



ECE-AUGUST-2022- SELF ASSESSMENT REPORT (SAR)
UNDERGRADUATE ENGINEERING PROGRAMS (TIER-I)

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PART-B: Criteria Summary**Name of the program : Electronics and Communication Engineering**

Criteria No.	Criteria	Mark/Weightage
Program Level Criteria		
1.	Vision, Mission and Program Educational Objectives	50
2.	Program Curriculum and Teaching –Learning Processes	100
3.	Course Outcomes and Program Outcomes	175
4.	Students' Performance	100
5.	Faculty Information and Contributions	200
6.	Facilities and Technical Support	80
7.	Continuous Improvement	75
Institute Level Criteria		
8.	First Year Academics	50
9.	Student Support Systems	50
10.	Governance, Institutional Support and Financial Resources	120
	Total	1000

NBA-ECE-Self Evaluation report

Criteria/ Sub.crit eria No.	Particulars	Max. Score	Availia ble score
1	Criterion 1: Vision, Mission and Program Educational Objectives (50)	50	50
1.1	State the Vision and Mission of the Department and Institute	5	5
1.2	State the Program Educational Objectives (PEOs)	5	5
1.3	Indicate where and how the Vision, Mission and PEOs are published and disseminated among stakeholders	15	15
1.4	State the process for defining the Vision and Mission of the Department, and PEOs of the program	15	15
1.5	Establish consistency of PEOs with Mission of the Department	10	10
2	Criterion 2: Program Curriculum and Teaching-Learning Processes (100)	100	100
2.1	Program Curriculum 30	30	30
2.1.1	State the process for designing the program curriculum	10	10
2.1.2	Structure of the Curriculum	5	5
2.1.3	State curriculum the components of the Curriculum	5	5
2.1.4	State the process used to identify extent of compliance of the curriculum for attaining the Program Outcomes(POs) & Program Specific Outcomes(PSOs)	10	10
2.2	Teaching-Learning Processes 70	70	70
2.2.1	Describe the Process followed to improve quality of Teaching Learning	15	15
2.2.2	Quality of end semester examination, internal semester question papers, assignments and evaluation	15	15
2.2.3	Quality of student projects	20	20
2.2.4	Initiatives related to industry interaction	10	10
2.2.5	Initiatives related to industry internship/summer training	10	10
3	Criterion 3: Course Outcomes and Program Outcomes (175)	175	175
3.1	Establish the correlation between the courses and the POs & PSOs	25	25
3.2	Attainment of Course Outcomes 75	75	75
3.2.1	Describe the assessment tools and processes used to gather the data upon which the evaluation of Course Outcome is based	10	10
3.2.2	Record the attainment of Course Outcomes of all courses with respect to set attainment levels	65	65
3.3	Attainment of Program Outcomes and Program Specific Outcomes 75	75	75
3.3.1	Describe assessment tools and processes used for assessing the attainment of each of the POs & PSOs	10	10
3.3.2	Provide results of evaluation of each PO & PSO	65	65
4	Criterion 4: Students' Performance (100)	100	89.56
4.1	Enrolment Ratio	20	20
4.2	Success Rate in the stipulated period of the program 20	20	11.72
4.2.1	Success rate without backlog in any Semester/year of study	15	6.9
4.2.2	Success rate in stipulated period (actual duration of the program) [Total of with backlog + without backlog]	5	4.82
4.3	Academic Performance in Second Year	10	10
4.4	Placement, Higher studies and Entrepreneurship	30	27.84
4.5	Professional Activities 20	20	20
4.5.1	Professional societies / chapters and organizing engineering events	5	5

4.5.2	Publication of technical magazines, newsletters, etc.	5	5
4.5.3	Participation in inter-institute events by students of the program of study (at other institutions)	10	10
5	Criterion 5: Faculty Information and Contributions (200)	200	200
5.1	Student-Faculty Ratio (SFR)	20	20
5.2	Faculty Cadre Proportion	20	20
5.3	Faculty Qualification	20	20
5.4	Faculty Retention	10	10
5.5	Faculty competencies in correlation to Program Specific Criteria	10	10
5.6	Innovations by the Faculty in Teaching and Learning	10	10
5.7	Faculty as participants in Faculty development /training activities /STTPs	15	15
5.8	Research and Development 75	75	75
5.8.1	Academic Research	20	20
5.8.2	Sponsored Research	20	20
5.8.3	Development Activities	15	15
5.8.4	Consultancy (From Industry)	20	20
5.9	Faculty Performance Appraisal and Development System (FPADS)	10	10
5.10	Visiting/Adjunct/Emeritus Faculty etc.	10	10
6	Criterion 6: Facilities and Technical Support (80)	80	80
6.1	Adequate and well equipped laboratories, and technical manpower	40	40
6.2	Laboratories: Maintenance and overall ambience	10	10
6.3	Safety measures in laboratories	10	10
6.4	Project laboratory/Facilities	20	20
7	Criterion 7: Continuous Improvement (75)	75	75
7.1	Actions taken based on the results of evaluation of each of the POs and PSOs	30	30
7.2	Academic Audit and actions taken during the period of Assessment	15	15
7.3	Improvement in Placement, Higher Studies and Entrepreneurship	10	10
7.4	Improvement in the quality of students admitted to the program	20	20
8	Criterion 8: First Year Academics (50)	50	46.86
8.1	First Year Student- Faculty Ratio (FYSFR)	5	5
8.2	Qualification of Faculty Teaching First Year Common Courses	5	4.6
8.3	First Year Academic Performance	10	6.86
8.4	Attainment of Course Outcomes of first year courses 10	10	10
8.4.1	Describe the assessment processes used to gather the data upon which the evaluation of Course Outcomes of first year is based	5	5
8.4.2	Record the attainment of Course Outcomes of all first year courses	5	5
8.5	Attainment of Program Outcomes of all first year courses 20	20	20
8.5.1	Indicate results of evaluation of each relevant PO/PSO	10	10
8.5.2	Actions taken based on the results of evaluation of relevant POs /PSOs	10	10

9	Criterion 9: Student Support Systems (50)	50	50
9.1	Mentoring system to help at individual level	5	5
9.2	Feedback analysis and reward /corrective measures taken, if any	10	10
9.3	Feedback on facilities	5	5
9.4	Self – Learning	5	5
9.5	Career Guidance, Training, Placement	10	10
9.6	Entrepreneurship Cell	5	5
9.7	Co-curricular and Extra curricular Activities	10	10
10	Criterion 10: Governance, Institutional Support and Financial Resources (120)	120	120
10.1	Organization, Governance and Transparency 55	55	55
10.1.1	State the Vision and Mission of the Institute	5	5
10.1.2	Availability of the Institutional Strategic Plan and its Effective Implementation and Monitoring	25	25
10.1.3	Governing body, administrative setup, functions of various bodies, service rules procedures, recruitment and promotional policies.	10	10
10.1.4	Decentralization in working and grievance redressal mechanism	5	5
10.1.5	Delegation of financial powers	5	5
10.1.6	Transparency and availability of correct/unambiguous information in public domain	5	5
10.2	Budget Allocation, Utilization, and Public Accounting at Institute level 15	15	15
10.2.1	Adequacy of Budget allocation	5	5
10.2.2	Utilization of allocated funds	5	5
10.2.3	Availability of the audited statements on the institute's website	5	5
10.3	Program Specific Budget Allocation, Utilization 30	30	30
10.3.1	Adequacy of budget allocation	10	10
10.3.2	Utilization of allocated funds	20	20
10.4	Library and Internet 20	20	20
10.4.1	Quality of learning resources (hard/soft)	10	10
10.4.2	Internet	10	10
	Gross Total	1000	986.42

Kalasalingam University (Kalasalingam Academy of Research and Education)

SELF ASSESSMENT REPORT(TIER - I)

Part A : Institutional Information

1 Name and Address of the Institution

Kalasalingam University (Kalasalingam Academy of Research and Education),
Kalasalingam University Anand Nagar, Krishnankoil- 626 126 Srivilliputtur(via) Virudhunagar (Dist.) Tamil Nadu

2 Name and Address of Affiliating University

Kalasalingam University

3 Year of establishment of the Institution:

1984

4 Type of the Institution:

<input type="radio"/> Institute of National Infortance	<input type="radio"/> Autonomous
<input type="radio"/> University	<input type="radio"/> Any other(please specify)
<input checked="" type="radio"/> Deemed University	

5 Ownership Status:

<input type="radio"/> Central Government	<input type="checkbox"/> Trust
<input type="radio"/> State Government	<input type="checkbox"/> Society
<input type="radio"/> Government Aided	<input type="checkbox"/> Section 25 Company
<input checked="" type="radio"/> Self financing	<input type="checkbox"/> Any Other(Please Specify)

6 Other Academic Institutions of the Trust/Society/Company etc., if any

Name of Institutions	Year of Establishment	Programs of Study	Location

7 Details of all the programs being offered by the Institution under consideration:

Name of Program	Program Applied level	Start of year	Year of AICTE approval	Initial Intake	Intake Increase	Current Intake	Accreditation status	From	To	Program for consideration	Program for Duration
B.Tech. Computer Science and Engineering	UG	2007	2007	300	Yes	240	Granted accreditation for 3 years for the period (specify period)	2018	2021	Yes	4
B.Tech. Computer Science and Engineering - Artificial Intelligence and Machine Learning	UG	2020	2020	60	No	60	Not eligible for accreditation	--	--	No	4
B.Tech. Computer Science and Engineering - Data Science	UG	2020	2020	60	No	120	Not eligible for accreditation	--	--	No	4
B.Tech. Computer Science and Engineering - Cyber Security	UG	2020	2020	60	No	180	Not eligible for accreditation	--	--	No	4
B.Tech. Computer Science and Engineering - Internet of Things and Cyber Security Including Block Cha	UG	2020	2020	60	No	60	Not eligible for accreditation	--	--	No	4
M.Tech. Computer Science and Engineering	PG	2007	2007	18	Yes	12	Not eligible for accreditation	--	--	No	2
B.Tech. Agricultural Engineering	UG	2017	2017	60	No	60	Not accredited (specify visit dates, year)	--	--	No	4
B.Tech. Aeronautical Engineering	UG	2017	2017	30	No	30	Not accredited (specify visit dates, year)	--	--	0	4
B.Tech. Automobile Engineering	UG	2011	2011	60	Yes	30	Not accredited (specify visit dates, year)	--	--	0	4
Sanctioned Intake for Last Five Years for the B.Tech. Automobile Engineering											
Academic Year				Sanctioned Intake							
2021-22				30							
2020-21				30							
2019-20				30							
2018-19				30							
2017-18				30							
2016-17				60							
B.Tech. Biomedical Engineering	UG	2015	2015	90	Yes	60	Not accredited (specify visit dates, year)	--	--	0	4

Name of Program	Program Applied level	Start of year	Year of AICTE approval	Initial Intake	Intake Increase	Current Intake	Accreditation status	From	To	Program for consideration	Program for Duration
Sanctioned Intake for Last Five Years for the B.Tech. Biomedical Engineering											
Academic Year				Sanctioned Intake							
2021-22				60							
2020-21				60							
2019-20				90							
2018-19				90							
2017-18				90							
2016-17				90							
B.Tech. Chemical Engineering	UG	2014	2014	60	Yes	30	Not accredited (specify visit dates, year)	--	--	0	4
Sanctioned Intake for Last Five Years for the B.Tech. Chemical Engineering											
Academic Year				Sanctioned Intake							
2021-22				30							
2020-21				30							
2019-20				30							
2018-19				30							
2017-18				30							
2016-17				60							
B.Tech. Food Technology	UG	2015	2015	90	No	90	Applying first time	--	--	No	4
B.Tech. Mechanical Engineering	UG	2007	2007	180	Yes	120	Granted accreditation for 5 years for the period (specify period)	2017	2023	0	4
Sanctioned Intake for Last Five Years for the B.Tech. Mechanical Engineering											
Academic Year				Sanctioned Intake							
2021-22				120							
2020-21				180							
2019-20				180							
2018-19				180							
2017-18				180							
2016-17				240							
M.Tech. Biotechnology	PG	2007	2007	12	No	12	Applying first time	--	--	0	2

Name of Program	Program Applied level	Start of year	Year of AICTE approval	Initial Intake	Intake Increase	Current Intake	Accreditation status	From	To	Program for consideration	Program for Duration
										0	2
M.Tech. Industrial Safety & Engineering	PG	2011	2011	12	No	12	Applying first time	--	--	0	2
M.Tech. Manufacturing Engineering	PG	2014	2014	12	No	12	Not accredited (specify visit dates, year)	--	--	0	2
M.Tech. Renewable Energy Technologies	PG	2015	2015	12	No	12	Not accredited (specify visit dates, year)	--	--	0	2
M.Tech. Civil Structural Engineering	PG	2015	2015	12	No	12	Applying first time	--	--	0	2
M.Tech. VLSI Design	PG	2007	2007	12	No	12	Eligible but not applied	--	--	0	2
M.Tech. Automotive Systems Engineering	PG	2009	2009	12	No	12	Not accredited (specify visit dates, year)	--	--	0	2
MCA. Computer Applications	PG	2007	2007	30	No	30	Not accredited (specify visit dates, year)	--	--	0	2
MBA. Business Administration	PG	2007	2007	120	No	120	Not accredited (specify visit dates, year)	--	--	0	2
MBA. Insurance and Risk Management	PG	2007	2007	18	No	18	Not accredited (specify visit dates, year)	--	--	0	2
B.Tech. Civil Engineering	UG	2007	2007	60	Yes	60	Granted accreditation for 3 years for the period (specify period)	2018	2021	No	4
Sanctioned Intake for Last Five Years for the B.Tech. Civil Engineering											
Academic Year				Sanctioned Intake							
2021-22				60							
2020-21				60							
2019-20				60							
2018-19				60							
2017-18				60							
2016-17				90							
B.Tech. Biotechnology	UG	2007	2007	120	No	120	Granted accreditation for 3 years for the period (specify period)	2018	2021	0	4
B.Tech. Electronics and Communication Engineering	UG	2007	2007	300	Yes	240	Granted accreditation for 3 years for the period (specify period)	2018	2021	No	4

Name of Program	Program Applied level	Start of year	Year of AICTE approval	Initial Intake	Intake Increase	Current Intake	Accreditation status	From	To	Program for consideration	Program for Duration
Sanctioned Intake for Last Five Years for the B.Tech. Electronics and Communication Engineering											
Academic Year				Sanctioned Intake							
2021-22				240							
2020-21				240							
2019-20				240							
2018-19				240							
2017-18				240							
2016-17				240							
B.Tech. Electrical and Electronics Engineering	UG	2007	2007	60	No	30	Granted accreditation for 3 years for the period (specify period)	2020	2023	0	4
B.Tech. Information Technology	UG	2007	2007	300	Yes	60	Applying first time	--	--	0	4

8 Programs to be considered for Accreditation vide this application:

S No	Level	Discipline	Program
1	Under Graduate	Engineering & Technology	Biotechnology
2	Under Graduate	Engineering & Technology	Computer Science & Engg.
3	Under Graduate	Engineering & Technology	Electronics & Communication Engg.

9 Total number of employees

A. Regular* Employees (Faculty and Staff):

Items	2021-22		2020-21		2019-20	
	MIN	MAX	MIN	MAX	MIN	MAX
Faculty in Engineering (Male)	228	232	292	309	254	265
Faculty in Engineering (Female)	89	92	96	100	80	87
Faculty in Maths, Science & Humanities teaching in engineering program (Male)	49	55	41	45	40	42
Faculty in Maths, Science & Humanities teaching in engineering program (Female)	29	30	14	17	20	21
Non-teaching staff (Male)	442	461	457	476	501	518
Non-teaching staff (Female)	167	174	172	179	209	223

B. Contractual* Employees (Faculty and Staff):

Items	2021-22		2020-21		2019-20	
	MIN	MAX	MIN	MAX	MIN	MAX
Faculty in Engineering (Male)	0	0	0	0	0	0
Faculty in Engineering (Female)	0	0	0	0	0	0
Faculty in Maths, Science & Humanities teaching in engineering Programs (Male)	0	0	0	0	0	0
Faculty in Maths, Science & Humanities teaching in engineering Programs (Female)	0	0	0	0	0	0
Non-teaching staff (Male)	0	0	0	0	0	0
Non-teaching staff (Female)	0	0	0	0	0	0

10 Total number of Engineering students:

Engineering and Technology- UG	<input checked="" type="checkbox"/> Shift1	<input type="checkbox"/> Shift2
Engineering and Technology- PG	<input checked="" type="checkbox"/> Shift1	<input type="checkbox"/> Shift2
Engineering and Technology- Polytechnic	<input type="checkbox"/> Shift1	<input type="checkbox"/> Shift2
MBA	<input type="checkbox"/> Shift1	<input type="checkbox"/> Shift2
MCA	<input type="checkbox"/> Shift1	<input type="checkbox"/> Shift2

Engineering and Technology- UG Shift-1

Course Name	2021-22	2020-21	2019-20
Total no. of Boys	3529	2535	1690
Total no. of Girls	1226	2677	2531
Total	4755	5212	4221

Engineering and Technology- PG Shift-1

Course Name	2021-22	2020-21	2019-20
Total no. of Boys	57	124	27
Total no. of Girls	24	132	36
Total	81	256	63

11 Vision of the Institution:

To be a University of Excellence of International Repute in Education and Research.

12 Mission of the Institution:

1. To provide a scholarly teaching-learning ambience which results in creating graduates equipped with skills and acumen to solve real-life problems.
2. To promote research and create knowledge for human welfare, rural and societal development.
3. To nurture entrepreneurial ambition, industrial and societal connect by creating an environment through which innovators and leaders emerge.

13 Contact Information of the Head of the Institution and NBA coordinator, if designated:

Head of the Institution	
Name	Dr. V. Vasudevan
Designation	Registrar
Mobile No.	9487551111
Email ID	registrar@klu.ac.in

☐ **NBA Coordinator, If Designated**

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CRITERION 1	Vision, Mission and Program Educational Objectives	50/50
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1.1. State the Vision and Mission of the Department and Institute (5)

The **VISION** of Kalasalingam Academy of Research and Education (Deemed to be University) is

To be a University of Excellence of International Repute in Education and Research.

The **MISSION** of Kalasalingam Academy of Research and Education (Deemed to be University) towards this Vision is

- To provide a scholarly teaching-learning ambience which results in creating graduates equipped with skills and acumen to solve real-life problems.
- To promote research and create knowledge for human welfare, rural and societal development.
- To nurture entrepreneurial ambition, industrial and societal connect by creating an environment through which innovators and leaders emerge.

The University, after consultation with various stakeholders, started the department of Electronics and Communication Engineering in the year 1993 with the department **VISION**

To strive towards excellence in Electronics and Communication Engineering through teaching, experiential learning, quality research and scholarship, while adhering to ethical and societal requirements.

To achieve this Vision, the **Electronics and Communication Engineering Department** of Kalasalingam Academy of Research and Education (Deemed to be University) **has the MISSION** as

- To help students achieve their goals by recognizing, identifying, and fostering their unique strengths through quality education and cutting-edge research training.
- To imbibe ability in the students to solve real life problems as per need of the society through nurturing their skills, creative thinking, and research acumen.
- To create an elite workforce, without compromise in the ethics and societal values.

Table 1.1 Department Vision consistency with Institute Vision

Institute Vision vs Department Vision	To strive towards excellence in Electronics and Communication Engineering through teaching, experiential learning, quality research and scholarship, while adhering to ethical and societal requirements.	
To be a University of Excellence of International repute in education and research	Excellence in Electronics and Communication Engineering	Teaching, experiential learning, quality research and scholarship
University of Excellence	√	
Education and Research		√

Table 1.2 Department Mission consistency with Institute Mission

Institute Mission vs. Department Mission	To help students achieve their goals by recognizing, identifying, and fostering their unique strengths through quality education and cutting-edge research training. M1	To imbibe ability in the students to solve real life problems as per need of the society through nurturing their skills, creative thinking, and research acumen. M2	To create an elite workforce, without compromise in the ethics and societal values. M3
To provide a scholarly teaching-learning ambience which results in creating graduates equipped with skills and acumen to solve real-life problems UM1	√	√	
To promote research and create knowledge for human welfare, rural and societal development UM2		√	
To nurture entrepreneurial ambition, industrial and societal connect by creating an environment through which innovators and leaders emerge UM3			√

Table 1.3 Department Mission Components vs. Institute Mission Components

Institute Mission Components vs. Department Mission Components	1.1 Quality Education and Research Training M1.1	2.1 Real life problems of society M2.1	2.2 Creative Thinking, Research acumen M2.2	3.1 Elite workforce M3.1	3.2 Ethics and Societal Value M3.2
Scholarly teaching-learning ambience UM1.1	√				
Graduates with skills and acumen to solve real-life problems UM1.2		√	√	√	
Research and Knowledge for human welfare, rural and societal development UM2.1				√	√
Innovators and Leaders UM3.1			√	√	√

Table 1.4 Consistency of the department vision and mission with the institute statements

Institute / Department	University Vision To be a University of Excellence of International Repute in Education and Research.
Department Vision To strive towards excellence in Electronics and Communication Engineering through teaching, experiential learning, quality research and scholarship, while adhering to ethical and societal requirements.	Substantial
Institute / Department	University Mission 1. To provide a scholarly teaching-learning ambience which results in creating graduates equipped with skills and acumen to solve real-life problems. 2. To promote research and create knowledge for human welfare, rural and societal development. 3. To nurture entrepreneurial ambition, industrial and societal connect by creating an environment through which innovators and leaders emerge.
Department Mission 1. To help students achieve their goals by recognizing, identifying, and fostering their unique strengths through quality education and cutting-edge research training. 2. To imbibe ability in the students to solve real life problems as per need of the society through nurturing their skills, creative thinking, and research acumen. 3. To create an elite workforce, without compromise in the ethics and societal values.	Substantial

The key components in the vision and mission of the institute and department are mapped in Tables 1.1, 1.2 and 1.3. From Tables 1.1, 1.2 and 1.3, the degree of appropriateness/relevance between the vision and mission statement of the institute and department was found to be significantly relevant. Similarly, the Vision and Mission statements of the department are qualified based on the statement of institute Vision and Mission. Finally, table 1.4 shows the consistency of the department vision and mission with the institute statement.

1.2. State the Program Educational Objectives (PEOs) (5)

The Electronics and Communication Engineering department has recognized the benchmark in higher education and research to the benefits of students through Outcome Based Education. The following Program Educational Objectives (PEOs) were developed based on the outcomes of brainstorming sessions to achieve the department's and Institute's intended vision and mission statements.

Within a few years of obtaining the undergraduate degree in Electronics and Communication Engineering, the students will

PEO1: Technical Proficiency:

Succeed as creative, productive, and valued engineers in their career by applying the technical knowledge and skills gained.

PEO2: Professional Growth:

Continue to develop professionally through life-long learning, higher education, and research expertise to meet the expectations of their organisation and the society.

PEO3: Management Skills:

Exhibit the management qualities in a responsive, ethical, and innovative manner.

1.3. Indicate where the Vision, Mission and PEOs are published and disseminated among stakeholders (15)

The department has identified STUDENTS, PARENTS, ALUMNI, PROFESSIONAL BODIES, FACULTY, SUPPORTING STAFF, EMPLOYERS and University Administration as stakeholders of the programme. The Vision, Mission and PEOs of the Electronics and Communication Engineering have been adequately disseminated and published to the above stakeholders in different ways. The Vision and Mission of the department, PEOs of the program are published at:

- University Website <https://kalasalingam.ac.in/>
- Laboratory Manuals
- Department Magazines
- Course Plan
- Syllabus

ELECTRONICS AND COMMUNICATION ENGINEERING DEPARTMENT	
Vision	Mission
To strive towards excellence in Electronics and Communication Engineering through teaching, experiential learning, quality research and scholarship, while adhering to ethical and societal requirements.	<ul style="list-style-type: none"> To help students achieve their goals by recognizing, identifying, and fostering their unique strengths through quality education and cutting-edge research training. To imbibe ability in the students to solve real life problems as per need of the society through nurturing their skills, creative thinking, and research acumen. To create an elite workforce, without compromise in the ethics and societal values.
B.Tech. E.C.E. Programme Educational Objectives Within a few years of obtaining the undergraduate degree in Electronics and Communication Engineering, the students will PEO1: Technical Proficiency Succeed as creative, productive, and valued engineers in their career by applying the technical knowledge and skills gained. PEO2: Professional Growth: Continue to develop professionally through life-long learning, higher education, and research expertise to meet the expectations of their organisation and the society. PEO3: Management Skills: Exhibit the management qualities in a responsive, ethical, and innovative manner.	
B.Tech. E.C.E. Programme Specific Outcomes At the end of the programme, the students will be able to: PSO1: Apply the basic sciences and engineering knowledge in the design and development of complex systems in the areas related to electronics and communication engineering. PSO2: Use the cutting-edge hardware and software tools with the obtained technical and managerial skills to design software and systems for applications including signal processing, communication engineering, computer networks, VLSI design and embedded systems. PSO3: Possess the attitude of continuous learning for producing effective solutions for the applications directly and indirectly related to Electronics and Communication engineering.	

Figure 1.3.1 (a) Vision, Mission, PEOs published in Laboratory Manual

ELECTRONICS AND COMMUNICATION ENGINEERING DEPARTMENT	
Vision	Mission
To strive towards excellence in Electronics and Communication Engineering through teaching, experiential learning, quality research and scholarship, while adhering to ethical and societal requirements.	<ul style="list-style-type: none"> To help students achieve their goals by recognizing, identifying, and fostering their unique strengths through quality education and cutting-edge research training. To imbibe ability in the students to solve real life problems as per need of the society through nurturing their skills, creative thinking, and research acumen. To create an elite workforce, without compromise in the ethics and societal values.

Figure 1.3.1 (b) Vision, Mission published in Department Magazine

ELECTRONICS AND COMMUNICATION ENGINEERING DEPARTMENT	
Vision	Mission
To strive towards excellence in Electronics and Communication Engineering through teaching, experiential learning, quality research and scholarship, while adhering to ethical and societal requirements.	<ul style="list-style-type: none"> To help students achieve their goals by recognizing, identifying, and fostering their unique strengths through quality education and cutting-edge research training. To imbibe ability in the students to solve real life problems as per need of the society through nurturing their skills, creative thinking, and research acumen. To create an elite workforce, without compromise in the ethics and societal values.

B.Tech. E.C.E. Programme Educational Objectives
<p>Within a few years of obtaining the undergraduate degree in Electronics and Communication Engineering, the students will</p> <p>PEO1: Technical Proficiency: Succeed as creative, productive, and valued engineers in their career by applying the technical knowledge and skills gained.</p> <p>PEO2: Professional Growth: Continue to develop professionally through life-long learning, higher education, and research expertise to meet the expectations of their organisation and the society.</p> <p>PEO3: Management Skills: Exhibit the management qualities in a responsive, ethical, and innovative manner.</p>

B.Tech. E.C.E. Programme Specific Outcomes
<p>At the end of the programme, the students will be able to:</p> <p>PSO1: Apply the basic sciences and engineering knowledge in the design and development of complex systems in the areas related to electronics and communication engineering.</p> <p>PSO2: Use the cutting-edge hardware and software tools with the obtained technical and managerial skills to design software and systems for applications including signal processing, communication engineering, computer networks, VLSI design and embedded systems.</p> <p>PSO3: Possess the attitude of continuous learning for producing effective solutions for the applications directly and indirectly related to Electronics and Communication engineering</p>

Figure 1.3.1 (c) Vision, Mission, PEOs published in Course Plan



  <p>Under the aegis of KAU SCHOOL OF ELECTRONICS AND ELECTRICAL TECHNOLOGY DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING</p>
<p align="center">DEPARTMENT VISION</p> <p><i>To strive towards excellence in Electronics and Communication Engineering through teaching, experiential learning, quality research and scholarship, while adhering to ethical and societal requirements.</i></p>
<p align="center">MISSION</p> <ul style="list-style-type: none"> <i>To help students achieve their goals by recognizing, identifying, and fostering their unique strengths through quality education and cutting-edge research training.</i> <i>To imbibe ability in the students to solve real life problems as per need of the society through nurturing their skills, creative thinking, and research acumen.</i> <i>To create an elite workforce, without compromise in the ethics and societal values.</i>

Figure 1.3.1 (d) Vision, Mission, PEOs published in Syllabus

They are displayed at:

- Department Office
- Laboratories
- Notice Boards
- Classrooms
- Staff Rooms



Figure 1.3.2 (a) Vision, Mission display at Department Office



Figure 1.3.2 (b) Vision, Mission. PEOs display at Laboratories



Figure 1.3.2 (c) Vision, Mission. PEOs display at Laboratories



Figure 1.3.2 (d) Vision, Mission. PEOs display at Notice boards



Figure 1.3.2 (e) Vision, Mission. PEOs display at Classrooms



Figure 1.3.2 (f) Vision, Mission. PEOs display at Staff rooms

The Vision and Mission of the department are disseminated to the stakeholders in the following ways:

Parents	:	During Parent Teachers Association Meet
Alumni	:	During Alumni Meet
Industry Persons	:	Through Event Brochure
Professional Bodies	:	Through Event Brochure
Faculty	:	During Department Meetings
Students	:	During feedbacks collection

Table 1.5 Publishing, Dissemination of Vision, Mission and PEOs to Stakeholders

Entity	Internal Stake Holders	External Stake Holders
Staff Rooms	√	
Classrooms	√	
Laboratories	√	
Course plan	√	
Syllabus	√	
Laboratory Manuals	√	
HoD Office	√	
Department Library	√	
Programme Advisory Committee	√	
Board of Studies	√	√
Parents Teacher Meeting		√
Event Brochures	√	√
Department Magazine	√	
Website	√	√
Notice boards	√	
Surveys	√	√

The stake holders are made aware of the Vision, Mission and PEOs as follows:

- Before starting of the academic session, where faculty members explain the Vision, Mission, PEOs, POs and Course Outcomes to the students.
- The Vision and Mission statements are explicitly communicated to the newly enrolled students during their first day in the programme.
- Alumni are informed about the Vision, Mission, Objectives and Outcomes during the Alumni Meet Interaction.
- Parents are informed about the Vision, Mission, PEOs and POs during the PTA meet
- Professional bodies and Industrial people are conveyed through event brochures
- Further PEOs and POs are disseminated during the meetings such as Programme Advisory Committee Meeting, Board of Studies Meeting

The significance of awareness about the vision, mission, and PEO was evaluated based on internal and external stakeholders' feedback ratings. The awareness rating on the dissemination of the statement is given in Table 1.6.

Table: 1.6 Awareness Indicators with stakeholders' feedback response

PEO	Alumni	Industry	Faculty	Students	Parents
PEO-1 Technical Proficiency	95%	93%	100%	90%	95%
PEO-2 Professional Growth	94%	95%	100%	89%	95%
PEO-3 Management Skills	98%	97%	100%	87%	95%

1.4. State the process for defining the Vision and Mission of the Department, and PEOs of the program (15)

Process of defining Department Vision and Mission:

The process of defining of vision and mission is carried out in two stages: viz. Consultative process, Deliberative process. The process of definition is depicted in fig. 1.1.4.1. During the consultative process, the department head consults with various stakeholders including the Sponsoring trust, University administrators, Local community, Industry experts, faculty, alumni. Hence the requirements of the local community, industry focus, faculty expertise, alumni interests, administrative and sponsoring supports are augmented and analysed.

With the analysed report, the department proposes the draft Vision and Mission statements. The draft document will be subjected to the deliberative process composing members from Academic council and Board of Management. The deliberated Vision and

Mission are then released for follow up.

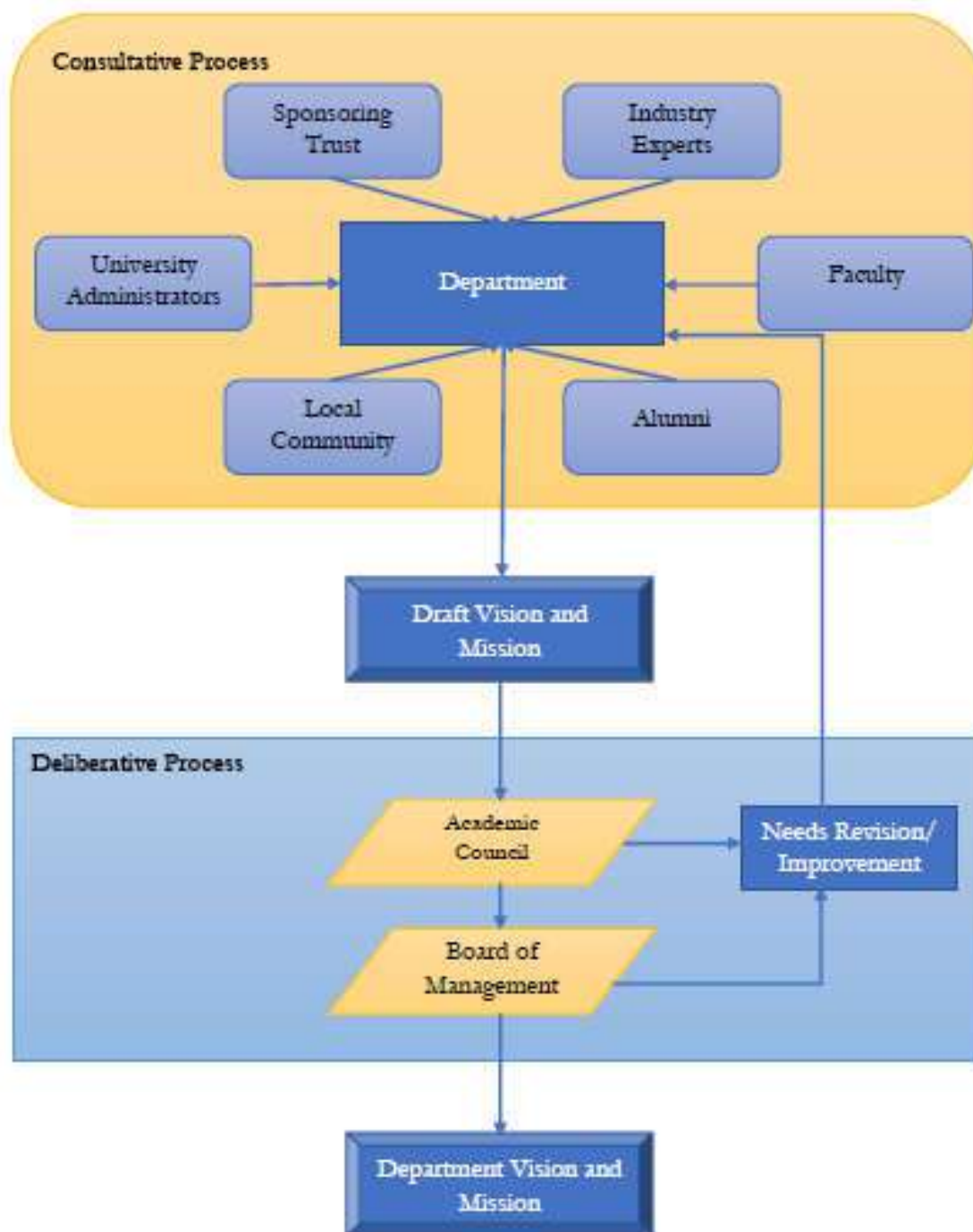


Fig. 1.1.4.1 Process of defining the Vision and Mission of the Department

Process of defining PEOs of the Program:

Definition of PEOs of the Program is carried out in two stages: viz. Consultative process, Deliberative process. Fig. 1.1.4.2 depicts the process of defining the PEO. During the consultative process, the department head consults with various stakeholders including the Parents,

Student representatives, Recruiters, Industry experts, faculty, alumni.

With the data received from the stakeholders, the department proposes the draft PEOs of the Program. The draft document will be subjected to the deliberative process composing members from Program Advisory Board, Board of Studies, Academic Council and Board of Management. The deliberated PEOs are then released for follow up.

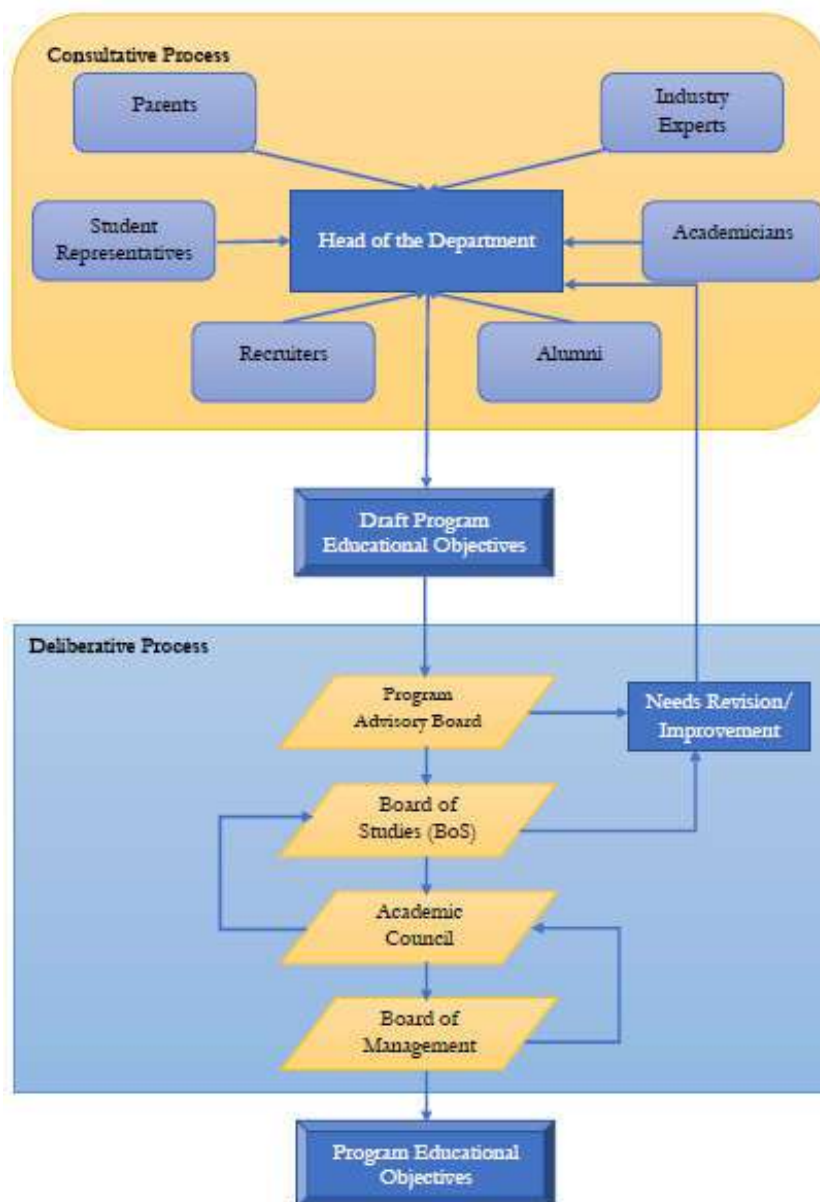


Fig. 1.1.4.2 Process of defining the Program Educational Objectives (PEOs) of the Program

1.5. Establish consistency of PEOs with Mission of the Department (10)

The compatibility of PEO with the mission statements is shown in Tables 1.7 and 1.8.

Table: 1.7 PEO vs Mission

PEO vs Mission Components	To help students achieve their goals by recognizing, identifying, and fostering their unique strengths through quality education and cutting-edge research training. M1	To imbibe ability in the students to solve real life problems as per need of the society through nurturing their skills, creative thinking, and research acumen. M2	To create an elite workforce, without compromise in the ethics and societal values. M3
PEO-1 Technical Proficiency	3	2	-
PEO-2 Professional Growth	-	3	-
PEO-3 Management Skills	-	-	3

Table 1.8 PEO vs Mission Components

PEO vs Mission Components	M1.1 Quality Education and Research Training	M2.1 Real Life Problems of Society	M2.2 Creative Thinkings, Research Acumen	M3.1 Elite Workforce	M3.2 Ethics and Societal Value
PEO-1 Technical Proficiency	3	-	2	-	-
PEO-2 Professional Growth	-	3	3	-	-
PEO-3 Management Skills	-	-	-	3	3

As a result, the amount of correlation was used to map the PEO and mission aspects. The correlation level is often stated as High (3), Moderate (2), or Low (1) to show the degree of correlation. PEO elements are related to Mission statement elements, as in Table 1.9, which shows the relationships between these aspects and their reasons.

Table: 1.9 Correlations between the PEO and Mission Statements

PEOs	CORRELATION WITH MISSION KEY ELEMENTS	JUSTIFICATION
PEO-1 Technical Proficiency	M1.1: Quality Education and Research Training M2.2: Creative Thinking, Research Acumen	Graduates will gain technical knowledge, and competence in electronics and communication engineering.
PEO-2 Professional Growth	M2.1: Real Life Problems of Society M2.2: Creative Thinking, Research Acumen	Graduates will improve professionally with life-long learning characteristics and social responsibilities.
PEO-3 Management Skills	M3.1: Elite Workforce M3.2: Ethics and Societal Value	Graduates will use collaborative and leadership skills and ethical attitudes to steer their careers toward social commitments.

CRITERION 2	Program Curriculum and Teaching –Learning Processes	100/100
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2.1. Program Curriculum (30) (30)

2.1.1. State the process for designing the program curriculum (10/10)

The curriculum design process involves both consultative and deliberative processes involving various committees as per the statutory bodies norms and as well the institute rules, which includes Academic Council (AC), Board of Studies (BoS) and Program Advisory Board (PAB). The curriculum design, development and update process framework are depicted in Figure 2.1.1

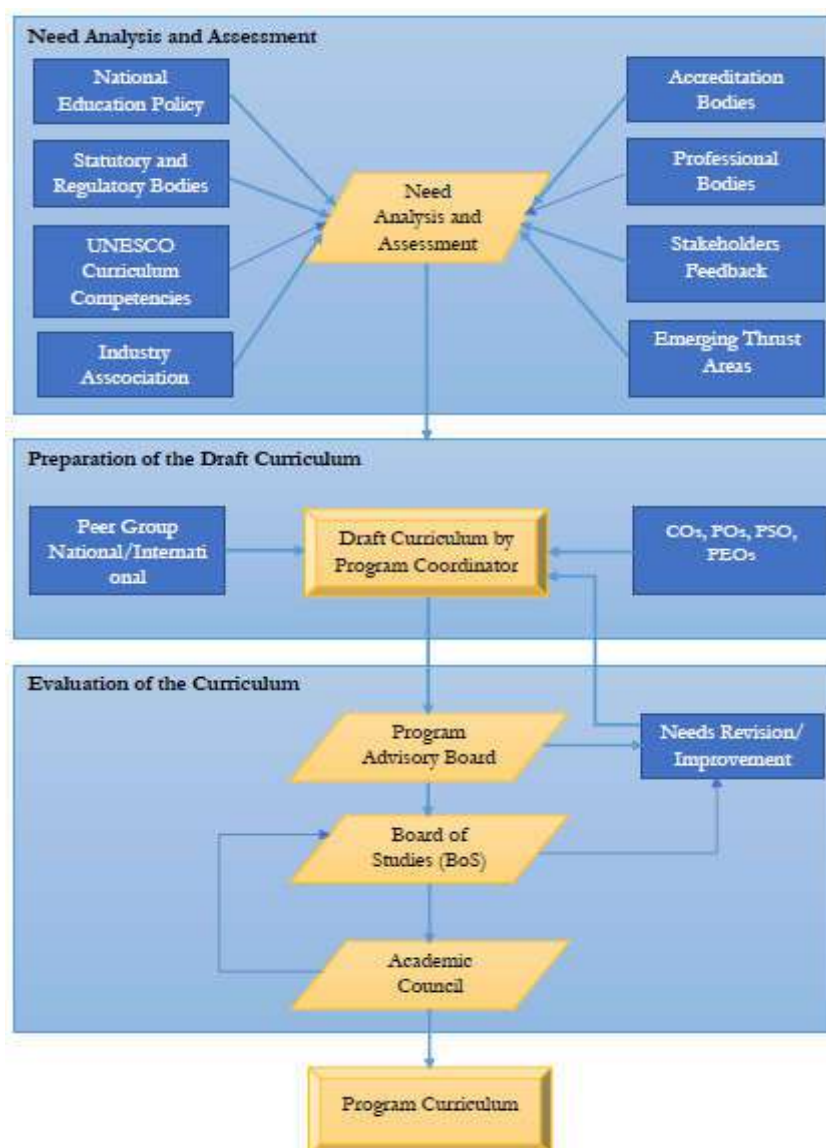


Figure 2.1.1 Process of Designing the Program Curriculum

Curriculum design process at KARE can broadly be categorized in three stages:

(i) **Need Analysis and Assessment:** Needs assessment is the basic element of curriculum design, development, and revision. The needs assessment shall be carried out to identify the key competencies, desirable characteristics, desirable learning experiences in curriculum development process. Need Analysis includes but not limited to, the following:

- Policy Revision at the National Level National Education Policy
- Statutory and Regulatory Bodies
- UNESCO Curriculum competencies
- Accreditation Bodies
- Professional Bodies
- Stakeholders Feedback
- Industry Associations
- Emerging Thrust Areas

The illustration of the student centric curriculum is depicted in Figure 2.1.2

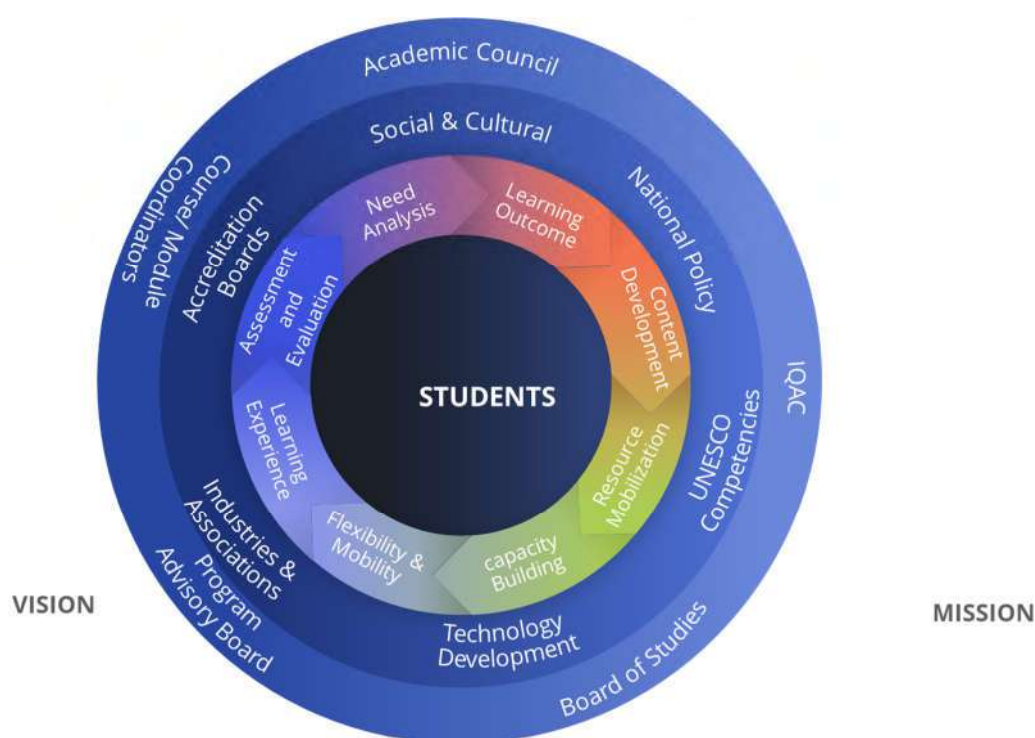


Figure 2.1.2 Illustration for design and development of student-centred curriculum

(ii) **Draft Curriculum:** The Program Coordinator consolidates the need analysis report with the team of Course/Module Coordinators and proposes a draft curriculum. The draft curriculum is prepared with the references of peers from National and International Universities, as well as with the compliance of Course Outcomes (COs),

Program Outcomes (POs), Program Specific Outcomes (PSOs), Program Educational Objectives (PEOs).

- (iii) **Review of the Draft Curriculum:** The draft curriculum will be reviewed by the Program Advisory Board (PAB). PAB will consider revision/improvement for the curriculum, if required. The BoS duly constituted as per norms, consisting of members including experts from Academia and Industry, will review the curriculum. The BoS considers revision/improvement for the curriculum, if required. The Academic Council will consider the recommendations of the BoS and provide suggestions/approval for the program curriculum.

2.1.2. Structure of the Curriculum (5 / 5)

The Department of Electronics and Communication Engineering follows the guidelines as elaborated in section 2.1.1. Table 2.1(a) shows the curriculum structure of BTech ECE 2014 regulation at KARE. In addition to the primary courses in the curriculum (CGPA Courses), complimentary skill courses/activities (Non-CGPA) are also inculcated to enhance the skills and attitudes of the students.

- Department of Electronics and Communication Engineering develops the curriculum following the AICTE curriculum guidelines from 2018 onwards. Table 2.1(a) shows the distribution of courses amongst the Semesters of the programme. In addition to the regular courses following courses are added to enhance the knowledge and skills of the students.
- The students study Soft Skill courses included in the regular curriculum, which improve their command over the language and analytical and logical thinking, preparing them for the interview. The HR Personnel conducts soft Skills courses from Talent Search, Coimbatore and SMART Training Resources, Chennai.
- The Industrial Professionals/Scientists offer one-credit courses from their Research Laboratories on the latest topics. The one-credit courses improve the students' skills in a particular topic according to the industrial requirement.
- The students are encouraged to study Online Courses offered by the Universities abroad /NPTEL.

- Laboratory Courses with Project for one of the laboratories courses each semester, the students have to do a mini-project as a part of the assessment in the laboratory course.
- Theory Courses with Practical Components for the theory courses that do not have the allied laboratory work, the practical component is associated with the course.

From Table 2.1(b) – 2.1(h) lists the detail of curriculum courses offered in 2014 regulations for each course. The table also describes the Lecture, Tutorial, Practical and the weighted credit points. The 2019 and 2020 passed out students completed their courses under this curriculum.

Table 2.1(a) Curriculum Structure - 2014 regulation – (a) CGPA courses

S. No	Category	CGPA Credit	Category wise minimum credit requirement
1	HUMANITIES		13
2	BASIC SCIENCES		22-25
	Physics	7	
	Chemistry	4	
	Mathematics	12	
	Environmental Sciences	2	
3	BASIC ENGINEERING		17
	Theory	13	
	Skills	4	
4	PROFESSIONAL MAJOR		110-115
	Theory Courses	61-71	
	Theory with Practical Component		
	Electives*	12-13	
	Laboratory	18-22	
	Laboratory with Project		
	Self Study	3	
	Project	8-10	

5	MINOR ELECTIVES	6
6	FREE ELECTIVES**	6
	Total	177-179

Table 2.1(b) Curriculum Structure - 2014 Regulation – (b) Non-CGPA courses

S. No	Group	Category	Non-CGPA credit	Minimum credit requirement
1.	1	Industrial Training I	3	18 (with atleast 3 credits from each group
2.		Advanced Industrial Training	3	
3.		Industrial Lectures	3	
4.		Soft Skills	3	
5.	2	International Certifications (Technical)	3	
6.		Co-curricular activities	3	
7.	3	Sports	3	
8.		NCC*	3	
9.		NSS	3	
10.		Extra-curricular activities	3	
11.	4	English Proficiency Certification (TOEFL/IELTS/BEC)	3	
12.		Aptitude Proficiency certification Exams II (GRE/ GMAT/ CAT/ GATE)	3	
13.		Foreign Languages (French/German/ Japanese etc.)	3	
		Total	39	

Table 2.1 (c) 2014 Regulation – (C) Basic Sciences

Sl.No	Course Code	Course Title	L	T	P	C
1	MAT103	Mathematics I	3	0	0	3
2	PHY131	Physics I	3	0	0	3
3	CHY106	Chemistry	3	0	0	3
4	PHY182	Physics Laboratory	0	0	3	1
5	MAT104	Mathematics II	3	0	0	3
6	PHY132	Physics II	3	0	0	3
7	CHY102	Environmental Sciences	2	0	0	2
8	CHY182	Chemistry Laboratory	0	0	3	1
9	MAT202	Mathematics III	3	0	0	3
10	MAT215	Mathematics IV	3	0	0	3

Table 2.1 (d) 2014 Regulation – (D) Basic Engineering

S. No	Course Code	Course Title	L	T	P	C
1.	CSE102	Programming Languages	2	0	0	2
2.	EEE101	Basic Electrical and Electronics Engineering	4	0	0	4
3.	CSE181	Programming Language Laboratory	0	0	3	1
4.	CIV101	Basic Civil and Mechanical Engineering	4	0	0	4
5.	MEC101	Engineering Drawing	1	0	3	2
6.	MEC103	Engineering Mechanics	3	0	0	3
7.	MEC181	Workshop	0	0	3	1

Table 2.1 (e) 2014 Regulation – (E) Professional Major

Sl.No	Course Code	Course Title	L	T	P	C
1.	ECE201	Electron Devices	3	0	0	3
2.	ECE203	Network Analysis	3	1	0	4
3.	ECE205	Electronic Circuits	3	1	0	4
4.	ECE209	Electromagnetic waves and Transmission Lines	3	1	0	4
5.	CSE255	Data Structures and ALGORITHMS	3	0	0	3
6.	ECE284	Electron Devices and Circuits Laboratory	0	0	3	2
7.	CSE295	Data Structures and ALGORITHMS Laboratory	0	0	3	2
8.	ECE206	Signals and Systems	3	1	0	4
9.	ECE208	Control System Engineering	3	1	0	4
10.	ECE210	Digital Design using HDL	3	1	0	4

11.	ECE211	Linear Integrated Electronics	3	1	0	4
12.	ECE283	Integrated Electronics Laboratory	0	0	3	2
13.	ECE285	HDL Programming Laboratory	0	0	3	2
14.	ECE301	Digital Signal Processing	3	1	0	4
15.	ECE304	Microprocessors and Microcontrollers	3	0	0	3
16.	ECE307	Analog and Digital Communication	3	1	0	4
17.	ECE308	Computer Organization and Architecture	3	0	0	3
18.	ECE381	Digital Signal Processing Laboratory	0	0	3	2
19.	ECE385	Microprocessors and Microcontrollers Laboratory	0	0	3	2
20.	ECE388	Community Project – Mini Project Lab and Comprehension	0	0	3	1
21.	ECE306	Computer Communication Networks	3	1	0	4
22.	ECE309	VLSI Design	3	1	0	4
23.	ECE386	Communication Systems and Networks Laboratory	0	0	3	2
24.	ECE387	Community Project – Mini Project Lab and Comprehension	0	0	3	2
25.	ECE403	Fibre Optic Communications	3	1	0	4
26.	ECE404	Microwave Devices	3	1	0	4
27.	ECE483	Microwave Devices Laboratory	0	0	3	2
28.	ECE484	Optical Communication Laboratory	0	0	3	2
29.	ECE***	Self-Study Elective	3	0	0	3
30.	ECE499	Project Work	-	-	2 4	1 0

Table 2.1 (f) 2014 Regulation – (F) Major Elective Courses

Sl.No	Code No.	Course	L	T	P	C
1.	ECE316	Antenna and Wave Propagation	3	1	0	4
2.	ECE317	Measurements and Instrumentation	3	1	0	4
3.	ECE318	Information Theory and Coding	3	1	0	4
4.	ECE320	Satellite Communication	3	1	0	4
5.	ECE322	Embedded and Real Time systems	3	1	0	4
6.	ECE323	Analog Mixed Signal Design	3	1	0	4
7.	ECE324	Electromagnetic Interference and compatibility	3	1	0	4
8.	ECE325	Robotics and Automation	3	1	0	4
9.	ECE341	Television Engineering	3	0	0	3
10.	ECE342	Advanced Digital Signal Processing	3	0	0	3
11.	ECE343	Advanced Digital System Design	3	0	0	3
12.	ECE344	Multimedia Compression Techniques	3	0	0	3
13.	ECE345	Industrial Electronics	3	0	0	3

14.	ECE346	Opto Electronics Devices	3	0	0	3
15.	ECE347	Telecommunication switching and networks	3	0	0	3
16.	ECE348	Telecommunication system modelling and simulation	3	0	0	3
17.	ECE349	Radar and Navigation Aids	3	0	0	3
18.	ECE350	Engineering Acoustics	3	0	0	3
19.	ECE351	Testing of VLSI Circuits	3	0	0	3
20.	ECE352	ARM Processor architecture and applications	3	0	0	3
21.	ECE353	Consumer Electronics	3	0	0	3
22.	ECE358	Nano-electronics	3	0	0	3
23.	ECE359	DSP based system design	3	0	0	3
24.	ECE425	Network management	3	0	0	3
25.	ECE426	Spread Spectrum Techniques	3	0	0	3
26.	ECE429	Digital Image Processing	3	0	0	3
27.	ECE430	Microwave Integrated Circuits	3	0	0	3
28.	ECE431	Wireless Communication	3	0	0	3
29.	ECE432	DSP Integrated Circuits	3	0	0	3
30.	ECE433	Speech and Audio Signal Processing	3	0	0	3
31.	ECE434	Cryptography and network security	3	0	0	3
32.	ECE435	High speed switching Architecture	3	0	0	3
33.	ECE436	DSP Architecture	3	0	0	3
34.	ECE437	Advanced Microprocessors	3	0	0	3
35.	ECE438	Low power VLSI design	3	0	0	3
36.	ECE439	RF MEMS	3	0	0	3
37.	ECE440	RF circuit design	3	0	0	3
38.	ECE441	Wavelets and Multi Resolution Processing	3	0	0	3
39.	ECE442	Reliability Engineering	3	0	0	3
40.	ECE443	Wireless Sensor Networks	3	0	0	3
41.	ECE444	Avionics	3	0	0	3
42.	ECE445	Integrated Circuit Verification	3	0	0	3
43.	ECE446	RFID and applications	3	0	0	3

Table 2.1(g) 2014 Regulation – (G) Minor Elective Courses

Sl.No	Code No.	Course	L	T	P	C
1.	EEE355	Soft Computing	3	0	0	3
2.	EEE365	Electrical Machines	3	0	0	3
3.	INT355	Internet and Web Technology	3	0	0	3
4.	EIE355	Advanced Control Systems	3	0	0	3
5.	CSE355	Artificial Intelligence	3	0	0	3
6.	EIE365	Medical Electronics	3	0	0	3
7.	EEE410	Neural network and fuzzy logic	3	0	0	3
8.	EIE409	Bio-Medical instrumentation	3	0	0	3
9.	EIE415	Microcontroller Based system design	3	0	0	3
10.	CSE408	Grid computing	3	0	0	3
11.	INT315	Bluetooth Technology	3	0	0	3
12.	EIE315	Virtual Instrumentation	3	0	0	3
13.	MEC416	Industrial Safety Engineering	3	0	0	3
14.	MEC320	Finite Element Analysis	3	0	0	3

Table 2.1(h) 2014 Regulation – (H) Humanities Elective Courses

Sl.No	Code No.	Course	L	T	P	C
1.	HSS001	Total Quality Management	3	0	0	3
2.	HSS002	Engineering Management	3	0	0	3
3.	HSS003	Indian Economic Development	3	0	0	3
4.	HSS004	Industrial Psychology	3	0	0	3
5.	HSS005	Consumer Psychology	3	0	0	3
6.	HSS006	Professional Ethics	3	0	0	3
7.	HSS007	Operations Management	3	0	0	3
8.	HSS008	Introduction to Economics	3	0	0	3
9.	HSS009	Applied Economics	3	0	0	3
10.	HSS010	International Trade and Finance	3	0	0	3
11.	HSS011	Information Systems for Managerial Decision Making	3	0	0	3
12.	HSS012	Advertising and Media Services	3	0	0	3

13.	HSS013	Cost Analysis and Control	3	0	0	3
14.	HSS014	Introduction to Marketing Management	3	0	0	3
15.	HSS015	Management Concepts and Techniques	3	0	0	3
16.	HSS016	Organizational Psychology	3	0	0	3
17.	HSS017	International Economics	3	0	0	3
18.	HSS018	Communication Skills	3	0	0	3
19.	HSS019	Operations Research	3	0	0	3
20.	HSS020	Human Resource Management	3	0	0	3
21.	HSS021	Public Finance in Theory and Practice	3	0	0	3
22.	HSS022	Banking Theory and Practice	3	0	0	3
23.	HSS023	Entrepreneurship Development	3	0	0	3

2018 Curriculum

The Department of Electronics and Communication Engineering follows the guidelines as elaborated in section 2.1.1. Table 2.1 (i) shows the curriculum structure of BTech ECE 2018 regulation at KARE. In addition to the primary courses in the curriculum (CGPA Courses), complimentary skill courses/activities (non-CGPA) are also inculcated to enhance the skills and attitudes of the students.

As a consistent curriculum development process, every year curriculum has review and revision, and every three years, the curriculum undergoes a significant review as a standard process adapted in our University. This curriculum revision commenced applying to 2021 passed-out students and the forthcoming batch of students. The 2018 Curriculum has evolved processed through the standard process as mentioned in Sec. 2.1.1. The curriculum contains additional features such as 2 courses of 3 credits from each Open Elective (Basic Sciences and Mathematics), Biology for Engineering course, and Industry training/Internship of 2 credits included within the CGPA earning by a student. Several fresh, cutting-edge professional elective courses have been incorporated in receipt of the inputs from industrial peers, alumni, recruiters, IEEE, and perusal of other thrust areas of the department. The curriculum has the following structure

- Basics science and Mathematics of total 31 credits.
- Humanities and social science elective, soft skills of total 12 credits.
- Basic Engineering of 24 credits.

- Program core has Core courses inclusive of community service-projects and project-work with a total of 61 courses.
- Elective courses from combined Professional and Open Elective of 36 credits, in which the Professional Elective carries 18, Open Elective Engineering carries 12, and Open Elective Basic Science and Mathematics carries 6 credits.
- Internship/ Industry training of 2 credits.

The program curriculum has been prepared by incorporating all the above factors and tabulated in Table 2.1 (j). From Table 2.1 (s), the total number of hours for each course with their corresponding credit points have been detailed.

Table 2.1 (j) Curriculum Structure - 2018 Regulation – (a) CGPA courses

I	Basic Science and Mathematics	25
II	Humanities and Social Science	9
	(a) Soft Skills	3
	(b) Humanities Elective	6
III	Basic Engineering	24
IV	Program Core	61
	a) Core Courses	48
	b) Community Service Project	3
	c) Project Work	10
V	Professional Elective Courses	36
	a) Professional Elective	18
	b) Open Elective Engineering	12
	c) Open Elective Basic Science and Mathematics	6
VI	Internship/Industry Training	2
VII	Mandatory Courses
Total Credits		

Table 2.1 (k) Curriculum Structure – 2018 regulation – (b) Non-CGPA courses

Group	Courses	Credit	Min. Credit Requirements
I	NCC	1	1
	NSS	1	
	Sports	1	
	Extra-Curricular Activity	1	

II	Value Added Courses	1	1
	International Certification (Technical)	1	
	Co-Curricular Activity	1	
III	English Proficiency Certification (TOEFL/IELTS/BEC etc)	1	1
	Aptitude Proficiency Certification (GRE/GMAT/CAT/GATE etc)	1	
	National/ International Languages (Hindi/ French/ German/ Japanese/ Korean etc)	1	

Table 2.1 (l) Curriculum Structure – 2018 regulation – I Courses offering by External Experts

I	Course offering by experts from Industry
II	Course offering by experts from Higher Learning Institutes
III	Course offering from MOOC Platforms

Table 2.1 (m) Curriculum Structure – 2018 regulation – (d) Basic Science and Mathematics

S.No	Course Code	Course Title	L	T	P	C
1.	PHY18R171	Introduction to Electromagnetic Theory	3	1	2	5
2.	CHY18R171	Chemistry	3	1	2	5
3.	MAT18R101	Calculus and Linear Algebra	3	1	0	4
4.	MAT18R102	Multiple Integration, Ordinary Differential Equations and Complex Variable	3	1	0	4
5.	MAT18R204	Partial Differential Equations and Transforms	3	1	0	4

Table 2.1 (n) Curriculum Structure - 2018 regulation – (e) Humanities and Social Science

S.N o	Course Code	Course Title	L	T	P	C
1.	HSS18R151	English for Technical Communication	2	0	2	3
2.	HSS18R101	Soft Skills – I	1	0	0	1
3.	HSS18R102	Soft Skills – II	1	0	0	1
4.	HSS18R201	Soft Skills – III	1	0	0	1
5.	HSS18R001	Management Concepts and Techniques	3	0	0	3
6.	HSS18R002	Marketing Management	3	0	0	3
7.	HSS18R003	Organisational Psychology	3	0	0	3
8.	HSS18R004	Project Management	3	0	0	3
9.	HSS18R005	Stress Management and Coping Strategies	3	0	0	3
10.	HSS18R006	Economics for Engineers	3	0	0	3
11.	HSS18R007	Human Resource Management and Labour Law	3	0	0	3
12.	HSS18R008	Entrepreneurship Development	3	0	0	3
13.	HSS18R009	Cost Analysis and Control	3	0	0	3
14.	HSS18R010	Product Design and Development	3	0	0	3
15.	HSS18R011	Business Process Reengineering	3	0	0	3
16.	HSS18R012	Political Economy	3	0	0	3
17.	HSS18R013	Professional Ethics	3	0	0	3
18.	HSS18R014	Operations Research	3	0	0	3
19.	HSS18R015	Total Quality Management	3	0	0	3
20.	HSS18R016	Advanced Soft Skills	3	0	0	3

Table 2.1 (o) Curriculum Structure - 2018 regulation – (e) Basic Engineering

S.No	Course Code	Course Title	L	T	P	C
1.	EEE18R172	Basic Electrical Engineering	3	1	2	5
2.	MEC18R151	Engineering Graphics and Design	3	0	2	3
3.	MEC18R211	Engineering Mechanics	3	1	0	4
4.	MEC18R152	Engineering Practice	2	0	2	3

5.	ECE18R172	Digital Circuits and Systems Design	3	1	2	5
6.	ECE18R171	Electronic Devices	3	0	2	4

Table 2.1 (p) Curriculum Structure - 2018 regulation – (f) Programme Core

S.No	Course Code	Course Title	L	T	P	C
1.	ECE18R201	Network Theory	3	1	0	4
2.	ECE18R202	Signals and Systems	3	1	0	4
3.	ECE18R203	Analog Integrated Circuits	3	0	0	3
4.	ECE18R271	Electronic Circuits	3	0	2	4
5.	ECE18R316	Probability Theory and Stochastic Processes	3	1	0	4
6.	ECE18R273	Digital Signal Processing	3	0	2	4
7.	ECE18R274	Electromagnetic Waves and Transmission Lines	3	0	2	4
8.	ECE18R275	Analog and Digital Communication	3	0	2	4
9.	ECE18R281	Analog Integrated Circuits Laboratory	0	0	2	1
10.	ECE18R301	Control Systems	3	1	0	4
11.	ECE18R371	Microprocessors and Microcontrollers	3	0	2	4
12.	ECE18R372	Antennas and Propagation	3	0	2	4
13.	ECE18R373	Computer Communication and Networks	3	0	2	4
14.	ECE18R399	Community Service Project	0	0	6	3
15.	ECE18R498	Project Work – Phase I	0	0	4	2
16.	ECE18R499	Project Work – Phase II	0	0	16	8

Table 2.1 (q) Curriculum Structure - 2018 regulation – (g) Professional Elective Courses

S. No	Course Code	Course Name	L	T	P	C
Stream: ELECTRONIC PRODUCT DESIGN AND PROGRAMMING						
1.	ECE18R250	PCB Design	3	0	1	3.5
2.	ECE18R251	Data Structures	3	0	2	4
3.	ECE18R252	Object-Oriented Programming with C++	3	0	1	3.5

4.	ECE18R253	Numerical Analysis using MATLAB	3	0	1	3.5
5.	ECE18R254	Electronic Sensors and Measurements with LABVIEW	3	0	1	3.5
6.	ECE18R312	Computer Architecture	3	1	0	4
7.	ECE18R313	Probability Theory and Stochastic	3	1	0	4
8.	ECE18R350	Python Programming for Electronics Engineers	3	0	2	4
9.	ECE18R402	Reliability Engineering	3	1	0	4
10.	ECE18R236	Linux and Shell Programming	3	0	2	4
11.	ECE18R237	C Essentials	3	0	2	4
12.	ECE18R238	Linux and Regular Expressions	3	0	2	4
Stream: VLSI DESIGN						
1.	ECE18R255	Electronic Material Physics	3	0	1	3.5
2.	ECE18R256	FPGA Based System Design	3	0	1	3.5
3.	ECE18R314	CMOS Analog IC Design	3	1	0	4
4.	ECE18R315	Microelectronics Physics	3	1	0	4
5.	ECE18R351	Process and Device Simulation by TCAD	3	0	1	3.5
6.	ECE18R352	CMOS Design	3	0	1	3.5
7.	ECE18R353	MEMS Technology and Modelling	3	0	1	3.5
8.	ECE18R354	Digital Logic and State Machine Design	3	0	1	3.5
9.	ECE18R404	Mixed Signal Design	3	1	0	4
10.	ECE18R405	Nano Electronics	3	0	0	3
11.	ECE18R406	IC Layout Design	3	1	0	4
12.	ECE18R450	Systematic Digital Design	3	0	1	3.5
13.	ECE18R239	RTL Design using Verilog HDL	3	0	2	4
Stream: SIGNAL PROCESSING						
1.	ECE18R257	Digital Signal Processing with FPGA	3	0	1	3.5
2.	ECE18R258	Digital Signal Processing and Filter Design	3	0	1	3.5
3.	ECE18R355	Digital Signal Processing Architecture	3	0	1	3.5
4.	ECE18R356	Speech and Audio Signal Processing	3	0	1	3.5
5.	ECE18R357	Digital Image Processing	3	0	1	3.5
6.	ECE18R358	Digital Video Processing	3	0	1	3.5
7.	ECE18R359	Computer Vision	3	0	1	3.5
8.	ECE18R407	Adaptive Signal Processing	3	1	0	4
9.	ECE18R452	Digital Signal Processing System Design	3	0	1	3.5
Stream: COMMUNICATION ENGINEERING AND NETWORKING						

1.	ECE18R259	Information Theory and Coding Principles	3	0	1	3.5
2.	ECE18R320	RFID and Applications	3	1	0	4
3.	ECE18R322	Data Compression	3	1	0	4
4.	ECE18R361	Fibre Optic Communication	3	0	1	3.5
5.	ECE18R362	Mobile Communication	3	0	1	3.5
6.	ECE18R363	Microwave Theory and Techniques	3	0	1	3.5
7.	ECE18R364	Wireless Network Technologies	3	0	1	3.5
8.	ECE18R410	Error Correcting Codes	3	1	0	4
9.	ECE18R411	High Speed Electronics	3	1	0	4
10.	ECE18R413	Next Generation Mobile Communication	3	0	0	3
11.	ECE18R454	Cryptography and Network Security	3	0	2	4
12.	ECE18R455	Wireless Ad-Hoc and Sensor Networks	3	0	1	3.5
Stream: EMBEDDED SYSTEM DESIGN						
1.	ECE18R260	Internet of Things	3	0	1	3.5
2.	ECE18R365	AVR Microcontroller Programming	3	0	1	3.5
3.	ECE18R366	Embedded ARM Development using BeagleBone	3	0	1	3.5
4.	ECE18R367	Embedded C	3	0	1	3.5
5.	ECE18R414	Flexible Electronics	3	1	0	4
6.	ECE18R456	Embedded Systems Design and Programming	3	0	1	3.5

Table 2.1 (r) Curriculum Structure - 2018 regulation – (H) Internship Course

S. No	Course Code	Course Name	Credits
1.	ECE18R397	Industry Training / Internship	2

Table 2.1 (s) Curriculum Structure - 2018 regulation – (I) Mandatory Courses

S. No	Course Code	Course Name	Credits
1.	MAN18R001	Environmental Sciences	-
2.	MAN18R002	Indian Constitution	-
3.	MAN18R003	Essence of Indian Traditional Knowledge	-

Curriculum Revision 2020

As a part of curriculum revision and refinement and, more explicitly, streamlining the students in a particular domain, it has been adopted to fix the number of students getting admitted to a domain area of the ECE. The professional electives were integrated and streamlined to enhance the core competency and acquired foundation knowledge to attain the desirable placement skills by the reputed companies. In this regard, the department of ECE, KARE, has collaborated with the Industry Nanochip Solution Pvt Ltd to structure the courses from diverse emerging domains of the Industry's cognitive and technical needs. The details of the domain and the subjects are listed in Table 2.1 (t). The table illustrates the courses, including those pertaining to a single domain and common to all domains. Industry engineers also prepare the course content (PPT, Video, and Quiz) for all the course topics and deliver 50 % of the course content to the students. As the students' study from the basics to the advanced concepts of the specific domain with practical hands-on experience, they could get expertise in that domain, which gets them core placements.

Table 2.1 (t) Nanochip Domain Course

Domain	Semester	Course Code	Course
Common to all Domain	I	ECE18R171	Electronic Devices
Common to all Domain	II	ECE18R172	Digital Circuits and Systems Design
VLSI Design and Verification	III	ECE18R239	RTL Design using Verilog HDL
	IV	ECE18R238	Linux and regular expressions
	V	ECE18R370	Python programming for design and verification engineers
	VI	ECE18R377	System Verilog for RTL Verification
	VII	ECE18R470	Universal Verification Methodology
Embedded systems and IOT	III	ECE18R237	C Essentials
	IV	ECE18R251	Data Structures
	V	ECE18R374	Embedded systems for IoT
	VI	ECE18R378	System design and applications for IoT
	VII	ECE18R471	IoT Protocols and their applications
Artificial Intelligence and cyber security	III	ECE18R350	Python programming for Electronic Engineers
	IV	ECE18R454	Cryptography and network security
	V	ECE18R375	Statistical Inference and Machine Learning
	VI	ECE18R376	Deep Learning implementations in Tensor Flow and Keras
	VII	ECE18R472	Applied Data Modelling and Deep Learning for engineers
	III	ECE18R350	Python programming for Electronics Engineers

VLSI Physical Design	IV	ECE18R236	Linux and shell programming
	V	ECE18R376	ASIC Design flow
	VI	ECE18R380	Static Timing analysis and its applications
	VII	ECE18R473	Physical design and verification

2021 Curriculum

Curriculum Structure

The curriculum of Btech ECE has went through a major revision as per the guidelines of the 2021 regulation of the University. The new regulation curriculum has the component such as foundation core, University electives, program core, program elective, experiential core, experiential elective which covers totally 160 credits. In the 2021 curriculum in addition to theory, practicals and tutorial an additional X component is included to certain courses to give more experiential importance to that particular course. The curriculum also has audit courses which covers the complimentary skills, courses related to environment and Indian constitution. The curriculum and curriculum structure of 2021 regulation is given in the tables 2.1 (u) (v)

Table 2.1 (u) Curriculum structure 2021 Regulation

Environment/Indian Constitution/	44	Foundation Core	Mathematics and sciences
			Engineering Science
			Computing
			Sustainable Product Development
			Human Values and Communication
			Entrepreneurship and Innovation
Complementary Skills	16	Univ Elective	Engineering (outside school)
			Liberal arts (Or)
			Mathematics and Sciences
	52	Program Core	
	24	Program Elective	
	16	Experiential Core	Design Project
			Capstone
	8	Experiential Elective	CSP/Internship/UG Research
			/Competitions
	160		

Table 2.1 (v) Curriculum 2021**Foundation Core**

Sl. No.	Course Code	Course Name	Credits
1	211ECE1100	IoT – Sensors and Devices	2

Program Core

Sl. No.	Course Code	Course Name	Credits
1	212ECE1300	Electronic Devices	4
2	212ECE1301	Digital Circuits and Systems Design	4
3	212ECE1302	Data Communication Networks	4
4	212ECE2303	Electronic Circuit Analysis and Design	4
5	212ECE2104	Signals and Systems	3
6	212ECE2105	Control Systems	3
7	212ECE2306	Analog Integrated Circuits	4
8	212ECE2307	Analog and Digital Communication	4
9	212ECE2308	Microcontrollers and Interfacing Techniques	4
10	212ECE2309	Engineering Electromagnetics	4
11	212ECE2110	Transmission Lines and Waveguides	3
12	212ECE2311	Antennas and Radiation	4
13	212ECE2112	Microwave and Optical Communication	3
14	212ECE2313	Digital Signal and Image Processing	4
		Total Credits	52

Program Electives**VLSI Design and Verification (Nanochip)**

Sl. No.	Course Code	Course Name	Credits
1	213ECE2300	IC CAD - Design Automation (Common to VLSI Physical Design)	4
2	213ECE2301	Verilog HDL Programming	4
3	213ECE2302	System Verilog for RTL Verification	4
4	213ECE3303	Advanced SV Constructs and Verification using Python	4
5	213ECE3304	Universal Verification Methodology	4
6	213ECE3305	System Verilog for Verification and Assertion	4
7	213ECE3306	High Level SoC Design Methodologies (Common to VLSI Physical Design)	4

Embedded Systems and IoT (Nanochip)

Sl. No.	Course Code	Course Name	Credits
1	213ECE2307	Object Oriented Programming and Data Structures using Python	4
2	213ECE2308	Embedded Systems for IoT	4
3	213ECE2309	System Design and Applications for IoT	4
4	213ECE3310	IoT Protocols and their Applications	4
5	213ECE3311	IoT Security	4
6	213ECE3312	Smart Textile Technologies	4
7	213ECE3313	Embedded Linux for IoT Systems with Mobile Application Development	4

Artificial Intelligence and Cyber Security (Nanochip)

Sl. No.	Course Code	Course Name	Credits
1	213ECE2314	Cryptography and Network Security	4
2	213ECE2315	Statistical Inference and Machine Learning	4
3	213ECE2316	Deep Learning Implementations in TensorFlow and Keras	4
4	213ECE3317	Applied Data Modelling and Deep Learning for Engineers	4
5	213ECE3318	Cyberspace Operations and Design	4
6	213ECE3319	Applied Cyber Data Analytics	4
7	213ECE3320	Security Data Visualisation	4

VLSI Physical Design (Nanochip)

Sl. No.	Course Code	Course Name	Credits
1	213ECE2300	IC CAD - Design Automation (Common to VLSI Design and Verification)	4
2	213ECE2321	ASIC Design Flow	4
3	213ECE2322	Static Timing Analysis	4
4	213ECE3323	Design For Testability	4
5	213ECE3324	Physical Design and Verification	4
6	213ECE3325	Low Power Logic Synthesis Methodologies	4
7	213ECE3306	High Level SoC Design Methodologies (Common to VLSI Design and Verification)	4

Communication Engineering Stream

Sl. No.	Course Code	Course Name	Credits
1	213ECE3326	Digital Signal Processors and Applications	4
2	213ECE3327	Biomedical Signal Processing	4
3	213ECE2328	Wireless Communications	4
4	213ECE2329	RFID Technologies for IoT	4
5	213ECE3330	Wireless Ad-Hoc and Sensor Networks	4
6	213ECE3331	Optical Networks	4
7	213ECE3332	Natural Language Processing	4

Additional Program Electives for Honours Students

Sl. No.	Course Code	Course Name	Credits
1	213ECE4370	Process and Device Simulation	4
2	213ECE4371	Pattern Recognition and Computer Vision	4
3	213ECE4372	Electronics for Autonomous Navigation Systems	3
4	213ECE4173	Virtual Reality and Augmented Reality	3
5	213ECE4174	Satellite Communication	3
6	213ECE4175	Display Systems	3
7	213ECE4176	Flexible Electronics	3
8	213ECE4377	Wireless MIMO Technology	4
9	213ECE4178	Biochips: Technology and Applications	3
10	213ECE4379	FPGA based System Design	4
11	213ECE4180	Brain Computer Interfacing	3
12	213ECE4381	Embedded Software and Hardware Architecture	4

University Electives by Electronics and Communication Engineering

Sl. No.	Course Code	Course Name	Credits
1	214ECE0100	GPS Fundamentals	3
2	214ECE0101	Electronic Product Design	3
3	214ECE0102	Biosensors and their Applications	3
4	214ECE0103	IoT for Smart Agriculture	3
5	214ECE0104	IoT Network Architecture and Protocols	3
6	214ECE0105	ARM System Architecture	3
7	214ECE0106	Green Electronics Manufacturing	3
8	214ECE0107	Electronics Packaging	3
9	214ECE0108	VLSI Design	3
10	214ECE0109	Fundamentals of Wireless Communications	3

COMMON COURSES (PROPOSED AT UNIVERSITY LEVEL)

S.No	Course Title	L	T	P	X	C	Hrs/Wk
1	English For Engineers	2	0	0	3	3	5
2	Introduction to Engineering Visualisation	0	0	2	3	2	5
3	Sustainable Product Realisation	1	0	2	3	3	6
4	IoT – Sensors and Devices	1	0	0	3	2	4
5	Problem Solving using Computer Programming	1	0	2	3	3	6
6	Python Programming	1	0	2	3	3	6
7	Innovation and Entrepreneurship	1	0	0	3	2	4
8	Statistics for Engineers	2	0	0	3	3	5
9	Calculus and Linear Algebra	3	2	0	0	4	5
10	Multiple Integration, Ordinary Differential Equation and Complex variable	3	0	2	0	4	5
11	Physics	3	0	2	0	4	5
12	Chemistry	3	0	2	0	4	5
13	Basic Electrical and Electronics Engineering	3	0	2	0	4	5
14	Biology for Engineers	3	0	0	0	3	3

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2.1.3. State the components of the curriculum (5 / 5)

Program curriculum grouping based on course components.

The curriculum component consists of different course components; its corresponding percentage of credit covered, total contact hours, and total credits are given in detail in Table 2.2 (a) for the 2014 curriculum. As given, the total number of credits for the 2014 curriculum components would equal 181.

Table 2.2 (a) Curriculum components for 2014 regulations

Course Component	Curriculum Content (% of total number of credits of the program)	Total number of contact hours	Total number of credits
Mathematics and Basic Sciences	14%	375	25
Basic Engineering	10%	255	17
Professional Cores	44%	1185	79
Major Electives	9%	240	16
Project Work	6%	150	10
Humanities	7%	195	13
Interdisciplinary (Minor, Free Elective) Courses	10%	315	21
Total number of Credits			181
Non-CGPA			18
Mandatory Courses			-

The percentage of credits of each course and the total number of contact hours needed to complete the course for the 2018 curriculum have been given in Table 2.2 (b) This table also explains the total credit points required by each course throughout the semester.

Table 2.2 (b) Curriculum components for 2018 regulations

Course Component	Curriculum Content (% of total number of credits of the program)	Total number of contact hours	Total number of credits
Basic Sciences	15.62%	405	25
Engineering Sciences	15%	420	24
Humanities and Social Sciences	5.63%	150	9
Program Core	30%	855	48
Program Electives	11.25%	270	18
Open Electives	11.25%	270	18
Project(s)	8.13%	390	13
Internships/Seminars	1.25%	90	2
Any other (Please specify) – Soft Skills	1.87%	45	3
Total number of Credits			160
Non-CGPA			3
Mandatory Courses			-

The percentage of credits of each course and the total number of contact hours needed to complete the course for the 2021 curriculum have been given in Table 2.2 (C) This table also explains the total credit points required by each course throughout the semester.

Table 2.2 (C) Curriculum components for 2021 regulations

Course Component	Curriculum Content (% of total number of credits of the program)	Total number of contact hours	Total number of credits
Foundation Core	27.5%	660	44
University Elective	10%	240	16
Program Core	32.5%	780	52
Program Elective	15%	360	24
Experiential Core	10%	240	16
Experiential Elective	5%	120	8

Total number of Credits	160
Non-CGPA	3
Mandatory Courses	-

2.1.4. State the process used to identify the extent of compliance of the curriculum for attaining the Program Outcomes and Program Specific Outcomes as mentioned in Annexure I (10 / 10)

(a) Contribution of Curriculum Structure towards the compliance with POs and PSOs:

The KARE Curriculum structure comprehensively addresses the Knowledge, Skill and Attitude expected of each engineering graduate covering all the POs and PSOs. The compliance of KARE Curriculum Structure with POs and PSOs is given in the Figure 2.1.3. It includes various course categories including Basic Science and Mathematics, Basic Engineering, Humanities and Social Sciences, Soft Skills, Program Core, Professional and Open Electives, Community Service Project, Industry Training/ Industry Internship and Capstone Project. The curriculum also mandates complementary skill courses under non-CGPA category primarily aiming at the POs which demand more skills and attitudes. Each of three groups concentrates on NSS/NCC/Sports/Extra-Curricular Activity, Co-curricular Activity and International Language/Aptitude/English Proficiency respectively.

The compliance of KARE Curriculum Structure with POs and PSOs is given in the Figure 2.1.3

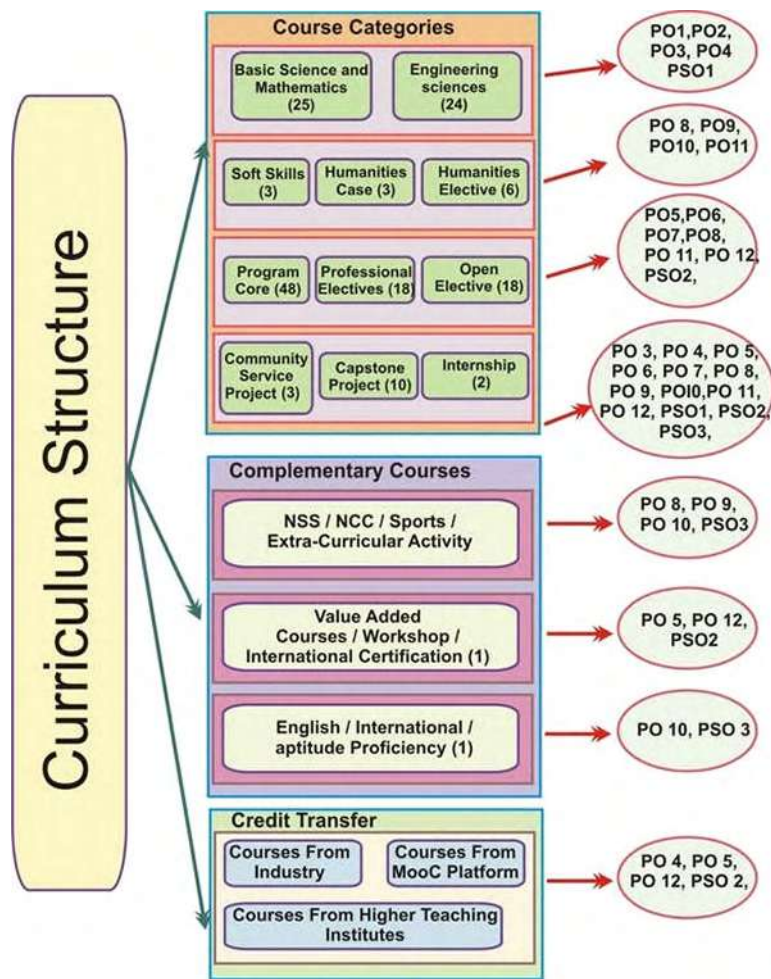


Figure 2.1.3 Compliance of KARE Curriculum Structure with POs and PSOs

- Project courses including Community Service Project, Internship, Capstone Project have high correlation with majority of Program Outcomes including Design/development of solutions (PO3), Conduct investigations of complex problems (PO4), Modern tool usage (PO5), Contextual knowledge to the Engineer and Society (PO6), Environment and Sustainability (PO7), Ethics (PO8), Individual and team work skills (PO9), Communication (PO10), Project management and finance (PO11), Life-long learning (PO12), Problem Solving (PSO1), Professional Skills (PSO2), Communication and Team Skill (PSO3).
- Complementary courses in Group 1 correlate with Ethics (PO8), Individual and team work skills (PO9), Communication (PO10), Communication and Team Skill (PSO3). Group 2 courses comply strongly with Modern tool usage (PO5), Life-long learning (PO12), Professional Skills (PSO2). Courses from Group 3 have high correlation with Communication (PO10), Communication and Team Skill (PSO3)
- Courses offered by external experts from Industry, Higher Training Institutes, Online Platforms typically have higher compliance with Conduct investigations of

complex problems (PO4), Modern tool usage (PO5), Life-long learning (PO12), Professional Skills (PSO2).

(b) Correlation of Delivery and Assessment methods with POs and PSOs

It is also envisioned that in addition to the courses (course outcomes), the delivery methods and assessment tools adopted based on the nature of course contribute significantly towards the attainment of POs and PSOs. The courses in various course components of KARE are offered in varied course types based on the nature of course outcomes as Theory courses (T), Integrated courses (IC), Theory with Practical component courses (TP), Project courses (P). The correlation of the delivery and assessment methods with POs and PSOs are depicted in Figure 2.1.4

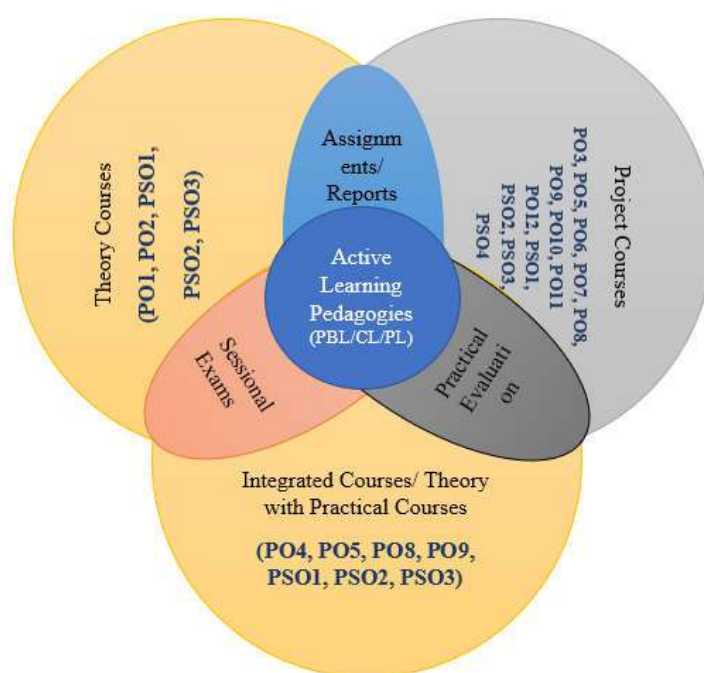


Figure 2.1.4 Correlation of Delivery and Assessment Methods with POs and PSOs

The theoretical courses inculcate practices to comply with outcomes including Engineering knowledge (PO1), Problem Analysis (PO2), Problem Solving (PSO1), Professional Skills (PSO2), Communication and Team Skill (PSO3). Theory courses are usually evaluated through written sessional examinations, assignments, and quizzes which corresponds to the requirements to achieve the mapping outcomes.

IC and TP courses typically offered with active learning pedagogies including Project Based Learning (PBL), Peer-led learning (PL), Collaborative learning (CL), among others, correlate with the outcomes such as Conduct investigations of complex problems (PO4), Modern tool usage (PO5), Ethics (PO8), Individual and team work skills (PO9), Problem Solving (PSO1), Professional Skills (PSO2), Communication and Team Skill

(PSO3). IC and TP courses are typically evaluated through written sessional examinations, practical assignments, among others.

Project courses offered with high level pedagogies in student centric schemes typically map with the outcomes such as Design/development of solutions (PO3), Conduct investigations of complex problems (PO4), Modern tool usage (PO5), Contextual knowledge to the Engineer and Society (PO6), Environment and Sustainability (PO7), Ethics (PO8), Individual and team work skills (PO9), Communication (PO10), Project management and finance (PO11), Life-long learning (PO12), Problem Solving (PSO1), Professional Skills (PSO2), Communication and Team Skill (PSO3). Project courses are evaluated through practical implementations, problem assignments, and periodic reviews, among others.

Further, the extent of compliance of the curriculum was evaluated based on the program outcome attainment (which is elaborately discussed in criteria-III) for each course component in the curriculum in such a way to ensure the degree of compliance between curriculum and PO, PSO. In order to ensure the degree of compliance of the curriculum with the attainment of PO and PSO, the numerical data was considered from the program attainment of batches. This was taken as reference to obtain the significance of compliance in accordance with the percentage of contribution for each course component in curriculum.

2.2.1. Describe Processes followed to improve quality of Teaching and Learning (15 / 15)

(Processes may include adherence to the academic calendar and improving instruction methods using pedagogical initiatives such as real world examples, collaborative learning, quality of laboratory experience with regard to conducting experiments, recording observations, analysis of data etc. encouraging bright students, assisting weak students etc. The implementation details and impact analysis need to be documented)

A. Adherence to Academic calendar (Institute and Department calendar):

The Department calendar of events and activities is derived from the Institute's Academic Calendar, specific to the department. Figure 2.2.1 (a) shows the sample of University level academic calendar. The academic calendar remains common to all UG and PG courses except for the first-year PG. The sample of department academic calendar for the odd semester which specifically shows the different activities planned

in the department has been shown in Figure 2.2.1 (b).

**ACADEMIC CALENDAR FOR ODD SEMESTER 2020-2021
(Common to all UG and PG-Except I Year PG)**

August 2020	14 th	Course Registration starts for senior Classes – ODD Semester CGPA Courses
	17 th	Reopening Day (All UG & PG Classes-Except - 2020 Batch)
	20 th	Faculty advisor counseling to the students/ Non-CGPA registration
	21 st	I Class Committee Meeting for UG and PG Engineering Programs, zeroth review for final year UG Capstone Design Project – Phase-I and PG projects
Sep 2020	24 th	I Class Committee Meeting for Arts and Science Programs
	1 st	First review for Community Service Project & PG Project
	7 th	Freshman induction Program for 2020 Batch (Tentative)
	14 th	Reopening Day for UG classes for 2020- Batch
October 2020	22 nd	I class committee meeting for UG -2020-Batch
	26 th	Faculty advisor counseling to the students-UG-Batch-2020
	5 th -9 th	Sessional Examination-I (Except 2020 Batch) and first review for final year UG Capstone Design Project – Phase-I and PG projects
	10 th	Last date for paying the tuition fees.
	14 th	II class committee meeting (Except 2020 Batch)
	15 th	Second review for community service project
November 2020	17 th	Faculty advisor counseling to the students
	28 th	Last date for paying arrear exam fees
	29 th – 2 nd	Sessional Examination-I for 2020 Batch
	5 th	II class committee meeting for 2020 Batch
	10 th	Last date for paying exam fees
	25 th	Compilation of attendance
December 2020	26 th	Submission of Non-CGPA results to COE office
	26 th -3 rd	Sessional Examination-II for all batch and second review for final year UG Capstone Design Project – Phase-I and PG projects
	4 th -7 th	Sessional Examinations-III for 2016 Batch -B.Arch.
	4 th -10 th	End semester practical examinations and Community Service Project final review
	11 th	End semester theory examinations and make up examinations starts
	15 th -17 th	Viva voce for UG Capstone Design Project – Phase-I and PG projects
January 2021	30 th	End semester examination ends
	31 st	Make up examination ends
	2 nd	Arrear examination starts
	7 th	Final class committee meeting
	11 th	Grade approval committee meeting
	20 th	Arrear examination ends
	23 rd	Result Passing Committee Meeting for CGPA and Non-CGPA Courses
	27 th	Paper distribution to the students and Declaration of Results
	27 th	Even semester begins

a)

ACADEMIC CALENDAR FOR ODD SEMESTER 2018-2019		
July 2018	16 th	Reopening Day, enrollment to CGPA and Non CGPA courses
	17 th	Faculty adviser counseling to the students
	21 st	First review for Community Service Project and PG Project Phase I
	26 th and 27 th	Enhancing Employability in Core Engineering Industries
	1 st	CSP Project Field Visit at Ayan Natthampatti, Near Kunnur
August 2018	3 rd and 4 th	Mock Interview Group Discussion & Personal Interview
	9 th	Community Service Project Phase I Field visit
		1. Radio Astronomy centre Ooty 2. Techno Electronics & Instruments Coimbatore
	10 th and 11 th	1. TRACO Cable Company Limited, Cochin, Kerala 2. HMT, Ernakulam, Kerala
	19 th	Value Added Course on VLSI, VHDL and PCB Starts
September 2018	24 th to 2 nd	Sessional examination I and first review for final year UG project
	3 rd and 4 th	Flood Relief camp at Pathanamthitta Kerala
	9 th	Value Added Course on VLSI, VHDL and PCB Ends, One credit course on " M2M for Smart Cities"
	21 st	Holiday Muharram, One credit course on " PERL for Testing Automation"
	23 rd	Holiday, One credit course on " PERL for Testing Automation"
	4 th	Green Programming: An Emission Control Strategy, Guest Lecture on "Smart Real time Networking"
	5 th to 13 th	Sessional Examination II and Second review for final year UG and PG projects, Exposure to cloud technologies and Business etiquette.
October 2018	17 th to 21 st	Holiday Ayutha pooja and Vijayadasami
	25 th	Workshop on "Applications of Electronic Circuits for an Industrial Perspective," Workshop for Core Competent Electronics Engineers
	26 th	Workshop for Core Competent Electronics Engineers, RF Applications & Software Defined Radio using NI LabVIEW & its Hardware (NI USRP)
	27 th	Holiday, RF Applications & Software Defined Radio using NI LabVIEW & its Hardware (NI USRP), Recent Trends in Engineering, How to build an effective career Best Practices
	9 th to 12 th	Sessional Examination III (Except 1st and 2nd Year UG and PG) and Third review for final year UG and PG projects
November 2018	13 th to 24 th	Two weeks FDTIP on "Analog Integrated Circuits"
	14 th to 18 th	End semester practical examinations and Community Service Project final review
	19 th	End semester theory Examinations and Make up Examinations starts
December 2018	6 th	Make up examination ends, Discussion related on research work
	12 th	Grade approval committee meeting
	20 th	Result Passing Committee Meeting
	27 th	Paper distribution to the students and Declaration of Results, Even Semester begins

b)

Figure 2.2.1 a) University Academic calendar for an odd semester for 2020-2021 b) Department Academic calendar for odd semester during year 2018-2019.

Maintenance of Course files:

The respective course teacher prepares a course file for each course. The course file consists of the following items:

Teaching plan:

Teaching plans for each course are prepared by the course teacher. The whole syllabus is divided into 5 units and 45 lectures for a Theory course, 60 Lectures for Theory with Practical course, and 75 Lectures for an Integrated Course category as prescribed in the institution's teaching scheme. The course objectives are defined for each course in line with the POs.

Course Information book

The faculty prepare a draft of the course information book for each course before the commencement of the semester. Then, after careful examination by the Program Coordinator and the Head of the Department, the approved copy is made available to the students.

The course information book encompasses the learning outcomes and the assessment of outcomes.

Question Bank:

Question banks are prepared for each topic in the course based on the course objectives and the institution's question paper pattern. The question bank of each unit comprises of minimum 10 part B questions which carry 16 marks and 15 Part A questions which carry 2 marks. This is taken in such a way that the entire syllabus topics are covered. This ensures the slow learners for their easy preparation for their assessment exams.

B. Course Delivery Methods:

The following are the various Student-centric methods to enhance Teaching- Learning.

- Lectures
- Class presentations
- Tutorials
- Laboratory experimental work
- Simulations exercises
- Written Assignments
- E-Learning: identifying online resources for self-learning.
- Learning management system (LMS) materials, NPTEL videos
- Case Studies / Technical reports
- Impartus Video Lectures
- Webinars
- Virtual lab
- Flipped Video Lectures.

- Online Courses
- One Credit Courses

The Management and the department encourage Faculties to use the latest pedagogical teaching technology, including audio visual teaching machines. Student learning is enhanced by adopting approaches/methods such as seminars, conferences, and special lectures. The faculty members are encouraged to participate in State/National level seminars at institution cost assistance. Stimulating and thought-provoking assignments and projects are given to the students to improve their intellectual calibre, sharpen their interest, induce them to experience the thrill of learning, and enjoy the pleasure of achievement.

Course study resources, including flipped video lectures and periodic assignments, are also made available to the students to prepare for the classroom. The practice has led to better interaction in the classrooms and laboratories.

Invited by experts from the industry and academia, the departments organize add-on courses to cover content beyond the syllabus and recent trends. In addition, MOUs are signed with leading industries to bridge the gaps in the curriculum relevant to industrial needs.

Interactive Learning Environment:

It consists of the interaction between students and interactive e-learning platforms. Case study to impart skills and enhance student's interaction and involvement in learning process. Another mode of providing a learning experience to students is arranging guest lectures, invited talks, and student's seminars by the Department Associations.

Collaborative Learning

The Institute promotes industry-sponsored projects and research projects. Students are encouraged to participate in project competitions, design contests, Club activities, Mini Project competition, Group Discussion and Various technical festivals in activity-based learning. Moreover, industrial and field visits are also arranged for special surveys. In addition to the CGPA credit courses students are encouraged to participate co- and extra-curricular activity – based courses categorized as Non-CGPA courses, as given in the previous section.

Independent Learning

E-learning platforms facilitate independent learning wherein students can access course contents online. Thus e-learning platforms bridge the gap from classroom learning and supplement advanced learning. Available e-learning platforms include Moodle, KARE LMS learning resources through CDs and DVDs. In addition, a Wi-Fi facility is available on campus to allow students to access technical resources such as NPTEL Lectures, video clips, and so on.

Student-centric learning is provided in the practical sessions. Experiential learning is ensured through individual or group projects. Competitive and Team Spirits are developed through group discussions, debates, and panel discussions. The problem-solving capabilities are enhanced through an algorithmic approach.

ICT-based learning is promoted through web assignments web-quiz. Analytical and presentation skills are shaped through the case study. At the same time, the research interest is inculcated by employing paper presentations and publication exercises. Interactive

lectures end with thought-provoking questions and revision assignments, compelling students to visit and consult with books, magazines, selected journals, etc., from the library or internet search. The topic-specific question set is provided to enlarge the students' perception and understanding.

Innovative Practices:

Apart from the above mentioned methodologies, few practices is undertaken to incite interest among the students in learning and analyzing novel ideas. The execution of the below-mentioned practices have found to be very successful in terms of quick learning, broad thinking, real time analysis etc. Some of them has been listed below:

- Activity-based learning
- Animated video
- Case studies
- Collaborative learning
- Collaborative study
- Concept map
- Demonstration
- Flipped classroom
- Group challenge
- Hardware demonstration
- Mind map
- Minute paper
- Model based learning
- Multimedia approach
- NPTEL video
- One minute paper
- Online quiz
- Real time examples
- Virtual laboratory
- Zero minute speech
- In-Plant training

Indo Universal Collaboration for Engineering Education (IUCEE) KARE Student Chapter (IKSC)

In the year 2018, KARE joined the IUCEE consortium. IKSC is a thriving student chapter that aims to improve KARE students' professional and employability abilities. As members of the IUCEE Consortium, IKSC students will be able to join in IUCEE's courses, activities, conferences, symposiums, webinars, and other events. Aside from that, IKSC organizes initiatives (technical and non-technical), podcasts, webinars, and other activities for student members to help them accomplish the chapter's vision, mission, and core values. IKSC encourages student members' interdisciplinary knowledge in addition to the skills required for graduation.

The students are now enrolled in IUCEF's short courses for engineering students, which are part of the IUCEE NEP mission 2021. Every year, a maximum of ten students (capacity) are chosen. Project-based learning is widely recognized as the cornerstone for becoming employable, a leader, and an entrepreneur. That is why the National Educational Policy (NEP) highlights the role of "holistic and multidisciplinary education." The following are the six mini-courses presented by IUCEE Global Experts.

- Leadership and sustainability
- Clean and green campus
- Artificial Intelligence for All
- Introduction to Entrepreneurial Thinking
- Design Thinking and Community-based Design
- Social-emotional Learning
-

Through projects and other means, each course aims to improve students' skills and interdisciplinary knowledge. Students from many disciplines create teams for these courses, and they work together to complete the course requirements, including the project.

Learning through Professional Societies

The KARE has many professional societies such as IEEE, IETE, IEI, ISTE etc., The students are encouraged to attend the technical event conducted on behalf of the societies. The reputed speakers of different domains from industry and Institutions are invited to give distinguished lectures on some specific topics. Students also use the IEEE blended learning portal to gain their technical knowledge. The sample of the event brochure is given in the **Figure 2.2.2**

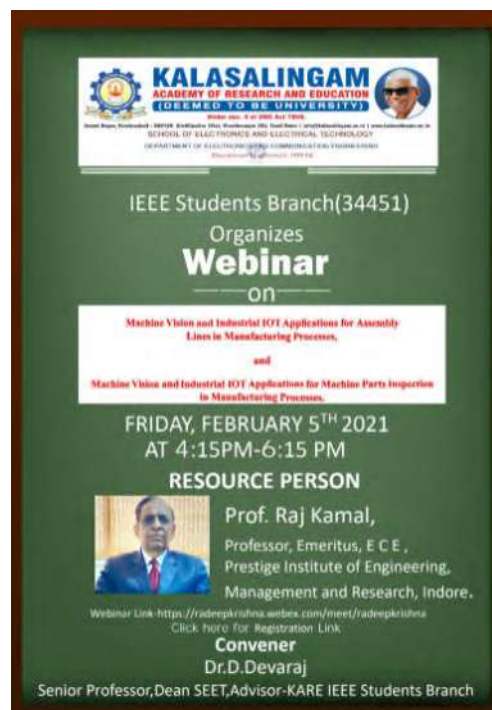


Figure 2.2.2 Same of Webinar Brochure conducted through IEEE

C. Methodologies to Support Weak Students and Encourage Bright Student

- Faculty Advisor system is effectively implemented to improve the students' performance.
- For every 20 – 25 students, one faculty is nominated to continuously monitor their performance in terms of academic and non-academic activities.
- Fast learners, slow learners and average learners are recognized based on their performance in the assessment tests.
- The segregation of the students are made with respect to their previous semester CGPA. The process of the segregation is as shown in the Figure 2.2.3 (a)

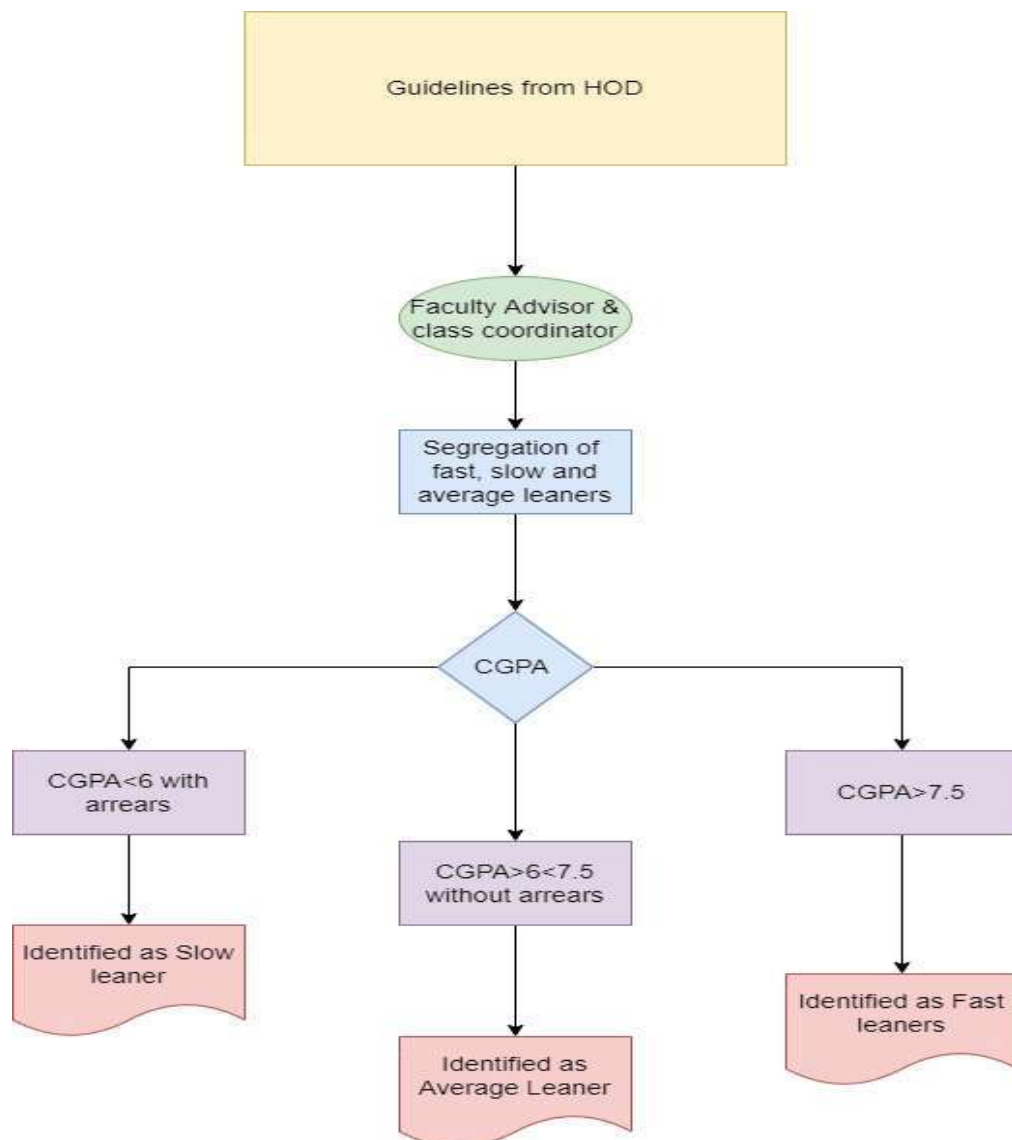


Figure 2.2.3 (a) Segregation of the Fast, Slow and Average learners

- The segregation of the Fast, Slow and Average learners are forwarded to the course handling faculties for their efficient delivery of course content.

Slow learners:

- The identified slow learners are continuously monitored by the faculty advisor. The methodologies used for the development of the fast learners are given in the Figure 2.2.3 (b)
- The techniques used are remedial classes, simplified notes, simplified videos, home assignment and tests.
- They are constantly motivated by motivational talks/ guest lectures, counselling.
- The groups are also formed with Slow, Average and Fast learners for guiding the students to better performances.
- The faculty advisors also provide the students with the road maps for their CGPA improvements.

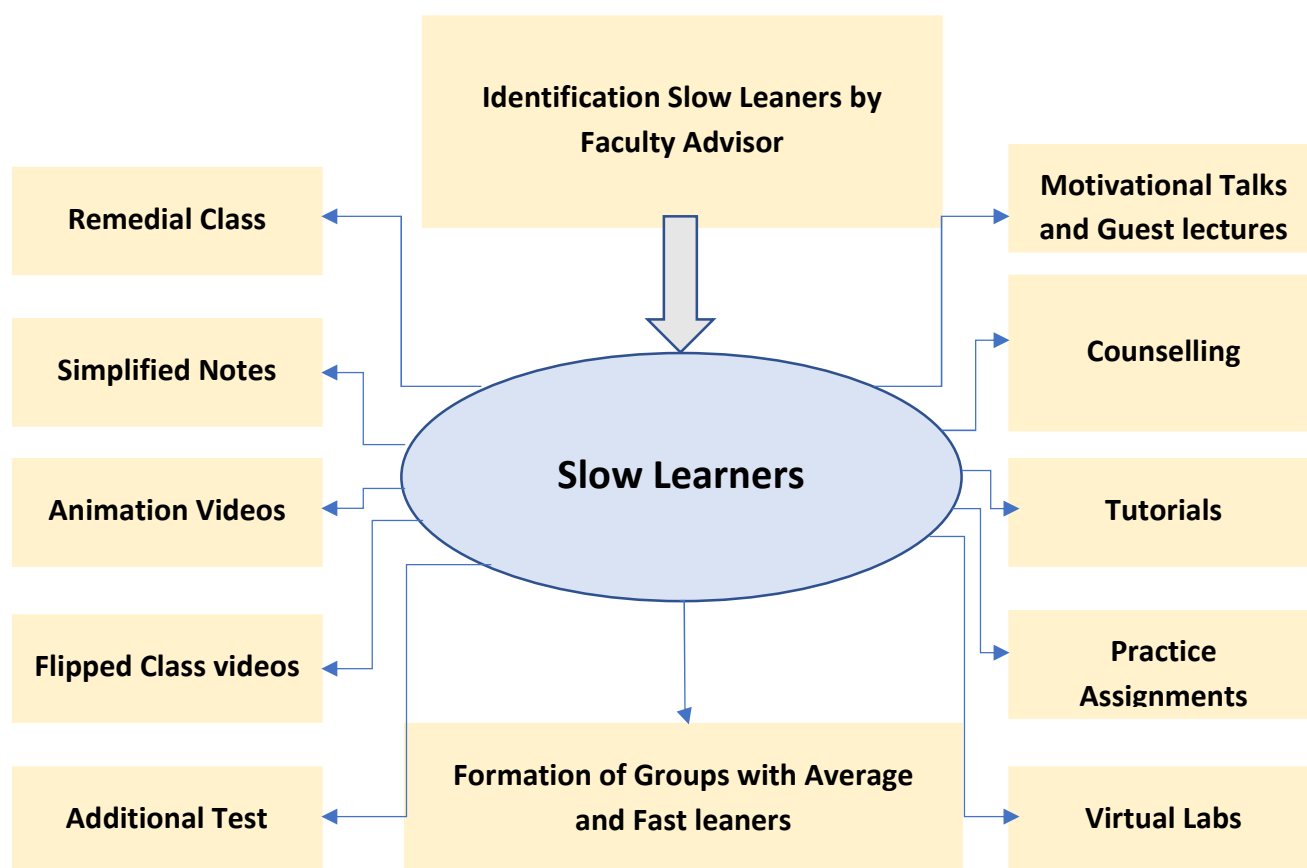


Figure 2.2.3 (b) Methodologies followed by the faculty advisors for slow learners

Fast Learners

- The identified fast learners are motivated in all possible for their technical growth.
- Their confidence level is improved by various activities given in the Figure 2.2.3 (c)
- The students who score CGPA more than 8.25 are encouraged to register for honours course to get honours degree.

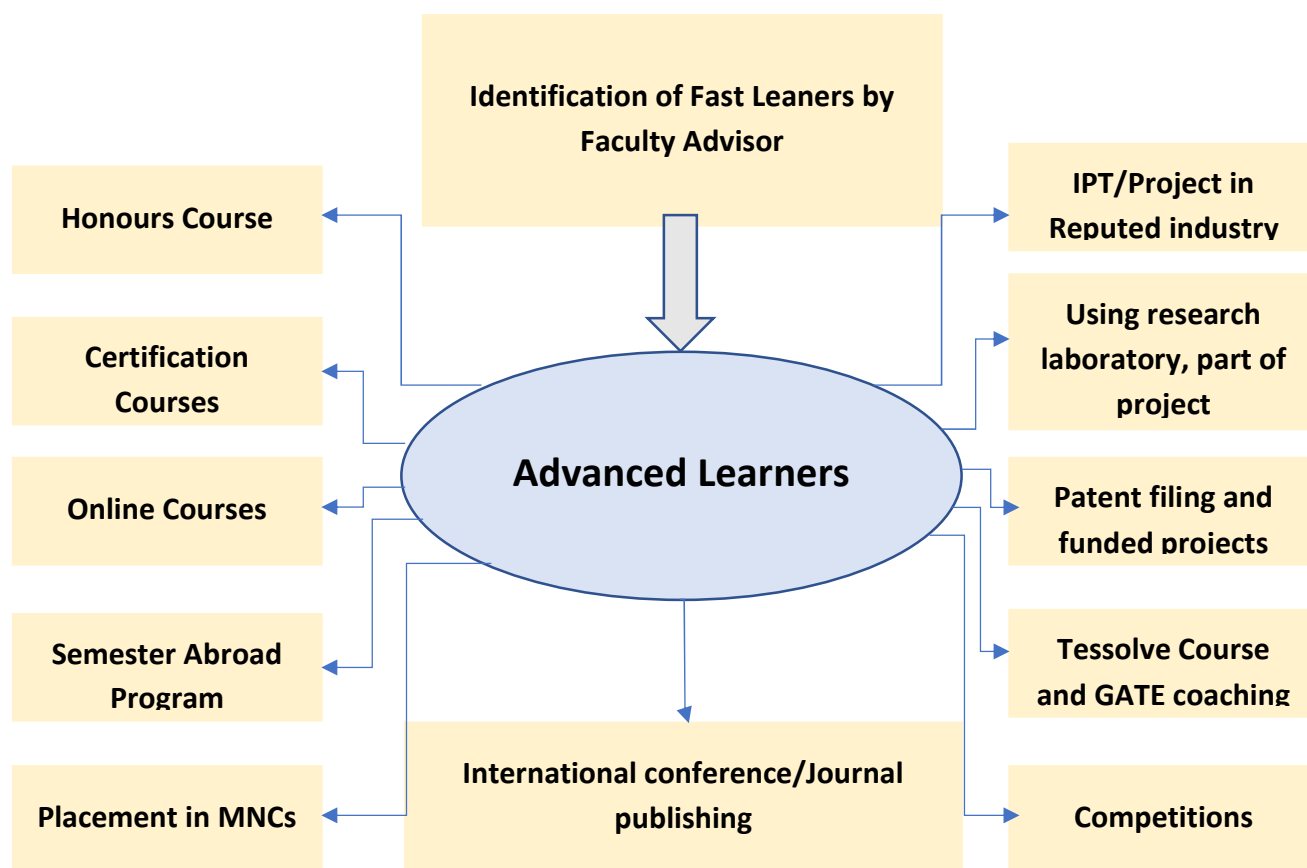
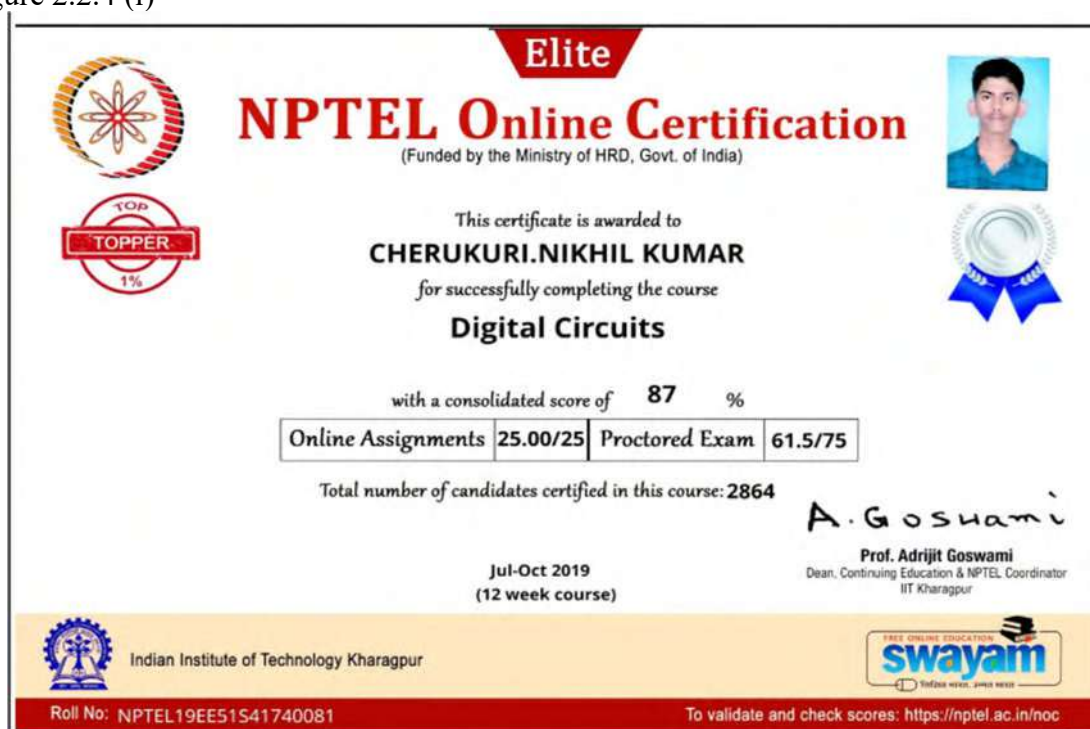


Figure 2.2.3 (c) Methodologies followed by the faculty Advisors for Fast Learners

The self-learning of the students are encouraged through online courses from NPTEL, Coursera, EDX etc., The sample of the students clearing online courses is given in the Figure 2.2.4 (i)



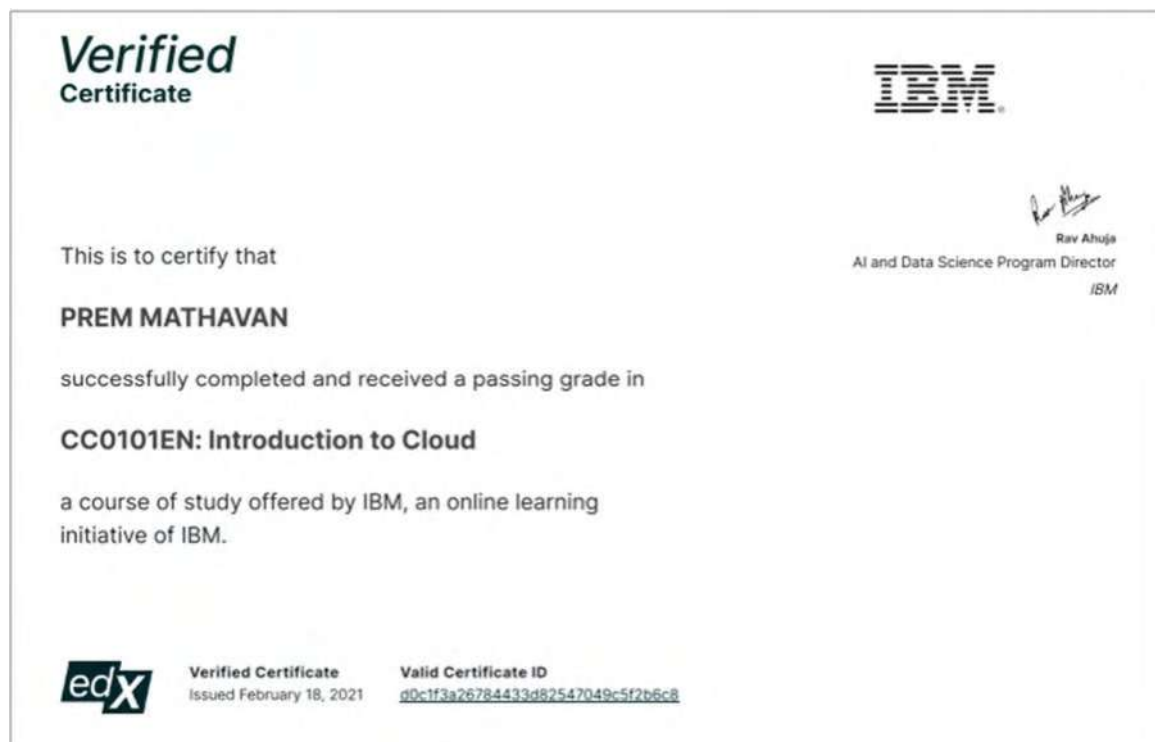


Figure 2.2.4 (i) Sample certificates of the students clearing online courses

The fast learners are also motivated to do international certification such as Labview, HP certificates and SAP global certificate. The sample of student's international certifications is as given in the Figure 2.2.4 (ii)

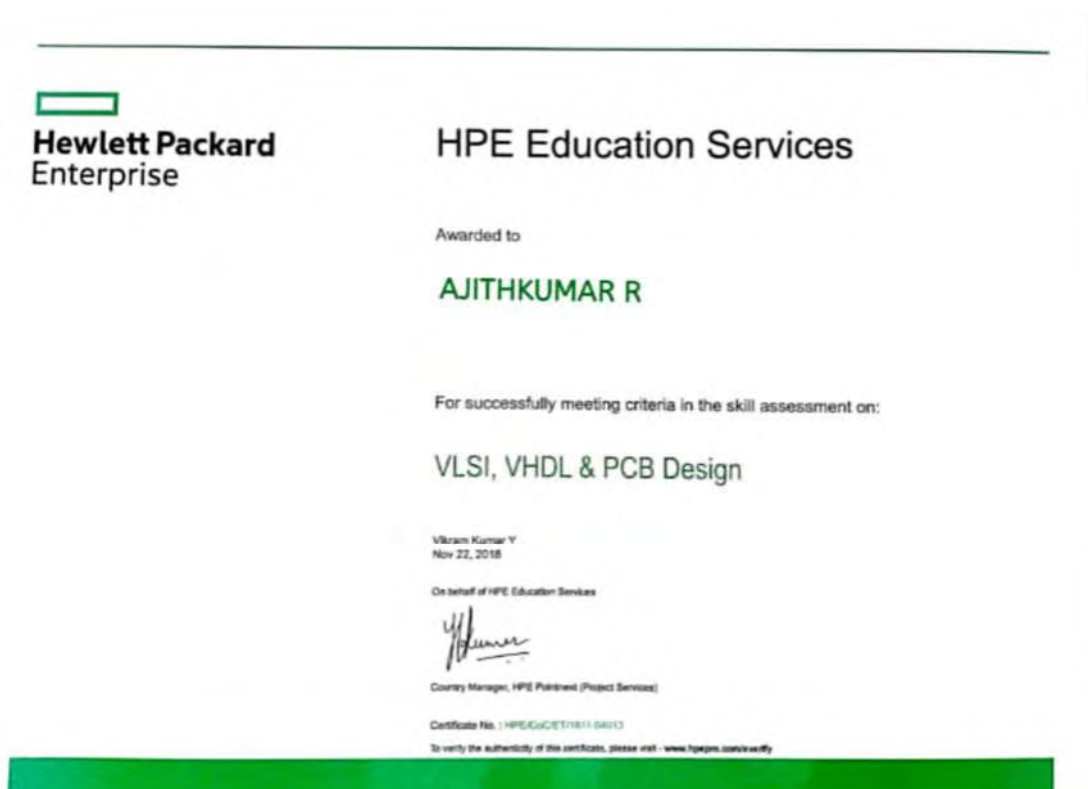
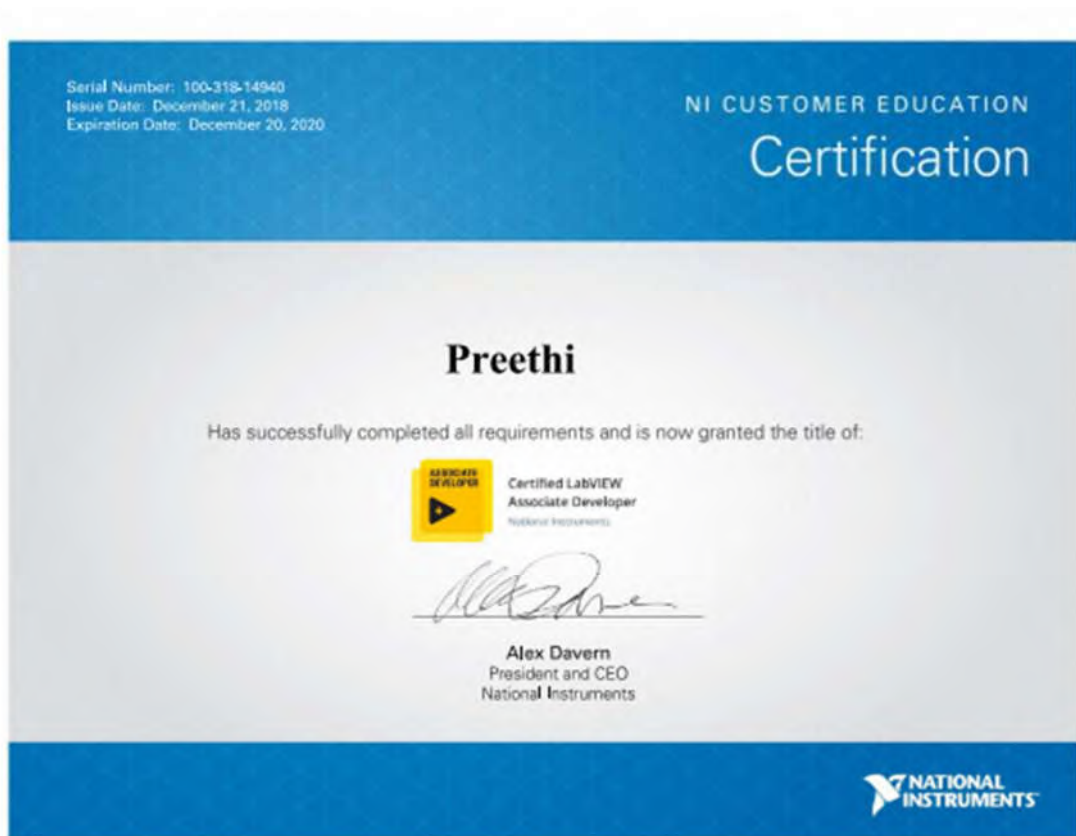


Figure 2.2.4 (ii) Sample of Students achieving international Certifications

In addition to that the students are also motivated to attend summer internships and projects associated with reputed institutes such as IISC Bangalore and other reputed industries.

Few of the fast learners are encouraged to complete AICTE supported 10 weeks AWS virtual internship by EDU skills. The sample completion certificate of the students is given in the Figure 2.2.5 (i)



Figure 2.2.5 (i) Certificate of Virtual Internship Completion Certificate

KARE encourages semester abroad program for the aspirant students to pursue one semester of their program in any reputed Universities from abroad. The curriculum regulation of KARE has the flexibility of credit transfer for the courses studied in the abroad universities. The sample of the student completing internship in Nanyang Technical University (NTU) is given in the Figure 2.2.5 (ii)



(a)



(b)

Figure 2.2.5 (ii) Sample of Certificate and ID card of the Student Completed Internship in NTU

The mark detail of the student Nikhil who has attended semester abroad program in Asia University, Taiwan for the course Data Science is given in the Figure 2.2.5 (iii)



Figure 2.2.5 (iii) Students score card of the Course Data Science in Asia University

Average Leaners:

The average leaners are encouraged to improve their CGPA by showing them the roadmap of CGPA improvement. They are motivated to attend guest lecture, handson workshop and other events to improve their skills. They are also encouraged to attend online courses and certification courses. They are clubbed with the fast leaners to form teams to do project and attend various other competitions.

D. Quality of classroom teaching (Observation in a Class)

The KARE ensures comfortable class room ambience with spacious seating arrangements, lighting and ventilation. All the concepts are explained with the real life examples and problems with different pedagogical initiatives given above. The students are engaged throughout the class timing with frequent question answer sessions. Each classroom is equipped with Projectors, Screens, Board, Impartus Lecture Capture facilities, Notice boards, Boards disseminating POs, PEOs and PSOs. The classroom abience ensures the students to get more involved in the topic.

E. Conduct of Experiments (Observation in Lab)

The experiments in the laboratories are conducted as per the course plan and the discussion with the course coordianator. All the laboratories are fully equipped as per the standard norms and proper safety measures are followed throughout. The students are provided witht the laboratory Manuel with instructions and procedures for each experiments. The students are continuously monitored and evaluated in each laboratory sessions with laboratory specific rubrics which is framed before the start of the semester. The rubrics are provided in the manuel for the students to get aware of it.

Rubric for Lab Work				
Criteria	Beginning or incomplete	Developing	Accomplished	Exemplary
Knowledge	No grasp of required subject matter. No understanding of major issues. (0)	Only basic concepts are demonstrated and interpreted. (1-10)	Able to elaborate and explain to some degree. (10-15)	Demonstration of full knowledge of the subject with explanations and elaboration. (15-20)
Design	Very ineffective. Would not allow experimenters to achieve any goals (0-5)	Somewhat ineffective. Would allow experimenter(s) to achieve some goals. (5-10)	Somewhat effective. Would allow experimenter(s) to achieve most goals. (10-20)	Effective. Would allow experimenter(s) to achieve all goals. (20-30)
Analysis	Analysis methods were completely misapplied or absent. (0)	Analysis methods were attempted. Some methods were applied but with significant errors or omissions. (1-10)	Analysis methods were attempted. Most methods were correctly applied but more could have been done with the data. (10-15)	Analysis methods were fully and correctly applied. (15-20)
Ethics	Not handed in more than one week late. Does not follow instructions. (0)	Up to one week late. Rarely follows instructions and/or requires constant assistance. (1-5)	Up to two days late. Reads and follows instructions but requires assistance. (5-8)	Handed in on time. Reads and follows instructions competently and accurately. (8-10)
Communication	-Presentation has limited organization. (1-3)	-Presentation is well organized (3-5)	-Presentation is well organized (5-8)	-Presentation is exceptionally well organized (8-10)
Team work	Does not work with group members to complete tasks (0)	Rarely works collaboratively with group members to complete tasks (1-5)	Sometimes works collaboratively with group members to complete tasks (5-8)	Works collaboratively with group members to complete tasks. (8-10)

Figure 2.2.6 (i): Rubrics for the Conduction of Lab Experiment

The rubrics for the conduction of the experiment during the laboratory session is given in the Figure 2.2.6 (i). It is ensured that students possess the proper ethics and team work during the course of the experiment. In addition to the regular experiment, the students are encouraged to explore other experiments involved in the theory concepts. The students are also encouraged to explore the virtual labs developed by the department of ECE KARE and other reputed institutions. The department of ECE also uses Virtual Labs project, from Ministry of Human Resource Development (MHRD), Government of India under the aegis of National Mission on Education through Information and Communication Technology (NMEICT).

F. Continuous Assessment in the Laboratory:

The continuous assessment in the laboratory includes the assessment for each experiments with the rubrics given above. The assessment of each experiment conduction with rubrics and its mapping with the CO attainment is given in the Figure 2.2.6 (ii)

Rubrics for Lab Work:

S. NO	CRITERIA	ALLOTTED MARKS	OBTAINED MARKS
1	Knowledge	20	
2	Design	30	
3	Analysis	20	
4	Ethics	10	
5	Communication	10	
6	Teamwork	10	
TOTAL MARKS		100	

Rubrics and CO Mapping:

COURSE OUTCOMES	ASSESSMENT PLANS						MARKS
	1	2	3	4	5	6	
CO5 (50%)	✓	✓	✓				
CO6 (50%)				✓	✓	✓	
Total Marks (100%)							

Figure 2.2.6 (ii) Assessment of Individual Experiment

In addition to that model lab and end semester lab assessments will be conducted for the assessment of the student's performance and their CO attainments for laboratory courses and lab/theory integrated course. The rubrics for model/End semester lab assessment is given in the Figure 2.2.6 (iii)

Rubric for Model Lab and End Semester Examination

Criteria	Exemplary	Proficient	Fair	poor
Analysis and Design (All circuit diagrams programs, & truth tables.) (35pts)	The program, diagrams and truth tables are 95- 100% accurate, and are very neatly designed & drawn (30 -35 pts)	The programs, diagrams and truth are 70 - 95% correct and/or is sub-exemplary in designing & drawing quality. (25 -30 pts)	The programs, diagrams and truth tables are 40 to 70% correct and/or is poor in designing & drawing quality. (15 -25 pts)	The programs, diagrams and truth tables are < 40 % correct and are poor in designing & drawing quality. Does not know how to design (0-15 pts)
Experiment Conduction (25 pts)	80-100% of the required design elements are obtained properly. (20-25) pts)	80 -60 % of the design elements are obtained properly (15 -20 pts).	60-40% design elements are obtained properly. (10 -20 pts)	Less than 40% design elements are obtained properly (0-10 pts)
Completed all parts of the laboratory (20 pts)	90-100% Completed (18-20 pts)	75%- 90%completed, without any help (15- 20 pts)	40-75% completed, with help (10-15 pts)	<40% completed or not done (0-10 pts)
Interpretation (10 pts)	The results are interpreted correctly and with demonstrated understanding of the design. (9-10 pts)	The results are interpreted correctly not in a complete manner with a little bunderstanding of the design. (6-8 pts)	The results are not interpreted correctly. (4-6 pts)	Does not know about the material. (0-3pts)
Safety (10 pts)	Safety instructions were carried completely; (10 pts)	Safety instructions were carried after instruction from faculty; (7-9pts)	Safety instructions were carried after many instructions from faculty; (4-7 pts)	Safety instructions were not carried; (0-3 pts)

Figure 2.2.6 (iii): Rubrics for the Model/End semester Lab Assessment**G. Student feedback of teaching learning process and actions taken**

Feedback is collected from students in various scenarios to ensure effective teaching-learning process.

Faculty Advisor Meeting:

A semester comprises of a minimum of 3 faculty advisor meetings. During the meeting, students will express their difficulties/suggestions to the faculty advisor, which will then be forwarded to the Head of the Department, for taking necessary actions.

Class Committee meeting:

There will be a minimum of two class committee meetings conducted during each semester by the class committee chairperson and the class coordinator. The meeting comprises of nearly 3-6 members of the class, involve and convey their opinions about the academic events, courses etc. Students having any inconvenience either towards the

subjects or the faculty members will be immediately dealt with by the Head of the Department.

Course Exit Survey

The Course Exit Survey is an important part of the educational process. Students are required to offer feedback on the course, course conduct/delivery, and knowledge/skills obtained as part of the survey. The survey is evaluated by the Module Coordinator before being forwarded to the Department Head for approval and appropriate actions.

Graduate survey

The Graduate Survey is completed by the student at the end of his or her BTech programme. The data is gathered and examined in order to determine how well the programme is delivered to the batch. The outcomes are also used to enhance the quality of the teaching and learning process, as well as extracurricular activities.

Student feedback in Curriculum revision:

The Academic Program's key stakeholders are students. As a result, the students' vital feedback is collected and analysed for curricular development. The Student Information System (SIS) offered in the EDU KARE SIS portal is used to collect student input as part of IQAC. Numerous appreciations, notably best teacher awards, are presented based on student input, encouraging faculties to work further. Based on the feedback collected from the students modifications are suggested to the academic council through board of studies.

The sample of the feedback collected from the students regarding curriculum revision is shown in the Figure 2.2.6 (iv)



SCHOOL OF ELECTRONICS AND ELECTRICAL TECHNOLOGY
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

STUDENT FEEDBACK

Name : r keerthiga

Register Number : 9915005009

Branch : ece

Kindly mark the appropriate rating as per the following criteria

5 – Strongly Agree; 4 – Agree; 3 – Neither agree Nor Disagree; 2 – Disagree; 1 – Strongly Disagree



1. Syllabus updated according to the need of time	<input type="checkbox"/> 5	<input checked="" type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
2. Fulfills the requirement of the laboratory usage	<input checked="" type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
3. Practical components appropriate ratio to theory	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input checked="" type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
4. Experiments enable to relate theory and practice	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input checked="" type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
5. Industrial training sufficient	<input checked="" type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
6. Covers basic topics, fundamentals needed	<input type="checkbox"/> 5	<input checked="" type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
7. Has the topics related to emerging areas	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input checked="" type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
8. Teaching and Learning meets outcomes	<input checked="" type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
9. Incorporates skills and values	<input type="checkbox"/> 5	<input checked="" type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
10. Enables self-learning	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input checked="" type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1

Any other suggestions / feedback:

Subjects on Embedded, IoT wanted

Date: 5-11-2017

Signature

KALASALINGAM
Academy of Research and Education
DEEMED TO BE UNIVERSITY
ESTD. U.S. 3 OF UGC Act 1956, Accredited by NAAC with 'A' Grade
Grand Nagar, Krishnankottai - 626126, Sivakasi (Dist. Ramanathapuram) (TN), Tamil Nadu | info@kalasalingam.ac.in | www.kalasalingam.ac.in

SCHOOL OF ELECTRONICS AND ELECTRICAL TECHNOLOGY
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ALUMNI FEEDBACK

Name : K. Abisami
Batch : 2010-14
Programme : EC E

Kindly mark the appropriate rating as per the following criteria
5 - Strongly Agree; 4 - Agree; 3 - Neither agree Nor Disagree; 2 - Disagree; 1 - Strongly Disagree

1. Courses were relevant to the program	<input checked="" type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
2. Sequence of the courses were appropriate	<input checked="" type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
3. Electives relevant to the technological advancements	<input checked="" type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
4. Fundamentals were covered in detail	<input checked="" type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
5. Develops skills needed for career growth	<input checked="" type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
6. Curriculum meets program outcomes and its objectives	<input checked="" type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1

Any other suggestions / feedback:
A subject related to PCB design can be added

Date: 7-7-17

Abisami
Signature

Figure 2.2.6 (iv) Sample of Students Feedback on Curriculum Revision
The sample of action taken report for the feedback received from students and various other stake holders are given in the Figure 2.2.6 (V)

FEEDBACK ACTION REPORT28th May 2018

In continuation with the meeting conducted for the analysis of feedback received from the various stakeholders on 27th January 2018, a follow up meeting for ensuring that the feedbacks have been addressed is conducted on 28th May 2018. An action plan was formulated to address the various suggestions and issues put forward by the stakeholders. Based on the recommendations following actions were recommended for Board of Studies meeting.

Sl.	Stakeholder	Suggestion	Action Taken
1	Students	More courses on Embedded Systems, IoT needed	A stream of Programme Electives on Embedded Design Programming with new courses like ECE18R260 Internet of Things, ECE18R367 Embedded C introduced
		Courses on Programming Languages needed	ECE18R252 Object Oriented Programming with C++, ECE18R253 Numerical Analysis using MATLAB, ECE18R254 Sensors and Measurements with LABVIEW, ECE18R350 Python Programming, ECE18R367 Embedded C added
		Recent topics Green Electronics, Flexible Electronics; Machine Learning needed	ECE18R414 Flexible Electronics, ECE18R311 Electronic Product Design, ECE18R401 Electronic Packaging, ECE18R403 Green Electronics Manufacturing, ECE18R408 Virtual Reality, ECE18R409 Augmented Reality, ECE18R359 Computer Vision introduced
		More practical needed	Many Theory courses were changed as Theory with Practical Courses and Integrated Courses
2	Parents	Coaching for competitive exams	Continue the practice of Coaching for Slow learners, GATE Coaching, CCE
3	Alumnae	VLSI courses with latest contents can be taught	ECE18R255 Electronic Material Physics, ECE18R256 FPGA Based Systems Design, ECE18R315 Microelectronic Physics, ECE18R351 Process and Device Simulation by TCAD, ECE18R406 IC Layout Design, ECE18R450 Systematic Digital Design introduced
		A subject related to designing PCB could be added	ECE18R250 PCB design added

(a)

Sl.	Stakeholder	Suggestion	Action Taken
4	Industrial Experts	Hands-on experience may be provided to students on theory topics	Integrated Courses, Theory with Practical Courses introduced for all possible theory courses
5	Academicians	More courses on modern communication can be added	ECE18R411 High Speed+ Electronics, ECE18R413 Next Generation Mobile Communication, ECE18R410 Error Correcting Codes introduced. Existing courses on Wireless Communication, Microwave Devices, Optical Communication, Wireless Sensor Networks, Computer Communication and Networks were revised to reflect the current topics
		Electives on Signal Processing can be strengthened	Programme electives ECE18R359 Computer Vision, ECE18R257 Digital Signal Processing with FPGA, ECE18R258 Digital Signal Processing and Filter Design, ECE18R358 Digital Video Processing, ECE18R407 Adaptive Signal Processing, ECE18R452 Digital Signal Processing System Design introduced


(Dr. P. Sivakumar)

Head of the Department / ECE

(b)

Figure 2.2.6 (v) Action Taken Report for the Feedback Received

2.2.2. Quality of end semester examination, internal semester question papers, assignments, and evaluation (15 / 15)

Question papers for End semester examinations are prepared by Internal and External faculty. The course coordinator prepares questions for all other internal assessments, including Sessional exams (two exams in a semester). A question bank will be created for each unit which comprises of maximum number of 2 mark and 16 mark questions that can cover the whole syllabus. Minimum number of questions that has to be prepared in the question bank include fifteen 2 marks and ten 16 mark questions. The questions will be generated from the question bank randomly for sessional exams. This helps the slow learners for their easy preparation.

Figure 2.2.7 depicts the procedure carried out for setting the internal semester exam question papers and their evaluation. As depicted in the figure, the examiner's initial question paper is scrutinized by the module and programme, and the question paper is finalized by the COE, along with the prepared answer keys and forwarded for printing.

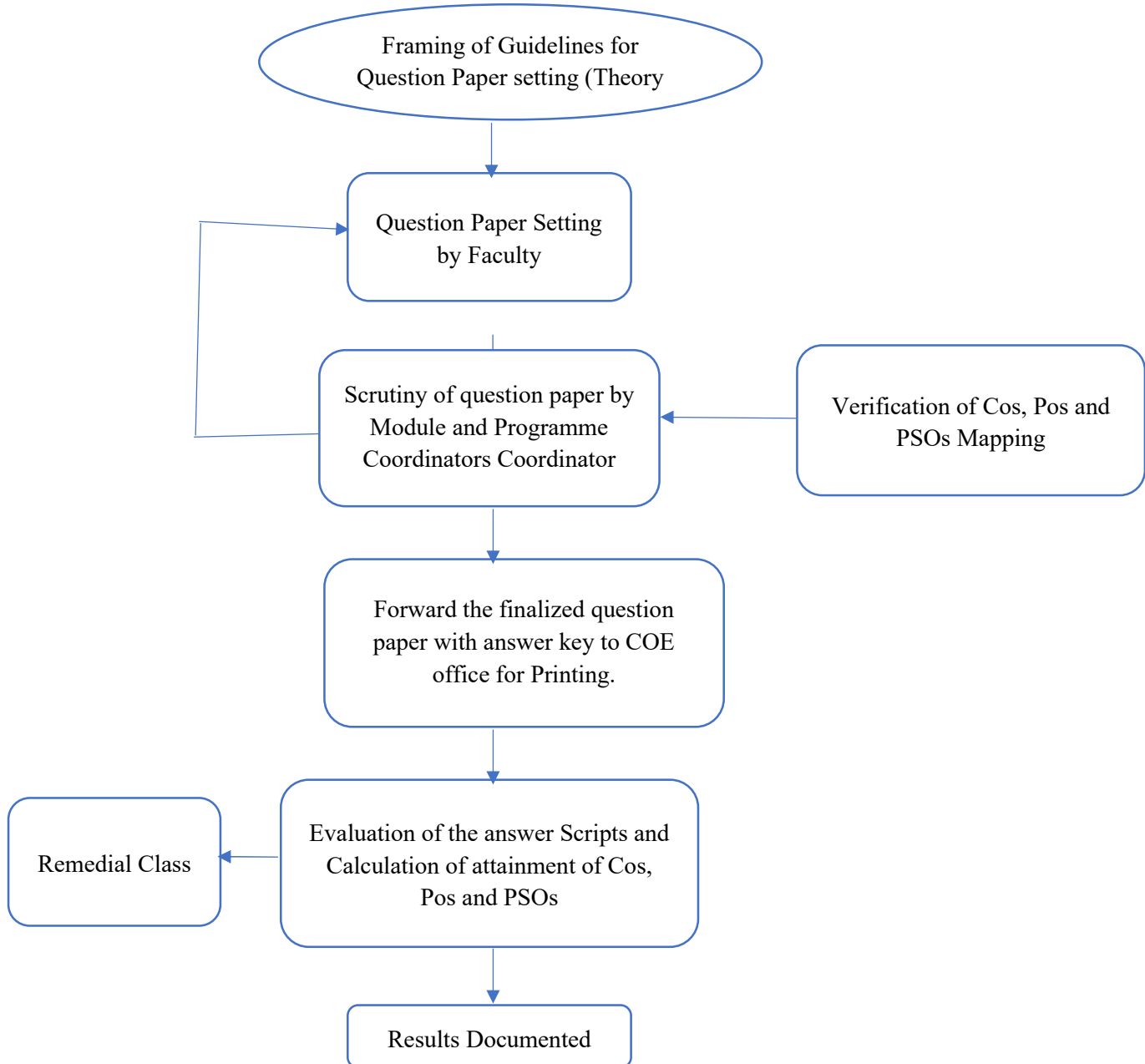


Figure 2.2.7 Process for internal Semester Question Paper setting and Evaluation

A. Process of internal semester question paper setting and evaluation process and effective process implementation.

- The faculty members are given training in setting question paper in NBA format using Blooms Taxonomy and paper evaluation regularly through the Controller of Examination (COE) section.
- KARE follows a continuous evaluation system carrying 50% internal examinations and the rest 50% weightage is given to end semester examinations.
- The question papers are prepared based on the level prescribed by Blooms-Taxonomy
- The circular will be issued to faculty members from the COE office regarding the instructions to be followed for the sessional examinations.
- Before every internal sessional examination, the course meeting will be convened by the course coordinator inviting all the faculty for the particular course. In this meeting the completion of the assignment, portion of the syllabus, and question papers for sessional (internal) examinations will be discussed and finalized.
- The course coordinator is the responsible person for the setting the question paper.
- This question paper and answer key is verified by the module coordinator and programme coordinator / HOD as per the format given by the COE.
- All the question papers are mapped with course outcome of each subject and this will be verified by course coordinator and module coordinator.
- The internal Sessional Examinations answer script bundles with question paper and answer key will be handed over to the concerned faculty member for evaluation.
- Office of COE will bring (external) question papers from outside the campus also for sessional exams. For scrutiny purpose, experts will be called upon from the reputed institutes.
- After completion of sessional exams, end semester will be conducted centrally by office of CoE. In this examination alone, 50% of the total marks will be decided. 85 % of the end semester question paper is prepared by external expert. Further the answer sheets are evaluated by the external faculties called upon from the various universities/engineering colleges.
- The evaluated answers booklets are shown to the students to ensure transparency. If the faculty advisor of the concern student wanted to verify the answer sheets, it will be provided them also.
- All internal sessional marks are entered with CO mapping for each question within five days of completion of all the examination.

- All internal sessional marks are entered for each question using EASY software.
- At the end of every internal sessional examination the CO attainment for every student will be recorded.
- Results and analysis will be discussed in staff council meeting for further follow up.

B. Process to ensure questions from outcomes/learning levels perspective

- The quality of questions papers is guided based on KARE- IQAC guidelines.
- The pre-examination process starts with gathering the following information: Collecting the panel of external examiners for Question paper setting and Evaluation, Sending the Request for setting the Question paper for End Semester Examinations.
- The two set of end semester questions with answers are prepared by internal faculty member and one set of question with answer prepared by external faculty from reputed institutions.
- Receipt of question papers from external examiners, Internal Question paper are verified and approved by the Module Coordinator and the Head of Department.
- The students' learning and thinking levels are increased by asking questions from GATE and IES that are included in some subject preparation.
- The Internal / External Questions papers are audited and scrutiny by External Experts from reputed institutions conducted by office of CoE.
- In department level, question paper for all examinations such as Sessional Exam – I, II, III and End are prepared by the course coordinator with respect to the course coordinator meetings and considering learning/outcome levels. Then the Module coordinator will check the level of question paper as mentioned by the IQAC. Further is checked by the Programme coordinator. Once all the corrections are carried out, the question paper will be forwarded to Controller of Examination office.
- From the University level, the IQAC will audit the level of question paper like quality, grammatical error and etc. Once the question paper gets corrected, the Controller of Examination office will take of printing the question paper and the same is distributed to students during examination.

C. Evidence of COs coverage in class test / mid-term tests

- In the sessional examination question papers the CO coverage is ensured and mentioned in the printed question papers with Blooms Taxonomy level.

Question selection is referred from the prominent textbooks, previous year's papers, and case studies. The standard questions level is strictly maintained and monitored. Papers setting adheres strictly to the university question paper template and the guidelines. The advisory committee of the department ensures the question quality. Post-evaluation, the critical solutions, usual mistakes, and the top answer from the answer scripts are discussed and shared with the students post-evaluation. The sample sessional question paper is given in the Figure 2.2.8

KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION (Deemed to be University) Anand Nagar, Krishnankoil – 626 126. SESSIONAL EXAMINATION - II - ODD SEMESTER [2019-2020]							
Course Code	: ECE404	Date & Session	: 01-10-2019 / FN				
Course Name	: Microwave Devices	Duration	: 90 Minutes				
Degree	: B.Tech.	Max. Marks	: 50				
PART – A (10 Marks) Answer All Questions		Pattern	Mapping COs				
1	Draw the equivalent circuit for Manley –Rowe equations	Remember	CO2				
2	Briefly explain the principle of PIN diode	Remember	CO2				
3	Describe the principle of magnetron oscillator	Understand	CO3				
4	List the limitations of conventional vacuum tubes at frequencies above 1GHz	Remember	CO3				
5	Draw the block diagram of spectrum analyzer	Remember	CO3				
PART – B (40 Marks) Answer All Questions		Pattern	Mapping COs				
6	Describe the mechanism of generating negative resistance in IMPATT diode	Understand	CO2				
7	Explain the plasma formation for negative resistance in TRAPATT DODE	Understand	CO2				
8	Explain the oscillation mechanism of reflex klystron oscillator	Understand	CO3				
9	Describe the amplification mechanism of Traveling Wave Tube amplifier	Understand	CO3				
10	How microwave frequency can be measured using the microwave test bench setup?	Understand	CO3				
Assessment Pattern as per Bloom's Taxonomy:							
COs	Remember	Understand	Apply	Analyze	Evaluate	Create	Total
CO2	4	16	0	0	0	0	20
CO3	4	26	0	0	0	0	30
Total	8	42	0	0	0	0	50

Figure 2.2.8 Sample Sessional Question Paper

D. Quality of Assignment and its relevance to COs

Following initiatives have been devised at the department level to prepare quality assignments for all internal assessments.

- An internal department-level committee is formed at the start of each semester to ensure the quality level of the assignments and question papers. This committee includes the Course Coordinator, Module Coordinator, Programme coordinator, and HoD.
- Sample assignments/ question papers/Laboratory assignments types are discussed to help the faculty members to understand what assignments should be given.
- Assignments/ Laboratory Assignments are prepared and evaluated as per the rubrics at the beginning of the semester itself.
- Theory assignments/ Laboratory assignments are provided against each subject.
- The assignments/ question papers/Laboratory Assignments are prepared by the individual subject teachers in consultation with course coordinators.
- Faculty members are also encouraged to include case studies and standard questions from an examination viewpoint.
- Students are encouraged to use standard content/references and follow standard books while writing their assignments.
- Subject assignments also include a few questions on contents beyond the syllabus.

Evaluation and Analysis Student assignments

- Assignments are evaluated as per the rubrics. The Sample rubrics levels are shown in the Figure 2.2.9
- The department-level committee analyses sample copies of evaluated assignments.
- The Department Head also ensures regularity and time-bound evaluation of the course assignments.
- The assignment carries 10 marks as one of the internal assessment components in each course, adhering to the university guidelines.
- The absentees of assignment submission are questioned to investigate the reason, and appropriate feedback action consents to the parents/guardians.

The assignment is a mandatory academic activity for each course in the department.

	(1/1 point)	(2/3 points)	(4 points)	(5 points)
Knowledge(PO1)	No grasp of required subject matter, No understanding of major issues.	Only basic concepts are demonstrated and interpreted	Able to elaborate and explain to some degree.	Demonstration of full knowledge of the subject with explanations and elaboration.
Design(PO3)	Most explanations are either difficult to understand or missing components.	All explanations are cleared but lack detail.	All explanations are cleared but only some are detailed.	All Explanations are cleared and detailed as much as possible.
Timeliness(PO6)	Work is not completed in allotted time.	A little of the work is done in the allotted time.	Most of the work is done in the allotted time.	Work is done in the allotted time.
Spelling, grammar, sentence structure(PO10)	Frequent grammar and/or spelling errors, writing style is rough and immature.	Occasional grammar /spelling errors. Generally readable with some rough spots in writing style.	Less than 3 grammar /spelling errors, mature, readable style.	All grammar/spelling correct and very well-written.

Figure 2.2.9 Assignment Rubrics

2.2.3. Quality of student projects (20 /20)

(Quality of the project is measured in terms of consideration to factors including, but not limited to, environment, safety, ethics, cost, type (application, product, research, review etc.) and standards. Processes related to project identification, allotment, continuous monitoring, evaluation including demonstration of working prototypes and enhancing the relevance of projects. Mention Implementation details including details of POs and PSOs addressed through the projects with justification)

Project Motivation

- Based on the thrust area formulated by various organizations such as DRDO, ISRO, DST etc., various orientation programs were conducted in order to gain knowledge about projects and its implementation
- Encouraged to actively carryout projects based on their subjects studied with practical applications which enhances their innovative skills

- Kindling the students to design their own projects with their interest

A. Identification of Projects and allocation methodology to faculty members

- According to our adopted curriculum, a student in their final year carryout a capstone project in a group of three to apply the knowledge acquired in three years of their graduate study.
- The students are informed to initiate the project registration in a departmental circular at the end of the sixth-semester study.
- In the registration process, the students are informed about framing a group with a maximum of three fellow students of their choice and interest.
- With the commencement of the semester, the faculty list and specialization is displayed on the department's notice board.
- The students identify the field of their interest, such as Communication, VLSI, Embedded systems, IoT, Signal processing, and propose a project title. The scope of the work is usually not limited to only a single field; instead, the students are encouraged to select interdisciplinary/multidisciplinary topics from the thrust areas.
- A committee of the Project coordinator(s) and Program coordinator organize the guide allocation to each proposed project title based on the faculty specialization/domain or interest, with the consent of the Department Head.

B. Types and relevance of the projects and their contribution towards attainment of POs and PSOs

Based upon the functional area of the projects, they are categorized as follows:

- Application-oriented
- Design and manufacturing
- Product and process development
- Material Science
- Solution of the industrial problems

After categorizing the projects, they are mapped with the POs and PSOs and the attainments are assessed based on the following:

- ✓ Depth in fundamentals
- ✓ Clarity in problem analysis
- ✓ Methodology adopted.
- ✓ Modern tool usage
- ✓ Impact on societal needs as useful products/processes
- ✓ Future scope of the work
- ✓ Novelty of work
- ✓ Teamwork
- ✓ Presentation and documentation
- ✓ Cost-effectiveness and project management
- ✓ Employability

C. Project related to industry.

Students are also encouraged to do the Project outside the campus (i.e.) preferably in Industries. If the students conduct their Projects in industries, they get exposure to real-time and challenging industrial problems. Moreover, the students can utilize the opportunity to undergo such kind of real-time projects that further enhances industry-campus association. Upon a successful project completion with industry may also lead to an employment opportunity for a student after completing their graduation.

The list of projects in correlation with POs and PSOs are correlated in the following Table 2.3, 2.4 and 2.5 (i) and (ii) with stream, type of project and classification of projects.

Table 2.3 Correlation between title of the project with POs and PSOs

Batch 2018-19

S.No	Project Title	Stream	Type of Project	Project Classification	Mapping with POs and PSOs
1	Performance evaluation of patient using IoT	VLSI, Embedded and IOT	External	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
2	High Efficient Multiplier Circuit Using Wallace Architecture With Hybrid Power Gating Technology	VLSI, Embedded and IOT	Internal	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
3	Design of static random access memory(SRAM) using four transistors(4T)	VLSI, Embedded and IOT	Internal	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
4	A hybrid fault tolerant approach (ReStar) for BIST architecture	VLSI, Embedded and IOT	Internal	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
5	Junctionless Transistor for Low Power Application	VLSI, Embedded and IOT	Internal	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3

6	Home Automation with Fire-base Alert system using Raspberry pi	VLSI, Embedded and IOT	External	Product	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
7	Design low power ,high speed circuit using adiabatic approach	VLSI, Embedded and IOT	Internal	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
8	Modelling and simulation of InAlN /AlN /Gan of high electron mobility transistor	VLSI, Embedded and IOT	Internal	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
9	Automatic irrigation system using single phase motor control in GSM	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
10	A VLIW architecture for executing multi-scalar / vector instructions on unified datapath	VLSI, Embedded and IOT	External	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
11	Segregation of decomposable and non decomposable wastes using capacitive sensor	VLSI, Embedded and IOT	Internal	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
12	Exam paper leakage prevention using RFID	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
13	Design and implementation to ensure road safety and environment using embedded system	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3

14	Driver drowsiness detection system	VLSI, Embedded and IOT	External	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
15	Smart helmet	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
16	Design and simulation of vibration based piezoelectric energy harvesters	VLSI, Embedded and IOT	Internal	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
17	Real Time Bus Arrival System with Advanced Features	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
18	Real time E-city bus tracking system	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
19	Energy aware cluster protocol using heterogeneous wireless sensor network	Communication Systems	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
20	An energy efficient approach for agriculture monitoring using wireless sensor network	communication systems	Internal	Product	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
21	Parameter tracking using harvesting sensor	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3

22	Industrial monitoring and controlling using WSN	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
23	Object recognition for military based services using image processing	Signal Processing	Internal	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
24	Degradeble & non-degradeble waste separation using Robotics	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
25	Automatic breast mitosis detection and classification in mcs using histopathology	communication systems	Internal	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
26	Gesture based intelligent home automation system using IOT	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
27	An Approach on Segmentation of Tumour and Tuberculosis of Hip Joint Using Convolutional Neural Networks	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
28	LP-SVD based on enhancement technique for MR and CT images	Signal Processing	Internal	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
29	Brain tumor detection using segmentation based Object labeling aL Gorithm	Signal Processing	External	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3

30	Automation of Object Sorting Using PLC and IoT	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
31	Evaluation of Device Performance of AlGaIn/InGaIn/GaN High Electron Mobility Transistors (HEMT's) Using TCAD Software	VLSI, Embedded and IOT	Internal	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
32	Intelligent Battery Management	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
33	Drone Based Medical Facility	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
34	FPGA Based Real Time Temperature Measurement System	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
35	Cost Effective Parking Solution	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
36	IOT Based Health Monitoring System Using FPGA	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
37	Water Bottle with Inbuilt Purification System	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3

38	Design of Parallel Pipelined Architecture For Wavelet Based Image Compression Using 2-D Daubechies Method	Signal Processing	Internal	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
39	Low Cost Non-Invasive Smart Bed System Using Medical Device Embedded with IoT	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
40	High Speed and Area Efficient Multiplier Design Using Reversible Gates	VLSI, Embedded and IOT	External	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
41	Simulation of Combined S box and Inverse S box of AES	VLSI, Embedded and IOT	Internal	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
42	Design of Power and Area Efficient Approximate Multiplier	communication systems	External	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
43	Testing of a shift register and buck converter using SAPHIRE tester by XTOS software	communication systems	External	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
44	Design and Implementation Of 64-Bit Vedic Multiplier	communication systems	External	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
45	Smart Voice Controlled Lock and Home Appliances	VLSI, Embedded and IOT	External	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3

46	Advance Traffic Navigation System	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
47	Simulation of Efficient Ku Band Folded Waveguide TWT Using CST Studio	communication systems	Internal	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
48	Low Cost Smart Dustbins	VLSI, Embedded and IOT	Internal	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
49	Public Address System	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
50	Bike Crash Detection	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
51	Low Cost and High Security System for Fuel Tank	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
52	Smart Traffic Control System	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
53	Automatic Gear Transmission (AGT) For Manual Gear Cars	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3

54	Road Traffic Management System for Hilly Terrain Areas	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
55	Digitalized Toll Fare Collection System Using RFID Technology	communication systems	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
56	Air Pollution Alert System Using Iot with GPRS	communication systems	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
57	Design and Implementation of 2Mbps Bandwidth to Corporate Sector Using SDH Technology with Protection	communication systems	External	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
58	IOT Enabled Warehouse Management	VLSI, Embedded and IOT	External	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
59	IOT Enabled Yard Management Using Modbus Protocol D	VLSI, Embedded and IOT	External	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
60	Smart Agriculture Using LORA Technology	VLSI, Embedded and IOT	External	Product	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
61	A Non-Intrusive Method to Detect Driver Drowsiness Using Facial Landmarks	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3

62	Smart Eco-Friendly Garbage Management	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
63	Control Wheelchair by Smile and Wink Expressions of a Paralytic Person	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
64	Local Binary pattern based multimodal biometric recognition using Ear and FKP with feature level fusion.	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
65	Automated Detection of Human Emotions and Heart Rate from Facial Expressions Using Probabilistic Neural Networks (PNN)	communication systems	Internal	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
66	Multi Task CNN For the Recognition of Tigers Through Their Stripes	Signal Processing	Internal	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
67	Brain Tumor Segmentation Using Machine Learning Techniques	Signal Processing	Internal	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
68	A Novel Approach in Medical Image Fusion Using Social Spider Optimization	Signal Processing	Internal	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
69	Energy Efficient Mapping of Computer Vision ALGORITHMS on Mobile Embedded Processing Platforms	VLSI, Embedded and IOT	External	Research	PO1,PO2,PO3,PO4 , PO5,PO6,PO7,PO8 ,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3

70	High Performance Network Intrusion Detection Engine	communication systems	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12, PSO1,PSO2, PSO3
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Table 2.4 Correlation between title of the project with POs and PSOs
Batch 2019-20

S.No	Project Title	Stream	Type of Project	Project Classification	Mapping with POs and PSOs
1	A Novel Antenna Design For Wimax Application Using Metamaterials	Signal Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
2	Design And Analysis Of Microstrip Dual Mode Impedence Transformer	Signal Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
3	Design And Analysis Of Ridge Gap Waveguide For 5G Wireless Standard	Communication Systems	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
4	Design And Implementation Of Ultrasonic Sonar Monitoring System	Signal Processing	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
5	Interfacing Voice Guiding System For An Autonomous Robot	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3

6	IOT Based Coal Mine Safety Monitoring And Alerting System	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
7	IOT Based Smart Agriculture Monitoring System	VLSI, Embedded and IOT	Internal	product	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
8	Computerized Smart Luminous System using Passive Infrared by Motion Recognition (CSLS-WIFI)	Communic ation Systems	Internal	Application	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
9	Smart Irrigation Control Using IOT For Farmers	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
10	Thermic Epidermic Tissue Surgical Generator Using Bipolar Electrodes	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
11	An Innovative Sanitation Solution With IOT Enabled Drainage System For Clean India	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
12	Automatic Brain Tumour Detection Using Histogram Optimized Tree Seed ALGorithm On MR Images	Signal Processing	Internal	Application	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3

13	Defect Detection Fabric Using Gabor Filter	Signal Processing	Internal	Application	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
14	Emotion Detection Based On Audio Signals	Signal Processing	Internal	Application	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
15	Face Recognition Based Automatic Door Lock Control System	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
16	Gender Classification With Finger Knuckle Print Using Obifs	Signal Processing	Internal	Application	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
17	Identification Of Railway Fasteners Using Svm Classifier	Communication Systems	Internal	Research	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
18	Implementation Of Currency Note To Coin Exchanger Using Arduino	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
19	Kernal Spares Coding And Textural Feature Based Segmentation For Cerebral Edema	Signal Processing	Internal	Research	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3

20	Sift Based Face Recognition For Front And Profile Faces	Signal Processing	Internal	Research	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
21	Tamil Character Recognition Using Cnn-Svm Classifier	Signal Processing	Internal	Research	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
22	Vehicle Starter On Face Recognition Using Raspberry Pi	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
23	A Reconfigurable Memory Based Fast VLSI Architecture For Computation Of The Histogram	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
24	Automated Smart Car Parking System Using Zigbee	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
25	Blind Image Quality Assessment Using Improved Deep Neural Network	Signal Processing	Internal	Research	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
26	FPGA Based Home Automation And Power Monitoring System	VLSI, Embedded and IOT	Internal	Research	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3

27	FPGA Implementation For Advanced Encryption Algorithm	VLSI, Embedded and IOT	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
28	Implementation of Modified Gabor Filter for Fingerprint Image Enhancement by Using Verilog HDL	VLSI, Embedded and IOT	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
29	Modular Design Of Electronic Voting Machine For Future Election	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
30	Simulation And Comparing Of Gate-All-Around(GAA) Stacked Nanosheets For Different Materials	VLSI, Embedded and IOT	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
31	Smart Ambulance Alerting System Using Xbee Digimesh	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
32	Smart Hearing Aid using Labview	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
33	Synthesis and Characteristics of MOS2 Based Devices	VLSI, Embedded and IOT	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3

34	Automated Detection of Glaucoma using Image Processing Technique	Signal Processing	Internal	Research	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
35	Arduino Based Biometric Recognition and Alcohol Detection for Safety Transportation	VLSI, Embedded and IOT	Internal	Research	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
36	Medicine Distribution Robot and Human Less Intervention for Covid-19 Affected People (AKM MED ASSISTIVE BOT)	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
37	IoT Based Real-Time Drowsy Driving Prediction System	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
38	Endo Illuminator Light Source Using For Multiple Surgeries	Signal Processing	Internal	Application	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
39	Design and Analysis of Endfire Microstrip Antenna for Aircraft Navigation System	Communication Systems	Internal	Research	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
40	IOT Based Water Level Controller for Irrigation	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3

41	Traffic and Energy Aware Routing for Hetrogeneous Wireless Sensor Networks	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
42	An Integrated Approach for Flood Prediction by Using Block Chain Network and Machine Learning	Communic ation Systems	Internal	Application	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
43	Smart Snake Crawl Robot in Search and Rescue	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
44	Underwater Image Enhancement	Signal Processing	Internal	Research	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
45	Artificial Bridge between Railway	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
46	Medical Images Compression and Decompression using Neural Network	Signal Processing	Internal	Application	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
47	Smart Innovative Helmet	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3

48	Gate Monitoring System	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
49	Detection of Abnormalities in Abdominal AORTA Using Deep Learning Neural Network	Signal Processing	Internal	Application	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
50	Intelligent Tourniquet System for Emergency Aid Using Wireless Network	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
51	Analysis of Brain Tumor Segmentation using Spectral Clustering Techniques	Signal Processing	Internal	Application	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
52	Compact Balanced Substrate Integrated Waveguide Filter With Low insertion loss for Wireless Application	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
53	Fire Fighting Robot with AI and WAP	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
54	Evaluation of Breast Thermograms by Hybrid Classifiers	Communication Systems	Internal	Application	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3

55	Design of Broadband Millimetre-Wave Beamforming Components For 5G Application	Communication Systems	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
56	Fractal Based CSRR Loaded Multiband Antenna for 5G	Communication Systems	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
57	Power Generation from Moving Vehicles Using Piezo Electric Effect	Communication Systems	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
58	Simulation of Molybdenum Disulfide (Mos2) Based Biosensor for Detection of Prostate Cancer Using Cancer Marker Protein	VLSI, Embedded and IOT	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
59	Audio Translator using Raspberry Pi and Iot	VLSI, Embedded and IOT	External	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
60	Detecting Intrusion of Strangers Using DIP	Signal Processing	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
61	Fractal Based Reconfigurable Antennas for Multiband Wireless Applications	Communication Systems	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3

62	Feature Level Fusion In Multimodal Biometric System Using FKP and Ear	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
63	Automatic Door Lock Control Using Face Recognition	Signal Processing	Internal	Application	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
64	An Efficient VLSI Architecture for Removal of Impulse Noise In Image	VLSI, Embedded and IOT	External	Research	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
65	Semiconductor Device Testing Using Eagle Tester	VLSI, Embedded and IOT	External	Research	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
66	Computing Performance Enhancement of VLIW Architecture Using Instruction Level Parallelism	VLSI, Embedded and IOT	External	Research	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
67	Semiconductor Device Testing Using ATE	VLSI, Embedded and IOT	External	Research	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3
68	Design of Low Power/High Speed Multiplier Using Spurious Power Suppression Technique	VLSI, Embedded and IOT	External	Research	PO1,PO2,PO3,P O4, PO5,PO6,PO7,P O8,PO9, PO10,PO11,PO 12,PSO1,PSO2, PSO3

Table 2.5 (i) Correlation between title of the project with POs and PSOs**Batch 2020-21**

S.No	Project Title	Stream	Type of Project	Project Classification	Mapping with POs and PSOs
1	Smart Nursing Robot for COVID-19 Patients	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
2	Solar Based Fingerprint Authentication Voting System Using IOT	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
3	Full Added Designs Using Low Power Full Swing Xor and Xnor Structures	VLSI, Embedded and IOT	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
4	Detecting of Distraction Under Naturalistic Driving Using Galvanic Skin Responses	Communication Systems	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
5	Development of The LoRaWAN-Based Movement Tracking System	Communication Systems	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
6	Data Hiding Using Audio Steganography and Chaos Encryption With Rc7 Encryption	Signal Processing	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
7	Slotted Monopole Antenna for Ultra Wide Band Applications	Communication Systems	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
8	IoT Based Smart Shopping Cart Using Rfid and NodeMCU	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3

9	Food Safety and Quality Analysis Using Semiconductor Sensor	VLSI, Embedded and IOT	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
10	Analysis of Dental Code Processing for the Effective Recognition of an Individual.	Signal Processing	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
11	Enhanced Image Compression Using Fractal and Tree Seed-Bio Inspired Algorithm	Signal Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
12	Finger Knuckle Print Authentication System Using Visual Threshold Cryptographic Techniques	Signal Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
13	Automatic Detection of Coronavirus Disease (Covid-19) Using X-Ray Images and Deep Convolutional Neural Networks	Signal Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
14	Under Water Wireless Sensor Communication System	Communication Systems	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
15	Design a Circularly Polarized Patch Antenna for Small Satellite Applications	Communication Systems	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
16	Smart Crop Protection from Wild Animals Using Pic	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3

17	Particle Swarm Optimization-Based Unequal and Fault Tolerant Trusting Protocol for Wireless Networks	Signal Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
18	Semiconductor Based Device for Bio Sensor Applications	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
19	IOT Based Wireless Home Security System	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
20	Mri Brain Image Segmentation Using Soft Computing Techniques	Signal Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
21	Dwt Based on Watermark for Palm Finger Print Recognition	Signal Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
22	Design and Analysis of an IOT Controlled Octahedron Frequency Reconfigurable Multiband Antenna For RF Sensing Applications	Signal Processing	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
23	IOT Based Smart Agriculture Water Quality Monitoring and Controlling System	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
24	Low Light Image Enhancement Using Volume Based Subspace Analysis	Signal Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3

25	Detection of Foot Ulcers in Diabetic Patient Using Image Processing	Signal Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
26	Identification of Timber Defects Using Convolution Neutral Network	Signal Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
27	Electricity Monitoring and Auto Bill Generation Using IOT	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
28	Node MCU Based Landmine Detection Using Wireless Robot	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
29	IOT Based Health Monitoring and Medication Remainder	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
30	Monitoring Speaker Sentiment in Various Conditions Using Machine Learning	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
31	IOT Based Low Power Transmission Line Fault Detection and Indication	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
32	Theft Intimation of Vehicle Over Sms To Owner who Can Turn OFF Engine Remotely	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
33	IOT Based Industry and Mining Safety Monitoring and Alerting System	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3

34	Electronic Sniffing Mask - a Smart Drainage Worker Safety System	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
35	Battery Bulge Identification and Avoidance of Firing System Using IOT	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
36	Trigonous Shielding System for Women	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
37	IOT Based Air Quality Monitoring System With Email Notification	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
38	RFID Based Automatic Lane Clearance System for Ambulance	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
39	Semantic Segmentation of Multispectral Geoanalyse Image by Cnn	Signal Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
40	IOT Based Car Parking System	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
41	A Secure IOT Based Healthcare System With Body Sensors Network	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
42	People Detection and Tracking Using Yolov2	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3

43	Safety Road Travelling System With Connected Vehicles	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
44	Smart Vehicular Systems Fractal Image Compression Using Quadtree Decomposition and Huffman Coding	Signal Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
45	Low Power ECG Based Processor for Predicting Ventricular Arythmia	Communication Systems	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
46	MULTIPLERS Designs Using Low Power Full Swing Xor and Xnor Structures	VLSI, Embedded and IOT	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
47	Cyber Security for Helath Care System Using IOT	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
48	Sensing and Monitoring Incubator with IOT	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
49	Face Recognition In Low Resolution Images Using Convolutional Neural Networks	Signal Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
50	Intelligent Transportation	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3

51	Bluetooth Based Car Garage Opening System	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
52	Design and Analysis of Nano Antenna for Satellite/ 5G Applications	Communication Systems	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
53	Motor Cycle Start-Stop System Based on Intelligent Biometric Voice Recognition and Only by Wearing Helmet	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
54	Diabetic Retinopathy Detection	Signal Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
55	Embedded Digital Ic Tester for Structural Testing Using Arduino Microcontroller	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
56	Detecting Helmet Using Deep Learning	Signal Processing	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
57	An Optimized Image Watermarking Method Based on HD And SVD In DWT Domain	Signal Processing	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
58	Prediction of Heart Disease Using Big Data Analytics	VLSI, Embedded and IOT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3

59	Development of Smart Stick for Visually Challenged People	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
60	Wireless Sensor Networks-Density Based Traffic Controller	Communication Systems	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
61	Night Surveillance Military Spying Robot Using Raspberry Pi	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3
62	Solar Panel Cleaning Robot Using Wireless Communication	VLSI, Embedded and IOT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8, PO9, PO10,PO11,PO12,P SO1,PSO2, PSO3

Table 2.5 (ii) Correlation between title of the project with POs and PSOs
Batch 2021-22

S.No	Project Title	Stream	Type of Project	Project Classification	Mapping with POs and PSOs
1	Contactless COVID-19 Monitoring System using IoT	Embedded System and IoT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
2	Vehicle Monitoring System and Auto Headlight Reduce	Embedded System and IoT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
3	IOT Based Smart Crop Field Monitoring System	Embedded System and IoT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3

4	IoT based cable defect location tracker using GPS and GSM	Embedded System and IoT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
5	Thermal wrapper Using T call esp32 sms800L	Embedded System and IoT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
6	IoT based Multiple Vital Health Parameter Detection and Analyzer System.	Embedded System and IoT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
7	Soil Nutrients Monitoring and Analysis System Using IoT	Embedded System and IoT	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
8	Voice Identification Based Bank Locker Security System with Live Image Authentication	Embedded System and IoT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
9	Self Health Monitoring System Based on IoT	Embedded System and IoT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
10	Electrical Safety Equipment Analyzer for Medical Equipment using IoT	Embedded System and IoT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
11	Smart Spinning Mill Industry Protection Monitoring and Controlling System using an IoT	Embedded System and IoT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3

12	Implementation of Real-Time chatbot hardware using Android for Medical Care	Embedded System and IoT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
13	IoT based wild animal Intrusion Detection System	Embedded System and IoT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
14	Smart Vehicle Locking System using pollution Sensor (MQ-O7)	Embedded System and IoT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
15	Patient Health Monitoring System for Tribal People based on IoT	Embedded System and IoT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
16	Artificial Intelligence Based Smart Electricity Billing Management System	Embedded System and IoT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
18	Implementation of Temperature and pH sensor for biomedical Application	Embedded System and IoT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
19	Power supply with Adjustable output for Biomedical devices safety system using an IOT	Embedded System and IoT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
20	Battery & Electric Vehicle (BEV) Monitoring and Quality oriented productions systems and GSM Based billing system	Embedded System and IoT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3

21	RFID Based Protection system to new borns in the hospitals including voice alert system	Embedded System and IoT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
22	Autonomous Robot for Filed Health indication and crop monitoring System usind AI	Embedded System and IoT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
23	An IoT- Based Alert System with Gas sensors in a WSN Framework for Evasion of Forest Fire	Embedded System and IoT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
24	Deep Learning using CNN with Lane detection and Traffic sign Recognition	Communication system, Signal and Image Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
25	Smart pothole Detector Using Artificial Intelligence	Communication system, Signal and Image Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
26	Age estimation & speaker recognition based on speech	Communication system, Signal and Image Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
27	Design and Implementation of convenient and compulsory voting system using finger print sensor and Face recognition	Communication system, Signal and Image Processing	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
28	Object Detection, Classification and information extraction system using Machine Learning for Aging and disabled person	Communication system, Signal and Image Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3

29	Classification of Covid affected cases through X ray chest images using CNN Models	Communication system, Signal and Image Processing	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
30	Human Identification using knuckle fingerprint	Communication system, Signal and Image Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
31	Modelling of Negative Capacitance Field Effect Transistor	VLSI Design and Device Modelling	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
32	semiconductor devices optimization using Artificial Neural networks	VLSI Design and Device Modelling	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
33	A Reversible Logic based Architecture for ANN	VLSI Design and Device Modelling	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
34	Real time Smart Attendance monitoring system with image processing and thermal scanning	Embedded System and IoT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
35	Alzheimer's Disease detection using Ensemble of classifiers	Embedded System and IoT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
36	Secure-Anonymous User Authentication Scheme for e-Healthcare Application Using Wireless Medical Sensor Networks	Embedded System and IoT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3

37	IOT Social Distancing & monitoring robot	Embedded System and IoT	Internal	Application	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
38	A Smart Paper Less Electronic Ticketing System Using Rfid,And Bluetooth Technology	Embedded System and IoT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
39	IoT Based Traffic & Transport Guidance System for Visually Impaired People Using GPS	Embedded System and IoT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
40	Rfid based wireless charging station for electric vehicles using Arduino and payment system	Embedded System and IoT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
41	Assessment of various milk parameter monitoring system using an IOT	Embedded System and IoT	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
42	Evaluation Method of Deep Learning Based Embedded System for Disease Detection	Communication system, Signal and Image Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
43	Leaf disease detection and classification using image processing	Communication system, Signal and Image Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
44	Automated Tree Species Classification System Using Teachable Machine	Communication system, Signal and Image Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3
45	Multi modal image fusion technique for detecting brain tumor	Communication system, Signal and Image Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,P O9, PO10,PO11,PO12,PS O1,PSO2, PSO3

46	Implementation Of Peanut Leaf Disease Detection System Using Faster RCNN	Communication system, Signal and Image Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
47	Tumor Identification In Ct Scan Using Deep Learning Technique	Communication system, Signal and Image Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
48	Osteoarthritis Detection using multiple edge detections	Communication system, Signal and Image Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
49	prototype implementation of neural networks based agriculture farm monitoring and rain prediction	Communication system, Signal and Image Processing	Internal	Product	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
50	Knuckle classification using CNN method	Communication system, Signal and Image Processing	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3
51	Electrostatic doping using Charge Plasma	VLSI Design and Device Modelling	Internal	Research	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9, PO10,PO11,PO12,PSO1,PSO2, PSO3

D. Process for monitoring and evaluation

- Monitoring of the projects is carried out by the supervisors at a regular basis
- Project diary is maintained with regular entries about the status of the projects
- Regarding project reviews and common instructions, separate circulars will be circulated among the students
- Project review phases are scheduled in the academic calendar in which timely inputs are taken from the department's domain experts.
- The department domain experts assess the students' performance through critical review comments/feedbacks/suggestions to judge the project progress and advise the scope of improvement.

- The final review is conducted with the external experts who evaluate the projects based upon the demonstration and quality of the project work in the final grading.

The project diary management for the monitoring of projects is shown in Figure 2.2.10

[illegible]

Figure 2.2.10 Snapshot of the diary maintained for project monitoring

Project Review

- Project reviews are conducted with panel members consist of Professors, Associate Professors and Doctorates who are expertise in specific domain
- The designated panel members will monitor and review the status of the projects.

Table 2.6 presents the agenda and weightage of each review assessed for the project evaluation for final year students. The overall weightage equates to 50 marks.

For carrying out the project work, the joining report is maintained for reviewing the status of the registered projects. The snapshot of the joining report is shown in Figure 2.2.12. Similarly, the snapshot of progress report is shown in Figure 2.2.13.


<p>From: P. Sai Aditya 9915005168 KARE Krishnankoil - 626 126</p> <p>To: <u>Mr. Sohan Ghosai</u> <u>Tessolve Semiconductors PVT. LTD</u> <u>Bangalore</u></p> <p>Sir,</p> <p>Sub: Joining report to carry out B.Tech. Project Work - Reg.</p> <p>I/ We, final year B.Tech. Student(s) of the KARE, Krishnankoil - 626 126, hereby report to you today to Carry out my / our final year B.Tech. Project Work at your organization, under your guidance. I / We sincerely thank you and your organization for the / opportunity given to me / us.</p> <p>I / we will abide by the rules and regulations of the organization during my / our stay here. I / we will adhere to the work timings / time schedules that would be fixed by you.</p> <p>Thanking you, Yours sincerely,</p> <p>1. P. Sai Aditya 2. 3.</p>	<p>Joining Report</p> <p>Date: 07-01-2019 Place: Bangalore</p>
<hr/>	
<p>Reporting Time and Date:</p> <p>Remarks, if any:</p> <p><u>Sohan Ghosai</u> </p> <p>Name and Signature of the External Guide (with office Seal)</p> <hr/>	
<p>CC: The Head Department of <u>Electronics & Communication Engineering</u> KARE Krishnankoil - 626 126</p> <hr/>	
<p>Kalasalingam Academy of Research and Education</p>	

Figure 2.2.12 Snapshot of Joining report of the project

[illegible]

Figure 2.2.13 Snapshot of progress report of project

Table 2.6 Review assessment of project evaluation for final-year students

Review #	Agenda	Assessment	Review Assessment Weightage	Overall Weightage
Review 1	Project Problem Identification and Literature Review Evaluation	Rubric R1	(5)	(50)
Review 2	Mid-Term Project Evaluation	Rubric R2	(12)	
Review 3	End Semester Project Evaluation	Rubric R3	(18)	
Review 4	Project Report Evaluation	Rubric R4	(10)	
Review 5	Evaluation by Guide	Rubric R5	(5)	
External Evaluation		Rubric R6	(50)	(50)
Total			(100)	(100)

Table 2.7 shows the rubrics for the project evaluation process. This table explains the various factors in which the level of achievement is categorized from 0 to 10.

Table 2.7 Project Evaluation Rubrics

Level of Achievement				
		Exceeds Expectation. (7-10)	Meets Expectation (3-7)	Does not Meet Expectation. (0-3)
A6	Knowledge and Application	Applies the appropriate knowledge and concepts to the problem with accuracy and proficiency; shows a precise understanding of these knowledge and basic concepts.	Applies the relevant knowledge and concept to the problem, possibly in a roundabout way; understands the major points of the knowledge, with possible misunderstanding or failure to recall minor points	Failing to apply relevant knowledge and concepts to the problem, misunderstand or recall critical points.
B6	Problem Identification	Identification of real-time problems and clear suggestions of problem statement	Identification of real-time problems and not clear suggestions of problem statement	Not clear identification and suggestions of problem statement
C6	Solution	Major problem in solving the problem.	The solution contains some minor math or numerical errors.	The problem is solved accurately in terms of mathematical manipulation and numerical calculation.
D6	Use of Modern Engineering Software	Demonstrates knowledge and application of modern engineering software through accurate development and interpretation of computer programs to solve problems.	Demonstrates awareness of modern engineering software through mostly correct development and interpretation of computer programs to solve problems, but may contain minor mistakes or syntax errors.	Unable to use modern engineering software to develop or interpret computer programs to solve problems.
E6	Design Strategy and Constraints	Uses sound design strategy, readily uses	Uses valid design strategy, albeit maybe	Fails to use a valid design strategy, haphazard approach.

		alternative methods when necessary. Appropriately considers constraints such as manufacturability, economics, safety, and environment	roundabout and lacks alternatives. Considers some of the constraints, but fails to consider or misinterprets some important constraints	Fails to consider or misinterprets key constraints
F6	Documentation Contents and Organization	Report well organized, appropriately sectioned, uses diagram when appropriate, important issues clearly stated	Report reasonably well documented. May lack some minor aspects.	Report not well organized, lack key aspects.
G6	Teamwork	Actively engages and cooperates with other group members in an effective manner.	Cooperates with other group members in a reasonable manner.	Distracts or discourages other group members from conducting the experiment.
H6	Ethics	Identifies the ethical issues associated with the project and discusses these issues thoroughly	Identifies most of the ethical issues associated with project, but misses some; discussion of the issues in the text is not completely thorough	Fails to recognize key issues or the discussion is cursory
I6	Recognizes the Need for Life-Long Learning (LLL)	Makes a strong argument connecting the need for LLL to his or her career plans	Mentions why LLL is important in his or her LLL plan	Fails to mention why LLL is necessary or down plays its importance
J6	Awareness of Contemporary Issues	Deep understanding of all the relevant contemporary issues related to the creation.	Good understanding of all the relevant contemporary issues directly related to the creation.	Little or no understanding of contemporary issues directly related to the creation.

E. Process to assess individual and team performance.

- The performance of the individual team member of the project is assessed at the
- The performance of the individual team member of the Project is assessed at the time of presentation in reviews by considering the following criterions:
 - ✓ Communication
 - ✓ Confidence in the project work
 - ✓ Attainment of individual scope of work
 - ✓ Overall contribution for the project accomplishment
- The performance of the project team is assessed by considering the following criterions:
 - ✓ Knowledge of the other member contribution towards the Project
 - ✓ Coordination in consolidating work
 - ✓ Time management

F. Quality of completed projects/ working prototypes.

The quality of the Project is evaluated based on the conversion possibility of the ideas synthesized during the Project based on the real outcome; also, Quality projects are encouraged to be present in the national/international conference and journals for publications.

- The completed projects are mandatorily encouraged to publish papers in standard publications, IEEE conferences and Scopus indexed journals
- The students are motivated to file patents with their projects
- The projects are converted as a prototype model and submitted for IEDC fundings.

G. Evidence of papers published /Awards received by projects etc.

Table 2.8 presents the total number of papers published and patents awarded during the three academic years 2018-19, 2019-20 and 2020-21. Both the applied as well as accepted/published papers/patents have been taken into consideration in this regard.

Table 2.8 Papers/patents applied/published during academic years 2018-19, 2019-20 and 2020-21.

S. No	Academic Year	No. of projects			Publication count	
		Internal	External	Conference	Journals (Applied/Published)	Patents (Applied)
1	2018-2019	54	16	24	19	1
2	2019-2020	62	6	17	42	1
3	2020-2021	68	-	44	19	5

Total Publication chart

The total number of publications and projects carried out during the academic years 2018-19, 2019-20 and 2020-21 has been represented in Figure 2.2.14. In addition, the percentage of publications and projects carried out in those years has also been plotted.

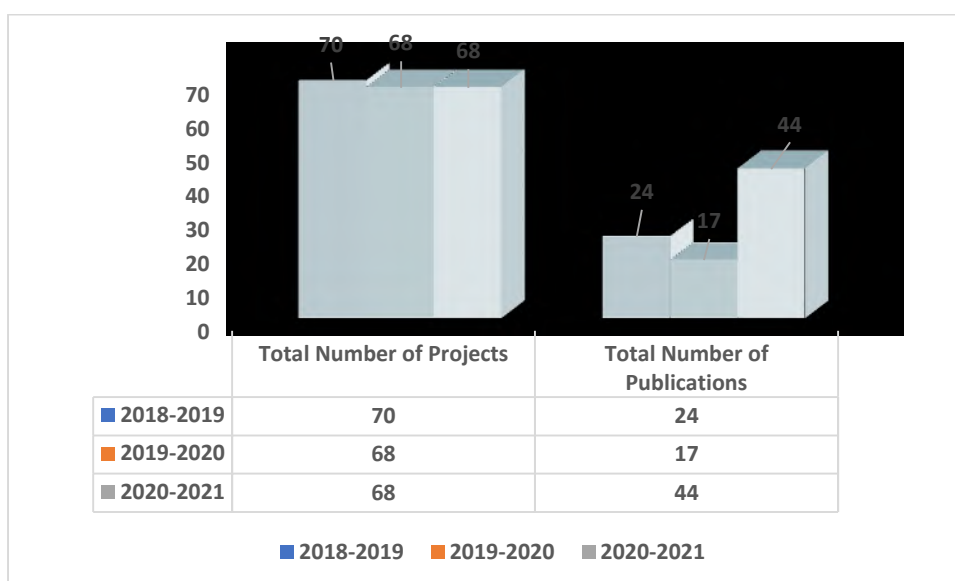


Figure 2.2.14 Total projects and publications for the academic years 2018-19, 2019-20 and 2020-21.

Conference/Journal/ Patent publication chart

The total number of publications in journals and conferences and the projects carried out during the academic years 2018-19, 2019-20 and 2020-21 have been depicted in Figure 2.2.15. In addition, the patents applied for those years have also been plotted.

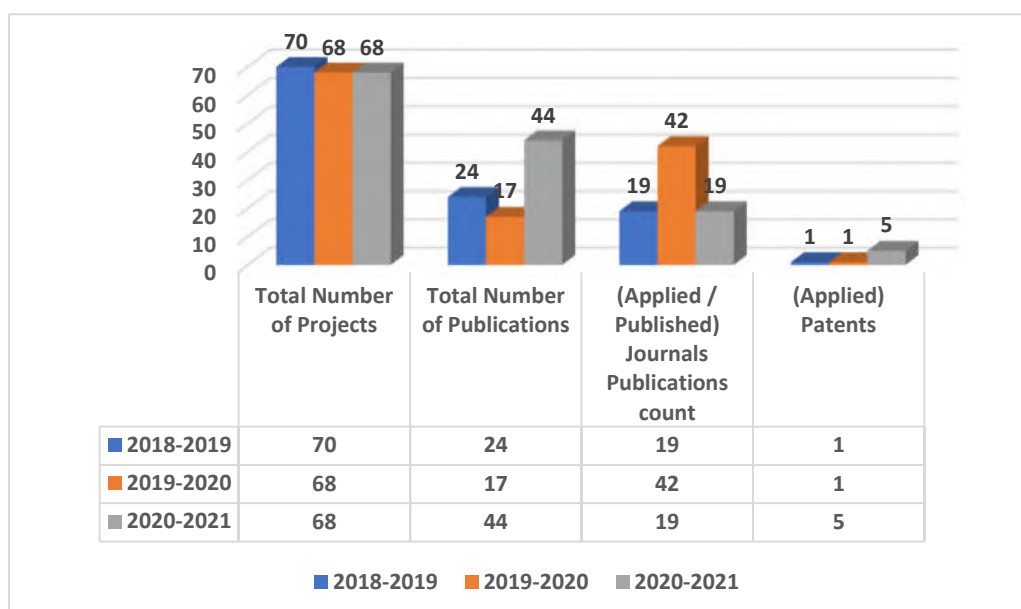


Figure 2.2.15 Total projects carried out, journal and conference publications, and the patents applied for the academic years 2018-19, 2019-20 and 2020-21.

ACADEMIC YEAR 2018-2019- Project- Publications:**Conference Publications details**

The details of the conference publications carried out by students during the academic year 2018-19 have been given in Table 2.9. 24 batches have had conference publications during that year, including IEEE conferences.

Table 2.9 Conference publications of students in the academic year 2018-19.

S. No	Project Title	Reg. No	Name of the Students	Conference Name
1	Performance Evaluation of Patient using IoT	9915005112	Gangisetty Sai Krishna Sathvik	1st IEEE EMBS International Student Conference 2018
		9915005184	Seggoju Teja	
		9915005190	Shaik Mohammed Sultan Sharif	
2	High Efficient Multiplier Circuit Using Wallace Architecture with Hybrid Power Gating Technology	9915005156	Madhumitha S	International Conference on Innovative Trends in Science & Technology (ICITST 2018)
		9915005028	Keerthika.N	
		9915005019	Dhana Bhagyam G	
3	Modelling and Simulation of InAlN/AlN/GaN of High Electron Mobility Transistor	9915005054	Santhosh Sivaraman N	Kalasalingam Global Conference (KGC 2019)
		9915005049	Rajkumar B	
		9915005142	Gowrishankar V	
4	Automatic Irrigation System using Single Phase Motor Control in GSM	9915005026	Kathir Kaamesh S	Kalasalingam Global Conference (KGC 2019)
		9816005004	Yuvaraj M	
		9915005066	Vasudevan S	
5	Design and Implementation to Ensure Road Safety and Environment using Embedded System	9915005235	Jeya Surya J	International Conference on New Scientific Creations in Engineering and Technology (ICNSCET 2019)
		9915005218	Atchaya A	
		9915005048	Ragadharshini G	
6	Real Time E-City Bus Tracking System	9915005180	Ramya K	Kalasalingam Global Conference (KGC 2019)
		9915005006	Anu Mangai R	
		9915005011	Asha Jency J	
7	Industrial Monitoring and Controlling using WSN	9915005223	Kunduru Naveen Kumar Reddy	International Conference on Recent Scientific Research in Engineering and Technology (ICRCET 2019)
		9816005006	Goskulashivakumar	
		9915005230	Digumarthy Raj V S M S Chandrasek	

8	Object Recognition for Military Based Services using Image Processing	9816005001	Chandra Sekaran M	International Journal of Innovative Research in Management, Engineering and Technology
		9915005203	Vikesh S B	
		9915005025	Karuppasamy E	
9	Gesture Based Intelligent Home Automation System using IoT	9915005124	Vakiti Akhil	Kalasalingam Global Conference (KGC 2019)
		9915005199	Tammalala Naveen	
		9915005158	Papasani Manoj Kumar Reddy	
10	LP-SVD Based on Enhancement Technique for MR and CT images	9915005014	Ayesha Rizwana S	International Conference on Recent Trends in Science and Management (ICRTSEM 2018)
		9915005007	Aravind J R	
		9915005009	Arumugaperumal M	
11	Evaluation of Device Performance Of AlGa _N /InGa _N /Ga _N High Electron Mobility Transistors (HEMT's) using TCAD Software	9915005041	Nalayira Muthu S	Kalasalingam Global Conference (KGC 2019)
		9915005046	Pravin Raja F	
		9915005060	Srinivas V	
12	FPGA Based Real Time Temperature Measurement System	9915005127	Ambarapu Saddam Hussain	18th International Conference on Science, Engineering and Technology (ICS ET 2019)
		9915005107	Gali Vinod Kumar Naidu	
		9915005119	Gangavarapu Venkatesh Naidu	
13	Cost Effective Parking Solution	9915005139	Eskala Pavan Kumar	18th International Conference on Science, Engineering and Technology (ICS ET 2019)
		9915005148	Jyothy Venkata Krishna Sai	
		9915005150	Kandi Ravindra	
14	IoT Based Health Monitoring System using FPGA	9915005191	Ambarapu Siddhu	18th International Conference on Science, Engineering and Technology (ICS ET 2019)
		9915005159	Modadugu Seshasai	
		9915005110	T Balaji Reddy	
15	Design of Parallel Pipelined Architecture for Wavelet Based Image Compression using 2D Daubechies Method	9915005215	Bandi Siva Sankar Reddy	IEEE International Conference on Intelligent Techniques in Control, Optimization and Signal Processing (INCOS 2019)
		9915005216	Eda Harsha Vardhan Reddy	
		9915005217	Garineni Gopi	
16	Low-Cost Non-Invasive Smart Bed System using Medical Device Embedded with IoT	9915005064	Theivakkani S	Kalasalingam Global Conference (KGC 2019)
		9915005231	Susmitha S N	
		9915005122	Sobiya S	

17	Simulation of Combined S-Box and Inverse S-Box Of AES	9915005169	Pacha Sai Krishna	Kalasalingam Global Conference (KGC 2019)
		9915005179	M C Rahul Chowdari	
18	Simulation of Efficient Ku Band Folded Waveguide TWT using CST Studio	9915005001	Aarthy P	Kalasalingam Global Conference (KGC 2019)
		9915005017	Devika V	
		9915005214	Vishnu Priya S	
19	Public Address System	9915005103	Chinta Uday Kumar	2nd National Conference on Recent Innovation in Engineering, Science, Humanities and Management (ESHM-19)
		9915005108	Devarapalli Rohithreddy	
		9517005501	Suriya D	
20	Low Cost and High Security System for Fuel Tank	9915005201	Vakati Sravan Kumar	2nd National Conference on Recent Innovation in Engineering, Science, Humanities and Management (ESHM-19)
		9915005098	Polavarapu Bhargav Sai	
		9915005181	Rishabh	
		9915005170	Pavan Kumar Reddy Bonthu	
21	Local Binary Pattern Based Multimodal Biometric Recognition using Ear and FKP With Feature Level Fusion.	9915005104	Achuta Chandralekha	IEEE International Conference on Intelligent Techniques in Control, Optimization and Signal Processing (INCOS 2019)
		9915005109	Yanamala Himaja	
		9915005163	S Mounika Sai	
22	Multi Task CNN For the Recognition of Tigers through their stripes	9915005097	Somesula Sukumar	Kalasalingam Global Conference (KGC 2019)
		9915005125	Akula Siva Ganesh	
		9915005154	Konduru Vijay Kumar	
23	Brain Tumor Segmentation using Machine Learning Techniques	9915005027	Keerthiga R	Kalasalingam Global Conference (KGC 2019)
		9915005043	Nusarathjahan D	
		9915005059	Sornalatha R	
24	High Performance Network Intrusion Detection Engine	9915005063	Subharisha R	Kalasalingam Global Conference (KGC 2019)
		9915005058	SORNA BALA S	
		9915005062	SUBHA M	

Journals Publications details

The details of the Scopus and Web of Science indexed journal publications carried out by students during the academic year 2018-19 has been given in Table 2.2.3.8. Around 19

student batches have had journal publications in both Scopus and Web of Science indexed journals.

Table 2.2.3.8 Journal publications of students for the academic year 2018-19.

S. No	Project Title	Reg. No	Name of the students	Journal Name
1	Air Pollution Alert System using IoT with GPRS	9915005105	Parlapalli Vaishnavi	3C Tecnología
		9915005118	Cherukuri Mohana Teja	
		9915005210	Karasala Triveni	
2	Design and Implementation of 2mbps Bandwidth to Corporate Sector using SDH Technology with Protection	9915005164	Mullangi Dhavanth	3C Proceedings
3	A Non-Intrusive Method to Detect Driver Drowsiness using Facial Landmarks	9915005200	Vadlamani Rampranav	3C Proceedings
4	Junctionless Transistor for Low Power Application	9915005042	Nandhini S	International Journal of Emerging Technology and Innovative Engineering
		9915005020	Gayathris	
5	Segregation of Decomposable and Non-Decomposable Wastes using Capacitive Sensor	9915005152	Karthik V	International Journal of Innovative Research in Management, Engineering and Technology
		9915005160	Mohamed Faizul Rahuman H	
		9915005147	Jey Ganesh D	
6	An Energy Efficient Approach for Agriculture Monitoring using Wire Less Sensor Network	9915005068	Vetriselvam R	International Journal of Emerging Technology and Innovative Engineering
		9915005070	Vijitha D	
		9915005044	Paranikumar T	
7	Parameter Tracking using Harvesting Sensor	9915005140	G Pranith Reddy	International Journal of Emerging Technology and Innovative Engineering
		9915005228	J Dileep Kumar Reddy	
		9915005229	Sumathidevi V	
8	Degradable & Non-Degradable Waste Separation using Robotics	9915005008	Arumuga Pandi S.	International Journal of Emerging Technology and
		9914005035	Sulthan Alaudeen S.	

				Innovative Engineering
9	An approach on Segmentation of Tumour and Tuberculosis of Hip Joint using Convolutional Neural Networks	9915005002	Afrena Parveen N	International Journal of Innovative Research in Management, Engineering and Technology
		9915005212	Kasturi Chakraborty	
		9816005005	Indira Rajeswari R	
10	Automation of Object Sorting Using plc and IOT	9915005115	Pasalapudi Tarun Krishna Vamsi	International Journal of Scientific Research and Review
		9915005116	Perecharla Laxmi Narashima Varma	
		9915005167	Nemalapuri Chaitanya	
11	Design and Implementation of 64-Bit Vedic Multiplier	9915005206	Yazali Dinesh	International Journal of Scientific Research and Review
12	Smart Voice Controlled Lock and Home Appliances	9915005189	Shaik Arshad Hussain	International Journal of Scientific Research and Review
13	Low-Cost Smart Dustbins	9915005135	Chinni Sumanth Kumar	International Journal of Scientific Research and Review
		9915005141	Dasari Girish	
		9915005161	Mohammad Zaidh Ahmad	
14	Bike Crash Detection	9915005099	Pamanji Dheekshith	International Journal of Scientific Research and Review
		9915005101	Rathikrindi Venkata Yeswanth Kuma	
		9915005126	Allam Lakshman Reddy	
15	Automatic Gear Transmission (AGT) for Manual Gear Cars	9915005137	Devendran V	International Journal of Recent Technology and Engineering
		9915005144	Jagannath K	
		9915005123	Gokulvasan K	
16	Road Traffic Management System for Hilly Terrain Areas	9915005232	Nalabothula Sai Kumar	International Journal of Scientific Research and Review
		9915005129	Beduduri Bharath	
		9915005211	Kodatala Veera Rahul Reddy	
17	Control Wheelchair by Smile and Wink Expressions of a Paralytic Person	9915005173	Popuri Prasanna Kumar	International Journal of Scientific Research and Review
		9915005174	Pothuri Gowtham Kiran Varma	
		9915005183	Singamasetty Uday Kumar	
		9915005109	Yanamala Himaja	
		9915005163	S Mounika Sai	
18	Automated Detection of	9915005198	Surya A	International Journal of Emerging
		9915005165	Muthuraj P	

	Human Emotions and Heart Rate from Facial Expressions using Probabilistic Neural Networks (PNN)	9915005136	Darapuneni Jagapathi Babu	Technology and Innovative Engineering
19	A Novel Approach in Medical Image Fusion using Social Spider Optimization	9915005162	Palla Mounika	Journal Of Emerging Technologies and Innovative Research
		9915005171	Penugonda Usha	
		9915005113	Pokala Manaswitha	

ACADEMIC YEAR 2019-2020- Project- Publications:

Conference Publications details

The details of the conference publications carried out by students during the academic year 2019-20 has been given in Table 2.10 17 batches have had conference publications during that year that include IEEE conferences also.

Table 2.10 Conference publications of students for the academic year 2019-20.

S. No	Project Title	Reg. No	Name of the Students	Conference Name
1	A Novel Antenna Design for WiMAX Application using Metamaterials	9916005175	Yallamaraju Surendra Varm	Virtual International Conference on
		9916005178	Yechuri Venkata Sai Manidee	Innovations in Interdisciplinary
		9916005047	Gadiraju Sai Santhosh	Research (VICIIDR 2020)
2	Design And Analysis of Microstrip Dual Mode Impedence Transformer	9916005133	Rubankumar M	Fourth International Conference on
		9916005192	Ram Kishore S	Inventive Systems and Control (ICISC 2020)
		9916005186	Gade Vamshikrishna	
3	IoT Based Smart Agriculture Monitoring System	9916005147	Siripuram Vamsi Krishna Redd	International Conference on
		9916005026	Bollineni Sai Gireesh	Recent Trends in
		9916005103	Mudduluru Manoj	

				Science, Engineering (ICRTSEM 2020)
4	Computerized Smart Luminous System using Passive Infrared by Motion Recognition (CSLS-Wifi)	9916005063	Jeyamohanaroopan K M K	Fourth International Conference on Inventive Systems and Control (ICISC 2020)
		9916005107	Navaneethanath M	
5	Thermic Epidermic Tissue Surgical Generator Using Bipolar Electrodes	9916005124	Prakash M	Fourth International Conference on Inventive Systems and Control (ICISC 2020)
		9916005007	Ajithkumar R	
6	Emotion Detection Based on Audio Signals	9916005172	Venkatarajugari Chandan Ku	International Conference on Recent Trends in Science, Engineering (ICRTSEM 2020)
		9916005183	Shaik Mahammed Haneef	
		9916005039	Devireddy Venkata Phanindra	
7	Vehicle Starter on Face Recognition using Raspberry Pi	9916005191	Palem Somasekhar Reddy	International Conference on Recent Trends in Science, Engineering (ICRTSEM 2020)
		9916005096	Marthala Vamshiteja Reddy	
		9916005110	Nellore Suresh	
8	FPGA Implementation for Advanced Encryption Algorithm	9916005012	Annabathina Rajiv	International Conference on Modern Trends in Engineering and Research (ICMTER 2020)
		9916005046	Gadhamsetty Venkata Bala N	
		9916005079	Kethi Venkateswarlu	
9	Synthesis and Characteristics of	9916005020	Basireddy Rushikesava Reddy	4th International Conference on Smart Systems and
		9916005031	Chevvu Saikumar	

	MoS2 based Devices	9916005055	Hanumanthu Sandeep	Inventive Technology (ICSSIT 2022)
10	Automated Detection of Glaucoma using Image Processing Technique	9916005033	Ch. Sampath	International Conference on Artificial Intelligence and Evolutionary Computations in Engineering System (ICAIECES 2020)
		9916005083	K.V Girish Kumar	
		9916005176	Y. Bharath Kumar	
		9817005003	B. Praveen Kumar	
		9916005035	D. Sri Venkata Nagendra	
11	Medicine Distribution Robot and Human Less Intervention for COVID-19 Affected People (AKM Med Assistive Bot)	9916005099	M.D. Arbas Ali Khan	International Conference on Applications of Machine Learning (ICAML 2020)
		9916005084	M.R. Kylash	
		9916005105	M. Muralidharan	
12	Endo Illuminator Light Source using for Multiple Surgeries	9916005002	A. Rohan	International Conference on Smart Electronics and Communication (ICOSEC 2020)
		9916005008	A. Sreekanth	
		9916005027	B. Rakesh	
13	An Integrated Approach for Flood Prediction by using Block Chain Network and Machine Learning	9916005013	A. Seeta Reddy	International Conference on Applications of Machine Learning (ICAML 2020)
		9916005104	M. Siva Sainath Reddy	
		9916005115	P. Ravi Teja Reddy	
14	Evaluation of Breast Thermograms By Hybrid Classifiers	9916005016	A. Pranavi	7th International Conference on Computational Intelligence and
		9916005117	P. Shoba Rani	

				Applications (ICCIA 2022)
15	Simulation of Molybdenum Disulfide (MoS ₂) Based Biosensor for Detection of Prostate Cancer using Cancer Marker Protein	9916005195	A.T.S. Lokesh	5th International Conference on Devices, Circuits and Systems (ICDCS 2020)
		9916005173	V. Avinash Reddy	
		9916005140	Shahid Aman Khan	
16	Fractal Based Reconfigurable Antennas for Multiband Wireless Applications	9916005024	B. Mahesh	Virtual International Conference on Innovations in Interdisciplinary Research (VICIIDR 2020)
		9916005040	D. Mohan Reddy	
		9916005082	K.V. Manikanta Deenadayal	
17	Feature Level Fusion in Multimodal Biometric System using FKP and Ear	9817005006	Sunki Reddy Hari Obul Reddy	3rd International Conference on Advanced Science and Engineering (ICOASE 2002)
		9916005151	Somisetty Bhanutejaswi	
		9916005123	P. Dinesh	

Journal Publications details

The details of the international journal publications carried out by students during the academic year 2019-20 has been given in Table 2.11. Large number of student batches, 42 have had international journal publications during that year.

Table 2.11 Journal publications of students in the academic year 2019-20

S. No	Project Title	Reg. No	Name of the Students	Journal Name
1.	Design And Analysis of Ridge Gap Waveguide For	9916005137	Sangaraju Jayasurya Varma	International Journal of Digital Communication and Networks
		9916005101	Mounika S	
		9916005102	Muddeneni Manikanta	

	5G Wireless Standard			
2.	Interfacing Voice Guiding System for an Autonomous Robot	9916005059	Indla Venkata Sai Vineeth	International Journal of Digital Communication and Networks
		9916005065	Jugunta Sharon Paul	
		9916005066	Kadirabba Vinod Kumar	
3.	Smart Irrigation Control using IoT for farmers	9916005058	Indiradevi Nachiyar S R	International Journal of Digital Communication and Networks
		9916005069	Kaleeswari M	
4.	An Innovative Sanitation Solution with IoT Enabled Drainage System for Clean India	9916005091	Mallu Poorna Sree	International Research Journal of Modernization in Engineering Technology and Science
5.	Defect Detection Fabric using Gabor Filter	9916005193	Salla Shiva Sai	International Journal of Digital Communication and Networks
		9916005038	Devangam Kempula Sessa Sai	
		9916005152	R Sreenath	
6.	Face Recognition Based Automatic Door Lock Control System	9916005134	P Sai Krishna	International Journal of Digital Communication and Networks
		9916005049	Gangala Vaddelugari Vamsi	
7.	Gender Classification With Finger Knuckle Print Using Obifs	9916005005	Ajith R	International Journal of Digital Communication and Networks
		9916005018	Aravindh P	
		9916005050	Gokul K	
8.	Identification of Railway Fasteners using SVM Classifier	9916005113	Nivetha G S	International Journal of Digital Communication and Networks
9.	Implementation Of Currency Note To Coin Exchanger Using Arduino	9916005014	Antony Aswin A	International Journal of Digital Communication and Networks
		9916005021	Bavathaarani B	
		9916005037	Deris R	
10.	Kernal Spares Coding and Textural Feature Based Segmentation	9916005139	Sarabu Venkata Naga Nikhil	International Journal of Digital Communication and Networks
		9916005157	Taalla Bhanu Theja	
		9916005160	Thota Harsha Vardhan	

	for Cerebral Edema			
11.	Sift Based Face Recognition for Front and Profile Faces	9916005155	Sundar P	International Journal of Digital Communication and Networks
		9916005162	Tirumalai Srinivasan	
		9916005009	Akurathi Siva Sai Chandan	
12.	Tamil Character Recognition using CNN-SVM Classifier	9916005145	Shivani K	International Journal of Digital Communication and Networks
		9916005163	Uma Maheswary P G	
		9916005206	Chitradevi P	
13.	A Reconfigurable Memory Based Fast VLSI Architecture For Computation of the Histogram	9916005130	Raya Ravicharan Reddy	International Journal Of Emerging Technology In Computer Science & Electronics
		9916005067	Kadiveti Manoj Kumar Reddy	
		9916005080	Kommi Kalyan	
14.	Automated Smart Car Parking System Using Zigbee	9916005138	Sankar Anandh M	International Journal of Digital Communication and Networks
		9916005144	Shiva Somu S S	
		9916005200	Muthu Kumar D	
15.	Blind Image Quality Assessment using Improved Deep Neural Network	9916005165	Vanaja N	International Journal of Digital Communication and Networks
16.	FPGA Based Home Automation and Power Monitoring System	9916005010	Allampati Raviteja	International Journal of Emerging Technology in Computer Science & Electronics
		9916005060	Jangiti Hari Prakash	
		9916005094	Manchikanti Anand	
17.	Implementation of Modified Gabor Filter for Fingerprint Image Enhancement by using Verilog HDL	9916005116	Panga Siva Sai Kumar Reddy	International Journal of Digital Communication and Networks
		9916005141	Shaik Mohammad Akram Javi	
		9916005064	Jonna Venkata Sunil Kumar	
18.	Modular Design of Electronic Voting Machine for Future Election	9916005057	Hilal Khan A	International Journal of Digital Communication and Networks
		9916005068	Kalaiselvi S	
		9916005085	Lakshmi Priya A	
19.	Smart Ambulance Alerting System	9916005148	Sivaramakrishnan M	International Journal of Digital Communication and Networks
		9916005153	Sudhakar K	
		9916005159	Thirumanikandan S B	

	using Xbee Digimesh			
20.	Smart Hearing Aid using Labview	9916005143	Sharmila R	International Journal of Digital Communication and Networks
		9916005156	Suresh M	
		9916005105	M. Muralidharan	
21.	Design And Analysis of Endfire Microstrip Antenna for Aircraft Navigation System	9916005001	S. Abarna	International Journal of Advanced Science and Technology
		9916005126	K. Praveena	
		9916005184	T. Kalpana	
22.	IoT Based Water Level Controller For Irrigation	9817005002	J. Mahendran	Elsevier - Materials Today: Proceedings
		9817005001	M. Azeem Ahmed	
		9817005005	S. Siva Karthick	
23.	Traffic and Energy Aware Routing for Hetrogeneous Wireless Sensor Networks	9916005187	K. Naveen Kumar	International Research Journal of Modernization in Engineering Technology and Science
		9916005076	K. Prasanth	
		9916005017	A. Vinay Kumar	
24.	Smart Snake Crawl Robot in Search and Rescue	9916005205	T. Keerthana	International Journal of Robotics and Automation
		9916005108	S.R. Naveen Prasath	
		9916005182	S. Hari Krishnan	
25.	Underwater Image Enhancement	9916005061	J. Jasim Ahmed	Journal of Interdisciplinary Cycle Research
		9916005197	S. Murugesan	
		9916005203	Abhishek Kumar Singh	
26.	Artificial Bridge Between Railway	9961005086	M. Sai Harsha Vardhan	International Journal of Computer Applications
		9916005081	K. Harsha Vardhan Kriti	
		9916005171	P. Venkata Sai	
27.	Medical Images Compression and Decompression using Neural Network	9916005029	T. Chenna Keshava Reddy	International Journal of Innovative Science and Research Technology
		9916005030	Ch. Nikhil Reddy	
		9916005098	M. Hari Siva	
28.	Smart Innovative Helmet	9916005114	P.V.N.S. Sasidhar	International Journal of Innovative Science and Research Technology
		9916005071	K. Suresh Babu	
		9916005120	P. Chakradhar Reddy	
29.	Gate Monitoring System	9916005149	K. Siva Varshini	International Journal of Innovative
		9916005100	P. Mohana Varsha	

		9916005025	B. Navya Sree	Science and Research Technology
30.	Detection Of Abnormalities In Abdominal Aorta Using Deep Learning Neural Network	9916005003	M. Aishwarya	Journal Of Critical Reviews
		9916005022	D.R. Benita Raja Sheba	
		9916005045	K. Flavita Angeline Nivetha	
31.	Intelligent Tourniquet System for Emergency Aid using Wireless Network	9916005077	S. Keerthana	International Journal of Innovative Science and Research Technology
		9916005004	S. Aishwarya	
		9916005127	R. Priyadharshini	
32.	Fire Fighting Robot with AI and WAP	9916005093	M. Dheeraj Singh	International Journal of Innovative Science and Research Technology
		9916005053	G. Bharath Sai	
		9916005174	Y.V. Adithya Kumar	
33.	Design of Broadband Millimetre-Wave Beamforming Components for 5G Application	9916005121	P. Sumanth	International Journal of Advanced Science and Technology
		9916005122	P. Venkata Sai	
		9916005131	R. Prudhvi	
34.	Fractal Based CSRR Loaded Multiband Antenna for 5G	9916005075	K. Sai Vamsi Krishna	International Journal of Advanced Science and Technology
		9916005119	P. Sumanth	
		9916005158	T. Poornesh	
35.	Power Generation from Moving Vehicles using Piezo Electric Effect	9916005188	K. Harish Kumar	International Journal of Advanced Science and Technology
		9916005166	V. Jaswanth Reddy	
		9916005052	G. Janardhan	
36.	Audio Translator using Raspberry PI and IoT	9916005194	K. Vamsi Krishna	International Research Journal of Modernization in Engineering Technology and Science
		9916005204	S. Naveen Kumar	
37.	Detecting Intrusion of Strangers using DIP	9916005118	S. Parkavi	International Journal of Innovative Science and Research Technology
		9916005106	V. Nandhini	
		9916005095	M. Raja Mohan Reddy	

38.	Automatic Door Lock Control Using Face Recognition	9916005011	A. Jai Sai	International Journal of Emerging Technology in Computer Science & Electronics
		9916005135	P. Sai Kumar Raju	
39.	An Efficient VLSI Architecture for Removal of Impulse Noise in Image	9916005199	M. Swathi	International Research Journal of Modernization in Engineering Technology and Science
		9916005196	N. Harshavaedhan	
		9916005198	G. Pavan Kumar	
40.	Computing Performance Enhancement of VLIW Architecture using Instruction Level Parallelism	9916005015	A. Sudhakar	International Journal of Innovative Science and Research Technology
		9916005167	V. Venkata Nagendra Reddy	
41.	Design of Low Power/High Speed Multiplier using Spurious Power Suppression Technique	9916005072	Kadapana Pavani	Journal of Critical Review
		9916005092	Mana Tanmayi	
	Arduino based Biometric Recognition and Alcohol Detection for Safety Transportation	9817005004	K. Sathish	International Journal of Digital Communication and Networks
		9817005003	B. Praveen Kumar	
		9916005035	D. Sri Venkata Nagendra	

ACADEMIC YEAR 2020-2021- Project- Publications

Conference Publications details

The details of the conference publications carried out by students during the academic year 2020-21 have been given in Table 2.12 Around 44 batches have had conference publications during that year, including IEEE conferences.

Table 2.12 Conference publications of students for the academic year 2020 - 21.

S. No	Project Title	Reg. No.	Name of the Students	Conference Name
1	Smart Nursing Robot for COVID-19 Patients	9917005038	Gadiraju Likith	International Conference on Advance Computing and Innovative Technologies in Engineering (ICACITE 2021)
		9917005039	G Durga Prasad	
		9917005030	Dodla Sreekanth	
2	Solar based Fingerprint Authentication Voting System using IoT	9917005208	N.V. Vinay Varma	5th International Conference on Communication and Electronics Systems (ICCES 2020)
		9917005211	K. Manideepak	
		9917005215	Guru Charan	
3	Full Added Designs using Low Power Full Swing XOR and XNOR Structures	9917005008	Avayamukhari Mohan Srinivas Adithya	International Journal of Emerging Technology in Computer Science & Electronics
		9917005197	Yoga Vignesh P	
4	Detecting of Distraction under Naturalistic Driving using Galvanic Skin Responses	9917005107	Maru Rithwik Seshu Reddy	6th International Conference on Communication and Electronics Systems (ICCES 2021)
		9917005128	P. Madhan Sai	
		9917005160	Shaik Mehatab	
5	Development of the Lorawan-based Movement Tracking System	9917005096	Sai Sudheer Maddukuri	15th International Conference on Signal Processing and Communication Systems (ICSPCS 2021)
		9917005139	Vikas Charan Reddy Ponkala	
		9917005022	Yaswant Boppudi	
6	Data Hiding using Audio Stegnography and Chaos Encryption with RC7 Encryption	9917005073	K. Kishore Chandra Sekhar	International Conference on Advanced Computing and Communication Technology (ICACCT 2021)
		9917005101	M. Madhu	
		9917005056	G. Siddu Saif Shareef	
7	Slotted Monopole Antenna for Ultra Wide Band Applications	9917005176	R. J. Sweatha	6th International Conference on Communication and Electronics Systems (ICCES 2021)
		9917005060	R. Haritha	
		9917005064	M. Jayshree	
8	IoT Based Smart Shopping Cart using	9917005071	K. Gangadhar	2nd International Conference on Electronics and
		9917005217	Ch. Manikanta Reddy	

	RFID and NodeMCU	9917005192	Y. Sai Sandeep Reddy	Sustainable Communication Systems (ICESC 2021)
9	Food Safety and Quality Analysis using Semiconductor Sensor	9917005007	A. Anumanjari	5th International Conference on Trends in Electronics and Informatics (ICOEI 2021)
		9917005123	T. Pandimeena	
		9917005150	J. Safana Fathima	
10	Analysis of Dental Code Processing for the Effective Recognition of an Individual.	9917005052	Gudi Kalyan	5th International Conference on Intelligent Computing and Control Systems (ICICCS 2021)
		9917005106	Manyam Vasundhara	
		9917005045	S. Godwin	
11	Enhanced Image Compression using Fractal and Tree Seed-Bio Inspired Algorithm	9917005065	Kalakuntla Puneeth Sai	6th International Conference on Communication and Electronics Systems (ICCES 2021)
		9917005174	Sutluru Reddy Chanakya	
		9917005034	Elchuri Ajay Kumar	
12	Finger Knuckle Print Authentication System using Visual Threshold Cryptographic Techniques	9917005094	K. Hemanth Kumar	International Conference on Advanced Computing and Communication Technology (ICACCT 2021)
		9917005213	Y. Joshnakar Reddy	
		9917005218	Y. Tharun Babu	
13	Automatic Detection Of Coronavirus Disease (COVID-19) Using X-Ray Images And Deep Convolutional Neural Networks	9917005095	Lingayath Umesh Chandra	International Conference on Advances in Science, Engineering and Technology (ICASET 2021)
		9917005024	Challa Venkata Sudharshan	
		9917005166	Siddi Raviteja Reddy	
14	Under Water Wireless Sensor Communication System	9917005169	Sivakoti Ramsai	15th International Conference on Signal Processing and Communication Systems (ICSPCS 2021)
		9917005124	Papasani Dinesh Reddy	
		9917005031	Donthagani Bhargav	
15	Design a Circularly Polarized Patch Antenna for Small Satellite Applications	9917005167	S.Rajasri	International Conference on IoT Based Control Networks and Intelligent Systems (ICICNIS 2021)
		9917005121	Rupa Priya	
		9917005050	Chandana	

16	Smart Crop Protection from Wild Animals using PIC	9917005204	Koduru Vamsinath Reddy	International Conference on IoT Based Control Networks and Intelligent Systems (ICICNIS 2021)
		9917005179	T. Ravikiran Naidu	
		9917005221	K. Bhanupradeep Kumar Reddy	
17	Particle Swarm Optimization-Based Unequal and Fault Tolerant Trusting Protocol for Wireless Networks	9917005009	A. Sumanth	International Virtual Conference on Innovations and Research in Marine Electrical and Electronics Engineering (ICIRMEE 2021)
		9917005042	G. Vigandhar Reddy	
		9917005163	B.M. Sharath Kumar	
18	Semiconductor based Device for Bio Sensor Applications	9917005189	S. Vishali	5th International Conference on Trends in Electronics and Informatics (ICOEI 2021)
		9917005198	J. Yuva Sri	
		9917005206	R. Selva Jayanthi	
19	IoT Based Wireless Home Security System	9917005070	Kanagasabapathy T S	International Conference on IoT Based Control Networks and Intelligent Systems [(CICNIS 2021)
		9917005046	Gokul P	
		9917005067	Kamaswaran S	
20	MRI Brain image Segmentation using Soft Computing Techniques	9917005201	Venkata Veera Bhogachari.S	6th International Conference on Communication and Electronics Systems (ICCES 2021)
		9917005040	Vinay Kumar.G	
		9917005193	Chandu Vardhan Reddy. Y	
21	DWT Based on Watermark for Palm Finger Print Recognition	9917005078	Bhavanisankar K	International Conference on IoT Based Control Networks and Intelligent Systems [(CICNIS 2021)
		9917005082	Uma Mahesh K	
		9917005185	Vinay Kumar Reddy V	
22	Design and Analysis of an IoT Controlled Octahedron Frequency Reconfigurable Multiband Antenna for RF Sensing Applications	9917005021	Bonthala Jaya Shankar	International Conference on IoT Based Control Networks and Intelligent Systems (ICICNIS 2021)
		9917005062	Jakkula Chaithanya	
		9917005026	Cheruvu Lavanya	
23	IoT based Smart Agriculture Water Quality Monitoring and Controlling System	9917005025	Chennamsetty Venkata Saiteja	15th International Conference on Signal Processing and Communication
		9917005162	Shaik Shahul	
		9917005109	Mettupalli Venkatasiva Reddy	

				Systems (ICSPCS 2021)
24	Low Light image Enhancement using Volume based Subspace Analysis	9917005138	P Surendra Babu	5th International Conference on Intelligent Computing and Control Systems (ICICCS 2021)
		9917005158	S. A. Sohel Basha	
		9917005074	K Chaithanya	
25	Detection of Foot Ulcers in Diabetic Patient using Image Processing	9917005041	Gantapara Arunsai Kumar	2nd International Conference on Electronics and Sustainable Communication Systems (ICESC 2021)
		9917005023	Boya Vinod Kumar	
		9917005076	Katuri Veera Manikanta Vara Prakash	
26	Identification of Timber Defects using Convolution Neural Network	9917005170	Sivaraman K	6th International Conference on Communication and Electronics Systems (ICCES 2021)
		9917005165	Siddhartha T	
		9917005172	Subramani V	
27	Electricity Monitoring and Auto Bill Generation using IoT	9917005006	A. Bhargav Narasimha	3rd IEEE International Conference on Signal Processing and Communication (ICSPC 2021)
		9917005145	R. Guna Vardhan Reddy	
		9917005156	S. Sathish	
28	Node MCU based Landmine Detection using Wireless Robot	9917005116	Nanda Rahul Bharadwaj	International Conference on Advanced Computing and Communication Technology (ICACCT 2021)
		9917005091	Krishnamannagari Sathish Kumar Reddy	
		9917005205	Mule Siva Reddy	
29	IoT based Health Monitoring and Medication Remainder	9917005098	M. Surya Kumar	2nd International Conference on. Electronics and Sustainable Communication Systems (ICESC 2021)
		9917005053	G. Bhargav	
		9917005084	K. Subramanyam	
30	Monitoring Speaker Sentiment in various Conditions using Machine Learning	9917005037	G. Yeshwitha	2nd International Conference on. Data Intelligence and Cognitive Informatics (ICDICI 2021)
		9917005187	V. Mounika	
		9917005055	G. Vinathi	
31	IoT based Low Power Transmission Line Fault Detection and Indication	9917005149	M.D. Rudra Prassanth	3rd IEEE International Conference on Signal Processing
		9917005144	G. Rajarajan	
		9917005117	N. Harshith	

				and Communication (ICSPC 2021)
32	Theft Intimation of vehicle over SMS to owner who can turn off engine remotely	9917005072	K. Sai Kumar Goud	6th International Conference on Communication and Electronics Systems (ICCES 2021)
		9917005089	K. Pradeep Kumar Reddy	
		9917005152	S. Thejeswara Reddy	
33	IoT based Industry and Mining Safety Monitoring and Alerting System	9917005057	G. Sai Kaushik	12th International Conference on Computing Communication and Networking Technologies (ICCCNT 2021)
		9917005212	P. Venu	
		9917005063	J. Sivaprasad Reddy	
34	Electronic Sniffing Mask - A Smart Drainage Worker Safety System	9917005028	Dandu Anil Kumar	International Conference on Advanced Computing and Communication Technology (ICACCT 2021)
		9917005049	G. V. Kiran Teja	
		9917005131	P. Mansoor Khan	
35	Battery Bulge Identification and Avoidance of Firing System using IoT	9917005068	K. Sandeep	International Conference on Advanced Computing and Communication Technology (ICACCT 2021)
		9917005181	T. Harsha Vardhan	
		9818005001	C. Balaji Dileep	
36	Trigonous Shielding System for Women	9917005120	P. Ruchitha	3rd IEEE International Conference on Signal Processing and Communication (ICSPC 2021)
		9917005220	K. Harshitha	
		9917005016	B. Tharuni	
37	IoT based Air Quality Monitoring System with Email Notification	9917005014	B. Nishith Kumar Reddy	6th International Conference on Communication and Electronics Systems (ICCES 2021)
		9917005169	V. Phanish Reddy	
		9917005103	M. Venkata Bhanu	
38	RFID based Automatic Lane Clearance System for Ambulance	9917005044	K. Gobika	International Conference on Advance Computing and Innovative Technologies in Engineering (ICACITE 2021)
		9917005113	T. Mounika	
		9917005209	R. Tamil Selvi	
39	Semantic Segmentation of Multispectral Geoanalyse image by CNN	9917005122	P. Siva Brahma Reddy	2nd International Conference on. Electronics and Sustainable Communication
		9917005159	Sk. Jaffer Sadik	
		9917005188	Vinothini.A	

				Systems (ICESC 2021)
40	IoT based Car Parking System	9917005199	Gopa Venkatesh	3rd IEEE International Conference on Signal Processing and Communication (ICSPC 2021)
		9917005129	Pasupuleti Manojkumar	
		9917005048	Gosi Nilakanteswara	
41	A Secure IoT based Healthcare System with Body Sensors Network	9917005088	K. Sai Pavan	5th International Conference on Intelligent Computing and Control Systems (ICICCS 2021)
		9917005151	S. Bhanu Chand	
		9917005182	T. Narendranath	
42	People Detection and Tracking using Yolov2	9917005002	S. Aishwaryalakshmi	2nd International Conference on. Electronics and Sustainable Communication Systems (ICESC 2021)
		9917005164	K. Shrivalli	
		9917005223	M. Jayameenakshi	
43	Safety Road Travelling System with Connected Vehicles	9917005033	E.Naveenkumar Reddy	5th Computational Methods in Systems and Software (CoMeSySo 2021)
		9917005127	P.Deepthi	
		9917005214	K.Bhavana	
44	Smart Vehicular Systems	9917005017	Bellam Maheswar Reddy	6th International Conference on Communication and Electronics Systems (ICCES 2021)
		9917005191	Y.Raja Surendra	
		9917005196	Y. Ashraf	

Journal Publications details

The details of the international journal publications carried out by students during the academic year 2020-21 have been given in Table 2.13. About 19 student batches have had international journal publications during that year.

Table 2.13 Journal publications of students for the academic year 2020 - 21.

S. No	Project Title	Reg. No	Name of the Students	Journal Name
1	Fractal Image Compression using Quadtree Decomposition and Huffman Coding	9917005075	K. Nikilesh Reddy	International Conference on Applied Sciences, Engineering and Technology
		9917005083	Sai Rohith Reddy	
		9916005128	R. Kalyan	
2	Low Power ECG based Processor for Predicting Ventricular Arythimia	9917005032	D. Ajithreddy	Annals of the Romanian Society for Cell Biology
		9917005054	G. Harsha Vardhan	
		9917005126	P. Venkata Vik	

3	Multipliers Designs Using Low Power Full Swing XOR and XNOR Structures	9917005141	Pravin Kumar S	International Journal of Emerging Technology in Computer Science and Electronics
		9917005036	Francischezhiyan J	
		9917005010	Jegadish Chandra Prasad B	
4	Sensing and Monitoring Incubator with IoT	9917005051	O.M. Gowtham	Annals of Romanian Society of Cell Biology
		9917005004	B. Akshy Karthick	
		9518005301	M. Jegatheshwaran	
5	Face Recognition in Low Resolution Images using Convolutional Neural Networks	9917005202	I. Lokesh	International Journal of Emerging Technology in Computer Science and Electronics
		9917005100	M. Mahidhar Reddy	
		9917005027	C. Balaji Reddy	
8	Bluetooth Based Car Garage Opening System	9917005104	M Sushanth Varma	International Science and Research Journals
		9917005066	K Reddy Mohan Reddy	
		9917005059	G Pavan Kumar	
9	Design and Analysis of Nano Antenna For Satellite 5G Applications	9917005058	Gurram Puneeth	Journal of Huazhong University of Science and Technology
		9917005005	Akula Yogendra	
		9917005203	P Bhargav Reedy	
10	Motor Cycle Start-Stop System Based on Intelligent Biometric Voice Recognition and only by wearing helmet	9917005013	Balan Abhilash	Annals of Romanian Society of Cell Biology
		9917005133	P. Lakshmi Narayana	
		9917005087	Kotte Rajesh Kumar	
11	Diabetic Retinopathy Detection	9917005011	Bakkireddy Manjusha Reddy	International Journal of Emerging Technology in Computer Science and Electronics
		9917005015	Battula Venkateshwara Rao	
		9917005029	Dodla Thorana	
12	Embedded Digital IC Tester for Structural Testing using Arduino Microcontroller	9917005173	S. Rajeswari	International Journal of Creative Research Thoughts
		9917005114	M. Anusha	
		9917005210	B.A. Anoohya	
13	Detecting Helmet using Deep Learning	9917005178	Tadala Subbarao	Annals of Romanian Society of Cell Biology
		9917005195	Yeravati Karunakar Reddy	
		9917005183	Vanipenta Vishnu Vardhan Reddy	
14	An Optimized Image Watermarking Method Based on HD and SVD in DWT Domain	9917005061	Idiga Divya Bharathi	International Journal of
		9917005081	Kondamuri Kotappa Naidu	
		9917005222	Leti Sri Vaishnav	

				Advance Research, Ideas and Innovations in Technology
15	Prediction of Heart Disease using Big Data Analytics	9917005186	Vemuri Gopi Krishna	Annals of Romanian Society of Cell Biology
		9917005194	Yenduru Sri Sai Naveen	
		9917005086	Kothuru Surya Sai Pranith	
16	Development of Smart Stick for Visually Challenged People	9917005108	M. Vineeshreddy	Annals of Romanian Society of Cell Biology
		9917005119	N.B. Sahul	
		9917005080	K. Sreenath	
17	Wireless Sensor Networks-Density Based Traffic Controller	9917005147	Regula Venkata Ravi Chowdary	Annals of Romanian Society of Cell Biology
		9917005020	Boddu Sreekanth	
		9917005093	Kukkapalli Charan Teja	
18	Night Surveillance Military Spying Robot using Raspberry Pi	9917005219	V. Jayapriya	Annals of Romanian Society of Cell Biology
		9917005085	K. Hima Bindu	
		9917005168	S. Pravallika	
19	Solar Panel Cleaning Robot using Wireless Communication	9917005077	R. Keerthivash	Annals of Romanian Society of Cell Biology
		9917005153	K. Santhosh Kumar	
		9917005097	S. Magesh Raj	

Patent details

5 student batches did apply and got published of patents of their project work during the Academic Year 2020-21; the details are mentioned in Table 2.2.3.13.

Table 2.2.3.13 Patent published in the academic year 2020 - 21.

S. No	Project Title	Reg. No	Name of the Students	Patent Name
1	Anger prediction and control using machine learning	9917005135	P. Chakraesh	Indian Patent office: No. 2021410075 82
		9917005146	R. Siva Rakesh	
		9917005115	N. Sumanth Reddy	
2	IoT based temperature and humidity monitoring system for agriculture purpose	9917005134	Peddireddy Harivaardhan Reddy	Patent: No. 2021410229 37
		9917005137	Poola Venkata Varun	
		9917005130	Patan Salman Khan	
3		9917005132	P. Ammaar	
		9917005112	T. Monish Kumar	

	Real patient health monitoring and Indication to doctors using IoT	9917005001	A. Rahul Kumar Reddy	Patent: No. 2021410228 56
4	Smart airflow of nebulizer using IoT	9917005047	Gokul T	Patent
		9917005090	Krishna Kumar R	
		9917005018	Bhagath Mohamed A	
5	Facial Recognition Automatic Door Opener using Mechanical Transmission	9917005092	Krishnapriya J	Industrial Control Systems - Theory and Applications

Community Service Project

The community project is based on students helping society and solving their problems using the knowledge gained during academic study. The Project comprises a need analysis followed by a solution to the problem identified in the need analysis. The main aim is to find a novel solution for the farming community. The rural community really needs the ease of solution for their problems cost-effectively. Students have visited nearby villages and enquired and surveyed about their needs and the difficulties they're facing, as shown in Figure 2.2.36





Figure 2.2.16: Students when they visited nearby villages for surveying and enquiring about their needs.

The community project is reviewed by experts in the corresponding field of study. The suggestions are made based on the problems and solutions adapted for the problem; if satisfactory, the Project progresses in the design and implementation phase. The students are advised to find an economical way for the fabrication process because the solutions may be helpful for rural communities. After implementation, the product is tested for its performance. The score is based on the project performance, reviewer comments, and scores by the community—list of Community service projects published in the conference/journals and patents.

The total number of CSP projects carried out in the academic years 2018-19 and 2019-20, and their corresponding publications are mentioned in Table 2.14 with the percentage count has for each year.

Table 2.14 Total CSP projects and publications during academic years 2018-19, 2019-20, 2020-21 and 2021-2022.

Academic Year	Total Number of CSP Projects	Publication count
2018-2019	64	24
2019-2020	52	19
2020-21	42	37

CSP Publication chart:

The total number of CSP projects undertaken and the papers published for the related projects have been represented graphically in Figure 2.2.17. The percentage count has also been presented along.

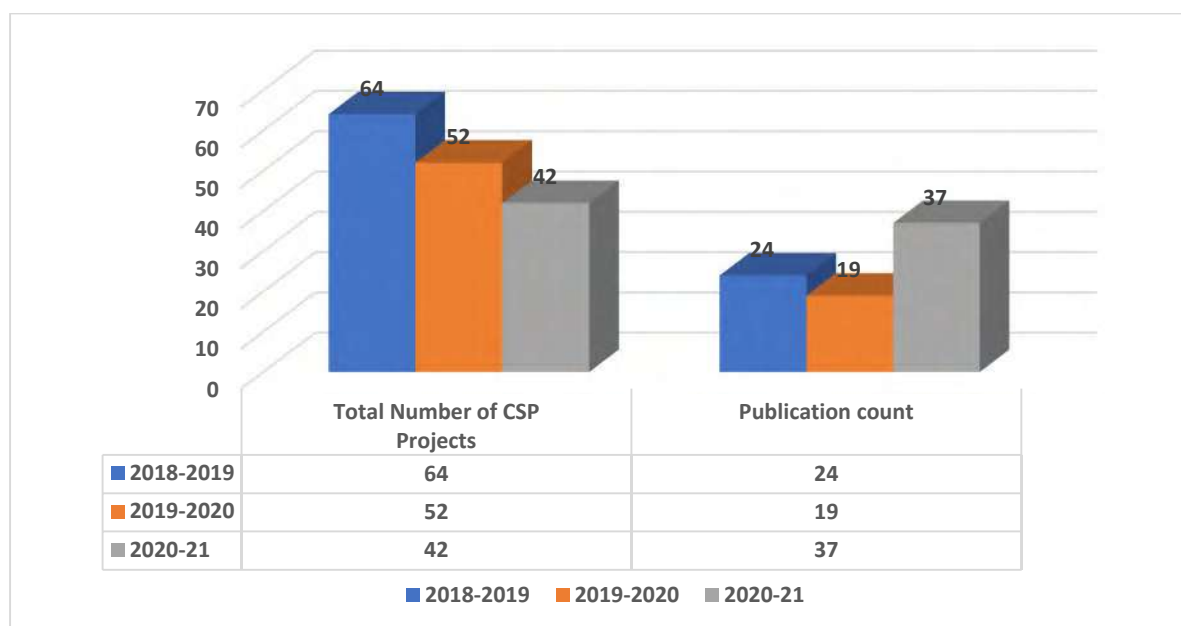


Figure 2.2.17 Total number of CSP projects and publications in the academic years 2018-19, 2019-20 and 2020-21.

Academic Year 2018-2019 – Publications

Conference Publications

The conference publications of students who carried out CSP projects during the academic year 2018-19 have been listed in Table 2.15. Nearly 13 student batches have done CSP projects with good publications, including IEEE conference.

Table 2.15 Conference publications of students who did CSP projects from 2018-19.

S. No	CSP Project Title	Reg. No	Name of the Students	Conference Name
1	Automatic Light Dimmer and Dippers	9916005028	Challa Haveesh Kumar	Kalasalingam Global Conference (KGC 2019)
		9916005089	Mahimaluru Charan Teja Vyas	
		9916005054	Guntaka Kumar Sai Reddy	
2	Auto Shutoff Pump to Reduce Water Overflow	9916005033	Chintha Mohan Sai Sampath Kumar	Kalasalingam Global Conference (KGC 2019)
		9916005083	Kotha Venkata Girishkumar	
		9916005176	Yanagandla Bharath Kumar Reddy	
		9916005078	Kesara Durga Reddy	
3	Automatic Watering System for Plants using Arduino	9916005027	Boya Rakesh	Kalasalingam Global
		9916005002	Adapala Rohan	
		9916005008	Akula Sreekanth	

				Conference (KGC 2019)
4	Water Quality Monitoring System for Water Tanks	9916005004	Aishwarya S	Kalasalingam Global Conference (KGC 2019)
		9916005145	Shivani K	
		9916005058	Indiradevi Nachiyar S R	
5	Automatic RFID based Bus Pass System	9916005188	Kodidela Harish Kumar	Kalasalingam Global Conference (KGC 2019)
		9916005052	Gumpu Janardhan	
		9916005166	Vankadara Jaswanth Reddy	
6	Wireless Monitoring and Decision Making for Water Saving in Agriculture	9916005037	Deris R	Kalasalingam Global Conference (KGC 2019)
		9916005021	Bavathaarani B	
		9916005001	Abarna S	
		9916005126	Praveena K	
7	Garbage Monitoring System using GSM	9916005118	S.P. Arkavi	Kalasalingam Global Conference (KGC 2019)
		9916005106	V. Nandhini	
		9916005069	M. Kaleeswari	
8	Smart Security System for Women using Gsm	9916005016	A. Pranavi	Kalasalingam Global Conference (KGC 2019)
		9916005117	P. Shoba Rani	
		9916005077	S. Keerthana	
		9916005068	S. Kalaiselvi	
9	Accident Avoiding System using LABVIEW	9916005103	M. Manoj	Kalasalingam Global Conference (KGC 2019)
		9916005080	K. Kalyan	
		9916005109	N. Mahidar	
10	Automatic Irrigation System using Sensing Moisture	9916005082	K.V. Manikanta Deenadayal	Kalasalingam Global Conference (KGC 2019)
		9916005026	B. Sai Gireesh	
		9916005175	Y. Surendra Varma	
11	Smart Blind Stick	9916005113	G.S. Nivetha	Kalasalingam Global Conference (KGC 2019)
		9916005179	S. Yuva Sree	
12	Smoking Detector with Oxygen Supply	9916005165	N. Vanaja	Kalasalingam Global Conference (KGC 2019)
		9916005143	R. Sharmila	
		9916005127	R. Priyadharshini	
13	Automatic Street Light Controller Using LDR	9916005153	K. Sudhakar	International Conference on Emerging Trends in Engineering & Technology (ICETET 2019)
		9916005156	M.Suresh	
		9916005138	M.Shankar Anand	

Journal Publications

The journal publications of students who carried out CSP projects during the academic year 2018-19 have been listed in Table 2.16. Nine student batches have done CSP projects with publications in Scopus indexed and Web of Science databases.

Table 2.16 Journal publications of students who did CSP projects during the academic year 2018-19.

S. No	CSP Project Title	Reg. No	Name of the Students	Journal Name
1	Auto Shutoff Pump to Reduce Water Overflow	9916005033	Chintha Mohan Sai Sampath Kumar	3C Tecnología
		9916005083	Kotha Venkata Girishkumar	
		9916005176	Yanagandla Bharath Kumar Reddy	
2	Smart Communicative Helmet	9916005114	P Venkata Nagasai Sasidhar	International Journal of Innovative Science and Research Technology-
		9916005120	Pochareddy Chakradhar Kakshith Reddy	
		9916005071	Kamalapuri Suresh Babu	
3	Smart Cleaning System Using Arduino	9916005098	Mittapalli Harisiva	3C Tecnología
		9916005029	T Chenna Keshava Reddy	
		9916005030	Chennuru Nikhil Reddy	
4	Vehicle Accident Alert System Using GPS and GSM and Accelerometer	9916005112	D.Nivetha	Journal Of Green Engineering
		9916005101	S. Mounika	
5	Protecting Agricultural Lands from Animal Intrusion	9916005092	M. Tanmayi	3C Tecnología
		9916005051	G. Harika	
		9916005072	K. Pavani	
6	Safe Home Smart Home	9916005133	M. Rubankumar	International Journal of Electronics and
		9916005163	P.G. Uma Maheswary	

		9916005085	A. Lakshmipriya	Communication Engineering
7	Third Eye for Blind People	9817005001	M. Azeemahamed	International Journal of Electronics and Communication Engineering
		9916005107	M. Navaneethanath	
		9916005108	S.R. Naveen Prasath	
8	Humidity and Temperature Detector	9916005134	P. Sai Krishna	International Journal for Technological Research in Engineering
		9916005056	G. Harsha Vardhan Naidu	
		9916005057	A. Hilal Khan	
		9916005180	Murali Krishna D	
		9916005186	Vamsi Krishna G	
9	Patient Health Check-up using Wireless Communication	9916005207	Anil Kumar P	International Journal for Technological Research in Engineering
		9916005180	Murali Krishna D	
		9916005186	Vamsi Krishna G	

Patent details

The patent details (applied and published) of students who carried out CSP projects during the academic year 2018-19 have been listed in Table 2.17. Two student batches have applied for patents for their corresponding CSP projects and granted patents.

Table 2.17 Patents published for students who did CSP projects in the academic year 2018-19.

S. No	CSP Project Title	Reg. No	Name of the Students	Patent
1	Automatic Abnormal Yarn Tension Defection and Control in Textile Industries	9916005115	P. Ravi Teja Reddy	Patent: No. 20194101686 8
		9916005130	R. Ravicharan Reddy	
		9916005087	M. Sai Pavan	
2	Automatic Shuttle Movement Detection in Textile Industries	9817005003	Praveen Kumar B	Patent: No. 20194101686 6
		9817005004	Sathish K	
		9817005005	Sivakarthish S	

Academic Year 2019-2020 – Publications**CSP Project details**

The student batches who carried out CSP projects during the academic year 2019-20 have published their work in various reputed conferences including IEEE conference. Table 2.18 lists the details of the CSP projects and their corresponding publications for the year 2019-20. Around 19 student batches have published their work during that year.

Table 2.18 Publications of students who did CSP projects during the academic year 2019-20

S. No.	CSP Project Title	Reg. No	Name of the Students	Conference Name
1	Intelligent Automatic Speed Control and Accident-Avoidance System for Vehicle using Arduino	9917005139	Ponkala Vikas Charan Reddy	1st International Conference on Advanced Sciences and Engineering (ICASE 2020)
		9917005166	Siddi Ravi Teja Reddy	
		9917005158	Shaik Astubaigari Sohel Basha	
		9917005129	Pasupuleti Manojkumar	
2	Fingerprint Key Sensor for Vehicle	9917005112	Monish Kumar T	1st International Conference on Advanced Sciences and Engineering (ICASE 2020)
		9917005109	Mettupalli Venkata Siva Reddy	
		9917005130	Patan Salman Khan	
		9917005132	Pattan Ammaar	
3	Automatic Head Light Dimmer	9917005155	Sathya Pradeep C	1st International Conference on Advanced Sciences and Engineering (ICASE 2020)
		9917005108	Mavilla Vineesh Reddy	
		9917005163	Sharath Kumar B M	
		9917005134	Peddireddy Hari Vardhan Reddy	
4	Drunk and Drive Controller	9917005135	Peddysetty Chakraesh	1st International Conference on Advanced Sciences and Engineering (ICASE 2020)
		9917005146	Ravuru Sivarakesh	
		9917005119	Noorbonala Sahul	
		9917005115	Nagireddy Sumanth Reddy	
5	Smart Vehicle (Car Accident Indication)	9917005153	Santhosh Kumar K	1st International Conference on Advanced Sciences and Engineering (ICASE 2020)
		9917005149	Rudra Prassanth M D	
		9917005137	Poola Venkata Varun	
		9917005165	Siddhartha T	
6	Automatic Writing Machine	9917005116	Nanda Rahul Bharadwaj	1st International Conference on Advanced Sciences and Engineering (ICASE 2020)
		9917005147	Regula Venkata Ravi Choudary	
		9917005141	Pravin Kumar S	
		9917005144	Rajarajan G	

7	Smart Blind Stick	9917005164	Shrivalli K	1st International Conference on Advanced Sciences and Engineering (ICASE 2020)
		9917005113	Mounika T	
		9917005123	Pandimeena T	
		9917005150	Safana Fathima J	
8	Smart Board Using GSM Module	9917005186	Vemuri Gopi Krishna	1st International Conference on Advanced Sciences and Engineering (ICASE 2020)
		9917005194	Yenduru Sri Sai Naveen	
		9917005199	Gopa Venkatesh	
		9917005222	Leti Sri Vaishnav	
9	Collision Avoidance of Heavy Vehicles using Ultrasonic Sensors	9917005168	Singa Pravallika	International Web Conference On Smart Engineering Technologies
		9917005187	Vennapusa Mounika	
		9917005219	Vasanthu Jayapriya	
10	LPG Gas Leakage Detector and Automatic Exhauster	9917005176	Sweatha R J	1st International Conference on Advanced Sciences and Engineering (ICASE 2020)
		9917005189	Vishali S	
		9917005198	Yuva Sri J	
		9917005206	Selva Jayanthi R	
11	Design of Greenhouse Lighting Control System using Micro Controller	9917005188	Vinothini A	Virtual International Conference on Innovations in InterDisciplinary Research (VICIIDR 2020)
		9917005209	Tamil Selvi R	
		9917005223	Jayameenakshi M	
12	Driver Anti Sleep Device	9917005179	Talari Ravi Kiran Naidu	1st International Conference on Advanced Sciences and Engineering (ICASE 2020)
		9917005204	Koduru Vamsinath Reddy	
		9917005212	Podila Venu	
		9917005221	Kuppireddy Bhanupradeep Kumar Reddy	
13	Smart Parking	9917005169	Sivakoti Ram Sai	1st International Conference on Advanced Sciences and Engineering (ICASE 2020)
		9917005193	Yemireddy Chandu Vardhan Reddy	
		9917005208	Nandimandalam Venkata Vinay Varma	
		9917005217	Challa Manikanta Reddy	
14	Torrential Rain Averter	9917005173	Sugreevu Rajeswari	1st International Conference on Advanced Sciences and Engineering (ICASE 2020)
		9917005210	Bhaskarla Alivelu Anoohya	
		9917005214	Kanthuri Bhavana	
		9917005220	Kaipu Jefhanya Harshitha	
15	Smart Lighting	9917005045	Godwin S	Virtual International Conference on Innovations in
		9917005046	Gokul P	
		9917005047	Gokul T	

	System using LDR	9518005301	Jegatheswaran M	InterDisciplinary Research (VICIIDR 2020)
		9917005025	Chennamsetty Venkata Sai Teja	
		9917005028	Dandu Anilkumar	
		9917005031	Donthagani Bhargav	
16	Password Based Circuit Breaker	9917005023	Boya Vinod Kumar	1st International Conference on Advanced Sciences and Engineering (ICASE 2020)
		9917005033	Ekasi Naveen Kumar Reddy	
		9917005039	Gandam Durga Prasad	
		9917005048	Gosi Nilakanteswara	
18	Smart Wireless Mobile Charging	9917005061	Idiga Divya Bharathi	Virtual International Conference on Innovations in InterDisciplinary Research (VICIIDR 2020)
		9917005055	Gujjula Vinathi	
		9917005105	Manyam Maheswari	
		9917005069	Kamsala Archana	
		9917005098	Maguluru Surya Kumar	
		9917005084	Kotagadda Subramanyam	
		9917005072	Kanala Sai Kumar Goud	
19	Source Production for Free Energy Generation	9917005088	Kovuru Sai Pavan	3rd International Conference on Intelligent Sustainable Systems (ICISS 2020)

Academic Year 2020-2021 – Publications

CSP Project details

The student batches who carried out CSP projects during the academic year 2020-21 have published their work in various reputed conferences, including IEEE conference. Table 2.19 lists the details of the CSP projects and their corresponding publications for the year 2020-21. A large number of student batches, nearly 42 of them have published their work during that year.

Table 2.19 Publications of students who did CSP projects in the academic year 2020-21.

Batch No	Project Title	Register Number	Student Name	Outcome Of Project
1.	Wi-Fi Based Night Vision Robot	9918005015	Harish R	Second International Conference on Sustainable Technologies for Computational Intelligence (ICTSCI 2021)
		9918005032	Nirrupan Sri Varshan R	
		9918005014	Harish M S	
		9918005053	Sridhar B	

2.	IoT Based Fire Prevention System	9918005040	Puli Chaitanya	International Journal of Creative Research Thoughts
		9918005046	Rayudu Jyothi Prasad	
		9918005037	Perumalla Venkata Sainadh	
3.	Smart Medical Telemetry Acquisition System	9918005023	Madipally Hemanth Chandra	Second International Conference on Sustainable Technologies for Computational Intelligence (ICTSCI 2021)
		9918005018	Jangamreddy Pranav Reddy	
		9918005035	Pera Vivekananda Reddy	
4.	Automated Plant Watering System	9918005029	Mukkapati Ganesh Raghunadh	International Journal of Creative Research Thoughts
		9918005031	Nelavelli Brahma Manas	
		9918005045	Ravuri Sri Kanth	
5.	Sign Language Detection using Deep Learning	9918005050	Shaik Mansur	International Journal of Creative Research Thoughts
		9918005008	Chitralla Himavanth Sai Ram	
		9918005049	Seelam Naga Parameswara Reddy	
6.	Wireless Mosquito Repeller	9918005043	Ravalakullu Mastan	International Journal of Creative Research Thoughts
		9918005034	Pasupuleti Venkata Ganesh	
		9918005026	Meda Venkata Ganesh	
7.	Smart in Sync Cylinder Reserving and LPG Gas Tracking System	9918005019	Jolin Dorrothi J	3rd IEEE International Conference on Advances in Computing, Communication Control and Networking (ICAC3N-21)
		9918005033	Nithya Shree R	
		9918005047	Sailanjali Ajitha S	
8.	Android Based Alcohol Detection System using an IoT	9918005030	Murarisetty Venkata Rahul	International Journal of Creative Research Thoughts
		9918005039	Porumalla Naveen Gandhi	

		9918005038	Polamreddy Kranthi Kumar Reddy	
		9917005133	Pedapudi Lakshmi Narayana	
9.	Android Based Voice Controlled Home Application	9819005005	Padmanabhuni Sai Hemanath	International Journal of Creative Research Thoughts
		9918005003	Bommu Sai Vivek	
		9918005052	Soma Venkata Vamsi	
10.	Self Defending System	9918005001	Chundru Satwik	International Journal of Innovative Science and Research Technology
		9918005028	Mekala Rohith Reddy	
		9918005020	Kotturu Praharsa	
11.	Obtaining Lubricants using Polycarbonate Plastic Substrate	9918005004	Chaluvadi Tushara Supriya	International Journal of Advance Research, Ideas and Innovations in Technology
		9918005013	Gonugunta Anusha	
		9918005022	Kunchaparthi Deepthi	
12.	Accidents and Disaster Management in Firework Industries	9819005001	Bathula Manikanta	International Journal of Creative Research Thoughts
		9918005036	Perumalla Bala Venkata Naga Sai Sumanth	
		9918005005	Cherlopalli Srujan Kumar	
13.	Real Time Flood Detection using Arduino Uno	9918005095	Sridharan M	International Journal of Advances in Electronics and Computer Science
		9918005093	Vankadara Jaswanth	
		9918005055	Sudhakar Reddy Venna	
		9918005057	Vanepenta Sasindhar	
		9918005061	Vottugunta Renil Kumar	
14.	Accident Identification and Alerting System Using ARM7 LPC2148	9918005084	Aenike Umesh Chandra Reddy	Second International Conference on Sustainable Technologies for Computational Intelligence (ICTSCI 2021)
		9918005072	Kakanuru Muralidhar Reddy	
		9918005075	Budugula Sandeep Kumar	

15.	Wireless Power Transmission Science Model	9918005089	Sadhu Lokaanand Reddy	Second International Conference on Sustainable Technologies for Computational Intelligence (ICTSCI 2021)
		9918005078	Busireddy Gnaneswar Reddy	
		9918005073	Vangam Chenna Reddy	
16.	IoT Based Agriculture Monitoring and Controlling System	9918005069	Yelagapudi Ravikumar	2021 6th International Conference on Communication and Electronics Systems (ICCES)
		9918005092	Nimmala Sai Krishna	
		9918005083	Gorla Manisha	
		9918005090	Kammari Hari Prasad	
		9918005064	Masula Balachandra	
17.	Automatic Text and Sound Using Hand Glove for Disambiguated and Mute People	9918005071	Chaganaboina Charan Kumar	Annals of Romanian Society of Cell Biology
		9918005080	Akula Gayathri	
		9918005079	Akula Sravani	
18.	Detection of Food Adulteration using Arduino IDE	9918005054	Subash Balaji A	Second International Conference on Sustainable Technologies for Computational Intelligence (ICTSCI 2021)
		9918005060	Vijaya Dharshini M	
		9918005088	Aravind C	
19.	RFID Based Access Control System Using Arduino	9918005087	Atla Praghna	Annals of the Romanian Society for Cell Biology
		9918005082	Elluru Thanusha Reddy	
		9918005096	Prabhavathy S K	
		9918005091	Katuru Chakravarthi	
		9918005068	Angirekula Venkata Krishna	
20.	Digital Fuel Indicator Using Arduino Uno	9918005086	Pidugu Ramprasad	Second International Conference on Sustainable Technologies for Computational Intelligence (ICTSCI 2021)
		9918005085	Challa Venkata Reddy	
		9918005097	Boyapati Sai Prasad	

21.	Bank Locker Security System Using QR Code	9918005081	Makam Surya Teja	Annals of the Romanian Society for Cell Biology
		9918005070	Shaik Mohin Basha	
		9918005076	Kakumani Pavan Kalyan	
22.	Air Pollution Monitoring System	9918005124	Veerapalli Maneesha	Second International Conference on Electronics and Sustainable Communication Systems (ICESC 2021)
		9918005127	Karnati Alekhya	
		9918005150	Mopidevi Vaishnavi	
23.	Automatic Injection System for Healthcare Applications	9519005301	Pavithra E	Patent: No.202141022991 A
		9918005120	Kurugunta Joshna	
		9918005122	Ediga Bhuvaneswari	
24.	RFID Based Smart Phone Interfaced Guidance System for Visually Challenged Person	9918005104	Mallavarapu Tarak Gopi	Turkish Online Journal of Qualitative Inquiry
		9918005106	Pagadala Kishore	
		9918005123	Jammigunpula Srinivasa Rao	
25.	Solar Powered Smart Ultrasonic Insects Repellent with DTMF and Manual Control for Agriculture	9918005129	Modepalli Surendra	International Journal of Creative Research Thoughts
		9918005135	Kure Venugopal	
		9918005138	Sake Vinay	
26.	Automated System to Monitor and Prevent the Spreading of Contagious (Sars Cov-2) Diseases using Screening Methodology	9918005117	Balagonda Pavan Kalyan	International Journal of Engineering Applied Sciences and Technology
		9918005115	Musalappagari Chenna Reddy	
		9918005113	Harish R	
27.	A Smart Paperless Electronic Ticketing System using RFID and Bluetooth Technologies	9918005107	Podaralla Ganesh Kumar Reddy	4th International Conference on. Inventive Research in Computing Applications (ICIRCA 2021)
		9918005119	Bobburi Venkatesh	
		9918005116	Thathannagari Narendra	
28.	Gas Leakage Detection System using NodeMCU and Blynk Software	9918005133	Gorla Sujana Souri	5th International Conference on Electrical, Electronics, Communication, Computer
		9918005134	Gummala Sainath Reddy	
		9918005143	Panditi Prem Sagar	

		9918005111	Arcot Venkata Sai Mahesh	Technologies and Optimization Techniques (ICEECCOT 2021)
		9918005110	Thirumuru Nikhil	
29.	Real Time Transformer Health Monitoring System	9918005118	Bobburi Anil	International Conference on Computer Communication and Informatics (ICCCI 2022)
		9918005121	Anam Sai Kumar Reddy	
		9918005125	Yenumula Gopishankar	
30.	Fall Detection and Avoidance System for OLDSTers	9918005145	Shaik Imran	Patent: No.202141022991 A
		9918005109	Sadda Ashok Reddy	
		9918005146	Rachakonda Dharmendra	
		9918005132	Ferasian C	
		9918005103	Kukkapalli Suresh	
31.	Implementation Of Smart Monitoring System in Vertical Farming by USING NodeMCU	9918005128	Sareddy Amarnath Reddy	3rd International Conference on Advances in Computing, Communication Control and Networking (ICAC3N 2021)
		9918005112	Devulapalli Ram Prasad Reddy	
		9918005137	Pulivendula Jameel Ahmed	
32.	Automatic Locking of Motor with Alcohol Detection using Embedded and AT89S52	9918005114	Polu Balaji	GIS Science Journal
		9918005144	Badavula Kumar Teja	
		9918005108	Pokala Vishnu Vardhan Reddy	
33.	Arduino Based Surveillance Robots for Magnetic and Ultrasonic Sensing	9519005302	Godwin C	4th International Conference on. Inventive Research in Computing Applications (ICIRCA 2022)
		9519005304	Santhosh Kumar J	
		9918005149	Sathish Kumar A	
34.	GSM Based Patient Monitoring System	9519005303	Aswin Bharathi P	International Journal of Innovative Science and Research Technology
		9519005305	Subash Raj B	

Project Contest

The students doing CSP projects are also encouraged to participate in project contests conducted within the university. The students also secure prizes in the University level completions. The project demonstration details and the winners are given in Figure 2.2.18



Figure 2.2.18 Winners of the project demo contest held on November, 2021.

The name of the award was Dr. A.P.J. Abdul Kalam Young Scientist award. The project exhibition was held on 26th November 2021, in the Department of ECE. A display of the brochure is shown in Figure 2.2.19



Figure 2.2.19 Brochure leaflet of the project exhibition event held in the Department of ECE on 26th November 2021.

Best Community Service Project (2020-21)

1. Title: AUTOMATIC INJECTION SYSTEM FOR HEALTHCARE APPLICATIONS

9519005301 PAVITHRA E

9918005120 KURUGUNTA JOSHNA

9918005122 EDIGA BHUVANESWARI

Name of the guide: Dr. V. Muneeswaran

2. Title: AUTOMATED SYSTEM TO MONITOR AND PREVENT THE SPREADING OF CONTAGIOUS (SARS COV-19) DISEASES USING SCREENING METHODOLOGY

9918005117 - Balakondapavankalyan

9918005115 – Musallapagari Chenna Reddy

9918005113 - Hariesh

Name of the guide: Mr. G. Ramesh

3. Title : Accident Identification and Alerting System Using ARM7 LPC2148

9918005084 AENIKE UMESH CHANDRA REDDY

9918005072 KAKANURU MURALIDHAR REDDY

9918005075 BUDUGULA SANDEEP KUMAR

Name of the guide: Dr. B.Perumal

2.2.4. Initiatives related to industry interaction (10 / 10)

(Give details of the industry involvement in the program such as industry-attached laboratories, partial delivery of appropriate courses by industry experts etc. Mention the initiatives, implementation details and impact analysis)

A. Industry-supported laboratories.

The department has industry-supported labs, through which students can access their required software/hardware for the project-related works. The labs are also utilized to conduct value-added courses and one-credit courses. The lab details are given in Table 2.20

Table 2.20 List of Industry-sponsored labs

S. No	Lab Name	Sponsored By	Year Of Establish	Amount
1.	Tessolve Lab	Tessolve Semiconductors, Bangalore	2018	Rs. 4,05,699
2.	Digital Signal Processing And System Design Lab	Microsoft India, Bangalore	2014	Rs. 45, 13,937
3.	Technology Innovation Center – Ni Lab	National Instruments, Bangalore	2014	Rs. 1,83,12,474.05
4.	VLSI Lab	Xilinx, USA	2014	Rs. 37, 94,194
5.	VLSI Research Lab	DST Fist Funding	2015	Rs. 22, 94,443
6.	DSP Lab	DST Fist Funding	2015	Rs. 30, 34,102
7.	Microprocessor And Microcontroller Laboratory	AICTE Modrobs Funding	2019	Rs. 3, 74,581

Industrial supported laboratories are given in the table below in Table 2.21

Table 2.21 List of equipment for different laboratories

Open-Source Lab (Tessolve Lab)		
S.No	Items Description	Quantity
1	LG-Lite Ate With Universal Load Board 50mh,Lpg 125	05 Nos
Digital Signal Processing And System Design Lab		
S.No	Items Description	Quantity
1	LAN-T Trainer Kit (Benchmark)	13
2	MATLAB R2014a	10
	Parallel Computing Toolbox	2
	Optimization Toolbox	2
	Global Optimization Toolbox	2
	Neural Network Toolbox	2
	Fuzzy Logic Toolbox	2
	Signal Processing Toolbox	2
	DSP System Toolbox	2
	Communication System Tool Box	2
	Wavelet Toolbox	2
	RF Toolbox	2
	Image Processing Toolbox	2
	Image Acquisition Toolbox	2

	MATLAB Coder	2
	HDL Coder	2
	HDL Verifier	2
	Fixed Point Designer	2
	Fitter Design HD Coder	2
	MATLAB Compiler	2
	Simulink	2
3	Rsoft OPTSIM V2015.06 Software Node Locked Academic Perpetual Licence For Windows 7/8	1
<u>NI TECHNOLOGY INNOVATION CENTRE LAB</u>		
S.NO	ITEM DESCRIPTION	QUANTITY
1.	Power Chord 250v,10A	16
2.	Pitsco My Quake,Quantity 5	1
3.	Pitsco My VTOL,Quantity 5	1
4.	Pitsco My Temp,Quantity 5	1
5.	Emona My DSP,Quantity 5	1
6.	Emona My GLCD,Quantity 5	1
7.	NI My Rio Kits:Mechatronics Kit Common Sensors And Actuators For Mechatronics Projects	4
8.	NI My RIO:Embedded Kit Common Sensors,Devices And Display For Embedded Projects	4
9.	Stratom CAN Adates For My RIO	4
10.	Evaluation Unit Of Nimy RIO(Academic Custom Only)	4
11.	Emona Date Telecommunication Board For ELVIS(Board Only)	4
12.	Emona ETT-Scope Set	4
13.	Emona ETT-2mm-Pc Set	4
14.	Emona ETT-2/4mm-DM Set	4
15.	Emona ETT-211 FOTEX Fiber Optic Communication Trainer For NI ELVIS	4
16.	Emona ETT –Scope Set	4
17.	Emona ETT-2mm-Pc Set	4
18.	Emona ETT-2/4mm-DM Set	4
19.	Emona ETT-FO Patch Set	4
20.	NI Digital Electronics FPGA Board	4
21.	Quanser QNET Dc Motor Board For NI ELVIS (Academic Only) Lab VIEW Control Design And Simulation Module And PID Toolkit	1
22.	Emona Sigex Signal And Systems Experiment For NI ELVIS (Board Only)	4

23.	Software Radio Educational Lab Station:Two NI USRP-2920 Bundles With Lab Materials	2
24.	144 MHZ,400 MHZ,1200 MHZ Tri-Band 7-Inch Vertical Antenna	8
25.	NI ELVIS 2+Hardware(For Academic Only)	16
26.	NI Sb RIO Inverter GPIC Evaluatio(SW Eval,Sb RIO-9606,NI-9683,PS-2,Stands Offs,Screws)	1
27.	CRIO-9076 Integrated Controller And Chassis Systems 400 MHZ Power Pc Controller,LX45 Gate FPGA,4-SLOTS	2
28.	Nips-15 Power Supply ,24-VDC,5A,100-120/1200-240V VAC Input	4
29.	CRIO-90688-Slot Integrated Controller And Chassis System, Artix-7FPGA	2
30.	NI 9201 Screw Term,+/-10V ,12-Bit,500 Ks/S,8 -Ch A1 Module	2
31.	NI 9263 Screw Term,+/-10v ,16-Bit,100 Ks/S/Ch,4-Ch Ao Module	2
32.	NI 9421 Screw Term,24v, 100s S-Ch Sinking D1 Module	2
33.	NI 9472 S-Ch 24v,100s, Sourcing Do Module	2
34.	NI 9227 4ch Current Input,5Amp,180,50k,24-Bit	2
35.	NI 9244,400 Vrms L-N,24-Bit,50ks/S/Ch,3-Ch,Aimodule	2
36.	CDACS-9184 Compact DACS Chassis(4 Slot Ethernet)	2
37.	NIPS-IS Power Supply,24 VDC,5A,100-120/200-240VAC Input	2
38.	Cable Assembly,CAT-5E Ethernet,Thin Profile,2m	2
39.	NI 9201 Scerw Term,+/-10v,12-Bit,500 Ks/S,8-Ch A1 Module	2
40.	NI 9263 Screw Term ,24v,100s ,8-Ch Sinking D1 Module	2
41.	NI 9263 Screw Term,+/-10v ,16-Bit,100 Ks/S/Ch,4-Ch Ao Module	2
42.	NI 9472 S-Ch 24v,100s,Sourcing Do Module	2
43.	NI My DAQS-University Kit Hardware Only	30
44.	NI Academic Site License-Labview Teaching Only ASL 1 Seats NOT CONCURRENT 1year Academic Sute License Teaching Standard Service Program	1
45.	NI Academic Site License Multisim Teaching Only ASL 1 Seats NOT CONCURRENT 1 Year Academic Site License Teaching Standard Service Program	1

Ni Technology Innovation Centre Lab System & Software Details

S.No	System Configuration	No. Of System
1.	<u>Software Installed:</u> 1. Labview 2014 -	60 Nos
	2. Multisim	60 Nos
	3. Matlab2019	60 Nos
	4. Cst Studio (Student Version)	50 Nos

5. Modelsim Software		45 Nos
<u>VLSI DESIGN LAB:</u>		
S.NO	ITEMS DESCRIPTION	QUANTITY
1.	UNIVERSAL- MULTIVENDOR DEVELOPMENT KIT	3
2.	UNIVERSAL CPLD/FPGA VHDL TRAINER KIT WITH XILINX	3
3.	ARM MICRO CONTROLLER KIT	1 SET
4.	FPGA BOARD NEXYS-3,VIRTEX-5,XUP-5)	3 (each 1no)
5.	ALTERA VLSI KIT	10
6.	XCR9128XL COOL RUNNER DEVELOPMENT KIT	1
7.	XILINX SPARTAN - 3 FPGA TRAINER KIT	1
8.	ASLK V2010STARTER KIT WITH ANALOG SYSTEM	6
9.	LOGIC ANALYZER (ENIXS)	2
10.	DIGITAL STROAGE OSCILLOSCOPE	1
11.	DLP PROJECTOR WITH INTERACTIVE WITE BOARD	1
12.	ARDUINO UNO	26
13.	ARDUINO MEGA	30
<u>VLSI DESIGN LAB SYSTEM & SOFTWARE DETAILS:</u>		
S.NO	ITEMS DESCRIPTION	QUANTITY
1	System configuration (Core 2 Duo Processor, 3 GB Ram, 250 GB Hard disk	77
2	GST Studio Suite 2017	5
3	Xilinx ISE Design Suite 14.7	10
<u>VLSI DESIGN RESEARCH LAB</u>		
S.NO	ITEMS DESCRIPTION	QUANTITY
1	PANDA BOARD-TI OMAP 4460 Processor,	2
2	XTION PROLIVE MOTIN Controller Dual Camera 3D VISION Capture Analysis,	1
3	Code Composer Studio IDE 5.0	1
4	OMAPL-DSP Starter Kit,	6

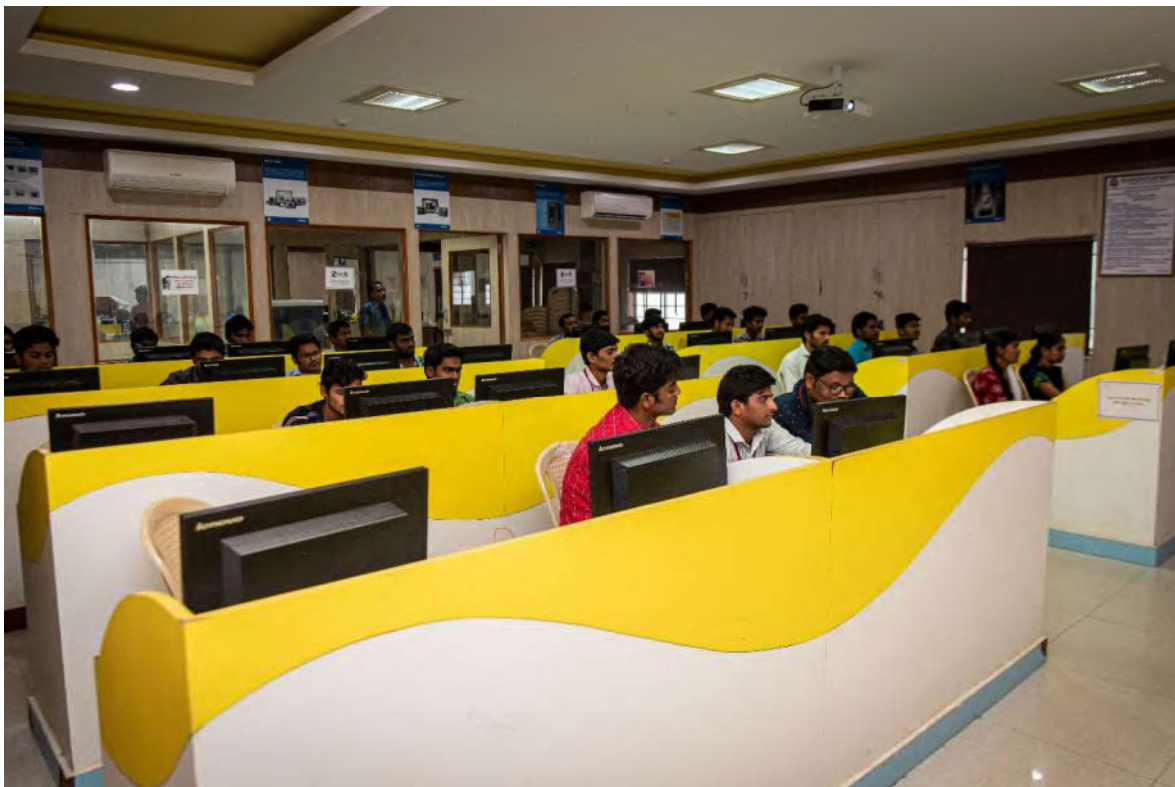
5	DM6437 Digital Video Development Kit With Emulator CSS And Camera	6
6	Multicore DSP Evaluation Module (6678)	1
7	OMAP 3730 Evaluation Module	1
8	Beagle Bone Black (CORTEX-A8) Board	1
9	Lenovo Sever – TCAD Software	1
<u>DIGITAL SIGNAL PROCESSING AND SYSTEM DESIGN LAB</u>		
S.NO	ITEMS DESCRIPTION	QUANTITY
1	LAN-T Trainer Kit (Benchmark)	13
2	MATLAB R2014a	10
	Parallel computing Toolbox	2
	Optimization Toolbox	2
	Global Optimization Toolbox	2
	Neural Network Toolbox	2
	Fuzzy logic toolbox	2
	Signal Processing Toolbox	2
	DSP System Toolbox	2
	Communication System Tool box	2
	Wavelet Toolbox	2
	RF Toolbox	2
	Image processing Toolbox	2
	Image Acquisition Toolbox	2
	MATLAB Coder	2
	HDL Coder	2
	HDL Verifer	2
	Fixed Point Designer	2
	Fitter Design HD Coder	2
	MATLAB Compiler	2
	Simulink	2
3	RSoft OPTSIM v2015.06 Software Node Locked Academic Perpetual Licence for windows 7/8	1

Sample of the students working in sponsored laboratories is as shown in the **Figure**

2.2.20 (i)



(a)



(b)

Figure 2.2.20 (i) Snapshot of Students working in Sponsored Labs

B. Industry involvement in the program design and curriculum

The program and curriculum are designed with the help of Industrial experts. The industry experts are involved in the following ways:

- In the board of studies, there will be an industry expert who is actively involved in curriculum design.
- Experts collect feedback during their visits to our campus for a one-credit course/value-added course, and their feedback will be incorporated into the curriculum where appropriate.
- A member of the industrial advisory board is also involved in the development of the program and curriculum.

Nanochip Courses:

The UG ECE program has MOU with an industry Nanochip Solutions Pvt Ltd to assist the program in curriculum development and content delivery from the academic year 2020-2021. They develop the curriculum in four modules (ASIC SoC Physical Design, RTL Verification using System Verilog/UVM, AI for Cyber Security professionals, Embedded Systems and IoT) which is on par with the current cutting-edge industrial requirements. The students are trained in those industry-standard courses and tools as a part of their skill development which helps them in getting core placements.

Curriculum Feedback from an Industry expert

Consulted with external experts and received warm feedback from them. Figure 2.2.20 (ii) a) and b) shows the curriculum feedback received from an industry expert.

Kalasalingam University
Anand Nagar, Krishnankoil-626126
Office of IQAC

Date: 9/9/16

FEEDBACK REPORT FROM EXTERNAL MEMBERS

1. Name : VIMALATHYAN, R
2. Designation : Director
3. Official Address : Keralam, Coimbatore
4. Contribution to KLU as : Expert / Guest Lecture / Alumni/IV/IPT/others ✓ ICC
5. Details of Visit :
 - a. Name of Dept. Visited : ECE
 - b. Purpose of Visit : 1 credit course
6. General observations about KLU : Excellent Infrastructure
7. About the Visiting Department :

Infrastructure : Good

Laboratories : Good

Faculty Interaction :
8. About the visiting department students :

Discipline : Good

Performance : Good

Interaction : Good

Subject strength :

Weakness :
9. Comments about KLU curriculum :

Course Name & No :

 1. ECE17R253 SIGNALS + SYSTEMS SSA in Security may not require
 2. ECE19R203 ANTENNAS + WAVE PROPAGATIONS (in case studies) Antenna Design may be included
 3. ECE17R371 MICRO PROCESSORS + MICRO CONTROLLER + INTERFACES latest MC may be included ARMADA 32
10. (a) What are the strengths of curriculum?

Most of the subjects were updated with latest technology

(b) Describe the three major weaknesses of the curriculum.

1. For Beginners: Less time given to students for introduction
2. _____
3. _____

(c) Check any of the following areas that are weak and need additional work:

_____	importance and originality of the curriculum
_____	soundness of the study design / appropriateness of the curriculum
_____	adequacy / appropriateness of analysis
_____	appropriateness of references cited

	No	Yes
I. Does the curriculum promote self study habit?	_____	<u>✓</u>
(d) II. Would the curriculum contribute to innovative thinking and develop critical analysis	_____	<u>✓</u>
III. Is the curriculum clear and concise?	_____	<u>✓</u>

(e) Additional Comments

11. Kindly comment on the LCD, A/C and other conference hall facilities.
Good

12. Kindly comment on the quality of hospitality extended
Excellent

Name & Signature of External member
Vijayarathnam R

b)

Figure 2.2.20 (ii) a) and b) Feedback from an industry expert regarding the curriculum.

Input for curriculum development from guest lecture/workshop/industrial lecture

Many workshops and guest lectures have been conducted, and those inputs are considered and incorporated, in all the major areas of ECE department such as image processing, IoT, VLSI for the 2nd 3rd and final year ECE students. The data is also incorporated into the preparation of the curriculum development process.

The curriculum development from the guest lecture for the academic year 2019-2021 is listed in Table 2.22

Table 2.22 Curriculum development by guest lectures for academic year 2019-2021.

Date	Event Type	Title Of The Event	Resource Person Details	Feedback Obtained For Curriculum Development From Guest Lectures/ Workshops From Experts
19-09-2019	Guest Lecture	Guest Lecture On "Joy Of Vision In Image Processing"	Dr. Mansoor Roomi, Asso Prof, Tce, Madurai	Image Processing Related Concepts Were Discussed
21-09-2019	Guest Lecture	Electronic Product Design And Iot	Mr. Dinesh, Mr. Ajay-E2a Technologies, Chennai	Product Design Course Is Available
25-01-2020	Guest Lecture	Guest Lecture On Fiber Optics-Challenges, Applications & Future Prospects	<ul style="list-style-type: none"> • Mr. Makesh Kannan, Lead, Reliance Jio Telecom • Mr. Moideen, Rf Engineer, Reliance Jio Telecom • Mr. Rajan, Fiber Engineer, Reliance Jio Telecom 	Various Applications And Future Implementation Methods Of Fiber Optics Were Discussed
19-05-2020 to 25-05-2020	Fdp	National Level Faculty Development Program On "Recent Trends In Wireless And Iot-Enabled Networks"	Dr. Venkatesh S, Mca, Phd., Technical Head, Elysium Academy Private Limited, Anna Nagar, Madurai. Mr.Senthilkumar, Ceo, Cofounder Of Jiovio Healthcare Mr.Mathankumar, Product Lead Mr.Deepak, Hardware Engineer Mr.Raj Gokul, R & D Engineer Mr.Vishnu, R & D Engineer Elysium Academy Anna Nagar, Madurai.	The Current Trends In Wireless Sensor Networks With Iot
11-6-2020	Training Program	Training Program On "Recent Trends On	Mr. Kiran D Technical Program Manager And Solution	Recent Artificial Intelligence And Its Evolution

		Intelligent Things (Ai & Iot) “	Architect (Iot) Mr. Murasoliselvan Karunanithi Director Engineering - Embedded, Iot And Automotive We Grow Technology Malaysia	With Iot Is Described
30-05-2020	Webinar	Research Opportunities In Iot And Robotics	Dr.Vimalathithan, Director Krish Tec, And Senior Software Engineer, Robert Bosch, Bangalore	Iot And Its Applications In Real Time
25-06-2020 to 01-07-2020	Fdp	Machine Learning With Tensor Flow	Dr. Kim , Kare	Learnt The Machine Learning Approaches With Tensor Flow
21-05-2020	Webinar	Accept No Limits (Sharing Industrial Experience And Plm Technology	Mr. Sangaran Nagendran, Plm Enovia Systems Developer, Faraday Future Inc, Los Angeles, Usa	Latest Industrial Technology Related Implementation
29-05-2020	Industrial Lecture	Different Areas Of Entrepreneurship	Mr. Hari, Director Of Big Foxx Branding & Technology, Chennai	Self-Encouragement As A Entrepreneurship Is Taught
29-05-2020	Hands-On Workshop	Image Processing Using Matlab	Dr. S. Bama, Associate Professor-Ece/Kare Dr. J. Josephine Selle, Assistant Professor-Ece/Kare	Software Implementation Of Image Processing Using Matlab
05-06-2020	Webinar	Challenges On Agile Methodology In Embedded System Projects	Mr. Malaikannan Ramaraj Embedded Software Engineer, Continental Automotive Singapore Pte. Ltd. Singapore	Hardware Implementation Of Embedded Systems
08-06-2020	Training Program	Cmos-VLSI Design	Dr. S. Krishna Priya, Associate Professor, Muthoot Institute Of Technology & Science Kochi, Kerala	VLSI Design Based Training About Complementary Metal Oxide Semiconductor
15-06-2020	Webinar	Electronic Packaging	Dr. Arun Chandrasekar Sr. Principal Engineer Packaging Technologies & Design	Electronic Components And IC Packaging

			Intel Corporation Bangalore	
17-06-2020	Webinar	5g Technologies	V. Lingasamy, Team Lead, Hcl Technologies, Bengaluru	Latest Wireless Generation Concepts
21-06-2020	Industrial Lecture	Fundamentals Of Electromagnetic Waves And Antennas	Dr. Pragnan Chakravorty Principle Director, Clique For Applied Research In Electronic Technology, Bhilai, India	The Main Fundamentals Of Electromagnetic Waves
21-06-2020	Webinar	Controller Applications In Automobiles	Mr. Venkatesan Ponnusamy, Hardware Project Manager, Visteon Technical And Service Centre, Chennai	Controller Applications
21-06-2020	Webinar	Career Guidance On Pursuing Labview	Mr. S. Sakthi Selva, Test Engineer, Tessolve Semiconductor Pvt. Ltd., Bangalore	Labview Software Guidance
05-05-2020	Webinar	Security Challenges In The Pandemic Period And Solutions	Dr.Dhinakaran Nagamalai, Vice President, Wireilla, Sydney, Australia	Safety Measures In Pandemic Period
18-5-2020	Webinar	Emerging Areas In Soc,M2m And Internet Of Things	Dr. Raj Kamal, Electronics And Communication Engineering Department, Prestige Institute Of Engineering Management And Research, Indore, Madhya Pradesh.	Internet Of Things And System On Chip Applications
22-06-2020	Industrial Lecture	Scope Of Automation In Future Industries	Er. Harish Ravi, Biass, Koyamputhoo	Atomization In Industries
22-06-2020	Industrial Lecture	Cyber Security In Iot	Mr. David N Samuel, Principal Security Engineer, Accenture (Security), Uk	Security Systems With Iot
24-06-2020	Webinar	Innovation To Reality	Mrs. S. Muthulakshmi, Freelancer	Real Time Innovations
25-06-2020	Webinar	Role Of Iot Engineer In Post Covid	Dr. K. S. Balamurugan, Associate Professor/Ece, Bharath Institute Of Engg. & Tech., Hyderabad	Iot Applications In Covid

26-06-2020	One Credit Course	Cupcarbon- Simulator Tool For Industry 4.0	Dr.Vimalathithan, Director Krish Tec, And Senior Software Engineer, Robert Bosch, Bangalore	Simulations Using Cupcarbon
29-06-2020	Workshop	Introducing The World Of Analog Ic Design	Dr. Immanuel Raja Ap-Avionics/Iist	Analog IC Design
03-07-2020	Workshop	Low Power VLSI Design Techniques	Dr. Rama Komaragiri, Dean Academic Affairs, Professor, Dept. of ECE, School of Engineering and Applied Sciences, Bennett University, UP	VLSI design techniques
25-07-2020	Webinar	Android mobile application development and testing	Mr.V.Akilan,IT analysy & programmer,ISPP global,martthandam,alumni 2009-13	Mobile application development
27-07-2020	Webinar	Decode your career path	Mrs.Selva nayagi Sundaram,Functional business analyst,unisys deucsthland Gmbh,germany	Decoding methods
25-7-2020	Webinar	Overview of HW product development life cycle	Mr.S.Sinkaravelan,Senior Technical manager,HCL chennai,alumni1999-2003	Hardware product development
17-07-2020 to 30-07-2020	FDP	Faculty Development Programme on “Analog and Digital Electronics with Programming Languages”	Nanochip Solutions	Analog and digital electronics concepts
11-08-2020	Webinar	IEEE Memership & Resources(webinar)	Dr. Lance Chun Che Fung,Emertius professor,Murdoch University,Australia	IEEE membership
24-07-2020	Industrial Guest Lecture	IC layout challenges(career guidance webinar)	Mr.Vishnu Sankar,Design Engineer,Elveego circuits bangalore,alumni 2007-11	Problems faced in IC layout desigh

31-07-2020	Industrial Guest Lecture	Python for Image Processing	Dr.V.B.Sundarabalan, Director Geosensing imaging consultancy, Former research scientist, NASA GSFC, alumni 2005-2007	Image processing with python language
01-08-2020	Industrial Guest Lecture	Importance of core competency for Electronic Engineer	Mrs.P.Karthiga, Test Engineer, Tessolve semiconductors, Bangalore, alumni	Electronic engineering core concepts
09-10-2020	FTP	“Next Generation Networks”	Mr. R. Vasu Senior IT – Training Consultant	Network communication in forthcoming generation
20-07-2020 to 25-07-2020 (Phase I),	Short Term Training Programme (STTP)	AICTE Sponsored one Week Short Term Training Programme (STTP)s on " Cyber Physical Systems (CPS) Design Techniques and Applications"	Abdul Wadood	Design techniques involved in physical design
27-07-2020 to 01-08-2020 (Phase II),	Short Term Training Programme (STTP)	AICTE Sponsored one Week Short Term Training Programme (STTP)s on " Cyber Physical Systems (CPS) Design Techniques and Applications"	Mr. Murasoliselvan Karunanithi Director Engineering - Embedded, IoT UST Global, Malaysia Mr. Sudhakar B, Technical lead -AWS Solution Architect, Wegrow Technology, Chennai Mr. Arunsenthil, Technical Lead in Networking Testing Wegrow Technology, Chennai Mr. Narendra Babu P, Technical Architect - Web Application Development, BNY Mellon Technology, Chennai Dr Sankaraiah Sreeramula, Ph.D, Head Data Scientist APP Sinar Mas, Indonesia Mr. Kanagaraj J Senior QA specialist, Grow labs Technology Pvt Ltd, Chennai	Design techniques involved in physical design

31-12-2020 to 07-01-2021	FACULTY DEVELOPMENT PROGRAM	Faculty Development Program On Artificial Intelligence & Deep Learning	1. Dr.V.Sowmaya,Associate Professor,Amrita Vishwa Vidyapeetham 2. Dr.Raj Kamal, Ph.D. (IITD) Professor/ECE Prestige Institute of Engineering Management and Research, Indore, Madhya Pradesh.3. Dr.Kyung Tae Kim Senior Prof./ECE KARE 4. Shivam Sham Agrawal Associate Professor/ETE Pankaj Laddhad Institute of Technology and Management Studies, Buldana	Artificial intelligence and deep learning methods
07-12-2020	Magazine Release	Electrocomm Vol 12 Issue 23	Prof. Korhan Cengiz, Farabi Faculty coordinator, Dept of Telecommunications,Trakya University, Edirne, Turkey	Electronics related study
02-01-2021	Industrial Lecture (Alumni placed through SAP)	IETE Sponsored Industrial Lecture on SAP Orientation Program – Next level in 2021	1. Mr. Balamuralikrishna 2. Mr. Abishek Kumar Singh 3. Mr. Sunil kumar 4. Mr. Sivasaikumar Programmer Analyst Trainee, CTS	SAP training
12-01-2021	Mini-Workshop	Ieee Sponsored Writing A Project Proposal For Funding	Dr. J. Deny, President, MHRD Innovation Cell-KARE	Project proposal writing
08-01-2021	"Eminent lecture (Industrial Expert - Alumni)"	Iei Sponsored IOT and Digital Transformation	Mr. K. Nikhil Vannan, Design Engineer, Kalycito InfoTech Pvt Ltd, Coimbatore	IIOT lecture
05-01-2020	Industrial Lecture	Industrial Lecture on AI For Smart Devices	Dr.Athif sha,Founder,ABE semiconductors	Artificial intelligence based smart devices
07-01-2021	Webinar	A carrer guidance webinar "Machine learning and its industrial role in association with The Institution of Engineers (INDIA)	Ms. Baslis Divya Data Associate, Amazon, Alumni - ECE, KARE	Machine learning based career guidance
10-01-2021	WORKSHOP	Workshop On Android Mobile Application Development In Association With	Mr. V.C.Agilan, Alumini (2009-2013) IT anlyast ISPP Global	Android mobile app development

		Institution Of Engineers (India)		
05-01-2021	Industrial Lecture	Embedded system development cycle (IEI)	M Shanmugam System Engineer Coimbatore Bosch	Embedded systems design
13-01-2021	Industrial Lecture	National Level Industrial Lecture On “How The Latest Technology Impact Our Current Industry?”	Mr.C.Navagridhar Ramsait MEAN Stack Developer Farshore	Industrial impact
11-01-20	Industrial Lecture	“Introduction To Rtl Design For Combinational And Sequential Circuits And Opportunities In Semiconductor”	S Rengaraja Southkorea	Design of RTL
20-03-2021	Seminar	Webinar on Inverters in Electronic Cars and Bootloader in Automotive Industry	Mr. Peri N Thiagaraj (1998-2002 ECE), Feature Group Lead, Bootloader, Valeo Siemens eAutomotive GmbH, Germany	Automations in industry
12-06-2021	WORKSHOP	Workshop on applications of Industry info in Automotive Electronics based on MCU8051IDE - An open source tool	Mr. Muthurasu Beemarajan (2000-2004 ECE) Senior Project Manager, Robert Bosch Engineering and Business Solution Pvt Ltd Coimbatore, Mr. Mukuntharaj C AP/Karpagam college of Engineering, Coimbatore	MCU8051 IDE based electronic design
11-06-2021 to 16-06-2021	FDP	Handson FDP on Statistical and Machine Learning ASIC Design Flow with Embedded IoT	Dr.Nagarajan Ms. Nagma Ms. Vijayashree Ms. Srinath Ms. Shilpa	ASIC design methods with IOT

C. Industry Involvement in Partial Delivery of any Regular Courses for Students

Industry experts take part in the CGPA and Non CGPA activities such as value-added courses and one credit courses. This enables the students to update the latest Technologies and motivates them to excel in industrial needs. Department of Electronics and Communication Engineering has a collaborative MOU with Nanochip Technologies for carrying out the curriculum design regarding the core specific courses, skill development and professional ethic courses. Also, they conduct the FDP for the efficient

preparation of the specified course for the forthcoming semester. And they involve in partial delivery of the course content.

FDP for Nanochip Collaborated Courses

Each semester for the nanochip courses, there is conducted seminar as an elective course for the students for every new offering course. The nanochip engineers also conduct specific FDP to the KARE faculties. All the faculty staff of the ECE department attends the nanochip FDP with full-time participation in learning. The faculty have studied and learned different components of the subject and the related tools, software(s), and pedagogical method helping the students to understand such courses better. Figure 2.2.21 details one of such events organized in the department.

TOPICS TO BE COVERED

- ❖ ELECTRONIC DEVICES:
 - Analysis of diode characteristics from the data sheet
 - Transistor characteristics and data sheet analysis
 - MoSFET and CMOS
- ❖ DIGITAL SYSTEM DESIGN
 - Boolean Algebra
 - Analysis and Design of Combinational Circuits
 - Analysis and Design of Sequential Circuits
- ❖ C ESSENTIALS
- ❖ PYTHON PROGRAMMING
 - Python Basics
 - Functions, Modules
 - Files and Exception
 - Data Science
 - Database connectivity and Internet Programming
- ❖ VERILOG HDL PROGRAMMING

RESOURCE PERSONS

The experts from Nanochip Solutions, Bangalore

ORGANIZING COMMITTEE

CHIEF PATRONS

"Ilaya Vallal" Dr. K. Sridharan
Chancellor

Dr. S. Arivazhagi
Pro-Chancellor

Dr. S. Shari Anand
Vice President

Mr. S. Arjun Kalasalingam
Vice President

PATRONS

Dr. R. Nagaraj
Vice-Chancellor

Dr. V. Vasudevan
Registrar

CONVENERS

Dr. D. Devanaj
Dean – SEET

Dr. M. Kalpana
HoD – ECE

COORDINATORS

Mr. P. Manikandan-Assistant Professor
Mr. G. Ramesh-Assistant Professor

Department of ECE
School of Electronics and Electrical Technology
Kalasalingam Academy of Research and Education
Krishnankoil, Srivilliputhur, Tamil Nadu – 626126

KALASALINGAM
ACADEMY OF RESEARCH AND EDUCATION
(DEEMED TO BE UNIVERSITY)
ESTD ON 3 OF DEC 2018. Accredited by NAAC with "A" Grade
Awarded Degree by Government of Tamil Nadu

TWO WEEKS
FACULTY
DEVELOPMENT PROGRAM
ON
"ANALOG AND DIGITAL
ELECTRONICS DESIGN
WITH
PROGRAMMING LANGUAGES"
17th - 30th July 2020
Organized by
Department of Electronics and Communication Engineering
School Electronics and Electrical Technology
Kalasalingam Academy of Research and Education
In Collaboration with
NANOCHIP SOLUTIONS
Bangalore, INDIA

Figure 2.2.21 Brochure of FDP for Nanochip collaborated courses

The agenda for the whole program is given in Table 2.23

Table 2.23 Agenda for the Nanochip course FDP.

Date	FN (10:00 a.m.-12:00 p.m.)	AN (2:00p.m.-4:00 p.m.)
17-02-2020	Inaugural (9:30am-10:00am)	
17-02-2020	Electronics devices	Electronics devices
18-07-2020	Electronics devices	Electronics devices
20-07-2020	Electronics devices	Embedded System
23-07-2020	Embedded System	Python Programming
24-07-2020	Embedded System	Python Programming
25-07-2020	Embedded System	Python Programming

27-07-2020	Embedded System	Python Programming
01-08-2020	Verilog Programming	Verilog Programming
03-08-2020	Verilog Programming	Verilog Programming
08-08-2020	Verilog Programming	Valedictory

Content Delivery by Nanochip Engineers.

Talk about semiconductor property was conducted by Mr. Kaushik, an engineer from Nanochip solutions, as shown in Figure 2.2.22

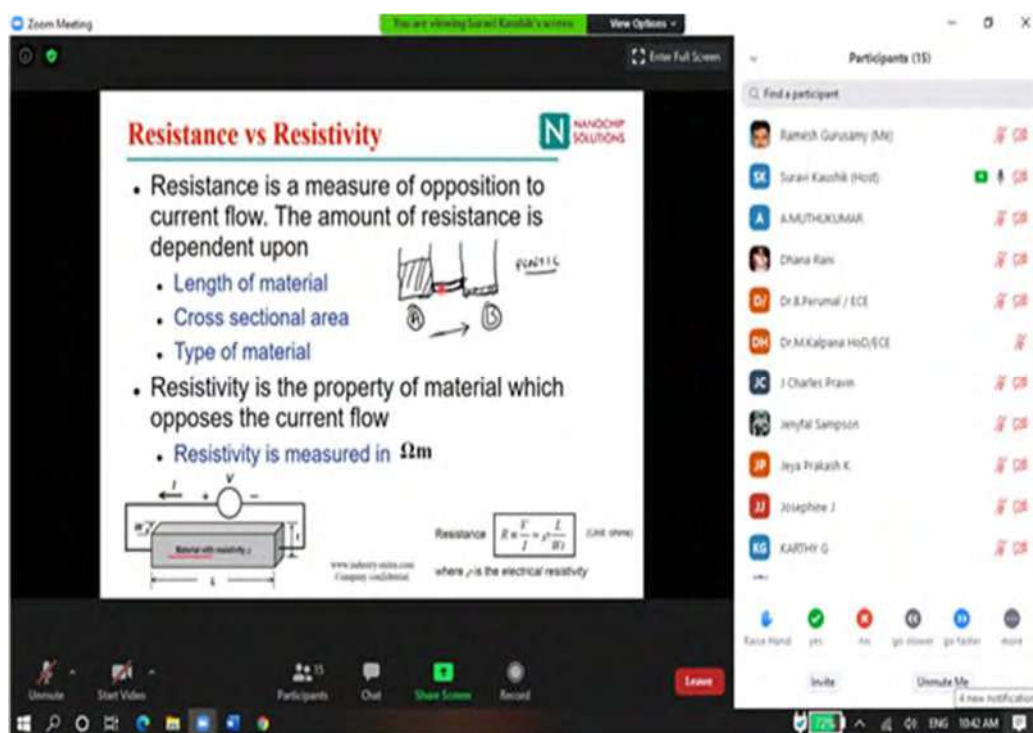


Figure 2.2.22 Mr. Kaushick giving a presentation about the semiconductor property through Zoom

The syllabus for those courses and the course content (PPT and Videos) of all the topics of the courses has been provided by the industry peers and will be available for the students in industry mitra portal. The 50 % of the course content delivery which include application and case studies will be done by the engineers from industry. The details have been given below, in Fig. 2.2.23 a), and b).

The screenshot shows the Industry Mitra portal homepage. The header includes the 'industry Mitra' logo, navigation links for COURSES, PRODUCTS, JOB MARKET, TOP CENTRAL, and CONTACT, and a user profile for DR. CHARLES PRAVIN J. The main banner reads 'KALASALINGAM UNIVERSITY TRAINING' with a 'Home / Kalasalingam University Training' breadcrumb. Below the banner, the 'MY COURSES' section displays three course cards: 'C Essentials' (Aug2021), 'Electronic Devices For Engineers (Section I-A)' (Aug2021), and 'Electronic Devices For Engineers (Section I-B)' (Aug2021). A 'Subcategories' sidebar on the right lists various categories like Aug2021, Electronics Engineering, and FDP Dec2021. An 'Instructor Rating' section is also visible.

a)

The screenshot shows the course content page for 'Introduction to Embedded Systems'. The page indicates that 83% of the course is completed. The content is organized into units, with '1. Unit1' expanded to show five sub-units: 1.1 Introduction to Embedded Systems, 1.2 Introduction to Embedded Systems-Part1, 1.3 Introduction to ARM, 1.4 Introduction to ARM - Part1, and 1.5 ARM7TDMI Signal Interface. Each sub-unit contains a video lecture and lecture notes, both with 'UnPublish' buttons.

b)

Fig. 2.2.23 a) and b) Industry mitra portal which has the Nanochip course content

2020-21 ODD Nanochip Courses:

The ODD semester courses integrated with Nanochip solutions, for the academic year 2020-21 is given in Table 2.24.

Table 2.24 Nanochip solutions integrated ODD semester courses for the academic year 2020-21.

S.No	Course Code	Course Name	Nanochip resource person	Designation
1	ECE18R171	Electronic Devices	Mr. Kaushik	Manager Design Engineer
2	ECE18R237	C Essentials	Ms. Nagma	Senior Design Engineer
3	ECE18R350	Python Programming for Electronics Engineers	Dr. Nagarajan	Senior Program Coordinator
4	ECE18R239	RTL Design using Verilog HDL	Ms. Vijayasree	Design Engineer

2020-21 EVEN Nanochip Courses:

The EVEN semester courses integrated with Nanochip Solutions for the academic year 2020-21 is given in Table 2.25 (i)

Table 2.25 (i) Nanochip solutions integrated EVEN semester courses for the academic year 2020-21.

S.No	Course Code	Course Name	Nanochip resource person	Designation
1	ECE18R172	Digital Circuits and System Design	Mr. Kaushik	Manager Design Engineer
2	ECE18R251	Data Structures	Ms. Nagma	Senior Design Engineer

3	ECE18R23 6	Linux and Shell Programming	Ms. Shilpa	Design Engineer
4	ECE18R45 4	Cryptography and Network Security	Dr. Nagarajan	Senior Program Coordinator
5	ECE18R23 8	Linux and Regular Expressions	Ms. Shilpa	Design Engineer

2021-22 ODD Nanochip Courses:

The ODD semester courses integrated with Nanochip Solutions for the academic year 2021-2022 is given in Table 2.25 (ii)

Table 2.25 (ii) Nanochip solutions integrated ODD semester courses for the academic year 2021-22.

S.No	Course Code	Course Name	Nanochip resource person	Designation
1	ECE18R237	C Essentials	Ms. Nagma	Senior Design Engineer
2	ECE18R350	Python Programming for Electronics Engineers	Dr. Nagarajan	Senior Program Coordinator
3	ECE18R239	RTL Design using Verilog HDL	Ms. Vijayasree	Design Engineer
4	ECE18R374	Embedded systems for IoT	Ms. Nagma	Senior Design Engineer
5	ECE18R376	ASIC Design flow	Ms. Shilpa	Design Engineer
6	ECE18R375	Statistical Inference and Machine Learning	Dr. Nagarajan	Senior Program Coordinator
7	ECE18R370	Python programming for design and	Ms.	Design

		verification engineers	Vijayasree	Engineer
--	--	------------------------	------------	----------

2020-21 EVEN Nanochip Courses:

The EVEN semester courses integrated with Nanochip Solutions for the academic year 2021-2022 is given in Table 2.25 (iii)

Table 2.25 (iii) Nanochip solutions integrated EVEN semester courses for the academic year 2021-22.

S.No	Course Code	Course Name	Nanochip resource person	Designation
1	ECE18R251	Data structures	Dr. Nagarajan	Senior Program Coordinator
2	ECE18R236	Linux and Shell Programming	Mr. Praveen	Design Engineer
3	ECE18R454	Cryptography and Network Security	Dr. Nagarajan	Senior Program Coordinator
4	ECE18R238	Linux and Regular Expressions	Mr. Praveen	Design Engineer
5	ECE18R378	System design and applications for IoT	Mr Pavan	Design Engineer
6	ECE18R380	Static Timing analysis and its applications	Ms. Shilpa	Design Engineer
7	ECE18R379	Deep Learning implementations in Tensor Flow and Keras	Dr. Nagarajan	Senior Program Coordinator
8	ECE18R377	System Verilog for RTL Verification	Ms. Vijayasree	Design Engineer

The list of value-added courses for the academic years 2019-20 and 2020-21 have been given in Table 2.26.

Table 2.26 List of value-added courses

S.No	Academic Year	Name Of The Course	Resource Person Name	No Of Students Participated
1	2019-2020	Application Development Using Arm	Mr. Varunvarma, Cranes Software International Private Limited, Bangalore	57
2	2020-2021	Embedded System Design And Iot	Mr. Pothirasan, Hasan Medicare, Viruthunagar	136

The list of one-credit courses for the academic years 2018-19, 2019-20, and 2020-21 has been given in Table 2.27

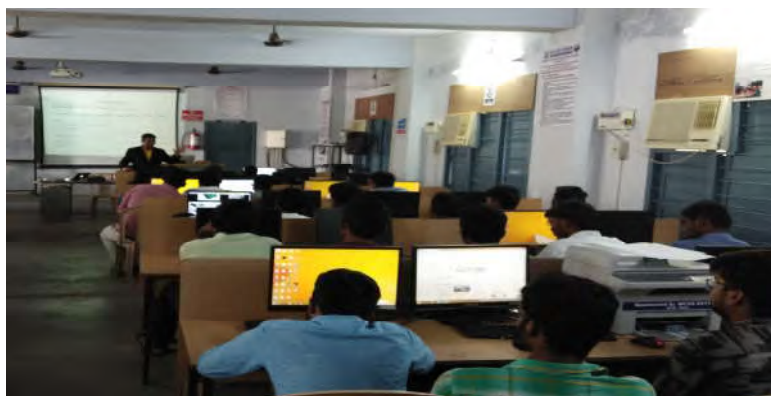
Table 2.27 List of one-credit courses

S.No	Academic year	Name of the course	Resource person name	No of students participated
1	2018-2019	Internet of things (IoT)- The future using Graphical Programming	Mr.Esakkiraja VI Solutions , Bangalore	36
2		M2M for smart cities	Dr.Vimalathithan, Director, Kris Tech, Coimbatore	63
3		Perl for Testing automation	Mr.A.Balaji, Lead Engineer, HCL Technologies, Chennai.	47
4	2019-2020	LoRa Gateway Design & Applications	Dr.Vimalathithan, Director, Kris Tech, Coimbatore	43
5		IOT Using Mongoose OS	Dr.Vimalathithan, Director, Kris Tech, Coimbatore	59
6	2020-2021	Cupcarbon- A Simulator Tool for Industry 4.0	Dr.Vimalathithan, Director, Kris Tech, Coimbatore	174
7		Machine Learning - Application Perspective	Dr.Vimalathithan, Director, Kris Tech, Coimbatore	84
8		Graphical approach on Industrial IoT and Pre-processing Programming	Mr.G.Nagarajan, VI Solutions , Bangalore	49

The course M2M for smart cities was handled by Dr. Vimalathithan, Director, Krish Tech, Coimbatore, during 2018-19. Figure 2.2.24 a) and b) show the in-session pictures.



a)



b)

Figure 2.2.24 ECX012 M2M for smart cities Course Handled by Dr.Vimalathithan, Director, Krish Tech, Coimbatore, (2018-2019).

The course Perl for Testing Automation was handled by A. Balaji, Lead Engineer, HCL Technologies, Chennai, during the academic year 2018-19. Figure 2.2.25 a) and b) shows the pictures of the session.



a)



Figure 2.2.25 a) and b) ECX009 Perl for Testing Automation Course Handled by A.Balaji, Lead Engineer at HCL Technologies, Chennai-(2018-2019) .

SAP Training

SAP trainings are exclusively conducted for the fast-learner students with the support of Time group. As an outcome of this training, students clear the global certifications in domains such as Advanced Business Application Programming (ABAP), Human Capital Management (HCM) and Materials Management (MM). The number of students of the batches 2016-20, 2017-21 and 2018-22 who have cleared the SAP certification has been given in Table 2.28

Table 2.28 No of Students cleared SAP Global Certification Exam

S. No.	SAP training domains	Number of students passed		
		2016-2020	2017-2021	2018-2022
1	ABAP	130	174	140
2	HCM	1	11	-
3	MM	8	12	1

The sample of the certificates are shown in Figure 2.2.26



(a)



(b)

Figure 2.2.26 Sample of SAP Training Program Certificate

Soft Skills

Soft skill training program were conducted for 45hours duration by SMART Training Resources India Pvt. Ltd. The training is mainly focussed on quantitative aptitude and

reasoning along with verbal for 2nd year students. They also taught the short cut methods to solve the questions faster. The sample photocopy of the training program is shown in Figure 2.2.27 (i) a) and the circular for the same is shown in Figure 2.2.27 (i) b).



Figure 2.2.27 (i) a) Sample of Soft skill Training Program

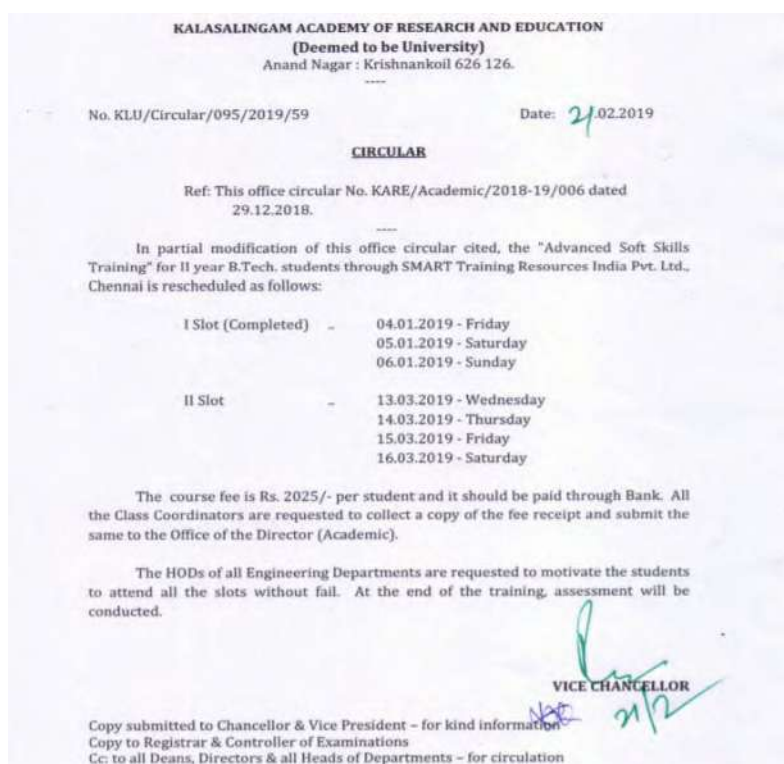


Figure 2.2.27 (i) b) Circular for Soft Skill training program

National Instruments Supported CLAD Certification

The students are given intensive training through National Instruments supported lab to pursue CLAD international certification in LabView through NI Technology Innovation

Centre. As an outcome of this many students clear the certification. The **Figure 2.2.27**

(ii) shows the list of students who have cleared CLAD certification with scores.



(a)



(b)

Figure 2.2.27 (ii) (a) List of Students Cleared CLAD Certification in a Batch (b) Sample Certificate of the Students who have Cleared CLAD Certification

Tessolve Program

Tessolve Semiconductors Pvt, Ltd., Bangalore is an Electronics Core Testing based company. An MoU was signed between the Department of ECE, Kare and Tessolve to train students in the core domain. In this regard, a Training Laboratory specifically for Tessolve was established in the department. Followed by which few Faculties from the department were provided training from Tessolve at the inception. Later, the Faculty of the department have begun training the students under the banner of Semiconductor Test Engineering – Skill Development Course (STE-SDC). A maximum of 10 students are allowed to attend the training every year as per the industry norms. Hence interested students having a good foundation on Electronics are provided training. As of the now, till the Academic year 2021, 8 students have been placed. The students have the benefit that they will First attend their internship during the last semester, followed by which they would become employees.



Figure 2.2.27 (iii) Snapshot of Skill Development Program for the ECE Students in Tessolve Lab

The image of the student attending tessolve skill development training is given in the Figure 2.2.27 (iii)

D. Impact analysis of industry-institute interaction and actions taken thereof.

- During the industry experts' visit, feedback is collected regarding the curriculum and lab facilities and incorporated wherever it is applicable.
- Students gained additional knowledge in cutting-edge Technologies based on the knowledge gained through value-added courses and one-credit courses. They also use their knowledge in doing their final year projects.
- A better understanding of subject contents and current trends helps the students attain good placements.

- By involving the students in various placement activities such as soft skill training programs, the placement rate is iNCReased
- Based on the industrial needs, 2020 curriculum has been revised that meets the need of Industry 4.0.

2.2.5. Initiatives related to industry internship/summer training (10 / 10)

(Mention the initiatives, implementation details and impact analysis)

A. Industrial training/tours for students

For the students of the batch 2015-2019, 2016-2020 industrial training is included in the non CGPA credits. The students undergo training to gain their non CGPA credits. The Students shall undergo industrial training in reputed industries during the summer vacation. At the end of the training, students shall submit a report and make a presentation which will be assessed by a committee constituted by the department.

Students who are undergoing training in the industry and process are taken on industrial visits. Figure 2.2.28 shows a photograph captured during student's visit to the Traco Cable Company Limited.



Figure 2.2.28 During the Industrial Visit for the students

B. Industrial /internship /summer training of more than two weeks and post training Assessment Online Approval Process

We have developed the online approval process portal for the students going to Industrial training/Internships and External projects and integrated it with the Student Information System (SIS) and the EDU-KARE.

The students who are willing to go for the Industrial training/Internship and External Project can apply through their Student Information System (SIS). The Industrial Training Menu is added to the Student Information System to submit their request online. The online request will be approved by the Faculty Advisor, Department Incharge, HoD, and finally by the Office of the Director (Corporate Relations)

The approval process is necessary for the following

Step 1: Approval needed for selecting the Company. The Office of Director (Corporate Relations) verifies the company's profile and repute and approves the company based on the student's request.

Step 2: Submitting the permission letter from the company to the Office of Director (Corporate Relations) for approval.

Step 3: Submitting the Completion letter after completing the Industrial training/Internship and External Project to the Office of Director (Corporate Relations) for approval.

Figure 2.2.29 a), b), and c) shows the snapshots acquired during the step-by-step process of online approval of the SIS system in EDU KARE.

sis.kalasalingam.ac.in/industrial_training/create

Change Password
Academic Calendar
Logout

Company Contact Person Phone No
Contact Person phone no

City
Enter City

Reside Address Details
Co. No. 0, Place, Town (Land), 1111, Address Line 1, Address Line 2, City, State - pincode, Country

Select Batch Other Student I
Select Register No

Select Batch Other Student II
Select Register No

Select Batch Other Student III
Select Register No

Date Information
Enter the from date and to date of training in company

From Date
From date

To Date
To date

KARE LOGO.png

Show all

a)

sis.kalasalingam.ac.in/industrial_training/create

SIS

Dashboard
Grievances
Semester
Course Registration
Grade
Seating & Time Table
Industrial Training
Travel History
Makeup
Fees
Exam Papers
New CGPA
Circulars
Hostel Booking
Transport Booking
Guest House Booking
Change Password

Industrial Training

Back Register

Request Details
Select Proper request

Steps Involved:

- Step 1: The students should select the company for Internship/Industrial Training/External Project and get approval from the Director/Corporate Relations.
- Step 2: Once the company Name is approved, the student should submit the official letter from the company and get approval from the Director/Corporate Relations.
- Step 3: Once the Internship/Industrial Training/External Project are over, The completion certificate should be submitted to Director/Corporate Relations for approval.
- All the approval process will go through your faculty Advisor/Department Incharge-HoD-Director/Corporate Relations

Company Details
Enter company name and city in proper

Academic Semester
Select Academic Semester

Request for
Select Type of Request

Company Name
Company Name

Company Website
Company Website

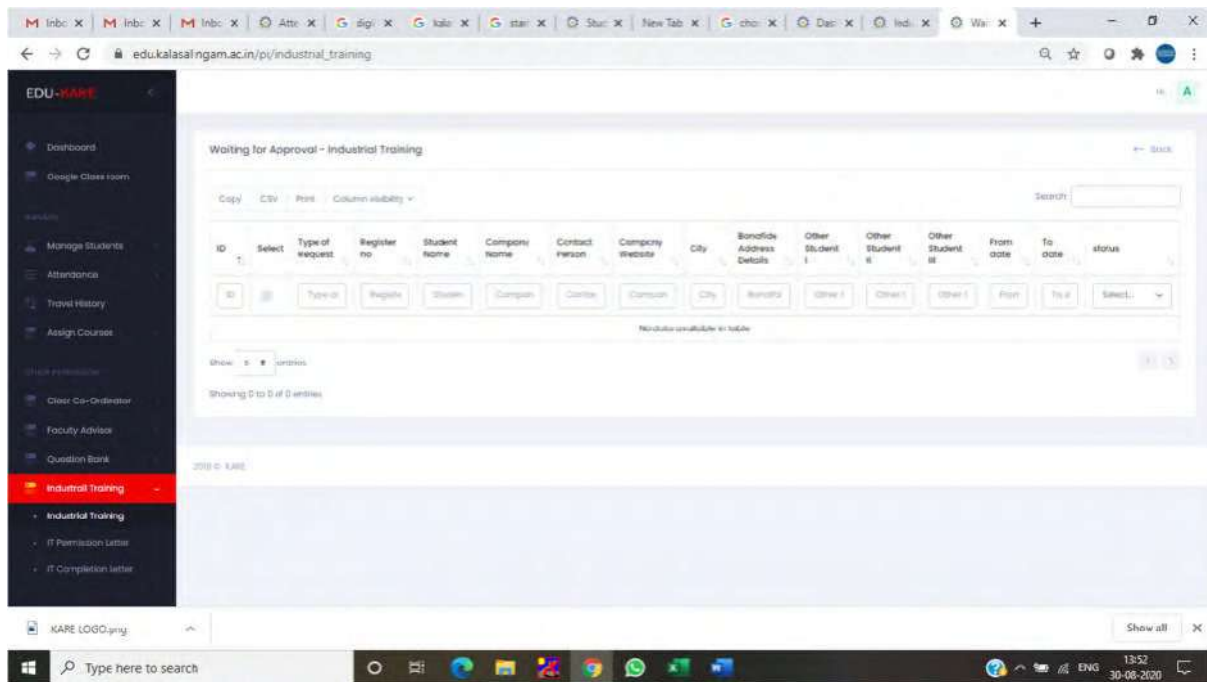
Company Contact Person Name
Contact Person Name

Company Contact Person Email
Contact Person Email

KARE LOGO.png

Show all

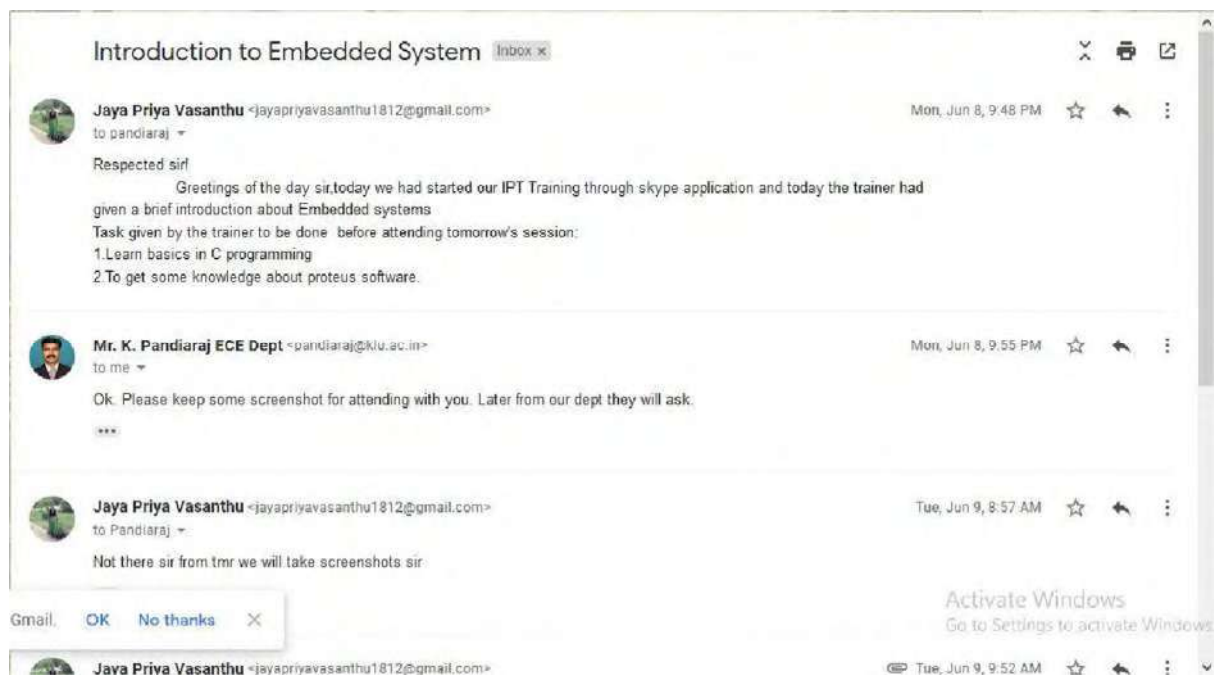
b)



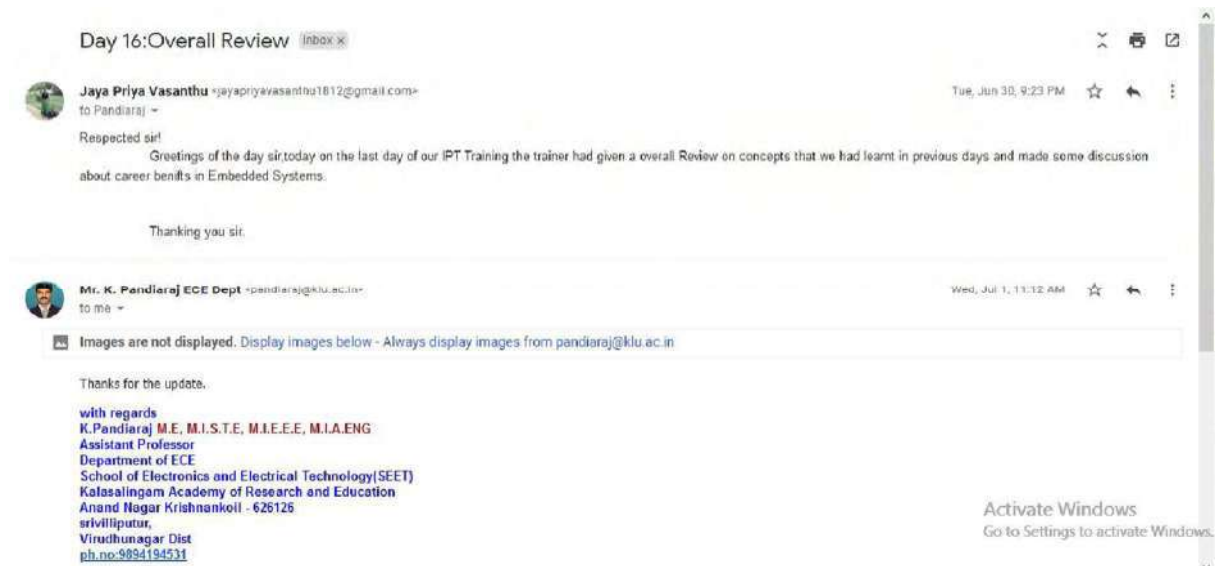
c)

Figure 2.2.29 a), b) and c) Step by step process of submitting the approval for industrial training / Internship

Internally the mentor will be there to assess and guide the students. The students' progress regularly reports to the concerned internal mentor. The mentor will monitor the status of the students and update the students' progress. The proof is attached below. Figure 2.2.30 a) and b) shows the progress and status of students as given by the internal mentor.



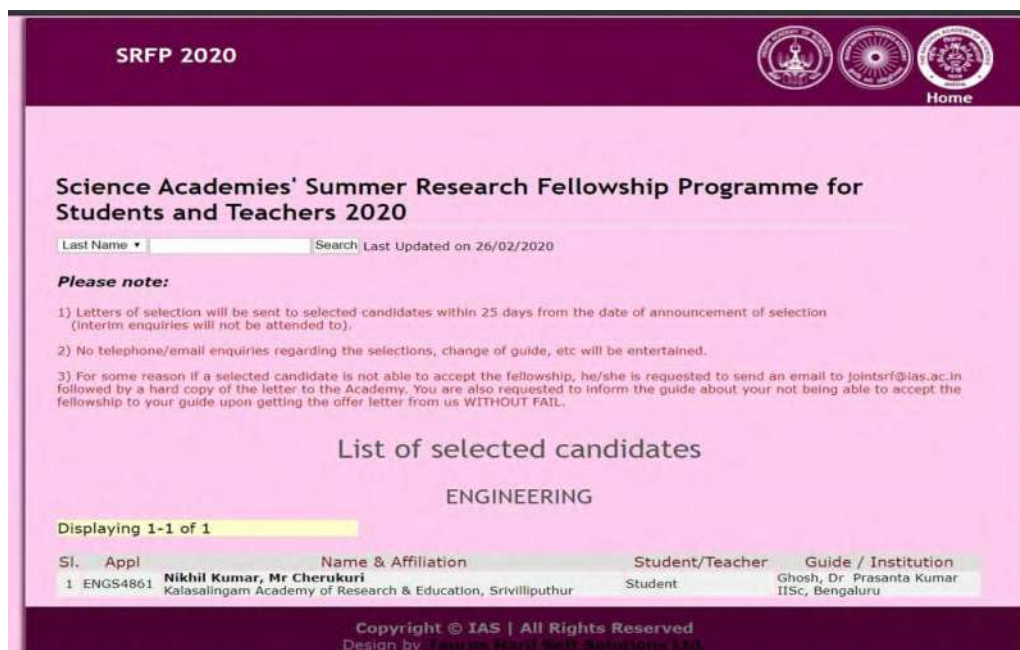
a)



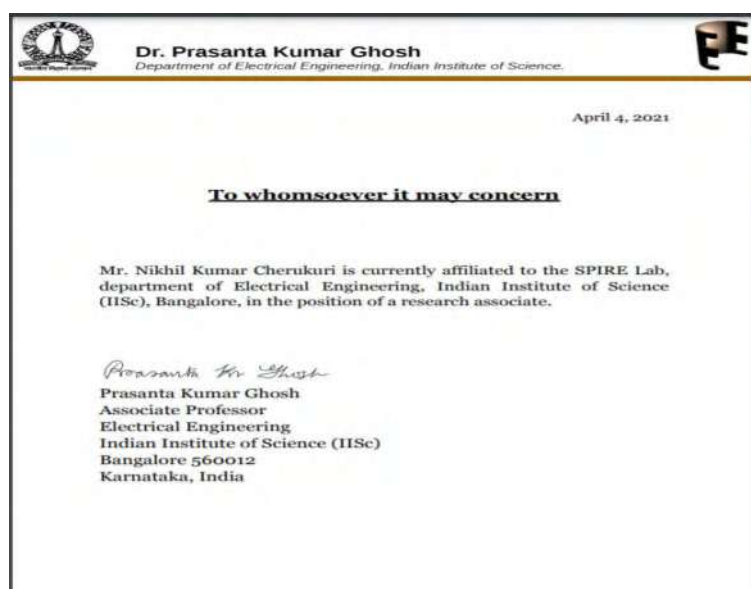
b)

Figure 2.2.30 a) and b) The student status updation to the internal mentor. Summer Training

Students are encouraged to take part in various summer internship trainings to gain knowledge in the industrial sector and how their domain area aligns with the industrial needs. It gives them crystal clear idea of implementation of the subject area into the society. One of the student who joined for summer camp through proper selection process at SRFP 2020 and IISC Bangalore is shown in Figure 2.2.31 (a) and (b).



(a)



(b)

Figure 2.2.31 a) and b) Summer Internship carried out at SRF and IISc**NON-CGPA Details**

To obtain B.Tech degree, a student must complete 18 credits from Non-CGPA activities apart from their regular academic courses. The Non-CGPA is comprised of 4 groups. The student sought to get at least 3 credits from each groups to earn 18 credits. The details of the Non-CGPA are given in Table 2.29

Table 2.29 NON-CGPA details with suitable credits

S.no	Gro up	Sub. Code	Category	NON- CGPA Credits	Minimum Credit Requireme nt from every group	Total Credits to be earned
1	I	NCG2001	Industrial Training	3	3	18
2		NCG3001	Advanced Industrial Training	3		
3		NCG2002	Industrial Lecture	3		
4	I I	NCG1001	Value added Courses		3	
5		NCG2003	International Certification	3		
6		NCG2004	Co-curricular Activities	3		
7	I I I	NCG1002	Sports	3	3	
8		NCG1003	NCC(For Indian Citizens Only)	3		
9		NCG1004	NSS	3		
10		NCG1005	Extra Curricular Activities	3		

11	I V	NCG3003	English Proficiency Certification	3	3	
12		NCG3003	Aptitude proficiency certification	3		
13		NCG2005	National/International Languages	3		
			TOTAL	39		18

Assessment will be carried out for the students and mark will be given based on the Rubrics, as shown in Table 2.30

Table 2.30 Rubrics carried out for assessing student marks

S.No	Rubric	Excellent	Acceptable	Poor
1.	Subject Knowledge(10) (R3)	Gained knowledge through Training(10)	Gained knowledge but not complete(5)	Not at all gained knowledge(2)
2.	Description of Processes(5) (R1)	Complete explanation & more informative(5)	Some explanation on processes but not complete and less informative OR complete information but not concise.(3)	Very little description and information.(2)
3.	Organization of presentation(10) (R1)	Information is in coherent, fascinating sequence with visuals which audience can follow.(10)	Information is in coherent sequence can follow.(5)	Cannot understand presentation because there is no sequence of information.(2)
4.	Expresses ideas clearly(5) (R1)	Accurate and complete. Explanation of key concepts with relevant literature.(5)	Partial complete explanation of key concepts with relevant literature.(3)	Explanations of concepts not accurate with literature.(2)
5.	Relevant to the technology development(10) (R3)	Relevant to the Department(10)	Fairly relevant to the department.(5)	Less relevant to the department.(2)
6.	Ethics(5) (R2)	Handed in on time (2) Reported to both internal and external guide (2) Day to day report (1)	Up to two days late.(1) Reported to internal and not to external guide (1) Day to day report (1)	Submitted late.(1) Not contacted internal and external(1) Not submitted day to day report

7.	Team work(5) (R2)	Works collaboratively with group members to complete tasks.(5)	Sometimes works collaboratively with group members to complete tasks(3)	Rarely works collaboratively with group members to complete tasks (2)
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The students submit a detailed report upon their successful completion of IPT/Internships/Project report to the faculty in charge. The experts evaluate gained knowledge/Projects through reviews and award marks. Based upon the marks, grading or PASS/FAIL is considered under CGPA/NONCGPA category.

The number of the students who have undergone Successful IPT and Internship are shown in Table 2.31 shows the list of students who undergone Successful IPT and Internship at various companies:

Table 2.31 Students who undergone internship and IPT during 2018-19, 2019-20 and 2020-21.

S. No.	Academic year	IPT Students count	Internship Students count
1	2018-19	126	26
2	2019-20	163	29
3	2020-21	90	83
4	2021-22	12	41

The students undertaken in-plant training, internships and summer training in various reputed industries during the academic years 2018-19, 2019-20 and 2020-21 have plotted in Figure 2.2.32



Figure 2.2.32 Students undergone internships, IPTs and summer trainings during the academic years 2018-19, 2019-20 and 2020-21.

Academic Year 2018-2019

The total number of students undergone industrial training and tours in the academic year 2018-19 has been represented in Figure 2.2.33



Figure 2.2.33 Industrial training undergone by students in 2018-19.

Academic Year 2019-2020

The total number of student's undergone industrial training and tours in the academic year 2019-20 has been represented in Figure 2.2.34

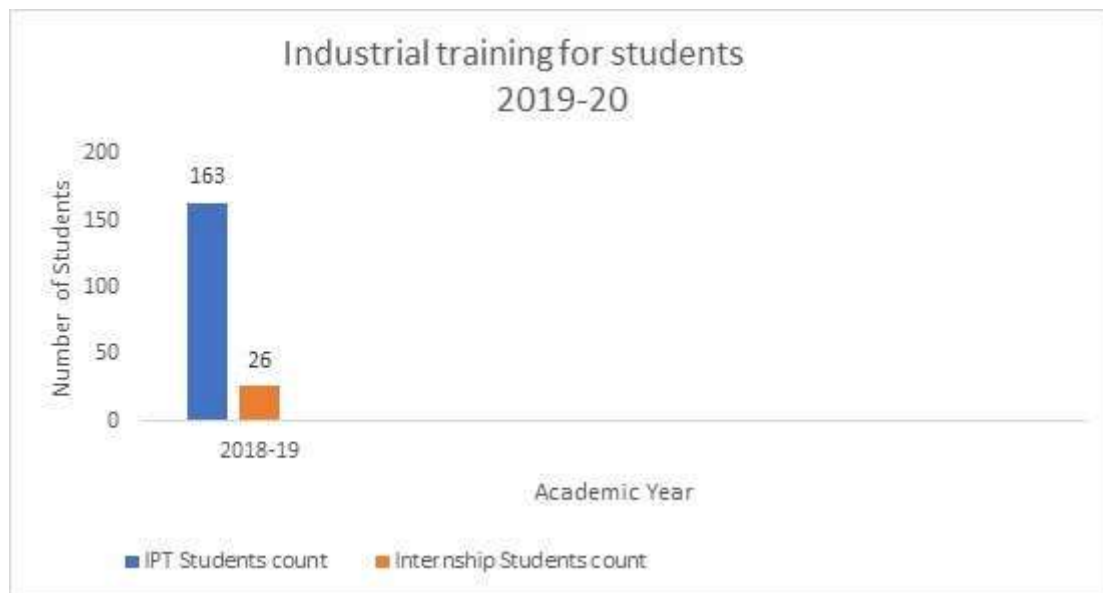


Figure 2.2.34 Industrial training undergone by students in 2019-20.

Academic Year 2020-2021

The total number of student's undergone industrial training and tours in the academic year 2020-21 has been represented in Figure 2.2.35

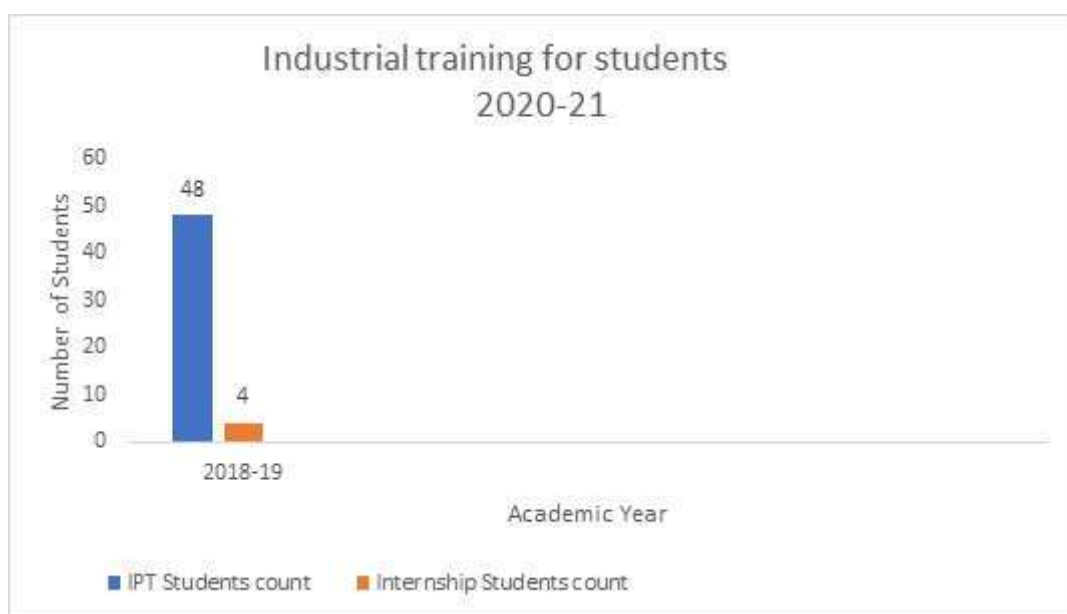


Figure 2.2.35 Industrial training undergone by students in 2020-21.

In-Plant training students list

Around 16 Non-CGPA student batches have completed in-plant training at a number of reputable industries across India. The list for the student batches who have undergone In-plant training at several reputed industries during the ODD semester of the academic year 2018-2019 has been given in Table 2.32

Table 2.32 Non-CGP category student's In-plant training during ODD semester of 2018-19.

Batch	Reg No	Name	Company Name
1	9916005181	Prabhakant Tripathi	BSNL, Hyderabad
	9916005203	Abhishek Kumar Singh	
2	9916005199	Menda Swathi	ECIL, Hyderabad
	9916005151	Bhanu Tejaswi	
	9916005172	Chandan Kumar	
	9916005164	Sailesh	
3	9916005205	T.Keerthana	BSNL, Chennai
4	9915005214	S.Vishnu Priya	BSNL, Karaikudi

5	9916005118	S.Parkavi	SB Technologies, Madurai
	9916005100	P.Mohana Varsha	
	9916005106	V.Nandhini	
6	9916005022	D.R.Benita Raja Sheba	BSNL, Tirunelveli
	9916005003	M.Aishwarya	
	9916005041	K.Durga	
7	9916005045	K.Flavitha Angeline Nivetha	PPY Technologies, Dindigul
8	9916005051	G.Harika	DLK Technologies
	9916005072	K.Pavani	
9	9916005092	M.Tanmayi	Hewlett Packard, Coimbatore
	9916005102	M.Manikanta	
10	9915005058	S.Sorna Bala	All India Radio, Tirunelveli &Spic, Tuticorin
	9915005063	R.Subharisha	
	9915005062	M.Subha	
11	9916005034	Ch.Avinash	ECIL, Hyderabad
	9916005090	M.Ajay	
	9916005036	D.Bala Murali Krishna	
	9916005177	Y.Sai Kumar	
12	9916005096	M Vamshiteja Reddy	Rezone Soft Solutions
	9916005097	M.Manikanta	
	9916005139	S V Nikhil	
	9916005020	B Rushikesava Reddy	
13	9916005198	G Pavan Kumar	Ciddse Technologies (P) Ltd, Chennai
	9916005002	A Rohan Naidu	
	9916005140	Shahid Aman Khan	
14	9916005188	K.Harish Kumar	Symentex, Madhapur, Telangana
	9916005052	G.Janardhan	
	9916005176	Y.Bharath Kumar Reddy	
15	9916005008	A.Sreekanth	Symentex, Madhapur, Telangana
	9916005027	B.Rakesh	
	9916005166	V.Jaswanth Reddy	
16	9916005054	G.Kumar Sai Reddy	ECIL, Hyderabad
	9916005095	M.Raja Mohan Reddy	
	9916005071	K.Suresh Babu	

The list for the student batches who have undergone In-plant training at several reputed industries during the EVEN semester of the academic year 2018-2019 has been given in Table 2.33 student batches did undergo In-plant training in the even semester.

Table 2.33 Non-CGP category students In-plant training during EVEN semester of 2018-19.

Batch	Reg No	Students Name	Company Name
1	9916005004	S.Aishwarya	BSNL, Madurai
	9916005058	S.R.Indiradevinachiyar	
	9916005145	K.Shivani	
2	9916005023	P.Bharathy Vikraman	Rail Net Software Solutions, Madurai
	9916005148	M.Sivarama Krishnan	
	9916005138	M.Sankar Anandh	
3	9916005065	J. Sharon Paul	Electronics Corporation Of India Limited, Hyderabad
	9916005081	K.Harshavardhan Kirti	
	9916005086	M.Sai Harsha Vardhan	
4	9916005077	S.Keerthana	G3 Themes Web Design And Development, Madurai
	9916005069	M.Kaleeswari	
	9916005001	S.Abarna	
5	9916005120	P.Chakradhar Reddy	Senelar Technologies Private Limited, Hyderabad
	9916005123	P.Dinesh	
	9916005078	K.Durga Reddy	
6	9916005067	K.Manoj	Symmentex, Madhapur, Telangana
	9916005080	K.Kalyan	
	9916005134	P.Sai Krishna	
	9916005056	G.Harshavardhan	
7	9916005114	P.V.N.S. Sasidhar	All India Radio, Tirunelveli
	9916005029	T.Chenna Kesava Reddy	
	9916005098	M.Harisiva	

	9916005094	M.Anand	
8	9916005083	K.V.Girish Kumar	All India Radio, Tirunelveli
	9916005160	T.Harshavardhan	
	9916005173	V.Avinash Reddy	
	9916005030	Ch.Nikhil Reddy	
9	9916005184	T.Kalpana	KG Information Systems Private Limited, Coimbatore
	9916005126	K.Praveena	
	9916005163	P.G.Uma Maheswary	
	9916005206	P.Chitradevi	
10	9915005059	R.Sornalatha	KG Information Systems Private Limited, Coimbatore
	9916005085	A.Lakshmipriya	
11	9817005006	S.Hari Obul Reddy	All India Radio, Tirunelveli
	9816005187	K.Naveen Kumar	
	9916005191	P.Somasekhar Reddy	
12	9916005079	K.Venkateswarlu	BSNL
13	9916005076	K.Prasanth	Rezone Soft Solutions
	9916005089	M.Charanteja	
	9916005193	Shiva Sai	
	9916005137	S.Surya	
14	9916005144	S. S. Shiva Somu	Rail Net Software Solutions, Madurai
	9916005153	K. Sudhakar	
15	9916005005	Ajith R	Keltron Component Complex Ltd, Kannur, Kerala
	9916005018	Aravindh P	
	9916005050	Gokul	
16	9916005061	Jesim Ahmed J A	Keltron Component Complex Ltd, Kannur, Kerala
	9916005037	Deris.R	
	9916005014	Antony Aswin A	
	9916005021	Bavathaarani B	

17	9916005093	M. Dheeraj Singh	ECIL, Hyderabad
	9916005174	Y. V. Adithya Kumar	
	9916005053	G. Bharath Sai	
18	9916005099	M.D.Arbas Ali Khan	Ciddse Technologies (P) Ltd, Chennai
	9916005084	M.R.Kylash	
	9916005105	M.Muralidharan	
19	9916005068	S.Kalaiselvi	Vi Microsystems Pvt Ltd, Chennai
	9915005064	S.Theivakani	
	9915005229	V.Sumathidevi	
20	9915005065	S.Triphena	S3 Technologies, Madurai
	9915005070	D.Vijitha	
	9915005072	S. Vishnupriya	
21	9916005193	Sinde Saiteja	CDAC

CGPA Category

Four student batches from the CGPA category have undergone In-plant training at various reputed industries across India. The list for the student batches who have undergone In-plant training at several reputed industries during the academic year 2018-2019 has been given in Table 2.34

Table 2.34 CGPA category students In-plant training during 2018-19.

Batch	Reg No	Students Name	Company Name
1	9917005189	S. Vishali	Rail Net Software Solutions, Madurai
	9917005206	R. Selva Jayanthi	
	9917005064	M.Jayshree	
2	9917005176	R. J. Sweatha	Rail Net Software Solutions, Madurai
	9917005198	J. Yuvasri	
	9917005060	R. Haritha	
3	9917005174	S.Reddy Chanakya	ITI Limited, Bangalore
	9917005027	C.Balaji Reddy	
	9917005100	M.Mahidhar Reddy	

4	9917005001	A.Rahul Kumar Reddy	ITI Limited, Bangalore
	9917005202	I.Lokesh Reddy	

2019-2020- ODD Sem

Two student batches from the Non-CGPA category have undergone In-plant training at various reputed industries across India. The list for the student batches who have undergone In-plant training at several reputed industries during the academic year 2019-2020 has been given in Table 2.35

Table 2.35 Non-CGPA category students In-plant training during the ODD semester in the year 2019-20.

Batch	Reg No	Students Name	Company Name
1	9916005101	S.Mounika	Hello FM, Chennai
	9916005112	D.Nivetha	
	9916005113	G.S.Nivetha	TVS Sensing Solutions, Madurai
	9916005179	S.Yuvasree	
2	9515005301	R.Soniya	Pantech, Vadodara, Gujarat
	9914005035	Sulthan Alaudeen	BSNL, Tirunelveli

21 student batches from the CGPA category have undergone In-plant training at various reputed industries across India. The list for the student batches who have undergone In-plant training at several reputed industries during the academic year 2019-20 has been given in Table 2.2.5.8.

Table 2.2.5.8 CGPA category students In-plant training during the ODD semester in the year 2019-20.

Batch	Reg No	Students Name	Company Name
1	9917005135	P.Chakraesh	Keltron Component Complex Ltd, Kannur, Kerala
	9917005115	N.Sumanth Reddy	
	9917005061	I.Divya Bharathi	

	9917005080	K.Sreenath	
2	9917005095	L.Umesh Chandra	ECIL, Hyderabad
	9917005166	S.Ravi Teja Reddy	
	9917005034	E.Ajay Kumar	
3	9917005065	K.Puneeth Sai	ECIL, Hyderabad
	9917005174	S.Reddy Chanakya	
	9917005094	K.Hemanth Kumar	
4	9917005187	V.Mounika	All India Radio, Tirunelveli
	9917005085	K.Hima Bindu	
5	9917005006	A.Bhargav Narasimha	All India Radio, Tirunelveli
	9917005145	P.Gunavardhana Reddy	
	9917005138	P.Surendra Babu	
	9917005163	B.M.Sharath Kumar	
6	9917005223	M.Jayameenakshi	BSNL, Tirunelveli
	9917005164	K.Shrivalli	
	9917005002	S.Aishwarya Lakshmi	
	9917005188	A.Vinothini	
7	9917005182	T.Naredra Nath	Hindustan Automation Solutions, Chennai
	9917005211	K.Mani Deepak	
	9917005212	P.Venu	
	9917005057	G.Sai Koushik	
8	9917005195	Y.Karunakar Reddy	All India Radio, Tirunelveli
	9917005072	K.Sai Kumar Goud	
	9917005131	P.Mansoor Khan	
	9917005024	P.Dinesh Reddy	
9	9917005152	S.Thejeswara Reddy	All India Radio, Tirunelveli
	9917005156	S.Sathish	
	9917005089	K.Pradeep Kumar Reddy	
	9917005101	M.Madhu	

10	9917005155	C.Sathya Pradeep	ECIL, Hyderabad
	9917005186	V.Gopi Krishna	
	9917005194	Y.Sri Sai Naveen	
	9917005108	M.Vineesh Reddy	
11	9917005073	K.Kishore Chandra Sekhar	ITI Limited, Bangalore
	9917005181	T.Harsha Vardhan	
	9917005086	K.Surya Sai Pranith	
12	9917005199	G.Venkatesh	Knowx Innovations.Pvt.Ltd, Bangalore
	9917005048	G.Nilakanteshwara	
	9917005129	P.Manoj Kumar	
	9917005041	G.Arun Sai Kumar	
13	9917005054	G.Harsha Vardhan	Amara Raja Batteries.Ltd, Tirupati
	9917005049	G.Venkata Kiran Teja	
14	9917005037	G.Yeshwitha	All India Radio, Tirunelveli
	9917005050	G.Chandana	
	9917005055	G.Vinathi	
15	9917005069	K.Archana	Kaashiv Infotech, Chennai
16	9917005119	N.B.Sahul	Knowx Innovations.Pvt.Ltd, Bangalore
	9917005196	Y.Ashraf	
	9917005222	L.Sri Vaishnav	
17	9818005001	C.Balaji Dileep	ITI Limited, Bangalore
	9917005068	K.Sundeeep	
18	9917005005	A.Yogendra	Hindustan Automation Solutions, Chennai
	9917005053	G.Bhargav	
	9917005084	K.Subramanyam	
	9917005208	N.V.Vinay Varma	
19	9917005146	R.Siva Rakesh	All India Radio, Tirunelveli
	9917005193	Y.Chandu Vardhan Reddy	
	9917005078	K.Bhavani Sankar	

20	9917005038	G.Likith	All India Radio, Tirunelveli
	9917005030	D.Sreekanth	
	9917005029	D.Thorana	
	9917005020	B.Sreekanth	
21	9917005092	J.Krishna Priya	BSNL, Tirunelveli
	9917005209	R.Tamil Selvi	
	9917005043	P.Gayatri	

The list for the student batches for Non-CGPA who have undergone In-plant training at several reputed industries during the EVEN semester of the year 2019-20 has been given in Table 2.36

Table 2.36 Non-CGPA category students In-plant training during the EVEN semester in the year 2019-20.

Batch	Reg No	Students Name	Company Name
1	9916005143	R.Sharmila	BSNL, Hello FM, Chennai
2	9916005055	H.Sandeep	Caliber Embedded Technologies India(P) Ltd., Coimbatore
	9916005116	P.Siva Sai Reddy	
	9916005039	D.V.Phanindra	
	9916005141	S.Akram Reddy	
3	9916005064	J.Sunilkumar	Caliber Embedded Technologies India(P) Ltd., Coimbatore
	9916005066	K.Vinod Kumar	
	9916005183	S.K.Hanneef	
4	9916005127	R.Priya Dharshini	Hello FM, Kaashiv Infotech, Chennai
	9916005165	N.Vavaja	

The list for the student batches for CGPA who have undergone In-plant training at several reputed industries during the EVEN semester of the year 2019-20 has been given in Table 2.37

Table 2.37 CGPA category students In-plant training during the EVEN semester in the year 2019-20.

Batch	Reg No	Students Name	Company Name
1	9917005047	Gokul.T	Keltron Equipment Complex, Kerala
	9917005018	Bhagath Mohamed.A	
	9917005090	Krishna Kumar R	
2	9917005217	C.H.Manikanta Reddy	Knowx Innovations.Pvt.Ltd, Bangalore
	9917005185	V.Vinay Kumar Reddy	
	9917005039	G.Durga Prasad	
	9917005019	B.Venkata Kiran	
3	9917005076	K.V.M.Varaprakash	Bharat Electronics Limited, Bangalore
	9917005169	S.Ramsai	
4	9917005023	B.Vinod Kumar	Knowx Innovations.Pvt.Ltd, Bangalore
	9917005033	E.Naveen Kumar Reddy	
	9917005205	M.Siva Reddy	
5	9917005032	D,Ajith Reddy	ITI Limited, Bangalore
	9917005028	D.Anil Reddy	
	9917005126	P.Venkata Vikranth	
6	9917005123	T.Pandimeena	BSNL, Tirunelveli
	9917005150	J.Safana Fathima	
	9917005007	A.Anu Manjari	
7	9917005200	S.Vishnu	ITI Limited, Bangalore
	9917005117	N.Harshith	
	9917005147	R.Venkata Ravi Choudary	
	9917005136	P.Rama Krishna	
8	9917005173	S.Rajeswari	Vishakapatnam Steel Plant
9	9917005127	P.Deepthi	
	9917005214	K.Bhavana	
	9917005215	G.Guru Charan	
10	9917005077	R.Keerthivash	Vi Microsystems Pvt Ltd, Chennai
	9917005004	B.Akshy Karthick	

	9917005097	S.Magesh Raj	
	9917005153	K.Santhosh Kumar	
11	9917005210	B.A.Anoohya	Keltron Equipment Complex, Kerala
	9917005110	M.Sushmitha	
	9917005091	K.Sathish Kumar Reddy	
12	9917005104	M.Sushanth Varma	ECIL, Hyderabad
	9917005122	P.Siva Brahma Reddy	
	9917005132	P.Ammaar	
13	9917005130	Salman Khan Patan	BSNL, Kadapa
	9917005134	Hari Vardhan Reddy Peddireddy	
	9917005158	Sohel Basha Shaik Astubai Gari	
14	9917005042	G.Vigandhar Reddy	All India Radio, Kadapa
	9917005192	Y.Sai Sandeep Reddy	
	9917005191	Y.Raja Surendra	
	9917005071	K.Gangadhar	
15	9917005046	P.Gokul	ITI Limited, Bangalore
	9917005051	O.M.Gowtham	
	9917005045	S.Godwin	
	9518005301	M.Jegatheswaran	
16	9917005021	B.Jeyashankar	ECIL, Hyderabad
	9917005152	S.Teja	
	9917005178	T.Subba Rao	
	9917005183	V.Vishnu Varadhan Reddy	
17	9917005025	C.V Sai Teja	All India Radio, Kadapa
	9917005162	Sk.Shakul	
	9917005009	A.Sumanth	
	9917005066	K.Reddy Mohan Reddy	
18	9918005009	D.Sai Subash	
	9918005026	M.Venkata Ganesh	

	9918005072	K.Muralidhar Reddy	AP Power Generation Corporation Limited, Hyderabad
	9918005086	P.Ram Prasad	
19	9917005013	B.Abhilash	AP Power Generation Corporation Limited, Hyderabad
	9918005134	G.Sainath Reddy	
	9918005133	G.Sujansouri	
	9918005039	P.Naveen Gandhi	
20	9917005137	P.Venkata Varun	All India Radio, Kadapa
	9917005058	G.Puneeth	
	9917005010	B.Jegadis Chandra Prasad	
	9917005109	M.Venkata Siva Reddy	
21	9917005088	K.Sai Pavan	Knowx Innovations.Pvt.Ltd, Bangalore
	9917005063	J.Siva Prasad Reddy	
	9917005098	M.Surya Kumar	
	9917005151	S.Bhanu Chand	
22	9917005170	K.Sivaraman	Keltron Equipment Complex, Kerala
	9917005165	P.Siddharatha	
	9917005172	V,Subramani	
	9917005144	G.Rajarajan	
23	9917005149	M.D.Rudra Prasanth	Vi Microsystems Pvt Ltd, Chennai
	9917005036	J.Francischezhian	
	9917005141	S.Pravin Kumar	
24	9917005163	B.M.Sharath Kumar	All India Radio, Kadapa

Internship Details

The list for the student batches who have undergone Internship at several reputed industries during the academic year 2019-20 has been given in Table 2.38

Table 2.38 Students undertaken Internship during the academic year 2019-20.

S No	Reg No	Students Name	Company
1	9915005055	Sathish Kumar K	Global Health Care, Chennai
2	9915005061	Sriram@Siva K	Global Health Care, Chennai
3	9915005152	Karthik V	Global Health Care, Chennai
4	9915005189	Shaik Arshad Hussain	Zoho, Chennai
5	9915005002	Afrena Parveen N	Swifterz, Bangalore
6	9915005025	Karuppasamy E	Swifterz, Bangalore
7	9915005060	Srinivas V	Swifterz, Bangalore
8	9915005063	Subharisha R	Swifterz, Bangalore
9	9915005112	Gangisetty Sai Krishna Sathvik	Swifterz, Bangalore
10	9915005126	Allam Lakshman Reddy	Swifterz, Bangalore
11	9915005130	Bachu Venkata Surya Lokesh	Swifterz, Bangalore
12	9915005149	Kurra Bharath Kumar	Swifterz, Bangalore
13	9915005151	Kaparlappalli Mohammad Fazil	Swifterz, Bangalore
14	9915005155	Kothakota Keerthi Sai Krishna	Swifterz, Bangalore
15	9915005161	Mohammad Zaidh Ahmad	Swifterz, Bangalore
16	9915005176	Prashant Kumar Mishra	Swifterz, Bangalore
17	9915005202	Velmurugan V	Swifterz, Bangalore
18	9915005208	Peddireddy Sree Harshavardhan Reddy	Swifterz, Bangalore
19	9915005025	Karuppasamy E	Eduvirtuoso, Bangalore
20	9915005058	Sorna Bala S	Eduvirtuoso, Bangalore
21	9915005098	Polavarapu Bhargav Sai	Eduvirtuoso, Bangalore
22	9915005126	Allam Lakshman Reddy	Eduvirtuoso, Bangalore
23	9915005137	Devendran V	Eduvirtuoso, Bangalore

24	9915005141	Dasari Girish	Eduvirtuoso, Bangalore
25	9915005173	Popuri Prasanna Kumar	Eduvirtuoso, Bangalore
26	9915005174	Pothuri Gowtham Kiran Varma	Eduvirtuoso, Bangalore

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The list for the student batches who have undergone Internships at several reputed industries during the 2019-20 has been given in Table 2.39

Table 2.39 Students undertaken Internship during the academic year 2019-20.

S No	Reg No	Students Name	Company
1	9916005061	J.A.Jasim Ahmed	Aspire Systems, Chennai
2	9916005153	Sudhakar K	Aspire Systems, Chennai
3	9916005010	Allampati Ravi Teja	NCR Corporation, Chennai
4	9916005020	B.Rushi Keshava Reddy	NCR Corporation, Chennai
5	9916005034	Chundu Avinash	NCR Corporation, Chennai
6	9916005056	Harsha Vardhan Naidu	NCR Corporation, Chennai
7	9916005059	Indla Venkata Sai Vineeth	NCR Corporation, Chennai
8	9916005067	Manoj Kumar Reddy	NCR Corporation, Chennai
9	9916005076	Katavuru Prasanth	NCR Corporation, Chennai
10	9916005078	Durga Reddy K	NCR Corporation, Chennai
11	9916005083	Kotha Venkata Girish Kumar	NCR Corporation, Chennai
12	9916005102	Muddeneni Manikanta	NCR Corporation, Chennai
13	9916005116	P. Sivasai Kumar Reddy	NCR Corporation, Chennai
14	9916005127	R. Priya Dharshini	NCR Corporation, Chennai
15	9916005129	Ravi.Pavankumar	NCR Corporation, Chennai
16	9916005130	Raya Ravi Charan Reddy	NCR Corporation, Chennai
17	9916005134	Sai Krishna P	NCR Corporation, Chennai
18	9916005139	Sarabu Venkata Naga Nikhil	NCR Corporation, Chennai
19	9916005145	K.Shivani	NCR Corporation, Chennai

20	9916005146	Sathyanand	NCR Corporation, Chennai
21	9916005148	M. Siva Ramakrishnan	NCR Corporation, Chennai
22	9916005152	Sreenath	NCR Corporation, Chennai
23	9916005157	T.Bhanu Teja	NCR Corporation, Chennai
24	9916005175	Yallamaraju Surendra Varma	NCR Corporation, Chennai
25	9916005176	Bharath Kumar Reddy.Y	NCR Corporation, Chennai
26	9916005179	S.Yuvasree	NCR Corporation, Chennai
27	9916005182	S.Harikrishnan	NCR Corporation, Chennai
28	9916005187	Kaku Naveen Kumar	NCR Corporation, Chennai
29	9916005195	A.T.S Lokesh	NCR Corporation, Chennai

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Industrial Training

The list for the student who have undergone Industrial training and Internships at several reputed industries during the 2020-21 has been given in Table 2.40 (i), (ii)

Table 2.40 (i) Students undertaken Industrial training during the academic year 2020-21.

S No	Reg No	Students Name	Company	City
1	9918005076	KAKUMANI PAVAN KALYAN	Bharat sanchar Nigam Limited (BSNL)	HYDERABAD
2	9917005218	YANDLAPALLI THARUN BABU	Knowx innovations private limited	Banglore
3	9917005011	BAKKIREDDY MANJUSHA REDDY	InfoEdge Solutions Limited - Research Organization	Chennai
4	9917005179	TALARI RAVI KIRAN NAIDU	Knowx innovation private Limited	Bengaluru
5	9918005084	AENIKE UMESH CHANDRA REDDY	Bharat Sanchar Nigam Limited(BSNL)	HYDERABAD
6	9918005075	BUDUGULA SANDEEP KUMAR	Bharat Sanchar Nigam Limited(BSNL)	HYDERABAD
7	9918005081	MAKAM SURYA TEJA	Bharat Sanchar Nigam Limited(BSNL)	HYDERABAD
8	9917005044	GOBIKA K	AADHI SOLAR(COIMBATORE)	Coimbatore
9	9917005014	BANGARAPU NISHITH KUMAR REDDY	AADHI SOLAR	Coimbatore
10	9917005017	BELLAM MAHESWAR REDDY	Isrorg	Chennai

11	9919005274	ANNAPUREDDY AKHILA	KNOWX INNOVATIONS PVT LTD	BANGLORE
12	9919005047	REMALA NANDAKISHORE REDDY	KAASHIV TECHNOLOGIES INFO TECH	CHENNAI
13	9919005016	POKALA NEERAJ	kaashiv infotech	chennai
14	9918005101	KESAMSETTY SUNIL RAJU	Phoenix softech	Madurai
15	9918005083	GORLA MANISHA	URANIUM CORPORATION OF INDIA LIMITED - TUMMALAPALLE	TUMMALAPALLE
16	9918005060	VIJAYA DHARSHINI M	Rajiv Gandhi Memorial Telecom Training Center	Chennai
17	9919005123	LAVANURU ANURADHA	National Small Industries Corporation (NSIC)	Chennai
18	9918005092	NIMMALA SAI KRISHNA	Institution of Electronics and Telecommunication Engineers	Mumbai
19	9918005095	SRIDHARAN M	Institution of Electronics and Telecommunication Engineers	Mumbai
20	9918005088	ARAVIND C	Institution of Electronics and Telecommunication Engineers	MUMBAI
21	9917005103	MANNEPALLI VENKATA BHANU	AADHI SOLAR COIMBATORE	COIMBATORE
22	9917005008	AVAYAMUKHARI MOHAN SRINIVAS ADITHYA	AADHI SOLAR COIMBATORE	COIMBATORE
23	9917005070	KANAGASABAPATHY T S	Smartx connected products private limited	Chennai
24	9918005010	GADIRAJU DINESH	Caliber Embedded Technologies India (P) Ltd. - Corporate Office	Coimbatore
25	9919005184	RAVVA SRAVANI	techknocorp	coimbatore
26	9919005052	DARISA VENKATA TILAK	KAASHIV TECHNOLOGIES INFO TECH	CHENNAI
27	9917005201	SRUNGARAPU VENKATA VEERA BHOGACHARI	AADHI SOLAR COIMBATORE	COIMBATORE
28	9919005199	SILVIA L E	Techknocorp	Coimbatore
29	9919005198	SIDHDARTHRAM J	Techknocorp	Coimbatore
30	9919005085	JAGATH A P	Techknocorp	Coimbatore
31	9918005074	KAMATAM BHANUPRAKASH REDDY	Technocorp	Coimbatore
32	9919005213	THOKALA SHIVA	Techknocorp	Coimbatore
33	9919005141	MOHAMMAD SOHAIB	Caliber Embedded Technologies India (P) Ltd.	Coimbatore
34	9919005187	RUDRAPATI BHARATH KUMAR	Falcon Square	Coimbatore

35	9918005099	CHUKKAPALLI NAGA SAI KIRAN	Phoenix softech	Madurai
36	9919005068	GATRAM JHANSI RANI	SmartX Connected Products pvt. Ltd.	Chennai
37	9919005254	BATHALA ARAVIND	Kitkat software technologies	Coimbatore
38	9919005180	RALI RAJAMOULI	KitKat technologies	Coimbatore
39	9919005159	NUNE V NARASIMHA SATYA SAI DATHA GANESH	kitkat technologies	Coimbatore
40	9919005277	THOTA JASWANTH YADAV	Web walk infosys	Madurai
41	9919005266	BADATALA MANOJ SHANKAR	Web walk infosys	Madurai
42	9919005231	VISHNU K	Shiash info solution private limited	Chennai

Table 2.40 (ii) Students undertaken Internship during the academic year 2020-21.

S No	Reg No	Students Name	Company	City
1	9918005070	SHAIK MOHIN BASHA	BSNL	Hyderabad
2	9918005077	NARESAPALLI SAI CHAITHANYA	KNOWX INNOVATIONS PRIVATE LIMITED	BANGALORE
3	9918005093	VANKADARA JASWANTH	Bharat sanchar Nigam Limited(BSNL)	HYDERABAD
4	9918005045	RAVURI SRI KANTH	Innovians Technologies	Noida
5	9918005031	NELAVELLI BRAHMA MANAS	Innovians Technologies	Noida
6	9918005027	MEESALA THIRUPATHI RAO	Innovians Technologies	Noida
7	9918005029	MUKKAPATI GANESH RAGHUNADH	Innovians Technologies	Noida
8	9918005005	CHERLOPALLI SRUJAN KUMAR	Conzura soft Solutions (OPC) private limited	Anantapur
9	9819005001	BATHULA MANIKANTA	Conzura soft Solutions (OPC) private limited	Ananthapur
10	9918005150	MOPIDEVI VAISHNAVI	KNOWX INNOVATIONS PRIVATE LIMITED	BANGALORE
11	9918005030	MURARISSETTY VENKATA RAHUL	KNOWX INNOVATIONS PRIVATE LIMITED	BANGALORE
12	9819005005	PADMANABHUNI SAI HEMANTH	KNOWX INNOVATIONS PRIVATE LIMITED	Bangalore
13	9918005129	MODEPALLI SURENDRA	KNOWX INNOVATIONS PRIVATE LIMITED	Banglore
14	9918005080	AKULA GAYATHRI	BSNL	HYDERABAD
15	9918005071	CHAGANABOINA CHARAN KUMAR	BSNL	HYDERABAD
16	9918005082	ELLURU THANUSHA REDDY	BSNL	Hyderabad
17	9918005087	ATLA PRAGHNA	BSNL	HYDERABAD
18	9918005087	ATLA PRAGHNA	BSNL	HYDERABAD
19	9919005071	GONDRALA TARUN SRINIVASULU	National Small Industries Corporation	HYDERABAD

20	9919005009	ARANI HARIPRASAD VIGNEESH	National Small Industries Corporation	HYDERABAB
21	9919005307	AKULA SAI TEJASWANI	National Small Industries Corporation	HYDERABAD
22	9919005018	BALA HARI PRIYA	National Small Industries Corporation	Hyderabad
23	9919005075	GUNDA MOUNIKA	National Small Industries Corporation	HYDERABAD
24	9919005038	CHEPALAMADUGU GREESHMA SAI	National Small Industries Corporation	Hyderabad
25	9919005100	KANDYALA SAI KUMAR	National small industries cooperation	HYDERABAD
26	9919005214	THOTA DEEPIKA	National Small Industries Corporation	HYDERABAD
27	9919005181	RAMIREDDYGARI DINESH REDDY	National Small Industries Corporation	HYDERABAD
28	9919005058	DUGGIRALA LAKSHMI SAI DEEPIKA	ELECTRONICS CORPORATION OF INDIA LIMITED (ECIL)	Hyderabad
29	9919005219	TIRUVEEDHI RAVI KIRAN	Inspireotech	CHENNAI
30	9919005241	NEELI CHANDRALEKHA	Inspireotech	CHENNAI
31	9918005132	FERASIAN C	NSIC technical service limited under ministry of small scale industries	Chennai
32	9918005114	POLU BALAJI	Conzura soft solutions(OPC) private limited	Anantapur
33	9919005224	VARDIREDDY JASWANTH KUMAR REDDY	Verzeo	bengaluru
34	9919005216	THULASI SAI NARASIMHA CHARAN	Inspireotech	Chennai
35	9918005061	VOTTUGUNTA RENIL KUMAR	Vi solutions	Bangalore
36	9918005057	VANEPENTA SASINDHAR	Vi solutions	Bangalore
37	9918005079	AKULA SRAVANI	CHIP INTEGRATION TECHNOLOGIES LIMITED	BANGALORE
38	9918005066	CHALLAGUNDLA RAJESH BABU	CHIP INTEGRATION TECHNOLOGIES LIMITED	BANGALORE
39	9918005069	YELAGAPUDI RAVIKUMAR	CHIP INTEGRATION TECHNOLOGIES LIMITED	BANGALORE
40	9918005094	MAREDDY RAMA KRISHNA REDDY	Vi solutions	Bangalore
41	9919005236	YELLAMPALLI VENKATA SIVA SAI DEEPAK	Inspireotech	Chennai
42	9918005054	SUBASH BALAJI A	NSIC Technical services centre, Chennai	Chennai
43	9918005127	KARNATI ALEKHYA	Hexnbit	Noida

44	9918005019	JOLIN DORROTHI J	NSIC Technical services centre, chennai	Chennai
45	9918005013	GONUGUNTA ANUSHA	CHIP INTEGRATION TECHNOLOGIES LIMITED	BANGALORE
46	9918005043	RAVALAKULLU MASTAN	CHIP INTEGRATION TECHNOLOGIES LIMITED	BANGALORE
47	9918005116	THATHANNAGARI NARENDRA	Hexnbit	Noida
48	9919005069	GAYATHRI DURGA B	Hexnbit	Noida
49	9919005108	KOKKANTI THIRUMALA KUMAR	ETHICAL EDUFABRICA PVT. LTD	Delhi
50	9919005104	KARUMANCHI MANOJ KUMAR	ETHICAL EDUFABRICA PVT. LTD	Delhi
51	9919005079	HARISH MUTHU KUMARANT	Hexenbit	Noida
52	9918005025	MARELLA VINAY	Caliber Embedded Technologies India (P) Ltd. - Corporate Office	Coimbatore
53	9919005061	ELUKUNTALA TEJASWANI	ETHICAL EDUFABRICA PVT. LTD	Delhi
54	9919005114	KORIVI KOTESH BABU	Phoenix softech	Madurai
55	9919005295	MOPIDEVI SAI ADVYTHA	SmartX Connected Products Pvt. Ltd.	Chennai
56	9919005125	MACHERLA VENKATA KARTHIK	Phoenix softech	Madurai
57	9918005103	KUKKAPALLI SURESH	Vi solutions	Bangalore
58	9919005083	ISUKALA SHASHANK	ETHICAL EDUFABRICA PVT.LTD	Delhi
59	9919005096	KAMASANI SIVA SANKAR REDDY	ETHICAL EDUFABRICA PVT. LTD	Delhi
60	9919005013	ATTAR MUJAYIDDIN	ELECTRONICS CORPORATION OF INDIA LIMITED (ECIL)	Hyderabad
61	9919005151	NALI VENKATA RAO	ICore Software Technologies	Coimbatore
62	9918005020	KOTTURU PRAHARSHA	Techknocorp	Coimbatore
63	9919005072	GONTLA NANDA NANDAN	Phoenix softech	Madurai
64	9919005176	KAKARLA MANOJ KUMAR	SmartX Connected Products Pvt. Ltd.	Chennai
65	9919005207	SWARNA NARAYANA SWAMI	Phoenix softech	Madurai
66	9919005015	AVULAPATI TEJASWEE	FALCON SQUARE	coimbatore
67	9919005022	KUPPALA NAGARAJU	Falcon Square	Coimbatore
68	9919005014	AVULA SIVA SANKAR REDDY	ELECTRONICS CORPORATION OF INDIA LIMITED (ECIL)	Hyderabad
69	9919005003	AILURI SAI KUMAR REDDY	Dreams technologies	Chennai

70	9919005008	ANIMGI CHANDU	Dreams technologies	Chennai
71	9919005161	PALLAPU MANEESH KUMAR	Phoenix Softech	Madurai
72	9919005257	DASARI CHARAN KUMAR	Web walk Infosys	Madurai
73	9919005105	KAVALAKUNTALA JAGADHESWAR REDDY	Phoenix softech	Madurai
74	9919005240	KUNCHA MAHENDRA REDDY	SmartX Connected Products Pvt. Ltd.	Chennai
75	9919005235	AVULA MANOHAR	Phoenix softech	madurai
76	9918005143	PANDITI PREM SAGAR	Cybricsoft technologies	Noida
77	9919005191	SHAIK ASHRAF	Icore technologies	Coimbatore
78	9918005089	SADHU LOKAANAND REDDY	Stemrobo technologies Pvt Ltd	Noida
79	9918005067	SREEREDDYGARI UDAY KUMAR REDDY	STEMROBO technologies	Noida

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The list for the student who have undergone Industrial training and Internships at several reputed industries during the 2020-21 has been given in Table 2.40 (iii), (iv)

Table 2.40 (iii) Students undertaken Industrial training during the academic year 2021-22.

S No	Reg No	Students Name	Company	City
1	9919005282	MYLAGONDA ARJUN	Dreams technologies	Chennai
2	9919005183	RAPURI MONALISA	Smartweb technologies	Coimbatore
3	9919005204	SUNIL PRASATH S	UniConverge Technologies	Noida
4	9919005010	ARAVIND I	UniConverge Technologies Pvt. Ltd.	Noida
5	9918005058	VANIPENTA BHARATH SIMHA REDDY	cybricsoft	Noida
6	9919005053	DASARI NAGA REVANTH KUMAR	Nineteen Hour IT Pvt Ltd.	Tiruchirapalli
7	9919005042	CHINTA SRI HARSHA	Nineteen Hour IT Pvt Ltd	Thiruchirappalli
8	9919005211	THALLA PRANATHI	Sura systems private limited	Chennai
9	9919005251	SIRIPIREDDY SATISH REDDY	Sura Systems Private Limited	Chennai
10	9920005107	CHOWDULA HARSHA VARDHAN SATYA SAI	NATIVE SPARROW SOFTWARE SOLUTIONS LLP	chennai
11	9919005220	ULAPU KARTEEK	NATIVE SPARROW SOFTWARE SOLUTIONS LLP	Chennai
12	9919005086	JAMPANA LIKITHSAIDHAR REDDY	Aadhi Solar Solutions	Coimbatore

Table 2.40 (ii) Students undertaken Internship during the academic year 2021-22.

S No	Reg No	Students Name	Company	City
1	9918005049	SEELAM NAGA PARAMESWARA REDDY	Cybricsoft Technologies	Noida
2	9919005196	SHASHANK NAIDU KAMIREDDY	SmartWeb Technologies	Coimbatore
3	9919005027	BLESSY FEMINA Y	Rajiv Gandhi Memorial Telecom Training Centre	Chennai
4	9918005037	PERUMALLA VENKATA SAINADH	cybricsoft Technologies	uttthar pradesh
5	9918005006	CHERUKURI NIKHIL KUMAR	Maven Silicon Softech Pvt Ltd - Center of Excellence in VLSI	Bangalore
6	9919005305	BANDI GOVARDHAN	SmartX Connected Products Pvt. Ltd.	Chennai
7	9918005146	RACHAKONDA DHARMENDRA	Tevatron Technologies pvt Ltd	Noida
8	9918005034	PASUPULETI VENKATA GANESH	Bharat Sanchar Nigam Limited (BSNL)	Hyderabad
9	9918005024	MANOJ KANNA S	AZ Pentas Solutions	Chennai
10	9918005111	ARCOT VENKATA SAI MAHESH	VI SOLUTIONS	Bangalore
11	9920005046	KONDAREDDY REVATHI	AICTE	New Delhi
12	9918005121	ANAM SAI KUMAR REDDY	E3dify Designs Pvt.ltd.	Noida
13	9918005141	MADDIBOYINA NAGA SURENDRA	NSIC Technical Services Centre	Chennai
14	9918005123	JAMMIGUNPULA SRINIVASA RAO	Vi solutions	Bangalore
15	9919005138	MEKALA RAJESH KUMAR REDDY	National small industries corporation	HYDERABAD
16	9920005043	DATLA SAI ANVESH VARMA	ITC PSPD	Bhadrachalam
17	9918005059	VEERARAVINDRAN C	NSIC technical service	Chennai
18	9918005038	POLAMREDDY KRANTHI KUMAR REDDY	Bharat Sanchar Nigam Limited (BSNL)	Hyderabad
19	9919005081	INNAMURI VENKATA DEVIKA	All India Council for Technical Education (AICTE) - EduSkills	New Delhi
20	9919005082	INNAMURI VENKATA MANASA	AICTE - AWS Cloud Internship - Eduskills	New Delhi
21	9920005161	THUMMALURU VENKATA SIVA	Sura Systems Private Limited	Chennai
22	9920005162	VANTHERAPALLE SAMARA SIMHA REDDY	Nineteen Hour IT Pvt Ltd	Tiruchirappali

23	9919005135	MEDINI PAVAN REDDY	National small industries corporation	HYDERABAD
24	9919005162	PANJALA SHIVA TEJA	National small industries corporation	HYDERABAD
25	9919005109	KOLICHILIMI OMKAR	National small industries corporation	HYDERABAD
26	9919005229	VENKATATHATHAGARI UMESH REDDY	ELECTRONICS CORPORATION OF INDIA LIMITED (ECIL)	Hyderabad
27	9919005226	VELIKANTI KIRAN KUMAR	ELECTRONICS CORPORATION OF INDIA LIMITED (ECIL)	Hyderabad
28	9919005206	SURA CHANDRA KIRAN REDDY	ELECTRONICS CORPORATION OF INDIA LIMITED (ECIL)	Hyderabad
29	9920005054	KETHIREDDY THRIMURTHY REDDY	AICTE	NEW DELHI
30	9920005021	NAMBI E	AICTE	New Delhi
31	9920005009	CHINDALURU GANESH	AICTE	NEW DELHI
32	9920005022	RAJENDRA PRASATH V	NSIC	Chennai
33	9919005283	PANDANABOINA MADHU VARSHITH YADAV	AICTE	New delhi
34	9920005053	CHANDRU M	NSIC	Chennai
35	9920005005	BARGAVRAM V	National Small Industries Corporation	Chennai
36	9919005325	ARAVA GURU VIKRAM	Sura Systems Private Limited	chennai
37	9920005050	ELAVARASI J	NSIC	Chennai
38	9919005265	VASINNI MAHESH	Sura Systems Private Limited	Chennai
39	9919005319	VEMPULURU VENKATA SAI MEGHAMS	Sura Systems Private Limited	Chennai
40	9919005322	GONUGUNTLA VANDANA	NATIVE SPARROW SOFTWARE SOLUTIONS LLP	Chennai
41	9919005286	PARVATHAGARI VENKATA CHARAN	NATIVE SPARROW SOFTWARE SOLUTIONS	Chennai

C. Impact analysis of industrial training

- The gained practical knowledge helps the students in understanding theory concepts easily and perform better in the regular courses as well as in placements related activities.
- As an example, the student Ms.R. TAMILSELVI (9917005209) who went to the industry BSNL for her IPT, had better understanding of ECE18R373-computer communication networks and able to score B Grade in the semester examinations.

- The student Mr. SHAIK ARSHAD HUSSAIN (9915005189) who went to the Internship in the ZOHO Company, got the placement from the same company because of his excellent performance during internship.
- The industrial training program also helps to attain CO and PO attainment
- The students are getting placed in better companies with higher package
- Also, by involving the students in industrial training program, the students are doing industry relevant projects.
- As a result of the skill development training conducted in collaboration with Tessolve Semiconductors students have got placed in Tessolve the details of which is given in the Table 2.41

Table 2.41 Name List of Students Joined Tessolve

SI. No.	Register No.	Name of the student	Academic Year
1	9915005183	P. SAI ADITHYA	2018-19
2	9916005042	DUVVURU ABHIRAM REDDY	2019-20
3	9916005054	G. KUMAR SAI REDDY	
4	9916005181	PRABHAKANT TRIPATHI	
5	9916005051	G. HARIKA	
6	9917005057	GUNTI SAI KAUSHIK	2020-21
7	9917005069	K. ARCHANA	
8	9917005	VENU	

The first page of the offer letter of a student who have joined Tessolve Semiconductors through the training program conducted is given in the **Figure 2.2.36**



A HERO ELECTRONIX VENTURE

24th December 2018

P. Sai Aditya

Dear P. Sai Aditya,

With reference to your application and the subsequent interview you had with us, we are pleased to appoint you as **"Test Engineer 1"** as per the terms and conditions given below:

1. You are required to report at Tessolve on 17th June 2019, to start the technical training for one month, during which period you will be paid a stipend of Rs. 10000 (Rupees Ten Thousand Only). The other terms and conditions of the offer, as mentioned from clause no. 2 to 22, will be applicable after completion of one month technical training. Your actual employment after training will commence from 17th July 2019 with the full time CTC as mentioned in the page no.4.
2. The salary and other emoluments and benefits, as per Annexure, will be applicable upon successful completion of the training. The details pertaining to your appointment letter and salary are strictly confidential between you and the company and you should not discuss these details with anyone within or outside the company, except your Senior Manager or the HR in-charge.
3. You shall be on probation for a period of six months, with effect from the date of completion of the training period. Should your work be found satisfactory at the end of the period of probation, your appointment will be confirmed in writing. Unless so confirmed in writing, you shall continue to be on probation. The probation period is extendable at the sole discretion of the management.
4. From the date of joining, you will abide by the Provident Fund, Medical and LTA and Leave Rules, as applicable to you.
5. During the probationary period and after confirmation, your service will be terminable at the discretion of the company on giving ninety days of notice or on payment of ninety days pay in lieu of such notice. If you wish to resign from the services of the company during probation period and after confirmation, you will do so by giving ninety days prior notice.
6. During the period of your employment with the company you shall not secure or try to secure any other employment, whether full time or part time, or engage in any commercial business or pursuit on your own account or as an agent for others. During your employment with the company, you shall not undertake any course or study without getting permission from the management.

TESSOLVE SEMICONDUCTOR PVT.LTD.
Plot No: 31 (P2), Electronic City, Phase II, Bangalore 560 100, India T: +91 80 4181 2626 F: +91 80 4120 2626
W: www.tessolve.com CIn- U72300KA1993PTCO54929

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Figure 2.2.36 Job offer letter of a student from Tessolve

D. Students feedback on initiatives

- The comments and suggestions about the initiatives taken by the department and university towards arranging industry interaction, industry training program and industrial visit are obtained from the students.
- The remedial action will be taken to ensure the effectiveness of the above said activities and hence the quality of the same is improved in continuous manner.
- The suggestions are considered in order to improve this process so that students get benefitted.
- The suggestions obtained from the students are the kind of industrial visit and the lecture topic/course they need further, in order to improve their skills and knowledge in academic and co-curricular activities. The corrective action will be taken for further improvements.
- The PTOs will regulate the company trainings and based on the feedback obtained from the students the PTOs will reject the company.

The feedback form is of the format given below.



INDUSTRIAL TRAINING STUDENT'S FEEDBACK FORM

Name of the student:

Register Number:

Details of the Event/program

Name of the program:

Date:

Venue:

Comments about the program:

Questionnaire (Please make a tick)

S.No.	Question	Ratings			
		Poor	Satisfactory	Good	Excellent
1.	Relativity of the program in line with your				
2.					
3.					
4.					
5.					
6.	Program in line with your expectations				
7.	To what extent it meets out experimental learning				
8.	Is this program inducing any innovative thoughts?				
9.	How far it is related to your career advancement?				
10.	Overall, how would you rate this program				

What changes, if any, would you recommend for this program?

Signature of the student

CRITERION 3	Course Outcomes and Program Outcomes	175
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3.1. Establish the correlation between the courses and the Program Outcomes (POs) and Program Specific Outcomes (25)

Program Outcomes are statements that describe what students are expected to know and be able to know and be able to do upon graduating from the program. These relate to the skills, knowledge, analytical ability, attitude, and behavior that students acquire through the program. The POs are essentially indicating what the students can do from subject-wise knowledge acquired by them during the program. As such, POs define the professional profile of an engineering graduate.

NBA has defined the following twelve POs for an engineering graduate. These are in line with the Graduate Attributes as defined by the Washington Accord.

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. Life-long learning: Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

The Program Specific Outcomes are a statement that describes what students are expected to know and able to do in a specialized area of discipline upon graduation from a program.

The PSOs for the UG programme of B. Tech. in Electronics and Communication Engineering are stated as follows.

B.TECH. E.C.E. PROGRAMME SPECIFIC OUTCOMES	
At the end of the programme, the students will be able to:	
PSO1: Apply the basic sciences and engineering knowledge in the design and development of complex systems in the areas related to electronics and communication engineering	
PSO2: Use the cutting-edge hardware and software tools with the obtained technical and managerial skills to design software and systems for applications including signal processing, communication engineering, computer networks, VLSI design, and embedded systems	
PSO3: Possess the attitude of continuous learning for producing effective solutions for the applications, directly and indirectly, related to Electronics and Communication engineering	

The course outcomes were prepared for all the courses available in the curriculum and the same is recorded in the department curriculum and syllabi book. The Course and Course Outcome are listed in Tables 3.1a & 3.1b. Selected Courses are major courses, and it is selected indicatively as one course per semester.

Table 3.1a. Selected Major Courses from R2014 per semester with their Course Outcomes

Semester	Course Code / Name	Course Outcomes
III	ECE205 Electronic Circuits	ECE205.1 - Design amplifier circuits using transistors ECE205.2 - Estimate the properties of feedback amplifier ECE205.3 - Design a sinusoidal oscillator circuit for the given specifications ECE205.4 - Analyse the response of Power Amplifiers ECE205.5 - Design pulse generators and pulse shaping circuits using transistors ECE205.6 - Explain the functioning of power supply circuits
IV	ECE206 Signals and Systems	ECE206.1 - Classify signals and systems and describe their properties on continuous and discrete domain ECE206.2 - Perform different domain transformations ECE206.3 - Analyse the input-output relationship of linear, time-invariant systems using time- domain techniques and transform method ECE206.4 - Determine the mathematical model of linear time-invariant systems in s-domain ECE206.5 - Demonstrate an understanding of users/applications of techniques studied.
V	ECE304 Microprocessors and Microcontrollers	ECE304.1 - Describe the architecture, role of CPU, registers of intel microprocessors ECE304.2 - Write an assembly language programs by using the knowledge on instruction set and programming of 8085 and 8086 processors ECE304.3 - Interface a peripheral with 8085/8086 processor

Semester	Course Code / Name	Course Outcomes
		<p>ECE304.4 - Select a microcontroller required an application by using knowledge gained on architecture of microcontrollers</p> <p>ECE304.5 - Develop a microcontroller-based system by acquiring knowledge on programming a microcontroller</p>
VI	ECE309 VLSI Design	<p>ECE309.1 - Explain the characteristics of CMOS transistors and their circuit level of models.</p> <p>ECE309.2 - Explain the chip technology scaling process.</p> <p>ECE309.3 – Identify the interactions between process parameters device structures, circuit performance and system design.</p> <p>ECE309.4 – Create models of CMOS circuit that realize specified function as mini-project.</p> <p>ECE309.5 – Describe digital system testing and verification strategies.</p> <p>ECE309.6 - Survey literature on new developments in integrated circuit design and communicate the information analysed from it through reports</p>
VII	ECE403 Fibre Optic Communication	<p>ECE403.1 - Define basic optical laws and fundamentals.</p> <p>ECE403.2 – Classify the structure of optical fibres and connectors.</p> <p>ECE403.3 – Describe the channel impairment like losses and dispersion analyse power launching and coupling.</p> <p>ECE403.4 – Explain the techniques for optical fibres.</p> <p>ECE403.5 – Identify the optical sources, detectors and its performances and explain their principles, properties.</p> <p>ECE403.6 – Explain different concepts and component of wave division multiplexing.</p>
VIII	ECE499 Project Work	<p>ECE499.1 - Apply the knowledge of mathematics, science, engineering fundamentals with the research literature to formulate the solution for complex Engineering problems.</p> <p>ECE499.2 - Design solutions, components or processes based on research knowledge, methods including experimental analysis, interpretation and synthesis of data to provide valid conclusions.</p> <p>ECE499.3 - Create and apply appropriate techniques and IT tools to model complex engineering activities to assess health, safety and cultural issues as a responsibility of professional engineering practices</p> <p>ECE499.4 - Understand environmental context with need for sustainable development and apply professional ethics in engineering practice</p>

Semester	Course Code / Name	Course Outcomes
		<p>ECE499.5 - Function effectively as an individual and in teams to communicate the project work, write documentation reports and make effective presentations.</p> <p>ECE499.6 - Demonstrate knowledge and management principles to ensure lifelong learning to adapt technological changes.</p>

Table 3.1b. Selected Major Courses from R2018 per semester with their Course Outcomes

Semester	Course Code / Name	Course Outcomes
I	ECE18R171 Electronic Devices	<p>ECE18R171.1 - Explain the principles of semiconductor physics</p> <p>ECE18R171.2 - Analyse the characteristics of p-n junction</p> <p>ECE18R171.3 - Analyse the characteristics of MOSFET, BJT, and opto electronic devices</p> <p>ECE18R171.4 - Describe the fabrication process of integrated circuits</p> <p>ECE18R171.5 - Operate electronic equipment and hardware/software tools to analyse the characteristics of electronic devices with an understanding of limitations and impact on environment</p> <p>ECE18R171.6 - Communicate the technical information related to device analysis by means of reports</p>
II	ECE18R272 Digital Circuits and Systems Design	<p>ECE18R272.1 - Utilise Boolean algebra and K-map as tool and the knowledge of number systems and codes, to simplify and design logic circuits</p> <p>ECE18R272.2 - Design and analyse the operation of Combinational Circuits and Sequential Circuits from the description of a logical function</p> <p>ECE18R272.3 - Describe how logic gates are implemented in different logic families, including characterisation of the noise margins</p> <p>ECE18R272.4 - Describe the function, characteristics and structure of different memory systems, programmable logic devices</p> <p>ECE18R272.5 - Write HDL code for digital logic design</p> <p>ECE18R272.6 - Operate electronic test equipment and hardware/software tools to create, evaluate and troubleshoot</p>

Semester	Course Code / Name	Course Outcomes
		digital circuits by applying the knowledge on them with an understanding of their limitations and impact on society, environment ECE18R272.7 - Work and communicate as part of a team and as individual effectively in designing digital circuits following the safety procedures and ethics
III	ECE18R201 Network Theory	ECE18R201.1 - Analyse basic electrical circuits with nodal and mesh analysis ECE18R201.2 - Apply electrical network theorems ECE18R201.3 - Apply transform techniques for steady-state and transient analyses ECE18R201.4 - Determine the network functions for the given network ECE18R201.5 - Apply the frequency domain techniques to analyse and design networks like resonant circuits, filters
IV	ECE18R274 Electromagnetic Waves and Transmission Lines	ECE18R274.1 - Analyse characteristics and wave propagation on high frequency transmission lines ECE18R274.2 - Carry out impedance transformation on transmission lines ECE18R274.3 - Use sections of transmission line sections for realising circuit elements ECE18R274.4 - Characterise uniform plane wave ECE18R274.5 - Calculate reflection and transmission of waves at media interface ECE18R274.6 - Analyse wave propagation on metallic waveguides in modal form ECE18R274.7 - Explain the principle of radiation and radiation characteristics of an antenna
V	ECE18R273 Digital Signal Processing	ECE18R273.1 - Represent signals mathematically in continuous and discrete time and frequency domain ECE18R273.2 - Get the response of an LSI system to different signals ECE18R273.3 - Design the digital filters for various applications meeting the requirements ECE18R273.4 - Analyse Finite word length effect on DSP systems ECE18R273.5 - Design as well as conduct experiments, analyse and interpret the results to provide valid conclusions for signal

Semester	Course Code / Name	Course Outcomes
		<p>processing systems with help of appropriate tools and software understanding their limitations and impact on society</p> <p>ECE18R273.6 - Work effectively in as team and individual in doing digital signal processing experiments following the safety procedures and ethics</p> <p>ECE18R273.7 - Document effectively the digital signal processing experiments carried in the laboratory</p>
VI	ECE18R372 Antennas and Propagation	<p>ECE18R372.1 - Apply the properties and parameters of antenna, Friis equation in simple communication system consisting of transmit and receive antenna to predict its received power</p> <p>ECE18R372.2 - Explain how antenna radiates and capture radio wave energy from the concepts of radiation by dynamic charges and currents and retarded potentials</p> <p>ECE18R372.3 - Design an antenna system, including the shape of the antenna, the need on the arrangement of the radiating elements in an array by applying the design principles and by selecting proper antenna type for the given specifications</p> <p>ECE18R372.4 - Describe the mechanism of the atmospheric effects on radio wave propagation</p> <p>ECE18R372.5 - Grasp the research on advanced topics in antenna and summarise it in writing</p>
VII	ECE18R373 Computer Communication and Networks	<p>ECE18R373.1 - Explain the concepts of networking and its layers.</p> <p>ECE18R373.2 - Analyse the performance of networks</p> <p>ECE18R373.3 - Grasp the research on advanced topics in antenna and summarise it in writing</p> <p>ECE18R373.4 - Design as well as conduct experiments, analyse and interpret the results to provide valid conclusions for network engineering with help of appropriate tools and software understanding their limitations and impact on society</p> <p>ECE18R373.5 - Work as part of a team and as individual effectively in designing the communication systems following the norms and ethics in practice</p> <p>ECE18R373.6 - Communicate the technical information related to designed communication systems by means of oral and written reports</p>

Semester	Course Code / Name	Course Outcomes
VIII	ECE18R499 Project Work	<p>ECE18R499.1 - Apply the knowledge of mathematics, science, engineering fundamentals with the research literature to formulate the solution for complex Engineering problems.</p> <p>ECE18R499.2 - Design solutions, components or processes based on research knowledge, methods including experimental analysis, interpretation and synthesis of data to provide valid conclusions.</p> <p>ECE18R499.3 - Create and apply appropriate techniques and IT tools to model complex engineering activities to assess health, safety and cultural issues as a responsibility of professional engineering practices</p> <p>ECE18R499.4 - Understand environmental context with need for sustainable development and apply professional ethics in engineering practice</p> <p>ECE18R499.5 - Function effectively as an individual and in teams to communicate the project work, write documentation reports and make effective presentations.</p> <p>ECE18R499.6 - Demonstrate knowledge and management principles to ensure life long learning to adapt technological changes.</p>

All the courses of B. Tech Electronics and Communication Engineering; are designed with Course Outcome indicating the level (High -3, Medium – 2, Low – 1) concerning the topics covered. The Curriculum and Syllabi book for B. Tech Electronics and Communication Engineering is shared with all the students and a soft copy of the same is available on University Website. In addition to that the COs are also embedded in the following list:

1. Syllabus from University Website
2. Course Information Sheet
3. Attendance / Assessment Record
4. Laboratory Manual / Record
5. Examination Question paper.

The screenshot of the syllabus uploaded on the University website is shown in Fig. 3.1a.

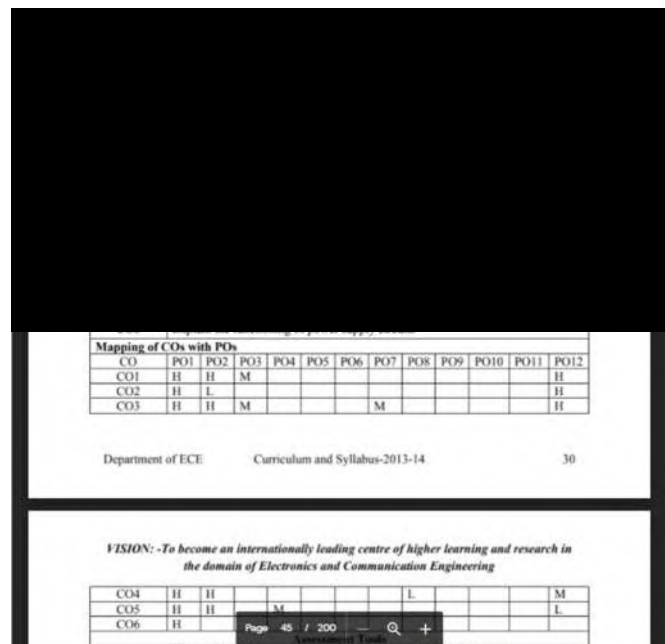
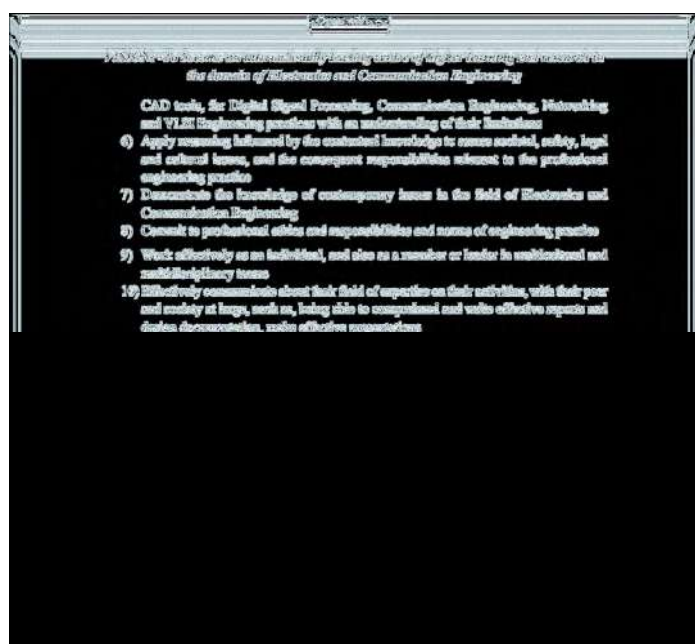
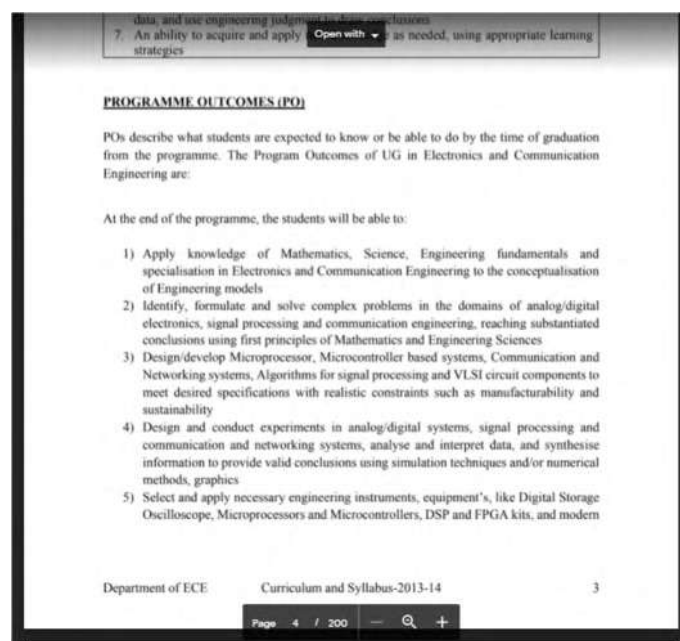


Figure. 3.1.1 Screenshot of curriculum and syllabus displayed on the website

Figure. 3.1.1 shows a sample Course Information Sheet prepared for the Course Material File indicating the Course Outcome, Program Outcome, Mapping, and other details related to course content.

B Design Ideas: (1 experiment per a batch of 3 or 4 members)**Project title should be unique and to be approved by Module Coordinator****Text Book(s):****Theory:**

1. R. K. Shrivastava, "Electromagnetic Waves", McGraw Hill India, 2006(1st Edition), ISBN: 9780070591165
2. Edward C. Jordan, Keith G. Balmain, "Electromagnetic Waves and Radiating Systems", Pearson India, 2015(2nd Edition), ISBN: 9789332551770

Laboratory:

1. CST Studio Manual <https://www.cst.com>

Reference(s):

1. G.S.N. Rao, "Electromagnetic Field Theory and Transmission Lines", Pearson India, 2005(1st Edition), ISBN: 9788131701713
2. David K. Cheng, "Field and Wave Electromagnetics", Pearson India, 2015(2nd Edition), ISBN: 9789332535022
3. Matthew N.O. Sadiku and S.V. Kulkarni, "Principles of Electromagnetics", Oxford University Press India, 2015(6th Edition), ISBN: 9780199461851
4. CST Microwave Studio Manual, https://perso.telecom-paristech.fr/begaud/intra/MWS_Tutorials.pdf
5. Dikshinlu K. Kalluri, "Electromagnetic Waves, Materials, and Computation with MATLAB®", CRC Press (Taylor and Francis Group), 2012, ISBN: 9781439838679 / 9781439896273(e-book)
6. Daniel G. Swanson, Wolfgang J. R. Hoefer, "Microwave Circuit Modeling Using Electromagnetic Field Simulation", Artech House, 2003
7. NPTEL, "Electromagnetic Fields", <http://nptel.ac.in/courses/108106073/41>
8. NPTEL, "Transmission Lines and EM Waves", <http://nptel.ac.in/downloads/117101057/>
9. NPTEL, "Transmission Lines and EM Waves", <http://nptel.ac.in/courses/117101056/>

Course Outcome(s):

After completing this course, the student will be able to:

- CO1: Analyse characteristics and wave propagation on high frequency transmission lines
 CO2: Carryout impedance transformation on transmission lines
 CO3: Use sections of transmission line sections for realising circuit elements
 CO4: Characterise uniform plane wave
 CO5: Calculate reflection and transmission of waves at media interface
 CO6: Analyse wave propagation on metallic waveguides in modal form
 CO7: Explain the principle of radiation and radiation characteristics of an antenna

Course Type: Integrated Course**Weightage**

Sessional Examinations: (Two)	Assignments/Mini project/ Seminar/ Tutorials etc.,	Practical (Laboratory)	End Semester Examinations:	
			Theory	Practical
20%	10%	20%	35%	15%

Course Information Handbook

Course Name/Code	ECE18R274 ELECTROMAGNETIC WAVES AND TRANSMISSION LINES		
Degree/ Branch	B.Tech. E.C.E		
Semester/ Section	IV/ALL		
Course Credit	4(3-0-2)		
Course Category	Programme Core - Integrated Course		
Course Instructors	Faculty Name		Contact details
			Staff Room E-mail
	Mrs. Josephine Sella	S106	josphine@klu.ac.in
	Mr. V. Karutharan	S002	karutharan@klu.ac.in
	Mr. V. Muneeswaran	313	v.muneeswaran@klu.ac.in
	Mr. R. Radeep Krishna	311	r.radeepkrishna@klu.ac.in
Course Coordinator	Ms. Josephine Sella J		
Module	Communication And Networking		
Module Coordinator	Dr. S. Rama		
Programme Coordinator	Dr. A. Muthukumar		
Academic Year	2018-2019		

Pre-requisite:

PHY18R171 – Introduction to Electromagnetic Theory / equivalent

Course Description:

The course is the most fundamental course for electronics and Communication engineering. The course defines capacitors, inductors and resistors in terms of its primary electric and magnetic quantities like electric charge, electric potential, electric current, electric and magnetic flux. Electromagnetic explains universal concepts in three-dimension real world, i.e., electromagnetic wave propagation in free-space. The course also provides students with a basic knowledge and understanding of transmission lines and wave guide structure as medium of EM propagation. The course also introduces various effects of EMI/EMC with standard for describing their properties.

Career Opportunities:

All electronics engineering positions requiring the skills of building and measuring circuits. A fundamental course for an engineer to get placed in electronics industries.

Course Outcome(s):

After completing this course, the student will be able to:

- CO1: Analyse characteristics and wave propagation on high frequency transmission lines
 CO2: Carryout impedance transformation on transmission lines
 CO3: Use sections of transmission line sections for realising circuit elements
 CO4: Characterize uniform plane wave
 CO5: Calculate reflection and transmission of waves at media interface
 CO6: Analyse wave propagation on metallic waveguides in modal form
 CO7: Explain the principle of radiation and radiation characteristics of an antenna

Acti
Go to**Mapping of COs with POs**

CO	Mapping of COs with POs												PSO		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	1	2	3
CO1	H	H	L	H	H	H	H	L	H	H	H	H			
CO2	M	H		H	H	M	H		H	H	M	H			
CO3	M	H				M	H				M	H			
CO4		H	L	M	H		H	L	M	H					
CO5	L	H	L	M	H	L	H	L	M	H	L	H			
CO6	L	H	L	L	H	L	H	L	L	H	L	H			
CO7	H														

Books:

SL	Book Name	Author(s)	Publisher	Year, Edition
Test Books	1. Electromagnetic Waves,	R. K. Shrivastava,	McGraw Hill India	2006(1st Edition), ISBN: 9780070591165
	2. Electromagnetic Waves and Radiating Systems	Edward C. Jordan, Keith G. Balmain	Pearson India	2015(2nd Edition), ISBN: 9789332551770
Theory Reference	1. Electromagnetic Field Theory and Transmission Lines	G.S.N. Rao,	Pearson India	2005(1st Edition), ISBN: 9788131701713
	2. Field and Wave Electromagnetics	David K. Cheng	Pearson India	2015, (2nd Edition), ISBN: 9789332535022
	3. Principles of Electromagnetics	Matthew N.O. Sadiku and S.V. Kulkarni	Oxford University Press India	2015(6th Edition), ISBN: 9780199461851
	4. CST Microwave Studio Manual,	https://perso.telecom-paristech.fr/begaud/intra/MWS_Tutorials.pdf		
	5. Electromagnetic Waves, Materials, and Computation with MATLAB®	Dikshinlu K. Kalluri,	©, CRC Press (Taylor and Francis Group),	2012, ISBN: 9781439838679 / 9781439896273(e-book)
	6. Microwave Circuit Modeling Using Electromagnetic Field Simulation	Daniel G. Swanson, Wolfgang J. R. Hoefer,	Artech House	2003

Practical Reference	CST Studio Manual	https://www.cst.com
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Lesson Plan

ABBREVIATION	TEACHING METHOD
L	Class Room Lecture (Chalk Based Lecture)
EL	Smart Class Room Lecture- Web-Facilitated Course Delivery/ Flipped Class Lecture/ Multimedia Lecture/ Animation
SS	Self-Study Topic – Student Seminar
T	Tutorial Case-Study/ Scenario
P	Practical/ Laboratory Demonstration/ Model Demonstration/ Simulation
GD	Group Discussion/ Debate/ Role Play
GL	Guest Lecture/ Workshop/ Interview with Experts/ Webinars
IV	Industrial Visit/ Field Trip
PJ	Project Design/ Project Demonstration/ Literature Survey

Sl	Topic Name	Ref.	page	# of Hours	Cum. Hours	Method
1	Introduction, CO Discussion	---	---	1	1	---
Unit 1 Transmission Lines						
2	Transmission Lines, Equations of Voltage and Current on TX line Propagation constant and characteristic impedance	R1	414-426	2	3	L+EL
3	Reflection coefficient and VSWR – Impedance Transformation on Lossless and Low loss Transmission line	R1	432-433	2	5	L
4	Power transfer on TX line – Smith Chart, Admittance Smith Chart	R1	437-452	2	7	L
5	Applications of transmission lines: Impedance Matching	R2	497	1	8	L
6	Use transmission line sections as circuit elements.	R2	454	1	9	L+EL
7	Tutorials	R1, R2, R3		1	10	T
Assessment of CO1, CO2, CO3				2	12	
Unit 2 Maxwell's Equations						
8	Basics of Vectors (Vector Addition, Subtraction, product of vectors)	R2	12-18	1	13	L

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9	Basics of vectors(Coordinate Systems and Transformation)	R3	5-18	2	15	L
10	Vector Calculus	R3	25-55	1	16	L
11	Basic Laws of Electromagnetics(Coulombs law, Gauss law, Biot savart law, Amperes Law, Faradays Law	R2	77, 87, 234, 308	2	18	L+EL
12	Maxwell's Equations	R2	321	1	19	L
13	Boundary Conditions at Media Interface (both Electrostatic and Magnetostatic	R2	116, 262	2	21	L
14	Tutorials	R1, R2, R3		1	22	T
Assessment of CO5				1	23	
Unit 3 Uniform Plane Wave and Plane waves at a Media interface						
15	Uniform plane wave Propagation of wave	R3	377	1	24	L
16	Wave polarization	R2	364	1	25	L+EL
17	Wave propagation in conducting medium	R1	309	1	26	L
18	Phase and group velocity Power flow and Poynting vector	R2	355,375-385	1	27	L
19	Surface current and power loss in a conductor	R3	390	1	28	L
20	Plane Waves at a Media Interface, Plane wave in arbitrary direction	R3	379	1	29	L
21	Reflection and refraction at dielectric interface Total internal reflection	R3	394-405	1	30	L
22	Wave polarization at media interface	R2	390-397	1	31	L
23	Reflection from a conducting boundary	R2	408	1	32	L
24	Tutorials	R1, R2, R3		1	33	T
Assessment of CO4				1	34	
Unit 4 Waveguides, Cavity Resonator						
25	Wave propagation in parallel plane waveguide	R2	534-543	1	35	L
26	Analysis of waveguide general approach	R2	521-529	1	36	L
27	Rectangular waveguide	R2	547-559	1	37	L+EL
28	Modal propagation in rectangular waveguide	R2	547-559	2	39	L
29	Surface currents on the waveguide walls	R3	518	1	40	L
30	Field visualization	R3	518	1	41	L+EL

31	Attenuation in waveguide	R3	518	1	42	L
32	Cavity resonator	R2	582-589	1	43	L+EL
33	Tutorials	R1, R2, R3		1	44	T
Assessment of CO5 & CO6				1	45	
Unit 5 Radiation and EM Wave Application						
34	Radiation: Solution for potential function	R3	545	2	47	L
35	Radiation from the Hertz dipole, Power radiated by hertz dipole	R3	547-550	2	49	L
36	Radiation Parameters of antenna	R2	607	1	50	L+EL
37	Receiving antenna	R2	631	1	51	L
38	Monopole and Dipole antenna	R1	492-497	1	52	L
39	Applications of EM Waves	R3	416	1	53	SS, GD
40	Tutorials	R1, R2, R3		1	54	T
Assessment of CO7				1	55	
Course Survey and Discussion						

S.No	Name of the Experiment	Mapping CO	#of Hours	Cum. Hours	Method
1	Study of field patterns of various modes inside a waveguide / cavity	CO6	2	2	P
2	Observe the transient phenomenon of terminated coaxial transmission lines to study their time domain behaviour	CO3	2	4	P
3	Study the behaviour of terminated coaxial transmission lines in frequency domain	CO2	2	6	P
4	Study of microstrip transmission line	CO1	2	8	P
5	Radiation pattern of monopole / dipole	CO7	2	10	P
6	Smith chart and its application for the unknown impedance measurement	CO3	2	12	P
7	Study the behaviour of impedance matching for passive networks using Smith chart	CO3	2	14	P
8	Find the change in characteristics	CO5	2	16	P

	impedance and reflection coefficients of the transmission line by changing the dielectric properties of materials embedded between two conductors				
9	Mini Project Demonstration	All CO's	2	18	P

COs, Teaching Methodologies and Assessment Tools:

CO	Content Delivery Methodology	Bloom's Level	Assessment Tools	
			Direct	Indirect
CO1	Class Lectures Tutorials Flipped Classes / Multimedia Lectures/Practical	Analyse	SE-I - 25% END SEM - 50% Continuous Assessment - 10% Laboratory Assessment - 15%	
CO2	Class Lectures Tutorials Flipped Classes / Multimedia Lectures/Practical	Apply	SE-I - 25% END SEM - 50% Continuous Assessment - 10% Laboratory Assessment - 15%	
CO3	Class Lectures Tutorials Flipped Classes / Multimedia Lectures/Practical	Understand	SE-I - 25% END SEM - 50% Continuous Assessment - 10% Laboratory Assessment - 15%	
CO4	Class Lectures Tutorials Flipped Classes / Multimedia Lectures	Understand	SE-II - 25% END SEM - 50% Continuous Assessment - 25%	
CO5	Class Lectures Tutorials Flipped Classes / Multimedia Lectures/Practical	Apply	SE-I - 25% END SEM - 50% Continuous Assessment - 25%	
CO6	Class Lectures Tutorials Flipped Classes / Multimedia Lectures/Practical	Analyse	SE-II - 25% END SEM - 50% Continuous Assessment - 10% Laboratory Assessment - 15%	
CO7	Class Lectures Tutorials Flipped Classes / Multimedia Lectures/Practical	Understand	SE-II - 25% END SEM - 50% Continuous Assessment - 10% Laboratory Assessment - 15%	

Assessment Topics:

CO	Measurement Tool	Topics	Beyond Syllabus/Self-Study	Sub. Date Tentative	Date
1.	Assignment - I	Industrial problem in transmission lines	Self-Study	Second Week of January	
2.	Assignment - II	Problems in Transmission Lines	N	Fourth Week of January	
3.	Assignment - III	Applications of Transmission Lines	N	Second Week of February	
4.	Assignment - IV	Reflection coefficient derivation	N	Second Week of March	
5.	Assignment - V	Problems Related to Coordinate system conversion, Maxwell's Equation	N	Fourth Week of Feb'19	
6.	Quiz - I	Problems in Unit -IV (Full)Topics	N	Fourth Week of March	
7.	Quiz - II	Unit -V (Full)Topics, Recent Developments in Antenna	Beyond Syllabus	First Week of April	

Exam Portion:

CO	Measurement Tool	Topic No(s)	Date (Tentative)	Measurement Time
CO1, CO2, CO3	Unit Test 1	1 to 7	Fourth Week of January'19	
CO1, CO2, CO3, CO5	Sessional Examination - I	1 to 14	Second week of February'19	
CO4, CO5	Unit Test 2	15-24	Second Week of March'19	
CO4, CO5, CO6	Sessional Examination - II	15-33	Fourth Week of March'19	
CO7	Unit Test 3	34-40	Second Week of April	
CO1-CO7	End Semester Examination	1-40	Third Week of April	

Course Coordinator ECE18R274

Programme Coordinator

Module Coordinator


HoD / ECE

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Figure. 3.1.2 Sample Course Plan for the course ECE18R274 Electromagnetic Waves and Transmission Lines

Figure. 3.1.3 shows a sample attendance/assessment record indicating the Course Outcome, Program Outcome, Mapping, and other details related to the course.

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Anand Nagar, Krishnankoil - 626 126.

 200497

ATTENDANCE / ASSESSMENT RECORD

ACADEMIC YEAR 20 20 - 20 21

Name of the Staff : *Dr. Josephine Belle. J*
Easy Staff ID : *JSJEE*
Department : *ECE*
Name of the Course : *Electromagnetic Waves & Tr. Lines*
Course code : *ELE18R274* Credits : *4*
Type of Course : Theory / Laboratory / Theory with Practical / Laboratory with Project / Online / One Credit Courses / Integrated Courses
Branch / Section : *II - E*
Year / Semester : *IV Sem.*

UNIVERSITY VISION
To be a Center of Excellence of International Repute in Education and Research

UNIVERSITY MISSION
To Produce Technically Competent, Socially Committed Technocrats and Administrators through Quality Education and Research.

GENERAL INSTRUCTIONS

1. Attendance should be marked on the relevant column noting the month / date and the periods and also in EASY Software.
2. At the end of each period the number of absentees should be clearly noted in the last row of the column in each page & initial by the staff.
3. Topics covered in each class should be recorded.
4. At the end of each month the entries in the register should be checked by the Head of the Department / Program Co-ordinator / Module Co-ordinator / Course Co-ordinator concerned.
5. At the end of the each assessment, the marks should be entered in the EASY Software.
6. The Course Teacher will be responsible for the safe custody of this register.
7. This is an important document and the Course Teacher should keep the entries upto date and correct.
8. The registers will have to be produced for scrutiny by the Deans / Controller of Examinations or any other inspecting authority whenever called for.

2

Program Outcome (PO) / Program Specific Outcome (PSO)

At the end of the programme, the students will be able to:

1. Apply knowledge of Mathematics, Science, Engineering fundamentals and specialisation in Electronics and Communication Engineering to the conceptualisation of Engineering models
2. Identify, formulate and solve complex problems in the domains of analog / digital electronics, signal processing and communication engineering, reaching substantiated conclusions using first principles of Mathematics and Engineering Principles.
3. Design/develop Microprocessor, Microcontroller based systems, Communication and Networking systems, Algorithms for signal processing and VLSI circuit components to meet desired specifications with realistic constraints such as manufacturability, sustainability.
4. Design and conduct experiments in analog / digital systems, signal processing and communication and networking systems, analyse and interpret data, and synthesise information to provide valid conclusions using simulation techniques and/or numerical methods, graphics.
5. Select and apply necessary engineering instruments, equipment's, like Digital Storage Oscilloscope, Microprocessors and Microcontrollers, DSP and FPGA kits, and modern CAD tools, for Digital Signal Processing, Communication Engineering, Networking and VLSI Engineering practices with an understanding of their limitations.
6. Apply reasoning informed by the contextual knowledge to assess societal, safety, legal and cultural issues, and the consequent responsibilities relevant to the professional engineering practice.
7. Demonstrate the knowledge of contemporary issues in the field of Electronics and Communication Engineering.
8. Commit to professional ethics and responsibilities and norms of engineering practice.
9. Work effectively as an individual, and also as a member or leader in multicultural and multidisciplinary teams.
10. Effectively communicate about their field of expertise on their activities, with their peer and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations.
11. Manage projects by applying gained knowledge on Engineering and Management principles.
12. Adapt themselves completely to the demands of the Electronics and Communication related Engineering by life-long learning.

3

DEPARTMENT VISION

To become an internationally leading Centre of higher learning and research in the domain of Electronics and Communication Engineering

DEPARTMENT MISSION

To provide quality education in the domain of Electronics and Communication Engineering through updated curriculum, effective teaching learning process, best of lived laboratory facilities and collaborative ventures with the industries.
To inculcate innovative skills, research aptitude, team-work, ethical practices among students so as to meet expectations of the industry as well as society.

Course Outcome (CO)

CO1: Analyse characteristics and wave propagation on high frequency transmission lines
CO2: Carryout impedance transformation on transmission lines
CO3: Use sections of transmission line sections for realising circuit elements
CO4: Characterise uniform plane wave
CO5: Calculate reflection and transmission of waves at media interface
CO6: Analyse wave propagation on metallic waveguides in modal form
CO7: Explain the principle of radiation and radiation characteristics of an antenna

5.	
6.	
7.	

Course Outcome (CO) Vs Program Outcome (PO) and Program Specific Outcome (PSO)


PO \ CO	1	2	3	4	5	6	7	8	9	10	11	12	PSO 1	PSO 2	PSO 3	PSO 4
1	H	H	L	H	H	H	L	H	H	H	H	H	H			
2	M	H		H	M	H		H	M	M	H		H			
3	M	H				M	H			M	M	H		H		
4		H	L	M	H		H	L	H			H		H		
5	L	H	L	M	H	L	H	L	L	L	H		H			
6	L	H	L	L	H	L	H	L	L	L	H	H				
7	H					H				H	H	H				
8																

Assessment Method and Weightage

CO	Assessment Method	Weightage	CO	Assessment Method	Weightage
1	SE-T	25%	1	SE-T	25%
2	Ass	10%	2	Ass	25%
3	Lab	15%	3	End Sem	50%
4	End Sem	50%	4		
5			5		
6	SE-T	25%	6	SE-T	25%
7	Ass	10%	7	Ass	25%
8	Lab	15%	8	Lab	15%
9	End Sem	50%	9	End Sem	50%
10			10		
11			11		
12			12		

Figure. 3.1.3 Model Attendance / Assessment Record

Figure. 3.1.4 shows a sample laboratory manual/record indicating the Course Outcome, Program Outcome, Mapping and other details related to course.


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Srivilliputhur (Via), Virudhunagar (Dt), Tamil Nadu.

Department of
Electronics and Communication Engineering

Laboratory Manual / Record
(Academic Year 2017 - 2018 ODD Semester)


Name of the Course } DIGITAL SIGNAL PROCESSING
with Code } ECE 381
Course Co-ordinator : Mrs. N.Bhuvaneshwary
Course Instructor : Dr. A.Muthukumar
Mrs. A.Lakshmi
Mr. S.Diwakaran
Ms. Josephine Selle
Mrs. N.Bhuvaneshwary

Name of the Student : Muthu Raj. P
Register No. : CP15005115 Year : IIIrd Year
Semester : V Section : C

ECE 381 Digital signal Processing Lab Manual

KALASALINGAM UNIVERSITY

ECE381- DIGITAL SIGNAL PROCESSING LABORATORY
MANUAL / RECORD


Academic year (2017-2018) ODD Semester
Department of Electronics and Communication Engineering
Bachelor of Technology

Course Coordinator: Mrs. N. Bhuvaneshwary
Course Instructor: Dr.A.Muthukumar
Mrs.A.Lakshmi
Mr.S.Diwakaran
Ms.Josephine Selle
Mrs.N.Bhuvaneshwary

KALASALINGAM UNIVERSITY
(Kalasalingam Academy of Research and Education)
(Under Sec 3 of UGC Act, 1956)
Anand Nagar, Krishnankoil - 626 126,
Srivilliputhur (Via), Virudhunagar (Dt), Tamil Nadu

DEPARTMENT OF ELECTRONIC COMMUNICATION ENGINEERING

BONAFIDE CERTIFICATE

Bonafied record of work done by P. MUTHURAJ
of IV YEAR, ECE in DIGITAL SIGNAL PROCESSING
during even semester in academic year 2017-2018

Staff in-charge. [Signature] Head of the Department.

Submitted to the Practical Examination held at
Kalasalingam University, Krishnankoil on 16.11.17

REGISTER NUMBER 9915005165

Internal Examiner. [Signature] 16/11/17 External Examiner. [Signature] 16/11/17

ECE 381 Digital signal Processing Lab Manual

S.No	Contents	Page no.
1.	Instructions	4
2.	Vision, Mission, PEOs, Gas	5
3.	Programme Outcomes, Course Outcomes	8
4.	Course Information Sheet	7
5.	PO vs. CO Mapping	8
6.	Generation of continuous time and discrete time signals using software	16
7.	Linear and circular convolution of two sequences using software	25
8.	Circular convolution using DFT by using software	35
9.	Design of IIR filters - Butterworth, Chebyshev I and II using software	44
10.	Design of FIR filters using windows by using software	59
11.	Calculation of FFT of a signal using DIT and DIF algorithms	69
12.	Study of various addressing modes of DSP Generation of the basic signals using DSP Hardware	80
13.	Implementation of IIR filter using DSP Hardware Implementation of FIR filter using DSP Hardware	103
14.	Calculation of FFT using DSP Hardware	113
15.	Spectral Estimation and Sampling Rate Conversion using software	121
16.	Model analog communication system using software - Generate sine signal, apply amplitude modulation at transmitter, add AWGN of channel, demodulate the received signal, calculate SNR	131
17.	BER Analysis of binary digital modulation Schemes (ASK, PSK and FSK) in the presence of Additive White Gaussian Noise using software	141

APPENDICES

A	Introduction to DSP processor	151
B	List of mini project in DSP	157
C	Rubric for Pre-Lab Work, On-Lab Work Assessment	158
D	Rubrics for On-Lab Work and Laboratory Report/Record	159
E	Rubric for Model lab	161
F	Rubric for Mini Project	162

ECE 381 Digital signal Processing Lab Manual

MARKS SUMMARY

Exp.No	Experiment Name	Page no.	Marks	Course Teacher's Signature
1	Generation of continuous time and discrete time signals using software	21-22	27.3	[Signature]
2	Linear and circular convolution of two sequences using software	23-24	20.3	
3	Circular convolution using DFT by using software	31-41	29.8	
4	Design of IIR filters - Butterworth, Chebyshev I and II using software	42-58	29.7	[Signature]
5	Design of FIR filters using windows by using software	59-64	27.5	
6	Calculation of FFT of a signal using DIT and DIF algorithms	65-78	27.5	
7	Study of various addressing modes of DSP Generation of the basic signals using DSP Hardware	79-102	25	[Signature]
8	Implementation of IIR filter using DSP Hardware Implementation of FIR filter using DSP Hardware			
9	Calculation of FFT using DSP Hardware			
10	Spectral Estimation and Sampling Rate Conversion using software	123-131	20.10	[Signature]
11	Model analog communication system using software - Generate sine signal, apply amplitude modulation at transmitter, add AWGN of channel, demodulate the received signal, calculate SNR	133-142	27.2	
12	BER Analysis of binary digital modulation Schemes (ASK, PSK and FSK) in the presence of Additive White Gaussian Noise using software	143-150	23.2	
Average (10%)				
Laboratory experimental report (10%)				
Mini Project Demonstration (20%)				
Model Examination (10%)				
Total Internal Marks (50 %)				

ECE 381 Digital signal Processing Lab Manual

Instructions

Attendance

Students are expected to attend laboratory classes regularly, and to be on time for every laboratory class period. Students can be dropped from a class due to excessive absences. Excessive tardiness may be considered absences. Students are responsible for assignments, and experiments covered during their absences.

Academic Honesty

Scholarship dishonesty is treated with the utmost seriousness by the instructor and the department. Academic dishonesty includes, but it is not limited to the willful attempt to misrepresent one's work, cheat, plagiarize, or impede other students' scholastic progress.

Dress Code

Dress code must be appropriate for the laboratory. Students must dress in a way that clothing and accessories do not compromise their safety, and the safety of others. Proper foot wear is required in all laboratories. Absolutely no sandals or other footwear that exposes the feet will be allowed.

Laboratory Conduct

Proper behaviour is expected in all laboratories. Fool language and horseplay are not allowed

Books, Tools and Supplies

Students are required to bring to class the required textbooks, tools (including

ECE 381 Digital signal Processing Lab Manual

UNIVERSITY MISSION	
To Produce Technically Competent, Socially Committed Technocrats and Administrators through Quality Education and Research	
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING	
UNIVERSITY VISION	MISSION
To be a Centre of Excellence of International Repute in Education and Research.	To provide quality education in the domain of Electronics and Communication Engineering through periodically updated curriculum, effective teaching learning process, best of breed laboratory facilities and collaborative ventures with the industries
To become an internationally leading centre of higher learning and research in the domain of Electronics and Communication Engineering.	To inculcate innovative skills, research aptitude, team work, ethical practices among students so as to meet expectations of the industry as well as society
B.TECH. E.C.E. PROGRAMME EDUCATIONAL OBJECTIVES	
Within a few years of obtaining an undergraduate degree in Electronics and Communication Engineering, the students will be able to:	
PEO1: TECHNICAL PROFICIENCY: Succeed in obtaining employment appropriate to their interests, education and will become productive and valued engineers within their companies	
PEO2: PROFESSIONAL GROWTH: Continue to develop professionally through life-long learning, higher education, and other creative pursuits in their areas of expertise or interest	
PEO3: MANAGEMENT SKILLS: • Exercise leadership (management) qualities in a responsive, ethical, and innovative manner	
B.TECH. E.C.E. PROGRAMME SPECIFIC OUTCOMES	
At the end of the programme, the students will be able to:	
PSO1: Knowledge: Apply the knowledge of engineering and basic sciences to design, develop, test components and systems for applications including Signal Processing, VLSI Design, Embedded, Communication Engineering and Networking	
PSO2: Skills: Solve the complex engineering problems, using latest techniques, tools, along with the needed skills with an understanding of societal, environmental, safety, legal and cultural impacts of the solution	
PSO3: Attitude: Apply the contextual knowledge of engineering to function effectively as an individual or a leader in multidisciplinary environments	

ECE 381 Digital signal Processing Lab Manual

B.TECH. E.C.E. PROGRAMME OUTCOMES (R2013)	
At the end of the programme, the students will be able to:	
PO1: Apply knowledge of Mathematics, Science, Engineering fundamentals and specialisation in Electronics and Communication Engineering to the conceptualisation of Engineering models	
PO2: Identify, formulate and solve complex problems in the domains of analog/digital electronics, signal processing and communication engineering, reaching substantiated conclusions using first principles of Mathematics and Engineering Sciences	
PO3: Design/develop Microprocessor, Microcontroller based systems, Communication and Networking systems, Algorithms for signal processing and VLSI circuit components to meet desired specifications with realistic constraints such as manufacturability and sustainability	
PO4: Design and conduct experiments in analog/digital systems, signal processing and communication and networking systems, analyse and interpret data, and synthesise information to provide valid conclusions using simulation techniques and/or numerical methods, graphics	
PO5: Select and apply necessary engineering instruments, equipment's, like Digital Storage Oscilloscope, Microprocessors and Microcontrollers, DSP and FPGA kits, and modern CAD tools, for Digital Signal Processing, Communication Engineering, Networking and VLSI Engineering practices with an understanding of their limitations	
PO6: Apply reasoning informed by the contextual knowledge to assess societal, safety, legal and cultural issues, and the consequent responsibilities relevant to the professional engineering practice	
PO7: Demonstrate the knowledge of contemporary issues in the field of Electronics and Communication Engineering	
PO8: Commit to professional ethics and responsibilities and norms of engineering practice	
PO9: Work effectively as an individual, and also as a member or leader in multicultural and multidisciplinary teams	
PO10: Effectively communicate about their field of expertise on their activities, with their peer and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations	
PO11: Manage projects by applying gained knowledge on Engineering and Management principles	
PO12: Adapt themselves completely to the demands of the Electronics and Communication-related Engineering by life-long learning	

ECE 381 Digital signal Processing Lab Manual

COURSE INFORMATION SHEET				
Course Name / Code	Digital Signal Processing Laboratory			
Degree / Branch	B.Tech., E.C.E.			
Semester / Section	VI / A, B, C, D			
Course Credit	2 credits - 3 contact hours (1 practical session per week)			
Course Category	Programme Core - Practical			
Course Instructors	Faculty Name	Initials	Staff Room	E-mail
	Dr. A. Mathakumar	B106	mathakumar@klu.ac.in	
	Mr. A. Lakshmi	B001	lakshmi@klu.ac.in	
	Mr. S. Divakaran	B002	sdivakaran@klu.ac.in	
	Mr. N. Bhuvaneshwari	B106	nbhuvaneshwari@klu.ac.in	
Course Coordinator	Mr. N. Bhuvaneshwari		DSP at lab	josephine@klu.ac.in
Module	Signal Processing			
Module Coordinator	Mr. Josephine Sella			
Programme Coordinator	Mr. K. Jaya Prakash			
Academic Year	Odd Semester / 2017-18			

1. **Pre-requisite:** MAT101, MAT102, MAT205, ECE206, HSS101, HSS102

2. **Course Description:** Digital Signal Processing (DSP) is concerned with the representation, transformation and manipulation of signals on a computer. After half a century advances, DSP has become an important field, and has penetrated a wide range of application systems, such as consumer electronics, digital communications, medical imaging and so on. With the dramatic increase of the processing capability of signal processing microprocessors, it is the expectation that the importance and role of DSP is to accelerate and expand.

Discrete-Time Signal Processing is a general term including DSP as a special case. This course will introduce the basic concepts and techniques for processing discrete-time signal on a computer. By the end of this course, the students should be able to understand the most important principles in DSP. The course emphasizes understanding and implementations of theoretical concepts, methods and algorithms.

3. **Career Opportunities:**

All electronics engineering positions requiring the skills of Matlab. A fundamental course for an engineer to get placed in electronics industries.

4. **Course Objectives:**

To familiarize the students with

1. Implementation of signals and systems using MATLAB.
2. Implementation of IIR and FIR filter using MATLAB
3. Implementation of basic concepts of signals, filtering using DSP Processors

5. **Course outcomes**

At the end of the course, the students will be able to

1. Analyse the signals and design systems for signal processing
2. Explain the DSP architecture and its instructions
3. Work as part of a team effectively
4. Communicate the technical information by means of oral and written reports

ECE 381 Digital signal Processing Lab Manual

6. **PO vs CO Mapping**

CO vs. PO, PSO	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	H	H	H	M	L	N	N	N	N	N	N	N	N	H	
CO2	H	M	N	N	N	N	N	N	N	N	N	N	M	L	H
CO3	N	N	N	L	N	M	M	L	H	M	N	N		H	M
CO4	N	N	N	L	N	M	M	L	M	H	N	N	L	M	

7. **Books:**

Book Name	Author(s)	Publisher	Year, Edition
1. Laboratory Manual	ECE Dept., KLU		
2. Digital Signal Processing using Matlab	Vinay K. Ingle, John G. Proakis	Asok K. Gosh, Prentice Hall Inc	Third Edition, 2010
3. Digital signal processing using matlab for Students and researchers	John w. Leix, University of Southern Queensland	A John Wiley & sons, inc., publication	Third Edition 2011
4. Digital Signal Processing using TMS320CXXX	Ralph Channing	Wiley & sons, inc.,	Second edition 2004

8. **Lesson Plan:**

ABBREVIATION	TEACHING METHOD
L	Class Room Lecture (Chalk Based Lecture)
EL	Smart Class Room Lecture/ Web-Facilitated Course Delivery/ Flipped Class
SS	Lecture/ Multimedia Lecture/ Animation
T	Self-Study Topic - Student Seminar
P	Tutorial/ Case-Study/ Scenario
GD	Practical/ Laboratory Demonstration/ Model Demonstration/ Simulation
GL	Group Discussion/ Debate/ Role Play
IV	Guest Lecture/ Workshop/ Interview with Experts/ Webinars
PI	Industrial Visit/ Field Trip
	Project Design/ Project Demonstration/Literature Survey

Figure. 3.1.4 Sample Laboratory manual/record for the course ECE381 Digital Signal Processing Laboratory

To ensure the list above a sample copy of the question paper framed during the year 2017-2018 for the course ECE205 – Electronic Circuits for Sessional Examination - 1 is scanned and shown in Fig. 3.1e. The question paper includes a list of COs, Bloom's taxonomy, Pattern/level with mark allocation, and mapping.

KALASALINGAM UNIVERSITY (Kalasalingam Academy of Research and Education) Anand Nagar, Krishnankoil - 626 126.							
SESSIONAL EXAMINATION - 1 - ODD SEMESTER [2017-2018]							
Course Code/ Name :	ECE205-Electronic Circuits				Date & Session :	16.8.17/FN	
Degree/Branch :	B.Tech.-ECE				Duration :	90 Minutes	
Semester/Section :	III-ALU				Max. Marks :	50 Marks	
Assessment Pattern as per Bloom's Taxonomy:							
Remember	Understand	Apply	Analyze	Evaluate	Create	Total	
6	36	8	-	-	-	50	
Course Outcomes for Assessment in this Test:							
COs	Course Outcome						
CO1	Design amplifier circuits using Transistors						
CO2	Estimate properties of a Feedback amplifier circuits						
PART - A (5 x 2 = 10 Marks)							
Answer All Questions							
1.	Mention any four different types of Amplifier circuits?	Understand	CO1				
2.	Draw the Small signal and Large signal equivalent circuit of BJT?	Understand	CO1				
3.	Draw the circuit diagram of Directly coupled two stage BIFET amplifier?	Remember	CO1				
4.	What is the difference between positive and negative feedback?	Remember	CO2				
5.	Define Sensitivity?	Remember	CO2				
PART - B (5 x 8 = 40 Marks)							
Answer All Questions							
6.	Explain briefly about the H-parameter Analysis for CE Amplifier circuit?	Understand	CO1	(8)			
7.	Calculate the V_{E}, V_{C}, V_{CE} for the voltage divider bias circuit having $V_{CC}=18V, R_1=33K\Omega, R_2=12K\Omega, R_E=1.2K\Omega, R_C=1K\Omega$.	Apply	CO1	(8)			
8.	What is DC biasing? Explain any one type of BJT Biasing ?	Understand	CO1	(8)			
9.	Explain about the input resistance and output resistance of Series-series and Series-shunt amplifier?	Understand	CO2	(8)			
10.	(a) Brief about Current Shunt amplifier?	Understand	CO2	(4)			
	(b) A voltage series negative feedback amplifier has a voltage gain without feedback $A=500, R_i=3K\Omega, R_o=20K\Omega$ and $\beta=0.01$. Calculate voltage gain A_v, R_{id} and R_{of} .	Understand	CO2	(4)			
Assessment Summary:							
COs	Remember	Understand	Apply	Analyze	Evaluate	Create	Total
CO1	4	20	8	-	-	-	32
CO2	2	16	-	-	-	-	18

Figure. 3.1.5 Model Question paper for SE - 1 for the course ECE205 Electronic Circuits

For all the courses available in the curriculum the mapping between CO and PO is prepared. The course articulation matrix is given for eight selected courses each per semester. Tables 3.2a and 3.2b show the course articulation matrix for the core courses indicatively.

1,2,3 are correlation levels defined as:

- 1- Slight (Low)
- 2- Moderate (Medium)
- 3- Substantial (High)

Table 3.2a Course Articulation Matrix

Course Outcome (CO)		Program Outcome												PSO		
Course Code / CO No.	Statement	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
ECE205 / Electronic Circuits / III Semester																
ECE205.1	Design amplifier circuits using transistors	3	3	2									3	3		3
ECE205.2	Estimate the properties of feedback amplifier	3	3										3	3		3
ECE205.3	Design a sinusoidal oscillator circuit for the given specifications	3	3	3				2					3	3	2	3
ECE205.4	Analyse the response of Power Amplifiers	3	3						1				2	3	1	2
ECE205.5	Design pulse generators and pulse shaping circuits using transistors	3	3	2									1	3		1
ECE205.6	Explain the functioning of power supply circuits	3					2						2	3	2	2
ECE206 / Signals and Systems / IV Semester																
ECE206.1	Classify signals and systems and describe their properties on continuous and discrete domain	3	3	2		1							3	3	1	3
ECE206.2	Perform different domain transformations	3	3	2		1							3	3	1	3
ECE206.3	Analyse the input-output relationship of linear, time-invariant systems using time-domain techniques and transform method	2	2	2		1							2	2	1	2
ECE206.4	Determine the mathematical model of linear time-invariant systems in s-domain	3	1	1									2	2		2

Course Outcome (CO)		Program Outcome												PSO		
Course Code / CO No.	Statement	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
ECE206.5	Demonstrate an understanding of users/applications of techniques studied.	2	3		1						2		2	2		2
ECE304 / Microprocessor and Microcontrollers / V Semester																
ECE304.1	Describe the architecture, role of CPU, registers of intel microprocessors	3											3	3		3
ECE304.2	Write an assembly language programs by using the knowledge on instruction set and programming of 8085 and 8086 processors	2	1	2	2	2		1	2	1	1		2	2	2	2
ECE304.3	Interface a peripheral with 8085/8086 processor	2	1	1	1	2							1	1	2	1
ECE304.4	Select a microcontroller required an application by using knowledge gained on architecture of microcontrollers	3	1	1		1		1					1	2	1	1
ECE304.5	Develop a microcontroller-based system by acquiring knowledge on programming a microcontroller	3	2	3	1	3	1	1	1	1	1	1	2	2	1	1
ECE309 / VLSI Design / VI Semester																
ECE309.1	Explain the characteristics of CMOS transistors and their circuit level of models.	3	3					3					2	3	3	2
ECE309.2	Explain the chip technology scaling process.	3	3				1	3					2	3	2	2
ECE309.3	Identify the interactions between process parameters device structures, circuit performance and system design.	3	3	3	1	1		3					2	3	2	2
ECE309.4	Create models of CMOS circuit that realize specified function as mini-project.	3	3	3	2	2		3	1	1	1	1	2	3	2	1
ECE309.5	Describe digital system testing and verification strategies.	3	3											3		3
ECE309.6	Survey literature on new developments in integrated circuit design and communicate the information analysed from it through reports	3	3				1	3	2	2	3		3	3	2	3

Course Outcome (CO)		Program Outcome												PSO		
Course Code / CO No.	Statement	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
ECE403 / Fibre Optic Communication / VII Semester																
ECE403.1	Define basic optical laws and fundamentals.	3	2	1	1								2	2		2
ECE403.2	Classify the structure of optical fibres and connectors.	3	2	1	1	1							2	2	1	2
ECE403.3	Describe the channel impairment like losses and dispersion analyse power launching and coupling.	2	2	1		2							2	2	2	2
ECE403.4	Techniques for optical fibres.	2	2	1		2							2	2	2	2
ECE403.5	Identify the optical sources, detectors and its performances and explain their principles, properties.			3	3	3	1	1	3	3		2	3	3	2	3
ECE403.6	Explain different concepts and component of wave division multiplexing.										3	3	3			3
ECE499 / Project Work / VIII Semester																
ECE499.1	Apply the knowledge of mathematics, science, engineering fundamentals with the research literature to formulate the solution for complex Engineering problems.			3										3		
ECE499.2	Design solutions, components or processes based on research knowledge, methods including experimental analysis, interpretation and synthesis of data to provide valid conclusions.	3	3											3	1	
ECE499.3	Create and apply appropriate techniques and IT tools to model complex engineering activities to assess health, safety and cultural issues as a responsibility of professional engineering practices				3	3								2	2	
ECE499.4	Understand environmental context with need for sustainable development and						3	3	3	1				1	3	3

Course Outcome (CO)		Program Outcome												PSO		
Course Code / CO No.	Statement	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
	apply professional ethics in engineering practice															
ECE499.5	Function effectively as an individual and in teams to communicate the project work, write documentation reports and make effective presentations.								1	1	3				3	1
ECE499.6	Demonstrate knowledge and management principles to ensure life long learning to adapt technological changes.								1	3					2	3

Table 2.2b Course Articulation Matrix for selected courses in R18

Course Outcome (CO)		Program Outcome												PSO		
Course Code / CO No.	Statement	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
ECE18R171 / Electronic Devices / I Semester																
ECE18R171.1	Explain the principles of semiconductor physics	3	3	2										3		
ECE18R171.2	Analyse the characteristics of p-n junction	3	3	1	1									3	2	
ECE18R171.3	Analyse the characteristics of MOSFET, BJT, and opto-electronic devices	3		3	1									3	2	
ECE18R171.4	Describe the fabrication process of integrated circuits		3											2		
ECE18R171.5	Operate electronic equipment and hardware/software tools to analyse the characteristics of electronic devices with an understanding of limitations and impact on environment				2	3	3	3		2			2		3	3
ECE18R171.6	Communicate the technical information related to device analysis by means of reports								1		3		1		3	1
ECE18R272 / Digital Circuits and System Design																
ECE18R272.1	Utilise Boolean algebra and K-map as tool and the knowledge of number systems and codes,	3	2	2	2									3	2	3

Course Outcome (CO)		Program Outcome												PSO		
Course Code / CO No.	Statement	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
	to simplify and design logic circuits															
ECE18R272.2	Design and analyse the operation of Combinational Circuits and Sequential Circuits from the description of a logical function	3	2	3	2								2	3		2
ECE18R272.3	Describe how logic gates are implemented in different logic families, including characterisation of the noise margins	3	2	2									2	2		2
ECE18R272.4	Describe the function, characteristics and structure of different memory systems, programmable logic devices	3	2	2									2	2		
ECE18R272.5	Write HDL code for digital logic design	3	2	2	2	3							2	2	3	2
ECE18R272.6	Operate electronic test equipment and hardware/software tools to create, evaluate and troubleshoot digital circuits by applying the knowledge on them with an understanding of their limitations and impact on society, environment	3	2	2	2	2	1	1					1	2	1	1
ECE18R272.7	Work and communicate as part of a team and as individual effectively in designing digital circuits following the safety procedures and ethics								3	3	3	1	1		3	2
ECE18R201 / Network Theory / III Semester																
ECE18R201.1	Analyse basic electrical circuits with nodal and mesh analysis	3	3	2	3	1	3						3	3	1	3
ECE18R201.2	Apply electrical network theorems	3	3	2	3	1	3							3	1	1
ECE18R201.3	Apply transform techniques for steady-state and transient analyses	3	3	2	3	1	3							3	2	2
ECE18R201.4	Determine the network functions for the given network	3	3	2	3	1	2							3	2	2

Course Outcome (CO)		Program Outcome												PSO		
Course Code / CO No.	Statement	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
ECE18R201.5	Apply the frequency domain techniques to analyse and design networks like resonant circuits, filters	3	2	2	3	1	2							3	2	2
ECE18R274 / Electromagnetic Waves and Transmission Lines / IV Semester																
ECE18R274.1	Analyse characteristics and wave propagation on high frequency transmission lines	3	3	1	3	3	3	3	1	3	3	3	3	3	2	3
ECE18R274.2	Carryout impedance transformation on transmission lines	2	3		3	3	2	3		3	3	2	3	3	3	3
ECE18R274.3	Use sections of transmission line sections for realising circuit elements	2	3				2	3				2	3	3	3	3
ECE18R274.4	Characterise uniform plane wave		3	1	2	3		3	1	2	3		3	2	3	3
ECE18R274.5	Calculate reflection and transmission of waves at media interface	1	3	1	2	3	1	3	1	2	3	1	3	2	3	2
ECE18R274.6	Analyse wave propagation on metallic waveguides in modal form	1	3	1	1	3	1	3	1	1	3	1	3	2	2	2
ECE18R274.7	Explain the principle of radiation and radiation characteristics of an antenna	3					3					3		3	3	3
ECE18R273 / Digital Signal Processing / V Semester																
ECE18R273.1	Represent signals mathematically in continuous and discrete time and frequency domain	3	3	2	1	1							2	2	1	2
ECE18R273.2	Get the response of an LSI system to different signals	2	2	2	1	2							2	2	2	2
ECE18R273.3	Design the digital filters for various applications meeting the requirements	3	3	3	1	2							3	3	2	3
ECE18R273.4	Analyse Finite word length effect on DSP systems	2	2	2	1	2							2	3	2	2
ECE18R273.5	Design as well as conduct experiments, analyse and interpret the results to provide valid conclusions for signal processing systems with help of appropriate tools and software	3	3	3	1	2	1	2	2				2		3	3

Course Outcome (CO)		Program Outcome												PSO		
Course Code / CO No.	Statement	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
	understanding their limitations and impact on society															
ECE18R273.6	Work effectively in as team and individual in doing digital signal processing experiments following the safety procedures and ethics			3	3	3	1	1	3	3		2	3	3	2	3
ECE18R273.7	Document effectively the digital signal processing experiments carried in the laboratory										3	3	3			3
ECE18R372 / Antennas and Propagation / VI Semester																
ECE18R372.1	Apply the properties and parameters of antenna, Friis equation in simple communication system consisting of transmit and receive antenna to predict its received power	3	3	1			1	1					1	3	1	1
ECE18R372.2	Explain how antenna radiates and capture radio wave energy from the concepts of radiation by dynamic charges and currents and retarded potentials	3												3		
ECE18R372.3	Design an antenna system, including the shape of the antenna, the need on the arrangement of the radiating elements in an array by applying the design principles and by selecting proper antenna type for the given specifications		1	3	2	1	1	1	1				1	2	1	1
ECE18R372.4	Describe the mechanism of the atmospheric effects on radio wave propagation	3												3		
ECE18R372.5	Grasp the research on advanced topics in antenna and summarise it in writing		3	3			2	3	3	2	2		3	3	3	3
ECE18R373 / Computer and Communication Networking / VII Semester																
ECE18R373.1	Explain the concepts of networking and its layers	3	3											3		
ECE18R373.2	Analyse the performance of networks	3	3	3									3	3		3

Course Outcome (CO)		Program Outcome												PSO		
Course Code / CO No.	Statement	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
ECE18R373.3	Grasp the research on advanced topics in antenna and summarise it in writing	3					2	3	2	1	3		2	3	2	2
ECE18R373.4	Design as well as conduct experiments, analyse and interpret the results to provide valid conclusions for network engineering with help of appropriate tools and software understanding their limitations and impact on society		1	3	3	3	1	1					3	2	2	
ECE18R373.5	Work as part of a team and as individual effectively in designing the communication systems following the norms and ethics in practice								3	3		1	1		3	2
ECE18R373.6	Communicate the technical information related to designed communication systems by means of oral and written reports								1	2	3				1	2
ECE18R499 / Project Work / VIII semester																
ECE18R499.1	Apply the knowledge of mathematics, science, engineering fundamentals with the research literature to formulate the solution for complex Engineering problems.			3										3		
ECE18R499.2	Design solutions, components or processes based on research knowledge, methods including experimental analysis, interpretation and synthesis of data to provide valid conclusions.	3	3											3	1	
ECE18R499.3	Create and apply appropriate techniques and IT tools to model complex engineering activities to assess health, safety and cultural issues as a responsibility of professional engineering practices				3	3								2	2	

Course Outcome (CO)		Program Outcome												PSO		
Course Code / CO No.	Statement	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
ECE18R499.4	Understand environmental context with need for sustainable development and apply professional ethics in engineering practice						3	3	3	1				1	3	3
ECE18R499.5	Function effectively as an individual and in teams to communicate the project work, write documentation reports and make effective presentations.								1	1	3				3	1
ECE18R499.6	Demonstrate knowledge and management principles to ensure life-long learning to adapt technological changes.								1	3					2	3

A student must pursue both the Theory Courses and Practical Courses along with the list of Non-CGPA Courses to complete his / her undergraduate program. Based on the importance of the courses, course evaluation and assessment are varied. Tables 3.3a shows the list of Theory and Practical Courses with the program articulation matrix for the batch 2017-2021. The subsequent tables 3.3b explain the model calculation for the PO articulation matrix.

Table 3.3a. Program Articulation Matrix for the courses studied by the batch 2017-2021

S. No	Course code	Program Outcomes & PSO														
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1.	CHY17R101	3	3	3	2	2	2	3		1	2	1	2	1	2	3
2.	CIV17R101	2	2	2		2	2	1	2		2		1	1		
3.	CSE17R171	3	2	2		2								2	2	
4.	HSS17R151	2	2	2	1										3	2
5.	MAT17R101	3												3		
6.	MEC17R105	2	1			1		2	1		2		1	1		
7.	MEC17R181	2	2	3			2	1		1	2	2		1		
8.	PHY17R171	3	2											3		
9.	CHY17R171	3												3		
10.	ECE17R101	3	3	3			1		1	1		2	3	1	1	
11.	EEE17R151	2	2	2		2	2	1	2		2		1	1		
12.	HSS17R152		2	2					2	1			2		3	2
13.	MAT17R102	3												3		
14.	MEC17R101	2	3	3	2	2	3	2	3	2	3	2	2	1		
15.	MEC17R103	3	2	2			2			2	2	2		1		

S. No	Course code	Program Outcomes & PSO														
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
16.	PHY17R151	3												3		3
17.	ECE18R201	3	3	2	3	1	3						3	3	2	3
18.	ECE18R202	3	3	3		1							3	3	1	3
19.	ECE18R254	3	2	2	2	2	2	1		3			3	2	2	3
20.	ECE18R271	3	3	2	2	3	3	2	2	3	3	2	2	3	2	3
21.	ECE18R272	3	2	2	2	3	1	1	3	3	3	1	2	2	2	3
22.	BIT18R101	3												3		3
23.	ECE18R203	3	3	2	2	2		1					1	3	2	3
24.	ECE18R273	3	3	3	1	2	1	2	3	3	3	3	2	3	2	3
25.	ECE18R274	2	3	1	2	3	2	3	1	2	3	2	3	3	3	2
26.	ECE18R281	3	3	2	2	3	1	1	3	3	3	1	1	2	3	3
27.	EEE18R312	2	2	2		2	2	1	2		2		1	1		2
28.	MAT18R204	3												3		3
29.	BIT18R432	3												3		3
30.	ECE18R275	3	3	2	2	2		1	3	3	3		2	3	2	3
31.	ECE18R301	3	3	2		1	1	1					1	3	1	3
32.	ECE18R352	3	2	2	3	3	3	3	2	2	3	1	2	3	3	3
33.	ECE18R371	3	1	2	3	3			3	3	3	1	1	2	3	3
34.	HSS18R013						2	3	2	3	2	2	1		2	
35.	OEE18R009	3	2	1	1	2								3	2	3
36.	ECE18R311	3	2	3	3	2					3	2	2	3	2	3
37.	EEE18R310	3	3	2									2	3		3
38.	OEE18R017	2	2	3	1	1	3							2	2	2
39.	OEE18R014	3	2	2	3		3	3				3	1			3
40.	ECE18R256	2	2	2	2	3			2	3	3	1	2	2	3	2
41.	ECE18R367	3	2	2	1	1	1		2	3	3	1	2	3	1	3
42.	ECE18R372	3	2	2	2	1	1	2	2	2	2		2	3	2	3
43.	ECE18R373	3	2	3	3	3	2	2	2	2	3	1	2	3	2	3
44.	ECE18R399	2	2	2	3	3	3	3	2	2	3	3	3	3	2	2
45.	MEC18R449	1	2	3										2		1
46.	OEE18R015	2	3	2		2								3		2
47.	MEC18R345	2	2		2									1		2
48.	ECE18R351	3	2	3	2	2	1	2	3	2	2	1	1	3	2	3
49.	ECE18R357	3	3	3	2	3	1	2	3	3	3	3	3	3	2	3
50.	EEE18R419	3	3	3	3	3						2	2	2	1	3
51.	OEE18R008	3	2	1	1	1								3	2	3
52.	CIV18R428	3	2	2	3	1		1	3		1	2	2	3	2	3
53.	ECE18R260	2	3	2	3	3	1		1	2	1	1	2	3	2	2
54.	ECE18R312	2	2	1		1							2	2	1	2
55.	ECE18R316	3	3	2	2								1	3	1	3
56.	ECE18R498	3	3	3	3	3	3	3	2	2	3			2	2	3
57.	AER18R306								3		2	1		1		

S. No	Course code	Program Outcomes & PSO														
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
58.	ECE18R257	3	3	2	2	3			2	2	3		2	3	2	2
59.	INT18R320	1	3		3	3	3	3	3	2		3	2	2	2	3
60.	HSS18R015	2	1				3	2	1	2	1	1	2	1	2	1

The model calculation for Program Articulation Matrix is shown in Table 3.3b for better understanding. The course chosen for the model calculation is ECE205 / Electronic Circuits

Table 3.3b. Model Calculation for the Course

ECE18R274 Electromagnetic Waves and Transmission Lines

Course Code with CO	Program Outcome												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
ECE18R274.1	3	3	1	3	3	3	3	1	3	3	3	3	3	2	3
ECE18R274.2	2	3		3	3	2	3		3	3	2	3	3	3	3
ECE18R274.3	2	3				2	3				2	3	3	3	3
ECE18R274.4		3	1	2	3		3	1	2	3		3	2	3	3
ECE18R274.5	1	3	1	2	3	1	3	1	2	3	1	3	2	3	2
ECE18R274.6	1	3	1	1	3	1	3	1	1	3	1	3	2	2	2
ECE18R274.7	3					3					3		3	3	3
	(3+2 +2+ 1+1 +3) = 12/6	(3+ 3+3 +3+ 3+3 +3) = 21/7	(1+ 3+2 +2+ +1) =4/ 4	(3+ 3+2 +2+ 1)= 11/ 5	(3+ 3+3 +3+ 3) = 15/ 5	(3+ 2+2 +3+ +1+ 1+3)= 12/ 6	(3+ 3+3 +3+ 3+3 +3) = 21/ 7	(1+ 1+1 +1) =4/ 4	(3+ 3+2 +2+ 1)= 11/ 5	(3+3 +3+ 3+3) = 15/5	(3+2 +2+ 1+1 +3) = 12/6	(3+3 +3+3 +3+3 +3)= 21/7	(3+3 +3+2 +2+2 +3)= 18/7	(2+3 +3+3 +3+2 +3)= 19/7	(3+3 +3+3 +2+2 +3) = 19/7
	2.0	3.0	1.0	2.2	3.0	2.0	3.0	1.0	2.2	3.0	2.0	3.0	2.6	2.7	2.7
	2	3	1	2	3	2	3	1	2	3	2	3	3	3	3

The CO and PO mapping with the correlation was taken from Table 3.2b for reference. The average value of individual POs / PSOs is rounded to the next whole number. The uncorrelated CO and PO columns are left empty. The same procedure was followed for all the courses and tabulated in Table 3.3a & Table 3.3b, for PO attainment. From the program articulation matrix, the number of courses (including basic sciences, core courses, elective courses, and practical courses) contributes towards the PO attainment for B.Tech. Electronics and Communication Engineering Program is shown in Figure. 3.1.6 and 3.1.7. The majority of the courses are influenced by PO1, PO2, PO3, PO5 and PO12. As the courses framed for the program are covering basic knowledge in problem identification, problem analysis, and design with strong Mathematical fundamentals. The supporting skills with electronics tool usage in teamwork during laboratory sessions are influencing the PO8, PO9, and PO10. The PSO1 and PSO2 are with predominant contribution indicating the ability to utilize the gained knowledge in the practical field and during implementing fundamentals in problem-solving-based courses.

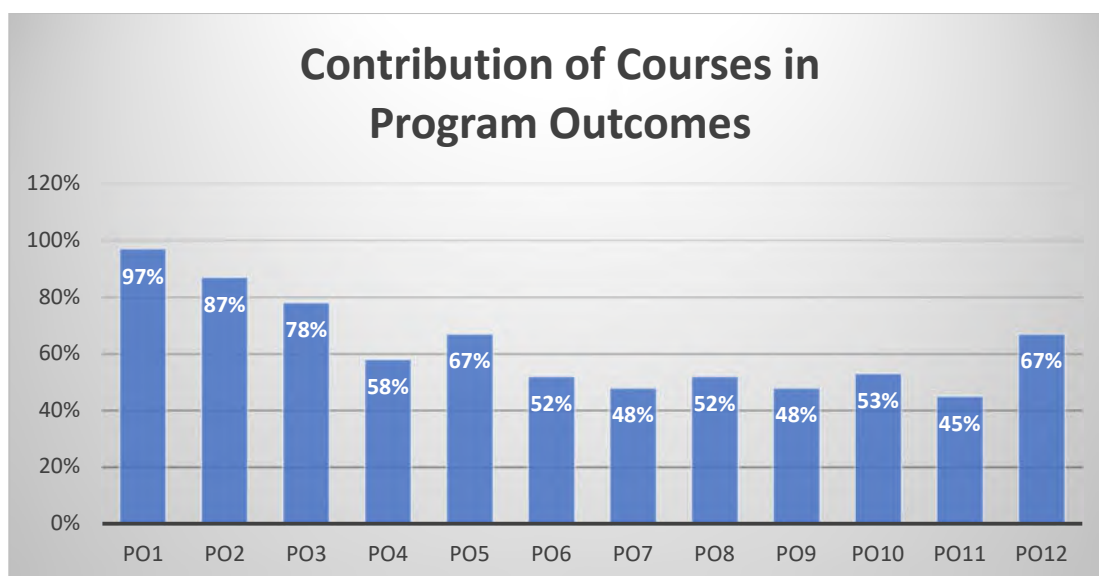


Figure. 3.1.6 Contribution of Courses for Batch 2017-2021 with PO / PSOs

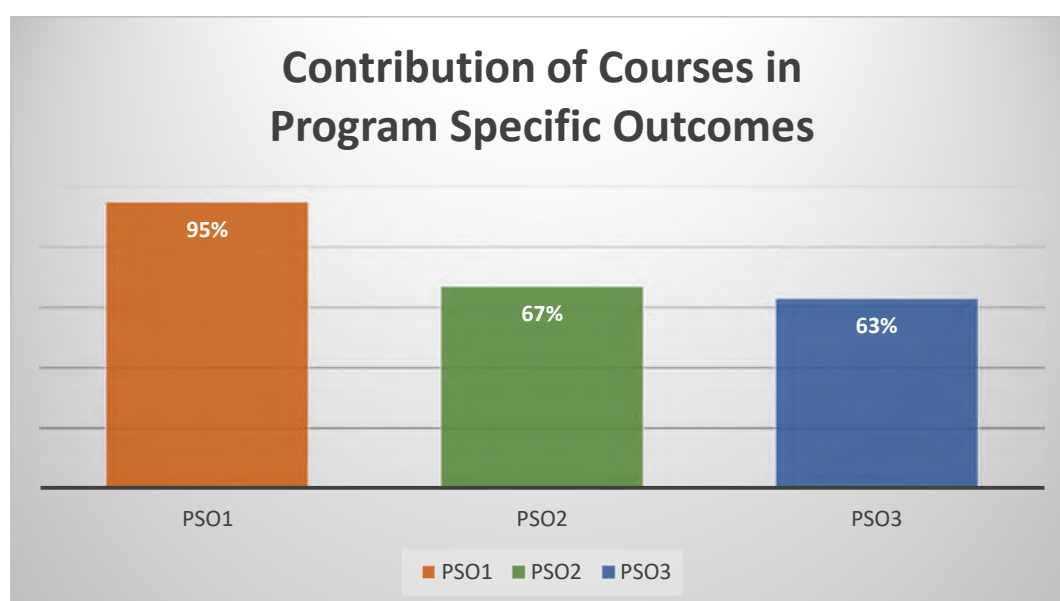


Figure. 3.1.7 Contribution of Courses for Batch 2017-2021 in Program Specific Outcomes

From Figure. 3.1.6 the graph shows that 97% of the courses influence the program outcome in terms of applying fundamentals of basic sciences and mathematics in the Electronics and Communication Engineering domain. In allied to PO1, the next major contribution is by PO2 which shows 87% of analytical-based courses influencing the POs. Figure. 3.1.7 shows 95% of courses contributing to the program-specific outcomes in applying basic knowledge of mathematics and basic sciences. 67% of the courses using problem-solving and analysis with established laboratory resources and software influence the PSOs. In addition to that 63% of the courses contributes to the development of an individual in the corporate world with necessary skills and attitude. Table 3.3c shows the number of Non – CGPA Courses in correlation to ascertain the PO / PSO attainment.

Table 3.3d. List of Non-CGPA courses with PO / PSO correlation

Courses	Program Outcomes												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
NG18R1001 - NCC						2	2		3	3					3
NG18R1002 - NSS						2	2		3	3					3
NG18R1003-SPORTS								2	2	3		2		2	2
NG18R1004 -EXTRA CURRICULAR ACTIVITIES									3	3	2			1	3
NG18R2002 - VALUE ADDED COURSE						2			3	3	3			2	2
NG18R2003 - INTERNATIONAL CERTIFICATION	3	3	3	3	3							2	3	2	
NG18R2004 -CO-CURRICULAR ACTIVITIES	2	2	1	2		2	2	3	2	2			2	1	2
NG18R3002 -ENGLISH CERTIFICATION (BEC)										3					2
NG18R3003 -TECHNICAL PROFICIENCY	3	3	2	3	2							3	3	2	
NG18R3004 -FOREIGN LANGUAGE										3					2

The Non CGPA courses strongly correlate with the POs and PSOs. The Non-CGPA courses include activities that involve the field expertise and its training which highly support gaining technical knowledge, practical exposure, and test facilities. These courses not only for knowledge dissemination but also equip the students to earn credits for the completion of B. Tech. program. Other than technical training and lectures some field events are supporting to fit on ethical issues and societal development. For example, NSS and NCC are courses that offer a student beyond technical knowledge. These courses are neither correlated to technical knowledge nor any particular software skills compared to other fieldwork.

3.2. Attainment of Course Outcomes

3.2.1 Describe the assessment processes used to gather the data upon which the evaluation of course outcome is based.

The information on CO assessment is explained in detail under the following sections; namely

- A. List of assessment tools used for CO attainment
- B. Mark Allotment for CO assessment
- C. Assessment Procedure for CO Attainment with sample calculations

A. List of Assessment Tools used for CO attainment

Table 3.4 Assessment Tools

Assessment Tool	Description
Direct Assessment	
Theory Course (T)	
Sessional Examinations	The assessment tool is initiated during the sessional examination which is held thrice a semester. Every sessional examination will focus on the attainment of each course outcome during the semester. If the COs are found to be not attained in the sessional examination then, corresponding actions for improvement of the particular COs will be taken to improve the attainment of CO in the subsequent end semester.
End Semester Examination	End semester examination is a metric for assessing the attainment of COs for a particular course at the end of the semester. End Semester questions are framed to consider all COs for assessment.
Assignment	<p>An assignment is a qualitative performance assessment tool designed to assess student's knowledge of engineering practices. An analytic rubric is developed for every course to assess student's knowledge concerning the learning outcomes. Assignments can be given as quizzes, Seminars, Industry expert-based evaluations, Research Article based evaluations, etc. The course coordinator will fix any of the above correspondings to the course outcomes.</p> <p>Quiz Quizzes will be conducted during regular class hours. Surprise quizzes are conducted in the respective classes and the evaluation is done based on their performances. After the quiz, the answers will be discussed in the respective class itself.</p> <p>Seminar It should be an individual student seminar. Seminar topics should be well planned as per the course outcomes of the concerned course and the presentation should contain all the technical components including literature review, any methodology, analysis methods, and specific conclusions</p> <p>Open Book Test Questions framed should not be directly from one or more published textbooks – either as solved or unsolved examples. The faculty must design the question himself as per the course outcome of the concerned course and preferably based on real-time case studies.</p> <p>Research Article Based Evaluation The topic will be given as an individual student exercise based on the course outcome of the concerned course. Research articles should be searched from standard journals such as Elsevier/Springer etc. The objectives should be clearly defined on what is the intended outcome of the research article's study.</p>
Laboratory Course (L)	

Assessment Tool	Description		
Direct Assessment			
Internal	The internal mark for laboratory courses is awarded based on observation, experimentation, interpretation, submission of reports, viva voce, and model examination. Internal marks: 50marks		
External	The external examination for laboratory courses is conducted at end of the semester for 3 hours. It is evaluated based on rubrics framed by the course coordinator for the corresponding lab course. End semester lab Examination: 100marks		
Integrated Course (IC)			
Based on the performance in each category the performance of the students is evaluated based on the weightage given below for the integrated course.			
Sessional Examinations (Two) 20%	Practical (Laboratory) 20%	Assignment 10%	End Semester Examination 35% (T) + 15%(L) Or 35%(L) + 15%(T)
Theory with Practical (TP)			
Based on the performance in each category the performance of the students is evaluated based on the weightage given below for the theory with practical component courses.			
Sessional Examinations (Two) 20%	Practical (Laboratory) 15%	Assignment 15%	End Semester Examination 50%
Indirect Assessment			
Course Exit Survey		At the end of every semester, every student is asked to report the courses they have studied with assigned rubrics. The course end survey is assessed based on rubrics that will be designed by the course coordinator	

B. Mark Allotment for CO Attainment**Table 3.5a. Marks allotment indicatively for Theory Course CO assessment**

COs	SE-1	SE-2	ASSIGNMENT	END-SEM
CO1	30		10	20
CO2	20		10	20
CO3		30	10	20
CO4		20	10	20
CO5			10	20
TOTAL	50	50	50	100

Table 3.5b. Marks allotment indicatively for Integrated Course CO assessment

COs	SE-1	SE-2	ASSIGNMENT	LAB-INTERNAL	LAB-EXTERNAL	END-SEM
CO1	30		10			20
CO2	20		10			20
CO3		30	10			20
CO4		20	10			20
CO5			10			20
CO6				30	60	
CO7				20	40	
TOTAL	50	50	50	50	100	100

Table 3.5c. Marks allotment indicatively for Theory with Practical Course CO assessment

COs	SE-1	SE-2	ASSIGNMENT	PRACTICAL	END-SEM
CO1	30		10		20
CO2	20		10		20
CO3		30	10		20
CO4		20	10		20
CO5			10		20
CO6				50	
TOTAL	50	50	50	50	100

Table 3.5d. Marks allotment indicatively for Theory Course CO assessment (R2014)

COs	SE-1	SE-2	SE - 3	ASSIGNMENT	END-SEM
CO1	30			10	20
CO2	20	15		10	20
CO3		20		10	20
CO4		15	20	10	20
CO5			30	10	20
TOTAL	50	50	50	50	100

Table 3.5d shows the indicative marks allotment for all the examinations conducted during the study. A minimum of two COs has been planned to cover all the sessional examinations for 50 marks. For example, in Sessional Examination I the split-up for 50 marks is 30 marks from CO1 and 20 marks from CO2 approximately. For Sessional Examination II; 15 marks from CO2, 15 marks from CO4, and the remaining 20 marks from CO3. In Sessional Examination III; 20 marks from CO4 and 30 marks from CO5. In the End Semester Examination, the question paper covers all the COs with equal weightage. Assignment topics are also framed to cover all the COs with equal weightage.

C. Assessment Procedure for CO Attainment

The CO attainment evaluation technique is based on direct and indirect assessment. The direct evaluation is entirely based on the examinations, whereas the indirect assessment is based on the survey/report completed for the specific course. Direct attainment accounted for 80% of the total, while indirect attainment accounted for 20%. The total CO attainment is calculated using a weighted average of direct and indirect assessment approaches, which are presented below.

Direct Assessment (Theory Courses)

- Sessional Examination (SE-I, SE-II, SE-III)
- Assignment
- End Semester Examination

Indirect Assessment

- Course exit Survey

The model calculation performed for the course ECE18R274 Electromagnetic Waves and Transmission Lines is explained in detail in Table 3.6. Followed by procedure and weightage for Sessional, Assignment and End Semester Examination are discussed in detail.

34

21	9917005020	3	13	5	19	25	2	14	5	6	7	6	4	21	20	37	41	37	39	39	39	20	A	A	A	A	A	A	A	37	N	41	Y	37	N	39	N	39	N	39	N	40	Y
22	9917005021	3	13	5	21	27	2	16	9	9	9	9	9	23	22	42	41	43	45	46	44	45	14	15	16	15	14	46	45	83	Y	79	Y	83	Y	83	Y	81	Y	89	Y	90	Y
23	9917005022	4	15	6	23	26	2	15	9	9	9	9	9	22	21	47	47	48	44	47	42	45	13	13	15	13	13	37	39	82	Y	80	Y	86	Y	77	Y	80	Y	81	Y	90	Y
24	9917005023	3	13	5	19	17	1	10	7	7	9	7	7	20	19	38	41	39	35	33	33	35	13	13	15	13	12	41	41	75	Y	74	Y	77	Y	68	Y	63	Y	74	Y	70	Y
25	9917005024	A	A	A	A	A	A	A	8	8	8	8	7	16	15	21	A	16	16	16	15	35	A	A	A	A	A	A	A	21	N	A	A	16	N	16	N	16	N	15	N	70	Y
26	9917005025	2	9	3	14	22	1	14	9	8	9	8	8	21	21	36	28	31	40	32	40	40	14	14	14	14	14	20	19	64	Y	63	Y	66	Y	75	Y	67	Y	59	Y	80	Y
27	9917005026	4	15	6	21	26	2	15	9	9	9	9	7	22	22	47	47	48	44	46	43	35	18	18	18	18	16	38	40	89	Y	92	Y	93	Y	89	Y	86	Y	83	Y	70	Y
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29	9917005028	3	11	4	17	19	1	12	10	9	10	9	9	23	23	43	34	38	39	36	40	45	15	15	15	15	15	44	44	84	Y	72	Y	76	Y	77	Y	74	Y	84	Y	90	Y
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36	9917005036	4	14	5	22	25	2	15	10	9	10	9	9	24	23	49	44	43	45	47	44	45	12	13	14	13	13	35	37	82	Y	77	Y	78	Y	78	Y	80	Y	81	Y	90	Y
37	9917005037	3	13	5	20	25	2	14	10	9	10	9	9	24	23	44	41	43	45	46	42	45	15	15	15	15	14	45	44	85	Y	79	Y	81	Y	83	Y	81	Y	86	Y	90	Y
38	9917005038	4	15	6	23	28	2	17	10	10	10	10	10	24	24	49	47	50	48	49	48	50	12	12	14	12	12	46	45	87	Y	77	Y	85	Y	78	Y	79	Y	93	Y	100	Y
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42	9917005042	4	14	5	21	19	1	12	7	7	9	7	6	23	23	45	44	39	37	35	40	30	12	13	14	13	11	41	40	81	Y	77	Y	74	Y	70	Y	63	Y	80	Y	60	Y
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46	9917005046	3	13	5	21	22	1	13	8	7	8	7	6	17	17	37	41	39	38	35	35	30	15	15	15	15	14	33	32	72	Y	79	Y	77	Y	76	Y	70	Y	67	Y	60	Y
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50	9917005050	3	12	4	17	26	2	15	8	8	8	8	7	18	17	37	38	36	42	42	38	35	17	16	17	16	16	39	39	78	Y	78	Y	79	Y	82	Y	82	Y	77	Y	70	Y
51	9917005051	4	14	5	22	23	2	13	9	9	9	9	8	21	21	46	44	43	41	47	39	40	15	14	15	14	13	40	39	85	Y	79	Y	81	Y	76	Y	80	Y	78	Y	80	Y
52	9917005052	3	13	5	19	28	2	16	10	10	10	10	10	25	24	45	41	45	48	47	46	50	15	15	15	15	13	44	44	86	Y	79	Y	83	Y	86	Y	80	Y	90	Y	100	Y

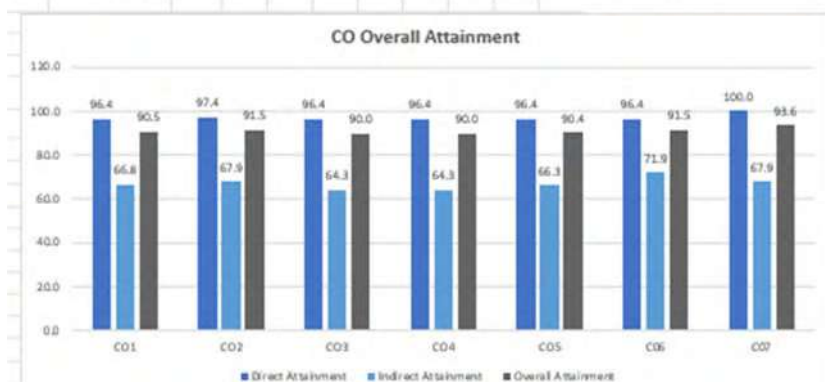
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54	9917005054	3	12	5	18	24	2	14	6	7	8	7	5	20	19	37	38	39	40	40	38	25	13	13	15	13	12	41	41	74	Y	71	Y	77	Y	73	Y	70	Y	79	Y	50	Y
55	9917005055	3	12	5	19	23	2	13	6	7	8	7	7	20	19	37	38	39	39	41	37	35	17	17	17	17	17	32	34	74	Y	81	Y	82	Y	82	Y	84	Y	71	Y	70	Y
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61	9917005061	4	14	5	22	21	1	13	6	7	8	7	6	21	20	43	44	39	37	35	38	30	14	14	16	14	14	41	41	81	Y	79	Y	79	Y	72	Y	70	Y	79	Y	60	Y
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65	9917005065	3	13	5	19	26	2	15	10	9	10	9	8	24	23	44	41	43	46	45	44	40	18	17	18	17	16	46	46	90	Y	84	Y	88	Y	89	Y	85	Y	90	Y	80	Y
66	9917005066	3	13	5	21	19	1	11	8	8	8	8	8	23	23	41	41	41	35	37	38	40	16	16	16	16	16	25	24	74	Y	81	Y	81	Y	75	Y	77	Y	62	Y	80	Y
67	9917005067	3	11	4	17	21	1	13	8	7	8	7	6	19	19	38	34	34	37	32	37	30	10	10	10	10	8	21	20	61	Y	53	Y	59	Y	62	Y	52	Y	57	Y	60	Y
68	9917005068	4	16	6	23	23	2	14	8	8	8	8	6	18	18	42	50	46	39	45	37	30	10	10	10	10	10	37	37	73	Y	75	Y	71	Y	64	Y	70	Y	74	Y	60	Y
69	9917005069	4	14	5	22	20	1	13	9	9	9	9	9	19	19	44	44	43	38	39	37	45	17	17	17	17	15	42	42	86	Y	87	Y	86	Y	81	Y	77	Y	79	Y	90	Y
70	9917005071	3	12	4	18	22	1	13	7	7	7	7	7	23	23	40	38	34	36	33	41	35	12	12	12	12	12	40	40	75	Y	68	Y	64	Y	66	Y	63	Y	81	Y	70	Y
71	9917005072	3	13	5	20	23	2	14	9	8	9	8	7	20	20	40	41	41	41	44	39	35	17	17	17	17	15	41	41	82	Y	84	Y	84	Y	84	Y	82	Y	80	Y	70	Y
72	9917005073	4	16	6	23	21	1	13	6	7	8	7	7	22	22	44	50	44	37	36	40	35	14	15	16	15	15	47	47	85	Y	88	Y	84	Y	75	Y	74	Y	87	Y	70	Y
73	9917005074	4	14	5	22	24	2	14	8	8	8	8	6	20	20	44	44	41	40	45	39	30	13	13	13	13	13	38	38	79	Y	77	Y	74	Y	73	Y	78	Y	77	Y	60	Y
74	9917005076	3	12	5	18	26	2	16	10	10	10	10	9	24	24	44	38	45	46	46	46	45	12	12	14	12	11	45	45	82	Y	68	Y	80	Y	76	Y	74	Y	91	Y	90	Y
75	9917005077	4	15	6	21	22	1	14	8	7	8	7	7	18	18	42	47	44	38	35	37	35	17	16	17	16	15	40	39	83	Y	87	Y	87	Y	78	Y	73	Y	76	Y	70	Y
76	9917005078	2	10	4	15	21	1	13	6	6	8	6	6	20	20	32	31	32	37	29	38	30	13	13	15	13	13	2	4	49	Y	64	Y	70	Y	70	Y	62	Y	42	Y	60	Y
77	9917005080	3	13	5	20	21	1	13	8	7	8	7	6	21	20	40	41	39	37	34	38	30	13	12	13	12	12	38	38	75	Y	71	Y	72	Y	67	Y	64	Y	76	Y	60	Y
78	9917005081	3	11	4	17	11	1	6	6	6	8	6	5	15	15	33	34	32	27	30	23	25	A	A	A	A	A	A	A	33	N	34	N	32	N	27	N	30	N	23	N	50	Y
79	9917005082	4	14	5	21	22	1	14	8	7	8	7	7	18	18	42	44	39	38	35	37	35	13	12	13	12	12	24	24	70	Y	74	Y	72	Y	68	Y	65	Y	61	Y	70	Y
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81	9917005085	4	14	5	21	26	2	16	9	8	9	8	7	21	21	46	44	41	44	44	43	35	14	13	14	13	13	46	46	87	Y	77	Y	76	Y	77	Y	77	Y	89	Y	70	Y
82	9917005086	2	7	3	10	22	1	14	9	9	9	9	9	24	23	38	22	33	40	32	42	45	11	12	13	12	10	33	34	68	Y	52	Y	66	Y	70	Y	57	Y	76	Y	90	Y
83	9917005087	2	10	4	14	15	1	9	6	7	8	7	7	18	17	30	31	34	31	30	30	35	13	13	15	13	12	22	23	57	Y	64	Y	72	Y	64	Y	60	Y	53	Y	70	Y
84	9917005088	3	11	4	17	20	1	13	9	9	9	9	7	23	23	42	34	38	38	36	41	35	18	18	18	18	16	47	46	88	Y	79	Y	83	Y	63	Y	76	Y	87	Y	70	Y

85	9917005089	3	13	5	19	25	2	15	9	9	9	9	8	24	24	43	41	43	43	45	45	40	13	14	15	14	13	48	47	83	Y	76	Y	81	Y	78	Y	78	Y	92	Y	80	Y
86	9917005090	3	12	4	18	23	2	14	6	7	8	7	6	20	19	37	38	34	39	40	38	30	10	11	12	11	9	28	30	64	Y	66	Y	64	Y	67	Y	63	Y	68	Y	60	Y
87	9917005091	A	A	A	A	A	A	A	5	5	7	5	4	18	17	19	A	10	14	10	17	20	A	A	A	A	A	A	A	19	N	A	A	10	N	14	N	10	N	17	N	40	Y
88	9917005092	3	14	5	21	19	1	12	9	8	9	8	8	20	20	40	44	41	37	37	37	40	13	12	13	12	11	46	45	79	Y	74	Y	74	Y	67	Y	65	Y	82	Y	80	Y
89	9917005093	4	14	5	21	22	1	13	8	7	8	7	7	16	15	41	44	39	38	35	33	35	15	15	15	15	15	19	19	69	Y	82	Y	77	Y	76	Y	73	Y	52	Y	70	Y
90	9917005094	3	12	5	18	23	2	14	8	7	8	7	6	18	18	37	38	39	39	40	37	30	13	13	13	13	13	28	27	67	Y	71	Y	72	Y	72	Y	73	Y	64	Y	60	Y
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92	9917005096	3	12	5	18	23	2	13	7	8	9	8	8	19	19	37	38	41	41	42	37	40	12	12	14	12	12	39	40	72	Y	68	Y	76	Y	71	Y	72	Y	77	Y	80	Y
93	9917005097	3	13	5	21	16	1	10	6	7	8	7	6	16	16	34	41	39	32	35	30	30	11	12	13	12	12	17	18	56	Y	71	Y	72	Y	62	Y	65	Y	48	Y	60	Y
94	9917005098	4	14	5	22	18	1	11	9	8	9	8	8	22	21	47	44	41	36	37	36	40	14	15	16	15	13	46	46	88	Y	82	Y	81	Y	74	Y	70	Y	82	Y	80	Y
95	9917005100	3	13	5	20	22	1	14	8	7	8	7	6	20	20	39	41	39	38	34	39	30	17	16	17	16	16	38	38	79	Y	81	Y	82	Y	78	Y	74	Y	77	Y	60	Y
96	9917005101	3	11	4	17	25	2	14	10	10	10	10	8	24	24	44	34	40	45	46	43	40	12	13	14	13	13	47	47	83	Y	67	Y	75	Y	78	Y	79	Y	90	Y	80	Y
97	9917005103	A	A	A	A	A	A	A	8	8	8	8	6	18	17	22	A	16	16	16	17	30	A	A	A	A	A	A	A	22	N	A	A	16	N	16	N	16	N	17	N	60	Y
98	9917005105	3	12	5	18	23	2	13	7	7	9	7	6	22	21	40	38	39	41	40	39	30	12	13	14	13	13	44	44	77	Y	71	Y	74	Y	74	Y	73	Y	83	Y	60	Y
99	9917005106	4	15	6	22	29	2	18	10	10	10	10	10	25	24	50	47	50	49	49	50	15	14	15	14	14	48	47	93	Y	82	Y	88	Y	84	Y	84	Y	96	Y	100	Y	
100	9917005107	2	10	4	14	26	2	15	7	7	7	7	7	20	20	33	31	34	40	38	41	35	14	13	14	13	12	36	35	69	Y	64	Y	69	Y	73	Y	68	Y	76	Y	70	Y
101	9917005108	3	13	5	20	25	2	14	9	9	9	9	8	24	23	43	41	43	43	46	42	40	12	12	14	12	11	46	46	81	Y	71	Y	78	Y	73	Y	74	Y	88	Y	80	Y
102	9917005109	3	13	5	20	21	1	13	9	9	9	9	7	20	19	40	41	43	39	38	37	35	7	8	9	8	8	20	22	59	Y	61	Y	66	Y	59	Y	58	Y	59	Y	70	Y
103	9917005110	3	11	4	17	28	2	16	10	9	10	9	8	24	23	44	34	38	48	44	45	40	13	13	15	13	13	48	48	84	Y	67	Y	76	Y	81	Y	77	Y	93	Y	80	Y
104	9917005112	4	16	6	23	26	2	15	9	9	9	9	7	20	19	45	50	48	44	47	40	35	12	13	14	13	12	36	38	78	Y	83	Y	83	Y	77	Y	77	Y	78	Y	70	Y
105	9917005113	A	A	A	A	20	1	12	7	8	9	8	7	19	18	22	A	16	38	24	35	35	12	13	14	13	12	33	34	54	Y	33	N	51	Y	71	Y	54	Y	69	Y	70	Y
106	9917005114	4	15	6	22	23	2	14	9	9	9	9	9	23	23	47	47	48	41	47	42	45	16	15	16	15	14	45	45	90	Y	85	Y	88	Y	79	Y	82	Y	87	Y	90	Y
107	9917005115	3	14	5	21	28	2	17	9	8	9	8	8	24	23	43	44	41	46	44	47	40	17	17	17	17	17	47	46	88	Y	87	Y	84	Y	89	Y	87	Y	93	Y	80	Y
108	9917005116	2	7	3	10	15	1	9	8	8	8	8	8	20	20	34	22	31	31	30	33	40	12	12	12	12	11	12	11	55	Y	52	Y	61	Y	61	Y	58	Y	44	Y	80	Y
109	9917005117	4	15	6	22	19	1	11	8	8	8	8	8	19	18	43	47	46	35	37	33	40	13	12	13	12	12	39	38	79	Y	77	Y	79	Y	65	Y	67	Y	71	Y	80	Y
110	9917005119	3	14	5	21	24	2	14	10	9	10	9	9	24	23	44	44	43	44	46	42	45	14	14	16	14	14	46	45	85	Y	79	Y	83	Y	79	Y	81	Y	87	Y	90	Y
111	9917005120	3	12	5	19	26	2	15	9	9	9	9	9	22	22	42	38	43	44	45	43	45	15	15	17	15	15	43	42	82	Y	76	Y	86	Y	82	Y	83	Y	85	Y	90	Y
112	9917005121	2	10	4	15	22	1	14	7	7	7	7	6	19	18	32	31	34	36	31	37	30	11	11	11	11	11	34	33	63	Y	59	Y	62	Y	64	Y	59	Y	70	Y	60	Y
113	9917005123	3	12	5	18	26	2	16	9	9	9	9	9	18	17	38	38	43	44	44	39	45	13	14	15	14	12	41	40	75	Y	73	Y	81	Y	79	Y	74	Y	79	Y	90	Y
114	9917005124	3	12	4	17	22	1	13	9	9	9	9	7	21	20	41	38	38	40	36	38	35	12	13	14	13	12	41	40	77	Y	71	Y	73	Y	73	Y	66	Y	78	Y	70	Y
115	9917005126	3	13	5	20	25	2	15	8	8	8	8	8	22	22	41	41	41	41	44	43	40	16	16	16	16	15	33	32	78	Y	81	Y	81	Y	81	Y	82	Y	75	Y	80	Y
116	9917005127	3	12	5	18	21	1	13	9	9	9	9	9	20	19	40	38	43	39	37	37	45	14	14	16	14	14	38	40	77	Y	73	Y	83	Y	74	Y	72	Y	77	Y	90	Y

117	9917005128	3	11	4	17	18	1	11	7	7	7	7	6	21	21	39	34	34	32	32	36	30	14	13	14	13	13	26	26	70	Y	67	Y	69	Y	65	Y	65	Y	62	Y	60	Y
118	9917005129	4	16	6	23	21	1	13	10	9	10	9	8	23	22	48	50	48	41	40	40	40	17	17	17	17	15	45	45	32	Y	93	Y	91	Y	84	Y	78	Y	85	Y	80	Y
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120	9917005131	3	12	5	19	26	2	16	9	9	9	9	9	23	23	42	38	43	44	45	45	45	17	17	17	17	15	46	45	86	Y	81	Y	86	Y	87	Y	83	Y	90	Y	90	Y
121	9917005132	3	14	5	21	23	2	14	6	6	6	6	4	19	18	36	44	37	35	40	37	20	10	10	10	10	8	34	33	66	Y	69	Y	62	Y	60	Y	60	Y	70	Y	40	Y
122	9917005133	2	8	3	13	21	1	13	7	7	9	7	6	20	20	33	25	29	39	30	38	30	8	8	10	8	8	30	31	58	Y	45	Y	54	Y	59	Y	50	Y	69	Y	60	Y
123	9917005134	2	8	3	13	18	1	11	9	8	9	8	8	22	21	37	25	31	36	32	36	40	18	18	18	18	17	42	41	81	Y	70	Y	76	Y	81	Y	75	Y	77	Y	80	Y
124	9917005135	3	14	5	21	18	1	11	9	8	9	8	7	21	20	41	44	41	36	37	35	35	14	13	14	13	12	46	45	82	Y	77	Y	76	Y	69	Y	67	Y	80	Y	70	Y
125	9917005137	3	12	5	19	23	2	14	6	7	8	7	5	22	22	39	38	39	39	41	41	25	13	14	15	14	14	37	38	74	Y	73	Y	77	Y	74	Y	76	Y	79	Y	50	Y
126	9917005138	3	13	5	21	22	1	14	9	9	9	9	8	23	23	42	41	43	40	39	42	40	14	13	14	13	12	46	45	83	Y	74	Y	78	Y	73	Y	69	Y	87	Y	80	Y
127	9917005139	3	12	4	18	22	1	13	10	10	10	10	8	22	22	43	38	40	42	39	40	40	13	14	15	14	14	46	46	82	Y	73	Y	78	Y	77	Y	74	Y	86	Y	80	Y
128	9917005141	3	12	4	17	21	1	13	6	7	8	7	7	21	20	38	38	34	37	32	38	35	15	16	17	16	15	32	33	73	Y	78	Y	77	Y	77	Y	70	Y	71	Y	70	Y
129	9917005144	4	14	5	22	25	2	14	7	8	9	8	6	21	21	44	44	41	43	45	40	30	14	15	16	15	15	47	46	85	Y	82	Y	81	Y	81	Y	83	Y	86	Y	60	Y
130	9917005145	4	14	5	21	24	2	14	10	9	10	9	9	24	24	49	44	43	44	46	43	45	14	14	14	14	12	45	44	89	Y	79	Y	78	Y	79	Y	76	Y	87	Y	90	Y
131	9917005146	3	12	4	17	25	2	15	10	9	10	9	9	24	24	44	38	38	45	44	45	45	17	17	17	17	16	48	48	89	Y	81	Y	81	Y	88	Y	84	Y	93	Y	90	Y
132	9917005147	4	14	5	21	21	1	13	5	6	7	6	6	17	16	39	44	37	35	33	34	30	15	15	17	15	15	32	34	74	Y	82	Y	80	Y	73	Y	71	Y	68	Y	60	Y
133	9917005149	3	13	5	20	25	2	15	8	8	8	8	6	21	20	40	41	41	41	44	41	30	13	12	13	12	11	45	44	79	Y	71	Y	74	Y	71	Y	72	Y	85	Y	60	Y
134	9917005150	4	15	6	22	19	1	11	9	9	9	9	9	19	19	44	47	48	37	39	34	45	12	13	14	13	11	38	40	78	Y	80	Y	83	Y	70	Y	67	Y	74	Y	90	Y
135	9917005151	4	14	5	21	19	1	12	9	9	9	9	8	22	22	47	44	43	37	33	39	40	17	17	17	17	16	34	34	85	Y	87	Y	86	Y	80	Y	79	Y	73	Y	80	Y
136	9917005152	3	13	5	21	26	2	16	9	9	9	9	8	23	23	42	41	43	44	46	45	40	16	16	16	16	14	41	41	83	Y	81	Y	83	Y	84	Y	81	Y	86	Y	80	Y
137	9917005153	3	11	4	17	9	1	5	8	7	8	7	6	19	18	38	34	34	25	32	25	30	10	10	10	10	9	28	27	65	Y	59	Y	59	Y	50	Y	55	Y	52	Y	60	Y
138	9917005155	4	15	6	21	26	2	15	10	9	10	9	9	23	22	48	47	48	46	46	43	45	13	14	15	14	14	46	45	87	Y	82	Y	86	Y	81	Y	81	Y	88	Y	90	Y
139	9917005156	3	12	5	18	19	1	11	9	9	9	9	9	24	23	43	38	43	37	37	38	45	17	16	17	16	15	42	42	85	Y	78	Y	86	Y	77	Y	75	Y	80	Y	90	Y
140	9917005157	3	10	4	15	17	1	10	7	7	7	7	5	20	20	38	31	34	31	31	34	25	10	9	10	9	9	20	19	61	Y	54	Y	59	Y	54	Y	54	Y	53	Y	50	Y
141	9917005158	A	A	A	A	21	1	13	7	7	7	7	5	19	19	22	A	14	35	22	37	25	13	13	13	13	13	36	35	56	Y	33	N	47	Y	68	Y	55	Y	72	Y	50	Y
142	9917005160	4	15	6	21	21	1	13	7	7	9	7	7	21	20	44	47	44	39	35	38	35	11	12	13	12	11	35	36	75	Y	77	Y	77	Y	69	Y	63	Y	74	Y	70	Y
143	9917005162	4	14	5	22	19	1	12	8	8	8	8	6	18	17	42	44	41	35	37	34	30	12	11	12	11	11	29	29	72	Y	72	Y	71	Y	63	Y	65	Y	63	Y	60	Y
144	9917005163	3	12	5	19	22	1	13	9	9	9	9	8	19	19	39	38	43	40	37	37	40	13	14	15	14	12	37	39	74	Y	73	Y	81	Y	75	Y	67	Y	76	Y	80	Y
145	9917005164	3	13	5	20	24	2	14	8	7	8	7	7	19	18	38	41	39	40	42	37	35	18	17	18	17	16	28	28	75	Y	84	Y	84	Y	83	Y	82	Y	65	Y	70	Y
146	9917005165	3	11	4	17	23	2	13	7	8	9	8	6	21	20	39	34	36	41	42	38	30	15	15	17	15	15	37	38	76	Y	72	Y	79	Y	79	Y	80	Y	76	Y	60	Y
147	9917005166	4	15	6	21	20	1	12	10	9	10	9	9	22	21	48	47	48	40	39	38	45	16	15	16	15	14	33	33	85	Y	85	Y	88	Y	78	Y	74	Y	71	Y	90	Y
148	9917005168	3	14	5	21	20	1	13	9	9	9	9	9	22	21	42	44	43	38	39	39	45	14	15	16	15	14	23	25	71	Y	82	Y	83	Y	76	Y	74	Y	64	Y	90	Y

149	9917005169	3	12	4	17	19	1	11	7	7	7	7	6	20	19	38	38	34	33	32	34	30	14	13	14	13	13	34	33	73	Y	71	Y	69	Y	66	Y	65	Y	67	Y	60	Y
150	9917005170	2	10	4	14	22	1	13	7	7	7	7	7	22	22	35	31	34	36	30	40	35	15	14	15	14	13	45	44	76	Y	66	Y	72	Y	71	Y	63	Y	84	Y	70	Y
151	9917005171	4	14	5	22	23	2	13	7	7	7	7	7	19	18	42	44	39	41	43	36	35	A	A	A	A	A	28	29	42	Y	44	Y	39	N	41	Y	43	Y	65	Y	70	Y
152	9917005172	3	12	4	17	26	2	16	10	9	10	9	9	22	22	43	38	38	46	44	44	45	13	12	13	12	11	44	43	81	Y	68	Y	71	Y	76	Y	72	Y	87	Y	90	Y
153	9917005173	4	15	6	22	23	2	14	9	8	9	8	8	22	22	47	47	46	41	45	41	40	17	16	17	16	15	48	47	92	Y	87	Y	89	Y	81	Y	83	Y	88	Y	80	Y
154	9917005174	3	12	4	18	21	1	13	7	7	7	7	7	19	19	37	38	34	35	33	37	35	14	13	14	13	13	25	25	67	Y	71	Y	69	Y	68	Y	66	Y	62	Y	70	Y
155	9917005176	3	12	5	18	21	1	13	8	8	8	8	6	21	21	40	38	41	37	35	39	30	16	16	16	16	16	26	25	73	Y	78	Y	81	Y	77	Y	75	Y	64	Y	60	Y
156	9917005178	4	14	5	21	26	2	16	9	8	9	8	7	23	22	47	44	41	44	44	44	35	17	17	17	17	17	42	41	89	Y	87	Y	84	Y	87	Y	87	Y	85	Y	70	Y
157	9917005179	4	15	6	23	21	1	13	9	9	9	9	8	24	23	48	47	48	39	40	41	40	17	17	17	17	16	38	39	88	Y	90	Y	91	Y	82	Y	80	Y	80	Y	80	Y
158	9917005181	3	12	5	19	25	2	14	7	8	9	8	8	22	22	40	38	41	43	43	41	40	11	12	13	12	10	42	41	75	Y	68	Y	74	Y	73	Y	68	Y	82	Y	80	Y
159	9917005182	4	14	5	22	14	1	8	9	9	9	9	7	22	21	47	44	43	32	39	32	35	14	14	16	14	14	39	41	84	Y	73	Y	83	Y	67	Y	74	Y	73	Y	70	Y
160	9917005183	3	12	4	18	23	2	13	9	9	9	9	8	21	20	41	38	38	41	44	38	40	17	16	17	16	15	22	22	73	Y	78	Y	81	Y	81	Y	82	Y	60	Y	80	Y
161	9917005185	4	16	6	23	25	2	14	7	8	9	8	7	21	20	44	50	46	43	45	39	35	12	12	14	12	11	27	29	73	Y	80	Y	81	Y	73	Y	73	Y	68	Y	70	Y
162	9917005186	3	13	5	21	23	2	14	10	10	10	10	8	24	24	44	41	45	43	48	43	40	13	13	13	13	11	47	47	84	Y	74	Y	78	Y	76	Y	76	Y	90	Y	80	Y
163	9917005187	4	14	5	21	26	2	15	9	8	9	8	7	21	20	46	44	41	44	44	41	35	18	18	18	18	16	33	35	85	Y	89	Y	86	Y	89	Y	84	Y	76	Y	70	Y
164	9917005188	3	14	5	21	22	1	13	7	7	9	7	6	20	19	38	44	39	40	35	37	30	15	16	17	16	15	27	29	70	Y	84	Y	82	Y	80	Y	73	Y	66	Y	60	Y
165	9917005189	3	13	5	21	22	1	14	10	10	10	10	10	23	22	43	41	45	42	41	41	50	13	12	13	12	11	21	20	70	Y	71	Y	78	Y	72	Y	69	Y	61	Y	100	Y
166	9917005191	3	12	4	17	25	2	15	9	9	9	9	8	19	18	39	38	38	43	44	39	40	14	13	14	13	13	40	39	77	Y	71	Y	73	Y	76	Y	77	Y	78	Y	80	Y
167	9917005192	3	12	4	17	23	2	13	7	7	7	7	7	22	22	40	38	34	37	40	40	35	13	13	13	13	13	34	34	73	Y	71	Y	67	Y	70	Y	73	Y	74	Y	70	Y
168	9917005193	3	11	4	17	22	1	13	6	7	8	7	5	20	19	37	34	34	38	32	37	25	14	14	16	14	13	25	26	67	Y	63	Y	74	Y	73	Y	65	Y	63	Y	50	Y
169	9917005194	4	14	5	21	26	2	16	10	9	10	9	9	24	24	49	44	43	46	46	46	45	14	14	14	14	13	43	43	88	Y	79	Y	78	Y	81	Y	79	Y	89	Y	90	Y
170	9917005195	4	16	6	23	23	2	13	9	9	9	9	9	24	23	48	50	48	41	47	41	45	12	13	14	13	11	43	42	85	Y	83	Y	83	Y	74	Y	75	Y	83	Y	90	Y
171	9917005196	3	11	4	15	22	1	13	9	9	9	9	7	24	23	43	34	38	40	35	41	35	12	12	14	12	12	39	41	78	Y	64	Y	73	Y	70	Y	65	Y	82	Y	70	Y
172	9917005198	3	13	5	21	21	1	13	7	8	9	8	8	21	20	39	41	41	39	37	38	40	18	18	18	18	17	33	35	78	Y	86	Y	86	Y	84	Y	80	Y	73	Y	80	Y
173	9917005199	3	13	5	21	21	1	13	9	8	9	8	8	21	20	41	41	41	39	37	38	40	16	16	16	16	16	41	40	82	Y	81	Y	81	Y	79	Y	77	Y	78	Y	80	Y
174	9917005200	A	A	A	A	23	2	13	6	6	8	6	5	21	20	23	A	12	39	27	38	25	11	12	13	12	12	26	27	50	Y	30	N	45	Y	69	Y	57	Y	65	Y	50	Y
175	9917005201	3	12	5	19	11	1	6	9	8	9	8	8	20	19	40	38	41	29	35	27	40	14	13	14	13	12	32	31	74	Y	71	Y	76	Y	62	Y	65	Y	58	Y	80	Y
176	9917005202	3	12	5	18	19	1	12	7	6	7	6	5	19	19	37	38	37	33	31	36	25	12	11	12	11	10	31	30	68	Y	66	Y	67	Y	61	Y	56	Y	66	Y	50	Y
177	9917005203	3	14	5	21	25	2	15	10	9	10	9	9	24	23	44	44	43	45	46	44	45	15	15	17	15	14	39	40	82	Y	82	Y	86	Y	83	Y	81	Y	84	Y	90	Y
178	9917005204	4	15	6	23	19	1	12	9	9	9	9	8	24	23	48	47	48	37	40	40	40	17	17	17	17	17	34	34	86	Y	90	Y	91	Y	80	Y	83	Y	74	Y	80	Y
179	9917005205	4	14	5	21	22	1	14	9	9	9	9	8	23	23	47	44	43	40	39	42	40	15	16	17	16	14	39	40	85	Y	84	Y	86	Y	80	Y	74	Y	82	Y	80	Y
180	9917005206	3	13	5	19	20	1	13	10	10	10	10	9	23	22	43	41	45	40	39	40	45	17	16	17	16	16	33	35	81	Y	81	Y	88	Y	80	Y	75	Y	75	Y	90	Y

181	9917005208	4	15	6	23	19	1	12	7	8	9	8	8	22	22	45	47	46	37	38	39	40	13	14	15	14	13	43	43	83	Y	82	Y	84	Y	72	Y	71	Y	82	Y	80	Y
182	9917005209	3	13	5	21	19	1	12	10	9	10	9	9	22	21	43	41	43	39	39	38	45	15	14	15	14	14	25	25	74	Y	76	Y	81	Y	74	Y	74	Y	63	Y	90	Y
183	9917005210	3	12	4	18	18	1	11	8	8	8	8	8	22	21	41	38	36	34	35	36	40	14	14	14	14	14	39	39	78	Y	73	Y	71	Y	69	Y	70	Y	75	Y	80	Y
184	9917005211	3	13	5	19	20	1	12	7	8	9	8	8	23	22	40	41	41	38	35	39	40	13	14	15	14	12	44	43	78	Y	76	Y	79	Y	73	Y	65	Y	82	Y	80	Y
185	9917005212	4	16	6	23	20	1	13	10	9	10	9	8	23	22	48	50	48	40	40	40	40	14	14	14	14	12	37	37	84	Y	85	Y	83	Y	75	Y	70	Y	77	Y	80	Y
186	9917005213	3	12	4	17	24	2	14	10	9	10	9	8	21	20	42	38	38	44	44	39	40	17	16	17	16	16	41	40	84	Y	78	Y	81	Y	84	Y	84	Y	79	Y	80	Y
187	9917005214	3	13	5	21	24	2	14	9	9	9	9	8	24	23	43	41	43	42	46	42	40	12	12	14	12	11	41	41	79	Y	71	Y	78	Y	72	Y	74	Y	83	Y	80	Y
188	9917005215	3	13	5	20	20	1	12	10	9	10	9	9	24	23	44	41	43	40	38	40	45	17	16	17	16	16	42	41	86	Y	81	Y	86	Y	80	Y	78	Y	81	Y	90	Y
189	9917005216	4	14	5	22	24	2	14	9	9	9	9	8	23	23	47	44	43	42	47	42	40	11	11	13	11	11	35	36	78	Y	72	Y	76	Y	70	Y	75	Y	78	Y	80	Y
190	9917005217	4	14	5	21	25	2	15	9	8	9	8	7	21	21	46	44	41	43	44	42	35	15	14	15	14	13	42	41	86	Y	79	Y	79	Y	78	Y	77	Y	83	Y	70	Y
191	9917005218	3	13	5	21	21	1	13	9	9	9	9	7	23	23	42	41	43	39	39	41	35	10	9	10	9	8	37	36	73	Y	64	Y	68	Y	62	Y	59	Y	77	Y	70	Y
192	9917005219	3	12	4	18	26	2	15	7	8	9	8	8	18	17	36	38	36	44	42	38	40	12	13	14	13	13	32	34	67	Y	71	Y	71	Y	77	Y	75	Y	72	Y	80	Y
193	9917005220	4	15	6	21	26	2	15	9	9	9	9	9	22	22	47	47	48	44	46	43	45	13	13	15	13	13	43	43	85	Y	80	Y	86	Y	77	Y	79	Y	86	Y	90	Y
194	9917005221	3	12	4	18	21	1	13	9	9	9	9	9	24	23	43	38	38	39	37	41	45	17	17	17	17	15	34	35	81	Y	81	Y	81	Y	82	Y	75	Y	76	Y	90	Y
195	9917005222	3	13	5	19	24	2	14	7	8	9	8	8	22	22	40	41	41	42	43	41	40	12	13	14	13	12	46	45	78	Y	74	Y	76	Y	75	Y	73	Y	86	Y	80	Y
196	9917005223	4	14	5	22	26	2	16	10	10	10	10	8	22	21	48	44	45	46	49	43	40	18	17	18	17	17	26	27	84	Y	87	Y	90	Y	89	Y	92	Y	70	Y	80	Y

**Attainment Level**

- 0 - Less than 40% of students attained the bench mark score
- 1 - 40% - 60% of students attained the bench mark score
- 2 - 60% - 75% of students attained the bench mark score
- 3 - 75% - 100% of students attained the bench mark score

Attained	Not Attained	Absent	CO1	CO2	CO3	CO4	CO5	CO6	CO7
189	7	0	196	96	188	5	3	193	97
189	7	0	196	96	189	7	0	196	96
189	7	0	196	96	189	7	0	196	96
189	7	0	196	96	189	7	0	196	96
188	7	0	195	96	188	1	195	96	196
196	100								

COs	Direct Attainment	Indirect Attainment	Overall Attainment	Attainment Level
CO1	96.4	66.8	90.5	3
CO2	97.4	67.9	91.5	3
CO3	96.4	64.3	90.0	3
CO4	96.4	64.3	90.0	3
CO5	96.4	66.3	90.4	3
CO6	96.4	71.9	91.5	3
CO7	100.0	67.9	93.6	3
Average Attainment Level				3.00

Table 3.6. The model calculation for CO attainment of ECE18R274

Course Outcome Attainment Through Cumulative Internal Examination (CIE) and Semester End Examination (SEE)

Second-year fourth semester (II/IV) ECE18R274 Electromagnetic Waves and Transmission Lines course has been selected for CO attainment model calculations. The benchmark score for the course was fixed as **40 out of 100**. The benchmark score for a particular course was selected based on the previous years' results and approved by the Program Advisory Board. To understand the calculations from Fig.3.6, 'Y' indicates **CO attained** when the score of the individual is greater than the benchmark score, and 'N' indicates **Not Attained**. Consider Serial No:7 Reg Number: **9917005006** in SE I scored 3 marks out of 4 marks in CO1, in the assignment he scored 10 marks out of 10 marks in CO1 and 24 out of 25 in practical for CO1. So, in the cumulative internal assessment for CO1, he scored 44 out of 50 (sessional 1 = 20%, Practical = 20% and Assignment = 10%). Similarly for external he scored 13 out of 20 and 47 out of 50 in practical lab exam. The total internal and external (50% + 50%) gives 84%. It indicates that the score is greater than the benchmark score fixed therefore CO1 is attained 'Y'. To calculate the value number of students attained, count the number of Y and N. The total number of Y and N is 189, and 7 out of 196 students. Therefore, for particular CO1 from cumulative internal examination results 96% of students (i.e. $189 / 196 = 0.96$) scored above benchmark. Similarly, to find the CO attainment for the particular course through all the cumulative internal assessments.

Table 3.7. Direct CO Attainment for ECE18R274 Electromagnetic Waves and Transmission Lines

Assessment Tool	Course Outcome	CO attainment	%
Cumulative Internal Assessment (SE I, SE II, SE III & Assignment) & End Semester Examination	CO1	0.96	96
	CO2	0.97	97
	CO3	0.96	96
	CO4	0.96	96
	CO5	0.96	96
	CO6	0.96	96
	CO7	1	100

The direct CO attainment for the course ECE18R274 is calculated as follows. The calculation of attainment level from CO attainment is shown in Table 3.8. It is calculated based on the weightage given below.

Direct Assessment	Cumulative Internal Assessment	50% of attainment
	End Semester Examination	50% of attainment


Table 3.8. Direct CO Attainment for ECE18R274

<i>Assessment Tool</i>	<i>COs</i>	<i>No. of students attained (Y)</i>	<i>Total No. of Students Appeared</i>	<i>%</i>
50% of Cumulative Internal Assessment + 50% of End Semester Examination	CO1	189	196	96
	CO2	188	193	97
	CO3	189	196	96
	CO4	189	196	96
	CO5	189	196	96
	CO6	189	195	96
	CO7	196	196	100

In-Direct CO attainment**Course exit survey:**

Course End survey is conducted to analyze the CO attainment, at the end of every semester. Fig. A.3.3.1 is the scanned copy of the Course exit survey form. The survey form includes questionnaires for all the COs with a provision to mark whether the course has supported building the knowledge. Students will tick on the appropriate column in five-point scales. Considerations on surveys are made as the marks calculated based on normalized value.

Let us consider the course EC18R274, for CO1, 131 students chose strong/medium out of 196 students (67%). Similarly, 68%, 64%, 64%, 66%, 71% and 68% for CO2, CO3, CO4, CO5 and CO6 respectively. The indirect CO attainment for ECE18R274 is calculated in Table 3.9.


KALASALINGAM
 ACADEMY OF RESEARCH AND EDUCATION
 UNIVERSITY
Under sec. 3 of UGC Act 1956. Accredited by NAAC with "A" Grade

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
ECE18R274 ELECTROMAGNETIC WAVES AND TRANSMISSION LINES

COURSE EXIT SURVEY

Course Name: Electromagnetic Waves and Transmission Lines Course Code: ECE18R274

It is requested to submit the survey on the outcome of the subject. This form is created to evaluate the course outcomes with content delivery, teaching methodology and importance of the subject. Students are required to give their responses in appropriate answer with tick mark.

A-strongly agree	B-Agree	C-Somewhat agree	D-Somewhat disagree	E-strongly Disagree				
Particulars				A	B	C	D	E
1.	How well you are able to analyse the characteristics of wave propagation on high frequency transmission lines [CO1]			<input checked="" type="checkbox"/>				
2.	How well you are able to carry out impedance transformation on transmission lines [CO2]				<input checked="" type="checkbox"/>			
3.	What rating will you give yourself in the understanding the sections of transmission line sections for realizing circuit elements [CO3]				<input checked="" type="checkbox"/>			
4.	How well you can explain the characterization of uniform plane wave [CO4]				<input checked="" type="checkbox"/>			
5.	How much will you rate yourself in calculating reflection and transmission of waves at media interface [CO5]					<input checked="" type="checkbox"/>		
6.	How much will you rate yourself in analysis of wave propagation on metallic waveguides in modal form [CO6]				<input checked="" type="checkbox"/>			
7.	What rating will you give yourself in explaining the principle of radiation and characteristics of an antenna [CO7]			<input checked="" type="checkbox"/>				
8.	Is Teaching methodology is as per curriculum			<input checked="" type="checkbox"/>				
9.	How you rate the knowledge of this subject for implementation in physical problems				<input checked="" type="checkbox"/>			
10.	Evaluate mathematical solutions to problems and communicate them in an appropriate form				<input checked="" type="checkbox"/>			
11.	Teaching methods and innovations followed to understand the subject was very useful			<input checked="" type="checkbox"/>				
12.	Overall content delivery and subject information has helped for professional development				<input checked="" type="checkbox"/>			

Please offer any additional comments for improvement of the course.

The Course Material were Good, And can Add more real-time Examples.

Name : SAI TEJA
 Reg.No. : 9717006025
 Year : 2017 Branch: E.C.E Signature: *Sai Teja*

Figure. A.3.3.1 Model scanned copy of course exit survey for ECE205 Electronic Circuits

INDIRECT ATTAINMENT

Table 3.9. Indirect CO Attainment for ECE18R274

Indirect (course exit survey)			
Course Outcome	Total no. of Students with strong and medium rating	CO Attainment	CO Percentage out of 100
CO1	131	0.67	67
CO2	133	0.67	67
CO3	126	0.64	64
CO4	126	0.64	64
CO5	130	0.66	66
CO6	141	0.71	71
CO7	133	0.68	68

Attainment level

The attainment levels are calculated as given in Table 3.10.

Table 3.10. Attainment level indicators

Level 0	< than 40% of students crossed the benchmark
Level 1	40% of students crossed the benchmark
Level 2	60% of students crossed the benchmark
Level 3	> than 75% students crossed the benchmark

. The attainment level is calculated by referring to Table 3.10, which clearly states that if the attainment value is less than 40%, the attainment level is 0, if the attainment value is less than 60% and greater than 40%, the attainment level is 1, if the attainment value is less than 75% and greater than 60%, the attainment level is 2, and finally if the attainment value is greater than 75%, the attainment level is 3.

OVERALL ATTAINMENT

The overall CO attainment for the course ECE18R274 Electromagnetic Waves and Transmission Lines is calculated as follows. It is calculated based on the weightage given below.

$0.8 * \text{Direct Attainment} + 0.2 * \text{Indirect Attainment} = \text{Overall Attainment}$.

Table 3.11 Overall CO Attainment for ECE18R274

COs	Direct Attainment (A)	Indirect Attainment (B)	Overall Attainment (A*0.8 + B*0.2)	Attainment Level
CO1	96.4	66.8	90.5	3
CO2	97.4	67.9	91.5	3
CO3	96.4	64.3	90.0	3
CO4	96.4	64.3	90.0	3
CO5	96.4	66.3	90.4	3
C06	96.4	71.9	91.5	3
C07	100.0	67.9	93.6	3
Average Attainment Level				3.00






Therefore the Overall CO attainment for the course ECE18R274 = 3.0

B. The quality /relevance of assessment processes & tools used**Table 3.12. Quality of Assessment Process**

<u>Sessional Examinations:</u>	
<p>There are 3 sessional examinations conducted for every theory course for which the question papers are prepared by using Bloom's taxonomy as per the course articulation matrix.</p> <ul style="list-style-type: none"> SE1 evaluates CO1 and CO2 SE2 evaluates CO2, CO3, and CO4 SE3 evaluates CO4 and CO5 <p>The process of preparing the question paper is as follows:</p> <pre> graph TD A[Preparation of Question paper by course coordinator] --> B[Module Coordinator verifies the question paper as per the bloom's taxonomy and GATE standards] B --> C[Program Coordinator Approval] </pre>	
<u>End Semester Examination</u>	
<ul style="list-style-type: none"> Two sets of question papers for each course are prepared following Bloom's taxonomy by internal experts. Another two sets of question papers for each course are prepared in accordance with Bloom's taxonomy by external experts from reputed institutions like (NIT and Renowned institutions). The End semester examination evaluates CO1, CO2, CO3, CO4, and CO5. Valuations are done by internal and external experts The controller of examination allocates internal and external experts to audit the question paper before the examination to maintain the curriculum content and to avoid conflict on examinations. 	
<u>Assignments</u>	
<ul style="list-style-type: none"> Five assignments will be given for every course corresponding to five COs. Assignment 1(A1) will meet the CO1 and similarly the other assignments will meet the corresponding COs. The course teacher will choose any one of the following tools for the assessment of the assignment. <p>Online / offline quiz Mind Mapping Mini projects – hardware/ simulation GUI models using Matlab Seminar Assignments using innovative ICT tools – Hot potatoes, Puzzles, Placards, etc.</p>	





Laboratory Sessions

In general, the practical sessions is assessed concerning the course outcomes as follows;

-  Experimental Procedure
-  Design & Conclusion
-  Results/ Graphs / Tabulation
-  Viva
-  Ethics






Project and Community Service Projects**Main Projects**

10 credits are allocated for project work. The internal review is conducted in three phases. The external experts evaluate the projects based on the rubrics assigned as follows

-  Problem identification
-  Analysis
-  Documentation
-  Viva

Community Service Projects (CSP)

CSP is carried out in two phases in the third year with a total credit of 3. The CSP projects are evaluated by internal experts and the CSP coordinator based on the following rubrics.

-  Field survey report
-  Need Analysis
-  Presentation
-  Project report
-  Viva –Voce (Presentation, clarity and defending)

3.2.2. Record the attainment of Course Outcomes of all courses with respect to set attainment levels

The target percentage of marks scored by the students is set by course coordinators based on university results of the course for the past three years. The benchmark score set for all the courses is 60. Table 3.13 shows the CO attainment for the batch 2016 – 2020.

Table 3.13. CO attainment for batch 2017-2021

Sl. No.	Course Code	Course Name	CO attainment
1	CHY17R101	Environmental Science	3
2	CIV17R101	Basic Civil Engineering	2.2
3	CSE17R171	Programming Language	2
4	HSS17R151	English for Technical Communication - I	3
5	MAT17R101	Calculus and Differential Equations	3

Sl. No.	Course Code	Course Name	CO attainment
6	MEC17R105	Basic Mechanical Engineering	2.2
7	MEC17R181	Engineering Practice Laboratory	1.75
8	PHY17R171	Engineering Physics	2.4
9	CHY17R171	Chemistry	1.8
10	ECE17R101	Electronic Devices	2.4
11	EEE17R151	Basic Electrical and Electronics Engineering	2.4
12	HSS17R152	English for Technical Communication II	2
13	MAT17R102	Linear Algebra, Partial Differential Equations and Complex Variable	3
14	MEC17R101	Engineering Drawing	2.8
15	MEC17R103	Engineering Mechanics	3
16	PHY17R151	Materials Physics - I	2
17	ECE18R201	Network Theory	2.2
18	ECE18R202	Signals and Systems	1.8
19	ECE18R254	Electronic Sensors and Measurements with LABVIEW	0.8
20	ECE18R271	Electronic Circuits	3
21	ECE18R272	Digital Circuits and Systems Design	1.5
22	BIT18R101	Biology for Engineers	2
23	ECE18R203	Analog Integrated Circuits	2.75
24	ECE18R273	Digital Signal Processing	2.8
25	ECE18R274	Electromagnetic Waves and Transmission Lines	3
26	ECE18R281	Analog Integrated Circuits Laboratory	2
27	EEE18R312	Electrical Machines	2.2
28	MAT18R204	Partial Differential Equations and Transforms	2.2
29	BIT18R432	Biological Waste Water Treatment	1.4
30	ECE18R275	Analog and Digital Communication	2.5
31	ECE18R301	Control Systems	2.6
32	ECE18R352	CMOS Design	2.8
33	ECE18R371	Microprocessors and Microcontrollers	2
34	HSS18R013	Professional Ethics	3
35	OEE18R009	Laser Technology	3
36	ECE18R311	Electronics Product Design for Manufacturing	3
37	EEE18R310	Solar and Wind Energy Conversion	2
38	OEE18R017	Number Theory with Applications	1.6
39	OEE18R014	Introduction to Web Design and Applications	2.8
40	ECE18R256	FPGA Based System Design	2.5

Sl. No.	Course Code	Course Name	CO attainment
41	ECE18R367	Embedded C	2.6
42	ECE18R372	Antennas and Propagation	3
43	ECE18R373	Computer Communication and Networks	1.167
44	ECE18R399	Community Service Project	2
45	MEC18R449	Engineering Design	2
46	OEE18R015	Functional Materials for Technological Applications	2.8
47	MEC18R345	Surface Engineering	2.2
48	ECE18R351	Process and Device Simulation by TCAD	2.2
49	ECE18R357	Digital Image Processing	2.5
50	EEE18R419	Soft Computing Techniques	2.8
51	OEE18R008	Photonics and Optoelectronic Devices	3
52	CIV18R428	Repair and Rehabilitation of Structures	2.8
53	ECE18R260	Internet of Things	1.8
54	ECE18R312	Computer Architecture	1.4
55	ECE18R316	Probability Theory and Stochastic Processes	0.5
56	ECE18R498	Project Work	2.67
57	AER18R306	Aircraft Rules and Regulations CAR I and II	2.4
58	ECE18R257	Digital Signal Processing with FPGA	2.8
59	INT18R320	Essentials of Information Technology	2.8
60	HSS18R015	Total Quality Management	1.6
61	ECE18R499	Project Work	3

3.3. Attainment of Program Outcomes and Program Specific Outcomes

3.3.1. Describe assessment tools and processes used for measuring the attainment of each Program Outcome and Program Specific Outcomes

The Program attainment of a particular student is based on his academic curriculum, which includes:

- (i) Theory courses
- (ii) Practical / Laboratory Courses
- (iii) Non-CGPA (Non – Cumulative Grade Point Average) Courses
- (iv) Graduate Survey

Table 3.14a describes the list of assessment tools used to calculate the POs and PSOs directly.

Table 3.14a Assessment tools used to attain the POs

Direct Assessment		
Assessment Tools	Frequency per course	Process
Assignment	Five times per sem	Attainment of COs
Sessional	Thrice per sem	
End Semester	Once per sem	
Laboratory sessions	Fifteen sessions per sem	
Practical examination (model/end sem)	Once per sem	
Indirect Assessment		
Course exit survey	Every sem	Knowledge of the course studied, the ability to imply the acquired knowledge in respective fields.
Graduate survey	Yearly	Knowledge of maths, basic science, basic computing principles, and electronics and communication engineering principles tools practices
Non-CGPA	Every semester	Co-curricular activities & extra curricular activities

The procedure used to calculate PO / PSO attainment is explained in table 3.14b and Table 3.14c. It describes the process involved in theory courses, practical / laboratory courses under the category of direct assessment. Indirect Assessments are completely based on a survey at the end of the program. Weightages are 80% for Direct Assessment (theory courses and practical / laboratory courses) and 20% for Indirect Assessment.

Table 3.14b. List of Direct Assessment Tool / Process for PO attainment

<i>SL. No</i>	<i>Assessment Tool</i>	<i>Method / Processes</i>
1	<i>Sessional Examinations</i>	<p>The Course Outcome attainment is the source input to calculate the PO attainment. The CO attainments are calculated based on the outcome of the following activities:</p> <ol style="list-style-type: none"> 1. Conducting three Sessional examinations per semester to evaluate the continuous performance of the students. 2. Questions were set by both internal and external course experts. 3. Questions are based on standard level by following Blooms Taxonomy for evaluation. 4. Valuations are made by sharing/exchanging the answer papers with Department course experts. 5. Sessional Examination Question papers and Answer scripts are evaluated regularly.
2	<i>Assignment</i>	<ol style="list-style-type: none"> 1. Seminars and Presentations are given on advanced topics related to the course content. 2. Students are asked to prepare a survey cum pertinent study on present industrial conditions. 3. Mind mapping for special topics with industrial / R&D relevance. 4. Quiz on topics using various ICT tools. 5. Mini projects to evaluate the capability of the students through critical thinking
3	<i>End semester examinations:</i>	<ol style="list-style-type: none"> 1. End semester examination questions are set by internal/external experts. 2. Valuation made by different external experts and answer scripts distributed to the students on Day One of Reopening to ensure their marks.
4	<i>End semester Practical Examination</i>	<ol style="list-style-type: none"> 1. The practical examination is focused on the practical knowledge, skill, and attitude of the students. 2. Students are involved to perform the practical examinations to evaluate their knowledge.
5	<i>Project</i>	<ol style="list-style-type: none"> 1. Students are accompanied in both Internal and External Projects. 2. Project Review committee was formed internally to approve and evaluate the research in three stages (i) Zeroth Review; (ii) First Review and (iii) Third Review. 3. Students have to come forward to present their project in reputed conferences/meet organized by IISc, IITs, NITs, Other Universities, etc. 4. External Examiner(s) are invited to evaluate the project as the final examination.

Table 3.14c List of Indirect Assessment Tool / Processes for PO attainment

<i>S. No</i>	<i>Assessment Tool</i>	<i>Method Description / Processes</i>
1.	<i>Graduate Survey</i>	1. Survey made with a set of Questionnaires which was prepared based on POs. 2. These surveys have been taken with the graduate of the academic year.
2.	<i>Co-Curricular and Extra-Curricular activities (Non-CGPA)</i>	At the end of every academic year annual report is developed where the statistics of students who have participated in professional bodies/student chapters/ workshops/seminars/ conferences/ paper presentations /internships /industry visits etc. are prepared. This statement is considered to indirectly assess the POs.

3.3.2. Provide results of evaluation of each PO & PSO**Direct Assessment**

The POs and PSOs are quantitatively measured by assigning weights for the correlation of CO and POs/PSOs of a particular course. The weights assumed for the analysis are as: w1, w2, and w3 for strong, medium, and low correlation respectively.

Where:

w1 = 3/3 = 1 for strong correlation

w2 = 2/3 = 0.66 for medium correlation and

w3 = 1/3 = 0.33 for low correlation.

$$PO = \frac{\sum_{Wi=1}^3 Wi \times CO \text{ attainment}}{\sum_{Wi=1}^3 Wi \times No. of Subjects}$$

Table 3.15. The model calculation for PO1 attainment for the 2017-2021 batch

Sl. No.	Course Code	PO1 Correlation	CO Attained	Model Calculation [Wi X CO Attained]	PO Value
1.	CHY17R101	3	3	=>3*1	3.00
2.	CIV17R101	2	2.2	=>2.2*0.66	1.45
3.	CSE17R171	3	2	=>2*1	2.00
4.	HSS17R151	2	3	=>3*0.66	1.98
5.	MAT17R101	3	3	=>3*1	3.00
6.	MEC17R105	2	2.2	=>2.2*0.66	1.45

Sl. No.	Course Code	PO1 Correlation	CO Attained	Model Calculation [Wi X CO Attained]	PO Value
7.	MEC17R181	2	1.75	=>1.75*0.66	1.16
8.	PHY17R171	3	2.4	=>2.4*1	2.40
9.	CHY17R171	3	1.8	=>1.8*1	1.80
10.	ECE17R101	3	2.4	=>2.4*1	2.40
11.	EEE17R151	2	2.4	=>2.4*0.66	1.58
12.	MAT17R102	3	3	=>3*1	3.00
13.	MEC17R101	2	2.8	=>2.8*0.66	1.85
14.	MEC17R103	3	3	=>3*1	3.00
15.	PHY17R151	3	2	=>2*1	2.00
16.	ECE18R201	3	2.2	=>2.2*1	2.20
17.	ECE18R202	3	1.8	=>1.8*1	1.80
18.	ECE18R254	3	0.8	=>0.8*1	0.80
19.	ECE18R271	3	3	=>3*1	3.00
20.	ECE18R272	3	1.5	=>1.5*1	1.50
21.	BIT18R101	3	2	=>2*1	2.00
22.	ECE18R203	3	2.75	=>2.75*1	2.75
23.	ECE18R273	3	2.8	=>2.8*1	2.80
24.	ECE18R274	2	3	=>3*0.66	1.98
25.	ECE18R281	3	2	=>2*1	2.00
26.	EEE18R312	2	2.2	=>2.2*0.66	1.45
27.	MAT18R204	3	2.2	=>2.2*1	2.20
28.	BIT18R432	3	1.4	=>1.4*1	1.40
29.	ECE18R275	3	2.5	=>2.5*1	2.50
30.	ECE18R301	3	2.6	=>2.6*1	2.60
31.	ECE18R352	3	2.8	=>2.8*1	2.80
32.	ECE18R371	3	2	=>2*1	2.00
33.	OEE18R009	3	3	=>3*1	3.00
34.	ECE18R311	3	3	=>3*1	3.00
35.	EEE18R310	3	2	=>2*1	2.00
36.	OEE18R017	2	1.6	=>1.6*0.66	1.06
37.	OEE18R014	3	2.8	=>2.8*1	2.80
38.	ECE18R256	2	2.5	=>2.5*0.66	1.65
39.	ECE18R367	3	2.6	=>2.6*1	2.60
40.	ECE18R372	3	3	=>3*1	3.00
41.	ECE18R373	3	1.167	=>1.167*1	1.17
42.	ECE18R399	2	2	=>2*0.66	1.32
43.	MEC18R449	1	2	=>2*0.33	0.66
44.	OEE18R015	2	2.8	=>2.8*0.66	1.85
45.	MEC18R345	2	2.2	=>2.2*0.66	1.45
46.	ECE18R351	3	2.2	=>2.2*1	2.20
47.	ECE18R357	3	2.5	=>2.5*1	2.50
48.	EEE18R419	3	2.8	=>2.8*1	2.80
49.	OEE18R008	3	3	=>3*1	3.00
50.	CIV18R428	3	2.8	=>2.8*1	2.80
51.	ECE18R260	2	1.8	=>1.8*0.66	1.19

Sl. No.	Course Code	PO1 Correlation	CO Attained	Model Calculation [Wi X CO Attained]	PO Value
52.	ECE18R312	2	1.4	=>1.4*0.66	0.92
53.	ECE18R316	3	0.5	=>0.5*1	0.50
54.	ECE18R498	3	2.67	=>2.67*1	2.67
55.	ECE18R257	3	2.8	=>2.8*1	2.80
56.	INT18R320	1	2.8	=>2.8*0.33	0.92
57.	HSS18R015	2	1.6	=>1.6*0.66	1.06
58.	ECE18R499	3	3	=>3*1	3.00

Similarly, a procedure has been followed to calculate for PO / PSO attainment whole batch result. Tables 3.16 and 3.17 show the Direct and overall PO attainment for the Batch 2017-2021.

Table 3.16 shows the overall PO attainment for the Batch 2017-2021

Sl. No.	Course Code	Program Outcomes & PSO														
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	CHY17R101	3.00	3.00	3.00	1.98	1.98	1.98	3.00		0.99	1.98	0.99	1.98	0.99	1.98	3.00
2	CIV17R101	1.45	1.45	1.45		1.45	1.45	0.73	1.45		1.45		0.73	0.73		
3	CSE17R171	2.00	1.32	1.32		1.32								1.32	1.32	
4	HSS17R151	1.98	1.98	1.98	0.99										3.00	1.98
5	MAT17R101	3.00												3.00		
6	MEC17R105	1.45	0.73			0.73		1.45	0.73		1.45		0.73	0.73		
7	MEC17R181	1.16	1.16	1.75			1.16	0.58		0.58	1.16	1.16		0.58		
8	PHY17R171	2.40	1.58											2.40		
9	CHY17R171	1.80												1.80		
10	ECE17R101	2.40	2.40	2.40			0.79		0.79	0.79		1.58	2.40	0.79	0.79	
11	EEE17R151	1.58	1.58	1.58		1.58	1.58	0.79	1.58		1.58		0.79	0.79		
12	HSS17R152		1.32	1.32					1.32	0.66			1.32		2.00	1.32
13	MAT17R102	3.00												3.00		

Sl. No.	Course Code	Program Outcomes & PSO														
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
14	MEC17R101	1.85	2.80	2.80	1.85	1.85	2.80	1.85	2.80	1.85	2.80	1.85	1.85	0.92		
15	MEC17R103	3.00	1.98	1.98			1.98			1.98	1.98	1.98		0.99		
16	PHY17R151	2.00												2.00		
17	ECE18R201	2.20	2.20	1.45	2.20	0.73	2.20						2.20	2.20	1.45	1.45
18	ECE18R202	1.80	1.80	1.80		0.59							1.80	1.80	0.59	0.59
19	ECE18R254	0.80	0.53	0.53	0.53	0.53	0.53	0.26		0.80			0.80	0.53	0.53	0.80
20	ECE18R271	3.00	3.00	1.98	1.98	3.00	3.00	1.98	1.98	3.00	3.00	1.98	1.98	3.00	1.98	1.98
21	ECE18R272	1.50	0.99	0.99	0.99	1.50	0.50	0.50	1.50	1.50	1.50	0.50	0.99	0.99	0.99	0.99
22	BIT18R101	2.00												2.00		
23	ECE18R203	2.75	2.75	1.82	1.82	1.82		0.91					0.91	2.75	1.82	0.91
24	ECE18R273	2.80	2.80	2.80	0.92	1.85	0.92	1.85	2.80	2.80	2.80	2.80	1.85	2.80	1.85	2.80
25	ECE18R274	1.98	3.00	0.99	1.98	3.00	1.98	3.00	0.99	1.98	3.00	1.98	3.00	3.00	3.00	3.00
26	ECE18R281	2.00	2.00	1.32	1.32	2.00	0.66	0.66	2.00	2.00	2.00	0.66	0.66	1.32	2.00	1.32
27	EEE18R312	1.45	1.45	1.45		1.45	1.45	0.73	1.45		1.45		0.73	0.73		
28	MAT18R204	2.20												2.20		
29	BIT18R432	1.40												1.40		
30	ECE18R275	2.50	2.50	1.65	1.65	1.65		0.83	2.50	2.50	2.50		1.65	2.50	1.65	1.65
31	ECE18R301	2.60	2.60	1.72		0.86	0.86	0.86					0.86	2.60	0.86	0.86
32	ECE18R352	2.80	1.85	1.85	2.80	2.80	2.80	2.80	1.85	1.85	2.80	0.92	1.85	2.80	2.80	1.85
33	ECE18R371	2.00	0.66	1.32	2.00	2.00			2.00	2.00	2.00	0.66	0.66	1.32	2.00	0.66
34	HSS18R013						1.98	3.00	1.98	3.00	1.98	1.98	0.99		1.98	0.99
35	OEE18R009	3.00	1.98	0.99	0.99	1.98								3.00	1.98	

Sl. No.	Course Code	Program Outcomes & PSO														
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
36	ECE18R311	3.00	1.98	3.00	3.00	1.98					3.00	1.98	1.98	3.00	1.98	0.99
37	EEE18R310	2.00	2.00	1.32									1.32	2.00		1.32
38	OEE18R017	1.06	1.06	1.60	0.53	0.53	1.60							1.06	1.06	
39	OEE18R014	2.80	1.85	1.85	2.80		2.80	2.80				2.80	0.92			
40	ECE18R256	1.65	1.65	1.65	1.65	2.50			1.65	2.50	2.50	0.83	1.65	1.65	2.50	1.65
41	ECE18R367	2.60	1.72	1.72	0.86	0.86	0.86		1.72	2.60	2.60	0.86	1.72	2.60	0.86	1.72
42	ECE18R372	3.00	1.98	1.98	1.98	0.99	0.99	1.98	1.98	1.98	1.98		1.98	3.00	1.98	1.98
43	ECE18R373	1.17	0.77	1.17	1.17	1.17	0.77	0.77	0.77	0.77	1.17	0.39	0.77	1.17	0.77	0.77
44	ECE18R399	1.32	1.32	1.32	2.00	2.00	2.00	2.00	1.32	1.32	2.00	2.00	2.00	2.00	1.32	1.32
45	MEC18R449	0.66	1.32	2.00										1.32		
46	OEE18R015	1.85	2.80	1.85		1.85								2.80		1.85
47	MEC18R345	1.45	1.45		1.45									0.73		
48	ECE18R351	2.20	1.45	2.20	1.45	1.45	0.73	1.45	2.20	1.45	1.45	0.73	0.73	2.20	1.45	1.45
49	ECE18R357	2.50	2.50	2.50	1.65	2.50	0.83	1.65	2.50	2.50	2.50	2.50	2.50	2.50	1.65	2.50
50	EEE18R419	2.80	2.80	2.80	2.80	2.80						1.85	1.85	1.85	0.92	0.92
51	OEE18R008	3.00	1.98	0.99	0.99	0.99								3.00	1.98	
52	CIV18R428	2.80	1.85	1.85	2.80	0.92		0.92	2.80		0.92	1.85	1.85	2.80	1.85	1.85
53	ECE18R260	1.19	1.80	1.19	1.80	1.80	0.59		0.59	1.19	0.59	0.59	1.19	1.80	1.19	1.19
54	ECE18R312	0.92	0.92	0.46		0.46							0.92	0.92	0.46	0.92
55	ECE18R316	0.50	0.50	0.33	0.33								0.17	0.50	0.17	0.17
56	ECE18R498	2.67	2.67	2.67	2.67	2.67	2.67	2.67	1.76	1.76	2.67			1.76	1.76	1.76
57	AER18R306								2.40		1.58	0.79		0.79		0.79
58	ECE18R257	2.80	2.80	1.85	1.85	2.80			1.85	1.85	2.80		1.85	2.80	1.85	1.85

Sl. No.	Course Code	Program Outcomes & PSO														
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
59	INT18R320	0.92	2.80		2.80	2.80	2.80	2.80	2.80	1.85		2.80	1.85	1.85	1.85	2.80
60	HSS18R015	1.06	0.53				1.60	1.06	0.53	1.06	0.53	0.53	1.06	0.53	1.06	0.53
61	ECE18R499	3.00	3.00	3.00	3.00	3.00	3.00	3.00	1.98	1.98	3.00			1.98	1.98	1.98

Table 3.18 Direct PO attainment for the Batch 2017-2021

Program Outcomes & for 2017-2021															
POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
average	2.06	1.86	1.73	1.76	1.72	1.61	1.62	1.76	1.76	2.02	1.46	1.43	1.82	1.58	1.49

Indirect Assessment

Questionnaires were prepared for the PO Survey and customized to an average value as per levels 1, 2 & 3 (i.e. Low – 1, Medium – 2, and Strong – 3). The survey form includes questionnaires for all the POs with a provision to mark whether the course has supported building the knowledge. Considerations on the survey are made as total number of the mark in medium and it's above. Similar to the course exit survey number of students' responses towards medium and its above are considered for attainment calculation. The sample graduate survey is shown in Figure. 3.3.2.1. The indirect attainment for PO and PSOs are listed in Table 3.19.

KALASALINGAM
ACADEMY OF RESEARCH AND EDUCATION
(DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
GRADUATE SURVEY – BATCH 2016 - 2020

Name: Nelapah Mahidhas Contact No: 8919 3 64200

Questionnaire

S. No	ACADEMIC PROGRAMME OUTCOMES: At the end of the Programme, I was able to,	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1.	Apply knowledge of Mathematics, Science, Engineering fundamentals and specialisation in Electronics and Communication Engineering to the conceptualisation of Engineering models		<input checked="" type="checkbox"/>			
2.	Identify, formulate and solve complex problems in the domains of analog/digital electronics, signal processing and communication engineering, reaching substantiated conclusions using first principles of Mathematics and Engineering Sciences		<input checked="" type="checkbox"/>			
3.	Design/develop Microprocessor, Microcontroller based systems, Communication and Networking systems, Algorithms for signal processing and VLSI circuit components to meet desired specifications with realistic constraints such as manufacturability and sustainability	<input checked="" type="checkbox"/>				
4.	Design and conduct experiments in analog/digital systems, signal processing and communication and networking systems, analyse and interpret data, and synthesise information to provide valid conclusions using simulation techniques and/or numerical methods, graphics	<input checked="" type="checkbox"/>				
5.	Select and apply necessary engineering instruments, equipment's, like: Digital Storage Oscilloscope, Microprocessors and Microcontrollers, DSP and FPGA kits, and modern CAD tools, for Digital Signal Processing, Communication Engineering, Networking and VLSI Engineering practices with an understanding of their limitations		<input checked="" type="checkbox"/>			
6.	Apply reasoning informed by the contextual knowledge to assess societal, safety, legal and cultural issues, and the consequent responsibilities relevant to the professional engineering practice	<input checked="" type="checkbox"/>				
7.	Demonstrate the knowledge of contemporary issues in the field of Electronics and Communication Engineering	<input checked="" type="checkbox"/>				
8.	Commit to professional ethics and responsibilities and norms of engineering practice	<input checked="" type="checkbox"/>				
9.	Work effectively as an individual, and also as a member or leader in multicultural and multidisciplinary teams	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
10.	Effectively communicate about their field of expertise on their activities, with their peer and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations	<input checked="" type="checkbox"/>				
11.	Manage projects by applying gained knowledge on Engineering and Management principles	<input checked="" type="checkbox"/>				
12.	Adapt themselves completely to the demands of the Electronics and Communication-related Engineering by life-long learning	<input checked="" type="checkbox"/>				

S. No	PROGRAMME SPECIFIC OUTCOMES: KNOWLEDGE, SKILLS, PERSONAL GROWTH To what extent do you think your graduate education contributed in each of the following areas?	VERY MUCH	SOMEWHAT	VERY LITTLE	NOT AT ALL	DON'T KNOW
1.	Knowledge in your program	<input checked="" type="checkbox"/>				
2.	Problem solving & Technical skills	<input checked="" type="checkbox"/>				
3.	Communication skills & Personal development	<input checked="" type="checkbox"/>				

N. Mahidhas
Graduate Signature

Figure. 3.3.2.1 Model Graduate Survey from a graduate of Batch 2017-2021

The various indirect attainment tools are,

1. Graduate Survey
2. Non CGPA

Table 3.18. Indirect PO attainment for the Batch 2017-2021

Program Outcomes & for 2016 -2020															
POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Non CGPA Indirect Attainment	2.67	2.67	2.00	2.67	2.50	2.00	2.00	3.00	2.50	2.75	3.00	2.50	2.67	1.75	2.00
Graduate Survey	3	2	2	3	3	3	3	3	3	3	3	2	3	2	3
Average	2.83	2.33	2.00	2.83	2.75	2.50	2.50	3.00	2.75	2.88	3.00	2.25	2.83	1.88	2.50

PO Attainment level will be 80% of Direct Assessment + 20% of Indirect Assessment

For Example: PO1 attained 2.06 from direct assessment and 2.83 from indirect assessment. So final PO attainment is

$$\Rightarrow [\text{PO1 Direct} \times 80\%] + [\text{PO1 Indirect} \times 20\%]$$

$$\Rightarrow 2.06 \times 0.8 + 2.83 \times 0.2$$

$$\Rightarrow \mathbf{2.22 > \text{Target Value (1.8)}}$$

Therefore, PO1 has been attained because the target fixed by the Program Advisory Committee for PO / PSO attainment was “1.8”.

Similarly, the overall POs and PSOs for Batch 2017-2021 are calculated and tabulated in table 3.19.

Table 3.19 Overall PO Attainment for the Batch 2017-2021

Program Outcomes & for 2017-2021															
POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Direct Attainment	2.06	1.86	1.73	1.76	1.72	1.61	1.62	1.76	1.76	2.02	1.46	1.43	1.82	1.58	1.49
Indirect Attainment	2.83	2.33	2.00	2.83	2.75	2.50	2.50	3.00	2.75	2.88	3.00	2.25	2.83	1.88	2.50
Overall	2.22	1.96	1.79	1.97	1.92	1.79	1.79	2.01	1.96	2.19	1.77	1.59	2.02	1.64	1.69

The PO / PSO attainment has been calculated based on the details furnished in Table 3.12. For an appreciative explanation of PO attainment, a model calculation with the weight assigned is indicated in Table 3.13.

CRITERION 4	Students' Performance	89.56/100
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Table 4.1 Enrolment Ratio

Item (Information to be provided cumulatively for all the shifts with explicit headings, wherever applicable)	CAY (2021-2022)	CAYm1 (2020-2021)	CAYm2 (2019-2020)	CAYm3 (2018-2019)	CAYm4 (2017-18)	CAYm5 (2016-17)	CAYm6 (2015-16)	CAYm7 (2014-15)
Sanctioned intake of the program (N)	240	240	240	240	240	240	240	60
Total number of students admitted in first year minus number of students migrated to other programs/ institutions, plus no. of students migrated to this program(N1)	240	197	240	144	202	180	179	41
Number of students admitted in 2 nd year in the same batch via lateral entry (N2)	12	8	22	4	1	6	7	7
Separate division students, if applicable (N3)	-	-	-	-	-	-	-	-
Total number of students admitted in the program (N1+N2+N3)	252	205	262	148	203	186	186	48

Table 4.2

Year of entry	Total No of students admitted in the program (N1+N2+N3) (As defined above)	Number of students who have successfully graduated in stipulated period of study without Backlog/year of study (Without Backlog means no compartment or failures in any semester/year of study)			
		I Year	II Year	III Year	IV Year
CAY (2021-22)	252 (240+12)				
CAYm1 (2020-21)	205 (197+8)	187			
CAYm2 (2019-20)	262 (240+22)	232	254		
CAYm3 (2018-19)	148 (144+4)	103	105 (101+4)	104	
CAYm4 (2017-18)	203 (202+1)	130	125	122	102
CAYm5 (LYG) (2016-17)	186 (180+6)	133	96	94	93
CAYm6 (LYGm1) (2015-16)	186 (179+7)	99	72 (70+2)	71	71
CAYm7 (LYGm2) (2014-15)	48 (41+7)	30	25	24	24

Table 4.3

Year of entry	Total No of students admitted in the program	Number of students who have successfully graduated in stipulated period of study) [Total of with Backlog + without Backlog]
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	(N1+N2+N3) (As defined above)	I Year	II Year	III Year	IV Year
CAY (2021-22)	252 (240+12)				
CAYm1 (2020-21)	205 (197+8)	197			
CAYm2 (2019-20)	262 (240+22)	240	262		
CAYm3 (2018-19)	148 (144+4)	144	148	148	
CAYm4 (2017-18)	203 (202+1)	202	203	203	198
CAYm5 (LYG) (2016-17)	186 (180+6)	180	186	186	182
CAYm6 (LYGm1) (2015-16)	186 (179+7)	179	186	186	175
CAYm7 (LYGm2) (2014-15)	48 (41+7)	41	48	48	42

4.1. Enrolment Ratio (20)

Enrolment Ratio= $N1/N=100$

	N (From Table 4.1)	N1 (From Table 4.1)	Enrollment Ratio [(N1/N)*100]
2021-22 (CAY)	240	240	100
2020-21 (CAYm1)	240	197	82.08
2019-20 (CAYm2)	240	240	100
2018-19 (CAYm3)	240	144	60

Average $[(ER1+ER2+ER3)/3]$: 94.02

4.2. Success Rate in the stipulated period of the program (20)

4.2.1. Success rate without backlogs in any semester/year of study (15)

SI = (Number of students who have graduated from the program without backlog)/(Number of students admitted in the first year of that batch and actually admitted in 2nd year via lateral entry and separate division, if applicable)

Average SI = Mean of Success Index (SI) for past three batches

Success rate without backlogs in any semester/year of study = $15 \times \text{Average SI}$

Item	Last Year of Graduate minus 1, LYGm1(2020-21)	Last Year of Graduate minus 2, LYGm1(2019-20)	Last Year of Graduate minus 3, LYGm2 (2018-19)	Last Year of Graduate minus 4, LYGm3 (2017-18)
Number of students admitted in the corresponding First Year + admitted in 2 nd year via lateral entry and separate division, if applicable	203	186	186	48
Number of students who have graduated without backlogs in the stipulated period	102	93	71	24
Success Index (SI)	0.5	0.5	0.38	0.5
Average	$0.46 \times 15 = 6.9$			

4.2.2. Success rate in stipulated period of study [5]

SI = (Number of students who graduated from the program in the stipulated period of course duration)/(Number of students admitted in the first year of that batch and actually admitted in 2nd year via lateral entry and separate division, if applicable)

Average SI = mean of Success Index (SI) for past three batches

Success rate = $5 \times \text{Average SI}$

Item	Last Year of	Last Year of	Last Year	Last Year
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	Graduate minus 1, LYGm1(2020- 21)	Graduate minus 2, LYGm1(2019- 20)	of Graduate minus 3, LYGm2 (2018-19)	of Graduate minus 3, LYGm2 (2017-18)
Number of students admitted in the corresponding First Year + admitted in 2 nd year via lateral entry and separate division, if applicable	203	186	186	48
Number of students who have graduated	198	182	175	42
Success Index (SI)	0.975	0.978	0.94	0.875
Average Success Index	0.946*5= 4.82			

4.3. Academic Performance in Second Year (10)

Academic Performance = Average API (Academic Performance Index), where

***API** = ((Mean of 2nd Year Grade Point Average of all successful Students on a 10 point scale) or (Mean of the percentage of marks of all successful students in Second Year/10)) x (number of successful students/number of students appeared in the examination)*

Successful students are those who are permitted to proceed to the Third year

Academic Performance	CAYm2 2019-20	CAYm3 2018-19	LYG 2017-18	LYG 2016-17
Mean of CGPA or Mean Percentage of all successful students(X)	7.73	7.19	6.82	6.60
Total no. of successful students (Y)	262	148	203	186
Total no. of students appeared in the examination (Z)	262	148	203	186
API = X* (Y/Z)	7.73	7.19	6.82	6.60
Average API=(AP1+AP2+AP3)/3	7.25			

Assessment [1.5*Average API]	10.875
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4.4. Placement, Higher Studies and Entrepreneurship (30)

Assessment Points = $30 \times$ average placement

Item	CAYm1 2020-21	CAYm2 2019-20	CAYm3 2018-19	CAYm3 2017-18
Total No. of Final Year Students (N)	203	186	186	48
No. of students placed in companies or Government Sector (x)	196	161	157	45
No. of students admitted to higher studies with valid qualifying scores (GATE or equivalent State or National Level Tests, GRE, GMAT etc.) (y)	5	11	2	0
No. of students turned entrepreneur in engineering/technology (z)	1	-	2	-
$x + y + z =$	202	172	161	45
Placement Index : $(x + y + z) / N$	0.995	0.924	0.865	0.937
Average placement = $(P1 + P2 + P3) / 3$	0.928			
Assessment Points = $30 \times$ average placement	27.84			

2017-18

S NO	STUDENT NAME	ENROLLMENT NO	EMPLOYEE NAME	APPOINTMENT NO
1	SONIYA R	9515005301	ZENOPSYS TECHNOLOGIES PVT. LTD	ZENRSA11112017
2	PONROHINI N	9516005501	BANKZONE	BANPON20122017
3	ABIJITH VIGNESH.S	9815005001	BANKZONE	BANABI20122017
4	ALAGIRISAMY M.	9815005002	BOARD INFINITY	BIYALA15102018
5	MANOJKUMAR.M	9815005003	BEREZIA	BERMAN20122017
6	GOWTHAM S.	9815005004	AETINS	AETGOW01082018
7	SUBBURAJA AJ.	9815005005	BOARD INFINITY	BIYSUB15102018
8	AARTHI N	9914005001	BANKZONE	BANAAR20122017
9	AISHWARYA M	9914005002	AETINS	AETAIS01082018
10	ANUSIYA PREETHI M.	9914005004	BOARD INFINITY	BIYANU15102018

11	ARJUN G	9914005005	AETINS SOFTWARE	ASEARJ01082018
12	ARUN KUMAR K	9914005006	BANKZONE	BANARU20122017
13	BALAJI G	9914005007	LUMINA DATAMATICS	LDSBAL26022018
14	BASKAR V.	9914005008	BOARD INFINITY	BIYBAS15102018
15	BASLIS DIVYA G	9914005009	AETINS	AETBAS1082018
16	M.P.BHARGHAVI	9914005010	KALYCITTO INFOTECH	KALBHI13112017
17	DURGADEVI S	9914005011	BOARD INFINITY	BIYDUR15102018
18	GEETHA K	9914005012	BOARD INFINITY	BIYGEE15102018
19	INDHUJA.M	9914005016	BANKZONE	BANIND20122017
20	JANAKI R	9914005017	BANKZONE	BANJAN20122017
21	LOHANATHAN A.	9914005021	LEAD PRO	LPOLOH02062018
22	MADHANA GAYATHRI G	9914005022	MAGUS	MAGMAD10032018
23	MENAKA R.	9914005023	BOARD INFINITY	BIYMEN15102018
24	MUTHUKRISHNA VENI.S	9914005026	AETINS	AETMVI01082018
25	NARESH KUMAR S	9914005027	BANKZONE	BANNAR20122017
26	NIVETHA J	9914005028	BANKZONE	BANNIV20122017
27	RISHIKA S.	9914005029	BOARD INFINITY	BIYRIS15102018
28	SAKTHI SELVA S.	9914005030	TESSOLVE SEMICONDUCTOR	TESSSA03102018
29	SANKARI.U	9914005032	BEREZIA	BERUSI20122017
30	SRIBALAJI S	9914005033	BANKZONE	BANSSI20122017
31	SUNDARAVALLI.K	9914005036	BEREZIA	BERKSI20122017
32	SURIYA S	9914005037	BEREZIA	BERSSA20122017
33	THANGARAJ A	9914005038	TNQ	TNQATH26022018
34	UDHAYA KAMALI N	9914005039	BANKZONE	BANUKI20122017
35	UDHAYA SHRI N	9914005040	BOARD INFINITY	BIYUSI15102018
36	VENKATESH.S	9914005041	BANKZONE	BANSVH20122017
37	VIJAYARANI K.	9914005042	AETINS	AETKVI01082018
38	VISHNU RAVICHANDRAN	9914005043	BANKZONE	BANVRN20122017
39	MEENAKSHI C	9914005045	BANKZONE	BANCMI20122017
40	MANI GOWTHAM.G.K	9914005046	BANKZONE	BANMGM20122017
41	GAYATHRI.S	9914005048	BEREZIA	BERSGI20122017
42	ELAKIYA B	9914005049	TNQ	TNQATH26022018
43	DEVIVISAKI.P	9914005050	BANKZONE	BANPDI20122017
44	GAYATHRI R	9914005051	AETINS	AETRGI01082018
45	AJITH KUMAR V	9914005003	BANKZONE	BANAJI20122017

2018-19

S NO	STUDENT NAME	ENROLLMENT NO	EMPLOYEE NAME	APPOINTMENT NO
1	JOSHWIN DARINGTON M	9516005301	EDUVIRTUOSO	EDUJOS30042019
2	JAIN MARCIYA X	9516005302	SRI MARG HUMAN RESOURCES PVT LTD	SRIJAI11032019
3	CHANDRA SEKARAN M	9816005001	KOTAK	KOTCHA24012019
4	YUVARAJ M	9816005004	THINKSYNQ	THIYUV21092019
5	INDIRARAJESWARI R	9816005005	NCR	NCRIND23032019
6	GOSKULA SHIVAKUMAR	9816005006	JUST DIAL	JUSGOS13082018

7	SULTHAN ALAUDEEN S.	9914005035	THINKSYNQ	THISUL21092019
8	AARTHY P	9915005001	HGS	HGSAAR24112018
9	AFRENA PARVEEN N	9915005002	SWIFTERZ	SWIAFR01112018
10	AKALYA A	9915005004	SUTHERLAND	SUTAKA26112018
11	ALICE JEMIMA S	9915005005	KOTAK	KOTALI24012019
12	ANU MANGAI R	9915005006	HGS	HGSANU24112018
13	ARAVIND J R	9915005007	HGS	HGSARA24112018
14	ARUMUGA PANDI S	9915005008	INDIAN HEALTH CARE	INDARU11032019
15	ARUMUGAPERUMAL M	9915005009	HGS	HGSARU24112018
16	ARUNKUMAR R	9915005010	OSIZ TECHNOLOGIES PVT LTD	OSZAKR01092021
17	ASHA JENCY J	9915005011	HGS	HGSASH24112018
18	ATCHAYA S	9915005013	HGS	HGSATC24112018
19	AYESHA RIZWANA S	9915005014	KOTAK	KOTAYE24012019
20	BHARATHI V	9915005015	NCR	NCRBHA23032019
21	DEVIKA V	9915005017	SUTHERLAND	SUTDEV26112018
22	DHAKSHEENA M M	9915005018	IBM	IBMMMD29112019
23	DHANA BHAGYAM G	9915005019	NCR	NCRDHA23032019
24	GAYATHRI S	9915005020	HGS	HGSGAY24112018
25	JESLIN SNEHA J	9915005022	HGS	HGSJES24112018
26	JOTHIKARTHIKA A	9915005023	HGS	HGSJOT24112018
27	KARUPPASAMY E	9915005025	NEEYAMO	NEEKAR05062019
28	KATHIR KAAMESH S	9915005026	HGS	HGSKAT24112018
29	KEERTHIGA R	9915005027	NCR	NCRKEE23032019
30	KEERTHIKA.N	9915005028	KOTAK	KOTKEE24012019
31	MANOJKUMAR P	9915005032	HGS	HGSMAN24112018
32	MARIAMMAL B	9915005033	Technomax Systems India Private Limited	TMSBML20082021
33	MEENAMBIGAI R	9915005034	SUTHERLAND	SUTMEE26112018
34	MUPPUDATHI P	9915005039	KOTAK	KOTMUP24012019
35	NALAYIRA MUTHU S	9915005041	HGS	HGSNAL24112018
36	NANDHINI S	9915005042	EXIDE LIFE INSURANCE	EXINAN18022019
37	NUSARATHJAHAN D	9915005043	NCR	NCRNUS23032019
38	PARANIKUMAR T	9915005044	THINKSYNQ	THIYUVPAR21092019
39	PRANESHWARAN P	9915005045	THINKSYNQ	THIPRA21092019
40	PRAVIN RAJA F	9915005046	NCR	NCRPRA23032019
41	PREETHI R	9915005047	NCR	NCRPRE23032019
42	RAJKUMAR B	9915005049	HGS	HGSRAJ24112018
43	RAYITH AHAMED M	9915005050	HGS	HGSRAY24112018
44	SAJEETHMOHAN B	9915005052	HGS	HGSSAJ24112018
45	SANTHOSH SIVARAMAN N	9915005054	TCS	TCSNSS13052019
46	SATHISH KUMAR K	9915005055	HGS	HGSSAT24112018
47	SENTHIL KUMAR B	9915005056	ELCOMPO	ELCBSK02082019
48	SORNA BALA S	9915005058	IGENIUS	IGESOR20032019
49	SORNALATHA R	9915005059	IGENIUS	IGESLA20032019
50	SRINIVAS V	9915005060	VISTEON TECHNICAL AND SERVICES CENTRE PRIVATE LIMITED	VTSSVSS09032021
51	SRIRAM@SIVA K	9915005061	KOTAK	KOTSRI24012019
52	THEIVAKKANI S	9915005064	IGENIUS	IGETHE20032019
53	TRIPHENA S	9915005065	HGS	HGSTRI24112018
54	VASUDEVAN S	9915005066	HGS	HGSVAS24112018
55	VIJITHA D	9915005070	KOTAK	KOTVIJ24012019

56	VISHNU PRIYA S	9915005072	KOTAK	KOTVIS24012019
57	KAVITHA S	9915005094	KOTAK	KOTKAV24012019
58	SATHISHKUMAR S	9915005095	KOTAK	KOTSAT24012019
59	SOMESULA SUKUMAR	9915005097	NCR	NCRSOM23032019
60	POLAVARAPU BHARGAV SAI	9915005098	EDUVIRTUOSO	EDUPOL30042019
61	PAMANJI DHEEKSHITH	9915005099	WIPRO LTD	WPRPDH30042019
62	JAKKA SOMA SANKARA BALAJI	9915005100	KOTAK	KOTJAK24012019
63	RATHIKRINDI VENKATA YESWANTH KUMAR	9915005101	Wipro Limited	WPRRVY30042019
64	PATNAM VENKATASAI YASHWANTH KUMAR	9915005102	NCR	NCRPAT23032019
65	CHINTA UDAY KUMAR	9915005103	HGS	HGSCHI24112018
66	ACHUTA CHANDRALEKHA	9915005104	IGENIUS	IGEACH20032019
67	PARLAPALLI VAISHNAVI	9915005105	IGENIUS	IGEPAR20032019
68	SYED KARISHMA	9915005106	NCR	NCRSYE23032019
69	GALI VINOD KUMAR NAIDU	9915005107	NCR	NCRGAL23032019
70	DEVARAPALLI ROHITHREDDY	9915005108	NCR	NCRDEV23032019
71	YANAMALA HIMAJA	9915005109	NCR	NCRYAN23032019
72	T BALAJI REDDY	9915005110	NCR	NCRBAL23032019
73	THASKU KANAKA REDDY	9915005111	NCR	NCRTHA23032019
74	POKALA MANASWITHA	9915005113	IBM	IBMPMS20072019
75	PASALAPUDI TARUN KRISHNA VAMSI	9915005115	Tech Mahendra	TMATKV27042021
76	PERECHARLA LAXMI NARASHIMA VARMA	9915005116	Tech Mahendra	TMALNV26082021
77	GANGAVARAPU VENKATESH NAIDU	9915005119	IGENIUS	IGEGAN20032019
78	KOWSALYA K	9915005120	KOTAK	KOTKOW24012019
79	SOBIYA S	9915005122	DONFOSS	DONSOB07032019
80	VAKITI AKHIL	9915005124	JUST DIAL	JUSVAK13082018
81	AKULA SIVA GANESH	9915005125	HGS	HGSAKU24112018
82	ALLAM LAKSHMAN REDDY	9915005126	EDUVIRTUOSO	EDUALL30042019
83	AMBARAPU SADDAM HUSSAIN	9915005127	HGS	HGSAMB24112018
84	BEDUDURI BHARATH	9915005129	NCR	NCRBED23032019
85	BACHU VENKATA SURYA LOKESH	9915005130	MPHASIS	MPHVSK01082019
86	BASANI CHETHAN	9915005131	HGS	HGSBAS24112018
87	BODAGALA SAI TEJA	9915005132	HGS	HGSBOD24112018
88	DEVENDRAN V	9915005137	MRUDAAN TECHNOLOGIES	MRUDEV17122018
89	DONTABHAKTUNI BHARGAV	9915005138	EDUVIRTUOSO	EDUDON30042019
90	GATTU PRANITH REDDY	9915005140	KOTAK	KOTGAT24012019
91	DASARI GIRISH	9915005141	SOFTTEK	SFTDRI08092020
92	GOWRISHANKAR V	9915005142	KOTAK	KOTGOW24012019
93	JAGANNATH K	9915005144	IGENIUS	IGEJAG20032019
94	JEYASHREE P.	9915005146	IBM India Private Limited	IBMPJS22072019
95	JEY GANESH D	9915005147	HGS	HGSJEY24112018
96	KURRA BHARATH KUMAR	9915005149	SWIFTERZ	SWIKUR01112018
97	KANDI RAVINDRA	9915005150	HGS	HGSKAN24112018

98	KAPARLAPALLI MOHAMMAD FAZIL	9915005151	NEEYAMO	NEEKAP05062019
99	KARTHIK V	9915005152	JBM AUTO	JBMKAR13042020
100	KOMMINENI SRIDHAR	9915005153	JUST DIAL	JUSKOM13082018
101	KOTHAKOTA KEERTHI SAI KRISHNA	9915005155	SWIFTERZ	SWIKOT01112018
102	MADHUMITHA S	9915005156	ELCOMPO	ELCSMA02082019
103	PAPASANI MANOJ KUMAR REDDY	9915005158	KOTAK	KOTPAP24012019
104	MODADUGU SESHASAI	9915005159	NCR	NCRM023032019
105	MOHAMED FAIZUL RAHUMAN H	9915005160	THINKSYNQ	THIMOH21092019
106	MOHAMMAD ZAIDH AHMAD	9915005161	NCR	NCRM023032019
107	PALLA MOUNIKA	9915005162	IGENIUS	IGEPAL20032019
108	S MOUNIKA SAI	9915005163	IGENIUS	IGEMOU20032019
109	MULLANGI DHAVANTH	9915005164	KOTAK	KOTMUL24012019
110	MUTHURAJ P	9915005165	KOTAK	KOTMUT24012019
111	NANDYALA PAVAN KALYAN YADAV	9915005166	JBM AUTO	JBMNAN13042020
112	NEMALAPURI CHAITANYA	9915005167	NCR	NCRNEM23032019
113	PABOLU SAI ADITYA	9915005168	HGS	HGSPAB24112018
114	PACHA SAI KRISHNA	9915005169	NEEYAMO	NEEPAC05062019
115	PAVAN KUMAR REDDY BONTHU	9915005170	KALYCITO	KALPAV11112018
116	PENUGONDA USHA	9915005171	IGENIUS	IGEPEN20032019
117	POPURI PRASANNA KUMAR	9915005173	IGENIUS	IGEPOP20032019
118	POTHURI GOWTHAM KIRAN VARMA	9915005174	EDUVIRTUOSO	EDUPOT30042019
119	PRANAVI S	9915005175	HGS	HGSPRA24112018
120	RAMYA K	9915005180	HGS	HGSRAM24112018
121	SINGAMASETTY UDAY KUMAR	9915005183	NCR	NCRSIN23032019
122	SEGGOJU TEJA	9915005184	SUTHERLAND	SUTSEG26112018
123	NARGAI SAITEJA	9915005186	KOTAK	KOTNAR24012019
124	BHUPATHIGARI SAMEERA REDDY	9915005187	IBM	IBMBSR19072019
125	SHAIK ARSHAD HUSSAIN	9915005189	ZOHO CORPORATION PRIVATE LIMITED.	ZCPSAH03062019
126	SHAIK MOHAMMED SULTAN SHARIF	9915005190	JBM AUTO	JBMSHA13042020
127	AMBARAPU SIDDHU	9915005191	NCR	NCRAMB23032019
128	SIDDU PAVAN KALYAN	9915005192	HGS	HGSSID24112018
129	SINDE SAI TEJA	9915005193	HGS	HGSSIN24112018
130	SUNKIREDDY MANISHA	9915005195	EDUVIRTUOSO	EDUSUN30042019
131	SURAM VENKATA SIVA SRIKAR REDDY	9915005196	HGS	HGSSUR24112018
132	SURYA A	9915005198	INDIAN HEALTH CARE	INDSUR11032019
133	TAMMALALA NAVEEN	9915005199	KOTAK	KOTTAM24012019
134	VADLAMANI RAMPRANAV	9915005200	CHELLA SOFTWARE	CHEVRP14122018
135	VELMURUGAN V	9915005202	HGS	HGSVEL24112018
136	VIKESH S B	9915005203	HGS	HGSVIK24112018
137	AKKANAMBATTU VISWACHAND	9915005204	KOTAK	KOTAKK24012019

138	YAZALI DINESH	9915005206	TCS	TCSYDH13052019
139	YELURI SURESH	9915005207	HGS	HGSYEL24112018
140	PEDDIREDDY SREE HARSHAVARDHAN REDDY	9915005208	NEEYAMO	NEEPED05062019
141	KARASALA TRIVENI	9915005210	IGENIUS	IGEKAR20032019
142	KODATALA VEERA RAHUL REDDY	9915005211	HGS	HGSKOD24112018
143	GUDE SAI KISHORE	9915005213	NCR	NCRGUD23032019
144	GARINENI GOPI	9915005217	NCR	NCRGAR23032019
145	ATCHAYA A	9915005218	GLOBAL HEALTH CARE	GLOATC20032019
146	KATARI DILEEP KUMAR	9915005220	NCR	NCRKAT23032019
147	KUNDURU NAVEEN KUMAR REDDY	9915005223	HGS	HGSKUN24112018
148	NARESH J	9915005226	KOTAK	KOTNAR24012019
149	J DILEEP KUMAR REDDY	9915005228	JBM AUTO	JBMDIL13042020
150	SUMATHIDEVI V	9915005229	KOTAK	KOTSUM24012019
151	DIGUMARTHY RAJ V S M S CHANDRASEKHAR	9915005230	HGS	HGSDIG24112018
152	SUSMITHA S N	9915005231	EXTRA MARKS	EXTSUS30052019
153	NALABOTHULA SAI KUMAR	9915005232	NCR	NCRNAL23032019
154	MAILA PRAMOD	9915005233	EDUVIRTUOSO	EDUMAI30042019
155	RAJA PRANAY	9915005234	KOTAK	KOTRAJ24012019
156	GOKULVASAN K	9915005123	DONFOSS	DONKGV07032019
157	VISHNU PRIYA S	9915005214	DONFOSS	DONSVP07032019

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S.No.	NAME OF THE STUDENTS	REG NO	COMPANY NAME	Ref ID
1	AZEEMAHAMED M	9817005001	NETTYFISH	NETMAD19082020
2	MAHENDRAN J	9817005002	IGENIUS	IGEJMN01062020
3	PRAVEENKUMAR B	9817005003	IGENIUS	IGEBPK01062020
4	SATHISH. K	9817005004	NETTYFISH	NETKSH19082020
5	SIVAKARTHICK S	9817005005	NETTYFISH	NETSSK19082020
6	SUNKI REDDY HARI OBUL REDDY	9817005006	NETTYFISH	NETSHO19082020
7	ABARNA	9916005001	COGNIZANT	CTSABA21032021
8	ADAPALA ROHAN	9916005002	IGENIUS	IGEARN01062020
9	AISHWARYA M	9916005003	TATA CONSULTANCY SERVICES	TCSAAM1012022
10	S.AISHWARYA	9916005004	MPHASIS	MPHSAA30012021
11	AJITH R	9916005005	NETTYFISH	NETRAH19082020
12	AJITHKUMAR R	9916005007	SBL KNOWLEDGE SERVICES	SBLRAK01062020
13	ALLAMPATI RAVI TEJA	9916005010	VIRTUSA	VIRART03172021
14	JAYA SAI	9916005011	SUTHERLAND	SUTJSI06072020
15	ANNABATHINA RAJIV	9916005012	LEADPRO	LEAABR01092020
16	ANNEM SEETA REDDY	9916005013	COGNIZANT	CTSASR06022021
17	ANTONY ASWIN A	9916005014	EXIDE LIFE INSURANCE	EXIAAN07032020
18	ARATI PRANAVI	9916005016	COGNIZANT	CTSAPI29062020

19	ARAVAPALLI VINAY KUMAR	9916005017	TCS	TCSAVK31072020
20	ARAVINDH P	9916005018	LEADPRO	LEAPAH01092020
21	B.RUSHI KESHA VA REDDY	9916005020	NCR CORPORATION	NCRBRK13072020
22	BAVATHAARANI B	9916005021	SCHNEIDER ELECTRIC	SCHBBR24072020
23	D.R.BENITA RAJA SHEBA	9916005022	COGNIZANT	CTSBR11282020
24	BILLA MAHESH	9916005024	COGNIZANT	CTSBM29022021
25	BOGGARAPU NAVYA SREE	9916005025	MICRO FOCUS	MICBNS30082021
26	BOLLINENI SAI GIREESH	9916005026	NETTYFISH	NETBSI19082020
27	BOYA RAKESH	9916005027	NETTYFISH	NETBRH19082020
28	CHALLA HAVEESH KUMAR	9916005028	IGENIUS	IGECHK01062020
29	THARUGU CHENNA KESHA VA REDDY	9916005029	CTS	CTSCKR09022021
30	CHENNURU NIKHIL REDDY	9916005030	CTS	CTSCNR02092021
31	CHEVVU SAIKUMAR	9916005031	Tech Mahindra	TECCSR15072021
32	CHINTHA MOHAN SAI SAMPATHKUMAR	9916005033	CTS	CTSMSS09022021
33	CHUNDU AVINASH	9916005034	NCR CORPORATION	NCRCAH13072020
34	D. SRI VENKATA NAGENDRA	9916005035	HCL	HCLSVN06012022
35	DERIS R	9916005037	JASMIN INFOTECH	JASRDI15072020
36	DEVANGAM KEMPULA SESA SAI	9916005038	VIRTUSA	VIRDKS03082021
37	DEVIREDDY VENKATA PHANINDRA	9916005039	TECH MAHENDRA	TECDVP17082021
38	DUGGIREDDY MOHAN REDDY	9916005040	IBM	IBMDMR24052021
39	DUVVURU ABHIRAM REDDY	9916005042	TESSOLVE	TESDAR31122020
40	DUVVURU ANEESH KUMAR REDDY	9916005043	LEADPRO	LEADAK01092020
41	GADHAMSETTY VENKATA BALA NAGA NIKHIL	9916005046	NETTYFISH	NETGVN19082020
42	GADIRAJU SAI SANTHOSH	9916005047	JASMIN INFOTECH	JASGSS15072020
43	GANGALA VADDELUGARI VAMSI	9916005049	IGENIUS	IGEGVV01062020
44	GOKUL K	9916005050	RANSTAD INDIA	RANGLK10112021
45	G.HARIKA	9916005051	TESSOLVE	TESGHA04012021
46	GUMPU JANARDHAN	9916005052	IGENIUS	IGEGJN01062020
47	GUNNAMREDDY BHARATH SAI	9916005053	WIPRO	WIPGBS19062020
48	G.KUMAR SAI REDDY	9916005054	DATA PATTERN	DATGKS01072020
49	HANUMANTHU SANDEEP	9916005055	EXIDE LIFE INSURANCE	EXIHSP07032020
50	HARSHA VARDHAN NAIDU	9916005056	NCR CORPORATION	NCRHVN13072020
51	HILAL KHAN A	9916005057	LEADPRO	LEAAHK01092020
52	INDIRADEVI NACHIYAR S R	9916005058	SCHNEIDER ELECTRIC	SCHIDN24072020
53	INDLA VENKATA SAI VINEETH	9916005059	HTC	HTCIVS05032021
54	J HARI PRAKASH	9916005060	NTTDATA	NTTJHP16072021
55	J.A.JASIM AHMED	9916005061	ASPIRE SYSTEMS	ASPJA10122020
56	JEYAMOHANAROOPAN KMK	9916005063	CTC	CTSJMR28112020
57	JONNA VENKATA SUNIL KUMAR	9916005064	CTS	CTSVSK17102020
58	JUGUNTA SHARON PAUL	9916005065	VOLTECH	VOLJSP14072021
59	KADIRABBA VINOD KUMAR	9916005066	TECH MAHENDRA	TECKVK27082021
60	MANOJ KUMAR REDDY	9916005067	AMAZON	AMAMKR9132021

61	KALAISELVI S	9916005068	IGENIUS	IGESKS01062020
62	KALEESWARI M	9916005069	SCHNEIDER ELECTRIC	SCHMKI24072020
63	KAMALAPURI SURESH BABU	9916005071	CTS	CTSKSB02092021
64	KADAPANA PAVANI	9916005072	WIPRO	WIPKPI09182020
65	KANDATI BHARATH KUMAR REDDY	9916005073	VERIZON	VERKKB01012022
66	KATARU SAI VAMSI KRISHNA	9916005075	CTS	CTSKSV02092021
67	KATAVURU PRASANTH	9916005076	NCR CORPORATION	NCRKPH13072020
68	S.KEERTHANA	9916005077	CTS	CTCSKA29062020
69	DURGA REDDY K	9916005078	TCS	TCSDRK12302021
70	KETHI VENKATESWARLU	9916005079	LEADPRO	LEAKVL01092020
71	KOMMI KALYAN	9916005080	Tech Mahindra	TECKKN07062021
72	K V GIRISH KUMAR	9916005083	WIPRO	WIPKVK09182020
73	KYLASH MR	9916005084	CTS	CTSKMR29062020
74	LAKSHMI PRIYA A	9916005085	SCHNEIDER ELECTRIC	SCHALP24072020
75	MADDALI SAI HARSHA VARDHAN	9916005086	CTS	CTSMNH29062020
76	MAHIMALURU CHARANTEJA VYAS	9916005089	CTS	CTSMCV02052021
77	MALLU POORNA SREE	9916005091	ZEALOUS	ZEAMPS16092020
78	M.TANMAYI	9916005092	IBM	IBMMTH17082020
79	MANCHIKANTI ANAND	9916005094	MINDTREE	MINMAD16042021
80	MANNEM RAJAMOHAN REDDY	9916005095	TEMENOS INDIA PVT. LTD.	TEMMRR13082021
81	MARTHALA VAMSHI TEJA REDDY	9916005096	TCS	TCSMVT14092020
82	METTUKURI MANIKANTA	9916005097	CTS	CTSMMK25112020
83	M.HARI SIVA	9916005098	CTS	CTSMHS27032021
84	MOHANA VARSHA P	9916005100	CTS	CTSPMV25112020
85	MOUNIKA S	9916005101	EXIDE LIFE INSURANCE	EXISMA07032020
86	MUDDENENI MANIKANTA	9916005102	NCR CORPORATION	NCRMMA13072020
87	MUDDLURU MANOJ	9916005103	LEADPRO	LEAMMJ01092020
88	MUNAGALASIVASAINATHREDDY	9916005104	CTS	CTSMNR29062020
89	MURALIDHARAN M	9916005105	CTS	CTSMMN05092020
90	V NANDHINI	9916005106	CTS	CTSVNI28112020
91	NAVANEETHANATH M	9916005107	LEADPRO	LEAMNA01092020
92	NAVEEN PRASATH S R	9916005108	EXIDE LIFE INSURANCE	EXINPH07032020
93	NELAPATI MAHIDHAR	9916005109	LEADPRO	LEANMR01092020
94	NELLORE SURESH	9916005110	TECHMAHINDRA	TECNH23122021
95	NIVETHA DHANDAPANI	9916005112	CTS	CTSNDI29062020
96	NIVETHA.G.S	9916005113	CTS	CTSNDS28112020
97	P VENKATA NAGA SAI SASIDHAR	9916005114	TCS	TCSPVNS832020
98	PADIGI RAVITEJA REDDY	9916005115	TCS	TCSPRR24082020
99	P. SIVASAI KUMAR REDDY	9916005116	NCR CORPORATION	NCRPSS13072020
100	SHOBARANI PAPASANI	9916005117	ACCENTURE	ACCSP103112021
101	S.PARKAVI	9916005118	CTS	CTSAPI25112020
102	PEDAMALA SUMANTH	9916005119	WIPRO	WIPPSH18092021
103	POCHAREDDY CHAKRADHAR KAKSHITH REDDY	9916005120	CTS	CTSPCK29062020

104	POLANI SUMANTH	9916005121	CTS	CTSPSH29062020
105	POLUCHARLA VENKATASAI	9916005122	TCS	TCSPVS03072020
106	PRAJAPATHI DINESH	9916005123	TCS	TCSPDH11122021
107	PRAKASH	9916005124	CTS	CTSPSR11272021
108	PRAVEENA K	9916005126	KOTAK	KOTKPA27072020
109	R. PRIYA DHARSHINI	9916005127	NCR CORPORATION	NCRRPD13072020
110	RAGIPUDI KALYAN	9916005128	JBM AUTO	JBMRPK01072020
111	RAVI.PAVANKUMAR	9916005129	TECH MAHENDRA	TECRPK02072021
112	RAYA RAVI CHARAN REDDY	9916005130	CGI Information Systems and Management Consultants Pvt. Ltd.	CGIRRC27102021
113	REVILLA PRUDHVI SAI SRINIVAS	9916005131	MPHASIS	MPHPSS3182021
114	SAI KRISHNA P	9916005134	NCR CORPORATION	NCRPSK13072020
115	P SAIKUMAR RAJU	9916005135	CTS	CTSPSR11282020
116	SAKAMURI VAMSI	9916005136	Capgemini Technology Services India Limited	CAPSVI27092021
117	SANKAR ANANDH M	9916005138	EXIDE LIFE INSURANCE	EXISAH07032020
118	SARABU VENKATA NAGA NIKHIL	9916005139	Source one management services pvt limited	SOUVNN26052021
119	SHAHID AMAN KHAN	9916005140	CTS	CTSSSAK28112021
120	SHAIK MOHAMMAD AKRAM JAVID	9916005141	IGENIUS	IGESMJ01062020
121	SHARMILA R	9916005143	LEADPRO	LEARSA01092020
122	SHIVA SOMU S S	9916005144	NETTYFISH	NETSSU19082020
123	K.SHIVANI	9916005145	SCHNEIDER ELECTRIC	SCHKSI24072020
124	SATHYANAND	9916005146	NCR CORPORATION	NCRSTA13072020
125	SIRIPURAM VAMSI KRISHNA REDDY	9916005147	NETTYFISH	NETSVI19082020
126	M. SIVA RAMAKRISHNAN	9916005148	TCS	TCSMSR14122021
127	SIVA VARSHINI K	9916005149	CTS	CTSKSV24042021
128	SOMISETTY BHANU TEJASWI	9916005151	EXIDE LIFE INSURANCE	EXIBTI07032020
129	SREENATH	9916005152	NCR CORPORATION	NCRSNT13072020
130	SUDHAKAR K	9916005153	ASPIRE SYSTEMS	ASPSUK12102020
131	SUNDAR	9916005155	Cognizant	CTSSUN28112021
132	SURESH M	9916005156	IGENIUS	IGEMSH01062020
133	T.BHANU TEJA	9916005157	NCR CORPORATION	NCRTBT13072020
134	THATTURI POORNESH	9916005158	CDK GLOBAL INDIA PVT. LTD	CDKTPO18022021
135	THIRUMANIKANDAN S B	9916005159	IGENIUS	IGESBT01062020
136	THOTA HARSHA VARDHAN	9916005160	HTC	HTCTHV07142021
137	TIRUMALAI SRINIVASAN	9916005162	EXIDE LIFE INSURANCE	EXITSN07032020
138	UMA MAHESWARY P G	9916005163	EXIDE LIFE INSURANCE	EXIUMY07032020
139	VALMIKI SAILESH	9916005164	NETTYFISH	NETVSH19082020
140	VANKADARA JASWANTH REDDY	9916005166	CTS	CTSVJR02092021
141	VARDHIREDDY VENKATA NAGENDRA REDDY	9916005167	NETTYFISH	NETVVN19082020
142	PONNURU VENKATA SAI	9916005171	IONIDEA ENGAGE EXCELLENCE	IONPVS03082021
143	VENKATARAJUGARI CHANDAN	9916005172	NETTYFISH	NETVCK19082020

	KUMAR			
144	VENUMBAKA AVINASH REDDY	9916005173	TCS	TCSVAR14122021
145	BHARATH KUMAR REDDY	9916005176	WIPRO	WIPBKR09182020
146	YARAMASU SAI KUMAR	9916005177	IGENIUS	IGEYSK01062020
147	S.YUVASREE	9916005179	NCR CORPORATION	NCRSYS13072020
148	PRABHAKANT TRIPATHI	9916005181	CTS	CTSPTI07092021
149	S.HARIKRISHNAN	9916005182	CTS	CTSSHN3272021
150	SHAIK MAHAMMED HANEEF	9916005183	NETTYFISH	NETSMD19082020
151	GADE VAMSHIKRISHNA	9916005186	IGENIUS	IGEGVK01062020
152	KAKU NAVEEN KUMAR	9916005187	NCR CORPORATION	NCRKNK13072020
153	K HARISH KUMAR	9916005188	TCS	TCSKHK14092020
154	RAM KISHORE S	9916005192	CTS	CTSRKS14092020
155	SALLA SHIVA SAI	9916005193	IGENIUS	IGESS01062020
156	A.T.S LOKESH	9916005195	ACCENTURE	ACCTSL29042021
157	NAGARAJUPALLI HARSHAVARDHAN	9916005196	CTS	CTSNHV02062021
158	S.MURUGESAN	9916005197	MPHASIS	MPHSM04022021
159	MUTHU KUMAR D	9916005200	EXIDE LIFE INSURANCE	EXIMKR07032020
160	KEERTHANA T	9916005205	CTS	CTSKAT09052020
161	HARSHAVARDHANKIRITIKOMMURU	9916005081	TCS	TCSHVK11092020

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Sl.No.	Name of the Student	Reg. No	Name of the company	Ref ID
1.	M.JEGATHESWARAN	9518005301	TNQ	16062021
2.	CHINNI BALAJI DILEEP	9818005001	JASMIN INFOTECH	5072021
3.	PHANISHREDDY	9916005169	TNQ	16062021
4.	AETHURI RAHUL KUMAR REDDY	9917005001	CAPGEMINI	4899551/926644
5.	S. AISHWARYALAKSHMI	9917005002	TNQ	16062021
6.	B.AKSHY KARTHICK	9917005004	TNQ	16062021
7.	AKULA YOGENDRA	9917005005	K K PRECISION	16082021
8.	ANDHA BHARGAV NARASIMHA	9917005006	DXC	23062021
9.	A.ANUMANJARI	9917005007	TNQ	16062021
10.	AVAYAMUKHARI MOHAN SRINIVAS ADITHYA	9917005008	TNQ	16062021
11.	AVULA SUMANTH	9917005009	JASMIN INFOTECH	5072021
12.	BADIGINCHALA JAGADISH CHANDRA PRASAD	9917005010	JASMIN INFOTECH	5072021
13.	BAKKIREDDY MANJUSHA REDDY	9917005011	DXC	23062021
14.	BALAN ABHILASH	9917005013	TNQ	16062021
15.	B.NISHITH KUMAR REDDY	9917005014	TNQ	16062021
16.	BATTULA VENKATESWARA RAO	9917005015	QUADGEN	23062021
17.	BELDAR THARUNI REDDY	9917005016	FUTURE GENERALI	7062021
18.	BELLAM MAHESWAR REDDY	9917005017	JASMIN INFOTECH	5072021

19.	BHAGATH MOHAMED. A	9917005018	TNQ	16062021
20.	BUDIDAVAKAM VENKATAKIRAN	9917005019	TNQ	16062021
21.	B SREEKANTH	9917005020	TNQ	16062021
22.	BONTHALA JAYA SHANKAR	9917005021	TCS	TCSL/CT20203315916 /1470533/CHENNAI
23.	BOPPUDI.YASWANTH	9917005022	MONTBLEU	4062021
24.	BOYA VINOD KUMAR	9917005023	LEGATO	23092021
25.	CHALLA VENKATA SUDHARSHAN	9917005024	JASMIN INFOTECH	5072021
26.	CHENNAMSETTY VENKATA SAITEJA	9917005025	TNQ	16062021
27.	C.LAVANYA	9917005026	MONTBLEU	8062021
28.	C.BALAJI REDDY	9917005027	JASMIN INFOTECH	5072021
29.	DANDU ANIL KUMAR	9917005028	JASMIN INFOTECH	5072021
30.	DODLA THORANA	9917005029	CAPGEMINI	4897689/926492
31.	DODLA SREEKANTH	9917005030	JASMIN INFOTECH	5072021
32.	D.BHARGAV	9917005031	SUTHERLAND	14072021
33.	D. AJITH REDDY	9917005032	RIA INTERNATIONAL	12072021
34.	E. NAVEEN KUMAR REDDY	9917005033	LUMINA DATAMATICS	16112021
35.	ELCHURI AJAY KUMAR	9917005034	JASMIN INFOTECH	5072021
36.	FRANCISCHEZHIAN J	9917005036	ASPIRE SYSTEMS	23072021
37.	GADAMSETTY YESHWITHA	9917005037	DXC	1042021
38.	GADIRAJU LIKITH	9917005038	TCS	TCSL/DT20206801450 /1470750/CHENNAI
39.	GANDAM DURGA PRASAD	9917005039	CTS	15411498
40.	G.VINAYKUMAR	9917005040	TNQ	16062021
41.	GANTAPARA ARUNSAI KUMAR	9917005041	SUTHERLAND	14072021
42.	G VIGANDHAR REDDY	9917005042	NTT DATA	16082021
43.	P. GAYATRI	9917005043	TCS	TCSL/DT20207179467 /1470878/CHENNAI
44.	K.GOBIKA	9917005044	JASMIN INFOTECH	5072021
45.	GODWIN S	9917005045	ZUARI TECH	2062021
46.	P.GOKUL	9917005046	TNQ	16062021
47.	GOKUL T	9917005047	JASMIN INFOTECH	5072021
48.	GOSI NILAKANTESWARA	9917005048	K K PRECISION	16082021
49.	G V KIRAN TEJA	9917005049	K K PRECISION	16082021
50.	G.CHANDANA	9917005050	INFOSYS	HPD/COV/100226114 8/21-22
51.	O.M.GOWTHAM	9917005051	JASMIN INFOTECH	5072021
52.	GUDI KALYAN	9917005052	DXC	16042021
53.	G.BHARGAV	9917005053	JASMIN INFOTECH	5072021
54.	GUDIPATI HARSHA VARDHAN	9917005054	TCS	TCSL/DT2020717505 6/Chennai
55.	G.VINATHI REDDY	9917005055	MONTBLEU	10062021
56.	GUNTI SAI KAUSHIK	9917005057	TESSOLVE	11032021
57.	GURRAM PUNEETH	9917005058	RIA INTERNATIONAL	12072021

58.	GUTTAPALLI PAVAN KUMAR	9917005059	TNQ	16062021
59.	R.HARITHA	9917005060	LEADPRO	5072021
60.	I DIVYA BHARATHI	9917005061	WIPRO	25112021
61.	JAKKULA CHAITHANYA	9917005062	WIPRO	4112021
62.	JALLA.SIVAPRASAD REDDY	9917005063	TNQ	16062021
63.	K PUNEETH SAI	9917005065	MONTBLEU	11062021
64.	K.REDDY MOHAN REDDY	9917005066	TNQ	16062021
65.	KAMASWARAN S	9917005067	TNQ	16062021
66.	K.SANDEEP	9917005068	SUTHERLAND	14072021
67.	KAMSALA ARCHANA	9917005069	TESSOLVE	7012021
68.	KANAGASABAPATHY T.S	9917005070	TNQ	16062021
69.	KANAKAM GANGADHAR	9917005071	WIPRO	1092021
70.	KANALA SAI KUMAR GOUD	9917005072	WIPRO	1092021
71.	K. KISHORE CHANDRA SEKHAR	9917005073	NEEYAMO	21062021
72.	KARAKAMBAKAM.CHAITHANYA	9917005074	TNQ	16062021
73.	KASARAM NIKILESH REDDY	9917005075	TNQ	16062021
74.	KATURI VEERA MANIKANTA VARA PRAKASH	9917005076	TCS	TCSL/CT20203351171 t147o5o2tChennai
75.	KEERTHIVASH R	9917005077	ACCENTURE	C9622430
76.	KODIMELA BHAVANI SANKAR	9917005078	TNQ	16062021
77.	KONDA SREENATH	9917005080	TNQ	16062021
78.	KONDAMURI KOTAPPA NAIDU	9917005081	TNQ	16062021
79.	K UMA MAHESH	9917005082	TNQ	16062021
80.	KOPPARTHI SAI ROHITH REDDY	9917005083	TNQ	16062021
81.	KOTAGADDA SUBRAMANYAM	9917005084	TNQ	16062021
82.	KOTHA HIMA BINDU	9917005085	DXC	4042021
83.	KOTHURU SURYA SAI PRANITH	9917005086	TNQ	16062021
84.	KOTTE.RAJESH KUMAR	9917005087	TNQ	16062021
85.	K. SAI PAVAN	9917005088	LEADPRO	5072021
86.	KOVVURU PRADEEP KUMAR REDDY	9917005089	ZUARI TECH	2062021
87.	KRISHNA KUMAR R	9917005090	NCR	13072021
88.	KRISHNAPRIYA J	9917005092	ACCENTURE	C9362920
89.	KUKKAPALLI CHARAN TEJA	9917005093	TNQ	16062021
90.	KUNDA HEMANTHKUMAR	9917005094	ACCENTURE	C10126254
91.	LINGAYATH UMESH CHANDRA	9917005095	TCS	
92.	SAI SUDHHEER MADDUKURI	9917005096	TCS	TCSL/DT20206853320 /1470532/CHENNAI
93.	MAGESH RAJ.S	9917005097	LUMINA DATAMATICS	16112021
94.	Maguluru Kumar	9917005098	TCS	TCS L/DT20206852690/144 1827/Chennai
95.	M.MAHIDHAR REDDY	9917005100	FUTURE GENERALI	7062021
96.	MANGALA.MADHU	9917005101	DXC	16042021
97.	MANNEPALLI VENKATA BHANU	9917005103	FUTURE GENERALI	7072021

98.	MANTENA SUSHANTH VARMA	9917005104	LEADPRO	5072021
99.	MANYAM MAHESWARI	9917005105	IBM	5112021
100.	MANYAM VASUNDHARA	9917005106	WIPRO	18082021
101.	MARU RITHWIK SESHU REDDY	9917005107	NCR	13072021
102.	MAVILLA VINEESH REDDY	9917005108	CTS	15411261
103.	METTUPLLIVENKATASIVAREDDY	9917005109	FUTURE GENERALI	7062021
104.	M.SUSHMITHA	9917005110	MONTBLEU	11062021
105.	T MONISH KUMAR	9917005112	CTS	15411262
106.	T.MOUNIKA	9917005113	LUMINA DATAMATICS	16112021
107.	M.ANUSHA	9917005114	CTS	15411427
108.	NAGI REDDY SUMANTH REDDY	9917005115	BOSCH	34597133
109.	NANDA RAHUL BHARADWAJ	9917005116	FUTURE GENERALI	7062021
110.	Narayanam Harshith	9917005117	TCS	TCSL/CT20203316546/1425748/Chennai
111.	NOORBONALA SAHUL	9917005119	FUTURE GENERALI	7062021
112.	P.RUCHITHA	9917005120	LEADPRO	5072021
113.	PADARTHI RUPA PRIYA	9917005121	LUMINA DATAMATICS	16112021
114.	PALLAPOLU SIVA BRAHMA REDDY	9917005122	LUMINA DATAMATICS	16112021
115.	T.PANDIMEENA	9917005123	INFOSYS	HPD/COV/1002198106/21-22
116.	DINESH REDDY PAPASANI	9917005124	INFOSYS	HPD/COV/1002261105/21-22
117.	PARVATHAREDDY VENKATA VIKRANTH	9917005126	NCR	13072021
118.	P.DEEPTHI NAGAKULLAYAMMA	9917005127	LEADPRO	5072021
119.	PASUPULETI MADHAN SAI	9917005128	ACCENTURE	C10095769
120.	PASUPULETI MANOJKUMAR	9917005129	ASPIRE SYSTEMS	23072021
121.	PATAN SALMAN KHAN	9917005130	FUTURE GENERALI	7062021
122.	PATHAN MANSOOR KHAN	9917005131	ASPIRE SYSTEMS	10120220
123.	PATTAN.AMMAAR	9917005132	FUTURE GENERALI	7062021
124.	PEDAPUDI LAKSHMI NARAYANA	9917005133	LUMINA DATAMATICS	16112021
125.	HARI VARDHAN REDDY PEDDIREDDY	9917005134	TCS	TCSL/CT20203158727/Chennai
126.	PEDDYSETTY CHAKRAESH	9917005135	MCAFEE	22112021
127.	PIDIKITI RAMA KRISHNA	9917005136	LEADPRO	5072021
128.	POOLA VENKATA VARUN	9917005137	TATA ELXSI	31082021
129.	POLU SURENDRA BABU	9917005138	HCL TECHNOLOGIES	16112021
130.	P.VIKAS CHARAN REDDY	9917005139	HIBIZ SOLUTIONS	2062021
131.	S.PRAVIN KUMAR	9917005141	LEADPRO	5072021
132.	RAJARAJAN G	9917005144	SUTHERLAND	14072021
133.	R GUNA VARDHAN REDDY	9917005145	CTS	15411434
134.	RAVURU SIVARAKESH	9917005146	ZIFO RND	10052021
135.	REGULA VENKATA RAVI CHOUDARY	9917005147	LEADPRO	5072021
136.	M D RUDRA PRASSANTH	9917005149	INFOSYS	HPD/COV/100226099

				8/21-22
137.	J. SAFANA FATHIMA	9917005150	MITSUBA	9062021
138.	SAMPATHI BHANUCHAND	9917005151	INFOSYS	HPD/COV/100217689 1/21-22
139.	S.THEJESWARA REDDY	9917005152	CTS	15411435
140.	SANTHOSH KUMAR K	9917005153	LEADPRO	5072021
141.	SATHYA PRADEEP C	9917005155	DXC	29042021
142.	SATTENAPALLI SATHISH	9917005156	TCS	TCSL/DT20206798304 /Chennai
143.	S.A.SOHEL BASHA	9917005158	LEADPRO	5072021
144.	SHAIK JAFFER SADIK	9917005159	JASMIN INFOTECH	5072021
145.	SHAIK MEHATAB	9917005160	FUTURE GENERALI	7062021
146.	SHAIK SHAHUL	9917005162	ACCENTURE	C9788849
147.	SHARATH KUMAR B M	9917005163	NTT DATA	17082021
148.	K.SHRIVALLI	9917005164	MPHASIS	DirectCore/RH8061889 /252070/Pune/August/v 0
149.	SIDDI RAVI TEJA REDDY	9917005166	CTS	16660544
150.	RAJASRI	9917005167	DXC	29042021
151.	S.PRAVALLIKA	9917005168	JASMIN INFOTECH	5072021
152.	SIVAKOTI.RAMSAI	9917005169	TCS	TCSL 1DT20207051 Og4/Chennai
153.	SIVARAMAN K	9917005170	NTT DATA	6092021
154.	SUGREEVU RAJESWARI	9917005173	DXC	29042021
155.	SUTLURU REDDYCHANAKYA	9917005174	LEGATO	23092021
156.	R.J.SWEATHA	9917005176	JASMIN INFOTECH	5072021
157.	TADALA SUBBARAO	9917005178	RIA INTERNATIONAL	12072021
158.	TALARI RAVI KIRAN NAIDU	9917005179	NTT DATA	16082021
159.	HARSHAVARDHAN.T	9917005181	SUTHERLAND	14072021
160.	VANIPENTA VISHNU VARDHAN REDDY	9917005183	LUMINA DATAMATICS	16112021
161.	VEMPALLI VINAY KUMAR REDDY	9917005185	LEADPRO	5072021
162.	VEMURI GOPI KRISHNA	9917005186	DXC	29042021
163.	VENNAPUSA MOUNIKA	9917005187	ACCENTURE	13249904
164.	VINOTHINI A	9917005188	TCS	TCSL/CT20203315681 /HYDERABAD
165.	VISHALI S	9917005189	DXC	29042021
166.	YADATI RAJA SURENDRA	9917005191	CTS	15411439
167.	YAMMANURU SAI SANDEEP REDDY	9917005192	JASMIN INFOTECH	5072021
168.	YEMIREDDY CHANDU VARDHAN REDDY	9917005193	FUTURE GENERALI	7062021
169.	YENDURU SRI SAI NAVEEN	9917005194	HIBIZ SOLUTIONS	2062021
170.	Y KARUNAKAR REDDY	9917005195	INFOSYS	HRD/COV/100226123 3/21-22
171.	YERRAGUDI ASHRAF	9917005196	JASMIN INFOTECH	5072021
172.	YOGAVIGNESH.P	9917005197	FUTURE GENERALI	7062021

173.	J. YUVASRI	9917005198	INFOSYS	HRD/COV/100226121 0/21-22
174.	GOPA VENKATESH	9917005199	AGILISIUM	AG/542
175.	SRIRANGAM.VISHNU	9917005200	LEADPRO	5072021
176.	VENKATA VEERA BHOGACHARI S	9917005201	LEADPRO	5072021
177.	I LOKESH	9917005202	LUMINA DATAMATICS	16112021
178.	POCHIMIREDDY BHARGAV REDDY	9917005203	ACCENTURE	13369737
179.	KODURU VAMSINATH REDDY	9917005204	RHEIN BRUCKE	5072021
180.	MULE. SIVA REDDY	9917005205	LEADPRO	5072021
181.	N. VENKATA VINAY VARMA	9917005208	TCS	TCSL/CT20203296778
182.	R. TAMIL SELVI	9917005209	INFOSYS	HRD/COV/100226114 4/21-22
183.	BHASKARLA ALIVELU ANOOHYA	9917005210	WIPRO	8092021
184.	KOTA MANIDEEPAK	9917005211	INFOSYS	HRD/COV/100206270 4/21-22
185.	PODILA VENU	9917005212	TESSOLVE	7012021
186.	YANAMALA JOSHNAKAR REDDY	9917005213	INFOSYS	HRD/COV/100226120 0/21-22
187.	KANTHURI BHAVANA	9917005214	NEEYAMO	21062021
188.	GADDAM GURU CHARAN	9917005215	TCS	TCSL/DT20207176410 /1445424/CHENNAI
189.	MANIDEEP N	9917005216	WIPRO	8092021
190.	CHALLA MANIKANTA REDDY	9917005217	TCS	TCSL/DT20206807062 /1560074/HYDERABA D
191.	YANDLAPALLI THARUN BABU	9917005218	LEADPRO	5072021
192.	VASANTHU JAYAPRIYA	9917005219	DXC	20052021
193.	KAIPU JEFHAYA HARSHITHA	9917005220	SUTHERLAND	14072021
194.	KUPPIREDDY BHANUPRADEEP KUMAR REDDY	9917005221	CTS	15411446
195.	LETI SRI VAISHNAV	9917005222	INFOSYS	HRD/COV/100206263 8/21-22
196.	JAYAMEENAKSHI M	9917005223	NTT DATA	16082021

4.5.1. Professional societies/chapters and organizing engineering events (5/5)

A. The following professional societies/chapters are organized in the University

1. IEEE (Institute of Electrical and Electronics Engineers)
2. IETE (Institution of Electronics and Telecommunication)
3. IEI (Institution of Engineers) (India)
4. IEDC (Innovation and Entrepreneurship Development Centre)
5. FSAI (Fire & Security Association of India)
6. ASELCOME - Electronics and Communication Engineering Department Association
7. Electronics Fun Club (EFC)

1. IEEE (Institute of Electrical and Electronics Engineers)

IEEE Madras Section in KARE is the technical club responsible for creating awareness about advancing technology for the benefit of humanity on the campus. Therefore, the students are highly encouraged to attend professional development programmes such as paper presentations, seminars, etc., in terms of Non-CGPA course credits. The events conducted in academic years are listed below tables 4.5.1.A.1, 4.5.1.A.2 and 4.4.1.A.3.

Office bearers

Sl. No.	Name	Designation	Mobile no.
1	Dr. D. Devaraj, Professor, EEE	Senior faculty advisor	8778594428
2	Dr. P. Aruna Jeyanthi, Professor, EEE	Faculty Counsellor	9443660712
3	Mr. Cherukuri Nikhil Kumar, Final year, ECE	Student Chairman	8309967932
4	Ms. Lavanuru Anuradha, Third year, ECE	Student Vice Chairman	6302916315
5	Ms. M. Devadharshini, Final Year, EEE	Student Secretary	8668082517

a. Academic year 2020-2021

Table 4.5.1.A.1: IEEE Events conducted in Academic Year 2020-21

Date	Event	Resource person	Event Description
05/02/2021	Webinar on Machine Vision and Industrial IoT Applications for Assembly lines in Manufacturing processes.	Prof Raj KamalProfessor Emeritus, ECE, Prestige Institute of Engineering, Management and Research, Indore.	Bring out the creative, innovative ideas and goals to design/build a prototype

26/08/2020 — 29/08/2020	Faculty Development Program on Deep Learning networks and Applications	<p>1. Sheeba Rani, Associate Professor, Indian Institute of Space Science and Technology, Trivandrum.</p> <p>2. Dr. P. Gnaesh Kumar, Associate Professor, Anna University, Coimbatore.</p> <p>3. Dr. C. Chandra Sekhar, Professor, IIT Madras</p> <p>4. Dr. Mahadeva Prasanna, Professor, IIT Dharwad.</p> <p>5. Mr. Mounik, Deep learning Engineer</p>	<p>Deep Learning and its Applications was hosted with the prime intention to introduce the exciting applications of industrial research works carried out using feature engineering and machine learning techniques regarding deep learning to the students.</p> <p>Starting from the basics of Machine Learning and Neural Networks, the resource persons delivered the required preliminaries smoothly.</p>
11/08/2020	IEEE Membership & Resources (webinar)	Dr. Lance Chun Che Fung, Emeritus professor, Murdoch University, Australia	IEEE Membership Advantages and usage of their resources fruitfully
12/01/ 2021	IEEE Sponsored Writing a Project Proposal for Funding	Dr. J. Deny, President, MHRD Innovation Cell-KARE	<p>The outcomes are the changes or results that the organization expects to be achieved after completing the project. The outcomes could be quantitative or qualitative or both. Explained how to write the proposal and funding opportunities available in India.</p>

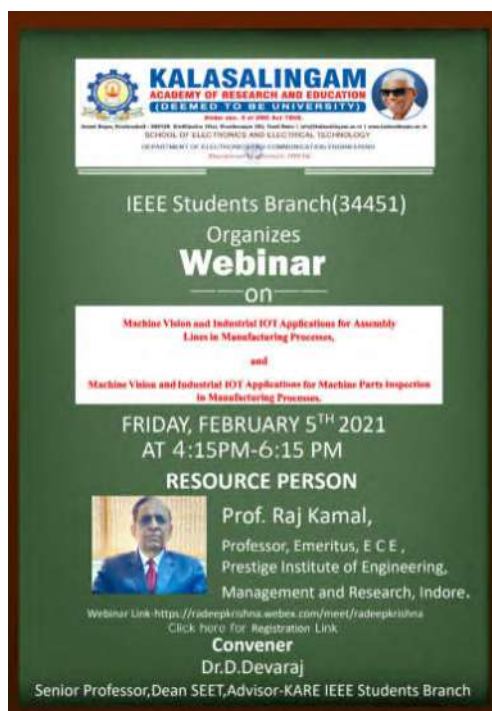


Figure 4.5.1.A. 1. Webinar on Machine Vision and Industrial IoT Applications for Assembly lines in Manufacturing processes Brochure


b. Academic year 2019-2020:

Table 4.5.1.A.2: IEEE Events conducted in Academic Year 2019-20

Date	Event	Resource person	Event Description
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01/02/2020	One day Workshop on Image Processing Using Neural Network	<p>Dr. D. Devaraj, Dean, SEET, KARE handled the technical Sessions on “Introduction about Artificial Neural Network and its application in Image Processing”.</p> <p>Dr. A. Muthukumar, Associate Prof. ECE, handled the technical session on “Introduction to Image Processing and its applications”.</p> <p>Dr. P. Ganesh Kumar, Associate Professor, Anna University, Coimbatore handled the session “Hands-on Training of NN Toolbox using MATLAB for Image Processing Applications”.</p>	A detailed idea about Image Processing using Neural networks and their applications were explained for the students benefit.
14/05/2020	Online training program on IEEE Exploring Digital Library	Nanda Lal T.S. Senior Training Manager- South India	IEEE is the worlds largest technical professional organization dedicated to advancing technology for the benefit of humanity. IEEE and its members inspire a global community through its highly cited publications, conferences, technology standards, and professional and educational activities.

14/06/2020	Webinar on Exploring IEEE and Membership benefits	Mrs. M. Benisha, Assistant Prof, Jeppiar Institute of Technology, Chennai	Enhancing Your Career by Networking with Technical Experts. Save with Low Member Prices on IEEE Products. Establish Yourself Early in the Professions Premier Technical Organization. Explained how to attend Top Technical Conferences at Low Member Rates.
01/02/2020	IEEE workshop on Image Processing using Neural Networks	Dr. P. Ganesh Kumar, Asso Prof, Anna University Regional Campus, Coimbatore.	This Workshop was intended to expose the fundamentals of Artificial Neural Network and its application in Image Process and gave hands-on training using MATLAB Neural Network Toolbox. In addition, the workshop included presentations on the Fundamentals of Image processing and the Development of Neural Network models for Image processing.


WORKSHOP ON
IMAGE PROCESSING USING NEURAL NETWORK
1st FEBRUARY 2010


ORGANIZING COMMITTEE

Chief Patron:
Prof. R. Subramaniam, Chancellor, KAR

Patrons:
Dr. V. Nataraj, Asst. Prof.
Dr. V. Arjun Kumar, Asst. Prof.
Dr. S. Suresh Kumar, Asst. Prof.
Dr. S. Suresh Kumar, Asst. Prof.

Chairperson:
Dr. V. Suresh Kumar, Asst. Prof.

Co-Chairman:
Dr. P. Ganesh Kumar, Asst. Prof.

Co-Organizers:
Dr. S. Suresh Kumar, Asst. Prof.
Dr. V. Suresh Kumar, Asst. Prof.

Co-ordinators:
Dr. S. Suresh Kumar, Asst. Prof.
Dr. V. Suresh Kumar, Asst. Prof.

Registration Fee:
IEEE Members: Rs. 100/-
Non-IEEE Members: Rs. 150/-

Last Date for Registration:
January 24, 2010

Address for Correspondence:
Dr. S. Suresh Kumar, Asst. Prof.
IEEE Student Branch (34451)
Kalasalingam Academy of Research and Education,
Krishnankoil-626126.

Email:
ieee.studentbranch34451@gmail.com

About the Workshop:

Artificial Neural Network (ANN) is an area of artificial intelligence concerned with the development, implementation and the application of computational models that mimic the functioning of the brain in its main functions of adaptive learning, predictive generalization, knowledge accumulation and knowledge discovery. Applications of ANN span across various disciplines of Science, Business, Engineering and Medicine.

This Workshop is intended to expose the participants to the fundamentals of Artificial Neural Network and its application to Image Process and to give hands on training using MATLAB Neural Network Toolbox. The workshop includes presentations on Fundamentals of Image processing, Development of Neural Network models for Image processing.

Topics to be covered:

- ✓ Introduction to Image Processing
- ✓ Learning on Neural Networks
- ✓ Feed forward Neural Networks
- ✓ Self Organizing Map
- ✓ Introduction to MATLAB
- ✓ MATLAB Neural Network Toolbox
- ✓ Applications of ANN for Image Processing

Resource persons:

- Faculty members from premier institutions and the experienced faculty members from KAR will conduct the session.

Target Audience:

- Research Scholars, P.G. Students, Pre-final year and final year U.G. Students.

IEEE STUDENT BRANCH (34451)
KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION,
KRISHNANKOIL-626126.

Figure 4.5.1.A.2: Brochure - One day Workshop on Image Processing Using Neural Network

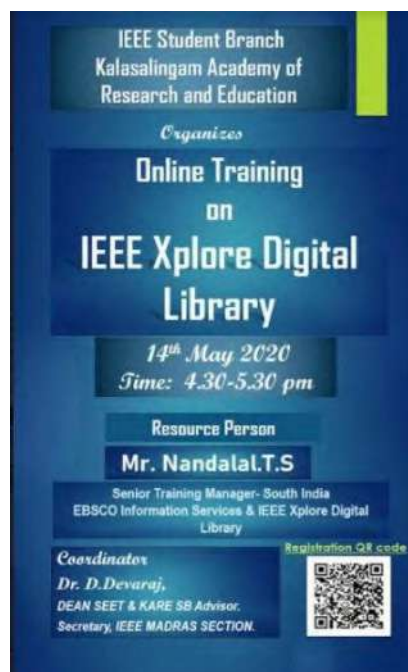


Figure 4.5.1.A. 3: Online Training on IEEE Xplore Digital Library

IEEE STUDENT BRANCH (34451)
KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION
 Anandnagar, Krishnankovil, Srivilliputhur-626126

Date :16.07.2020
Time :4 to 5 pm

DESIGN THINKING AND ITS INNOVATION

Resource person
K.V. VINOTH KUMAR
 Motivational speaker,
 Bangalore

CO-ORDINATORS :
 Dr. D. Devaraj,
 IEEE KARE Advisor,
 IEEE MAS Secretary

Dr.V. Agnes idhaya selvi
 IEEE SB Counselor
 For contact: 9840659699

Registration link :
<https://forms.gle/QKGjURUkatCfVnTz6>

Figure 4.5.1.A. 4: Design Thinking and its innovation

c. Academic year 2021-2022

Table 4.5.1.A.3:IEEE Events conducted in Academic Year 2021-22

Date	Event	Resource person
29/04/2022	Inauguration Ceremony of KARE IEEE EDS Student Branch Chapter	<p>1. Mr. Venkatesh Prasad Director - Nanochipsolutions pvt ltd</p> <p>2. Mr. Vinay K CxO, Expert consultant: Nanochipsolutions Pvt Ltd</p> <p>3. Mr. Anand H, Head of Department and Program Manager, Brigosha Technologies, Expert Consultant: Nanochipsolutions Pvt Ltd</p>
10/06/2022	Keynote Address on Fabrication Approach and Modeling of Nano Interconnects	Dr. Vijayarao K, Asst prof, Dept of ECE, KLEF, Hyderabad

KARE IEEE STUDENT BRANCH [34451]
School of Electronics Electrical and Biomedical Technology
Department of Electronics and Communication Engineering

Inauguration Ceremony
of
KARE IEEE EDS Student Branch Chapter
ED15 (SBC34451B)

Date: 29th April
Time: 9:30 AM - 10:15 AM

Venue: 8th Block Seminar Hall

Chief Guest:
Mr. Venkatesh Prasad
Director - Nanochipsolutions Pvt Ltd

Resource Person:
Mr. Vinay K, CxO
Expert consultant: Nanochipsolutions Pvt Ltd

Resource Person:
Mr. Anand H
Head of Department and Program Manager
Expert Consultant: Nanochipsolutions Pvt Ltd

Convenor:
Dr. P. Sivakumar
Professor, ED15
ECE

IEEE KARE SB Advisor:
Dr. D. Devaraj
Senior Professor / IEEE

IEEE EDS SBC Counselor:
Dr. J. Charles Pravin
Associate Professor / ECE

IEEE KARE SB Chair:
Dr. P. Anura Jayanthi
Professor / IEEE

IEEE EDS SBC Faculty Coordinators:
Dr. Josephine Sella Jayanthi
Associate Professor / ECE
Dr. Shashi Kanth Dargar
Associate Professor / ECE

IEEE KARE SB Chair:
Mr. CH. Nikhil Kumar
Final Year ECE

IEEE EDS SBC Chair:
Ms. D. L. Sai Deepika
Third Year / ECE

KARE IEEE EDS STUDENT BRANCH CHAPTER
(ED15) (SBC34451B)

FABRICATION APPROACH AND MODELING OF NANO - INTERCONNECTS

KEYNOTE SPEAKER
Dr. Vijay Rao Kumbhare currently working as Assistant Professor in Department of ECE, KLEF Deemed to be University, Hyderabad. He has more than 6 years of teaching experience and published more than 8 SCI Journals, 9+ reputed International conference papers. He is engaged in research and publications in the areas of VLSI Nanotechnology, Low Power Circuit Modeling and Simulation. His research interests include Graphene Nanoribbon, Carbon Nanotube and other Nano-Materials for Nano-Interconnects.

NO REGISTRATION FEE

DATE & TIME: 10th JUNE 2022 | 6:00 - 7:00 PM

REGISTER: bit.ly/nanoed15

REGISTRATION ENDS ON 9th JUNE 2022 11:59 PM

POINTS TO BE DISCUSSED IN WEBINAR

- Basics of Interconnects
- Interconnect Materials
- Modeling of Interconnects
- Different Structure of Interconnects
- Performance Analysis
- Fabrication Approach

IEEE KARE SB Advisor:
Dr. D. Devaraj
Senior Professor / IEEE

IEEE EDS SBC Counselor:
Dr. J. Charles Pravin
Associate Professor / ECE

IEEE EDS SBC Faculty Co.:
Dr. Shashi Kanth Dargar
Associate Professor / ECE

IEEE EDS SBC Chair:
Ms. Deepika Duggirala
Third Year / ECE

Figure 4.5.1.A. 5: IEEE KARE IEEE EDS
Student Branch Chapter

2. IETE (Institution of Electronics and Telecommunication)

The Institution of Electronics and Telecommunication Engineers (IETE) is India's leading recognized professional society devoted to advancing Electronics, telecommunications & IT science, and technology. Founded in 1953.

The IETE in KARE is the leading Professional non-profit making Society for the Technical education system with the motto of Career Development of Teachers and Personality Development of Students and Overall development of our Technical Education System.

The IETE focuses on advancing the Science and Technology of Electronics, Telecommunication, Computers, Information Technology, and related areas. In addition, the Institution promotes and conducts basic engineering and continuing technical education programmes for human resource development

The events conducted in last three academic years are listed table 4.5.1.A.4, 4.5.1.A.6 and 4.5.1. A.7:

a. Academic year 2020-2021:

Table 4.5.1.A.4: IETE Events conducted in Academic Year 2020-21

Date	Event	Resource person	Event Description
15/07/2020	Finishing House Automation	V. Thiruppathy, Deputy General manager (Instrumentation), TamilNadu Paper Limited	Knowledge on recent advances in Home automation gained by the students
03/07/2020	Low Power VLSI Design Techniques	Dr. Rama Komaragiri, Dean Academic Affairs, Professor, Dept. of ECE, School of Engineering and Applied Sciences, Bennett University, UP	To expose the students to the low voltage device modelling, low voltage, low power VLSI CMOS circuit design

17/07/2020 - 30/07/2020	Faculty Development Programme on “Analog and Digital Electronics with Programming Languages”	Nanochip Solutions	Understanding the Basic Analog and Digital Electronics with programming language plays a vital role in the emerging career of students.
24/07/2020	IC layout challenges (career guidance webinar)	Mr. Vishnu Sankar, Design Engineer, Elveego circuits Bangalore, alumni 2007-11	Lecture about the circuit applications close to the program, for instance VLSI Design
31/07/2020	Python for Image Processing	Dr. V. B. Sundarabalan, Director Geosensing imaging consultancy, Former research scientist, NASAGSFC, alumni 2005-2007	Python becomes an apt choice for such Image processing tasks due to its growing popularity as a scientific programming language and the free availability of many State of Art Image Processing tools in its ecosystem.
20/07/2020 to 25/07/2020 (Phase I),	AICTE Sponsored One Week Short Term Training Programme (STTP)s on " Cyber-Physical Systems (CPS) Design Techniques and Applications."	Abdul Wadood	Challenges about the security and resilience of cyber-physical systems were discussed, and the students gained keen knowledge.

<p>27/07/2020 to 01/08/2020 (Phase II),</p>	<p>AICTE Sponsored one Week Short Term Training Programme (STTP)s on " Cyber-Physical Systems (CPS) Design Techniques and Applications"</p>	<p>Mr. Murasoliselvan Karunanithi</p> <p>Director Engineering - Embedded, IoT</p> <p>UST Global, Malaysia Mr. Sudhakar B,</p> <p>Technical lead -AWS Solution Architect,</p> <p>Wegrow Technology, Chennai Mr. Arunsenthil,</p> <p>Technical Lead in Networking Testing</p> <p>Wegrow Technology, Chennai Mr. Narendra Babu P, Technical Architect -</p> <p>Web Application</p> <p>Development, BNY Mellon Technology,</p> <p>Chennai Dr Sankaraiah Sreeramula,</p> <p>Ph.D, Head Data Scientist</p> <p>APP Sinar Mas, Indonesia Mr. Kanagaraj J Senior QA specialist,</p> <p>Grow labs Technology Pvt Ltd, Chennai</p>	<p>Challenges about security and resilience of cyber- physical systems were discussed and the students got keen knowledge on the same</p>
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31/12/2020 to 07/01/2021	Faculty Development Program On Artificial Intelligence & Deep Learning	<p>1. Dr. V. Sowmaya, Associate Professor, Amrita Vishwa Vidyapeetham</p> <p>2. Dr. Raj Kamal, Ph.D. (IITD)</p> <p>Professor/ECE Prestige Institute of Engineering Management and Research, Indore, Madhya Pradesh.</p> <p>3. Dr. Kyung Tae Kim</p> <p>Senior Prof./ECE KARE</p> <p>4. Shivam Sham Agrawal Associate Professor/ETE Pankaj Laddhad Institute of Technology and Management Studies, Buldana</p> <p>5. Dr. D. Anil Kumar Assistant Professor Pace institute of technology and sciences, Ongole 6. Mr. B. Premjith Faculty Associate (CEN), Amrita Vishwa Vidyapeetham</p> <p>7. Dr. I. Sheik Arafat Associate Professor and Head/ECE Mohamed Sathak Engineering College, Kilakarai,</p> <p>8. Dr Lalit Mohan Goyal Assistant Professor/ CE J.C. Bose University of Science and Technology, Haryana</p>	AI drives down the time taken to perform a task and also enables the execution of hitherto complex tasks without high-cost outlays
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02/01/2021	IETE sponsored Industrial Lecture on SAP Orientation Program – Next level in 2021	1. Mr. Balamuralikrishna 2. Mr. Abishek Kumar Singh 3. Mr. Sunil Kumar 4. Mr. Sivasaikumar Programmer Analyst Trainee, CTS	SAP Certifications are globally recognized and standardized. In addition, they provide validation that the certified individual has the required proficiency and expertise in the SAP solution in which they are certified. As a result, it makes it very easy for organizations to manage the SAP skills of their employees worldwide.
05/01/2021	Industrial Lecture on AI For Smart Devices	Dr. Athifsha, Founder, ABE semiconductors	Students had learned the essential deep learning, and AI has advanced to the point that it too has the potential to transform every industry
11/01/2021	One day National level workshop on Data Engineering & Big Data analytics with Backend Serverless system	Mr. Ajish Ramachandran, Senior Data eng, Amazon US & Mr. Mayank Sinha (Alumni) Software Engineer MTS, Salesforce, Hyderabad	All businesses collect data, so it is crucial to understand how data is compiled and its value in helping your company meet its goals. Businesses use data to make better decisions.
11/01/2021	“Introduction To RTL Design for Combinational and Sequential Circuits and Opportunities in Semiconductor”	S Rengaraja, South Korea	Practical design of combinational logic systems may require consideration of the finite time required for practical logical elements to react to changes in their inputs.

13/01/2021	IPR KNOW ABOUT PATENT FILING	Dr. J. Deny, President, MHRD Innovation Cell-KARE	Intellectual Property Rights (IPRs) are legal rights that protect creations and/or inventions resulting from intellectual activity in the industrial, scientific, literary, or artistic fields. The most common IPRs include patents, copyrights, marks and trade secrets.
19/03/2021	Dr. A P J ABDUL KALAM YOUNG SCIENTIST AWARD (Sponsored by IETE)	Dr. J. Deny, President, MHRD Innovation Cell-KARE	The project competition provides an excellent opportunity to the students to showcase their talent.
20/03/2021	Webinar on Inverters in Electronic Cars and Bootloader in Automotive Industry	Mr. Peri N Thiagaraj (1998-2002 ECE), Feature Group Lead, Bootloader, Valeo Siemens eAutomotive GmbH, Germany	Students gained knowledge on Limited driving range, high costs, battery issues, and spotty charging infrastructure are the main challenges for battery electric vehicles
12/06/2021	Workshop on applications of Industry info in Automotive Electronics based on MCU8051IDE - An open-source tool	Mr. Muthurasu Beemarajan (2000-2004 ECE) Senior Project Manager, Robert Bosch Engineering and Business Solution Pvt Ltd Coimbatore, Mr. Mukuntharaj C, AP / Karpagam college of Engineering, Coimbatore	Future autonomous cars will rely on powerful computer systems, an array of sensors, networking, and satellite navigation, all of which will require electronics.

11/06/2021 to 16/06/2021	Handson FDP on Statistical and Machine Learning ASIC Design Flow with Embedded IoT	Dr. Nagarajan, Ms. Nagma, Ms. Vijayashree Ms. Srinath Ms. Shilpa	Acquaintance on Statistical and Machine Learning ASIC Design Flow with Embedded IoT
27/06/2021	A career guidance webinar on “International Trends and Innovation in Career Guidance"	Ms. S. Parkavi	Scope for starting new business and become entrepreneur, after graduation



Figure 4.5.1.A.7: Webinar on International Trends and Innovation in Career Guidance Brochure



KALASALINGAM
ACADEMY OF RESEARCH AND EDUCATION
(DEEMED TO BE UNIVERSITY)

SCHOOL OF ELECTRONICS AND ELECTRICAL TECHNOLOGY
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INDUSTRIAL LECTURE ON SAP ORIENTATION PROGRAM
In Association with the Institution of Electronics & Telecommunication Engineers

NEXT LEVEL

IN 2021

OBJECTIVE

In this Industrial Lecture, we will describe different tangible and intangible benefits of training for individuals. We will also summarize the value of training. We will guide you to understand the easiest way to navigate the SAP training.

CREATIVITY
TEAMWORK
INNOVATION

STRATEGY
MOTIVATION

SAP has evolved to become a market leader in end-to-end enterprise application software.

Convener
Dr.M.Kalpana, HoD/ECE, KARE

Coordinators
Mrs.N.Bhuvaneswary, AP/ECE
Dr.K.S.Dhanalakshmi, AP/ECE

Resource Person

1. Mr.Balamuralikrishna(Alumni)
Programmer Analyst Trainee,CTS
2. Mr. Abishek Kumar singh (Alumni)
Programmer Analyst Trainee, CTS
- 3.Mr.Sunil Kumar(Alumni)
Programmer Analyst Trainee,CTS
4. Mr.Sivasai kumar(Alumni)
Programmer Analyst Trainee,CTS

Target Audience
All Final Year's

02.01.2021/11.00 to 12.30 pm

Google meet
meet.google.com/bow-zgos-rdo

Figure 4.5.1.A.8: Industrial Lecture on SAP Orientation Program



Figure 4.5.1.A.9: IPR Webinar

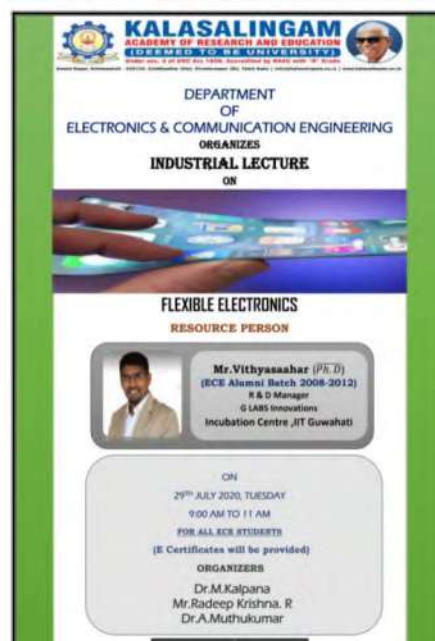


Figure 4.5.1.A.10: Industrial Lecture on Flexible Electronics

b. Academic year 2019-2020:

Table 4.5.1.A.5: IETE Events conducted in Academic Year 2019-20

Date	Event	Resource person	Event Description
16/07/2020	Webinar on Design Thinking and Innovation	Mr. K. Vinothkumar Contracts Manager, ExxonMobil Bangalore	Design thinking is a non-linear, iterative process that teams use to understand users, challenge assumptions, redefine problems and create innovative solutions to prototype and test.
19/09/2019	Guest Lecture On "Joy of Vision in Image Processing"	Dr. Mansoor Roomi, Asso. Prof, TCE, Madurai	Provided an introduction to computer vision, including fundamentals of image formation, camera imaging geometry, feature detection and matching, stereo, motion estimation and tracking, image classification, scene understanding, and deep learning with neural networks.

21/09/2019	Electronic Product Design and IoT	Mr. Dinesh, Mr. Ajay-E2a Technologies, Chennai	The Internet of Things (IoT) has ushered in an age of connectivity, one that enables objects to function in new, expanded ways. IoT technology allows objects to communicate with each other continuously, forming large, interconnected systems capable of creating, communicating, aggregating, analyzing, and acting on data.
05/06/2020	Challenges on Agile methodology in Embedded system projects	"Mr. Malaikannan Ramaraj, Embedded Software Engineer, Continental Automotive Singapore Pte. Ltd. Singapore"	Agile produces important metrics like lead time, cycle time, and throughput that helps measure the teams performance, identify bottlenecks, and make data-driven decisions to correct them.
05/06/2020	Building A New Internet	"Mr. Wilson Bright, Co-founder, Block Survey, Bangalore"	It allows for quality interactions, opportunities to work together on solutions to real-life challenges, and practicing new techniques
29/05/2020	Intellectual Property Rights- An Overview	Dr. J. Deny, President-IIC, KARE	The main objective of intellectual property law is to encourage innovation and to provide incentives for innovation by granting protection to inventors that allow them to recover research and development investments and reap the benefits of their inventions for a limited period

29/05/2020	Different areas of Entrepreneurship	Mr. Hari, Director of Big Foxx Branding & Technology, Chennai	Entrepreneurship and Innovation minors get able to sell their ideas
29/05/2020	Image Processing using MATLAB	Dr. S. Bama, Associate Professor-ECE/KARE, Dr. J. Josephine Selle, Assistant Professor-ECE/KARE	MATLAB is a scientific programming language and provides strong mathematical and numerical support for the implementation of advanced algorithms. It is for this reason that MATLAB is widely used by the image processing and computer vision community.
06/08/2020	CMOS-VLSI Design	Dr. S. Krishna Priya, Associate Professor, Muthoot Institute of Technology & Science, Kochi, Kerala	Identify the various IC fabrication methods. Express the Layout of a simple MOS circuit using Lambda based design rules
13/06/2020	Web Development in 2020	Ms. P. Senthilkumari, Technical Consultant, Infosys Bangalore	There Are Web Dev Jobs Available. Given that there will be approximately 1.4 million computing jobs available in 2020, with only 400,000 qualified developers to fill them, those interested in acquiring in-demand skills can certainly benefit from having web development and coding in their resume.
15/06/2020	ELECTRONIC PACKAGING	Dr. Arun Chandrasekar, Sr. Principal Engineer, Packaging Technologies & Design, Intel Corporation, Bangalore	Electronic packaging serves four major functions in the performance of electronic systems: interconnection of electrical signals at several levels; distribution of power to the electronic circuits and devices

20/06/2020	Opportunities for an Engineer and the Skills needed	Mr. S. Sriram Gowtham, Blue Yonder, Bengaluru	It builds hands-on experiences which would help to learn manufacturing processes and production technology courses in successive semesters. Workshop practice is also important since only practice can make the man perfect.
21/06/2020	Career Guidance on Pursuing LabVIEW	"Mr. S. Sakthi Selva, Test Engineer, Tessolve Semiconductor Pvt. Ltd., Bangalore"	LabVIEW is a powerful tool where most of the organizations who are into Industrial Automation, Engineering, and Research & Development use this software to build prototypes and proof of concepts before building the final product.
21/06/2020	Fundamentals of Electromagnetic Waves and Antennas	Dr. Pragnan Chakravorty, Principal Director, Cliques for Applied Research in Electronic Technology, Bhilai, India	The study of antennas and electromagnetic wave propagation is essential to a complete understanding of radio communications, radar, cell phones.
21/06/2020	Controller Applications in Automobiles	"Mr. Venkatesan Ponnusamy, Hardware Project Manager, Visteon Technical and Service Center, Chennai	It is a comprehensive system that communicates and integrates the work of all electronic modules through the vehicle bus.
22/06/2020	Cyber Security in IoT	Mr. David N Samuel, Principal Security Engineer, Accenture (Security), UK	Advanced Threat Intelligence to Help You Manage Risk and Protect Against Cyberattacks.

25/06/2020	Role of IoT engineer in Post Covid	Dr. K. S. Balamurugan, Associate Professor/ECE, Bharath Institute of Engg. & Tech., Hyderabad	The participants will learn how sensors are connected to the hardware platform and how the hardware platform fetches data from sensors and pass it to cloud using various connection methodologies
29/06/2020	Introducing the World of Analog IC Design	Dr. Immanuel Raja, AP-Avionics/IIST	To provide in-depth understanding of the analog integrated circuit and building blocks; To provide a basic idea on mixed signal IC design

c. Academic year 2021-2022:

Table 4.5.1.A.6: IETE Events conducted in Academic Year 2021-22

Date	Event	Resource person	Event Description
24/07/2021	Industrial lecture on Career Planning and Development	Ms.Meghna (Alumni 2015-19), Application Developer, Wipro Mr.V.Sravan Kumar (Alumni 2015-19), Project Engineer, Wipro	Students gained knowledge on current scenario on education, the lecture given importance for the fitness of the survival to the industries
24/07/2021	""Developments and opportunities in Networking""	"Er. Vishnu Ravichandran System Engineer Netcon Technologies India Pvt. Ltd. [KARE-ECE-ALUMNI-2014-18]"	The students gained knowledge on the development and opportunities in Network Engineering
25/07/2021	Webinar on Engineers choosing job as pilot	"Mr Libin Koshy Airline Pilot Air Canada"	A pilot is a professional who is responsible for flying planes, helicopters or rockets. Pilots undergo extensive aviation training before they are entrusted

			with actual flying. A career as a pilot is not only one of the most adventurous career one can imagine, it is one of the most well paid jobs.
27/04/2022	Dr. A P J ABDUL KALAM YOUNG SCIENTIST AWARD (Sponsored by IETE)	Dr. Hima Deepthi Asso Prof / ECE, Dr. Shasikant Dargar, Asso Prof / ECE	The project competition provides an excellent opportunity to the students to showcase their talent.



Figure 4.5.1.A.11: Industrial Lecture Brochure



Figure 4.5.1.A.12: CSP Project Competition Brochure

3. IEI (The Institution of Engineers (India))

The IEI in KARE is the national organization of engineers in India. The aim is to participate in Nation building, to support the society by all means, and to develop inventions for rural people and also to support them.

The events conducted in last three academic years are listed below

a. Academic year 2020-2021:

Table 4.5.1.A.8: IEI Events conducted in Academic Year 2020-21

Date	Event	Resource person	Event Description
25/07/2020	Webinar on Next step for success	Prof. Thirukoshtiyur K Manikandan, Director, Grow your self-organization	Students gained knowledge on current scenario on education, the lecture given importance for the fitness of the survival to the industries
31/07/2020	Dos and Don'ts in Engineering	Mr. S. Arvind, Consultant, Mirage Telecom	To develop their Personality, Leadership Quality and Professional Skills to meet out the requirements of industries - Professional Ethics (HSS18R013)

01/08/2020	Importance of core competency for Electronic Engineer	Mrs. P. Karthiga, Test Engineer, Tessolve Semiconductors, Bangalore, (Alumni)	Core competencies help an organization distinguish its products from its rivals and reduce its costs than its competitors and thereby attain a competitive advantage. It helps in creating customer value.
05/08/2020	Project way finder to career opportunities for Electronics Engineering Graduates	Mr. C. V. Renjith, Product Designer, Philips India Ltd, Pune	Best minds from academics and industry come together to share their experiences, knowledge, and insights about their respective careers
09/10/2020	“Next Generation Networks”	Mr. R. Vasu Senior IT – Training Consultant	Students gained knowledge on current scenario on education, the lecture given importance for the fitness of the survival to the industries
08/01/2021	IEI Sponsored talk on “IoT and Digital Transformation”	Mr. K. Nikhil Vannan, Design Engineer, Kalycito InfoTech Pvt Ltd, Coimbatore	Digital transformation creates a system for gathering the right data and incorporating it fully for business intelligence at a higher level.
07/01/2021	A career guidance webinar "Machine learning and its industrial role in association with The Institution of Engineers (India)	Ms. Baslis Divya Data Associate, Amazon, Alumni - ECE, KARE	Have a good understanding of the fundamental issues and challenges: data, model selection, model complexity, etc. Be able to design and implement various machine learning algorithms in various real-world applications.

10/01/2021	Workshop On Android Mobile Application Development in Association with Institution of Engineers (India)	Mr. V. C. Agilan, Alumni (2009- 2013) IT analyst ISPP Global	Upon completion of the course students should be able to: Install and configure Android application development tools. Design and develop user Interfaces for the Android platform. Save state information across important operating system events.
05/01/2021	Embedded System Development Cycle (IEI)	M Shanmugam System Engineer Coimbatore Bosch	Understand Linux operating system and device drivers. Get to know the hardware – software co design issues and testing methodology for Embedded systems.
13/01/2021	National Level Industrial Lecture On “How the Latest Technology Impact Our Current Industry?”	Mr. C. Navagridhar Ramsait MEAN Stack Developer, Farshore.	By improving product development, business processes, and developing workers skills, technology increases productivity in various business operations. The size of improvements is debatable, but some technologies like email and social media have made communication easier and faster



Figure 4.5.1.A.13: Android Workshop Brochure

b. Academic year 2019-2020:

Table 4.5.1.A.9: IEI Events conducted in Academic Year 2019-20

Date	Event	Resource person	Event Description
07/03/2020	Low Power VLSI Design Techniques	Dr. Rama Komaragiri, Dean Academic Affairs Professor, Department of ECE, School of Engineering and Applied Sciences, Bennett University, Noida	Low Power VLSI Design a. Power Requirements b. Review of MOSFET c. MOSFET Scaling d. Review of CMOS Inverter e. Capacitance in MOSFET f. Power and Energy

06/05/2020	Security Challenges in the Pandemic Period and Solutions	Dr. Dhinakaran Nagamalai, Vice President, Wireilla, Sydney, Australia	The COVID-19 pandemic risks widening further the divide in labour market outcomes for the most vulnerable groups who face numerous employment obstacles
18/05/2020	Emerging Areas in SoC, M2M and Internet of Things	"Dr. Raj Kamal, Electronics and Communication Engineering Department, Prestige Institute of Engineering Management and Research, Indore, Madhya Pradesh.	Internet of Things (IoT) is a new paradigm that has changed the traditional way ... enabling technologies, social and environmental impacts etc.
20/05/2020	Effective and Attractive Documentation using Latex	"Dr. A. Ramesh Babu, Department of Mathematics, School of Engineering, AMRITA Vishwa Vidhyapeetham, Coimbatore."	The documents produced using LaTeX just look better. This means that LaTeX can create everything from business cards to books to presentations
21/05/2020	Accept No Limits (Sharing Industrial Experience and PLM Technology	Mr. Sangaran Nagendran, PLM Enovia Systems Developer, Faraday Future Inc, Los Angeles, USA	Good PLM capabilities are essential to accelerate the maturity growth in product development projects. This improves product design and cuts lead time and cost.
31/05/2020	IIC Innovation Project Contest	Dr. M. Kalpana, HoD/ECE & Dr. J. Deny, President-IIC/KARE	Create an Institutions Innovation portal to highlight innovative projects carried out by institutions faculty and students.

17/06/2020	5G Technologies	V. Lingasamy, Team Lead, HCL Technologies, Bengaluru	Emerging 5G networks feature lower latency, higher capacity, and increased bandwidth compared to 4G. These network improvements will have far-reaching impacts on how people live, work, and play all over the world
19/06/2020	Job Opportunities in Solar PV Energy System	"Dr. K. Pushpanathan, TIAS energy Pvt. Ltd., Chennai"	Employment of solar photovoltaic installers is projected to grow 52 percent from 2020 to 2030, much faster than the average for all occupations.
22/06/2020	Scope of Automation in Future Industries	Er. Harish Ravi, Biass, Koyamputhoor	AI, automation, and advanced engineered systems promise improvements in safety, simplification of routine tasks, and higher productivity levels across organizations
24/06/2020	Innovation to Reality	Mrs. S. Muthulakshmi, Freelancer	The purpose of innovation workshops was to organize idea generation exercises from which the participants got benefitted

c. Academic year 2021-2022:

Table 4.5.1.A.10: IEI Events conducted in Academic Year 2021-22

Date	Event	Resource person	Event Description
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12/07/2021	Online Industrial Lecture “Design Ideas for Capstone Projects”	Dr. N. Pothirasan, Director, Hashan Medicare, Rajapalayam	
17/07/2021	SAP Orientation Program	Mr.M.Prakash (Alumni 2016-20) Program Analyst CTS, Mr.Harikrishnan (Alumni 2016-20), Program Analyst, CTS	SAP Certifications are globally recognized and standardized. In addition, they provide validation that the certified individual has the required proficiency and expertise in the SAP solution in which they are certified. As a result, it makes it very easy for organizations to manage the SAP skills of their employees worldwide.

KALASALINGAM
ACADEMY OF RESEARCH AND EDUCATION
(DEEMED TO BE UNIVERSITY)

Online Reg. & Fee: Rs. 1500.
Award Reg. & Fee: Rs. 1500.
SCHOOL OF ELECTRONICS AND ELECTRICAL TECHNOLOGY
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
(Approved by AICTE, PO-44)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
ORGANIZES
NATIONAL LEVEL INDUSTRIAL GUEST LECTURE

On
DESIGN IDEAS FOR CAPSTONE PROJECT

Date : 12th July 2021
Time : 3.00 PM to 5 PM
Beneficiaries : II Year ECE Students
Online Platform : Microsoft Teams
Online Link : <https://bit.ly/3k3uzp1>

About the Lecture:
The main objective of the industrial lecture is to create innovative ideas in project and to build a prototype.

Resource Person
Dr. N. Pothirasan
Director,
Hashan Medicare,
Rajapalayam

Convener
Dr. M. Kalpana,
HoD/ECE, KARE

Co-Ordinator's
Mr. G. Ramesh
AP/ECE, KARE

Mr. G. Karthy
AP/ECE, KARE

E-Certificate will be provided

Figure 4.5.1.A.14: Online Industrial Lecture Brochure



KALASALINGAM
ACADEMY OF RESEARCH AND EDUCATION
(DEEMED TO BE UNIVERSITY)
Under sec. 3 of USC Act 1956. Accredited by MAAC with "B" Grade

SCHOOL OF ELECTRONICS AND ELECTRICAL TECHNOLOGY
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Industrial Lecture on SAP Orientation Program

OBJECTIVE

In this Industrial Lecture describe about tangible and Intangible benefits of training for individual. We will also summarize the value of training. We will guide you to understand the easiest way to navigate the SAP Training

Target Audience
Final Years

Resource Person
Mr.Prakash, (Alumni 2016-20)
Program Analyst, CTS
Mr.Harikrishnan, (Alumni 2016-20)
Program Analyst, CTS

Join Teams
<https://bit.ly/3jVVMKw>

17/07/2021-09.30 am to 11.30 am

INNOVATION
ideas, imagination, motivation, success, finance, vision, communication, management, original, new, business, operations, design, strategy, focus, method, creative, development, company

Convener
Dr.M.Kalpana, HoD/ECE, KARE

Coordinators
Mrs.N.Bhuvaneswary, AP/ECE
Dr.A.Lakshmi, Asso.Prof/ECE
Mr.M.Sakthimohan, AP/ECE

Figure 4.5.1.A.15: Online Industrial Lecture Brochure

4. IEDC (Innovation and Entrepreneurship Development Centre)

IEDC in KARE intends to develop an institutional mechanism to create Entrepreneurial culture in academic institutions to foster the growth of innovation and Entrepreneurship among the faculty and students.

a. Academic year 2018-2019:

Table 4.5.1.A.11: IEDC Events conducted in Academic Year 2018-19

Date	Expert Members	Title of the Event	School	No.	Fund
10/08/2018	Mani James, Forst & Sullivan	Industrial Workshop on Mega Trends & IPR	SEET	70	KARE Fund

08/03/2019	Dr. Dhanalakshmi, CED Madurai	Women Entrepreneurship	All	70	KARE Fund
08/01/2019	Shri. Anand Mahindra, Chairman, Mahindra Group	India First Leadership Talk 1st Episode	All	25	KARE Fund
24/01/2019	Dr. Anand Deshpande, Founder, Chairman & Managing Director Persistent Systems Ltd	2nd Episode of India First Leadership Talk	All	120	KARE Fund
19/03/2019	Dr. Ajit Doval, NSA, Govt. of India	3rd Episode of India First Leadership Talk	All	162	KARE Fund
10/05/2019	Prof. Anil D. Sahasrabudhe, Chairman, AICTE	Episode 04 of India First Leadership Talk	All	142	KARE Fund
10/01/2019	Ms. Shwetasree, Principal, Fidus Law Chamber Dr. J. Deny, President, KARE-IIC	Workshop on IPR for Students and Faculty Members	All	86	KARE Fund
14/06/2019	Mr. Ragupathi Muthu, Director, Minniyal Pvt. Ltd	Proof of Concept Exhibition	All	114	KARE Fund
15/02/2019 to 18/02/2019	Mr. N. POTHIRASAN, Director, Raj Bio Electronics And, Intelligent Private Limited Mr. Sankaranarayanan G, Business Consultant, JCI, Rajapalyam	Entrepreneurship Awareness Camp	SEET	75	Rs.20,000/- Funded by EDII & DST

22/02/2019 to 24/02/2019	Mr. V. MUNEESWARAN, Director, Raj Bio Electronics and Intelligent Private Limited Mr R. N. Ragupathi Muthu, Director, Minniyal Pvt. Ltd	Entrepreneurship Awareness Camp	SEET	77	Rs.20,000/- Funded by EDII & DST
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Figure 4.5.1.A.16: Entrepreneurship Awareness Camp



Figure 4.5.1.A.17: Workshop on IPR for Students and Faculty

Table 4.5.1.A.12: Student's projects supported by IEDC (Rs. 1 Lakh /Project)

SI. No.	Title of the Project	Department	Guide Name	Students Name
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1	Development of Electronic Lockers with Multiple keys using Visual Cryptography Scheme	CSE and ECE	Dr. K. Suthendran	Sai Anand. M Harish R
2	Smart Tube light	ECE	Dr. J. Deny Mr. V. Ramachandran	R. Vengat Rahul

b. Academic year 2019-2020:

Table 4.5.1.A.13: IEDC Events conducted in Academic Year 2019-20

Date	Resource Person	Event Title	Department	No.
22/08/2019	Honble HRD Minister Shri Ramesh Pokhriyal Nishank.	India First Leadership Talk Series	ECE	75
19/09/2019 to 20/09/2019	Mr. Pothirasan, Director, Raj Bioelectronics and Intelligent Pvt.Ltd	Hands on Workshop on PCP Design and Fabrication	ECE, BME	71
05/08/2019	Shri Narayana Murthy, Founder	Dr. N. Seshagiri memorial Lecture 2019	All	133
06/08/2019	Prof. K. Vijayaragavan Principal Scientific Adviser to the Government of India.	Agni-Enabling Technology Commercialization	ECE, KBS	97

09/11/2019	Dr. J. Deny, President-IIC, KARE, Mr. Ragupathi Muthu, Director, Minniyal Pvt. Ltd	Demo Day	All	87
15/10/2019	Mr. Ragupathi Muthu, Director, Minniyal Pvt. Ltd Mr. Pothirasan, Director, Raj Bioelectronics and Intelligent Pvt. Ltd	Innovation Day Campaign	All	220
24/01/2019	Mr. Thirupatthi & Mr. Govindaraj Assistant Directors, MSME	MSME Demo Day	All	112
08/02/2020	Mr. Ragupathi Muthu, Director, Minniyal Pvt. Ltd Dr. J. Deny, President-IIC, KARE,	Internal Smart India Hackathon 2020	All	144

21/02/2020 To 23/02/2020	Mr Rammiah Chidambaran Founder-CEO Whizifi Robotics Pvt. Ltd Dr. J. Deny, President-IIC, KARE,	Entrepreneurship Awareness Camp	ECE	77
28/02/2020	Dr. J. Deny, President-IIC, KARE, Dr B. Peruaml Convener-IIC, KARE,	Science Day	All	156
29/02/2020	Mr. Prabhu Swaminathan Founder Director Lafors Talent Solutions India Pvt. Ltd Chennai	IIC-ISTE Innovation Contest	All	126

06/03/2020 To 08/03/2020	Dr. E. Muthukumaran, President-IIC Dr B R Ambedkar Institute of Technology Mr. Ragupathi Muthu, Director, Minniyal Pvt. Ltd Dr. J. Deny, President-IIC, KARE,	Entrepreneurship Awareness Camp	ECE, BME	117
07/04/2020	Mr. Abhishek Suryawanshi, Director, Wikipedia Swastha	IIC- India First Leadership Talk Series	All	102
08/04/2020	Prof. K Vijay Raghavan, Principal Scientific Adviser, Government of India	IIC- India First Leadership Talk Series	All	128
09/04/2020	Prof. Anil D. Sahasrbudhe, Chairman, AICTE	IIC- India First Leadership Talk Series	All	104
10/04/2020	Prof. Partha Chakraborty, Chairman National Digital Library, Ex-Director, IIT Kharagpur	IIC- India First Leadership Talk Series	All	132
11/04/2020	Mr. Abhishek Singh, CEO, My Gov	IIC- India First Leadership Talk Series	All	136
13/04/2020	Dr. VK Saraswat, Member NITI Aayog	IIC- India First Leadership Talk Series	All	106

14/04/2020	Dr. Anand Deshpande, Founder, Chairman & Managing Director, Persistent Systems Ltd	IIC- India First Leadership Talk Series	All	125
15/04/2020	Ms. Shradha Sharma, Founder, and Chief Editor, YourStory.com	IIC- India First Leadership Talk Series	All	124
16/04/2020	Dr. Vinay Sahasrabhddhe, President, ICCR	IIC- India First Leadership Talk Series	All	122
17/04/2020	Mr. Ronnie Screwvala	IIC- India First Leadership Talk Series	All	130
18/04/2020	Prof. K.K Aggarwal, National Board of Accreditation (NBA), Govt. of India	IIC- India First Leadership Talk Series	All	147
20/04/2020	Mr. Yashraj Bhardwaj, Co-Founder, Zenith Vipers & Partner Ensure Equity	IIC- India First Leadership Talk Series	All	126
21/04/2020	Dr.Gurung Desh Deshpande, Indian- American Venture Capitalist & Entrepreneur	IIC- India First Leadership Talk Series	All	132
22/04/2020	Padma Shri, Vaidya Rajesh Kotecha, Secretary Ministry of Ayush, Govt of India	IIC- India First Leadership Talk Series	All	148
23/04/2020	Mr. Gautam Bambawale, Ex-Indias Ambassador to China	IIC- India First Leadership Talk Series	All	116

27/04/2020	Dr. BVR Mohan Reddy, Chairman Cyient & Ex-Chairman NASSCOM	IIC- India First Leadership Talk Series	All	108
27/04/2020	Prof. Sherin Sam Jose, CEO, Startup Valley Amal Jyothi College of Engineering, Kottayam	Online FDP on Innovation and Entrepreneurship	All	132
28/04/2020	Mr. Dipan Sahu, National Coordinator - IIC, ARIIA, NISP Innovation Cell, Ministry of HRD, Govt. of India	National Innovation and Start-up Policy for Students and Faculty 2019	All	82
29/04/2020	Mr. Muthu Singaram CEO, IIT Madras, Chennai	Role and Importance of Pre-Incubators, Incubators and Accelerators in HEIs - Harnessing Innovation and Entrepreneurial Potential of Students and Faculties at Early Stage	All	90
30/04/2020	Ms. Vandana Thakur Female Innovator cum Entrepreneur, Canada India Acceleration Mr. Amit Sanjay Lokhande Innovator Cum Entrepreneur, India-South Korea Start-up Exchange	Hangout with Emerging Innovator & Entrepreneurs Supported through MIC & AICTE	All	94
01/05/2020	Ms. Geetika Dayal Executive Director, TiE Delhi- NCR	Role of Network Enablers in driving I&E in HEIs - A Case of TiE, India	All	87

02/05/2020	Dr. Madhuri Kanitkar, Lieutenant General	IIC- India First Leadership Talk Series	All	176
09/05/2020	Prof DB Singh Chairman -UGC	IIC- India First Leadership Talk Series	All	187
04/05/2020	Dr. Pankaj Parashar CEO/Founder Cutting edge Technology Pvt. Ltd., Indore	Hangout with Successful Start-up Founder	All	83
05/05/2020	Dr. Sunil Shukla Director general, EDII, Ahmedabad	Entrepreneurship, Business Idea and Business Model Canvas	All	89
05/05/2020	Malaikannan Sankarasubbu, VP of AI Research, Saama Technologies USA	Webinar on Recent Research Opportunities in AI and ML	Research Scholars	120
06/05/2020	Prajakta Kulkarni Founder, Director, Nodes Pvt. Ltd., Pune Sanket Inamdar Co-founder, CEO, Nodes Pvt. Ltd, Pune	How to Identify Right Problem and Solution using the Double Diamond Approach in Design	All	83
07/05/2020	Dr Sanjeeva Kumar Majumdar Manager-IPR, Start-up & Incubation National Research Development Corporation, New Delhi	Intellectual Property (IP) Management at Early Stage of Innovation and Start-ups	All	91

08/05/2020	Mr. Sushanto Mitra CEO, Lead Angels	Understanding Angel and Venture Capital Funding - What is there for Early-Stage innovator & Entrepreneurs	All	86
12/05/2020	Mr. Harit Mohan Founder & CEO of Signicent LLP in India and Signicent LLC in the US	Legal and Ethical Steps - Productive Entrepreneurship and Start-up	All	71
13/05/2020	Prof. Sanjay Inamdar Chairman, AICTE Start-up Policy Implementation Committee and Entrepreneur	Innovating Self- Screen and Identify right opportunities	All	68
14/05/2020	Dr. Preet Deep Singh AVP, Invest India	Understanding Role and Application of Marketing Research at Idea to Start up Stage - Foundation Level	All	72



Figure 4.5.1.A.18: Entrepreneurship, Business Idea and Business Model Canvas



Figure 4.5.1.A.19: Science Day



Figure 4.5.1.A.20: MSME Demo Day



Figure 4.5.1.A.21: Innovation Day Campaign



Figure 4.5.1.A.22: Agni-Enabling Technology Commercialization

c. Academic year 2020-2021:

Table 4.5.1.A.14: IEDC Events conducted in Academic Year 2020-21

SI. No.	Title	Event Date	No of Participants	Fund
1	Workshop on “Entrepreneurship and Innovation as Career Opportunity”	22/08/2020	75	KARE Fund
2	Orientation Session on National Education Policy (with a focus on Innovation and entrepreneurship)	21/09/2020	120	KARE Fund
3	Entrepreneurship Orientation Camp 1	10/09/2020	112	KARE Fund
4	Entrepreneurship Orientation Camp 2	11/09/2020	124	KARE Fund
5	Entrepreneurship Orientation Camp 3	14/09/2020	108	KARE Fund
6	Entrepreneurship Orientation Camp 4	15/09/2020	126	KARE Fund

7	Entrepreneurship Orientation Camp 5	16/09/2020	118	KARE Fund
8	Entrepreneurship Orientation Camp 6	17/09/2020	108	KARE Fund
9	Project-Way finder to Career opportunities	05/08/2020	74	KARE Fund
10	Online Training on Intellectual Property Rights	17/08/2020	36	KARE Fund
11	Awareness Program for Tamil Nadu student Innovators Award 2020	30/08/2020	100	KARE Fund
12	Idea/ PoC pitching & validation	04/12/2020	142	KARE Fund
13	KAPILA: Kalam Program for IP Literacy and Awareness	15/10/2019 to 23/10/2020	76	Through MIC
14	How to Apply for a Government Innovative Entrepreneur Project!!!	04/01/2021	45	KARE Fund
15	National Level Workshop on WRITING A PROJECT PROPOSAL FOR FUNDING	12/01/2021	64	KARE Fund
16	Session on identifying Intellectual Property component at the early stage of Innovation	13/01/2021	82	KARE Fund
17	Orientation Session on National Innovation and Start-up Policy (NISP)	30/01/2021	112	KARE Fund
18	Entrepreneurship Motivation Training for Polytechnic Students	11/02/2021	89	KARE Fund

19	TNSI 2020 Boot camp	25/02/2021 to 27/02/2021	70	Funded by EDII, Tamilnadu
20	Alumni Entrepreneur Interaction	09/03/2021	82	KARE Fund
21	Next Step into Business	12/03/2021	75	KARE Fund
22	Leadership Talk on “From your Masters/PhD Thesis into a startup”	23/04/2021	84	Through MIC
23	Session on Why IP is Important in academia?	26/04/2021	92	Through MIC
24	ISTE Innovation Contest	07/05/2021	120	KARE Fund
25	Webinar on Challenges and Opportunities for Success	07/05/2021	100	KARE Fund

Student Start-up Companies incubated in KARE:

SI. No.	Project Title	Dept	Company Name
1.	Smart Cart for SuperMarket	CSE, ECE	Yugti Smart Solutions Pvt. Ltd.

5. FSAI ([Fire & Security Association of India](#))

FSAI in KARE is working with a motto to establish Life Safety and Security as an important human obligation in the economic development of the country and use this as an index for future.

a. Academic year 2018-2019:

Table 4.5.1.A.15: FSAI Events conducted in Academic Year 2018-19

Date	Event	Resource person	Event Description
------	-------	-----------------	-------------------

22/10/2018 to 23/10/2018	Numerical Analysis using MATLAB	Dr. Mahesh Anand, CTO, SCS India, Chennai	Numerical analysis is a branch of mathematics that solves continuous problems using numeric approximation. ... MATLAB® is widely used for applied numerical analysis in engineering, computational finance, and computational biology.
25/10/2018	Applications Of Electronic Circuits for An Industrial Perspective	Mr. B. Veerasamy, Associate Professor, Department of ECE, Hindustan College of Engineering and Technology, Coimbatore	Understand and apply concepts of sequential logic design to implement circuits. Understand and apply concepts of state machines
25/10/2018	Workshop for Core Competent Electronics Engineers	Dr. Vimalathithan Director, Krish Tech, Coimbatore	Thorough understanding of the Core Subject Planning and Organization Skills
26/10/2018	Two days technical workshop on RF Applications & Software Defined Radio Using NI LabVIEW & Hardware (NI- USRP)	Mr. Sathya Narayana, VI Solutions Bangalore.	This workshop was to acquaint the participants with the basic principles, developments, and research trends in antennas and wave propagation. The workshop has covered the perfect combination of theory and practical sessions in the well-balanced manner
29/04/2019	Technology development with TCAD	Mr. A S Varun Gaikwad, Regional Manager, Nanochip Solutions, Bangalore.	Technology Computer-Aided Design (TCAD) refers to the use of computer simulations to develop and optimize semiconductor processing technologies and devices.

 **KALASALINGAM**
ACADEMY OF RESEARCH AND EDUCATION
(DEEMED TO BE A UNIVERSITY)
Under Section 3 of MGC Act 1956
SCHOOL OF ELECTRONICS AND ELECTRICAL TECHNOLOGY
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
(Established in 1973-74)

SCHOOL OF ELECTRONICS AND ELECTRICAL TECHNOLOGY
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Cordially invites you for the two day workshop
On
“Numerical Analysis using Matlab”
With Technical Support
By
 Scientific
Computing
Solutions
Scientific Computing Solutions (SCS), Chennai
Held on
22nd and 23rd October 2018
Resource Person
Dr. Mahesh Anand
CTO, SCS – India, Chennai
Co-ordinators
Ms. Josephine Selle Jeyanathan, AP / ECE
Mr. R. Radeep Krishna, AP / ECE
Mr. V. Muneeswaran, AP / ECE
Venue: VLSI Lab, 8th Block II Floor & DSP SD Lab, 3rd block II floor.

Figure 4.5.1.A.23: Numerical Analysis using Matlab

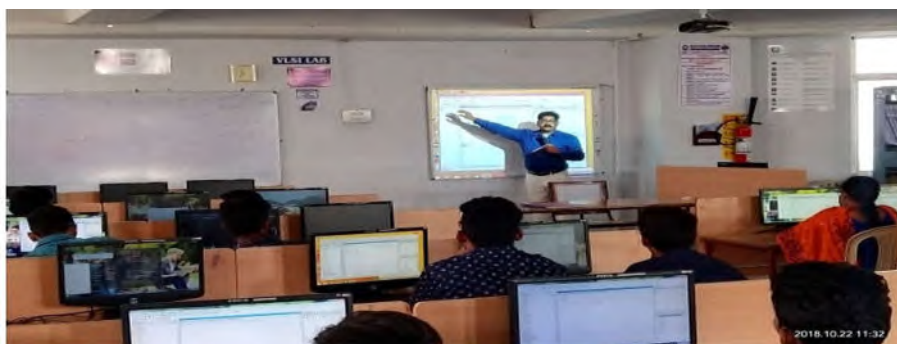


Figure 4.5.1.A.24: Numerical Analysis using Matlab



Figure 4.5.1.A.25: Two days technical workshop on RF Applications & Software Defined Radio Using NI LabVIEW & Hardware (NI-USRP)



Figure 4.5.1.A.26: Applications Of Electronic Circuits For An Industrial Perspective


<p>KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION (DEEMED TO BE UNIVERSITY)</p> <p>A TWO-DAY WORKSHOP ON APPLICATIONS OF ELECTRONIC CIRCUITS FOR AN INDUSTRIAL PERSPECTIVE 25th & 26th OCTOBER, 2018</p>  <p>Organized by DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING SCHOOL OF ELECTRONICS AND ELECTRICAL TECHNOLOGY KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION (DEEMED TO BE UNIVERSITY) KRISHNANKOIL, TAMIL NADU-626 126</p>	<p>ORGANISING COMMITTEE</p> <p>Chief Patron: Dr. K. Sridharan, Chancellor, KARE Dr. S. Shasi Anand, Vice President, KARE</p> <p>Patron: Dr. S. Saravana Sankar, Vice-Chancellor, KARE</p> <p>Convenor: Dr. P. Siva Kumar, Professor & HoD/ECE</p> <p>Co-ordinators: Dr. J. Charles Pravin Dr. B. Perumal Mrs. C. Swedheetha Mr. R. Krishnasamy</p> <p>ADDRESS FOR CORRESPONDENCE Dr. P. Siva Kumar Professor & HoD/ECE, KARE, Krishnankoil - 626 126</p>	<p>REGISTRATION FORM</p> <p>WORKSHOP ON APPLICATIONS OF ELECTRONIC CIRCUITS FOR AN INDUSTRIAL PERSPECTIVE 25th & 26th OCTOBER, 2018</p> <p>1. Name:</p> <p>2. Institute:</p> <p>3. Address:</p> <p>4. Contact Mobile No:</p> <p>5. Email:</p> <p>Place:</p> <p>Date:</p>
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Figure 4.5.1.A.27: Applications Of Electronic Circuits For An Industrial Perspective Brochure

<p>KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION</p> <p>IEEE ELECTRON DEVICES SOCIETY COIMBATORE CHAPTER SPONSORED</p> <p>TWO-DAY WORKSHOP ON TECHNOLOGY DEVELOPMENT WITH TCAD 29th & 30th APRIL, 2019</p>  <p>Organized by DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION MDR 194, KRISHNAN KOVIL, TAMIL NADU-626126</p>	<p>ORGANISING COMMITTEE</p> <p>Chief Patron: Dr. K. Sridharan, Chancellor, KARE Dr. S. Shasi Anand, Vice President, KARE</p> <p>Patron: Dr. R. Nagaraj, Vice-Chancellor, KARE</p> <p>Convenor: Dr. P. Siva Kumar, Professor & HoD/ECE</p> <p>Co-ordinator: Dr. J. Charles Pravin Mob: 9566368171 Mr. Jenyfal Sampson Mob: 8667207558</p> <p>ADDRESS FOR CORRESPONDENCE Dr. P. Siva Kumar Professor and HoD/ECE, KARE, Krishnankoil - 626 126</p> <p>SPONSORED BY IEEE ELECTRON DEVICES SOCIETY COIMBATORE CHAPTER  NANOCHIP SOLUTIONS PVT LTD </p>	<p>REGISTRATION FORM</p> <p>WORKSHOP ON TECHNOLOGY DEVELOPMENT WITH TCAD 29th & 30th APRIL, 2019</p> <p>1. Name:</p> <p>2. Institute:</p> <p>3. Designation:</p> <p>4. Address:</p> <p>5. Contact Mobile No:</p> <p>6. Email:</p> <p>7. DD Number/Date:</p> <p>8. Drawn at:</p> <p>Place:</p> <p>Date: Signature</p> <p>SIGNATURE OF THE PARTICIPANT</p> <p>SIGNATURE OF THE HEAD OF THE INSTITUTION/DEPARTMENT (WITH SEAL)</p>
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Figure 4.5.1.A.28: Technology development with TCAD brochure



Figure 4.5.1.A.29: Technology development with TCAD

 <p>KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION (DEEMED TO BE UNIVERSITY)</p> <p>Two days technical workshop on RF Applications & Software Defined Radio Using NI LabVIEW & Hardware (NI-USRP) 26th & 27th October 2018</p> <p>REGISTRATION FORM</p> <p>Name: _____</p> <p>Organization: _____</p> <p>Designation: _____</p> <p>Department: _____</p> <p>Professional Category (Please Tick):</p> <p><input type="checkbox"/> Industry <input type="checkbox"/> Academic</p> <p>Accommodation Required</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Communication Address: _____</p> <p>Phone : _____</p> <p>Mobile: _____</p> <p>E-mail: _____</p> <p>Signature of the Applicant: _____</p> <p>Signature of the Head of the Institution: _____</p>	 <p>KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION (DEEMED TO BE UNIVERSITY)</p> <p>Two days technical workshop on RF Applications & Software Defined Radio Using NI LabVIEW & Hardware (NI-USRP) 26th & 27th October 2018</p> <p>ORGANIZING COMMITTEE</p> <p>Chief Patrons</p> <p>Dr. K. Sridharan, Chancellor, KARE.</p> <p>Dr. S. Shasi Anand, Vice-President/Academic, KARE.</p> <p>Dr. S. Arjun Kalasalingam, Vice-President/Admin, KARE.</p> <p>Patrons</p> <p>Dr. S. Saravana Sankar, Vice-Chancellor, KARE.</p> <p>Dr. V. Vasudevan, Registrar, KARE.</p> <p>Dr. D. Devaraj, Dean/SEET and Director-Academic, KARE.</p> <p>Convener</p> <p>Dr. M. Pallikonda Rajasekaran, Center Head/KARE-NI-TIC & Controller of Examinations, KARE.</p> <p>Dr. P. Sivakumar, HoD / ECE, KARE.</p> <p>Coordinators</p> <p>Mr. M. Thilagaraj, Coordinator- NI-TIC, KARE.</p> <p>Mr. V. Muneeswaran, AP-1/Department of ECE, KARE.</p>	 <p>KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION (DEEMED TO BE UNIVERSITY)</p> <p>KARE-NI TECHNOLOGY INNOVATION CENTRE with DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING</p> <p>Organizes</p> <p>Two days technical workshop on RF Applications & Software Defined Radio using NI LabVIEW & its Hardware (NI-USRP)</p> <p>26th & 27th October 2018</p>   <p>KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION (DEEMED TO BE UNIVERSITY)</p> <p>SCHOOL OF ELECTRONICS AND ELECTRICAL TECHNOLOGY DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING</p>
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Figure 4.5.1.A.30: Two days technical workshop on RF Applications & Software Defined Radio Using NI LabVIEW & Hardware (NI-USRP)

6. ASELCOME - Electronics and Communication Engineering Department Association

Electronics and Communication Engineering Department Association supports students by conducting various events like Technical and Non-Technical Events Inter Department and Intra Department Symposium, Sport Day and Guest lecturers to upgrade student's profile.

Some of the events conducted in last three years are listed as follows:

Table 4.5.1.A.16: ASELCOME Events conducted in ECE

SI. No.	Date	Title of the Event Outcome	Outcome
1.	14/11/2018	SPORTFEST 2k18	The Inter Department Sports day "SPORTFEST 2k18" was conducted by the Department of Electronics and Communication Engineering on 14th November 2018, at Kalasalingam University. The events like volleyball, cricket, throw ball, basketball and athletics were conducted for both boys and girls. They have participated in all the events. The events of the day were judged by the Physical Directors of Kalasalingam University.
2.	18/02/2019	EXPRESSO 2k18	The Association of the Department of Electronics and Communication organizes this event to encourage the students and provide them the opportunities to express their competency with students from other colleges and Universities. The Department of ECE has thus organized the Non – Technical Event "EXPRESSO 2k18" on 18 th February 2019
3.	14/10/2018	TARANG 2k18	The Department of ECE had organized the University Level Non – Technical Event "TARANG 2k18" on 14 th October 2018. About 223 students from various departments of the University participated in the non-Technical events such as Multi-tasking, Spot Event, Best Manager, Dubs Mash, Short Film, and Grand Master. The winners and runners of the events were awarded with prizes.
4.	18/03/2019	Sports Day 2k19	The Sports day was conducted on 18th March 2019, at Kalasalingam University. The events like volleyball, cricket, throw ball, basketball and athletics were conducted for both boys and girls. They have participated in all the events. The events of the day were judged by the Physical Directors of Kalasalingam University.

5.	15/03/2019	TARANG 2K19	<p>The Department of ECE has organized a University Level Non-Technical competition for the students at the University under the banner of "TARANG 2K19" on 15th March 2019.</p> <p>About 252 students from various departments of the University participated in the non-Technical events such as Multi-tasking, Spot Event, Best Manager, Dubs Mash, Short Film, and Grand Master. The winners and runners of the events were awarded with prizes.</p>
6.	08/08/2020	A National Level Technical Virtual Symposium & Non-Technical E.	<p>Demonstrate a greater understanding about to the field.</p> <p>Demonstrate an increased level of confidence in their ability to perform academically and socially. (Self-Efficacy)</p> <p>Increase professional interaction through interpersonal skills with other students and faculty.</p> <p>Articulate a greater understanding of how their achievements can contribute to their field, community, nation and/or world.</p>
7.	26/02/2021	YUVA 2k21	<p>Departmental Level Sports meet conducted in the name of "YUVA 2k21" Sports teaches mental and physical discipline.</p>
8.	28/04/2022	ELEXRIEG 2K22 - INTRA DEPARTMENT SYMPOSIUM	<p>The Department of ECE has organized a University Level Non-Technical competition for the students at the University under the banner of " ELEXRIEG 2K22"</p>

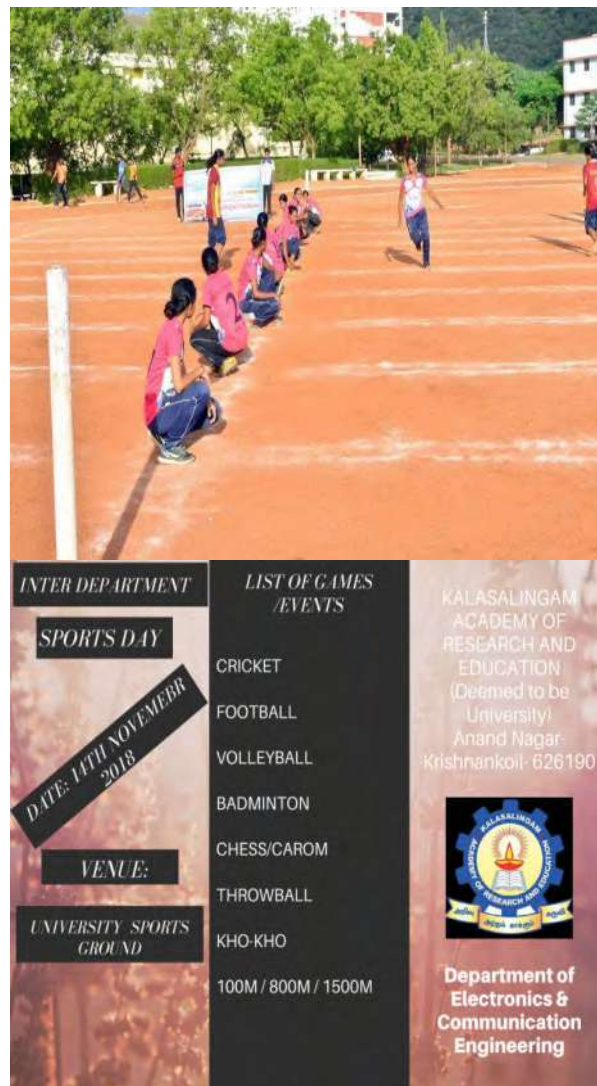



Figure 4.5.1.A.31: SPORTSFEST 2k18 Brochure and Students participation





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Akad Nagar, Krishnankottai - 626 120
 Sivakapoor Jct, Virudhunagar (TN)
 Tamil Nadu, India.
 Ph : 04563 288012 / 22 / 32 / 462 / 467 / 13
 E-MAIL : admission@kva.ac.in

&

The DEPARTMENT OF ECE

ORGANIZES

EXPRESSO 2K18

DATE: 18TH FEBRUARY 2019

TIME: 9.00 AM TO 4.00 PM

VENUE: K. S. KRISHNAN AUDITORIUM.

EVENTS ORGANIZED:

SHERLOCK HOLMES
SHORT FILM
BE A SUPERHERO

MUSICALLY
MULTITACHE
MEME ZONE

CO-ORDINATORS
FACULTY & STUDENTS OF ECE

EXPRESSO 2k18

Figure 4.5.1.A.32: EXPRESSO 2k18 and Dignitaries on the Dias - EXPRESSO 2k18



Figure 4.5.1.A.33: TARANG 2k18 Brouchure TARANG 2k18 Participants



Figure 4.5.1.A.34: Sports Day 2k19 Brochure and Student participation in Sports Day 2k19



Figure 4.5.1.A.35: TARANG 2k19 Brochure and Students getting award on TARANG 2k19

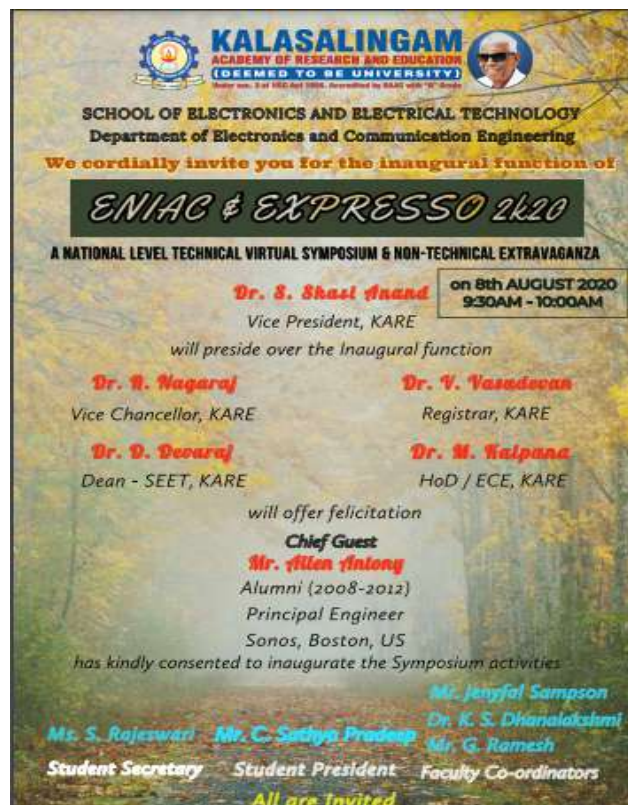


Figure 4.5.1.A.36: ENIAC & EXPRESSO 2K20 Brochure



Figure 4.5.1.A.37: YUVA 2k21 Brochure

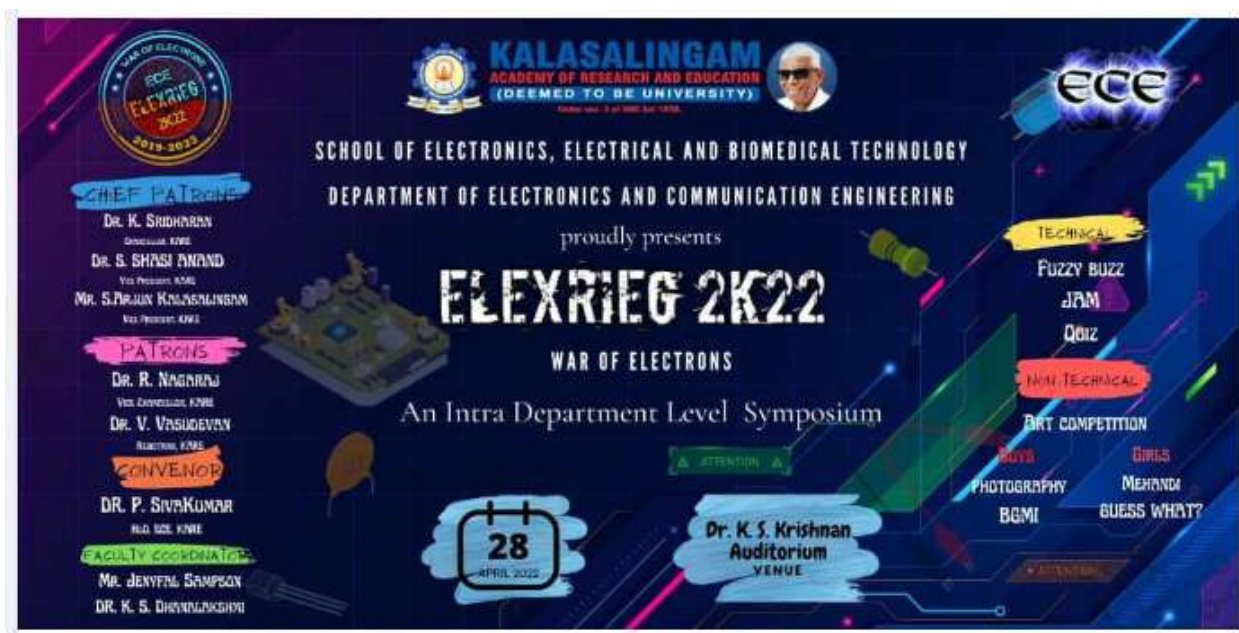


Figure 4.5.1.A.38: ELEXRIEG 2K22 Brochure

7. Electronics Fun Club

EFC in KARE is the technical club aimed to introduce the design of simple electronic circuits using basic electronic devices, components and ICs. To familiarize the design of electronic circuits in line with the curriculum with emphasis on realization in PCB boards and troubleshooting the circuits. It is also responsible to create awareness about advancing technology for the benefit of doing the real time projects during their study on campus. The senior students are highly appreciated to volunteer in conduction workshops and events for their juniors.

SI. No.	Reg No	Name	Faculty Advisor	Mobile Number
1	9918005023	M. Hemanth Chandra	Dr. J. Charles Pravin	9701942501
2	9819005002	K. David Ratna Raj	Dr. K. S. Dhanalakshmi	9603740269
3	9918005039	P. Naveen Gandhi	Dr. J. Charles Pravin	6302553976
4	9918005026	M. Venkata Ganesh	Dr. J. Charles Pravin	9640176029
5	9918005072	K. Muralidhar Reddy	Dr. K. S. Dhanalakshmi	9381125375

6	9918005008	Ch. Sairam	Dr. J. Charles Pravin	6302488842
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Table 4.5.1.A.17: Events conducted during the academic year 21-22

Sl. No.	Name of the event	Resource person	Event details	Student participation
1	Hands-on workshop on PCB Design and Simulation	Mr. Pothi, Hashan Medicare, Rajapalayam	26/03/2021	65
2	Fundamentals of Electronics	Er. U. Uma Maheswaran, Spectrum InfoTech, Virudhunagar	11/12/2021	53



Figure 4.5.1.A.39: Fundamentals of Electronics workshop session handled by Resource Person



Figure 4.5.1.A.40: PCB design and Simulation workshop resource person with participants

4.5.2. Publication of technical magazines, newsletters, etc. (5/5)

The Department of Electronics and Communication Engineering publishes one Departmental Magazine every semester and one Newsletter every year as shown in table 4.5.2.1.

Electrocomm – ECE Department Magazine was initiated in the year of 2009 as Volume 1 and Issue 1 and now it has successfully crossed 12 years. Thus currently we are in the Electrocomm Volume 12, Issue 24.

The purpose of the magazine is to provide a platform to the students and faculty members to give their technical and non-technical views and to exhibit their skills such as poem writing, pencil sketches and Photography etc. The magazine acts as synchronization between academic learning and recent trends and developments, and covers extra-curricular activities, thereby providing all round development of students. This magazine is run by the students and for the students to achieve their objectives.

The department Newsletter, also published once in a year, features articles about the faculty details such as their research works, abroad visit, their awards and recognition, etc. It also comprises Department activities such as Workshops / Guest lectures organized, Conference conducted and the participation of students in various activities like Gate, BEC and SAP training programs and getting certified. It also has the backup of Placement records of the final year students and also the co-curricular and extracurricular activities of the Notable students.

Table 4.5.2.1 – Details of Newsletter and Magazine

Year	Newsletter		Magazines		
	No. Of publications	Date of publication	No. of publications	Date of publication (Odd Sem)	Date of publication (Even Sem)
2018-19	1	5 May 2019	2	20 Dec 2018	16 Apr 2019
2019-20	1	18 June 2020	2	22 Dec 2019	25 Apr 2020
2020-21	1	15 May 2021	2	15 Dec 2020	10 May 2021
2021-22	1	28 April 2022	2		28 Apr 2022

a) Department of Electronics and Communication Engineering– Magazine
(The below table shows the general content available in each semester magazine)

Table 4.5.2.2 – Magazine Contents

S. No	Contents
1	Message(s)
2	Magazine Team members
3	Technical Articles
4	Non Technical Articles
5	Photography
6	Pencil sketches
7	Poems
8	Quiz and Mind Mapping Game

(b) Department of Electronics and Communication Engineering– Newsletter
(The below table shows the general content available in each year Newsletter)

Table 4.5.2.3 – Newsletter Contents

S. No	Contents
1	Message(s)
2	List of Teaching faculty
3	List of Ph.D awarded during the respective Year
4	Faculty Awards and Recognition

5	Conference/ Workshop / Symposium Organized
6	List of articles published in the journal of International Repute
7	List of Students Placed in Reputed Industries
8	Co curricular and Extra curricular events Organized

(c) Team involved in Magazine preparation and student participations:

Table 4.5.2.4 – Magazine Team

S. No.	Academic year	Semester	Editor	Co-editor	Students Participated
1.	2018-19	Odd Sem	Dr. S. Bama Associate Professor	Dhavanth.M, IV Year, Pranavi.A, III Year	110
2.	2018-19	Even Sem	Dr. S. Bama Associate Professor	Meghana.M, IV Year, Kumar Sai.G, III Year	135
3.	2019-20	Odd Sem	Dr. S. Bama Associate Professor	M.Siva Rama Krishnan, IV Year, M.Vijaya Darshini, II Year	140
4.	2019-20	Even Sem	Dr. K. S. Dhanalakshmi, Associate Professor	G.Likith, IV Year, E Pavithra, III Year	150
5.	2020-21	Odd Sem	Dr. K. S. Dhanalakshmi, Associate Professor	E Pavithra, III Year G.TarunSrinivasulu, II Year	225
6.	2020-21	Even Sem	Dr. K. S. Dhanalakshmi, Associate	A.Sravani, III Year, A.H.Vigneesh, II Year	240
7	2021-22	Odd Sem	Dr. K. S. Dhanalakshmi, Associate Professor	E Pavithra, IV Year G.TarunSrinivasulu, III Year	225
8	2021-22	Even Sem	Dr. K. S. Dhanalakshmi, Associate	A.Sravani, IV Year, A.H.Vigneesh, III Year	240

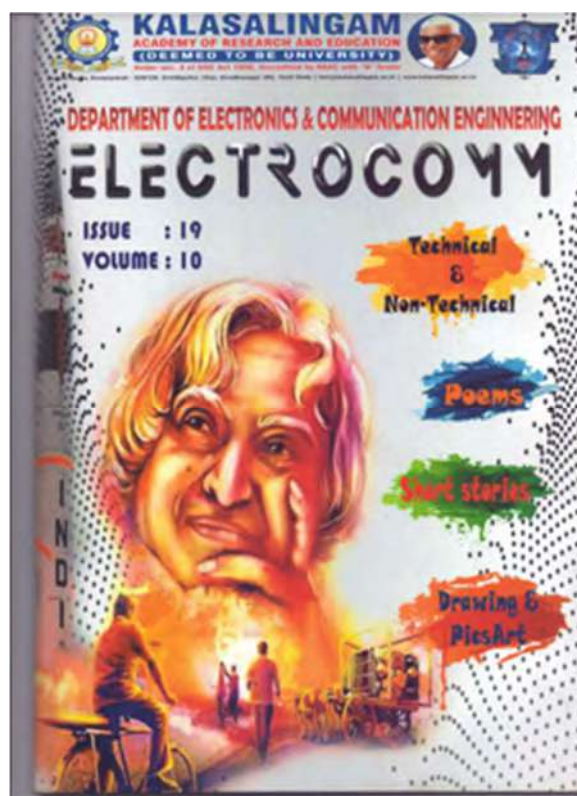


Figure 4.5.2.1: Electrocomm in 2018-2019 Odd sem



Figure 4.5.2.2: Department Magazine 2018 – 2019 Even sem

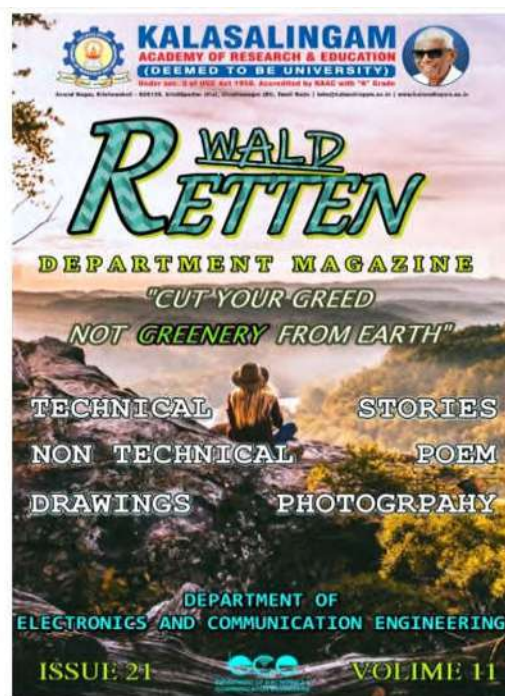


Figure 4.5.2. 3: Department Magazine 2019 – 2020 Odd sem

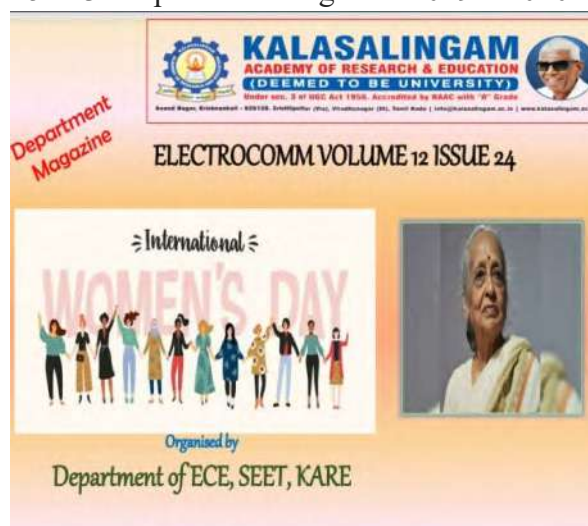


Figure 4.5.2.4: Electrocomm in 2019 – 2020 Even sem



Figure 4.5.2.5: Electrocomm in 2021 – 2022Odd sem



Figure 4.5.2.6: Electrocomm in 2021 – 2022 Even sem

(d) Team involved in Newsletter preparation:

Table 4.5.2.5: Magazine Team

S. No.	Academic year	Editor	Co-editor
1	2018-19	Dr. K. S. Dhanalakshmi, Associate Professor	Dhavanth. M, IV Year
2	2019-20	Dr. K. S. Dhanalakshmi, Associate Professor	G. Likith, IV Year
3	2020-21	Dr. K. S. Dhanalakshmi, Associate Professor	A. H. Vigneesh, III Year
4	2021-22	Dr. K. S. Dhanalakshmi, Associate Professor	C.Sai Ganesh IV Year

Conference organized

KALASALINGAM GLOBAL CONFERENCE-2019

The Kalasalingam Global Conference-2019 organized with a theme on Sustainable Development during 18.12.2019 to 20.12.2019 was grandeur and a remarkable interdisciplinary platform for the exchange of ideas among leading academicians, researchers, scientists, and research scholars in the emerging frontiers of research.



Figure 4.5.2.7: Dr. S. Shasi Anand Vice President KARE and Other plenary/keynote speakers released the KGC 2019 Proceedings



Figure 4.5.2.8: Dr. M. Kalpana HoD/ECE, Honoring the Chief Guest and the paper presented members in 9th Block



Figure 4.5.2.9: Dr. D. Devaraj, Dean SEET, Dr. Kim Prof/ECE, Dr. M. Kalpana HoD/ ECE, Dr. A. Ramkumar HoD/EEE, Dr. Yogeshwar HoD/ EIE with the Participants of KGC 2019



Figure 4.5.2.10: Prof. N. SundaraRajan, Emeritus Professor, Nanyang Technological University, Singapore delivered keynote address with the Research Team of SEET

ICASE2020

SEET school has organized International Conference with the Title "**International Conference on Recent Trends in Automation Signal Processing and Energy Systems**" on 19th and 20th June 2020 with the objective of initiating and sharing the research areas in various domains namely Image and Signal processing, Intelligent Systems and IoT, and Power and Energy Systems.

Various Committees comprising a group of faculties have been formed under the guidance of the School head as well as HoDs of ECE, EEE and EIE. The responsibilities and works to be carried out were discussed. Frequent meetings were conducted for the smooth conduction of the program.

Program committee members took part in organizing the program. Technical committee personnel took care of the paper receiving, reviewing, plagiarism checking etc. The Web and Internet committee undertook the web design, link creation etc. Certificate committee members took the responsibility of preparing the certificates.

The Invitation is shown in figure 4.5.2.9.



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Academy of Research and Education
(DEEMED TO BE UNIVERSITY)
Est'd U.S.I of UGC Act 1956. Accredited by NAAC with 'A' Grade



INTERNATIONAL CONFERENCE ON RECENT TRENDS IN AUTOMATION, SIGNAL PROCESSING AND ENERGY SYSTEM (ICASE-2020)

19th & 20th
June 2020



ABOUT THE CONFERENCE

The School of Electronics and Electrical Technology of Kalasalingam Academy of Research and Education is organizing the International Conference on Recent Trends in Automation, Signal Processing and Energy System-2020 on June 19th and 20th, 2020 through online. The objective of ICASE-2020 is to provide a common forum for the researchers, faculty members and students to exchange their ideas and research findings in the area of automation, signal processing and energy systems. The conference includes paper presentations and key note speeches by the experts on recent topics related to the above domains.

GUIDELINES FOR PAPER SUBMISSION

The Paper must be prepared in English limited to a maximum of 6 pages including references and must confirm to IEEE format. Only the soft copy (.doc) of the paper should be submitted.

CALL FOR PAPERS

Original and unpublished research Papers are invited from the authors related to the following topics:

- Robotics and Industrial Automation
- IoT in Building Automation
- Intelligent control
- Industry 4.0
- Image processing
- Bio signal processing
- Medical imaging
- Wireless Communication
- Power System Optimization
- Renewable energy technology
- Microgrid
- Smart grid technology

Organizing Committee

<p>Chief Patrons</p> <p>"Illayavallil" Dr.K.Sridharan Chancellor</p> <p>Dr.S.Shasi Anand Vice President</p> <p>Mr.S.Arjun Kalasalingam Vice President</p> <p>Patrons</p> <p>Dr.R.Nagaraj, Vice Chancellor</p> <p>Dr.V.Vasudevan, Registrar</p>	<p>Conference Chair</p> <p>Dr.D.Devaraj Dean / SEET</p> <p>Organizing Secretaries</p> <p>Dr.A.Ramkumar HOD/EEE</p> <p>Dr.M.Kalpana HOD/ECE</p> <p>Dr.V.Yogeshwar Chakrapani HOD/ECE</p>
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IMPORTANT DATES

Last date for paper submission	18 th June, 2020
Estimation of paper selection	12 th June, 2020
Last date for registration	15 th June, 2020

REGISTRATION FEE

Faculty members and research scholars	Rs. 500/-
UG / PG students	Rs. 300/-
Authors from abroad	10 \$

All the Selected papers will be published in the conference proceedings with ISBN Number.

ADDRESS FOR COMMUNICATION

Dr.D.DEVARAJ

Dean - School of Electronics and Electrical Technology
Kalasalingam Academy of Research and Education
Anand Nagar, Krishnasankoli, Srivilliputhur (via),
Virudhunagar (Dt.), Tamil Nadu - 626 126.
E-Mail: icasekare2020@gmail.com

FOR FURTHER DETAILS:
<https://icase20.weebly.com/>

**PAPER
SUBMISSION
LINK**



Organized by

School of Electronics and Electrical Technology, Kalasalingam Academy of Research and Education.

Figure 4.5.2. 11: ICASE2020 Conference Brochure


 KALASALINGAM Academy of Research and Education DEEMED TO BE UNIVERSITY Estd. U/S 3 of UGC Act 1956. Accredited by NAAC with "A" Grade Award Regd. No. 108128. Srirangapatnam (Vid), Virudhunagar (DT), Tamil Nadu info@kalasalingam.ac.in www.kalasalingam.ac.in					
SCHOOL of ELECTRONICS and ELECTRICAL TECHNOLOGY (SEET)					
INTERNATIONAL CONFERENCE ON RECENT TRENDS IN AUTOMATION, SIGNAL PROCESSING AND ENERGY SYSTEM (ICASE2020)- 19th & 20th, June 2020 Program Schedule					
Day 1: 19.06.2020					
Time	Event				
10:00 am to 10:45 am	Inauguration Zoom Link: https://us02web.zoom.us/j/81052346153?pwd=MTI5RnJlZmE4UzN6TmdGeWFOeEdOQT09				
10:45 am to 11:30 am	Key note 1: Enterprises Transition to Smart grid in Saudi Arabia Dr.Mounir Bouzguenda , Electrical Engineering, King Faisal University, Saudi Session In charge: Dr.A.Ram kumar, HoD/EEE Zoom Link: https://us02web.zoom.us/j/81052346153?pwd=MTI5RnJlZmE4UzN6TmdGeWFOeEdOQT09				
11:45 am to 1:00 pm	<table border="1"> <tr> <td> Session IA: Intelligent Systems and IoT Session In charge Mr.M.Karuppasamy pandiyan AP/EEE Mrs.P.Jeyanthi RS/EEE </td><td> Session IB: Image and signal processing Session In charge Mr. R. Radheep Krishna AP/ECE Ms.A.Kavi Priya RS/ECE </td></tr> <tr> <td> Session Chair (Internal) Dr.V.Agnes Idhaya Selvi Assoc. Prof/EEE KARE </td><td> Session Chair (Internal) Dr.Charles Pravin Assoc. Prof/ECE KARE </td></tr> </table>	Session IA: Intelligent Systems and IoT Session In charge Mr.M.Karuppasamy pandiyan AP/EEE Mrs.P.Jeyanthi RS/EEE	Session IB: Image and signal processing Session In charge Mr. R. Radheep Krishna AP/ECE Ms.A.Kavi Priya RS/ECE	Session Chair (Internal) Dr.V.Agnes Idhaya Selvi Assoc. Prof/EEE KARE	Session Chair (Internal) Dr.Charles Pravin Assoc. Prof/ECE KARE
Session IA: Intelligent Systems and IoT Session In charge Mr.M.Karuppasamy pandiyan AP/EEE Mrs.P.Jeyanthi RS/EEE	Session IB: Image and signal processing Session In charge Mr. R. Radheep Krishna AP/ECE Ms.A.Kavi Priya RS/ECE				
Session Chair (Internal) Dr.V.Agnes Idhaya Selvi Assoc. Prof/EEE KARE	Session Chair (Internal) Dr.Charles Pravin Assoc. Prof/ECE KARE				

Figure 4.5.2.12: ICASE2020 Conference Schedule

Program started with the Inaugural function on 19th June 2020 @ 10:00AM. Dr.D.Devaraj, School Dean welcomed the delegates, dignitaries and participants. Dr. S.Shasi Anand, delivered the presidential address. The University Vice Chancellor delivered the special address to the gathering. Mr.MH.Ravichandran, Division Head, SASD /ISRO, IS Unit delivered the inaugural address.

Dr.Mounir Bouzguenda, Electrical Engineering, King Faizal University, Saudi Arabia delivered the Keynote speech on “Enterprise Transition to smart grid in Saudi Arabia . Presentation sessions started in two parallel venues.

In the AN session, Dr.K.Shankar, EIE Department, NIT Silchar, delivered a keynote speech on “ Pain and its Challenges” to the participants. On 20-June 2020, Dr.G.Thavasi Raja, ECE Department, NIT Trichy delivered keynote speech on “ Applications of Specialty optical fibers and Photonic Integrated circuits for Communications, Sensing, and Industrial Applications” to the participants. In the AN session, Dr.S.R.Mahadeva Prasanna, IIT Dharwad delivered a keynote speech on “Pattern Recognition to Deep Learning” to the participants.

Presentation venues on the Title “Image and Signal Processing, Intelligent Systems and IoT, Power and Energy Systems” were arranged to exhibit the research works. Experts from other Institutes and our own University Reviewed the presentations and identified best papers in each Titles. Apart from these, Students demonstrated the Poster presentation. A total of 40 papers from ECE have been reviewed in the Conference. The best papers are under process for publication in Scopus and SCI Indexed journals. The program Ended with a valedictory function. Dr. Mani. K.S, Deputy Director, IISU, ISRO delivered valedictory speech.

All the experts who supported the conference by delivering keynote address and special address are thanked with appreciation letters as well as honorarium. Session experts who reviewed the papers are also acknowledged with appreciation letters and honorarium. All the

participants are appreciated with the certificates. Best paper winners are additionally honored with special certificates.

S. No.	Category	Count
1	Total number of papers received	50
2	Number of Papers selected and Registered	40
3	Number of Internal Participants	32
4	Number of External Participants	8
5	Number of Venues arranged	3 +1 (Poster Presentation)
6	Number of Best papers selected	One from Each i.e 3
7	Number of papers recommended for Journal publication	Approximately 15 from ECE

VIRTUAL INTERNATIONAL CONFERENCE

The Kalasalingam Academy of Research and Education (KARE) organized the Virtual International Conference on “Innovations in Interdisciplinary Research” (VICIIDR-2020) during June 23&24,2020 through online mode. The conference was inaugurated by our Vice-President Dr. S. ShasiAnand, Dr. R. Nagaraj, Vice- Chancellor of our University welcomed the participants. Dr. J.T.Winowlin Jappes (Deputy Organizing Chair) detailed the proceedings and agenda of the sessions. Eminent scientists from all over the world delivered the following lectures through online mode: 1. Dr. Filip Soute, Professor, Universidade Federal do Rio de Janeiro, Brazil, delivered the keynote address.

2. Dr. Shwetal Mehta, Faculty Member, Department of Neurobiology, Barrow Neurological Institute, USA, delivered a lecture on "Preclinical and Clinical Studies for Targeting Brain Tumors".

3. Dr. Nitin Muttli, Professor, Department of Civil Engineering, Victoria University, Melbourne, Australia, delivered a lecture on "Leak Management in a Water Distribution Network". 4. Dr. X. Felix Joseph, Faculty Member, Department of Electrical and Computer Engineering, Bule Hora University, Ethiopia, delivered a lecture on "A Novel Adaptive Morpho-HistoWavelet Denoising (AMHW) method in Pre-processing for Dental X-ray images".

5. Dr. Asai Asaithambi, Professor, Department of Computer Science, University of North Florida, USA, delivered a lecture on "Research Connections with Computer Science".

6. Dr. Gustavo F. S. Andrade, Faculty Member, Department of Chemistry, Federal University of Juiz de Fora, Brazil, delivered a lecture on "Preparation and Enhanced Spectroscopies of Plasmonic Nanostructures".

7. Dr. Sezen Arslan, Faculty Member, Department of English Learning Teaching, Yuzuncu Yil University, Turkey, delivered a lecture on " Dialogic Teaching in Digital Platforms for ELT ".

8. Dr. K.M. Ashifa, Faculty Member, Department of Social Work, Gelisim University, Turkey, delivered a lecture on "Interventions in Social Work Research".

9. Dr. K.R. Sundaravaradarajan, Professor, Department of Agricultural Economics, Annamalai University, India, delivered a lecture on "Interdisciplinary Research in Agricultural Sciences".

10. Ar. C.J. Kosalraman, Architect and Entrepreneur, Chennai, India delivered a lecture on "Architecture and Urban development".

600 Participants from all over the world attended the program and they were all benefitted by this International Conference.

 KALASALINGAM Academy of Research and Education DEEMED TO BE UNIVERSITY <small>Estd. U/S 3 of UGC Act 1956. Accredited by NAAC with "A" Grade</small> Anand Nagar, Kottarakott - 621729, Sri Lanka (VIA), Virendranagar (IN), Tamil Nadu info@kalasalingam.ac.in www.kalasalingam.ac.in			
Virtual International Conference on Innovations in Interdisciplinary Research (VICIIDR – 2020) SCHOOL OF ELECTRONICS AND ELECTRICAL TECHNOLOGY – Keynote Schedule			
	Link	Moderators	
 Dr. V. Jayaprakashan <small>Professor Department of Electronics and Communication Engineering Sreenidhi Institute of Science and Technology Telangana</small> Keynote Session 1	DAY 1: 23.06.2020 10.30 - 11.30 am <u>Dr. V. Jayaprakashan</u> Professor Department of Electronics and Communication Engineering Sreenidhi Institute of Science and Technology Telangana	Zoom Meeting ID: 827 399 7603 Password: KARE https://zoom.us/j/8273997603?pwd=Tmx3eGZlWnNGWnQYlNvL2M4dDlFU09	Mr. K. Vijayakumar Assistant Professor/EEE
 Dr. X. Felix Joseph <small>Assistant Professor, Electrical and Computer Engineering, Associate Dean for Wind farm Projects of Bule Hora University's Center for Excellence, Bule Hora University, Ethiopia</small> Keynote Session 2	DAY 1: 23.06.2020 02.00 - 3.00 pm <u>Dr. X. Felix Joseph</u> Assistant Professor, Electrical and Computer Engineering, Associate Dean for Wind farm Projects of Bule Hora University's Center for Excellence, Bule Hora University, Ethiopia	Zoom Meeting ID: 274 453 7068 Password: 9Jdyrg https://us02web.zoom.us/j/2744537068?pwd=aFExuMnJZZZ2FsbVo1TCFlcW1uSHdoLT09	Dr. A. Lakshmi Associate Professor/EEE
 Dr. S. Balamurugan <small>HoD/EEE Amritha University Coimbatore</small> Keynote Session 3	DAY 2: 24.06.2020 10.00 - 11.00 am <u>Dr. S. Balamurugan</u> HoD/EEE Amritha University Coimbatore	Zoom Meeting ID: 351 297 1771 Password: kare2020 https://us02web.zoom.us/j/3512971771?pwd=ZGZlZkxhR0tWcmRmd1T0lVKS2NB0hGZz09	Mr. D. Ganesha Perumal Assistant Professor/EEE

Figure 4.5.2.13: Virtual International Conference on “Innovations in Interdisciplinary Research” (VICIIDR-2020) Keynote Schedule

4.5.3 Participation in inter-institute events by students of the program of study (10/10)

(The Department shall provide a table indicating those publications, which received awards in the events/conferences organized by other institutes)

Students are encouraged to participate in various inter-institute events conducted at reputed institutes such as International conference, National conference, Workshops, Seminars, Guest Lectures and Symposiums related to the Program. Third year students are motivated to participate in their Community Service Project work in inter-institute events and symposiums. Final year students are encouraged to publish their project work into conferences and journals. The consolidated details are specified in table 4.5.3.1.

Table 4.5.3.1: Academic year wise consolidated student participation details

	Events within the State		Events outside the State		Published paper in Journals
Academic Year	International / National Conference	Workshops / Seminars/ Symposium	International / National Conference	Workshops / Seminars/ Symposium	
2018-19	4	62	72	-	50
2019-20	3	23	48		96
2020-21	-	113	131	56	57
2021-22		95		65	

A. Events Participated within the state:

(i) List of students presented in the International / National conferences:

Table 4.5.3.A.1: Participation in International / National conferences

Sl. No.	Authors	Title	Conference	Venue	Date
1	R Kalairani	Design And Simulation of 22nm FinFET Structure using TCAD	IEEE Conference on Devices, Circuits and Systems	Karunya University, Coimbatore	06.03.2020

2	R Jayalakshmi	An Optimization Technique for General Neural Network Hardware Architecture	IEEE Conference on Devices, Circuits and Systems	Karunya University, Coimbatore	06.03.2020
3	K Hemalatha	Image Compression using Haar Discrete Wavelet	IEEE Conference on Devices, Circuits and Systems	Karunya University, Coimbatore	06.03.2020
4	Hilal Khan A., Navaneethanath M., M. Azeem Ahamed	Eye for Blind People	International Conference on Trending Technologies in Engineering Research (ICTER-2019)	Mangayarkarai College of Engineering in Association with Seventh Sense Research Group	15.03.20219
5	Praveen Kumar B, K. Sathish	Automatic Shuttle Movement in Textile Technology	International Conference on New Scientific Creations in Engineering and Technology (ICNSCET-19)	Nadar Saraswathy College of Engineering and Technology	22.03.2019
6	K. Durga	Mobile Charger using Wind Turbine	International Conference on “Business Innovation through Technological Advancement”	Rathinam College of Arts and Science, Coimbatore	01.03.2019
7	Flavita Angeline Nivetha. K	Home Automation using Digital Controller	International Conference on “Business Innovation through Technological Advancement”	Rathinam College of Arts and Science, Coimbatore	01.03.2019

(ii) List of Students Attended/Presented Workshops/Seminars/Symposiums:

Class coordinators and Faculty Advisors always acknowledge the eager students to be present at workshops and seminars to sharpen their skills, learn new information from the presenters, brainstorm their ideas and get immediate feedback from the evaluators. Students are participating in seminars during their graduate study to get rich experience and exposure before facing interviews in their final year. It also helps students to get spin off ideas from others, get presentation skills along with materials for later study.

Table 4.5.3.A.2: Participation in Workshops/Seminars/Symposiums:

SI. No.	Name of the Student	Event Name	Venue	Date
Academic Year 2018-19				
1	R Krishna Kumar	Hands On Training on PCB Layout Design using Eagle, Workshop	Rajalakshmi Engineering College, Chennai	27.09.2018
2	Talla Bhanu Teja	Arduino Wireless Communication Embedded Workshop	IPCS Automation, Chennai	29.09.2018
3	Nagarajupalli Harsha Vardhan	Arduino Wireless Communication Embedded Workshop	IPCS Automation, Chennai	29.09.2018
4	B Abhilash	Unga - Disec, Snsimun 2k18	SNS College of Technology, Coimbatore	30.09.2018
5	Naveen Kumar S	Arduino Wireless Communication Embedded Workshop	IPCS Automation, Chennai	29.09.2018
6	S Sathyanand	Arduino Wireless Communication	IPCS Automation, Chennai	29.09.2018

		Embedded Workshop		
7	Vamsi Krishna Korrapati	Arduino Wireless Communication Embedded Workshop	IPCS Automation, Chennai	29.09.2018
8	Hari Sunkireddy	Arduino Wireless Communication Embedded Workshop	IPCS Automation, Chennai	29.09.2018
9	R. Keerthivash	Hands On Training on PCB Layout Design Using Eagle	Rajalakshmi Engineering College, Chennai	27.09.2018
10	Dhileep Kumar Reddy J.	Hands on Training Workshop in Android Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018
11	Sumathi Devi V.	Hands on Training Workshop in Android Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018
12	M. Rayith Ahamed	Workshop on Simulation and Emulation of Self Organised Networks	Kongu Engineering College, Erode	18.08.2018
13	B. Senthil Kumar	Workshop on Simulation and Emulation of Self Organised Networks	Kongu Engineering College, Erode	18.08.2018
14	B. Sajeethmohan	Workshop on Simulation and Emulation of Self Organised	Kongu Engineering College, Erode	18.08.2018

		Networks		
15	Murali Krishna D.	One Day Hands-on Training on Advanced Embedded Systems	K. Ramakrishnan College of Technology, Trichy	07.09.2018
16	Anil Kumar	One Day Hands-on Training on Advanced Embedded Systems	K. Ramakrishnan College of Technology, Trichy	07.09.2018
17	Vamshi Krishna G.	One Day Hands-on Training on Advanced Embedded Systems	K. Ramakrishnan College of Technology, Trichy	07.09.2018
18	Hilal Khan A.	One Day Hands-on Training on Advanced Embedded Systems	K. Ramakrishnan College of Technology, Trichy	07.09.2018
19	Harsha Vardhan Naidu G.	One Day Hands-on Training on Advanced Embedded Systems	K. Ramakrishnan College of Technology, Trichy	07.09.2018
20	Sai Krishna P.	One Day Hands-on Training on Advanced Embedded Systems	K. Ramakrishnan College of Technology, Trichy	07.09.2018
21	N. Santhosh Sivaraman	Training on TCAD For IC Design	VIT, Vellore	09.09.2018

22	Gowrishankar V.	Training on TCAD For IC Design	VIT, Vellore	09.09.2018
23	Rajkumar B.	Training on TCAD For IC Design	VIT, Vellore	09.09.2018
24	Vetriselvam	International Workshop on Internet of Things - Iwiot'18	PSG Institute of Technology and Applied Research, Coimbatore	18.08.2018
25	Paranikumar	International Workshop on Internet of Things - Iwiot'18	PSG Institute of Technology and Applied Research, Coimbatore	18.08.2018
26	Vijitha	International Workshop on Internet of Things - Iwiot'18	PSG Institute of Technology and Applied Research, Coimbatore	18.08.2018
27	J R Aravind	Workshop on Implementation of Image Processing Techniques Using MATLAB for Project Development	Kongu Engineering College, Erode	18.08.2018
28	Arumuga Perumal M	Workshop on Implementation of Image Processing Techniques Using MATLAB for Project Development	Kongu Engineering College, Erode	18.08.2018

29	N Arena Parveen	Workshop on Implementation of Image Processing Techniques Using MATLAB for Project Development	Kongu Engineering College, Erode	18.08.2018
30	Kasturi Chakraborty	Workshop on Implementation of Image Processing Techniques Using MATLAB for Project Development	Kongu Engineering College, Erode	18.08.2018
31	T Naveen	Workshop on Robotics & Internet of Things	Technophilia Solutions, Hyderabad	19.08.2018
32	V Akhil	Workshop on Robotics & Internet of Things	Technophilia Solutions, Hyderabad	19.08.2018
33	Papasani Manoj Kumar Reddy	Workshop on Robotics & Internet of Things	Technophilia Solutions, Hyderabad	19.08.2018
34	Praneshwaran P	Workshop on VLSI Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018
35	Sathish Kumar S	Workshop on VLSI Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018
36	Manoj Kumar P	Workshop on VLSI Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018

37	Muppudathi P	Workshop on VLSI Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018
38	Atchaya S	Workshop on VLSI Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018
39	Jothikarthika A	Workshop on VLSI Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018
40	M Chandra Sekaran	Workshop on Implementation of Image Processing Techniques Using MATLAB for Project Development	Kongu Engineering College, Erode	18.08.2018
41	E Karuppasamy	Workshop on Implementation of Image Processing Techniques Using MATLAB for Project Development	Kongu Engineering College, Erode	18.08.2018
42	S B Vikesh	Workshop on Implementation of Image Processing Techniques Using MATLAB for Project Development	Kongu Engineering College, Erode	18.08.2018
43	Dhana Bhagyam G	Workshop on VLSI Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018

44	Keerthika N	Workshop on VLSI Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018
45	Madhumitha S	Workshop on VLSI Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018
46	Bharathi V	Workshop on VLSI Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018
47	Kowsalya K	Workshop on VLSI Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018
48	Alice Jemima S	Workshop on VLSI Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018
49	Menda Swathi	Workshop on Realisation of Embedded Applications using Arduino	M.A.M College of Engineering and Technology, Trichy	27.07.2018
50	T Keerthana	Workshop on Realisation of Embedded Applications using Arduino	M.A.M College of Engineering and Technology, Trichy	27.07.2018
51	R Tamil Selvi	Workshop on Embedded System Design	IIT Madras Research Park, Chennai	04.08.2018
52	K Gobika	Workshop on Embedded System Design	IIT Madras Research Park, Chennai	04.08.2018
53	J Krishnapriya	Workshop on Embedded System Design	IIT Madras Research Park, Chennai	04.08.2018

54	S Vsaodevan	Workshop on Embedded System Design	IIT Madras Research Park, Chennai	04.08.2018
55	M Yuvaraj	Workshop on Embedded System Design	IIT Madras Research Park, Chennai	04.08.2018
56	Kathir Kaamesh S	Workshop on Embedded System Design	IIT Madras Research Park, Chennai	04.08.2018
57	H Mohamed Faizul Rahuman	Workshop on Arduino (Sensor-2018)	IIT Madras Research Park, Chennai	05.08.2018
58	D Jey Ganesh	Workshop on Arduino (Sensor-2018)	IIT Madras Research Park, Chennai	05.08.2018
59	Duvvuru Aneesh Kumar Reddy	Indian Technology Congress – 2018	NIMHANS Convention Centre, Bangalore	06.09.2018
60	K Durga	Two Days National Level Workshop on “Network Modelling and Simulation using OPNET Modeler	Sri Ramakrishna Engineering College, Coimbatore	07.03.2019 and 08.03.2019
61	S Ram Kishore	Workshop on IoT using Arduino and Android	Top Engineers at IIT Madras, Research Park	11.08.2018
62	Flavita Angeline Nivetha. K	Two Days National Level Workshop on “Network Modelling and Simulation using OPNET Modeler	Sri Ramakrishna Engineering College, Coimbatore	07.03.2019 And 08.03.2019

Academic Year 2019-20				
1	K Durga	Workshop on Internet of Things	IEEE And CSI Student Branch Mepco Schlenk Engineering College, Sivakasi	25.09.2019
2	S Ram Kishore	Design Of Microstrip Antenna, (DMA - 2019)	K. Ramakrishnan College of Technology, Trichy	19.09.2019
3	S Ram Kishore	Workshop on Ethical Hacking	Tech Byte at IIT Madras, Chennai	12.01.2019 And 13.01.2019
4	K Charan Teja	Googler Event, Symposium-Valiant 2020	AAA College of Engineering and Technology, Sivakasi	31.01.2020
5	M Sai Harsha Vardhan	Workshop on Development of IoT Applications using CC3200	Sri Ramakrishna Engineering College, Coimbatore	25.02.2020
6	D Nivetha	Workshop on Development of IoT Applications using CC3200	Sri Ramakrishna Engineering College, Coimbatore	25.02.2020
7	S Yuvasree	Workshop on Development of IoT Applications using CC3200	Sri Ramakrishna Engineering College, Coimbatore	25.02.2020
8	K Harsha Vardhan Kiriti	Workshop on Development of IoT Applications using CC3200	Sri Ramakrishna Engineering College, Coimbatore	25.02.2020

9	P Venkata Sai	Workshop on Development of IoT Applications using CC3200	Sri Ramakrishna Engineering College, Coimbatore	25.02.2020
10	Y V Adithya Kumar	Workshop on Development of IoT Applications using CC3200	Sri Ramakrishna Engineering College, Coimbatore	25.02.2020
11	R Ajith Kumar	Project Expo, National Science Day Celebration - Scimit'20	Manakula Vinayagar Institute of Technology, Puducherry	28.02.2020
12	M Navaneethan	Project Expo, National Science Day Celebration - Scimit'20	Manakula Vinayagar Institute of Technology, Puducherry	28.02.2020
13	B Subash Raj	Electric Vehicle Design Workshop, Techutsav - 2020	Thiagarajar College of Engineering, Madurai	04.03.2020
14	J Jolin Dorrothi	Role of Wireless Technologies in Sustainable Development, Workshop-Techutsav - 2020	Thiagarajar College of Engineering, Madurai	04.03.2020
15	R Nithya Shree	Role of Wireless Technologies in Sustainable Development, Workshop-Techutsav - 2020	Thiagarajar College of Engineering, Madurai	04.03.2020

16	S K Prabhavathy	Role of Wireless Technologies in Sustainable Development, Workshop-Techutsav - 2020	Thiagarajar College of Engineering, Madurai	04.03.2020
17	K Puneeth Sai	Googler Event, Symposium - Valiant 2020	AAA College of Engineering and Technology, Sivakasi	31.01.2020
18	K Gangadhar	Hustle Devices (Technical Event), Symposium - Valiant 2020	AAA College of Engineering and Technology, Sivakasi	31.01.2020
19	K Rajesh Kumar	Hustle Devices (Technical Event), Symposium - Valiant 2020	AAA College of Engineering and Technology, Sivakasi	31.01.2020
20	S Reddy Chanakya	Hustle Devices (Technical Event), Symposium - Valiant 2020	AAA College of Engineering and Technology, Sivakasi	31.01.2020
21	K Hemanth	Hustle Devices (Technical Event), Symposium - Valiant 2020	AAA College of Engineering and Technology, Sivakasi	31.01.2020
22	M Sushmitha	Googler, Symposium-Valiant 2020	AAA College of Engineering and Technology, Sivakasi	31.01.2020
23	M Maheswari	Befuddle (Technical Event), Symposium - Valiant 2020	AAA College of Engineering and Technology, Sivakasi	31.01.2020

Academic Year 2020-21				
1	D. Sai Subash	Guest Lecture on Job Opportunities in Electronics and Communication Field	Builders Engineering College, Tiruppur	19.06.2020
2	Meda Venkata Ganesh	Webinar on Mobile App Development	M.G.R Educational and Research Institute, Chennai	09.06.2020
3	K. Deepthi	Guest Lecture on Job Opportunities in Electronics and Communication Field	Builders Engineering College, Tiruppur	19.06.2020
4	Meda Venkata Ganesh	Webinar On Containers Cloud	Panimalar Engineering College, Chennai	20.06.2020
5	Murarisetty Venkata Rahul	A National Level of Webinar Defence Opportunities	PSG College of Arts and Science,	06.06.2020
			Coimbatore	
6	Meda Venkata Ganesh	Webinar on Data Science in ERP Applications	Mohamed Sathak A J College of Engineering, Chennai	20.06.2020
7	Meda Venkata Ganesh	Guest Lecture on Job Opportunities in Electronics and Communication Field	Builders Engineering College, Tiruppur	19.06.2020

8	Murarisetty Venkata Rahul	Webinar on Introduction to MATLAB	Builders Engineering College, Tiruppur	18.06.2020
9	Meda Venkata Ganesh	Webinar on Introduction to MATLAB	Builders Engineering College, Tiruppur	18.06.2020
10	Murarisetty Venkata Rahul	Industrial Lecture on Amazon Web Services	R.M.K Engineering College, Gummidipoondi	04.06.2020
11	Meda Venkata Ganesh	An Insight into Project Management	K. Ramakrishnan Engineering College, Trichy	18.06.2020
12	Meda Venkata Ganesh	Webinar on Role of Technology in Post Covid World	R.M.K Engineering College, Gummidipoondi	12.06.2020
13	Meda Venkata Ganesh	Webinar on Agent Based Computing	Mohamed Sathak A J College of Engineering, Chennai	12.06.2020
14	Meda Venkata Ganesh	A National Level of Webinar Defence Opportunities	PSG College of Arts and Science,	06.06.2020
			Coimbatore	
15	Meda Venkata Ganesh	Webinar on Mobile App Development	M.G.R Educational and Research Institute, Chennai	09.06.2020

16	Bommu Sai Vivek	Webinar on Data Science in ERP Applications	Mohamed Sathak A J College of Engineering, Chennai	20.06.2020
17	Bommu Sai Vivek	Webinar on Agent Based Computing	Mohamed Sathak A J College of Engineering, Chennai	12.06.2020
18	Nikhil Kumar Cherukuri	Guest Lecture on Job Opportunities in Electronics and Communication Field	Builders Engineering College, Tiruppur	19.06.2020
19	J. Pranav Reddy	Webinar on Data Science in ERP Applications	Mohamed Sathak A J College of Engineering, Chennai	20.06.2020
20	Pavithra Elango	Webinar on Future of Industry 4.0	Saveetha Engineering College, Chennai	17.06.2020
21	Pavithra Elango	Webinar on Image and Video Analytics	Loyola Institute of Technology, Thovalai	17.06.2020
22	Pavithra Elango	Guest Lecture on Job Opportunities in Electronics and Communication Field	Builders Engineering College, Tiruppur	19.06.2020
23	Pavithra Elango	Webinar on Get Awarded and Recognised with IEEE	Jansons Institute of Technology, Karumathampatti	14.06.2020

24	Pavithra Elango	Webinar on Open-Source Software and Tools for Modern Methodology	Dr. NGP Institute of Technology, Chennai	19.07.2020
25	Pavithra Elango	Workshop on Automotive Power Electronics	Skill Lync, Chennai	13.06.2020
26	J. Pranav Reddy	Guest Lecture on Job Opportunities in Electronics and Communication Field	Builders Engineering College, Tiruppur	19.06.2020
27	Madipally Hemanth Chandra	Guest Lecture on Job Opportunities in Electronics and Communication Field	Builders Engineering College, Tiruppur	19.06.2020
28	Murarisetty Venkata Rahul	Webinar on Data Science in ERP Applications	Mohamed Sathak A J College of Engineering, Chennai	20.06.2020
29	Murarisetty Venkata Rahul	Webinar on Big Data	K. Ramakrishnan Engineering College, Trichy	10.06.2020
30	N. Sai Chaithanya	Guest Lecture on Job Opportunities in Electronics and Communication Field	Builders Engineering College, Tiruppur	19.06.2020
31	E. Thanusha Reddy	Autonomous Vehicle Technology in Digital Era	Hindustan College of Engineering and Technology, Coimbatore	06.07.2020 To 08.07.2020

32	G. Manisha	Webinar on Introduction to MATLAB	Builders Engineering College, Tiruppur	18.06.2020
33	P. Ramprasad	Webinar on Big Data	K. Ramakrishnan Engineering College, Trichy	10.06.2020
34	P. Ramprasad	A National Level of Webinar Defence Opportunities	PSG College of Arts and Science,	06.06.2020
			Coimbatore	
35	P. Ramprasad	Webinar on Containers Cloud	Panimalar Engineering College, Chennai	20.06.2020
36	P. Ramprasad	Webinar on Agent Based Computing	Mohamed Sathak A J College of Engineering, Chennai	12.06.2020
37	S. K. Prabhavathy	Webinar on Virtual Meeting on the Theme of Toastmasters	KPR Institute of Technology, Coimbatore	07.07.2020
38	Kishore Pagadala	National Level Webinar on Next Gen Mobile Automation Platform-Test Project	Hindustan Institute of Technology, Chennai	13.07.2020
39	B. Pavan Kalyan	Webinar on Data Science and Artificial Intelligence	Saveetha Autonomous Engineering College, Chennai	16.06.2020

40	M. Chenna Reddy	Webinar on Data Science and Artificial Intelligence	Saveetha Autonomous Engineering College, Chennai	16.06.2020
41	M. Chenna Reddy	Webinar on The Risk of Artificial Intelligence	St. Joseph Institute of Technology, Chennai	20.06.2020
42	M. Chenna Reddy	Workshop on Challenges and Impacts of ECE on Covid-19	Sri Eshwar College of Engineering, Coimbatore	03.07.2020
43	K. Sunil Raju	Webinar on The Risk of Artificial Intelligence	St. Joseph Institute of Technology, Chennai	20.06.2020
44	K. Sunil Raju	National Level Webinar on Next Gen Mobile Automation Platform – Test Project	Hindustan Institute of Technology, Chennai	13.07.2020
45	M. Tarak Gopi	Workshop on Challenges and Impacts of ECE on Covid-19	Sri Eshwar College of Engineering, Coimbatore	03.07.2020
46	Hariesh R	Webinar on 3D Printing Technology	St. Mother Theresa Engineering College, Tuticorin	15.06.2020
47	Hariesh R	Webinar on Android Insights	Loyola Institute of Technology, Thovalai	18.06.2020

48	Hariesh R	Webinar on Data Science and AI	Saveetha Engineering College, Chennai	16.06.2020
49	Hariesh R	Webinar on Future of Industry	Saveetha Engineering College, Chennai	17.06.2020
50	Hariesh R	Webinar on Innovation using Blockchain Technology	Saveetha Engineering College, Chennai	18.06.2020
51	Hariesh R	Webinar on MS Chat Bot	Saveetha Engineering College, Chennai	15.06.2020
52	Hariesh R	Webinar on Math Wiz 2020	Dr. MGR Arts and Science College, Chennai	29.05.2020 To 30.05.2020
53	Hariesh R	Webinar on Risk of AI	St. Joseph Institute of Technology	12.06.2020
54	D. Ram Prasad Reddy	Webinar on Role of IoT Engineer in Post Covid	Bharat Institute of Engineering and Technology	25.06.2020
55	P. Sai Hemanth	Webinar on Agent Based Computer	MSAJCE, Chennai	12.06.2020
56	P. Sai Hemanth	Webinar on Big Data	K. Ramakrishnan College of Engineering, Trichy	10.06.2020
57	P. Sai Hemanth	Webinar on An Insight into Project Management	K. Ramakrishnan College of Engineering, Trichy	18.06.2020

58	P. Sai Hemanth	Webinar on Introduction to MATLAB	Builders Engineering College, Tiruppur	18.06.2020
59	P. Sai Hemanth	Webinar on Job Opportunities in Electronics and Communication Field	Builders Engineering College, Tiruppur	19.06.2020
60	P. Sai Hemanth	Webinar on Containers Cloud	Panimalar Engineering College, Chennai	20.06.2020
61	P. Sai Hemanth	Webinar on Python in Research Lab	K. Ramakrishnan College of Engineering, Trichy	24.06.2020
62	P. Sai Hemanth	Webinar on Role of Technology in Post Covid World	R.M.K Engineering College	12.06.2020
63	P. Vivekananda Reddy	Webinar on An Insight into Project Management	K. Ramakrishnan College of Engineering	18.06.2020
64	P. Vivekananda Reddy	Webinar on Container Cloud	Panimalar Engineering College, Chennai	20.06.2020
65	P. Vivekananda Reddy	Webinar on Data Science in ERP Application	Mohammed Sathak A J College of Engineering, Chennai	20.06.2020
66	P. Vivekananda Reddy	Webinar on Agent Based Computer	Mohammed Sathak A J College of Engineering, Chennai	12.06.2020

67	P. Vivekananda Reddy	Webinar on Introduction to MATLAB	Builders Engineering College, Tiruppur	18.06.2020
68	P. Vivekananda Reddy	Webinar on Role of Technology in Post Covid World	R.M.K Engineering College, Gummidipoondi	12.06.2020
69	P.V Sainadh	Webinar on Job Opportunities in Electronics and Communication Field	Builders Engineering College, Tiruppur	19.06.2020
70	P.V Sainadh	Webinar On Agent Based Computing	Mohammed Sathak A J College of Engineering, Chennai	12.06.2020
71	P. Chaitanya	Webinar on Job Opportunities in Electronics and Communication Field	Builders Engineering College, Tiruppur	19.06.2020
72	R. Mastan	Webinar on Bigdata	Ramakrishnan College of Engineering	10.06.2020
73	R. Mastan	Webinar on Agent Based Computing	Mohammed Sathak A J College of Engineering, Chennai	12.06.2020
74	R. Mastan	Webinar on Role of Technology in a Post Covid World	R. M. K. Engineering College	12.06.2020

75	R. Mastan	Webinar on Mobile App Development	Dr. MGR Research Institute	09.06.2020
76	R. Mastan	Webinar on an Insight into Project Management	K. Ramakrishnan College of Engineering	18.06.2020
77	R. Mastan	Webinar on Job Opportunities	Builders Engineering College, Tiruppur	19.06.2020
78	R. Mastan	Webinar on Data Science in ERP Applications	Mohammed Sathak A J College of Engineering, Chennai	20.06.2020
79	R. Mastan	Webinar on Containers Cloud	Panimalar Engineering College, Chennai	20.06.2020
80	Subash Balaji A	Webinar on Job Opportunities in Electronics and Communication Field	Builders Engineering College, Tiruppur	19.06.2020
81	Subash Balaji A	Webinar on Introduction to MATLAB	Builders Engineering College, Tiruppur	18.06.2020
82	Subash Balaji A	Webinar on The Risk of Artificial Intelligence: A Security Perspective	St. Josephs Institute of Technology	12.06.2020
83	Sudhakar Reddy Venna	Webinar on Data Science in ERP Applications	Mohamed Sathak AJ College of Engineering, Chennai	20.06.2020

84	Dodla Sreekanth	Webinar on Controller Application on Automobiles	Visteon. Pvt. Ltd, Chennai	21.06.2020
85	C. Sathya Pradeep	Webinar on AI and Model Based Design	Chennai Institute of Technology, Chennai	25.06.2020
86	C. Sathya Pradeep	Techgyan Workshop Powered by Festember	NIT, Trichy	26.12.2020
87	Regula Venkata Ravi Choudary	Webinar on Recent Trends in Semiconductor Devices and Future Perspectives	SNS College of Technology, Coimbatore	29.07.2020
88	Shaik Fiza Sohail	Webinar on Lower Power VLSI Design Techniques	Sri Meenakshi Government Arts College, Madurai	03.07.2020
89	L. Anuradha	Entrepreneurship Webinar	PSG College of Arts and Science, Coimbatore	02.05.2020
90	L. Anuradha	3 Days Live Workshop on Python Game Development	Four Steps Training Solution, Chennai	02.05.2020
91	M. Likitha	3 Days Live Workshop on Python Game Development	Four Steps Training Solution, Chennai	02.05.2020
92	M. Venkata Karthik	3 Days Live Workshop on Python Game Development	Four Steps Training Solution, Chennai	02.05.2020

93	M. Lakshmi Sowmica	3 Days Live Workshop on Python Game Development	Four Steps Training Solution, Chennai	02.05.2020
94	M. Nagalaxmi	3 Days Live Workshop on Python Game Development	Four Steps Training Solution, Chennai	02.05.2020
95	Kamalapuri Suresh Babu	Webinar on Post Covid Employment Opportunities	Fine Mind Placement Academy Private Limited, Coimbatore	21.05.2020
96	Silvia L E	Lecture Series on Recent Trends in Dielectric Resonator Antennas for Wireless Applications	Kumaraguru College of Technology, Coimbatore	10.08.2020
97	Silvia L E	Lecture Series on 5G: Challenges and Enabling Technologies	Kumaraguru College of Technology, Coimbatore	11.12.2020
98	Silvia L E	Lecture Series on Antennas for Underwater Communication	Kumaraguru College of Technology, Coimbatore	12.08.2020
99	Silvia L E	Lecture Series on Full Duplex Antenna: Design and Challenges	Kumaraguru College of Technology, Coimbatore	13.08.2020
100	Silvia L E	Lecture Series on 3D Printed Antennas	Kumaraguru College of Technology, Coimbatore	14.08.2020

101	Silvia L E	Lecture Series on Future Antenna Technologies	Kumaraguru College of Technology, Coimbatore	10.08.2020
102	Subramani V	Training Program on Internet of Things & Cloud Interface	IETE in association with Pantech E Learning	22.06.2020
103	Siddhartha T	Workshop on Internet of Things & Cloud Interface (Code G)	IETE & Pantech E Learning	22.06.2020
104	Y. Joshnakar Reddy	Workshop on MATLAB Programme	AB Technologies, Chennai	20.11.2020
105	Jampana Likithsaidhar Reddy	Workshop on Flutter	Pantech Solutions	16-06-2021 To 18.06.2021
106	Jampana Likithsaidhar Reddy	Workshop on Image Processing using MATLAB	Pantech Solutions	12.04.2021 To 16.04.2021
107	Rapuri Monalisa	IEEE R10 EA Awards	IEEE Madras Section	24-6-2021 To 28.06.2021
108	C. Chandana	Workshop On AI	Pantech Solutions and Jai Shriram Engineering College	17.06.2021 To 19.06.2021
109	Akula Sai Tejaswani	Chatbot Using Python	Jeppiaar Engineering College, Chennai	14.06.2021

110	D. Pujitha	Workshop on AI	Pantech Solutions and Jai Shriram Engineering College	17.06.2021 To 19.06.2021
111	B. Prasanna	Workshop on AI	Pantech Solutions and Jai Shriram Engineering College	17.06.2021 To 19.06.2021
112	B. Haripriya	Workshop on AI	Pantech Solutions and Jai Shriram Engineering College	17.06.2021 To 19.06.2021
113	Sai Deepak	Workshop on AI	Pantech Solutions and Jai Shriram Engineering College	17.06.2021 To 19.06.2021
Academic Year 2021-22				
1	Vantherapalle Samara Simha Reddy	National Level E-Quiz On Electrical And Electronics Engineering	Sri Ramakrishna Engineering College, Coimbatore	14.08.2021
2	Vikash Mehta	National Level E-Quiz On Electrical And Electronics Engineering	Sri Ramakrishna Engineering College, Coimbatore	14.08.2021
3	Malasani Greeshma	National Level E-Quiz On Electrical And Electronics Engineering	Sri Ramakrishna Engineering College, Coimbatore	14.08.2021

4	Theerdhala Sandhya	National Level E-Quiz On Electrical And Electronics Engineering	Sri Ramakrishna Engineering College, Coimbatore	14.08.2021
5	Mohammad Rabiya Bathul	National Level E-Quiz On Electrical And Electronics Engineering	Sri Ramakrishna Engineering College, Coimbatore	14.08.2021
6	Chindaluru Ganesh	Webinar-Plan Your Future	Ms Teams Platform-Online	20/09/2021
7	Kode Vivek Srinivas	Webinar-Plan Your Future	Ms Teams Platform-Online	20/09/2021
8	V. Bargavram	Covid 19 Awareness Quiz	Care College Of Engineering	22/09/2021
9	K.Thrimurthy Reddy	Covid-19 Awareness Quiz	Care College Of Engineering	20/09/2021
10	Addepalli Hemavardhan Venkata Manikanta	Effective Ways Of Writing Research Articles	Department Of Eee At Sri Ramakrishna Engineering	24/09/2021

11	Addepalli Hemavardhan Venkata Manikanta	Plan Your Future	Pg & Research Department Of Commerce	20/09/2021
12	Rayalacheruvu Varshitha	Effective Ways Of Writing Research Articles	Department Of Eee At Sri Ramakrishna Engineering	24/09/2021
13	Rayalacheruvu Varshitha	Plan Your Future	Pg & Research Department Of Commerce	20/09/2021
14	Kummara Charanya	Effective Ways Of Writing Research Articles	Department Of Eee At Sri Ramakrishna Engineering	24/09/2021
15	Kummara Charanya	Plan Your Future	Pg & Research	20/09/2021
16	V.Nithish Kumar	Effective Ways Of Writing Research Articles	Department Of Eee At Sri Ramakrishna Engineering	24/09/2021
17	V.Nithish Kumar	Plan Your Future	Pg & Research	20/09/2021

18	Mupparaju Hema Priya	Effective Ways Of Writing Research Articles	Department Of Eee At Sri Ramakrishna Engineering	24/09/2021
19	Mupparaju Hema Priya	Plan Your Future	Pg & Research Department Of Commerce	20/09/2021
20	Gummidela Sirichandana	EFFECTIVE WAYS OF WRITING RESEARCH ARTICLES	Department Of EEE At Sri Ramakrishna Engineering	24/09/2021
21	Gummidela Sirichandana	PLAN YOUR FUTURE	PG & Research Department Of Commerce	20/09/2021
22	Thota Praneeth Krishna	EFFECTIVE WAYS OF WRITING RESEARCH ARTICLES	Department Of EEE At Sri Ramakrishna Engineering College	24/09/2021
23	Ramisetty Harsha Vardhan	EFFECTIVE WAYS OF WRITING RESEARCH ARTICLES	Department Of Electrical And Electronics Engineering	24 /09/2021
24	Nune Venkata Sri Vardhan	Plan For Future	Pg & Research Center	20/09/2021

25	Inamanamellur u V Sai Narayana Karthikeya	Plan Of Future	Pg&Research Center	20/09/2021
26	Inamanamellur u V Sai Narayana Karthikeya	Effective Ways Of Writing Research Articles	Department Of Eee At Sri Ramakrishna Engineering College	24/09/2021
27	Chindaluru Ganesh	Next Generation High Energy Radiation Shielding Materials	Saveetha School Of Engineering	30/09/2021
28	Chindaluru Ganesh	Virtual Industrial Visits	Quark	24/09/21-26/09/21
29	Chindaluru Ganesh	Design Thinking And Product Innovation	Arifa Institute Of Technology	1-10-21
30	Chindaluru Ganesh	Surface Enhanced Raman Scattering (SERS) For Biomolecule Detection	Saveetha School Of Engineering	7-10-21
31	Chindaluru Ganesh	"Test Your Knowledge In Reasoning"	Virudhunagar Hindu Nadar College	17/10/21

32	Chindaluru Ganesh	Remembering Mahatma Gandhi Awareness Campaign Of Indian National Movement (Inm)	Govt College Of Arts And Science	2-10-21
33	Chindaluru Ganesh	Internet Of Things Master Classes	Pan Tech	19/9/21 (30 DAYS)
34	Yalamanda Shaik Rabbani	Internet Of Things Master Class	Pan Tech	19/09/21
35	B Sree Madhu Kiran	All Certificates	Pan Tech	
36	Nune Venkata Sri Vardhan	Iot-Master Calss	Pan Tech	19/9/2021
37	Addepalli Hemavardhan Venkata Manikanta	Internet Of Things Master Classes	Pan Tech	19/09/2021
38	Mupparaju Hema Priya	Internet Of Things Master Classes	Pan Tech	19/09/2021

39	Thota Praneeth Krishna	Internet Of Things Master Class	Pan Tech	19/09/2021
40	Mohammad Ghousee Ali Siddiq	Sse Expert Talk	SAVEETHA SCHOOL OF ENGINEERING	07-10-2021
41	G.Siri Chandana	Internet Of Things Master Class	Pantech e Learning(online)	19-09-2021
42	G.Siri Chandana	International Weebinar On Plan Your Future	Sri Nehru Vidyalaya(online)	20-09-2021
43	G.Siri Chandana	National Level Seminar On Effective Ways Of Writing Research Articles	Sri ramakrishna engineering college(online)	24-09-2021
44	G.Siri Chandana	Aws Cloud Master Class-Discovery Day	Future skills prime(online)	29-09-2021
45	G.Siri Chandana	Covid-19 Awareness Quiz Contest	CARE college of engineering(online)	20-09-2021

46	M.Lokesh Kumar	Covid-19 Awareness Quiz Contest	CARE College of Engineering(Online)	20-09-2021
47	Mohammad Ghousee Ali Siddiq	Sse Expert Talk	SAVEETHA SCHOOL OF ENGINEERING	07-10-2021
48	Dasari Venkata Suryachandra Rao	SSE-Expet Talk	SAVEETHA SCHOOL OF ENGINEERING	10-07-2021
49	Dasari Venkata Suryachandra Rao	World Breastfeeding Week Celebration	The Standard Fireworks Rajaratnam For Women	08-08-2021
50	Nambi E	National Level E-Quiz On Electrical And Electronics Engineering	Online	14/08/2021
51	Andre Srinkanth	National Level E-Quiz On Electrical And Electronics Engineering	Sri Ramakrishna Engineering College, Coimbatore	14.08.2020
52	Pullagura Narasimha Raju	Iot Workshop	Sri Krishna College Of Engineering And Technology	15-09-2021

53	Pullagura Narasimha Raju	3d Printing Workshop	Sri Krishna College Of Engineering And Technology	15-09-2021
54	Pujari Lokesh	Additive Manufacturing In Automobile Applications	Bannari Amman Institute Of Technology Sathyamangalam	31-08-2021
55	Muthukumar M V	Iot Workshop	Sri Krishna College Of Engineering And Technology	15-09-2021
56	Muthukumar M V	Pcb Design Workshop	Pantech Solutions	16-08-2021
57	Prem Mathavan N	Interviewind	Sri Krishna College Of Engineering And Technology	13-09-2021
58	Prem Mathavan N	Electroloop	Sri Krishna College Of Engineering And Technology	14-09-2021
59	Prem Mathavan N	Talen Di Saade	Srm Valliammai Engineering College	28-08-2021

60	Prem Mathavan N	Pcb Design Workshop	Pantech Solutions	23-08-2021
61	Aravind I	Pcb Design Workshop	Pantech Solutions	23-08-2021
62	Aravind I	Iot Workshop	Sri Krishna College Of Engineering And Technology	15-09-2021
63	Aravind I	Project Presentation	Bannari Amman Institute Of Technology	21-08-2021
64	Gondrala Tarun Srinivasulu	Levaraging Ai And Iot In Smart Farming	Ieee Madras Section	09-07-2021
65	Madhura Prasad S	Talen-Di-Saade(Paper Presentation)	Srm Valliammai Engineering College	28-08-2021
66	Dinesh Kumar Burada	Industrial Training On Mechine Learning In Smartx Plt.	Smartx Connected Products Pvt.Ltd	21-06-2021

67	Y.Blessy Femina	National Level Virtual Project Presentation	Bannari Amman	20.08.2021
68	Jampana Likithsaidhar Reddy	Flutter	Pantech Solutions	16-06-2021
69	Jampana Likithsaidhar Reddy	Workshop On Image Processing Using Matlab	Pantech Solutions	12-04-2021
70	Rapuri Monalisa	Ieee R10 Ea	Lee Madras Section	24-6-2021
71	Pullagura Narasimha Raju	5 Day National Workshop On "Zero Coding:Data Analysis For Iot Using Red- Node"	Kongu Engineering College	20-10-2021
72	Pujari Lokesh	Szikra 2k21- National Level Technical Symposium (Paper Presentation)	Jai Shriram Engineering College	01-10-21
73	Pullagura Narasimha Raju	National Level Technical Symposium Szikra 2k21	Jai Shriram Engineering College	01-10-2021

74	Pitla Madhu	5 Day National Workshop On Zero Coding	Kongu Engineering College	20-10-21
75	Pitla Madhu	National Level Technical Symposium Szikra 2k21 (Paper Presentation)	Jai Shriram Engineering College	01-10-2021
76	Rudhrapati Bharath Kumar	A National Level Technical Symposium, Paper Presentation	Jai Shriram Engineering College	01-10-2021
77	Rudhrapati Bharath Kumar	Ieee Communication Socceity Madras Chapter	Ieee Communication Socceity Madras Chapter	16-07-2021
78	Neeraj Pokala	Workshops	Pantech solutions	28/06/2021
79	Aravind I	Workshops	Pantech solutions	16/06/2021
80	Aravind I	Paper Presentation (Symphosism)	Krishna clg,Srm University,Sairam clg	16/06/2021

81	Aravind I	Interview, Non Technical Event(Ipl Auction)	Thiruvallur clg, Ramakrishna clg	16/06/2021
82	A.Sai Deepak	Workshops And Paper Presentation	pantech solutions and Jai Shriram Engineering College	17/06/2021,1/10/2021
83	C.Chandana	Workshops And Paper Presentation	pantech solutions and Jai Shriram Engineering College	16/06/2021,1/10/2021
84	D.Pujitha	Workshops And Paper Presentation	pantech solutions and Jai Shriram Engineering College	16/06/2021,1/10/2021
85	B.Prasanna	Workshops And Paper Presentation	pantech solutions,Sri sai ram engineering college	16/06/21,21/10/21
86	B.Haripriya	Workshop And Paper Presentation	pantech solutions and Jai Shriram Engineering College	16/06/21,01/10/21
87	T. Deepika	Paper Presentation	Jai Shriram Engineering College	01-10-2021

88	R. Dinesh Reddy	Paper Presentation	Jai Shriram Engineering College	01-10-2021
89	M. Likitha	Paper Presentation	Jai Shriram Engineering College	10-01-2021
90	B.Sravan	Paper Presentation	jai shriram engineering college	10-01-2021
91	Neeraj Pokala	Paper Presentation	SRM valliammai engineering college	04-09-2021
92	Madhura Prasad S	Workshops	Pantech solutions	16/06/2021
93	Madhura Prasad S	Paper Presentation (Symposium)	Krishna clg, Srm University, Sairam clg	16/06/2021
94	Madhura Prasad S	Non Technical Event (Ipl Auction)	Ramakrishna clg	16/06/2021

95	Pagadala Kishore	Pcb Design Workshop	Pantech Prolabs India Pvt Ltd	23-Aug-2021
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B. Events outside the state:

Students are encouraged to participate in workshops, seminars, and conferences outside the state also to get contemporary knowledge and to develop communication skills. Highly appreciated project work batches which comprises fast, average, and slow learners are regularly esteemed to participate in International and National conferences conducted at IITs and NITs of outside the state.

(i) List of Students Attended/Presented Workshops/Seminars:

Table 4.5.3.B.1: Participation in Workshops/Seminars/Symposiums

Sl. No.	Name	Event	Venue	Date
1	Bethu Pavan Ramanendra Swamy	Webinar on an upcoming development in Brain computer interface	ITS Engineering College, Noida	28.05.2020
2	Hariesh R	Webinar on Launching a Nanosatellite	GMR Institute of Technology, Srikakulam	18.06.2020
3	P. Sai Hemanth	Webinar on Launching a Nanosatellite	GMR Institute of Technology, Srikakulam	18.06.2020
4	Nelavelli Brahma Manas	Webinar on Tips to Formulate Research Project Proposals and Write Technical Papers	GMR Institute of Technology, Srikakulam	21.06.2020
5	R. Mastan	Webinar on Launching of Nanosatellite	GMR Institute of Technology, Srikakulam	18.06.2020

6	Subash Balaji A	Webinar on Launching of Nanosatellites	GMR Institute of Technology, Srikakulam	18.06.2020
7	Sudhakar Reddy Venna	Webinar on Launching Nanosatellite	GMR Institute of Technology, Srikakulam	18.06.2020
8	Silvia L E	Webinar on Synthetic Applications of Donor - Acceptor Cyclopropanes	Government college, Rajahmundry	13.07.2020
9	Ganesh Raghunadh Mukkapati	Tips to formulate Research Project Proposals and write technical papers	GMR Institute of Technology, Rajam, Andhra Pradesh	21.06.2020
10	D. Sai Subash	Guest Lecture on Role of IoT engineer in post COVID	Bharat Institute of Engineering and Technology, Hyderabad	25.06.2020
11	D. Sai Subash	Industrial Lecture on Learn to develop android app	Amity School of Engineering and Technology, Amity University, Gwalior	24.05.2020
12	Murarisetty Venkata Rahul	Webinar on Launching a Nanosatellite	GMR institute of Technology, Srikakulam	18.06.2020
13	CH Tushara Supriya	Webinar on Solar Roof Top Design	IEC College of Engineering and technology, Greater Nodia	16.06.2020
14	K. Deepthi	Webinar on Solar Roof Top Design	IEC College of Engineering and technology, Greater Nodia	16.06.2020
15	Murarisetty Venkata Rahul	Webinar on Research in Big Data Analytics	Anurag University, Hyderabad	20.06.2020

16	S. Manoj Kanna	Webinar on Web Development	Infosys Limited, Bangalore	13.06.2020
17	Bommu Sai Vivek	Webinar on Applied Deep Learning	Indian servers, Vijayawada	14.06.2020
18	Bommu Sai Vivek	Webinar on Launching a Nanosatellite	GMR institute of Technology, Srikakulam	18.06.2020
19	Nikhil Kumar Cherukuri	Webinar on Robotic Principles and Application	IEEE Robotics and Automation Society	05.06.2020
20	Nikhil Kumar Cherukuri	RPA and Manufacturing	IEEE Robotics and Automation Society	03.06.2020
21	J. Pranav Reddy	Webinar on Web Development	Infosys Limited, Bangalore	13.06.2020
22	Pavithra Elango	Webinar on 5G Network Architecture and SDN	Parul University, Gujarat	15.06.2020
23	Pavithra Elango	Webinar on Solar Roof Top Design	IEC College of Engineering and Technology, Greater Nodia	16.06.2020
24	J. Pranav Reddy	Webinar on Launching a Nanosatellite	GMR institute of Technology, Srikakulam	18.06.2020
25	Madipally Hemanth Chandra	Guest Lecture on Role of IoT engineer in post COVID	Bharat Institute of Engineering and Technology, Hyderabad	25.06.2020
26	Madipally Hemanth Chandra	Webinar on Launching a Nanosatellite	GMR institute of Technology, Srikakulam	18.06.2020

27	K. Pavankalyan	Industrial Lecture on Digital electronics	Sri GCSR College of Education, Andhra Pradesh	08.07.2020
28	N. Sai Chaithanya	Webinar on Cyber Security	MIT ADT University, Pune	29.06.2020
29	G. Manisha	Webinar on Launching a Nanosatellite	GMR institute of Technology, Srikakulam	18.06.2020
30	N. Sai Krishna	Webinar on Web Development	Infosys Limited, Bangalore	13.06.2020
31	N. Sai Krishna	Webinar on Cyber Security	MIT ADT University, Pune	29.06.2020
32	K. Sunil Raju	A National Level three-day FDP on Digital Image Processing and Its Applications	Sai Spurhi Institute of Technology, Telangana	09.07.2020 to 11.07.2020
33	M. Vijaya Dharshini	Webinar on Web Development	Infosys Limited, Bangalore	13.06.2020
34	Subash Balaji A	Python Workshop	Packt, Mumbai	21.05.2020
35	Subash Balaji A	SQL Workshop	Packt, Mumbai	19.05.2020
36	R Sri Kanth	Webinar on Career Opportunities in Cloud Computing and AWS Certification Exam	MIT ADT University, Pune	13.07.2020
37	R. Mastan	Webinar on Applied deep learning	Indian services	14.06.2020
38	R Venkata Rao	A National Level three-day FDP on Digital Image Processing and Its Applications	Sai Spurhi Institute of Technology, Telangana	09.07.2020 to 11.07.2020

39	Nelavelli Brahma Manas	Webinar on Career Opportunities in Cloud Computing and AWS Certification Exam	MIT ADT University, Pune	13.07.2020
40	Hariesh R	Webinar on Solar Rooftop Designs	IEC College of Engineering and Technology, Greater Nodia	16.06.2020
41	Hariesh R	Webinar on Design of Brain controlled Applications	Dr. B. R. Ambedkar National Institute of technology, Jalandhar	26.06.2020
42	Hariesh R	Webinar on Face recognition using deep learning	Balaji Institute of technology & science, Warangal	30.06.2020
43	Hariesh R	Webinar on IoT using Arduino	Dr. Shyama prasad mukherjee university, Ranchi	16.06.2020
44	Hariesh R	Webinar on IoT using NODEMCU	Shiv Kumar Institute of technology & science, Madhya Pradesh	23.06.2020
45	Hariesh R	Webinar on IoT using Raspberry Pi	Institute of Engineering and Technology, Lucknow	19.06.2020
46	Hariesh R	Webinar on Effective Enlightening Expertise	KGRL College of Pharmacy, Andhra Pradesh	14.06.2020
47	Hariesh R	Webinar on 5G: Network Architecture and SDN	Parul University, Gujarat	15.06.2020
48	Padigi Raviteja Reddy	Webinar on Career edge	TCS	04.06.2020
49	G. V. Kiran Teja	Webinar on TCS Code Vita	TCS	26.05.2020

50	Gadiraju Likith	Training Program on Industry Ready Python Programming	AICL, Mumbai	04.07.2020
51	Manoj Kumar	Webinar on TCS Code Vita	TCS	31.05.2020
52	Shaik Fiza Sohail	Workshop on Post - pandemic computational science: challenge and opportunity	College of Engineering, Nashik	22.06.2020 to 28.06.2020
53	P. Bala Venkata Naga Sai Sumanth	Webinar on Role of IoT Engineer in Post Covid	Bharat Institute of Engineering and Technology, Odisha	25.06.2020

Academic Year 2021-22

1	Mohammad Rabiya Bathul	Online National Webinar On "Yoga In @ As Sports"	Yogasana Sports Association A.P., And Yoga Mandir Trust, Bengaluru.	05.09.2021
2	Addepalli Hemavardhan Venkata Manikanta	Embedded System With Robotics	Finland Labs New Delhi (Online)	15/09/2021
3	Mupparaju Hema Priya	Embedded System With Robotics	Finland Labs New Delhi	15/09/2021
4	Chindaluru Ganesh	Embedded System With Robotics	Finland Labs New Delhi (Online)	15/09/2021
5	Thota Praneeth Krishna	EMBEDDED SYSTEM WITH ROBOTICS	FINLAND FINLAND LABS L	15/09/2021
6	Royalacheruvu Varshitha	Embedded System With Robotics	Finland Labs New Delhi (Online)	15/09/2021

7	Gummidela Sirichandana	EMBEDDED SYSTEM WITH ROBOTICS	FINLAND LABS NEW DELHI (Online)	15/09/2021
8	Nune Venkata Sri Vardhan	Embedded System With Robotics	Finland Labs	15/09/2021
9	Rangisetty Yogananda Dheeraj	Embedded System With Robotics	Finland Labs	15/09/2021
10	Inamanamelluru V Sai Narayana Karthikeya	Embedded System With Robotics	Finland Labs	15/09/2021
11	M.Vinod Kumar	Embedded System With Robotics	Finland Labs	15/09/2021
12	M.Mohit Narayan	Embedded System With Robotics	Finland Labs	15/09/2021
13	K.Thrimurthy Reddy	Debate Competition On "Skill Study Is Better Than Scientific Study"	Iucee Ewb Mce Student Chapter	18/08/2021
14	Addepalli Hemavardhan Venkata Manikanta	Aws Cloud Master Class Discovery Day	Future Prime Skills	27/09/2021
15	Puli Ajay	Coincent	Coincent	05-07-2021
16	Kondareddy Revathi	Coinect	Coinect	05-07-2021
17	Kummara Charanya	Cloud Master Class Discovery Day	Future Prime Skills	27/09/2021

18	V.Bargavram	Workshop On Arduino And Embedded System	Cyberonics	25/09/2021
19	Mupparaju Hema Priya	AWS Cloud Master Class-Discovery Day	Futura Skills Prime	27/09/2021
20	Chindaluru Ganesh	Mental Well Being And Stress Management During C0vid-19 Pandemic	Youtube	29/09/2021
21	Chindaluru Ganesh	Rise By Lifting Others	Christ Nagar College	20/09/2021
22	Chindaluru Ganesh	Galactic Astronomy Quiz	Dare 2 Complete	26/09/2021
23	Chindaluru Ganesh	Cyber Security & Data Protection	F A Ahamed College	15/10/21
24	Chindaluru Ganesh	Python Machine Learning Project:Spam Classification In Gmail	Tech Learn	6-10-21
25	Chindaluru Ganesh	Data Science Career Map	Tech Learn	9-10-21
26	Thota Subba Rao	"Iot, Robotics And Embedded System	Iit Delhi (Online)	05-07-2021
27	P.Sumanth Kumar Reddy	How Google Deep Mind Reinforcement Learning Work	Tech Learn (Online)	15-09-2021
28	G.Siri Chandana	Webinar On Embedded System With Robotics	Finland Labs,New Delhi(Online)	15-09-2021

29	Shyam S N	Bootstrap 5 Project	Unschool	18/8/21
30	Shyam S N	Static Website Hosting	Unschool	18/8/21
31	Dasari Venkata Suryachandra Rao	Exploring The Educational Resources Of IEEE	IEEE Indian Council Webinar	27-02-2021
32	Dasari Venkata Suryachandra Rao	IEEE Students Humanitarian Technology Conference(SHTC)	IEEE	01-05-2021
33	Dasari Venkata Suryachandra Rao	<i>IEEE STUDENT MEMBER SHIP</i>	IEEE	
34	Dasari Venkata Suryachandra Rao	<i>IEEE QUIZ COMPETITION</i>	IEEE	10-05-2021
35	Nambi E	Introduduction To Programing Using Python	Microsoft	23/08/2021
36	Nambi E	Most Users To Talke An Online Computer Programming Lesson In 24 Hours	Guvi	24/04/2021
37	Nambi E	Artifical Intelligence With Python	Inmovidu	20/05/2021
38	Nambi E	Artifical Intelligence With Python-Training Completion	Inmovidu	20/05/2021
39	Pujari Lokesh	Neural Networks Using Python	Nitk – Step National Institute Of Technology, Karnataka, Surathkal	28-08-2021

40	Gondrala Tarun Srinivasulu	Ieee Sps Aiva 2021	Ieee Sps Chapter And Iiit-D	24-6-2021
41	Gondrala Tarun Srinivasulu	Education 4.0 - Role Of Educational Technologies	Ieee Sicsr Pune Student Branch And Educational Activities And Education Society Of Ieee Pune Section	15-07-2021
42	Silvia L E	Programming For Everybody (Getting Started With Python)	University Of Michigan(Online)	27-07-2021
43	Arani Hariprasad Vigneesh	Education 4.0 - Role Of Educational Technologies	Ieee Sicsr Pune Student Branch And Educational Activities And Education Society Of Ieee Pune Section	15-07-2021
44	Rapuri Monalisa	Education 4.0 - Role Of Educational Technologies	Ieee Sicsr Pune Student Branch And Educational Activities And Education Society Of Ieee Pune Section	15-07-2021
45	Lavanuru Anuradha	Debate Competition	IUCEE	03.09.21
46	Penumuchu Rahul	Online Training On Microcontroller Programming	Msme - Technology Development Centre , Government Of India Organization	04-08-2021
47	Neeraj Pokala	Udemy Online Course(Python Programming)	Udemy	01-11-2021
48	Neeraj Pokala	Future Skills Prime(Machine Learning)	Microsoft	18/10/2021
49	Neeraj Pokala	Future Skills Prime(AWS)	Amazon	25/10/2021

50	J.Likith Saidhar Reddy	Workshop And Industrial Lecture, Online Elementary FDP	IBM	24/07 /2021, 12/07 / 2021,15 /07/2021
51	Neeraj Pokala	365 Data Science E Learning Company	Microsoft	10-10-2021
52	R.Sravani	Future Skills Prime(Aws)	Microsoft	28/09/2021
53	S.Nandini	Future Skills Prime(Aws)	Microsoft	28/09/2021
54	Cherukuri Nikhil Kumar	Tessolve Online Internship Training	Tessolve (Online)	26-07-2021

(ii) List of students presented paper in symposium/Conferences:

Table 4.5.3.B.2: Participation of Paper presentation in Symposium

Sl. No.	Name	Title	Venue	Date
1	Aneem Seeta Reddy	SYMPO AAGNYA 2020	St. Martins Engineering College, Secunderabad	30.01.2020 and 31.01.2020
2	B Navya Sree	SITAR – 2K20	Prasad V. Potluri Siddhartha Institute of Technology, Vijayawada	25.01.2020
3	K. Siva Varshini	SITAR – 2K20	Prasad V. Potluri Siddhartha Institute of Technology, Vijayawada	25.01.2020

(iii) List of students published paper in conferences/Journals (Events outside the state):

Encouraging students to publish their final year project work and community service project work in international/nation conferences and journals.

Table 4.5.3.B.3: Academic year-wise Participation of Paper presentation in Conferences / Journals outside the State

Sl. No.	Project Title	Reg. No	Name of the Students	Conference Name
1	Performance Evaluation of Patient Using IoT	9915005112	Gangisetty Sai Krishna Sathvik	1 st IEEE EMBS International Student Conference 2018 India
		9915005184	Seggoju Teja	
		9915005190	Shaik Mohammed Sultan Sharif	
2	High Efficient Multiplier Circuit Using Wallace Architecture With Hybrid Power Gating Technology	9915005156	Madhumitha S	International conference on Innovative Trends in Science & Technology ICITST - 2018
		9915005028	Keerthika.N	
		9915005019	Dhana Bhagyam G	
3	Design and Implementation to Ensure Road Safety and Environment Using Embedded System	9915005235	Jeya Surya J	International Conference on New Scientific creations in Engineering and Technology ICNSCET - 19
		9915005218	Atchaya A	
		9915005048	Ragadharshini G	
4	Industrial Monitoring and Controlling Using WSN	9915005223	Kunduru Naveen Kumar Reddy	International Conference on Recent Scientific Research in Engineering and Technology
		9816005006	Goskulashivakumar	
		9915005230	Digumarthy Raj V S M S Chandrasek	

5	Object Recognition for Military Based Services Using Image Processing	9816005001	Chandra Sekaran M	International Journal of Innovative Research In Management, Engineering And Technology, ISSN (Online): 2456-0448
		9915005203	Vikesh S B	
		9915005025	Karuppasamy E	
6	LP-SVD Based on Enhancement Technique for MR And CT Images	9915005014	Ayesha Rizwana S	International Conference on Recent Trends in Science and Management ICRTSM -2018
		9915005007	Aravind J R	
		9915005009	Arumugaperumal M	
7	FPGA Based Real Time Temperature Measurement System	9915005127	Ambarapu Saddam Hussain	ICSET-2019 International Conference on Science, Engineering & Technology
		9915005107	Gali Vinod Kumar Naidu	
		9915005119	Gangavarapu Venkatesh Naidu	
8	DESIGN OF Parallel Pipelined Architecture for Wavelet Based Image Compression Using 2_D Daubechies Method	9915005215	Bandi Siva Sankar Reddy	2019 IEEE International Conference on Intelligent Techniques in Control, Optimization and Signal Processing
		9915005216	Eda Harsha Vardhan Reddy	
		9915005217	Garineni Gopi	

9	Low Cost and High Security System for Fuel Tank	9915005201	Vakati Sravan Kumar	National Conference on Recent Innovation in Engineering, science, and Humanities
		9915005098	Polavarapu Bhargav Sai	
		9915005181	Rishabh	
		9915005170	Pavan Kumar Reddy Bonthu	

International/National Journals: 2018-19

SI. No.	Project Title	Reg. No	Students	Journal Name
1	Junction less Transistor for Low Power Application	9915005042	Nandhini S	International Journal of Emerging Technology and Innovative Engineering
		9915005020	Gayathri S	
2	Segregation Of Decomposable and Non-Decomposable Wastes Using Capacitive Sensor	9915005152	Karthik V	International Journal of Innovative Research in Management, Engineering and Technology
		9915005160	Mohamed Faizul Rahuman H	
		9915005147	Jey Ganesh D	
3	Design And Implementation of 64-Bit Vedic Multiplier	9915005206	Yazali Dinesh	International Journal of Scientific Research and Review
4	Automatic Gear Transmission (AGT) For Manual Gear Cars	9915005137	Devendran V	International Journal of Recent Technology and Engineering (IJRTE)
		9915005144	Jagannath K	

		9915005123	Gokulvasan K	
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International Conferences: 2019-20

Sl. No.	Project Title	Reg. No	Name of the Students	Conference Name
1	A Novel Antenna Design for WiMAX Application using Metamaterials	9916005175	Yallamaraju Surendra Varma	Virtual International Conference On “Innovations in Interdisciplinary Research
		9916005178	Yechuri Venkata Sai Manidee	
		9916005047	Gadiraju Sai Santhosh	
2	Design and Analysis of Microstrip Dual Mode Impedance Transformer	9916005133	Rubankumar M	IEEE- 4 th International Conference on Inventive Systems and Controls
		9916005192	Ram Kishore S	
		9916005186	Gade Vamshikrishna	
3	IoT Based Smart Agriculture Monitoring System	9916005147	Siripuram Vamsi Krishna Redd	International Virtual Conference on Recent Trends in Science, Engineering and Management (ICRTSEM 2020)
		9916005026	Bollineni Sai Gireesh	
		9916005103	Mudduluru Manoj	
4	Computerized Smart Luminous System Using Passive Infrared by Motion Recognition	9916005063	Jeyamohanaroopan K M K	IEEE Proceedings of the Fourth International Conference on Inventive Systems and Control

	(CSLS-WIFI)	9916005107	Navaneethanath M	(ICISC 2020)
5	Emotion Detection Based on Audio Signals	9916005172	Venkatarajugari Chandan Ku	International Conference on Recent Trends in Automation, Signal Processing and Energy Systems (ICASE 2020)
		9916005183	Shaik Mahammed Haneef	
		9916005039	Devireddy Venkata Phanindra	
6	FPGA Implementation for Advanced Encryption Algorithm	9916005012	Annabathina Rajiv	IEEE- International Conference on Modern Trends in Engineering and Research (ICMTER-2020)
		9916005046	Gadhamsetty Venkata Bala N	
		9916005079	Kethi Venkateswarlu	
7	Synthesis And Characteristics of MoS ₂ Based Devices	9916005020	Basireddy Rushikesava Reddy	IEEE- 2 nd International Conference on Smart Systems and Inventive Technology
		9916005031	Chevvu Saikumar	
		9916005055	Hanumanthu Sandeep	
8	Automated Detection of Glaucoma using Image Processing Technique	9916005033	Ch. Sampath	International Conference on Artificial Intelligence and Evolutionary Computations in Engineering system (ICAIECES-2020)
		9916005083	K.V Girish Kumar	
		9916005176	Y. Bharath Kumar	
		9817005003	B. Praveen Kumar	
		9916005035	D. Sri Venkata Nagendra	

9	Medicine Distribution Robot and Human Less Intervention for Covid-19 Affected People (AKM Med Assistive Bot)	9916005099	M. D. Arbas Ali Khan	International Conference on Applications of Machine Learning- ICAML - 2020 (Scopus Indexed)
		9916005084	M. R. Kylash	
		9916005105	M. Muralidharan	
10	Endo Illuminator Light Source using for Multiple Surgeries	9916005002	A Rohan	International Conference on Smart Electronics and Communication ICOSSEC 2020
		9916005008	A Sreekanth	
		9916005027	A Rakesh	
11	Evaluation of Breast Thermograms by Hybrid Classifiers	9916005016	A. Pranavi	International Conference on Computational intelligence and Applications
		9916005117	P. Shoba Rani	

International/Nation Journals: 2019-20

Sl. No.	Project Title	Reg. No.	Name Of the Students	Journal Name
1.	Design And Analysis of Ridge Gap Waveguide For 5G Wireless Standard	9916005137	Sangaraju Jayasurya Varma	International Journal of Digital Communication and Networks (IJDCN)
		9916005101	Mounika S	
		9916005102	Muddeneni Manikanta	

2.	An Innovative Sanitation Solution with IoT Enabled Drainage System for Clean India	9916005091	Mallu Poorna Sree	International Research Journal of Modernization in Engineering Technology and Science
3.	A Reconfigurable Memory Based Fast VLSI Architecture for Computation of The Histogram	9916005130	Raya Ravicharan Reddy	International Journal of Emerging Technology in Computer Science & Electronics
		9916005067	Kadiveti Manoj Kumar Reddy	
		9916005080	Kommi Kalyan	
4.	Design And Analysis of End fire Microstrip Antenna for Aircraft Navigation System	9916005001	S. Abarna	International Journal of Advanced Science and Technology
		9916005126	K. Praveena	
		9916005184	T. Kalpana	
5.	IoT Based Water Level Controller for Irrigation	9817005002	J. Mahendran	Elsevier - Materials Today: Proceedings
		9817005001	M. Azeem Ahmed	
		9817005005	S. Siva Karthick	
6.	Traffic And Energy Aware Routing for Heterogeneous Wireless Sensor Networks	9916005187	K. Naveen Kumar	International Research Journal of Modernization in Engineering Technology and Science
		9916005076	K. Prasanth	
		9916005017	A. Vinay Kumar	

7.	Smart Snake Crawl Robot in Search and Rescue	9916005205	T. Keerthana	International Journal of Robotics and Automation
		9916005108	S. R. Naveen Prasath	
		9916005182	S. Hari Krishnan	
8.	Underwater Image Enhancement	9916005061	J. Jasim Ahmed	Journal of Interdisciplinary Cycle Research
		9916005197	S. Murugesan	
		9916005203	Abhishek Kumar Singh	
9.	Artificial Bridge Between Railway	9961005086	M. Sai Harsha Vardhan	International Journal of Computer Applications
		9916005081	K. Harsha Vardhan Kriti	
		9916005171	P. Venkata Sai	
10.	Medical Images Compression and Decompression using Neural Network	9916005029	T. Chenna Keshava Reddy	International Journal of Innovative Science and Research Technology
		9916005030	Ch. Nikhil Reddy	
		9916005098	M. Hari Siva	

Sl. No.	Project Title	Reg. No.	Name of the Students	Conference Name
1.	Smart nursing robot for COVID-19 patients	9917005038	Gadiraju Likith	International conference on advance computing and innovative technologies in engineering
		9917005039	G Durga Prasad	
		9917005030	Dodla Sreekanth	
2.	Solar based fingerprint authentication voting system using IoT	9917005208	N.V. Vinay Varma	International Conference on Communication and Electronics Systems
		9917005211	K. Manideepak	
		9917005215	Guru Charan	
3.	Detecting of distraction under naturalistic driving using galvanic skin responses	9917005107	Maru Rithwik Seshu Reddy	Communication And Electronics Systems (ICCES)
		9917005128	P. Madhan Sai	
		9917005160	Shaik Mehatab	
4.	Development of the LoRaWAN-based Movement Tracking System	9917005096	Sai Sudheer Maddukuri	IEEE - ICSPC21
		9917005139	Vikas Charan Reddy Ponkala	
		9917005022	Yaswant Boppudi	
5.	Data Hiding Using Audio Steganography and Chaos Encryption with RC7 Encryption	9917005073	K. Kishore Chandra Sekhar	International Conference on Advanced Computing and Communication
		9917005101	M.Madhu	

		9917005056	G. Siddu Saif Shareef	Technology-2021 (ICACCT)
6.	IoT based Smart Shopping Cart using RFID and NodeMCU	9917005071	K. Gangadhar	2 nd International Conference on Electronics and Sustainable Communication Systems ICESC 2021
		9917005217	Ch. Manikanta Reddy	
		9917005192	Y. Sai Sandeep Reddy	
7.	Food Safety and Quality Analysis using Semiconductor Sensor	9917005007	A. Anumanjari	The 5 th International Conference on Trends in Electronics and Informatics (ICOEI 2021)
		9917005123	T. Pandimeena	
		9917005150	J. Safana Fathima	
8.	Enhanced Image Compression using Fractal and Tree Seed-Bio inspired algorithm	9917005065	Kalakuntla Puneeth Sai	6 th International conference on Communication and electronics system
		9917005174	Sutluru Reddy Chanakya	
		9917005034	Elchuri Ajay Kumar	
9.	Finger Knuckle print authentication system using Visual Threshold Cryptographic Techniques	9917005094	K. Hemanth Kumar	ICACT 2021
		9917005213	Y. Joshnakar Reddy	
		9917005218	Y. Tharun Babu	
10.	Smart crop protection from wild animals	9917005204	Koduru Vamsinath Reddy	2 nd International Conference On IOT

	using PIC	9917005179	T. Ravikiran Naidu	Based Networks and Intelligent Systems
		9917005221	K. Bhanupradeep Kumar Reddy	
11.	Particle swarm optimization-based unequal and fault Tolerant trusting protocol for wireless networks	9917005009	A. Sumanth	ICIRMEEE 2021
		9917005042	G. Vigandhar Reddy	
		9917005163	B. M. Sharath Kumar	
12.	Semiconductor based device for Biosensor applications	9917005189	S. Vishali	ICOEI (International Conference on Trends in Electronics and Information
		9917005198	J. Yuva Sri	
		9917005206	R. Selva Jayanthi	
13.	IoT Based Wireless Home Security System	9917005070	Kanagasabapathy T S	ICICNIS 2021: 2 nd International Conference on IoT Based Control Networks and Intelligent Systems
		9917005046	Gokul P	
		9917005067	Kamaswaran S	
14.	Identification Of Timber Defects Using Convolution Neural Network	9917005170	Sivaraman K	6 th International conference on communication and electronics system (ICCES 2021)
		9917005165	Siddhartha T	
		9917005172	Subramani V	

15.	Electricity Monitoring and Auto Bill Generation Using IoT	9917005006	A. Bhargav Narasimha	3 rd IEEE ICSPC 2021
		9917005145	R. Guna Vardhan Reddy	
		9917005156	S. Sathish	
16.	Node MCU based landmine detection using Wireless Robot	9917005116	Nanda Rahul Bharadwaj	International Conference on Advanced Computing and Communication Technology (ICACCT-2021)
		9917005091	Krishnamannagari Sathish Kumar Reddy	
		9917005205	Mule Siva Reddy	
17.	Monitoring speaker sentiment in various conditions using Machine learning	9917005037	G. Yeshwitha	2 nd International Conference on Data Intelligence and Cognitive Informatics ICDICI 2021
		9917005187	V. Mounika	
		9917005055	G. Vinathi	
18.	IoT Based Low Power Transmission Line Fault Detection and Indication	9917005149	M. D. Rudra Prassanth	3 rd IEEE International Conference on Signal Processing and Communication (ICSPC 21).
		9917005144	G. Rajarajan	
		9917005117	N. Harshith	

International/National Journals: 2020-21

SI. No.	Project Title	Reg. No.	Name of the Students	Journal Name
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1	Low power ECG based processor for predicting ventricular arrhythmia	9917005032	D. Ajith Reddy	Annals of The Romanian Society for Cell Biology
		9917005054	G. Harsha Vardhan	
		9917005126	P. Venkata	
2	Bluetooth based car Garage opening system	9917005104	M Sushanth Varma	International Science and Research Journals
		9917005066	K Reddy Mohan Reddy	
		9917005059	G Pavan Kumar	
3	Design and Analysis of Nano antenna for satellite/ 5G Applications	9917005058	Gurram Puneeth	Journal of Huazhong University of Science and Technology
		9917005005	Akula Yogendra	
		9917005203	P Bhargav Reedy	
4	Motorcycle start-stop system based on intelligent Biometric voice Recognition and only by wearing helmet	9917005013	Balan Abhilash	Annals Of the Romanian Society for Cell Biology
		9917005133	P. Lakshmi Narayana	
		9917005087	Kotte Rajesh Kumar	
5	Prediction of Heart disease using big data analytics	9917005186	Vemuri Gopi Krishna	Annals of the Romanian

		9917005194	Yenduru Sri Sai Naveen	Society for Cell Biology
		9917005086	Kothuru Surya Sai Pranith	
6	Development of smart stick for visually challenged people	9917005108	M. Vineesh Reddy	Annals of the Romanian Society for Cell Biology
		9917005119	N. B. Sahul	
		9917005080	K. Sreenath	

C. Prizes/awards received in events:

Despite more participation from the programme, students received prizes and awards, too, at various occasions. These awards motivate the junior students of the programme on the participation in such events.

Table 4.5.3.C.1: Technical Prize/Awards received by students

Sl. No.	Name of the Student	Event Name	Venue	Date	Prize Won
1.	C Sathya Pradeep	Paper Presentation, Angel Arena 2018	Angel College of Engineering and Technology, Tirupur	29.09.2018	First
2.	C Sathya Pradeep	Technical Events, Angel Arena 2018	Angel College of Engineering and Technology, Tirupur	29.09.2018	Third

3.	Cherukuri Nikhil Kumar	IUCEE & EWB Student Leadership Course 2020 (Phase-3) Project Phase (Business Proposal)	IUCEE	December 2020 to May 2021	Rs. 2500
4.	MUTHU KUMAR M V	INTERVIEWIND	Sri Krishna College of engineering and technology	13-09-2021	2 nd prize
5.	ARAVIND I	INTERVIEWIND	Sri Krishna College of engineering and technology	13-09-2021	3 rd prize
6.	LAVANURU ANURADHA	Debate Competition	IUCEE	03.09.21	2 nd prize
7.	Chitrالا Himavanth Sai Ram	Oxygen Enriched Air Project Competition	IUCEE	June 10	Rs. 2000/-
8.	Cherukuri Nikhil Kumar	Design, Development and Maintenance of Website for IUCEE Student Development Programs	Indo - Universal Collaboration for Engineering Education (IUCEE)	June 2021	Rs. 5000/-

Table 4.5.3.C.2: Sports Prize / Awards received by students:

Sl. No.	Name of the Event / Prize Won	Name of the Organizer	Name of the Student	Date of the Event
1.	Volleyball / Runner with cash Prize Rs. 4,000.	3 rd Avinashilingam Ayya Memorial Trophy – State Level Volleyball Tournament	S. Sobiya	27.09.2018
			Anusha. M	
2.	Basketball / Runner with cash Prize Rs. 9,000.	Chief Minister District Level Competition	Idiga Divya Bharathi	06.02.2019 & 07.02.2019
3.	Basketball / 4 th place	Sports Development Authority Tamil Nadu State Level Inter University Basketball (Men & Women) Tournament held at Noorul Islam University, Kanyakumari	Idiga Divya Bharathi	20.09.2018 to 22.09.2018
4.	Volleyball / Winner with cash Prize Rs. 12,000.	Chief Minister District Level Competition	S. Sobiya	06.02.2019 & 07.02.2019
5.	Volleyball / Winner with cash Prize Rs. 5,000.	44 th State level open Volleyball (Women) Tournament organized by Madathur Volleyball Club, Madathur, Tenkasi	S. Sobiya	09.02.2019



Figure 4.5.3.C.1: ECE students S.Sobiya (Fifth from Left - of the players) and Anusha. M (First from Left - of the players) receiving the Trophy at the 3rd Avinashilingam Ayya Memorial Trophy – State Level Volleyball Tournament.



Figure 4.5.3.C.2: ECE student Idiga Divya Bharathi (Fourth from Left – of the players) at the Chief Minister District Level Competition



Figure 4.5.3.C.3: ECE student Idiga Divya Bharathi (Second from Left - of the players) receiving the Trophy at Sports Development Authority Tamil Nadu State Level Inter University Basketball (Men & Women) Tournament held at Noorul Islam University, Kanyakumari



Figure 4.5.3.C.4: ECE student S.Sobiya (Fourth from Left – of the players standing) at the Chief Minister District Level Competition



Figure 4.5.3.C.5: ECE student S. Sobiya (Second from Left – of the players standing) receiving the Trophy at 44th State level open Volleyball (Women) Tournament organized by Madathur Volleyball Club, Madathur, Tenkasi.

D. International Certifications

International certifications are helpful for the students to gain technical knowledge and skills and build up self-esteem and self-confidence in their professional careers. In addition, these courses provide profound knowledge to the student to sustain the competitive world increases marketability.

Faculty are motivating and encouraging students to complete the international certification courses. The student attains the international certification to enhance their modeling knowledge to attain PO attainment of various courses associated with software knowledge like Python programming, which plays an essential role in placement and higher studies. Students participated in international certifications are consolidated in table 4.5.3.D.1 and 4.5.3.D.7

Table 4.5.3.D.1: Consolidated list for CLAD, BEC and HPE

Academic Year	No. of students participated in CLAD	No. of students participated in BEC	No. of students participated in HPE
2018-19	26	76	33
2019-20	3	55	-

Table 4.5.3.D.2: CLAD qualified students 2018-19

Sl. No.	Registration number	Names of students selected/qualified	Certification Examination
1	9915005195	S. Manisha	CLAD
2	9915005097	S. Sukumar	CLAD
3	9915005155	K. Keerthi Sai Krishna	CLAD
4	9915005046	F. Pravin Raja	CLAD

5	9915005017	R. Devi Kamatchi	CLAD
6	9915107004	V. Sudhatharangini	CLAD
7	9915005141	D. Girish	CLAD
8	9915005118	C. MohanaTeja	CLAD
9	9915005105	P. Vaishnavi	CLAD
10	9915005109	Himaja. Y	CLAD
11	9915005173	P.P rasanna Kumar	CLAD
12	9915005174	P. Gowtham Kiran Varma	CLAD
13	9915005164	M. Dhavanth	CLAD
14	9915005146	P. Jeyashree	CLAD
15	9915005210	K. Triveni	CLAD
16	9915005202	V. Velmurugan	CLAD
17	9915005033	B. Mariammal	CLAD
18	9915005047	R Preethi	CLAD
19	9915005120	K Kowsalya	CLAD
20	9915005030	S Madhumitha	CLAD
21	9915005001	P. Aarthy	CLAD
22	9915005017	V. Devika	CLAD

23	9915005068	R. Vetriseelvam	CLAD
24	9915005004	A. Akalya	CLAD
25	9915005018	M. M. Dhaksheena	CLAD
26	9915005154	K. Vijay Kumar	CLAD

Table 4.5.3.D.3: CLAD qualified students 2019-20

SI. No.	Registration number	Names of students selected/ qualified	Certification Examination
1	9916005124	M. Prakash	CLAD
2	9916005199	M. Swathi	CLAD
3	9916005205	Keerthana. T	CLAD

Table 4.5.3.D.4: BEC qualified students 2018-19

SI. No.	Registration number	Names of students qualified	Certification Examination
1	9915005001	Aarthy P	BEC
2	9915005022	Jeslin Sneha J	BEC
3	9915005018	Dhaksheena M	BEC
4	9915005026	Kathir Kaamesh S	BEC
5	9916005001	Abarna S	BEC

6	9916005045	Flavita Angeline	BEC
7	9916005041	Durga K	BEC
8	9915005068	Vetriselvam R	BEC
9	9915005056	Senthil Kumar B	BEC
10	9915005215	Bandi Siva Sankar	BEC
11	9915005002	Afreena Parveen. N	BEC
12	9915005161	Md. Zaidh Ahmad	BEC
13	9915005190	S K M D Sharif	BEC
14	9915005191	A Siddhu	BEC
15	9915005015	Bharathi V	BEC
16	9915005006	Anu Mangai	BEC
17	9915005180	Ramya	BEC
18	9915005005	Alice Jemima	BEC
19	9915005042	Nandhini S	BEC
20	9915005210	K Triveni	BEC
21	9915005165	Muthuraj P	BEC
22	9916005051	Gujjula Harika	BEC
23	9516005301	Joshwin	BEC

24	9916005022	Benita Raja Sheba D	BEC
25	9916005003	M. Aishwarya	BEC
26	9916005149	K. Sivavarshini	BEC
27	9916005072	K Pavani	BEC
28	9916005100	P Mohana Varsha	BEC
29	9916005047	Saisanthosh	BEC
30	9916005025	Navya Sree	BEC
31	9916005117	Shobarani	BEC
32	9916005016	Pranavi	BEC
33	9916005092	Tanmayi	BEC
34	9916005126	Praveena	BEC
35	9916005004	Aishwarya	BEC
36	9916005145	Shivani	BEC
37	9916005058	Nachiyar	BEC
38	9916005021	Bavatharini	BEC
39	9916005037	Durga Lakshmi	BEC
40	9916005199	Bhanitejaswi	BEC
41	9916005151	Keerthana T	BEC

42	9916005069	Kaleeswari	BEC
43	9916005077	Keerthana S	BEC
44	9916005131	Deenadayal	BEC
45	9916005082	Billa Mahesh	BEC
46	9916005024	Shiva Sainath Reddy	BEC
47	9916005104	Chevu Sai Kumar	BEC
48	9916005055	H Sandeep	BEC
49	9916005141	Akram Javid	BEC
50	9916005099	Arbas Ali Khan	BEC
51	9916005128	Vignesh S	BEC
52	9916005204	Naveen Kumar S	BEC
53	9916005194	Vamshi Krishna K	BEC
54	9916005010	A Ravi Teja	BEC
55	9916005054	Kumar Sai Reddy	BEC
56	9916005089	C Teja Vyas	BEC
57	9916005042	Abhiram Reddy	BEC
58	9916005011	A Jayasai	BEC
59	9916005028	C Haveesh Kumar	BEC

60	9916005040	D Mohan Reddy	BEC
61	9916005196	Harshavardhan	BEC
62	9916005203	Abishek Kumar Singh	BEC
63	9916005146	Sathyaanand	BEC
64	9916005197	Murugesan S	BEC
65	9916005075	K Saivamsi Krishna	BEC
66	9916005121	P Sumanth	BEC
67	9916005122	P Venkata Sai	BEC
68	9916005043	D Anees Kumar Reddy	BEC
69	9916005057	A Hilal Khan	BEC
70	9916005114	V Naga Sai Sasidhar	BEC
71	9916005079	Venkateswarlu	BEC
72	9916005046	Gvb Nikhil	BEC
73	9916005012	A Rajiv	BEC
74	9917005045	Godwin S	BEC
75	9917005170	Sivaraman	BEC
76	9917005165	Siddhartha	BEC

Table 4.5.3.D.5: BEC qualified students 2019-20

Sl. No.	Registration number	Names of students qualified	Certification Examination
1	9916005092	Mana Tanmayi	BEC
2	9916005015	Anumala Sudhakar	BEC
3	9916005081	Kommuru Harsha Vardhan Kiriti	BEC
4	9916005086	Maddali Sai Harshavardhan	BEC
5	9916005093	Manchikalapati Dheeraj Singh	BEC
6	9916005053	Gunnam Reddy Bharath Sai	BEC
7	9916005203	Abhishek Kumar Singh	BEC
8	9916005197	Murugesan S	BEC
9	9916005204	Sathuluri Naveen Kumar	BEC
10	9916005151	Somisetty Bhanu Tejaswi	BEC
11	9916005004	Aishwarya S	BEC
12	9916005145	Shivani K	BEC
13	9916005206	Chitradevi P	BEC
14	9916005126	Praveena K	BEC
15	9916005196	Nagarajupalli Harshavardhan	BEC
16	9916005200	Muthu Kumar D	BEC
17	9916005159	Thirumanikandan S B	BEC

18	9916005194	Korrapati Vamsikrishna	BEC
19	9916005011	Allineni Jaya Sai	BEC
20	9916005010	Allampati Raviteja	BEC
21	9916005114	P Venkata Nagasai Sasidhar	BEC
22	9916005042	Duvvuru Abhiram Reddy	BEC
23	9916005054	Guntaka Kumar Sai Reddy	BEC
24	9916005024	Billa Mahesh	BEC
25	9916005082	Kondisetty Venkata Manikanta Deenadayal	BEC
26	9916005040	Duggireddy Mohan Reddy	BEC
27	9916005131	Revilla Prudhvi Sai Srinivas	BEC
28	9916005055	Hanumanthu Sandeep	BEC
29	9916005075	Kataru Saivamsikrishna	BEC
30	9916005079	Kethi Venkateswarlu	BEC
31	9916005104	Munagala Sivasainathreddy	BEC
32	9916005122	Polucharla Venkata Sai	BEC
33	9916005028	Challa Haveesh Kumar	BEC
34	9916005046	Gadhamsetty Venkata Bala Naga Nikhil	BEC
35	9916005146	Singamsetty Satyanand	BEC

36	9916005043	Duvvuru Aneesh Kumar Reddy	BEC
37	9916005177	Yaramasu Sai Kumar	BEC
38	9916005199	Menda Swathi	BEC
39	9916005128	Ragipudi Kalyan	BEC
40	9916005016	Arati Pranavi	BEC
41	9916005117	Papasani Shobarani	BEC
42	9916005025	Boggarapu NavyaSree	BEC
43	9916005144	Shiva Somu S S	BEC
44	9916005057	Hilal Khan A	BEC
45	9916005089	Mahimaluru CharanTeja Vyas	BEC
46	9916005167	Vardhireddy Venkata Nagendra Reddy	BEC
47	9916005037	Deris R	BEC
48	9916005058	Indiradevi Nachiyar S R	BEC
49	9916005099	Mohammed Arbas Ali Khan	BEC
50	9916005171	Ponnuru Venkata Sai	BEC
51	9916005141	Shaik Mohammad Akram Javid	BEC
52	9916005121	Polani Sumanth	BEC
53	9916005021	Bavathaarani B	BEC

54	9918005006	Cherukuri Nikhil Kumar	BEC
55	9917005036	Francischezhiyan J	BEC

Table 4.5.3.D.6: HPE qualified students 2018-19

Sl. No.	Roll number of the exam	Names of students qualified	Certification Examination
1	HPE/CoC/ET/1811-04028	Ajithkumar R	HDL/HPE
2	HPE/CoC/ET/1811-04021	Aravindh	HDL/HPE
3	HPE/CoC/ET/1811-04019	Bala Murali Krishna	HDL/HPE
4	HPE/CoC/ET/1811-04018	Bharath Sai	HDL/HPE
5	HPE/CoC/ET/1811-04008	Chakradhar Kakshith Reddy	HDL/HPE
6	HPE/CoC/ET/1811-04020	Chundu Avinash	HDL/HPE
7	HPE/CoC/ET/1811-04011	Dheeraj Singh	HDL/HPE
8	HPE/CoC/ET/1811-04026	Gattu Pranith Reddy	HDL/HPE
9	HPE/CoC/ET/1811-04017	Guntaka Kumar Sai Reddy	HDL/HPE
10	HPE/CoC/ET/1811-04016	Jeya Mohana Roopan Kmk	HDL/HPE

11	HPE/CoC/ET/1811-04029	Jeya Prakash K	HDL/HPE
12	HPE/CoC/ET/1811-04015	Jugunta Sharon Paul	HDL/HPE
13	HPE/CoC/ET/1811-04024	Kaku Naveen Kumar	HDL/HPE
14	HPE/CoC/ET/1811-04009	Karthy Gopalan	HDL/HPE
15	HPE/CoC/ET/1811-04014	Kethi Venkateswarlu	HDL/HPE
16	HPE/CoC/ET/1811-04013	Kylash	HDL/HPE
17	HPE/CoC/ET/1811-04012	Makkena Ajay	HDL/HPE
18	HPE/CoC/ET/1811-04031	Manikandan Palanivel	HDL/HPE
19	HPE/CoC/ET/1811-04010	Muralidharan M	HDL/HPE
20	HPE/CoC/ET/1811-04000	Nagarajupalli Harsha Vardhan	HDL/HPE
21	HPE/CoC/ET/1811-04023	Naveen P	HDL/HPE
22	HPE/CoC/ET/1811-03999	Padarthi Ragahvendra Anil Kumar	HDL/HPE
23	HPE/CoC/ET/1811-04007	Priyadharshini R	HDL/HPE
24	HPE/CoC/ET/1811-	Ramesh G	HDL/HPE

	04030		
25	HPE/CoC/ET/1811-04006	Ravi Charan Reddy	HDL/HPE
26	HPE/CoC/ET/1811-04005	Sharmila Ravichandran	HDL/HPE
27	HPE/CoC/ET/1811-04001	Somasekhar Reddy	HDL/HPE
28	HPE/CoC/ET/1811-04022	Sunki Reddy Hari Obul Reddy	HDL/HPE
29	HPE/CoC/ET/1811-04025	Surendra Varma	HDL/HPE
30	HPE/CoC/ET/1811-04027	Swedheetha Chandrasekar	HDL/HPE
31	HPE/CoC/ET/1811-04002	Uma Mahes Wary	HDL/HPE
32	HPE/CoC/ET/1811-04004	Vanaja Nagarajan	HDL/HPE
33	HPE/CoC/ET/1811-04003	Venumbaka Avinash Reddy	HDL/HPE

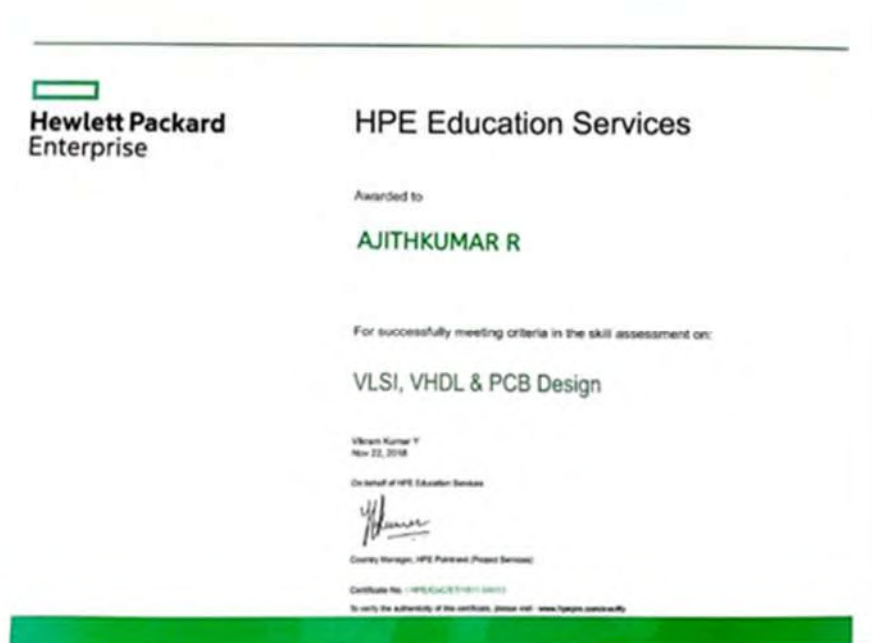


Figure 4.5.3.D.1: Sample certificate for HPE

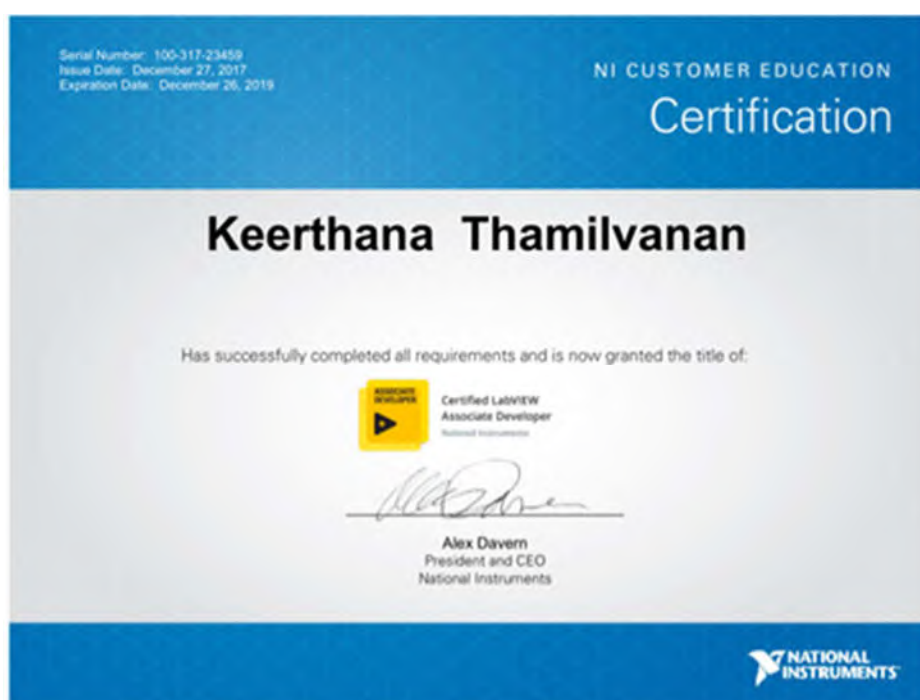


Figure 4.5.3.D.2: Sample certificate for CLAD

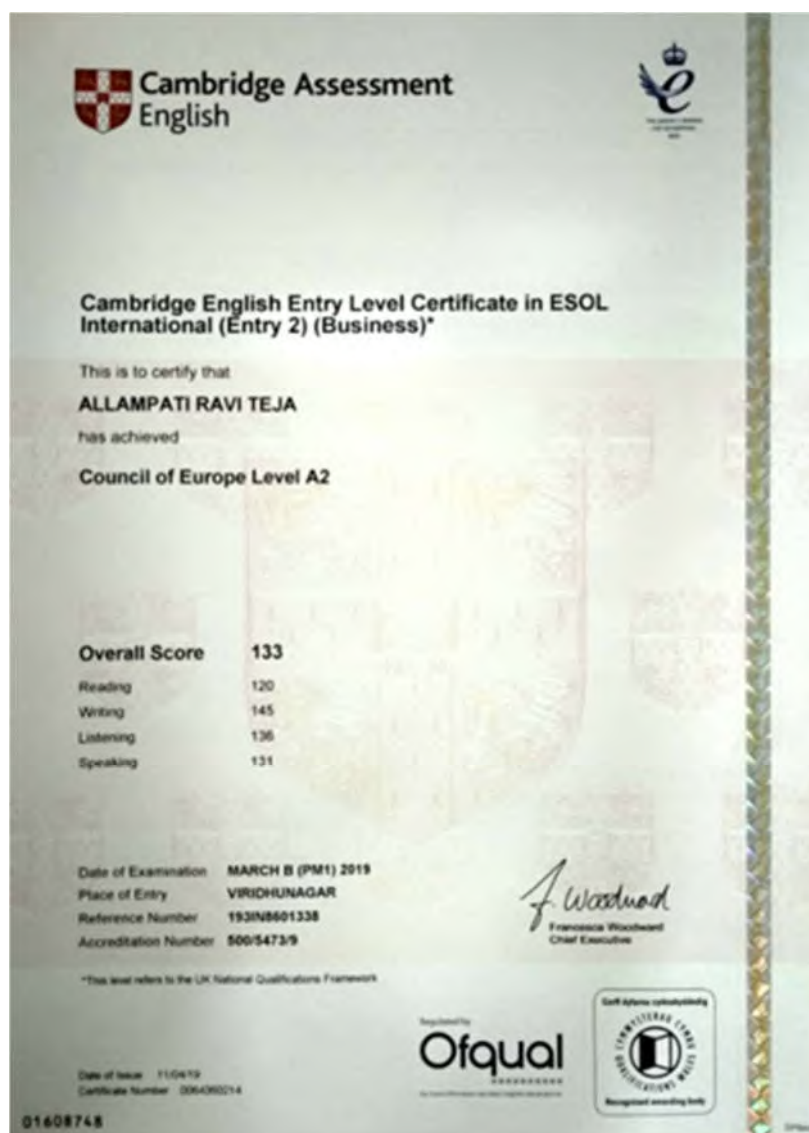


Figure 4.5.3.D.3: Sample certificate for BEC

Table 4.5.3.D.7: SAP Student Training Details

SAP INTERNATIONAL CERTIFICATION						
Academic Year	ABAP		MM		HCM	
	Appeared	Passed	Appeared	Passed	Appeared	Passed
2019-20	156	132	17	9	13	5

2020-21	179	175	12	12	11	11
2021-22	143	141	1	1	-	-

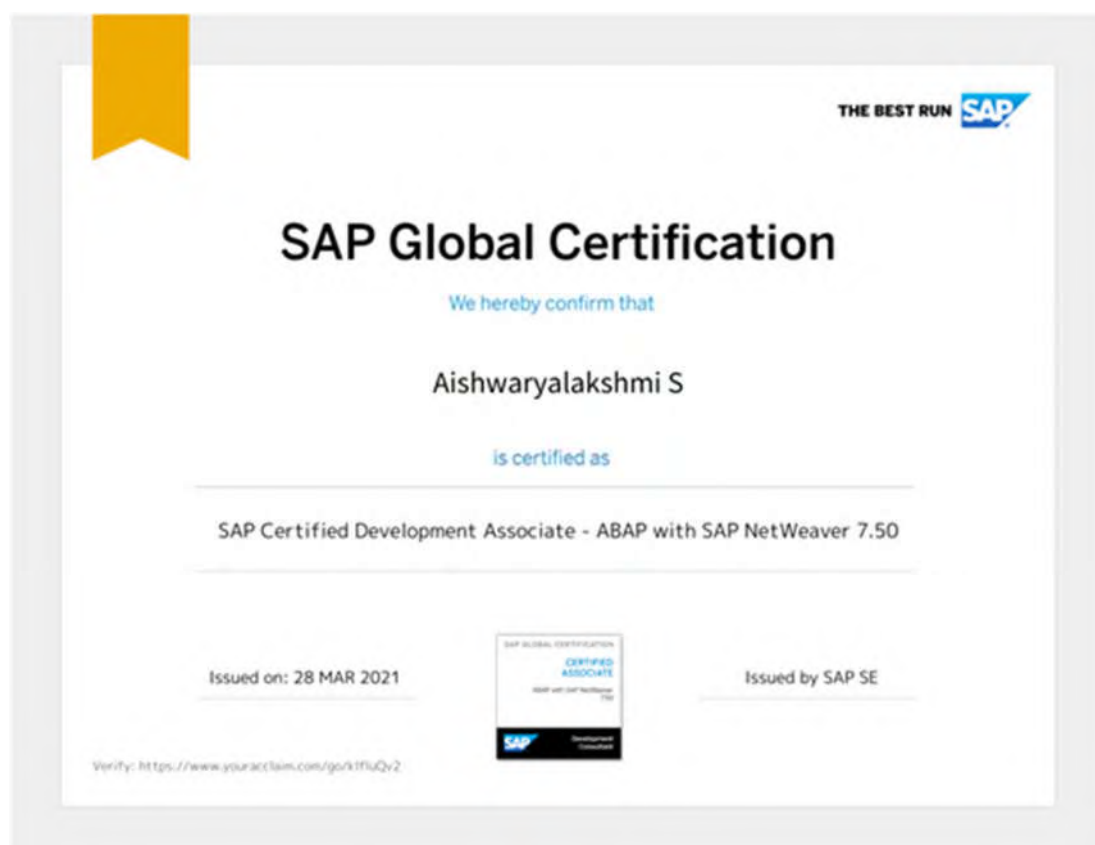


Figure 4.5.3.D.4: Sample SAP certificate

CRITERION 4	Students' Performance	89.56/100
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Item (Information to be provided cumulatively for all the shifts with explicit headings, wherever applicable)	CAY 2021-22	CAYm1 2020-21	CAYm2 2019-20	CAYm3 2018-19
Sanctioned intake of the program (<i>N</i>)	240	240	240	240
Total number of students admitted in first year <i>minus</i> number of students migrated to other programs/institutions, plus no. of students migrated to this program (<i>N1</i>)	240	197	240	144
Number of students admitted in 2nd year in the same batch via lateral entry (<i>N2</i>)	12	8	22	4
Separate division students, if applicable (<i>N3</i>)	-	-	-	-
Total number of students admitted in the Program (<i>N1 + N2 + N3</i>)	252	205	262	148

Table B.4a**CAY – Current Academic Year****CAYm1- Current Academic Year minus1= Current Assessment Year****CAYm2 - Current Academic Year minus2=Current Assessment Year minus 1****LYG – Last Year Graduate****LYGm1 – Last Year Graduate minus 1****LYGm2 – Last Year Graduate minus 2**

Year of entry	N1 + N2 + N3 (As defined above)	Number of students who have successfully graduated without backlogs in any semester/year of study. (Without Backlog means no compartment or failures in any semester/year of study)			
		I Year	II Year	III Year	IV Year
CAY (2021-22)	252 (240+12)				
CAYm1 (2020-21)	205 (197+8)	187			
CAYm2 (2019-20)	262 (240+22)	232	254		
CAYm3 (2018-19)	148 (144+4)	103	105 (101+4)	134	
CAYm4 (2017-18)	203 (202+1)	130	125	122	102
CAYm5 (LYG) (2016-17)	186 (180+6)	133	96	94	93
CAYm6 (LYGm1) (2015-16)	186 (179+7)	99	72 (70+2)	71	71
CAYm7 (LYGm2) (2014-15)	48 (41+7)	30	25	24	24

Table B.4b

Year of entry	N1 + N2 + N3 (As defined above)	Number of students who have successfully graduated in stipulated period of study) [Total of with Backlog + without Backlog]			
		I Year	II Year	III Year	IV Year
CAY (2021-22)	252 (240+12)				
CAYm1 (2020-21)	205 (197+8)	197			
CAYm2 (2019-20)	262 (240+22)	240	262		
CAYm3 (2018-19)	148 (144+4)	144	148	148	
CAYm4 (2017-18)	203 (202+1)	202	203	203	198
CAYm5 (LYG) (2016-17)	186 (180+6)	180	186	186	182
CAYm6 (LYGm1) (2015-16)	186 (179+7)	179	186	186	175
CAYm7 (LYGm2) (2014-15)	48 (41+7)	41	48	48	42

Table B.4b

4.1. Enrolment Ratio (20/ 20)

Enrolment Ratio= $N1/N$

Enrolment Ratio= $N1/N = [240+197+240]/720 = 94.02\%$

Item (Students enrolled at the First Year Level on average basis during the previous three academic years starting from current academic year)	Marks
>=90% students enrolled	20
>=80% students enrolled	18
>=70% students enrolled	16
>=60% students enrolled	14
Otherwise	0

4.2. Success Rate in the stipulated period of the program (20)**4.2.1. Success rate without backlogs in any semester/year of study (6.9/15)**

SI= (Number of students who have graduated from the program without backlog)/(Number of students admitted in the first year of that batch and actually admitted in 2nd year via lateral entry and separate division, if applicable)

Average SI = Mean of Success Index (SI) for past three batches

Success rate without backlogs in any semester/year of study = $15 \times \text{Average SI}$

=15 x 0.46 = 6.9

Item	LYG (CAYm4) [2017-18]	LYGm1 (CAYm5) [2016-17]	LYGm2 (CAYm6) [2015-16]	LYGm3 (CAYm7) [2014-15]
Number of students admitted in the corresponding First Year + admitted in 2nd year via lateral entry and separate division, if applicable	203	186	186	48

Number of students who have graduated without backlogs in the stipulated period	102	93	71	24
Success Index (SI)	0.5	0.5	0.38	0.5
Average Success Index	0.46			

Table B.4.2.1

4.2.2. Success rate in stipulated period of study [Total of with backlog + without backlog] (4.82/5)

SI= (Number of students who graduated from the program in the stipulated period of course duration)/ (Number of students admitted in the first year of that batch and admitted in 2nd year via lateral entry and separate division, if applicable)

Average SI = mean of Success Index (SI) for past three batches

Success rate = $5 \times \text{Average SI} = 5 \times 0.964 = 4.82$

Item	LYG (CAYm4) [2017-18]	LYGm1 (CAYm5) [2016-17]	LYGm2 (CAYm6) [2015-16]	LYGm3 (CAYm7) [2014-15]
Number of students admitted in the corresponding First Year + admitted in 2nd year via lateral entry and separate division, if applicable	203	186	186	48
Number of students who have graduated in the stipulated period	198	182	175	42
Success Index (SI)	0.975	0.978	0.94	0.875
Average Success Index	0.964			

Table B.4.2.2

4.3. Academic Performance in Second Year (10/10)

Academic Performance = 10

Average API (Academic Performance Index), where API = ((Mean of 2nd Year Grade Point Average of all successful Students on a 10-point scale) or (Mean of the percentage of marks of all successful students in Second Year/10)) x (number of successful students/number of students appeared in the examination)

Successful students are those who are permitted to proceed to the Third year.

Academic Performance	CAYm1 (2020-21) 2019 batch	CAYm2 (2019-20) 2018 batch	CAYm3 (2018-19) 2017 batch	CAYm4 (2017-18) 2016 batch
Mean of CGPA or Mean Percentage of all successful students (X)	7.73	7.19	6.82	6.60
Total no. of successful students (Y)	262	148	203	186
Total no. of students appeared in the examination (Z)	262	148	203	186
API = X* (Y/Z)	7.73	7.19	6.82	6.60
Average API = (AP1 + AP2 + AP3)/3	7.25			

Table B.4.3

4.4. Placement, Higher Studies and Entrepreneurship (27.84/30)

Assessment Points = 30 × average placement = 30 x 0.928 = 27.84

Item	CAYm1 [2020-21]	CAYm2 [2019-20]	CAYm3 [2018-19]	CAYm4 [2017-18]
Total No. of Final Year Students (N)	203	186	186	48
No. of students placed in companies or Government Sector (x)	196	161	157	45

No. of students admitted to higher studies with valid qualifying scores (GATE or equivalent State or National Level Tests, GRE, GMAT etc.) (y)	5	11	2	0
No. of students turned entrepreneur in engineering/technology (z)	1	-	2	-
$x + y + z =$	202	172	161	45
Placement Index : $(x + y + z)/N$	0.995	0.924	0.865	0.937
Average placement= $(P1 + P2 + P3)/3$	0.928			
Assessment Points = $30 \times$ average placement	27.84			

2017-18

S NO	STUDENT NAME	ENROLLMENT NO	EMPLOYEE NAME	APPOINTMENT NO
1	SONIYA R	9515005301	ZENOPSY'S TECHNOLOGIES PVT. LTD	ZENRSA11112017
2	PONROHINI N	9516005501	BANKZONE	BANPON20122017
3	ABIJITH VIGNESH.S	9815005001	BANKZONE	BANABI20122017
4	ALAGIRISAMY M.	9815005002	BOARD INFINITY	BIYALA15102018
5	MANOJKUMAR.M	9815005003	BEREZIA	BERMAN20122017
6	GOWTHAM S.	9815005004	AETINS	AETGOW01082018
7	SUBBURAJA AJ.	9815005005	BOARD INFINITY	BIYSUB15102018
8	AARTHI N	9914005001	BANKZONE	BANAAR20122017
9	AISHWARYA M	9914005002	AETINS	AETAIS01082018
10	ANUSIYA PREETHI M.	9914005004	BOARD INFINITY	BIYANU15102018
11	ARJUN G	9914005005	AETINS SOFTWARE	ASEARJ01082018
12	ARUN KUMAR K	9914005006	BANKZONE	BANARU20122017
13	BALAJI G	9914005007	LUMINA DATAMATICS	LDSBAL26022018
14	BASKAR V.	9914005008	BOARD INFINITY	BIYBAS15102018
15	BASLIS DIVYA G	9914005009	AETINS	AETBAS1082018
16	M.P.BHARGHAVI	9914005010	KALYCITTO INFOTECH	KALBHI13112017
17	DURGADEVI S	9914005011	BOARD INFINITY	BIYDUR15102018
18	GEETHA K	9914005012	BOARD INFINITY	BIYGEE15102018
19	INDHUJA.M	9914005016	BANKZONE	BANIND20122017
20	JANAKI R	9914005017	BANKZONE	BANJAN20122017
21	LOHANATHAN A.	9914005021	LEAD PRO	LPOLOH02062018

22	MADHANA GAYATHRI G	9914005022	MAGUS	MAGMAD10032018
23	MENAKA R.	9914005023	BOARD INFINITY	BIYMEN15102018
24	MUTHUKRISHNA VENI.S	9914005026	AETINS	AETMVI01082018
25	NARESH KUMAR S	9914005027	BANKZONE	BANNAR20122017
26	NIVETHA J	9914005028	BANKZONE	BANNIV20122017
27	RISHIKA S.	9914005029	BOARD INFINITY	BIYRIS15102018
28	SAKTHI SELVA S.	9914005030	TESSOLVE SEMICONDUCTOR	TESSSA03102018
29	SANKARI.U	9914005032	BEREZIA	BERUSI20122017
30	SRIBALAJI S	9914005033	BANKZONE	BANSSI20122017
31	SUNDARAVALLI.K	9914005036	BEREZIA	BERKSI20122017
32	SURIYA S	9914005037	BEREZIA	BERSSA20122017
33	THANGARAJ A	9914005038	TNQ	TNQATH26022018
34	UDHAYA KAMALI N	9914005039	BANKZONE	BANUKI20122017
35	UDHAYA SHRI N	9914005040	BOARD INFINITY	BIYUSI15102018
36	VENKATESH.S	9914005041	BANKZONE	BANSVH20122017
37	VIJAYARANI K.	9914005042	AETINS	AETKVI01082018
38	VISHNU RAVICHANDRAN	9914005043	BANKZONE	BANVRN20122017
39	MEENAKSHI C	9914005045	BANKZONE	BANCMI20122017
40	MANI GOWTHAM.G.K	9914005046	BANKZONE	BANMGM20122017
41	GAYATHRI.S	9914005048	BEREZIA	BERSGI20122017
42	ELAKIYA B	9914005049	TNQ	TNQATH26022018
43	DEVIVISAKI.P	9914005050	BANKZONE	BANPDI20122017
44	GAYATHRI R	9914005051	AETINS	AETRGI01082018
45	AJITH KUMAR V	9914005003	BANKZONE	BANAJI20122017

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S NO	STUDENT NAME	ENROLLMENT NO	EMPLOYEE NAME	APPOINTMENT NO
1	JOSHWIN DARINGTON M	9516005301	EDUVIRTUOSO	EDUJOS30042019
2	JAIN MARCIYA X	9516005302	SRI MARG HUMAN RESOURCES PVT LTD	SRIJAI11032019
3	CHANDRA SEKARAN M	9816005001	KOTAK	KOTCHA24012019
4	YUVARAJ M	9816005004	THINKSYNQ	THIYUV21092019
5	INDIRARAJESWARI R	9816005005	NCR	NCRIND23032019
6	GOSKULA SHIVAKUMAR	9816005006	JUST DIAL	JUSGOS13082018
7	SULTHAN ALAUDEEN S.	9914005035	THINKSYNQ	THISUL21092019
8	AARTHY P	9915005001	HGS	HGSAAR24112018
9	AFRENA PARVEEN N	9915005002	SWIFTERZ	SWIAFR01112018
10	AKALYA A	9915005004	SUTHERLAND	SUTAKA26112018
11	ALICE JEMIMA S	9915005005	KOTAK	KOTALI24012019
12	ANU MANGAI R	9915005006	HGS	HGSANU24112018
13	ARAVIND J R	9915005007	HGS	HGSARA24112018
14	ARUMUGA PANDI S	9915005008	INDIAN HEALTH CARE	INDARU11032019
15	ARUMUGAPERUMAL M	9915005009	HGS	HGSARU24112018

16	ARUNKUMAR R	9915005010	OSIZ TECHNOLOGIES PVT LTD	OSZAKR01092021
17	ASHA JENCY J	9915005011	HGS	HGSASH24112018
18	ATCHAYA S	9915005013	HGS	HGSATC24112018
19	AYESHA RIZWANA S	9915005014	KOTAK	KOTAYE24012019
20	BHARATHI V	9915005015	NCR	NCRBHA23032019
21	DEVIKA V	9915005017	SUTHERLAND	SUTDEV26112018
22	DHAKSHEENA M M	9915005018	IBM	IBMMMD29112019
23	DHANA BHAGYAM G	9915005019	NCR	NCRDHA23032019
24	GAYATHRI S	9915005020	HGS	HGSGAY24112018
25	JESLIN SNEHA J	9915005022	HGS	HGSJES24112018
26	JOTHIKARTHIKA A	9915005023	HGS	HGSJOT24112018
27	KARUPPASAMY E	9915005025	NEEYAMO	NEEKAR05062019
28	KATHIR KAAMESH S	9915005026	HGS	HGSKAT24112018
29	KEERTHIGA R	9915005027	NCR	NCRKEE23032019
30	KEERTHIKA.N	9915005028	KOTAK	KOTKEE24012019
31	MANOJKUMAR P	9915005032	HGS	HGSMAN24112018
32	MARIAMMAL B	9915005033	Technomax Systems India Private Limited	TMSBML20082021
33	MEENAMBIGAI R	9915005034	SUTHERLAND	SUTMEE26112018
34	MUPPUDATHI P	9915005039	KOTAK	KOTMUP24012019
35	NALAYIRA MUTHU S	9915005041	HGS	HGSNAL24112018
36	NANDHINI S	9915005042	EXIDE LIFE INSURANCE	EXINAN18022019
37	NUSARATHJAHAN D	9915005043	NCR	NCRNUS23032019
38	PARANIKUMAR T	9915005044	THINKSYNQ	THIYUVPAR21092019
39	PRANESHWARAN P	9915005045	THINKSYNQ	THIPRA21092019
40	PRAVIN RAJA F	9915005046	NCR	NCRPRA23032019
41	PREETHI R	9915005047	NCR	NCRPRE23032019
42	RAJKUMAR B	9915005049	HGS	HGSRAJ24112018
43	RAYITH AHAMED M	9915005050	HGS	HGSRAY24112018
44	SAJEETHMOHAN B	9915005052	HGS	HGSSAJ24112018
45	SANTHOSH SIVARAMAN N	9915005054	TCS	TCSNSS13052019
46	SATHISH KUMAR K	9915005055	HGS	HGSSAT24112018
47	SENTIL KUMAR B	9915005056	ELCOMPO	ELCBSK02082019
48	SORNA BALA S	9915005058	IGENIUS	IGESOR20032019
49	SORNALATHA R	9915005059	IGENIUS	IGESLA20032019
50	SRINIVAS V	9915005060	VISTEON TECHNICAL AND SERVICES CENTRE PRIVATE LIMITED	VTSSVSS09032021
51	SRIRAM@SIVA K	9915005061	KOTAK	KOTSRI24012019
52	THEIVAKKANI S	9915005064	IGENIUS	IGETHE20032019
53	TRIPHENA S	9915005065	HGS	HGSTRI24112018
54	VASUDEVAN S	9915005066	HGS	HGSVAS24112018
55	VIJITHA D	9915005070	KOTAK	KOTVIJ24012019
56	VISHNU PRIYA S	9915005072	KOTAK	KOTVIS24012019
57	KAVITHA S	9915005094	KOTAK	KOTKAV24012019
58	SATHISHKUMAR S	9915005095	KOTAK	KOTSAT24012019
59	SOMESULA SUKUMAR	9915005097	NCR	NCRSOM23032019

60	POLAVARAPU BHARGAV SAI	9915005098	EDUVIRTUOSO	EDUPOL30042019
61	PAMANJI DHEEKSHITH	9915005099	WIPRO LTD	WPRPDH30042019
62	JAKKA SOMA SANKARA BALAJI	9915005100	KOTAK	KOTJAK24012019
63	RATHIKRINDI VENKATA YESWANTH KUMAR	9915005101	Wipro Limited	WPRRVY30042019
64	PATNAM VENKATASAI YASHWANTH KUMAR	9915005102	NCR	NCRPAT23032019
65	CHINTA UDAY KUMAR	9915005103	HGS	HGSCHI24112018
66	ACHUTA CHANDRALEKHA	9915005104	IGENIUS	IGEACH20032019
67	PARLAPALLI VAISHNAVI	9915005105	IGENIUS	IGEPAR20032019
68	SYED KARISHMA	9915005106	NCR	NCRSYE23032019
69	GALI VINOD KUMAR NAIDU	9915005107	NCR	NCRGAL23032019
70	DEVARAPALLI ROHITHREDDY	9915005108	NCR	NCRDEV23032019
71	YANAMALA HIMAJA	9915005109	NCR	NCRYAN23032019
72	T BALAJI REDDY	9915005110	NCR	NCRBAL23032019
73	THASKU KANAKA REDDY	9915005111	NCR	NCRTHA23032019
74	POKALA MANASWITHA	9915005113	IBM	IBMPMS20072019
75	PASALAPUDI TARUN KRISHNA VAMSI	9915005115	Tech Mahendra	TMATKV27042021
76	PERECHARLA LAXMI NARASHIMA VARMA	9915005116	Tech Mahendra	TMALNV26082021
77	GANGAVARAPU VENKATESH NAIDU	9915005119	IGENIUS	IGEGAN20032019
78	KOWSALYA K	9915005120	KOTAK	KOTKOW24012019
79	SOBIYA S	9915005122	DONFOSS	DONSOB07032019
80	VAKITI AKHIL	9915005124	JUST DIAL	JUSVAK13082018
81	AKULA SIVA GANESH	9915005125	HGS	HGSAKU24112018
82	ALLAM LAKSHMAN REDDY	9915005126	EDUVIRTUOSO	EDUALL30042019
83	AMBARAPU SADDAM HUSSAIN	9915005127	HGS	HGSAMB24112018
84	BEDUDURI BHARATH	9915005129	NCR	NCRBED23032019
85	BACHU VENKATA SURYA LOKESH	9915005130	MPHASIS	MPHVSK01082019
86	BASANI CHETHAN	9915005131	HGS	HGSBAS24112018
87	BODAGALA SAI TEJA	9915005132	HGS	HGSBOD24112018
88	DEVENDRAN V	9915005137	MRUDAAN TECHNOLOGIES	MRUDEV17122018
89	DONTABHAKTUNI BHARGAV	9915005138	EDUVIRTUOSO	EDUDON30042019
90	GATTU PRANITH REDDY	9915005140	KOTAK	KOTGAT24012019
91	DASARI GIRISH	9915005141	SOFTTEK	SFTDRI08092020
92	GOWRISHANKAR V	9915005142	KOTAK	KOTGOW24012019
93	JAGANNATH K	9915005144	IGENIUS	IGEJAG20032019
94	JEYASHREE P.	9915005146	IBM India Private Limited	IBMPJS22072019
95	JEY GANESH D	9915005147	HGS	HGSJEY24112018
96	KURRA BHARATH KUMAR	9915005149	SWIFTERZ	SWIKUR01112018
97	KANDI RAVINDRA	9915005150	HGS	HGSKAN24112018

98	KAPARLAPALLI MOHAMMAD FAZIL	9915005151	NEEYAMO	NEEKAP05062019
99	KARTHIK V	9915005152	JBM AUTO	JBMKAR13042020
100	KOMMINENI SRIDHAR	9915005153	JUST DIAL	JUSKOM13082018
101	KOTHAKOTA KEERTHI SAI KRISHNA	9915005155	SWIFTERZ	SWIKOT01112018
102	MADHUMITHA S	9915005156	ELCOMPO	ELCSMA02082019
103	PAPASANI MANOJ KUMAR REDDY	9915005158	KOTAK	KOTPAP24012019
104	MODADUGU SESHASAI	9915005159	NCR	NCRM023032019
105	MOHAMED FAIZUL RAHUMAN H	9915005160	THINKSYNQ	THIMOH21092019
106	MOHAMMAD ZAIDH AHMAD	9915005161	NCR	NCRM023032019
107	PALLA MOUNIKA	9915005162	IGENIUS	IGEPAL20032019
108	S MOUNIKA SAI	9915005163	IGENIUS	IGEMOU20032019
109	MULLANGI DHAVANTH	9915005164	KOTAK	KOTMUL24012019
110	MUTHURAJ P	9915005165	KOTAK	KOTMUT24012019
111	NANDYALA PAVAN KALYAN YADAV	9915005166	JBM AUTO	JBMNAN13042020
112	NEMALAPURI CHAITANYA	9915005167	NCR	NCRNEM23032019
113	PABOLU SAI ADITYA	9915005168	HGS	HGSPAB24112018
114	PACHA SAI KRISHNA	9915005169	NEEYAMO	NEEPAC05062019
115	PAVAN KUMAR REDDY BONTHU	9915005170	KALYCITO	KALPAV11112018
116	PENUGONDA USHA	9915005171	IGENIUS	IGEPEN20032019
117	POPURI PRASANNA KUMAR	9915005173	IGENIUS	IGEPOP20032019
118	POTHURI GOWTHAM KIRAN VARMA	9915005174	EDUVIRTUOSO	EDUPOT30042019
119	PRANAVI S	9915005175	HGS	HGSPRA24112018
120	RAMYA K	9915005180	HGS	HGSRAM24112018
121	SINGAMASETTY UDAY KUMAR	9915005183	NCR	NCRSIN23032019
122	SEGGUJU TEJA	9915005184	SUTHERLAND	SUTSEG26112018
123	NARGAI SAITEJA	9915005186	KOTAK	KOTNAR24012019
124	BHUPATHIGARI SAMEERA REDDY	9915005187	IBM	IBMSR19072019
125	SHAIK ARSHAD HUSSAIN	9915005189	ZOHO CORPORATION PRIVATE LIMITED.	ZCPSAH03062019
126	SHAIK MOHAMMED SULTAN SHARIF	9915005190	JBM AUTO	JBMSHA13042020
127	AMBARAPU SIDDHU	9915005191	NCR	NCRAMB23032019
128	SIDDU PAVAN KALYAN	9915005192	HGS	HGSSID24112018
129	SINDE SAI TEJA	9915005193	HGS	HGSSIN24112018
130	SUNKIREDDY MANISHA	9915005195	EDUVIRTUOSO	EDUSUN30042019
131	SURAM VENKATA SIVA SRIKAR REDDY	9915005196	HGS	HGSSUR24112018
132	SURYA A	9915005198	INDIAN HEALTH CARE	INDSUR11032019
133	TAMMALALA NAVEEN	9915005199	KOTAK	KOTTAM24012019
134	VADLAMANI RAMPRANAV	9915005200	CHELLA SOFTWARE	CHEVRP14122018
135	VELMURUGAN V	9915005202	HGS	HGSVEL24112018

136	VIKESH S B	9915005203	HGS	HGSVIK24112018
137	AKKANAMBATTU VISWACHAND	9915005204	KOTAK	KOTAKK24012019
138	YAZALI DINESH	9915005206	TCS	TCSYDH13052019
139	YELURI SURESH	9915005207	HGS	HGSYEL24112018
140	PEDDIREDDY SREE HARSHAVARDHAN REDDY	9915005208	NEEYAMO	NEEPED05062019
141	KARASALA TRIVENI	9915005210	IGENIUS	IGEKAR20032019
142	KODATALA VEERA RAHUL REDDY	9915005211	HGS	HGSKOD24112018
143	GUDE SAI KISHORE	9915005213	NCR	NCRGUD23032019
144	GARINENI GOPI	9915005217	NCR	NCRGAR23032019
145	ATCHAYA A	9915005218	GLOBAL HEALTH CARE	GLOATC20032019
146	KATARI DILEEP KUMAR	9915005220	NCR	NCRKAT23032019
147	KUNDURU NAVEEN KUMAR REDDY	9915005223	HGS	HGSKUN24112018
148	NARESH J	9915005226	KOTAK	KOTNAR24012019
149	J DILEEP KUMAR REDDY	9915005228	JBM AUTO	JBMDIL13042020
150	SUMATHIDEVI V	9915005229	KOTAK	KOTSUM24012019
151	DIGUMARTHY RAJ V S M S CHANDRASEKHAR	9915005230	HGS	HGSDIG24112018
152	SUSMITHA S N	9915005231	EXTRA MARKS	EXTSUS30052019
153	NALABOTHULA SAI KUMAR	9915005232	NCR	NCRNAL23032019
154	MAILA PRAMOD	9915005233	EDUVIRTUOSO	EDUMAI30042019
155	RAJA PRANAY	9915005234	KOTAK	KOTRAJ24012019
156	GOKULVASAN K	9915005123	DONFOSS	DONKGV07032019
157	VISHNU PRIYA S	9915005214	DONFOSS	DONSVP07032019

2019-20

S.No.	NAME OF THE STUDENTS	REG NO	COMPANY NAME	Ref ID
1	AZEEMAHAMED M	9817005001	NETTYFISH	NETMAD19082020
2	MAHENDRAN J	9817005002	IGENIUS	IGEJMN01062020
3	PRAVEENKUMAR B	9817005003	IGENIUS	IGEBPK01062020
4	SATHISH. K	9817005004	NETTYFISH	NETKSH19082020
5	SIVAKARTHIK S	9817005005	NETTYFISH	NETSSK19082020
6	SUNKI REDDY HARI OBUL REDDY	9817005006	NETTYFISH	NETSHO19082020
7	ABARNA	9916005001	COGNIZANT	CTSABA21032021
8	ADAPALA ROHAN	9916005002	IGENIUS	IGEARN01062020
9	AISHWARYA M	9916005003	TATA CONSULTANCY SERVICES	TCSAAM1012022
10	S.AISHWARYA	9916005004	MPHASIS	MPHSAA30012021
11	AJITH R	9916005005	NETTYFISH	NETRAH19082020
12	AJITHKUMAR R	9916005007	SBL KNOWLEDGE SERVICES	SBLRAK01062020
13	ALLAMPATI RAVI TEJA	9916005010	VIRTUSA	VIRART03172021

14	JAYA SAI	9916005011	SUTHERLAND	SUTJSI06072020
15	ANNABATHINA RAJIV	9916005012	LEADPRO	LEAABR01092020
16	ANNEM SEETA REDDY	9916005013	COGNIZANT	CTSASR06022021
17	ANTONY ASWIN A	9916005014	EXIDE LIFE INSURANCE	EXIAAN07032020
18	ARATI PRANAVI	9916005016	COGNIZANT	CTSAPI29062020
19	ARAVAPALLI VINAY KUMAR	9916005017	TCS	TCSAVK31072020
20	ARAVINDH P	9916005018	LEADPRO	LEAPAH01092020
21	B.RUSHI KESHAVA REDDY	9916005020	NCR CORPORATION	NCRBRK13072020
22	BAVATHAARANI B	9916005021	SCHNEIDER ELECTRIC	SCHBBR24072020
23	D.R.BENITA RAJA SHEBA	9916005022	COGNIZANT	CTSBRS11282020
24	BILLA MAHESH	9916005024	COGNIZANT	CTSBM29022021
25	BOGGARAPU NAVYA SREE	9916005025	MICRO FOCUS	MICBNS30082021
26	BOLLINENI SAI GIREESH	9916005026	NETTYFISH	NETBSI19082020
27	BOYA RAKESH	9916005027	NETTYFISH	NETBRH19082020
28	CHALLA HAVEESH KUMAR	9916005028	IGENIUS	IGECHK01062020
29	THARUGU CHENNA KESHAVA REDDY	9916005029	CTS	CTSKCR09022021
30	CHENNURU NIKHIL REDDY	9916005030	CTS	CTSCNR02092021
31	CHEVVU SAIKUMAR	9916005031	Tech Mahindra	TECCSR15072021
32	CHINTHA MOHAN SAI SAMPATHKUMAR	9916005033	CTS	CTSMSS09022021
33	CHUNDU AVINASH	9916005034	NCR CORPORATION	NCRCAH13072020
34	D. SRI VENKATA NAGENDRA	9916005035	HCL	HCLSVN06012022
35	DERIS R	9916005037	JASMIN INFOTECH	JASRDI15072020
36	DEVANGAM KEMPULA SESA SAI	9916005038	VIRTUSA	VIRDKS03082021
37	DEVIREDDY VENKATA PHANINDRA	9916005039	TECH MAHENDRA	TECDVP17082021
38	DUGGIREDDY MOHAN REDDY	9916005040	IBM	IBMDMR24052021
39	DUVVURU ABHIRAM REDDY	9916005042	TESSOLVE	TESDAR31122020
40	DUVVURU ANEESH KUMAR REDDY	9916005043	LEADPRO	LEADAK01092020
41	GADHAMSETTY VENKATA BALA NAGA NIKHIL	9916005046	NETTYFISH	NETGVN19082020
42	GADIRAJU SAI SANTHOSH	9916005047	JASMIN INFOTECH	JASGSS15072020
43	GANGALA VADDELUGARI VAMSI	9916005049	IGENIUS	IGEGVV01062020
44	GOKUL K	9916005050	RANSTAD INDIA	RANGLK10112021
45	G.HARIKA	9916005051	TESSOLVE	TESGHA04012021
46	GUMPU JANARDHAN	9916005052	IGENIUS	IGEGJN01062020
47	GUNNAMREDDY BHARATH SAI	9916005053	WIPRO	WIPGBS19062020
48	G.KUMAR SAI REDDY	9916005054	DATA PATTERN	DATGKS01072020
49	HANUMANTHU SANDEEP	9916005055	EXIDE LIFE INSURANCE	EXIHSP07032020
50	HARSHA VARDHAN NAIDU	9916005056	NCR CORPORATION	NCRHVN13072020
51	HILAL KHAN A	9916005057	LEADPRO	LEAAHK01092020
52	INDIRADEVI NACHIYAR S R	9916005058	SCHNEIDER ELECTRIC	SCHIDN24072020

53	INDLA VENKATA SAI VINEETH	9916005059	HTC	HTCIVS05032021
54	J HARI PRAKASH	9916005060	NTTDATA	NTTJHP16072021
55	J.A.JASIM AHMED	9916005061	ASPIRE SYSTEMS	ASPJJA10122020
56	JEYAMOCHANAROOPAN KMK	9916005063	CTC	CTSJMR28112020
57	JONNA VENKATA SUNIL KUMAR	9916005064	CTS	CTSVSK17102020
58	JUGUNTA SHARON PAUL	9916005065	VOLTECH	VOLJSP14072021
59	KADIRABBA VINOD KUMAR	9916005066	TECH MAHENDRA	TECKVK27082021
60	MANOJ KUMAR REDDY	9916005067	AMAZON	AMAMKR9132021
61	KALAISELVI S	9916005068	IGENIUS	IGESKS01062020
62	KALEESWARI M	9916005069	SCHNEIDER ELECTRIC	SCHMKI24072020
63	KAMALAPURI SURESH BABU	9916005071	CTS	CTSKSB02092021
64	KADAPANA PAVANI	9916005072	WIPRO	WIPKPI09182020
65	KANDATI BHARATH KUMAR REDDY	9916005073	VERIZON	VERKBK01012022
66	KATARU SAI VAMSI KRISHNA	9916005075	CTS	CTSKSV02092021
67	KATAVURU PRASANTH	9916005076	NCR CORPORATION	NCRKPH13072020
68	S.KEERTHANA	9916005077	CTS	CTCSKA29062020
69	DURGA REDDY K	9916005078	TCS	TCSDRK12302021
70	KETHI VENKATESWARLU	9916005079	LEADPRO	LEAKVL01092020
71	KOMMI KALYAN	9916005080	Tech Mahindra	TECKKN07062021
72	K V GIRISH KUMAR	9916005083	WIPRO	WIPKVK09182020
73	KYLASH MR	9916005084	CTS	CTSKMR29062020
74	LAKSHMI PRIYA A	9916005085	SCHNEIDER ELECTRIC	SCHALP24072020
75	MADDALI SAI HARSHA VARDHAN	9916005086	CTS	CTSMST29062020
76	MAHIMALURU CHARANTEJA VYAS	9916005089	CTS	CTSMCV02052021
77	MALLU POORNA SREE	9916005091	ZEALOUS	ZEAMPS16092020
78	M.TANMAYI	9916005092	IBM	IBMMTI17082020
79	MANCHIKANTI ANAND	9916005094	MINDTREE	MINMAD16042021
80	MANNEM RAJAMOHAN REDDY	9916005095	TEMENOS INDIA PVT. LTD.	TEMMRR13082021
81	MARTHALA VAMSHI TEJA REDDY	9916005096	TCS	TCSMVT14092020
82	METTUKURI MANIKANTA	9916005097	CTS	CTSMMK25112020
83	M.HARI SIVA	9916005098	CTS	CTSMHS27032021
84	MOHANA VARSHA P	9916005100	CTS	CTSPMV25112020
85	MOUNIKA S	9916005101	EXIDE LIFE INSURANCE	EXISMA07032020
86	MUDDENENI MANIKANTA	9916005102	NCR CORPORATION	NCRMMA13072020
87	MUDDULURU MANOJ	9916005103	LEADPRO	LEAMMJ01092020
88	MUNAGALASIVASAINATHREDDY	9916005104	CTS	CTSMST29062020
89	MURALIDHARAN M	9916005105	CTS	CTSMMN05092020
90	V NANDHINI	9916005106	CTS	CTSVNI28112020
91	NAVANEETHANATH M	9916005107	LEADPRO	LEAMNA01092020
92	NAVEEN PRASATH S R	9916005108	EXIDE LIFE INSURANCE	EXINPH07032020

93	NELAPATI MAHIDHAR	9916005109	LEADPRO	LEANMR01092020
94	NELLORE SURESH	9916005110	TECHMAHINDRA	TECNSH23122021
95	NIVETHA DHANDAPANI	9916005112	CTS	CTSNDI29062020
96	NIVETHA.G.S	9916005113	CTS	CTSNIS28112020
97	P VENKATA NAGA SAI SASIDHAR	9916005114	TCS	TCSPVNS832020
98	PADIGI RAVITEJA REDDY	9916005115	TCS	TCSRR24082020
99	P. SIVASAI KUMAR REDDY	9916005116	NCR CORPORATION	NCRPSS13072020
100	SHOBARANI PAPASANI	9916005117	ACCENTURE	ACCSP103112021
101	S.PARKAVI	9916005118	CTS	CTSAPI25112020
102	PEDAMALA SUMANTH	9916005119	WIPRO	WIPPSH18092021
103	POCHAREDDY CHAKRADHAR KAKSHITH REDDY	9916005120	CTS	CTSPCK29062020
104	POLANI SUMANTH	9916005121	CTS	CTSPSH29062020
105	POLUCHARLA VENKATASAI	9916005122	TCS	TCSPVS03072020
106	PRAJAPATHI DINESH	9916005123	TCS	TCSPDH11122021
107	PRAKASH	9916005124	CTS	CTSPSR11272021
108	PRAVEENA K	9916005126	KOTAK	KOTKPA27072020
109	R. PRIYA DHARSHINI	9916005127	NCR CORPORATION	NCRRPD13072020
110	RAGIPUDI KALYAN	9916005128	JBM AUTO	JBMRPK01072020
111	RAVI.PAVANKUMAR	9916005129	TECH MAHENDRA	TECRPK02072021
112	RAYA RAVI CHARAN REDDY	9916005130	CGI Information Systems and Management Consultants Pvt. Ltd.	CGIRRC27102021
113	REVILLA PRUDHVI SAI SRINIVAS	9916005131	MPHASIS	MPHPSS3182021
114	SAI KRISHNA P	9916005134	NCR CORPORATION	NCRPSK13072020
115	P SAIKUMAR RAJU	9916005135	CTS	CTSPSR11282020
116	SAKAMURI VAMSI	9916005136	Capgemini Technology Services India Limited	CAPSVI27092021
117	SANKAR ANANDH M	9916005138	EXIDE LIFE INSURANCE	EXISAH07032020
118	SARABU VENKATA NAGA NIKHIL	9916005139	Source one management services pvt limited	SOUVNN26052021
119	SHAHID AMAN KHAN	9916005140	CTS	CTSSAK28112021
120	SHAIK MOHAMMAD AKRAM JAVID	9916005141	IGENIUS	IGESMJ01062020
121	SHARMILA R	9916005143	LEADPRO	LEARSA01092020
122	SHIVA SOMU S S	9916005144	NETTYFISH	NETSSU19082020
123	K.SHIVANI	9916005145	SCHNEIDER ELECTRIC	SCHKSI24072020
124	SATHYANAND	9916005146	NCR CORPORATION	NCRSTA13072020
125	SIRIPURAM VAMSI KRISHNA REDDY	9916005147	NETTYFISH	NETSVI19082020
126	M. SIVA RAMAKRISHNAN	9916005148	TCS	TCSMSR14122021
127	SIVA VARSHINI K	9916005149	CTS	CTSKSV24042021
128	SOMISETTY BHANU TEJASWI	9916005151	EXIDE LIFE INSURANCE	EXIBTI07032020
129	SREENATH	9916005152	NCR CORPORATION	NCRSNT13072020
130	SUDHAKAR K	9916005153	ASPIRE SYSTEMS	ASPSUK12102020

131	SUNDAR	9916005155	Cognizant	CTSSUN28112021
132	SURESH M	9916005156	IGENIUS	IGEMSH01062020
133	T.BHANU TEJA	9916005157	NCR CORPORATION	NCRTBT13072020
134	THATTURI POORNESH	9916005158	CDK GLOBAL INDIA PVT. LTD	CDKTPO18022021
135	THIRUMANIKANDAN S B	9916005159	IGENIUS	IGESBT01062020
136	THOTA HARSHA VARDHAN	9916005160	HTC	HTCTHV07142021
137	TIRUMALAI SRINIVASAN	9916005162	EXIDE LIFE INSURANCE	EXITSN07032020
138	UMA MAHESWARY P G	9916005163	EXIDE LIFE INSURANCE	EXIUMY07032020
139	VALMIKI SAILESH	9916005164	NETTYFISH	NETVSH19082020
140	VANKADARA JASWANTH REDDY	9916005166	CTS	CTSVJR02092021
141	VARDHIREDDY VENKATA NAGENDRA REDDY	9916005167	NETTYFISH	NETVVN19082020
142	PONNURU VENKATA SAI	9916005171	IONIDEA ENGAGE EXCELLENCE	IONPVS03082021
143	VENKATARAJUGARI CHANDAN KUMAR	9916005172	NETTYFISH	NETVCK19082020
144	VENUMBAKA AVINASH REDDY	9916005173	TCS	TCSVAR14122021
145	BHARATH KUMAR REDDY	9916005176	WIPRO	WIPBKR09182020
146	YARAMASU SAI KUMAR	9916005177	IGENIUS	IGEYSK01062020
147	S.YUVASREE	9916005179	NCR CORPORATION	NCRSYS13072020
148	PRABHAKANT TRIPATHI	9916005181	CTS	CTSPTI07092021
149	S.HARIKRISHNAN	9916005182	CTS	CTSSHN3272021
150	SHAIK MAHAMMED HANEEF	9916005183	NETTYFISH	NETSMD19082020
151	GADE VAMSHIKRISHNA	9916005186	IGENIUS	IGEGVK01062020
152	KAKU NAVEEN KUMAR	9916005187	NCR CORPORATION	NCRKNK13072020
153	K HARISH KUMAR	9916005188	TCS	TCSKHK14092020
154	RAM KISHORE S	9916005192	CTS	CTSRKS14092020
155	SALLA SHIVA SAI	9916005193	IGENIUS	IGESSS01062020
156	A.T.S LOKESH	9916005195	ACCENTURE	ACCTSL29042021
157	NAGARAJUPALLI HARSHAVARDHAN	9916005196	CTS	CTSNHV02062021
158	S.MURUGESAN	9916005197	MPHASIS	MPHSM04022021
159	MUTHU KUMAR D	9916005200	EXIDE LIFE INSURANCE	EXIMKR07032020
160	KEERTHANA T	9916005205	CTS	CTSKAT09052020
161	HARSHAVARDHANKIRITIKOMMURU	9916005081	TCS	TCSHVK11092020

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Sl.No.	Name of the Student	Reg. No	Name of the company	Ref ID
1	M.JEGATHESWARAN	9518005301	TNQ	TNQJEG16062021
2	CHINNI BALAJI DILEEP	9818005001	JASMIN INFOTECH	JASBAL05072021

3	PHANISHREDDY	9916005169	TNQ	TNQPHA16062021
4	AETHURI RAHUL KUMAR REDDY	9917005001	CAPGEMINI	CAPRAH09092021
5	S. AISHWARYALAKSHMI	9917005002	TNQ	TNQAIS16062021
6	B.AKSHY KARTHICK	9917005004	TNQ	TNQAKS16062021
7	AKULA YOGENDRA	9917005005	K K PRECISION	KKPYOG16082021
8	ANDHA BHARGAV NARASIMHA	9917005006	DXC	DXCBHA23062021
9	A.ANUMANJARI	9917005007	TNQ	TNQANU16062021
10	AVAYAMUKHARI MOHAN SRINIVAS ADITHYA	9917005008	TNQ	TNQMOH16062021
11	AVULA SUMANTH	9917005009	JASMIN INFOTECH	JASSUM05072021
12	BADIGINCHALA JAGADISH CHANDRA PRASAD	9917005010	JASMIN INFOTECH	JASJAG05072021
13	BAKKIREDDY MANJUSHA REDDY	9917005011	DXC	DXCMAN23062021
14	BALAN ABHILASH	9917005013	TNQ	TNQABH16062021
15	B.NISHITH KUMAR REDDY	9917005014	TNQ	TNQNIS16062021
16	BATTULA VENKATESWARA RAO	9917005015	QUADGEN	QUAVEN23062021
17	BELDAR THARUNI REDDY	9917005016	FUTURE GENERALI	FUTTHA07062021
18	BELLAM MAHESWAR REDDY	9917005017	JASMIN INFOTECH	JASMAH05072021
19	BHAGATH MOHAMED. A	9917005018	TNQ	TNQMOH16062021
20	BUDIDAVAKAM VENKATAKIRAN	9917005019	TNQ	TNQVEN16062021
21	B SREEKANTH	9917005020	TNQ	TNQSRE16062021
22	BONTHALA JAYA SHANKAR	9917005021	TCS	TCSJAY03062021
23	BOPPUDI.YASWANTH	9917005022	MONTBLEU	MONYAS04062021
24	BOYA VINOD KUMAR	9917005023	LEGATO	LEGVIN23092021
25	CHALLA VENKATA SUDHARSHAN	9917005024	JASMIN INFOTECH	JASVEN05072021
26	CHENNAMSETTY VENKATA SAITEJA	9917005025	TNQ	TNQVEN16062021
27	C.LAVANYA	9917005026	MONTBLEU	MONLAV08062021
28	C.BALAJI REDDY	9917005027	JASMIN INFOTECH	JASBAL05072021
29	DANDU ANIL KUMAR	9917005028	JASMIN INFOTECH	JASANI05072021
30	DODLA THORANA	9917005029	CAPGEMINI	CAPTHO09092021
31	DODLA SREEKANTH	9917005030	JASMIN INFOTECH	JASSRE05072021
32	D.BHARGAV	9917005031	SUTHERLAND	SUTBHA14072021
33	D. AJITH REDDY	9917005032	RIA INTERNATIONAL	RIAAJI12072021
34	E. NAVEEN KUMAR REDDY	9917005033	LUMINA DATAMATICS	LUMNAV16112021
35	ELCHURI AJAY KUMAR	9917005034	JASMIN INFOTECH	JASAJA05072021
36	FRANCISCHEZHIAN J	9917005036	ASPIRE SYSTEMS	ASPFRA23072021
37	GADAMSETTY YESHWITHA	9917005037	DXC	DXCYES01042021
38	GADIRAJU LIKITH	9917005038	TCS	TCSLIK03062021
39	GANDAM DURGA PRASAD	9917005039	CTS	CTSDUR30082021
40	G.VINAYKUMAR	9917005040	TNQ	TNQVIN16062021
41	GANTAPARA ARUNSAI KUMAR	9917005041	SUTHERLAND	SUTARU14072021

42	G VIGANDHAR REDDY	9917005042	NTT DATA	NTTVIG23072021
43	P. GAYATRI	9917005043	TCS	TCSGAY03062021
44	K.GOBICA	9917005044	JASMIN INFOTECH	JASGOB05072021
45	GODWIN S	9917005045	ZUARI TECH	ZUAGOD02062021
46	P.GOKUL	9917005046	TNQ	TNQGOK16062021
47	GOKUL T	9917005047	JASMIN INFOTECH	JASGOK05072021
48	GOSI NILAKANTESWARA	9917005048	K K PRECISION	KKPNIL16082021
49	G V KIRAN TEJA	9917005049	K K PRECISION	KKPKIR16082021
50	G.CHANDANA	9917005050	INFOSYS	INFCHA23082021
51	O.M.GOWTHAM	9917005051	JASMIN INFOTECH	JASGOW05072021
52	GUDI KALYAN	9917005052	DXC	DXCGUD16042021
53	G.BHARGAV	9917005053	JASMIN INFOTECH	JASBHA05072021
54	GUDIPATI HARSHA VARDHAN	9917005054	TCS	TCSGUD09032021
55	G.VINATHI REDDY	9917005055	MONTBLEU	MONVIN10062021
56	GUNTI SAI KAUSHIK	9917005057	TESSOLVE	TESGUN11032021
57	GURRAM PUNEETH	9917005058	RIA INTERNATIONAL	RIAGUR12072021
58	GUTTAPALLI PAVAN KUMAR	9917005059	TNQ	TNQGUT16062021
59	R.HARITHA	9917005060	LEADPRO	LEAHAR05072021
60	I DIVYA BHARATHI	9917005061	WIPRO	WIPDIV25112021
61	JAKKULA CHAITHANYA	9917005062	WIPRO	WIPJAK04112021
62	JALLA.SIVAPRASAD REDDY	9917005063	TNQ	TNQJAL16062021
63	K PUNEETH SAI	9917005065	MONTBLEU	MONPUN11062021
64	K.REDDY MOHAN REDDY	9917005066	TNQ	TNQRED16062021
65	KAMASWARAN S	9917005067	TNQ	TNQKAM16062021
66	K.SANDEEP	9917005068	SUTHERLAND	SUTSAN14072021
67	KAMSALA ARCHANA	9917005069	TESSOLVE	TESKAM07012021
68	KANAGASABAPATHY T.S	9917005070	TNQ	TNQKAN16062021
69	KANAKAM GANGADHAR	9917005071	WIPRO	WIPKAN01092021
70	KANALA SAI KUMAR GOUD	9917005072	WIPRO	WIPSAI01092021
71	K. KISHORE CHANDRA SEKHAR	9917005073	NEEYAMO	NEEKIS21062021
72	KARAKAMBAKAM.CHAITHANYA	9917005074	TNQ	TNQKAR16062021
73	KASARAM NIKILESH REDDY	9917005075	TNQ	TNQKAS16062021
74	KATURI VEERA MANIKANTA VARA PRAKASH	9917005076	TCS	TCSKAT03062021
75	KEERTHIVASH R	9917005077	ACCENTURE	ACCKEE11062021
76	KODIMELA BHAVANI SANKAR	9917005078	TNQ	TNQKOD16062021
77	KONDA SREENATH	9917005080	TNQ	TNQKON16062021
78	KONDAMURI KOTAPPA NAIDU	9917005081	TNQ	TNQKOT16062021
79	K UMA MAHESH	9917005082	TNQ	TNQKUM16062021
80	KOPPARTHI SAI ROHITH REDDY	9917005083	TNQ	TNQKOP16062021
81	KOTAGADDA SUBRAMANYAM	9917005084	TNQ	TNQKOT16062021

82	KOTHA HIMA BINDU	9917005085	DXC	DXCHIM04042021
83	KOTHURU SURYA SAI PRANITH	9917005086	TNQ	TNQKOT16062021
84	KOTTE.RAJESH KUMAR	9917005087	TNQ	TNQRAJ16062021
85	K. SAI PAVAN	9917005088	LEADPRO	LEASAI05072021
86	KOVVURU PRADEEP KUMAR REDDY	9917005089	ZUARI TECH	ZUAKOV02062021
87	KRISHNA KUMAR R	9917005090	NCR	NCRKRI13072021
88	KRISHNAPRIYA J	9917005092	ACCENTURE	ACCKRI03042021
89	KUKKAPALLI CHARAN TEJA	9917005093	TNQ	TNQKUK16062021
90	KUNDA HEMANTHKUMAR	9917005094	ACCENTURE	ACCKUN17092021
91	LINGAYATH UMESH CHANDRA	9917005095	TCS	TCSLIN03062021
92	SAI SUDHHEER MADDUKURI	9917005096	TCS	TCSSAI03062021
93	MAGESH RAJ.S	9917005097	LUMINA DATAMATICS	LUMMAG16112021
94	Maguluru Kumar	9917005098	TCS	TCSMAG03062021
95	M.MAHIDHAR REDDY	9917005100	FUTURE GENERALI	FUTMAH07062021
96	MANGALA.MADHU	9917005101	DXC	DXCMAD16042021
97	MANNEPALLI VENKATA BHANU	9917005103	FUTURE GENERALI	FUTMAN07072021
98	MANTENA SUSHANTH VARMA	9917005104	LEADPRO	LEASUS05072021
99	MANYAM MAHESWARI	9917005105	IBM	IBMMAH05112021
100	MANYAM VASUNDHARA	9917005106	WIPRO	WIPMAN18082021
101	MARU RITHWIK SESHU REDDY	9917005107	NCR	NCRMAR13072021
102	MAVILLA VINEESH REDDY	9917005108	CTS	CTSMAV23032021
103	METTUPLLIVENKATASIVAREDDY	9917005109	FUTURE GENERALI	FUTMET07062021
104	M.SUSHMITHA	9917005110	MONTBLEU	MONSUS11062021
105	T MONISH KUMAR	9917005112	CTS	CTSMON12102021
106	T.MOUNIKA	9917005113	LUMINA DATAMATICS	LUMMOU16112021
107	M.ANUSHA	9917005114	CTS	CTSANU30072021
108	NAGI REDDY SUMANTH REDDY	9917005115	BOSCH	BOSNAG25022022
109	NANDA RAHUL BHARADWAJ	9917005116	FUTURE GENERALI	FUTNAN07062021
110	Narayanam Harshith	9917005117	TCS	TCSNAR03062021
111	NOORBONALA SAHUL	9917005119	FUTURE GENERALI	FUTNOO07062021
112	P.RUCHITHA	9917005120	LEADPRO	LEARUC05072021
113	PADARTHI RUPA PRIYA	9917005121	LUMINA DATAMATICS	LUMPAD16112021
114	PALLAPOLU SIVA BRAHMA REDDY	9917005122	LUMINA DATAMATICS	LUMPAL16112021
115	T.PANDIMEENA	9917005123	INFOSYS	INFPAN23082021
116	DINESH REDDY PAPASANI	9917005124	INFOSYS	INFDIN23082021
117	PARVATHAREDDY VENKATA VIKRANTH	9917005126	NCR	NCRPAR13072021
118	P.DEEPTHI NAGAKULLAYAMMA	9917005127	LEADPRO	LEADEE05072021
119	PASUPULETI MADHAN SAI	9917005128	ACCENTURE	ACCPAS28102021

120	PASUPULETI MANOJKUMAR	9917005129	ASPIRE SYSTEMS	ASPPAS23072021
121	PATAN SALMAN KHAN	9917005130	FUTURE GENERALI	FUTPAT07062021
122	PATHAN MANSOOR KHAN	9917005131	ASPIRE SYSTEMS	ASPPAT10120220
123	PATTAN.AMMAAR	9917005132	FUTURE GENERALI	FUTPAT07062021
124	PEDAPUDI LAKSHMI NARAYANA	9917005133	LUMINA DATAMATICS	LUMPED16112021
125	HARI VARDHAN REDDY PEDDIREDDY	9917005134	TCS	TCSHAR10012021
126	PEDDYSETTY CHAKRAESH	9917005135	MCAFEE	MCAPED22112021
127	PIDIKITI RAMA KRISHNA	9917005136	LEADPRO	LEAPID05072021
128	POOLA VENKATA VARUN	9917005137	TATA ELXSI	TATPOO31082021
129	POLU SURENDRA BABU	9917005138	HCL TECHNOLOGIES	HCLPOL16112021
130	P.VIKAS CHARAN REDDY	9917005139	HIBIZ SOLUTIONS	HIBVIK02062021
131	S.PRAVIN KUMAR	9917005141	LEADPRO	LEAPRA05072021
132	RAJARAJAN G	9917005144	SUTHERLAND	SUTRAJ14072021
133	R GUNA VARDHAN REDDY	9917005145	CTS	CTSGUN07092021
134	RAVURU SIVARAKESH	9917005146	ZIFO RND	ZIFRAV10052021
135	REGULA VENKATA RAVI CHOUDARY	9917005147	LEADPRO	LEAREG05072021
136	M D RUDRA PRASSANTH	9917005149	INFOSYS	INFRUD23082021
137	J. SAFANA FATHIMA	9917005150	MITSUBA	MITSAF09062021
138	SAMPATHI BHANUCHAND	9917005151	INFOSYS	INFSAM23082021
139	S.THEJESWARA REDDY	9917005152	CTS	CTSTHE30072021
140	SANTHOSH KUMAR K	9917005153	LEADPRO	LEASAN05072021
141	SATHYA PRADEEP C	9917005155	DXC	DXESAT29042021
142	SATTENAPALLI SATHISH	9917005156	TCS	TCSSAT03062021
143	S.A.SOHEL BASHA	9917005158	LEADPRO	LEASOH05072021
144	SHAIK JAFFER SADIK	9917005159	JASMIN INFOTECH	JASSHA05072021
145	SHAIK MEHATAB	9917005160	FUTURE GENERALI	FUTSHA07062021
146	SHAIK SHAHUL	9917005162	ACCENTURE	ACCSHA24122021
147	SHARATH KUMAR B M	9917005163	NTT DATA	NTTSHA17082021
148	K.SHRIVALLI	9917005164	MPHASIS	MPHSHR16082021
149	SIDDI RAVI TEJA REDDY	9917005166	CTS	CTSSID30082021
150	RAJASRI	9917005167	DXC	DXCRAJ29042021
151	S.PRAVALLIKA	9917005168	JASMIN INFOTECH	JASPRA05072021
152	SIVAKOTI.RAMSAI	9917005169	TCS	TCSSIV10062021
153	SIVARAMAN K	9917005170	NTT DATA	NTTSIV16082021
154	SUGREEVU RAJESWARI	9917005173	DXC	DXCSUG29042021
155	SUTLURU REDDYCHANAKYA	9917005174	LEGATO	LEGSUT23082021
156	R.J.SWEATHA	9917005176	JASMIN INFOTECH	JASSWE05072021
157	TADALA SUBBARAO	9917005178	RIA INTERNATIONAL	RIATAD12072021
158	TALARI RAVI KIRAN NAIDU	9917005179	NTT DATA	NTTTAL06102021

159	HARSHAVARDHAN.T	9917005181	SUTHERLAND	SUTHAR14072021
160	VANIPENTA VISHNU VARDHAN REDDY	9917005183	LUMINA DATAMATICS	LUMVAN16112021
161	VEMPALLI VINAY KUMAR REDDY	9917005185	LEADPRO	LEAVEM05072021
162	VEMURI GOPI KRISHNA	9917005186	DXC	DXCVEM29042021
163	VENNAPUSA MOUNIKA	9917005187	ACCENTURE	ACCVEN24122021
164	VINOTHINI A	9917005188	TCS	TCSVIN03062021
165	VISHALI S	9917005189	DXC	DXCVIS29042021
166	YADATI RAJA SURENDRA	9917005191	CTS	CTSYAD30082021
167	YAMMANURU SAI SANDEEP REDDY	9917005192	JASMIN INFOTECH	JASYAM05072021
168	YEMIREDDY CHANDU VARDHAN REDDY	9917005193	FUTURE GENERALI	FUTYEM07062021
169	YENDURU SRI SAI NAVEEN	9917005194	HIBIZ SOLUTIONS	HIBYEN02062021
170	Y KARUNAKAR REDDY	9917005195	INFOSYS	INFKAR17082021
171	YERRAGUDI ASHRAF	9917005196	JASMIN INFOTECH	JASYER05072021
172	YOGAVIGNESH.P	9917005197	FUTURE GENERALI	FUTYOG07062021
173	J. YUVASRI	9917005198	INFOSYS	INFYUV17082021
174	GOPA VENKATESH	9917005199	AGILISIUM	AGIGOP02082021
175	SRIRANGAM.VISHNU	9917005200	LEADPRO	LEASRI05072021
176	VENKATA VEERA BHOGACHARI S	9917005201	LEADPRO	LEAVEN05072021
177	I LOKESH	9917005202	LUMINA DATAMATICS	LUMLOK16112021
178	POCHIMIREDDY BHARGAV REDDY	9917005203	ACCENTURE	ACCPOC24122021
179	KODURU VAMSINATH REDDY	9917005204	RHEIN BRUCKE	RHEKOD05072021
180	MULE. SIVA REDDY	9917005205	LEADPRO	LEAMUL05072021
181	N. VENKATA VINAY VARMA	9917005208	TCS	TCSVEN03062021
182	R. TAMIL SELVI	9917005209	INFOSYS	INFTAM17082021
183	BHASKARLA ALIVELU ANOOHYA	9917005210	WIPRO	WIPBHA08092021
184	KOTA MANIDEEPAK	9917005211	INFOSYS	INFKOT17082021
185	PODILA VENU	9917005212	TESSOLVE	TESPOD03062021
186	YANAMALA JOSHNAKAR REDDY	9917005213	INFOSYS	INFYAN17082021
187	KANTHURI BHAVANA	9917005214	NEEYAMO	NEEKAN21062021
188	GADDAM GURU CHARAN	9917005215	TCS	TCSGAD03062021
189	MANIDEEP N	9917005216	WIPRO	WIPMAN08092021
190	CHALLA MANIKANTA REDDY	9917005217	TCS	TCSCHA03062021
191	YANDLAPALLI THARUN BABU	9917005218	LEADPRO	LEAYAN05072021
192	VASANTHU JAYAPRIYA	9917005219	DXC	DXCVAS29042021
193	KAIPU JEFHAYA HARSHITHA	9917005220	SUTHERLAND	SUTKAI14072021
194	KUPPIREDDY BHANUPRADEEP KUMAR REDDY	9917005221	CTS	CTSKUP30082021
195	LETI SRI VAISHNAV	9917005222	INFOSYS	INFLET17082021
196	JAYAMEENAKSHI M	9917005223	NTT DATA	NTTJAY16082021

4.5.1. Professional societies/chapters and organizing engineering events (5/5)

A. The following professional societies/chapters are organized in the University

1. IEEE (Institute of Electrical and Electronics Engineers)
2. IETE (Institution of Electronics and Telecommunication)
3. IEI (Institution of Engineers) (India)
4. IEDC (Innovation and Entrepreneurship Development Centre)
5. FSAI (Fire & Security Association of India)
6. ASELCOME - Electronics and Communication Engineering Department Association
7. Electronics Fun Club (EFC)

1. IEEE (Institute of Electrical and Electronics Engineers)

IEEE Madras Section in KARE is the technical club responsible for creating awareness about advancing technology for the benefit of humanity on the campus. Therefore, the students are highly encouraged to attend professional development programmes such as paper presentations, seminars, etc., in terms of Non-CGPA course credits. The events conducted in academic years are listed below tables 4.5.1.A.1, 4.5.1.A.2 and 4.4.1.A.3.

Office bearers

Sl. No.	Name	Designation	Mobile no.
1	Dr. D. Devaraj, Professor, EEE	Senior faculty advisor	8778594428
2	Dr. P. Aruna Jeyanthi, Professor, EEE	Faculty Counsellor	9443660712
3	Mr. Cherukuri Nikhil Kumar, Final year, ECE	Student Chairman	8309967932
4	Ms. Lavanuru Anuradha, Third year, ECE	Student Vice Chairman	6302916315
5	Ms. M. Devadharshini, Final Year, EEE	Student Secretary	8668082517

a. Academic year 2020-2021

Table 4.5.1.A.1: IEEE Events conducted in Academic Year 2020-21

Date	Event	Resource person	Event Description
05/02/2021	Webinar on Machine Vision and Industrial IoT Applications for Assembly lines in Manufacturing processes.	Prof Raj Kamal Professor Emeritus, ECE, Prestige Institute of Engineering, Management and Research, Indore.	Bring out the creative, innovative ideas and goals to design/build a prototype
26/08/2020 — 29/08/2020	Faculty Development Program on Deep Learning networks and Applications	1. Sheeba Rani, Associate Professor, Indian Institute of Space Science and Technology, Trivandrum. 2. Dr. P. Gnaesh Kumar, Associate Professor, Anna University, Coimbatore. 3. Dr. C. Chandra Sekhar, Professor, IIT Madras 4. Dr. Mahadeva Prasanna, Professor, IIT Dharwad. 5. Mr. Mounik, Deep learning Engineer	Deep Learning and its Applications was hosted with the prime intention to introduce the exciting applications of industrial research works carried out using feature engineering and machine learning techniques regarding deep learning to the students. Starting from the basics of Machine Learning and Neural Networks, the resource persons delivered the required preliminaries smoothly.
11/08/2020	IEEE Membership & Resources (webinar)	Dr. Lance Chun Che Fung, Emeritus professor, Murdoch University, Australia	IEEE Membership Advantages and usage of their resources fruitfully

12/01/ 2021	IEEE Sponsored Writing a Project Proposal for Funding	Dr. J. Deny, President, MHRD Innovation Cell- KARE	The outcomes are the changes or results that the organization expects to be achieved after completing the project. The outcomes could be quantitative or qualitative or both. Explained how to write the proposal and funding opportunities available in India.
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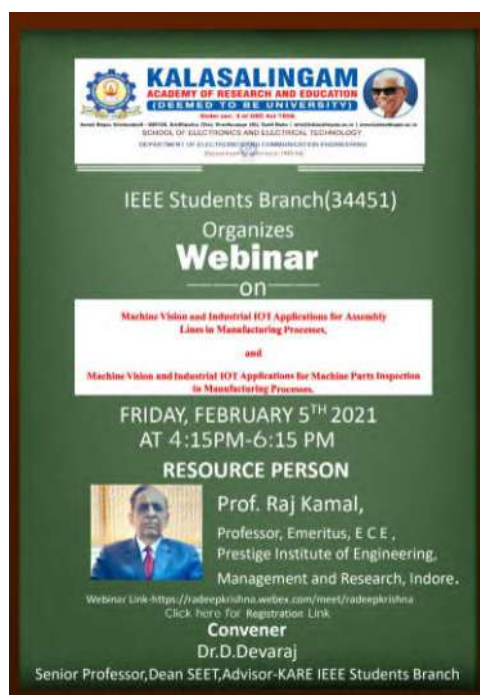


Figure 4.5.1.A. 1. Webinar on Machine Vision and Industrial IoT Applications for Assembly lines in Manufacturing processes Brochure

b. Academic year 2019-2020:

Table 4.5.1.A.2: IEEE Events conducted in Academic Year 2019-20

Date	Event	Resource person	Event Description
01/02/2020	One day Workshop on Image Processing Using Neural Network	<p>Dr. D. Devaraj, Dean, SEET, KARE handled the technical Sessions on “Introduction about Artificial Neural Network and its application in Image Processing”.</p> <p>Dr. A. Muthukumar, Associate Prof. ECE, handled the technical session on “Introduction to Image Processing and its applications”.</p> <p>Dr. P. Ganesh Kumar, Associate Professor, Anna University, Coimbatore handled the session “Hands-on Training of NN Toolbox using MATLAB for Image Processing Applications”.</p>	A detailed idea about Image Processing using Neural networks and their applications were explained for the students benefit.
14/05/2020	Online training program on IEEE Exploring Digital Library	Nanda Lal T.S. Senior Training Manager- South India	IEEE is the worlds largest technical professional organization dedicated to advancing technology for the benefit of humanity. IEEE and its members inspire a global community through its highly cited publications, conferences, technology standards, and professional and educational activities.

14/06/2020	Webinar on Exploring IEEE and Membership benefits	Mrs. M. Benisha, Assistant Prof, Jeppiar Institute of Technology, Chennai	Enhancing Your Career by Networking with Technical Experts. Save with Low Member Prices on IEEE Products. Establish Yourself Early in the Professions Premier Technical Organization. Explained how to attend Top Technical Conferences at Low Member Rates.
01/02/2020	IEEE workshop on Image Processing using Neural Networks	Dr. P. Ganesh Kumar, Asso Prof, Anna University Regional Campus, Coimbatore.	This Workshop was intended to expose the fundamentals of Artificial Neural Network and its application in Image Process and gave hands-on training using MATLAB Neural Network Toolbox. In addition, the workshop included presentations on the Fundamentals of Image processing and the Development of Neural Network models for Image processing.



Figure 4.5.1.A.2: Brochure - One day Workshop on Image Processing Using Neural Network

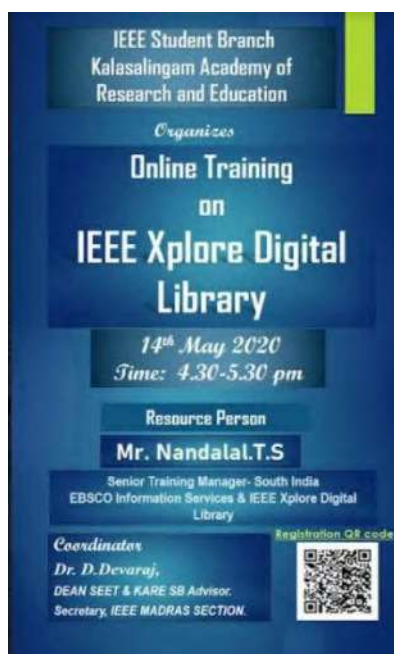


Figure 4.5.1.A. 3: Online Training on IEEE Xplore Digital Library



IEEE STUDENT BRANCH (34451)
KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION
Anandnagar, Krishnankovil, Srivilliputhur-626126

Date :16.07.2020
Time :4 to 5 pm

**DESIGN
THINKING
AND ITS
INNOVATION**

WEBINAR

Resource person
K.V. VINOTH KUMAR
Motivational speaker,
Bangalore

CO-ORDINATORS :
Dr. D. Devaraj,
IEEE KARE Advisor,
IEEE MAS Secretary
Dr.V. Agnes idhaya selvi
IEEE SB Counselor
For contact: 9840659699

Registration link :
<https://forms.gle/QKGjURUkatCfVnTz6>

Figure 4.5.1.A. 4: Design Thinking and its innovation

c. Academic year 2021-2022

Table 4.5.1.A.3: IEEE Events conducted in Academic Year 2021-22

Date	Event	Resource person
29/04/2022	Inauguration Ceremony of KARE IEEE EDS Student Branch Chapter	1. Mr. Venkatesh Prasad Director - Nanochipsolutions pvt ltd 2.Mr. Vinay K CxO, Expert consultant: Nanochipsolutions Pvt Ltd 3.Mr. Anand H, Head of Department and Program Manager, Brigosha Technologies, Expert Consultant: Nanochipsolutions Pvt Ltd
10/06/2022	Keynote Address on Fabrication Approach and Modeling of Nano Interconnects	Dr. Vijayarao K, Asst prof , Dept of ECE, KLEF, Hyderabad



Figure 4.5.1.A. 5: IEEE KARE IEEE EDS Student Branch Chapter



Figure 4.5.1.A. 6: IEEE Keynote Lecture

2. IETE (Institution of Electronics and Telecommunication)

The Institution of Electronics and Telecommunication Engineers (IETE) is India's leading recognized professional society devoted to advancing Electronics, telecommunications & IT science, and technology. Founded in 1953.

The IETE in KARE is the leading Professional non-profit making Society for the Technical education system with the motto of Career Development of Teachers and Personality Development of Students and Overall development of our Technical Education System.

The IETE focuses on advancing the Science and Technology of Electronics, Telecommunication, Computers, Information Technology, and related areas. In addition, the Institution promotes and conducts basic engineering and continuing technical education programmes for human resource development

The events conducted in last three academic years are listed table 4.5.1.A.4, 4.5.1. A.6 and 4.5.1. A.7:

a. Academic year 2020-2021:

Table 4.5.1.A.4: IETE Events conducted in Academic Year 2020-21

Date	Event	Resource person	Event Description
15/07/2020	Finishing House Automation	V. Thiruppathy, Deputy General manager (Instrumentation), TamilNadu Paper Limited	Knowledge on recent advances in Home automation gained by the students
03/07/2020	Low Power VLSI Design Techniques	Dr. Rama Komaragiri, Dean Academic Affairs, Professor, Dept. of ECE, School of Engineering and Applied Sciences, Bennett University, UP	To expose the students to the low voltage device modelling, low voltage, low power VLSI CMOS circuit design
17/07/2020 - 30/07/2020	Faculty Development Programme on “Analog and Digital Electronics with Programming Languages”	Nanochip Solutions	Understanding the Basic Analog and Digital Electronics with programming language plays a vital role in the emerging career of students.
24/07/2020	IC layout challenges (career guidance webinar)	Mr. Vishnu Sankar, Design Engineer, Elveego circuits Bangalore, alumni 2007-11	Lecture about the circuit applications close to the program, for instance VLSI Design

31/07/2020	Python for Image Processing	Dr. V. B. Sundarabalan, Director Geosensing imaging consultancy, Former research scientist, NASAGSFC, alumni 2005-2007	Python becomes an apt choice for such Image processing tasks due to its growing popularity as a scientific programming language and the free availability of many State of Art Image Processing tools in its ecosystem.
20/07/2020 to 25/07/2020 (Phase I),	AICTE Sponsored One Week Short Term Training Programme (STTP)s on " Cyber-Physical Systems (CPS) Design Techniques and Applications."	Abdul Wadood	Challenges about the security and resilience of cyber-physical systems were discussed, and the students gained keen knowledge.

<p>27/07/2020 to 01/08/2020 (Phase II),</p>	<p>AICTE Sponsored one Week Short Term Training Programme (STTP)s on " Cyber-Physical Systems (CPS) Design Techniques and Applications"</p>	<p>Mr. Murasoliselvan Karunanithi Director Engineering - Embedded, IoT UST Global, Malaysia Mr. Sudhakar B, Technical lead -AWS Solution Architect, Wegrow Technology, Chennai Mr. Arunsenthil, Technical Lead in Networking Testing Wegrow Technology, Chennai Mr. Narendra Babu P, Technical Architect - Web Application Development, BNY Mellon Technology, Chennai Dr Sankaraiah Sreeramula, Ph.D, Head Data Scientist APP Sinar Mas, Indonesia Mr. Kanagaraj J Senior QA specialist, Grow labs Technology Pvt Ltd, Chennai</p>	<p>Challenges about security and resilience of cyber-physical systems were discussed and the students got keen knowledge on the same</p>
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31/12/2020 to 07/01/2021	Faculty Development Program On Artificial Intelligence & Deep Learning	<p>1. Dr. V. Sowmaya, Associate Professor, Amrita Vishwa Vidyapeetham</p> <p>2. Dr. Raj Kamal, Ph.D. (IITD)</p> <p>Professor/ECE Prestige Institute of Engineering Management and Research, Indore, Madhya Pradesh.</p> <p>3. Dr. Kyung Tae Kim</p> <p>Senior Prof./ECE KARE</p> <p>4. Shivam Sham Agrawal Associate Professor/ETE Pankaj Laddhad Institute of Technology and Management Studies, Buldana</p> <p>5. Dr. D. Anil Kumar Assistant Professor Pace institute of technology and sciences, Ongole</p> <p>6. Mr. B. Premjith Faculty Associate (CEN), Amrita Vishwa Vidyapeetham</p> <p>7. Dr. I. Sheik Arafat Associate Professor and Head/ECE Mohamed Sathak</p>	AI drives down the time taken to perform a task and also enables the execution of hitherto complex tasks without high-cost outlays
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		<p>Engineering College, Kilakarai,</p> <p>8. Dr Lalit Mohan Goyal Assistant Professor/ CE J.C. Bose University of Science</p> <p>and Technology, Haryana</p>	
02/01/2021	IETE sponsored Industrial Lecture on SAP Orientation Program – Next level in 2021	<p>1. Mr. Balamuralikrishna</p> <p>2. Mr. Abishek Kumar Singh</p> <p>3. Mr. Sunil Kumar</p> <p>4. Mr. Sivasaikumar Programmer Analyst Trainee, CTS</p>	<p>SAP Certifications are globally recognized and standardized. In addition, they provide validation that the certified individual has the required proficiency and expertise in the SAP solution in which they are certified. As a result, it makes it very easy for organizations to manage the SAP skills of their employees worldwide.</p>
05/01/2021	Industrial Lecture on AI For Smart Devices	Dr. Athifsha, Founder, ABE semiconductors	<p>Students had learned the essential deep learning, and AI has advanced to the point that it too has the potential to transform every industry</p>

11/01/2021	One day National level workshop on Data Engineering & Big Data analytics with Backend Serverless system	Mr. Ajish Ramachandran, Senior Data eng, Amazon US & Mr. Mayank Sinha (Alumni) Software Engineer MTS, Salesforce, Hyderabad	All businesses collect data, so it is crucial to understand how data is compiled and its value in helping your company meet its goals. Businesses use data to make better decisions.
11/01/2021	“Introduction To RTL Design for Combinational and Sequential Circuits and Opportunities in Semiconductor”	S Rengaraja, South Korea	Practical design of combinational logic systems may require consideration of the finite time required for practical logical elements to react to changes in their inputs.
13/01/2021	IPR KNOW ABOUT PATENT FILING	Dr. J. Deny, President, MHRD Innovation Cell-KARE	Intellectual Property Rights (IPRs) are legal rights that protect creations and/or inventions resulting from intellectual activity in the industrial, scientific, literary, or artistic fields. The most common IPRs include patents, copyrights, marks and trade secrets.
19/03/2021	Dr. A P J ABDUL KALAM YOUNG SCIENTIST AWARD (Sponsored by IETE)	Dr. J. Deny, President, MHRD Innovation Cell-KARE	The project competition provides an excellent opportunity to the students to showcase their talent.

20/03/2021	Webinar on Inverters in Electronic Cars and Bootloader in Automotive Industry	Mr. Peri N Thiagaraj (1998-2002 ECE), Feature Group Lead, Bootloader, Valeo Siemens eAutomotive GmbH, Germany	Students gained knowledge on Limited driving range, high costs, battery issues, and spotty charging infrastructure are the main challenges for battery electric vehicles
12/06/2021	Workshop on applications of Industry info in Automotive Electronics based on MCU8051IDE - An open-source tool	Mr. Muthurasu Beemarajan (2000-2004 ECE) Senior Project Manager, Robert Bosch Engineering and Business Solution Pvt Ltd Coimbatore, Mr. Mukuntharaj C, AP / Karpagam college of Engineering, Coimbatore	Future autonomous cars will rely on powerful computer systems, an array of sensors, networking, and satellite navigation, all of which will require electronics.
11/06/2021 to 16/06/2021	Handson FDP on Statistical and Machine Learning ASIC Design Flow with Embedded IoT	Dr. Nagarajan, Ms. Nagma, Ms. Vijayashree Ms. Srinath Ms. Shilpa	Acquaintance on Statistical and Machine Learning ASIC Design Flow with Embedded IoT
27/06/2021	A career guidance webinar on "International Trends and Innovation in Career Guidance"	Ms. S. Parkavi	Scope for starting new business and become entrepreneur, after graduation



Figure 4.5.1.A.7: Webinar on International Trends and Innovation in Career Guidance Brochure



KALASALINGAM
ACADEMY OF RESEARCH AND EDUCATION
(DEEMED TO BE UNIVERSITY)
SCHOOL OF ELECTRONICS AND ELECTRICAL TECHNOLOGY
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INDUSTRIAL LECTURE ON SAP ORIENTATION PROGRAM
In Association with the Institution of Electronics & Telecommunication

NEXT LEVEL

IN 2021

OBJECTIVE

In this Industrial Lecture, we will describe different tangible and intangible benefits of training for individuals. We will also summarize the value of training. We will guide you to understand the easiest way to navigate the SAP training.

CREATIVITY
TEAMWORK
INNOVATION

STRATEGY
MOTIVATION

SAP has evolved to become a market leader in end-to-end enterprise application software.

Convener
Dr.M.Kalpana, HoD/ECE, KARE
Coordinators
Mrs.N.Bhuvaneswary, AP/ECE
Dr.K.S.Dhanalakshmi, AP/ECE

Resource Person

1. Mr.Balamuralikrishna(Alumni)
Programmer Analyst Trainee,CTS
2. Mr. Abishek Kumar singh (Alumni)
Programmer Analyst Trainee, CTS
- 3.Mr.Sunil Kumar(Alumni)
Programmer Analyst Trainee,CTS
4. Mr.Sivasai kumar(Alumni)
Programmer Analyst Trainee,CTS

Target Audience
All Final Years

02.01.2021/11.00 to 12.30 pm

Google meet
meet.google.com/bow-zgos-rdo

Figure 4.5.1.A.8: Industrial Lecture on SAP Orientation Program

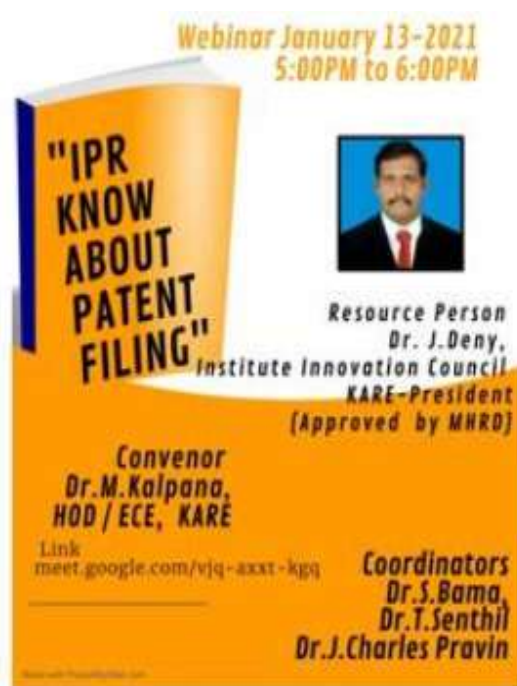


Figure 4.5.1.A.9: IPR Webinar

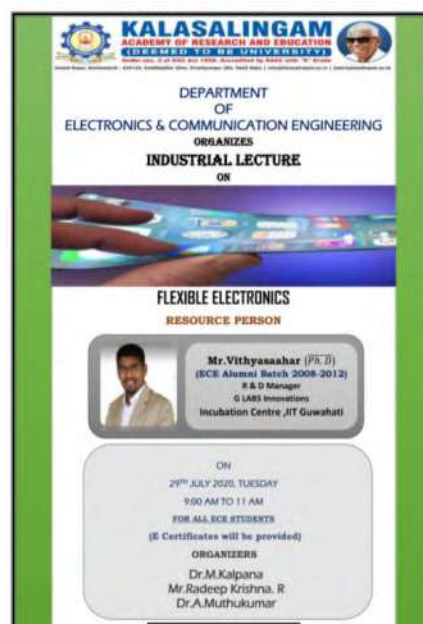


Figure 4.5.1.A.10: Industrial Lecture on Flexible Electronics

b. Academic year 2019-2020:

Table 4.5.1.A.5: IETE Events conducted in Academic Year 2019-20

Date	Event	Resource person	Event Description
16/07/2020	Webinar on Design Thinking and Innovation	Mr. K. Vinothkumar Contracts Manager, ExxonMobil Bangalore	Design thinking is a non-linear, iterative process that teams use to understand users, challenge assumptions, redefine problems and create innovative solutions to prototype and test.

19/09/2019	Guest Lecture On "Joy of Vision in Image Processing"	Dr. Mansoor Roomi, Asso. Prof, TCE, Madurai	Provided an introduction to computer vision, including fundamentals of image formation, camera imaging geometry, feature detection and matching, stereo, motion estimation and tracking, image classification, scene understanding, and deep learning with neural networks.
21/09/2019	Electronic Product Design and IoT	Mr. Dinesh, Mr. Ajay-E2a Technologies, Chennai	The Internet of Things (IoT) has ushered in an age of connectivity, one that enables objects to function in new, expanded ways. IoT technology allows objects to communicate with each other continuously, forming large, interconnected systems capable of creating, communicating, aggregating, analyzing, and acting on data.
05/06/2020	Challenges on Agile methodology in Embedded system projects	"Mr. Malaikannan Ramaraj, Embedded Software Engineer, Continental Automotive Singapore Pte. Ltd. Singapore"	Agile produces important metrics like lead time, cycle time, and throughput that helps measure the teams performance, identify bottlenecks, and make data-driven decisions to correct them.
05/06/2020	Building A New Internet	"Mr. Wilson Bright, Co-founder, Block Survey, Bangalore"	It allows for quality interactions, opportunities to work together on solutions to real-life challenges, and practicing new techniques

29/05/2020	Intellectual Property Rights- An Overview	Dr. J. Deny, President-IIC, KARE	The main objective of intellectual property law is to encourage innovation and to provide incentives for innovation by granting protection to inventors that allow them to recover research and development investments and reap the benefits of their inventions for a limited period
29/05/2020	Different areas of Entrepreneurship	Mr. Hari, Director of Big Foxx Branding & Technology, Chennai	Entrepreneurship and Innovation minors get able to sell their ideas
29/05/2020	Image Processing using MATLAB	Dr. S. Bama, Associate Professor- ECE/KARE, Dr. J. Josephine Selle, Assistant Professor- ECE/KARE	MATLAB is a scientific programming language and provides strong mathematical and numerical support for the implementation of advanced algorithms. It is for this reason that MATLAB is widely used by the image processing and computer vision community.
06/08/2020	CMOS-VLSI Design	Dr. S. Krishna Priya, Associate Professor, Muthoot Institute of Technology & Science, Kochi, Kerala	Identify the various IC fabrication methods. Express the Layout of a simple MOS circuit using Lambda based design rules

13/06/2020	Web Development in 2020	Ms. P. Senthilkumari, Technical Consultant, Infosys Bangalore	There Are Web Dev Jobs Available. Given that there will be approximately 1.4 million computing jobs available in 2020, with only 400,000 qualified developers to fill them, those interested in acquiring in-demand skills can certainly benefit from having web development and coding in their resume.
15/06/2020	ELECTRONIC PACKAGING	Dr. Arun Chandrasekar, Sr. Principal Engineer, Packaging Technologies & Design, Intel Corporation, Bangalore	Electronic packaging serves four major functions in the performance of electronic systems: interconnection of electrical signals at several levels; distribution of power to the electronic circuits and devices
20/06/2020	Opportunities for an Engineer and the Skills needed	Mr. S. Sriram Gowtham, Blue Yonder, Bengaluru	It builds hands-on experiences which would help to learn manufacturing processes and production technology courses in successive semesters. Workshop practice is also important since only practice can make the man perfect.
21/06/2020	Career Guidance on Pursuing LabVIEW	"Mr. S. Sakthi Selva, Test Engineer, Tessolve Semiconductor Pvt. Ltd., Bangalore"	LabVIEW is a powerful tool where most of the organizations who are into Industrial Automation, Engineering, and Research & Development use this software to build prototypes and proof of concepts before building the final product.

21/06/2020	Fundamentals of Electromagnetic Waves and Antennas	Dr. Pragnan Chakravorty, Principal Director, Clique for Applied Research in Electronic Technology, Bhilai, India	The study of antennas and electromagnetic wave propagation is essential to a complete understanding of radio communications, radar, cell phones.
21/06/2020	Controller Applications in Automobiles	"Mr. Venkatesan Ponnusamy, Hardware Project Manager, Visteon Technical and Service Center, Chennai	It is a comprehensive system that communicates and integrates the work of all electronic modules through the vehicle bus.
22/06/2020	Cyber Security in IoT	Mr. David N Samuel, Principal Security Engineer, Accenture (Security), UK	Advanced Threat Intelligence to Help You Manage Risk and Protect Against Cyberattacks.
25/06/2020	Role of IoT engineer in Post Covid	Dr. K. S. Balamurugan, Associate Professor/ECE, Bharath Institute of Engg. & Tech., Hyderabad	The participants will learn how sensors are connected to the hardware platform and how the hardware platform fetches data from sensors and pass it to cloud using various connection methodologies
29/06/2020	Introducing the World of Analog IC Design	Dr. Immanuel Raja, AP-Avionics/IIST	To provide in-depth understanding of the analog integrated circuit and building blocks; To provide a basic idea on mixed signal IC design

c. Academic year 2021-2022:

Table 4.5.1.A.6: IETE Events conducted in Academic Year 2021-22

Date	Event	Resource person	Event Description
24/07/2021	Industrial lecture on Career Planning and Development	Ms.Meghna (Alumni 2015-19), Application Developer, Wipro Mr.V.Sravan Kumar (Alumni 2015-19), Project Engineer, Wipro	Students gained knowledge on current scenario on education, the lecture given importance for the fitness of the survival to the industries
24/07/2021	"“Developments and opportunities in Networking”"	"Er.Vishnu Ravichandran System Engineer Netcon Technologies India Pvt. Ltd. [KARE-ECE-ALUMNI-2014-18]"	The students gained knowledge on the development and opportunities in Network Engineering
25/07/2021	Webinar on Engineers choosing job as pilot	"Mr Libin Koshy Airline Pilot Air Canada"	A pilot is a professional who is responsible for flying planes, helicopters or rockets. Pilots undergo extensive aviation training before they are entrusted with actual flying. A career as a pilot is not only one of the most adventurous career one can imagine,it is one of the most well paid jobs.
27/04/2022	Dr. A P J ABDUL KALAM YOUNG SCIENTIST AWARD (Sponsored by IETE)	Dr. Hima Deepthi Asso Prof / ECE, Dr.Shasikant Dargar, Asso Prof / ECE	The project competition provides an excellent opportunity to the students to showcase their talent.



Figure 4.5.1.A.11: Industrial Lecture Brochure



Figure 4.5.1.A.12: CSP Project Competition Brochure

3. IEI (The Institution of Engineers (India))

The IEI in KARE is the national organization of engineers in India. The aim is to participate in Nation building, to support the society by all means, and to develop inventions for rural people and also to support them.

The events conducted in last three academic years are listed below

a. Academic year 2020-2021:

Table 4.5.1.A.8: IEI Events conducted in Academic Year 2020-21

Date	Event	Resource person	Event Description
25/07/2020	Webinar on Next step for success	Prof. Thirukoshtiyur K Manikandan, Director, Grow your self-organization	Students gained knowledge on current scenario on education, the lecture given importance for the fitness of the survival to the industries
31/07/2020	Dos and Don'ts in Engineering	Mr. S. Arvind, Consultant, Mirage Telecom	To develop their Personality, Leadership Quality and Professional Skills to meet out the requirements of industries - Professional Ethics (HSS18R013)
01/08/2020	Importance of core competency for Electronic Engineer	Mrs. P. Karthiga, Test Engineer, Tessolve Semiconductors, Bangalore, (Alumni)	Core competencies help an organization distinguish its products from its rivals and reduce its costs than its competitors and thereby attain a competitive advantage. It helps in creating customer value.

05/08/2020	Project way finder to career opportunities for Electronics Engineering Graduates	Mr. C. V. Renjith, Product Designer, Philips India Ltd, Pune	Best minds from academics and industry come together to share their experiences, knowledge, and insights about their respective careers
09/10/2020	“Next Generation Networks”	Mr. R. Vasu Senior IT – Training Consultant	Students gained knowledge on current scenario on education, the lecture given importance for the fitness of the survival to the industries
08/01/2021	IEI Sponsored talk on “IoT and Digital Transformation”	Mr. K. Nikhil Vannan, Design Engineer, Kalycito InfoTech Pvt Ltd, Coimbatore	Digital transformation creates a system for gathering the right data and incorporating it fully for business intelligence at a higher level.
07/01/2021	A career guidance webinar "Machine learning and its industrial role in association with The Institution of Engineers (India)	Ms. Baslis Divya Data Associate, Amazon, Alumni - ECE, KARE	Have a good understanding of the fundamental issues and challenges: data, model selection, model complexity, etc. Be able to design and implement various machine learning algorithms in various real-world applications.
10/01/2021	Workshop On Android Mobile Application Development in Association with Institution of Engineers (India)	Mr. V. C. Agilan, Alumni (2009-2013) IT analyst ISPP Global	Upon completion of the course students should be able to: Install and configure Android application development tools. Design and develop user Interfaces for the Android platform. Save state information across important operating system events.

05/01/2021	Embedded System Development Cycle (IEI)	M Shanmugam System Engineer Coimbatore Bosch	Understand Linux operating system and device drivers. Get to know the hardware – software co design issues and testing methodology for Embedded systems.
13/01/2021	National Level Industrial Lecture On “How the Latest Technology Impact Our Current Industry?”	Mr. C. Navagridhar Ramsait MEAN Stack Developer, Farshore.	By improving product development, business processes, and developing workers skills, technology increases productivity in various business operations. The size of improvements is debatable, but some technologies like email and social media have made communication easier and faster



Figure 4.5.1.A.13: Android Workshop Brochure

b. Academic year 2019-2020:

Table 4.5.1.A.9: IEI Events conducted in Academic Year 2019-20

Date	Event	Resource person	Event Description
07/03/2020	Low Power VLSI Design Techniques	Dr. Rama Komaragiri, Dean Academic Affairs Professor, Department of ECE, School of Engineering and Applied Sciences, Bennett University, Noida	Low Power VLSI Design a. Power Requirements b. Review of MOSFET c. MOSFET Scaling d. Review of CMOS Inverter e. Capacitance in MOSFET f. Power and Energy
06/05/2020	Security Challenges in the Pandemic Period and Solutions	Dr. Dhinakaran Nagamalai, Vice President, Wireilla, Sydney, Australia	The COVID-19 pandemic risks widening further the divide in labour market outcomes for the most vulnerable groups who face numerous employment obstacles
18/05/2020	Emerging Areas in SoC, M2M and Internet of Things	"Dr. Raj Kamal, Electronics and Communication Engineering Department, Prestige Institute of Engineering Management and Research, Indore, Madhya Pradesh.	Internet of Things (IoT) is a new paradigm that has changed the traditional way ... enabling technologies, social and environmental impacts etc.

20/05/2020	Effective and Attractive Documentation using Latex	"Dr. A. Ramesh Babu, Department of Mathematics, School of Engineering, AMRITA Vishwa Vidhyapeetham, Coimbatore."	The documents produced using LaTeX just look better. This means that LaTeX can create everything from business cards to books to presentations
21/05/2020	Accept No Limits (Sharing Industrial Experience and PLM Technology	Mr. Sangaran Nagendran, PLM Enovia Systems Developer, Faraday Future Inc, Los Angeles, USA	Good PLM capabilities are essential to accelerate the maturity growth in product development projects. This improves product design and cuts lead time and cost.
31/05/2020	IIC Innovation Project Contest	Dr. M. Kalpana, HoD/ECE & Dr. J. Deny, President-IIC/KARE	Create an Institutions Innovation portal to highlight innovative projects carried out by institutions faculty and students.
17/06/2020	5G Technologies	V. Lingasamy, Team Lead, HCL Technologies, Bengaluru	Emerging 5G networks feature lower latency, higher capacity, and increased bandwidth compared to 4G. These network improvements will have far-reaching impacts on how people live, work, and play all over the world
19/06/2020	Job Opportunities in Solar PV Energy System	"Dr. K. Pushpanathan, TIAS energy Pvt. Ltd., Chennai"	Employment of solar photovoltaic installers is projected to grow 52 percent from 2020 to 2030, much faster than the average for all occupations.

22/06/2020	Scope of Automation in Future Industries	Er. Harish Ravi, Biass, Koyamputhoor	AI, automation, and advanced engineered systems promise improvements in safety, simplification of routine tasks, and higher productivity levels across organizations
24/06/2020	Innovation to Reality	Mrs. S. Muthulakshmi, Freelancer	The purpose of innovation workshops was to organize idea generation exercises from which the participants got benefitted

c. Academic year 2021-2022:

Table 4.5.1.A.10: IEI Events conducted in Academic Year 2021-22

Date	Event	Resource person	Event Description
12/07/2021	Online Industrial Lecture "Design Ideas for Capstone Projects"	Dr. N. Pothirasan, Director, Hashan Medicare, Rajapalayam	
17/07/2021	SAP Orientation Program	Mr.M.Prakash (Alumni 2016-20) Program Analyst CTS, Mr.Harikrishnan (Alumni 2016-20), Program Analyst, CTS	SAP Certifications are globally recognized and standardized. In addition, they provide validation that the certified individual has the required proficiency and expertise in the SAP solution in which they are certified. As a result, it makes it very easy for organizations to manage the

			SAP skills of their employees worldwide.
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KALASALINGAM
ACADEMY OF RESEARCH AND EDUCATION
(DEEMED TO BE UNIVERSITY)
Umbrella No. 2 of MGC Act 1956.
Accred. By: AICTE - 120123, Shaheedul (Sha), Vivekananda (V), Tamil Nadu | info@kalasalingam.ac.in | www.kalasalingam.ac.in
SCHOOL OF ELECTRONICS AND ELECTRICAL TECHNOLOGY
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
(Department started in 1993-94)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ORGANIZES

NATIONAL LEVEL INDUSTRIAL GUEST LECTURE

On

DESIGN IDEAS FOR CAPSTONE PROJECT

Date : 12th July 2021

Time : 3.00 PM to 5 PM

Beneficiaries : II Year ECE Students

Online Platform : Microsoft Teams

Online Link : <https://bit.ly/3k3uzp1>

About the Lecture:

The main objective of the industrial lecture is to create innovative ideas in project and to build a prototype.

Resource Person
Dr. N. Pothirasan
Director,
Hashan Medicare,
Rajapalayam

Convener
Dr. M. Kalpana,
HoD/ECE, KARE

Co-Ordinator's
Mr. G. Ramesh
AP/ECE, KARE,

Mr. G. Karthy
AP/ECE, KARE

E-Certificate will be provided

Figure 4.5.1.A.14: Online Industrial Lecture Brochure

KALASALINGAM
ACADEMY OF RESEARCH AND EDUCATION
(DEEMED TO BE UNIVERSITY)
Under sec. 3 of UGC Act 1956, Accredited by NAAC with "B" Grade
SCHOOL OF ELECTRONICS AND ELECTRICAL TECHNOLOGY
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Industrial Lecture on
SAP Orientation Program

OBJECTIVE
In this Industrial Lecture describe about tangible and Intangible benefits of training for individual. We will also summarize the value of training. We will guide you to understand the easiest way to navigate the SAP Training

INNOVATION
ideas, operations, motivation, original, communication, management, finance, issues, goals, strategy, focus, innovative, business, operations, design, method, creative, development, company

Convener
Dr.M.Kalpna, HoD/ECE, KARE

Coordinators
Mrs.N.Bhuvaneswary, AP/ECE
Dr.A.Lakshmi, Asso.Prof/ECE
Mr.M.Sakthimohan, AP/ECE

Resource Person
Mr.Prakash, (Alumni 2016-20)
Program Analyst, CTS
Mr.Harikrishnan, (Alumni 2016-20)
Program Analyst, CTS

Target Audience
Final Years

Join Teams
<https://bit.ly/3jVVMKw>

17/07/2021-09.30 am to 11.30 am

Figure 4.5.1.A.15: Online Industrial Lecture Brochure

4. IEDC (Innovation and Entrepreneurship Development Centre)

IEDC in KARE intends to develop an institutional mechanism to create Entrepreneurial culture in academic institutions to foster the growth of innovation and Entrepreneurship among the faculty and students.

a. Academic year 2018-2019:

Table 4.5.1.A.11: IEDC Events conducted in Academic Year 2018-19

Date	Expert Members	Title of the Event	School	No.	Fund
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10/08/2018	Mani James, Forst & Sullivan	Industrial Workshop on Mega Trends & IPR	SEET	70	KARE Fund
08/03/2019	Dr. Dhanalakshmi, CED Madurai	Women Entrepreneurship	All	70	KARE Fund
08/01/2019	Shri. Anand Mahindra, Chairman, Mahindra Group	India First Leadership Talk 1st Episode	All	25	KARE Fund
24/01/2019	Dr. Anand Deshpande, Founder, Chairman & Managing Director Persistent Systems Ltd	2nd Episode of India First Leadership Talk	All	120	KARE Fund
19/03/2019	Dr. Ajit Doval, NSA, Govt. of India	3rd Episode of India First Leadership Talk	All	162	KARE Fund
10/05/2019	Prof. Anil D. Sahasrabudhe, Chairman, AICTE	Episode 04 of India First Leadership Talk	All	142	KARE Fund
10/01/2019	Ms. Shwetasree, Principal, Fidus Law Chamber Dr. J. Deny, President, KARE-IIC	Workshop on IPR for Students and Faculty Members	All	86	KARE Fund
14/06/2019	Mr. Ragupathi Muthu, Director, Minniyal Pvt. Ltd	Proof of Concept Exhibition	All	114	KARE Fund

15/02/2019 to 18/02/2019	Mr. N. POTHIRASAN, Director, Raj Bio Electronics And, Intelligent Private Limited Mr. Sankaranarayanan G, Business Consultant, JCI, Rajapalyam	Entrepreneurship Awareness Camp	SEET	75	Rs.20,000/- Funded by EDII & DST
22/02/2019 to 24/02/2019	Mr. V. MUNEESWARAN, Director, Raj Bio Electronics and Intelligent Private Limited Mr R. N. Ragupathi Muthu, Director, Minniyal Pvt. Ltd	Entrepreneurship Awareness Camp	SEET	77	Rs.20,000/- Funded by EDII & DST



Figure 4.5.1.A.16: Entrepreneurship Awareness Camp



Figure 4.5.1.A.17: Workshop on IPR for Students and Faculty

Table 4.5.1.A.12: Student's projects supported by IEDC (Rs. 1 Lakh /Project)

SI. No.	Title of the Project	Department	Guide Name	Students Name
1	Development of Electronic Lockers with Multiple keys using Visual Cryptography Scheme	CSE and ECE	Dr. K. Suthendran	Sai Anand. M Harish R
2	Smart Tube light	ECE	Dr. J. Deny Mr. V. Ramachandran	R. Vengat Rahul

b. Academic year 2019-2020:

Table 4.5.1.A.13: IEDC Events conducted in Academic Year 2019-20

Date	Resource Person	Event Title	Department	No.
22/08/2019	Honble HRD Minister Shri Ramesh Pokhriyal Nishank.	India First Leadership Talk Series	ECE	75

19/09/2019 to 20/09/2019	Mr. Pothirasan, Director, Raj Bioelectronics and Intelligent Pvt.Ltd	Hands on Workshop on PCP Design and Fabrication	ECE, BME	71
05/08/2019	Shri Narayana Murthy, Founder	Dr. N. Seshagiri memorial Lecture 2019	All	133
06/08/2019	Prof. K. Vijayaragavan Principal Scientific Adviser to the Government of India.	Agni-Enabling Technology Commercialization	ECE, KBS	97
09/11/2019	Dr. J. Deny, President-IIC, KARE, Mr. Ragupathi Muthu, Director, Minniyal Pvt. Ltd	Demo Day	All	87
15/10/2019	Mr. Ragupathi Muthu, Director, Minniyal Pvt. Ltd Mr. Pothirasan, Director, Raj Bioelectronics and Intelligent Pvt. Ltd	Innovation Day Campaign	All	220
24/01/2019	Mr. Thirupatthi & Mr. Govindaraj Assistant Directors, MSME	MSME Demo Day	All	112

08/02/2020	Mr. Ragupathi Muthu, Director, Minniyal Pvt. Ltd Dr. J. Deny, President-IIC, KARE,	Internal Smart India Hackathon 2020	All	144
21/02/2020 To 23/02/2020	Mr Rammiah Chidambaran Founder-CEO Whizifi Robotics Pvt. Ltd Dr. J. Deny, President-IIC, KARE,	Entrepreneurship Awareness Camp	ECE	77
28/02/2020	Dr. J. Deny, President-IIC, KARE, Dr B. Peruaml Convener-IIC, KARE,	Science Day	All	156
29/02/2020	Mr. Prabhu Swaminathan Founder Director Lafors Talent Solutions India Pvt. Ltd Chennai	IIC-ISTE Innovation Contest	All	126

06/03/2020 To 08/03/2020	Dr. E. Muthukumaran, President-IIC Dr B R Ambedkar Institute of Technology Mr. Ragupathi Muthu, Director, Minniyal Pvt. Ltd Dr. J. Deny, President-IIC, KARE,	Entrepreneurship Awareness Camp	ECE, BME	117
07/04/2020	Mr. Abhishek Suryawanshi, Director, Wikipedia Swastha	IIC- India First Leadership Talk Series	All	102
08/04/2020	Prof. K Vijay Raghavan, Principal Scientific Adviser, Government of India	IIC- India First Leadership Talk Series	All	128
09/04/2020	Prof. Anil D. Sahasrbudhe, Chairman, AICTE	IIC- India First Leadership Talk Series	All	104
10/04/2020	Prof. Partha Chakraborty, Chairman National Digital Library, Ex-Director, IIT Kharagpur	IIC- India First Leadership Talk Series	All	132
11/04/2020	Mr. Abhishek Singh, CEO, My Gov	IIC- India First Leadership Talk Series	All	136
13/04/2020	Dr. VK Saraswat, Member NITI Aayog	IIC- India First Leadership Talk Series	All	106

14/04/2020	Dr. Anand Deshpande, Founder, Chairman & Managing Director, Persistent Systems Ltd	IIC- India First Leadership Talk Series	All	125
15/04/2020	Ms. Shradha Sharma, Founder, and Chief Editor, YourStory.com	IIC- India First Leadership Talk Series	All	124
16/04/2020	Dr. Vinay Sahasrabhddhe, President, ICCR	IIC- India First Leadership Talk Series	All	122
17/04/2020	Mr. Ronnie Screwvala	IIC- India First Leadership Talk Series	All	130
18/04/2020	Prof. K.K Aggarwal, National Board of Accreditation (NBA), Govt. of India	IIC- India First Leadership Talk Series	All	147
20/04/2020	Mr. Yashraj Bhardwaj, Co-Founder, Zenith Vipers & Partner Ensure Equity	IIC- India First Leadership Talk Series	All	126
21/04/2020	Dr.Gurung Desh Deshpande, Indian- American Venture Capitalist & Entrepreneur	IIC- India First Leadership Talk Series	All	132
22/04/2020	Padma Shri, Vaidya Rajesh Kotecha, Secretary Ministry of Ayush, Govt of India	IIC- India First Leadership Talk Series	All	148

23/04/2020	Mr. Gautam Bambawale, Ex-Indias Ambassador to China	IIC- India First Leadership Talk Series	All	116
27/04/2020	Dr. BVR Mohan Reddy, Chairman Cyient & Ex-Chairman NASSCOM	IIC- India First Leadership Talk Series	All	108
27/04/2020	Prof. Sherin Sam Jose, CEO, Startup Valley Amal Jyothi College of Engineering, Kottayam	Online FDP on Innovation and Entrepreneurship	All	132
28/04/2020	Mr. Dipan Sahu, National Coordinator - IIC, ARIIA, NISP Innovation Cell, Ministry of HRD, Govt. of India	National Innovation and Start-up Policy for Students and Faculty 2019	All	82
29/04/2020	Mr. Muthu Singaram CEO, IIT Madras, Chennai	Role and Importance of Pre-Incubators, Incubators and Accelerators in HEIs - Harnessing Innovation and Entrepreneurial Potential of Students and Faculties at Early Stage	All	90
30/04/2020	Ms. Vandana Thakur Female Innovator cum Entrepreneur, Canada India Acceleration Mr. Amit Sanjay Lokhande Innovator Cum Entrepreneur, India-South Korea Start-up Exchange	Hangout with Emerging Innovator & Entrepreneurs Supported through MIC & AICTE	All	94

01/05/2020	Ms. Geetika Dayal Executive Director, TiE Delhi- NCR	Role of Network Enablers in driving I&E in HEIs - A Case of TiE, India	All	87
02/05/2020	Dr. Madhuri Kanitkar, Lieutenant General	IIC- India First Leadership Talk Series	All	176
09/05/2020	Prof DB Singh Chairman -UGC	IIC- India First Leadership Talk Series	All	187
04/05/2020	Dr. Pankaj Parashar CEO/Founder Cutting edge Technology Pvt. Ltd., Indore	Hangout with Successful Start-up Founder	All	83
05/05/2020	Dr. Sunil Shukla Director general, EDII, Ahmedabad	Entrepreneurship, Business Idea and Business Model Canvas	All	89
05/05/2020	Malaikannan Sankarasubbu, VP of AI Research, Saama Technologies USA	Webinar on Recent Research Opportunities in AI and ML	Research Scholars	120
06/05/2020	Prajakta Kulkarni Founder, Director, Nodes Pvt. Ltd., Pune Sanket Inamdar Co-founder, CEO, Nodes Pvt. Ltd, Pune	How to Identify Right Problem and Solution using the Double Diamond Approach in Design	All	83

07/05/2020	Dr Sanjeeva Kumar Majumdar Manager-IPR, Start-up & Incubation National Research Development Corporation, New Delhi	Intellectual Property (IP) Management at Early Stage of Innovation and Start-ups	All	91
08/05/2020	Mr. Sushanto Mitra CEO, Lead Angels	Understanding Angel and Venture Capital Funding - What is there for Early-Stage innovator & Entrepreneurs	All	86
12/05/2020	Mr. Harit Mohan Founder & CEO of Signicent LLP in India and Signicent LLC in the US	Legal and Ethical Steps - Productive Entrepreneurship and Start-up	All	71
13/05/2020	Prof. Sanjay Inamdar Chairman, AICTE Start-up Policy Implementation Committee and Entrepreneur	Innovating Self- Screen and Identify right opportunities	All	68
14/05/2020	Dr. Preet Deep Singh AVP, Invest India	Understanding Role and Application of Marketing Research at Idea to Start up Stage - Foundation Level	All	72



Figure 4.5.1.A.18: Entrepreneurship, Business Idea and Business Model Canvas



Figure 4.5.1.A.19: Science Day



Figure 4.5.1.A.20: MSME Demo Day



Figure 4.5.1.A.21: Innovation Day Campaign



Figure 4.5.1.A.22: Agni-Enabling Technology Commercialization

c. Academic year 2020-2021:

Table 4.5.1.A.14: IEDC Events conducted in Academic Year 2020-21

SI. No.	Title	Event Date	No of Participants	Fund
1	Workshop on “Entrepreneurship and Innovation as Career Opportunity”	22/08/2020	75	KARE Fund

2	Orientation Session on National Education Policy (with a focus on Innovation and entrepreneurship)	21/09/2020	120	KARE Fund
3	Entrepreneurship Orientation Camp 1	10/09/2020	112	KARE Fund
4	Entrepreneurship Orientation Camp 2	11/09/2020	124	KARE Fund
5	Entrepreneurship Orientation Camp 3	14/09/2020	108	KARE Fund
6	Entrepreneurship Orientation Camp 4	15/09/2020	126	KARE Fund
7	Entrepreneurship Orientation Camp 5	16/09/2020	118	KARE Fund
8	Entrepreneurship Orientation Camp 6	17/09/2020	108	KARE Fund
9	Project-Way finder to Career opportunities	05/08/2020	74	KARE Fund
10	Online Training on Intellectual Property Rights	17/08/2020	36	KARE Fund
11	Awareness Program for Tamil Nadu student Innovators Award 2020	30/08/2020	100	KARE Fund
12	Idea/ PoC pitching & validation	04/12/2020	142	KARE Fund
13	KAPILA: Kalam Program for IP Literacy and Awareness	15/10/2019 to 23/10/2020	76	Through MIC

14	How to Apply for a Government Innovative Entrepreneur Project!!!	04/01/2021	45	KARE Fund
15	National Level Workshop on WRITING A PROJECT PROPOSAL FOR FUNDING	12/01/2021	64	KARE Fund
16	Session on identifying Intellectual Property component at the early stage of Innovation	13/01/2021	82	KARE Fund
17	Orientation Session on National Innovation and Start-up Policy (NISP)	30/01/2021	112	KARE Fund
18	Entrepreneurship Motivation Training for Polytechnic Students	11/02/2021	89	KARE Fund
19	TNSI 2020 Boot camp	25/02/2021 to 27/02/2021	70	Funded by EDII, Tamilnadu
20	Alumni Entrepreneur Interaction	09/03/2021	82	KARE Fund
21	Next Step into Business	12/03/2021	75	KARE Fund
22	Leadership Talk on “From your Masters/PhD Thesis into a startup”	23/04/2021	84	Through MIC
23	Session on Why IP is Important in academia?	26/04/2021	92	Through MIC
24	ISTE Innovation Contest	07/05/2021	120	KARE Fund

25	Webinar on Challenges and Opportunities for Success	07/05/2021	100	KARE Fund
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Student Start-up Companies incubated in KARE:

Sl. No.	Project Title	Dept	Company Name
1.	Smart Cart for SuperMarket	CSE, ECE	Yugti Smart Solutions Pvt. Ltd.

5. FSAI ([Fire & Security Association of India](#))


FSAI in KARE is working with a motto to establish Life Safety and Security as an important human obligation in the economic development of the country and use this as an index for future.

a. Academic year 2018-2019:

Table 4.5.1.A.15: FSAI Events conducted in Academic Year 2018-19

Date	Event	Resource person	Event Description
22/10/2018 to 23/10/2018	Numerical Analysis using MATLAB	Dr. Mahesh Anand, CTO, SCS India, Chennai	Numerical analysis is a branch of mathematics that solves continuous problems using numeric approximation. ... MATLAB® is widely used for applied numerical analysis in engineering, computational finance, and computational biology.

25/10/2018	Applications Of Electronic Circuits for An Industrial Perspective	Mr. B. Veerasamy, Associate Professor, Department of ECE, Hindustan College of Engineering and Technology, Coimbatore	Understand and apply concepts of sequential logic design to implement circuits. Understand and apply concepts of state machines
25/10/2018	Workshop for Core Competent Electronics Engineers	Dr. Vimalathithan Director, Krish Tech, Coimbatore	Thorough understanding of the Core Subject Planning and Organization Skills
26/10/2018	Two days technical workshop on RF Applications & Software Defined Radio Using NI LabVIEW & Hardware (NI-USRP)	Mr. Sathya Narayana, VI Solutions Bangalore.	This workshop was to acquaint the participants with the basic principles, developments, and research trends in antennas and wave propagation. The workshop has covered the perfect combination of theory and practical sessions in the well-balanced manner
29/04/2019	Technology development with TCAD	Mr. A S Varun Gaikwad, Regional Manager, Nanochip Solutions, Bangalore.	Technology Computer-Aided Design (TCAD) refers to the use of computer simulations to develop and optimize semiconductor processing technologies and devices.

 **KALASALINGAM**
ACADEMY OF RESEARCH AND EDUCATION
(DEEMED TO BE UNIVERSITY)
Under Sec. 3 of MGC Act 1988.

SCHOOL OF ELECTRONICS AND ELECTRICAL TECHNOLOGY
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
(Established in 1983-84)

SCHOOL OF ELECTRONICS AND ELECTRICAL TECHNOLOGY
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Cordially invites you for the two day workshop
On
"Numerical Analysis using Matlab"
With Technical Support
By
 Scientific Computing Solutions
Scientific Computing Solutions (SCS), Chennai
Held on
22nd and 23rd October 2018
Resource Person
Dr. Mahesh Anand
CTO, SCS – India, Chennai
Co-ordinators
Ms. Josephine Sella Jeyanathan, AP / ECE
Mr. R. Radeep Krishna, AP / ECE
Mr. V. Muneeswaran, AP / ECE
Venue: VLSI Lab, 8th Block II Floor & DSP SD Lab, 3rd block II floor

Figure 4.5.1.A.23: Numerical Analysis using Matlab

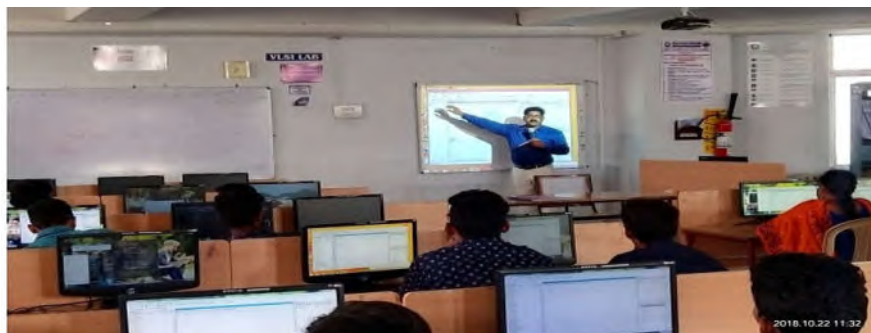


Figure 4.5.1.A.24: Numerical Analysis using Matlab



Figure 4.5.1.A.25: Two days technical workshop on RF Applications & Software Defined Radio Using NI LabVIEW & Hardware (NI-USRP)



Figure 4.5.1.A.26: Applications Of Electronic Circuits For An Industrial Perspective


KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION (DEEMED TO BE UNIVERSITY)	ORGANISING COMMITTEE	REGISTRATION FORM
<p>A TWO-DAY WORKSHOP ON APPLICATIONS OF ELETRONIC CIRCUITS FOR AN INDUSTRIAL PERSPECTIVE 25th & 26th OCTOBER, 2018</p>  <p>Organized by DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING SCHOOL OF ELECTRONICS AND ELECTRICAL TECHNOLOGY KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION (DEEMED TO BE UNIVERSITY) KRISHNANKOIL TAMIL NADU-626 126</p>	<p>Chief Patron: Dr. K. Sridharan, Chancellor, KARE Dr. S. Shasi Anand, Vice President, KARE</p> <p>Patron: Dr. S. Saravana Sankar, Vice-Chancellor, KARE</p> <p>Convenor: Dr. P. Siva Kumar, Professor & HoD/ECE</p> <p>Co-ordinators: Dr. J. Charles Pravin Dr. B. Perumal Mrs. C. Swedheetha Mr. R. Krishnasamy</p> <p>ADDRESS FOR CORRESPONDENCE Dr. P. Siva Kumar Professor & HoD/ECE, KARE, Krishnankoil – 626 126</p>	<p>WORKSHOP ON APPLICATIONS OF ELETRONIC CIRCUITS FOR AN INDUSTRIAL PERSPECTIVE 25th & 26th OCTOBER, 2018</p> <p>1. Name:</p> <p>2. Institute:</p> <p>3. Address</p> <p>4. Contact Mobile No:</p> <p>5. Email:</p> <p>Place:</p> <p>Date:</p>

Figure 4.5.1.A.27: Applications Of Electronic Circuits For An Industrial Perspective Brochure

<p>KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION</p> <p>IEEE ELECTRON DEVICES SOCIETY COIMBATORE CHAPTER SPONSORED</p> <p>TWO-DAY WORKSHOP ON TECHNOLOGY DEVELOPMENT WITH TCAD 29th & 30th APRIL, 2019</p>  <p>Organized by DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING</p> <p>KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION MDR 194, KRISHNAN KOVIL, TAMIL NADU-626126</p>	<p>ORGANISING COMMITTEE Chief Patron: Dr. K. Sridharan, Chancellor, KARE</p> <p>Dr. S. Shasi Anand, Vice President, KARE</p> <p>Patron: Dr. R. Nagaraj, Vice-Chancellor, KARE</p> <p>Convenor: Dr. P. Siva Kumar, Professor & HoD/ECE</p> <p>Co-ordinator: Dr. J. Charles Pravin Mob: 9566368171 Mr. Jenyfal Sampson Mob: 8667207558</p> <p>ADDRESS FOR CORRESPONDENCE Dr. P. Siva Kumar Professor and HoD/ECE, KARE, Krishnankoil - 626 126</p> <p>SPONSORED BY IEEE ELECTRON DEVICES SOCIETY COIMBATORE CHAPTER</p>  <p>NANOCHIP SOLUTIONS PVT LTD</p> 	<p>REGISTRATION FORM</p> <p>WORKSHOP ON TECHNOLOGY DEVELOPMENT WITH TCAD 29th & 30th APRIL, 2019</p> <p>1. Name:</p> <p>2. Institute:</p> <p>3. Designation:</p> <p>4. Address:</p> <p>5. Contact Mobile No:</p> <p>6. Email:</p> <p>7. DD Number/Date:</p> <p>8. Drawn at:</p> <p>Place:</p> <p>Date: Signature</p> <p>SIGNATURE OF THE PARTICIPANT</p> <p>.....</p> <p>SIGNATURE OF THE HEAD OF THE INSTITUTION/DEPARTMENT (WITH SEAL)</p> <p>.....</p>
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Figure 4.5.1.A.28: Technology development with TCAD brochure



Figure 4.5.1.A.29: Technology development with TCAD

 KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION (DEEMED TO BE UNIVERSITY) Two days technical workshop on RF Applications & Software Defined Radio Using NI LabVIEW & Hardware (NI-USRP) 26th & 27th October 2018 REGISTRATION FORM Name: _____ Organization: _____ Designation: _____ Department: _____ Professional Category (Please Tick): <input type="checkbox"/> Industry <input type="checkbox"/> Academic Accommodation Required <input type="checkbox"/> Yes <input type="checkbox"/> No Communication Address: _____ _____ Phone : _____ Mobile: _____ E-mail: _____ Signature of the Applicant _____ Signature of the Head of the institution _____	 KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION (DEEMED TO BE UNIVERSITY) Two days technical workshop on RF Applications & Software Defined Radio Using NI LabVIEW & Hardware (NI-USRP) 26th & 27th October 2018 ORGANIZING COMMITTEE Chief Patrons Dr. K. Sridharan, Chancellor, KARE. Dr. S. Shasi Anand, Vice-President/Academic, KARE. Dr. S. Arjun Kalasalingam, Vice-President/Admin, KARE. Patrons Dr. S. Saravana Sankar, Vice-Chancellor, KARE. Dr. V. Vasudevan, Registrar, KARE. Dr. D. Devaraj, Dean/SEET and Director-Academic, KARE. Convener Dr. M. Pallikonda Rajasekaran, Center Head/KARE-NI-TIC & Controller of Examinations, KARE. Dr. P. Sivakumar, HoD / ECE, KARE. Coordinators Mr. M. Thilagaraj, Coordinator- NI-TIC, KARE. Mr. V. Muneeswaran, AP-1/Department of ECE, KARE.	 KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION (DEEMED TO BE UNIVERSITY) KARE-NI TECHNOLOGY INNOVATION CENTRE with DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING Organizes Two days technical workshop on RF Applications & Software Defined Radio using NI LabVIEW & its Hardware (NI-USRP) 26 th & 27 th October 2018   KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION (DEEMED TO BE UNIVERSITY) SCHOOL OF ELECTRONICS AND ELECTRICAL TECHNOLOGY DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
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Figure 4.5.1.A.30: Two days technical workshop on RF Applications & Software Defined Radio Using NI LabVIEW & Hardware (NI-USRP)

6. ASELCOME - Electronics and Communication Engineering Department Association

Electronics and Communication Engineering Department Association supports students by conducting various events like Technical and Non-Technical Events Inter Department and Intra Department Symposium, Sport Day and Guest lecturers to upgrade student's profile. Some of the events conducted in last three years are listed as follows:

Table 4.5.1.A.16: ASELCOME Events conducted in ECE

SI. No.	Date	Title of the Event Outcome	Outcome
1.	14/11/2018	SPORTFEST 2k18	<p>The Inter Department Sports day "SPORTFEST 2k18" was conducted by the Department of Electronics and Communication Engineering on 14th November 2018, at Kalasalingam University.</p> <p>The events like volleyball, cricket, throw ball, basketball and athletics were conducted for both boys and girls. They have participated in all the events. The events of the day were judged by the Physical Directors of Kalasalingam University.</p>

2.	18/02/2019	EXPRESSO 2k18	<p>The Association of the Department of Electronics and Communication organizes this event to encourage the students and provide them the opportunities to express their competency with students from other colleges and Universities. The Department of ECE has thus organized the Non – Technical Event "EXPRESSO 2k18" on 18th February 2019</p>
3.	14/10/2018	TARANG 2k18	<p>The Department of ECE had organized the University Level Non – Technical Event "TARANG 2k18" on 14th October 2018. About 223 students from various departments of the University participated in the non-Technical events such as Multi-tasking, Spot Event, Best Manager, Dubs Mash, Short Film, and Grand Master. The winners and runners of the events were awarded with prizes.</p>
4.	18/03/2019	Sports Day 2k19	<p>The Sports day was conducted on 18th March 2019, at Kalasalingam University. The events like volleyball, cricket, throw ball, basketball and athletics were conducted for both boys and girls. They have participated in all the events. The events of the day were judged by the Physical Directors of Kalasalingam University.</p>
5.	15/03/2019	TARANG 2K19	<p>The Department of ECE has organized a University Level Non-Technical competition for the students at the University under the banner of "TARANG 2K19" on 15th March 2019.</p> <p>About 252 students from various departments of the University participated in the non-Technical events such as Multi-tasking, Spot Event, Best Manager, Dubs Mash, Short Film, and Grand Master. The winners and runners of the events were awarded with prizes.</p>

6.	08/08/2020	A National Level Technical Virtual Symposium & Non-Technical Ex	<p>Demonstrate a greater understanding about to the field.</p> <p>Demonstrate an increased level of confidence in their ability to perform academically and socially. (Self-Efficacy)</p> <p>Increase professional interaction through interpersonal skills with other students and faculty.</p> <p>Articulate a greater understanding of how their achievements can contribute to their field, community, nation and/or world.</p>
7.	26/02/2021	YUVA 2k21	Departmental Level Sports meet conducted in the name of “YUVA 2k21” Sports teaches mental and physical discipline.
8.	28/04/2022	ELEXRIEG 2K22 - INTRA DEPARTMENT SYMPOSIUM	The Department of ECE has organized a University Level Non-Technical competition for the students at the University under the banner of " ELEXRIEG 2K22"

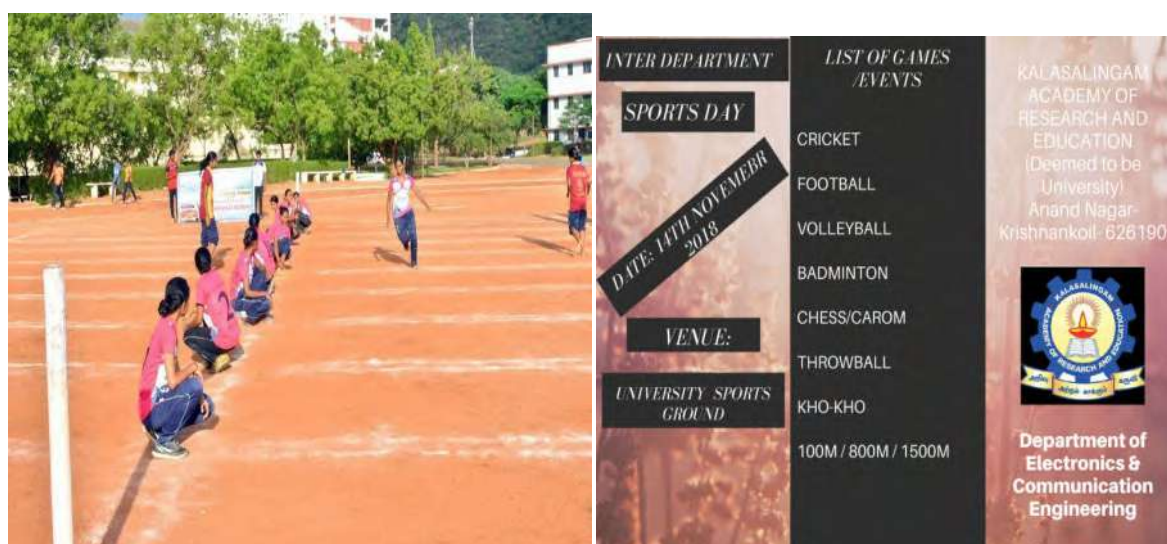



Figure 4.5.1.A.31: SPORTSFEST 2k18 Brochure and Students participation





KALASALINGAM
ACADEMY OF RESEARCH AND EDUCATION
KUMARAKOTTAI, VIRUDHACHARI
www.kalasalingam.ac.in | 1000 425 7884 | 1000 425 8285

Assent Regn. Kishorekul - 626 126
Sri Jagadgur Jyoti, Virudhachari 201
Tamil Nadu, 60506.
Ph : 04463 200112 / 22 / 32 / 42 / 62 / 72
E-mail : admissions@kars.ac.in

&

The DEPARTMENT OF ECE

ORGANIZES

EXPRESSO 2K18

DATE: 18TH FEBRUARY 2019

TIME: 9.00 AM TO 4.00 PM

VENUE: K. S. KRISHNAN AUDITORIUM.

EVENTS ORGANIZED:

SHERLOCK HOLMES
SHORT FILM
BE A SUPERHERO

MUSICALLY
MULTITACHE
MEME ZONE

CO-ORDINATORS
FACULTY & STUDENTS OF ECE

EXPRESSO 2k18

Figure 4.5.1.A.32: EXPRESSO 2k18 and Dignitaries on the Dias - EXPRESSO 2k18



Figure 4.5.1.A.33: TARANG 2k18 Brouchure TARANG 2k18 Participants



Figure 4.5.1.A.34: Sports Day 2k19 Brochure and Student participation in Sports Day 2k19



Figure 4.5.1.A.35: TARANG 2k19 Brochure and Students getting award on TARANG 2k19

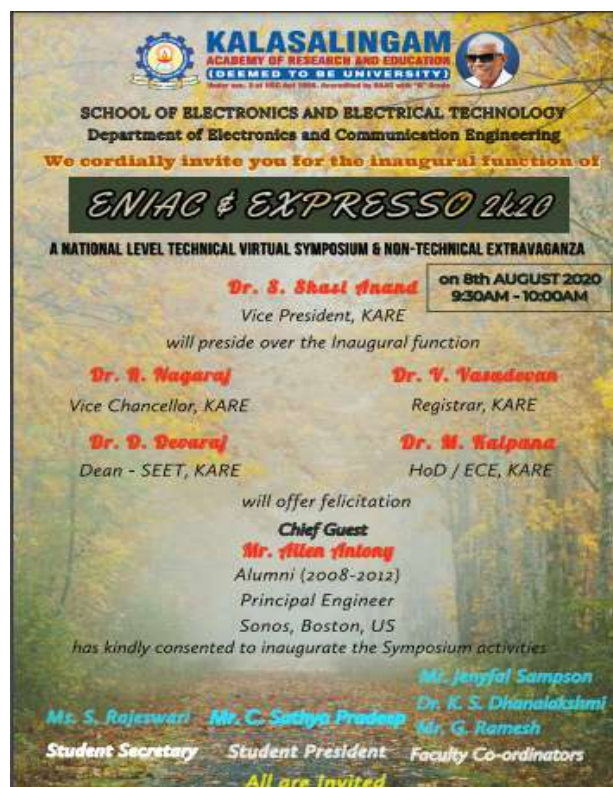


Figure 4.5.1.A.36: ENIAC & EXPRESSO 2K20 Brochure



Figure 4.5.1.A.37: YUVA 2k21 Brochure

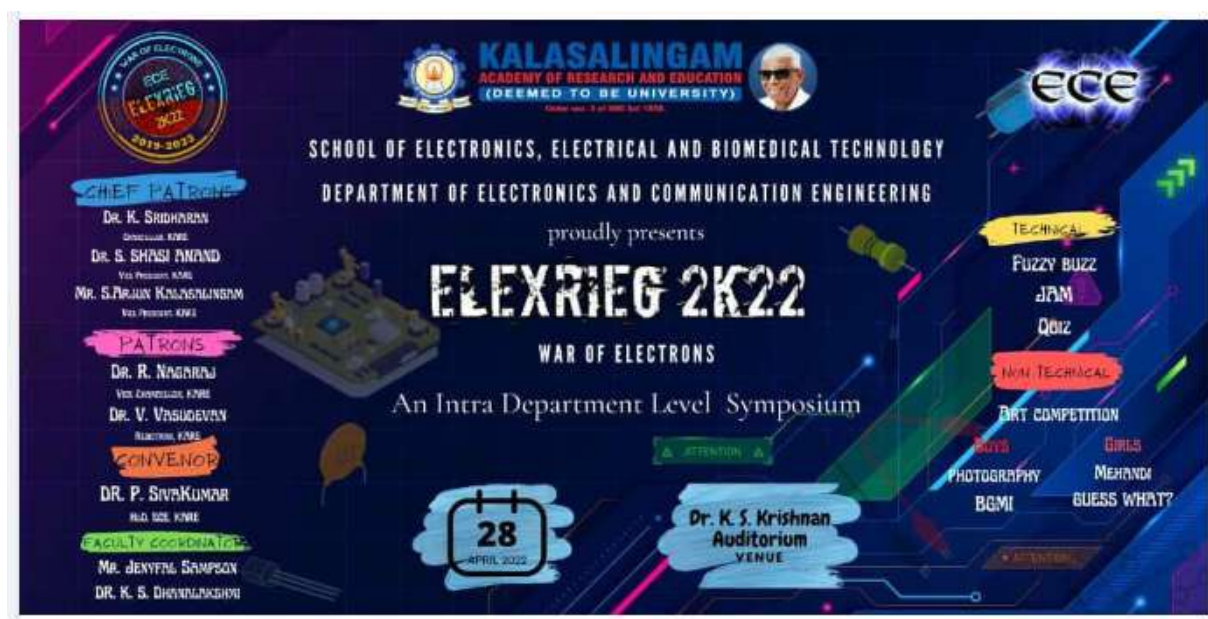


Figure 4.5.1.A.38: ELEXRIEG 2K22 Brochure

7. Electronics Fun Club

EFC in KARE is the technical club aimed to introduce the design of simple electronic circuits using basic electronic devices, components and ICs. To familiarize the design of electronic circuits in line with the curriculum with emphasis on realization in PCB boards and troubleshooting the circuits. It is also responsible to create awareness about advancing technology for the benefit of doing the real time projects during their study on campus. The senior students are highly appreciated to volunteer in conduction workshops and events for their juniors.

SI. No.	Reg No	Name	Faculty Advisor	Mobile Number
1	9918005023	M. Hemanth Chandra	Dr. J. Charles Pravin	9701942501
2	9819005002	K. David Ratna Raj	Dr. K. S. Dhanalakshmi	9603740269
3	9918005039	P. Naveen Gandhi	Dr. J. Charles Pravin	6302553976
4	9918005026	M. Venkata Ganesh	Dr. J. Charles Pravin	9640176029

5	9918005072	K. Muralidhar Reddy	Dr. K. S. Dhanalakshmi	9381125375
6	9918005008	Ch. Sairam	Dr. J. Charles Pravin	6302488842

Table 4.5.1.A.17: Events conducted during the academic year 21-22

Sl. No.	Name of the event	Resource person	Event details	Student participation
1	Hands-on workshop on PCB Design and Simulation	Mr. Pothi, Hashan Medicare, Rajapalayam	26/03/2021	65
2	Fundamentals of Electronics	Er. U. Uma Maheswaran, Spectrum InfoTech, Virudhunagar	11/12/2021	53



Figure 4.5.1.A.39: Fundamentals of Electronics workshop session handled by Resource Person



Figure 4.5.1.A.40: PCB design and Simulation workshop resource person with participants

4.5.2. Publication of technical magazines, newsletters, etc. (5/5)

The Department of Electronics and Communication Engineering publishes one Departmental Magazine every semester and one Newsletter every year as shown in table 4.5.2.1.

Electrocomm – ECE Department Magazine was initiated in the year of 2009 as Volume 1 and Issue 1 and now it has successfully crossed 12 years. Thus currently we are in the Electrocomm Volume 12, Issue 24.

The purpose of the magazine is to provide a platform to the students and faculty members to give their technical and non-technical views and to exhibit their skills such as poem writing, pencil sketches and Photography etc. The magazine acts as synchronization between academic learning and recent trends and developments, and covers extra-curricular activities, thereby providing all round development of students. This magazine is run by the students and for the students to achieve their objectives.

The department Newsletter, also published once in a year, features articles about the faculty details such as their research works, abroad visit, their awards and recognition, etc. It also comprises Department activities such as Workshops / Guest lectures organized, Conference conducted and the participation of students in various activities like Gate, BEC and SAP training programs and getting certified. It also has the backup of Placement records of the final year students and also the co-curricular and extracurricular activities of the Notable students.

Table 4.5.2.1 – Details of Newsletter and Magazine

Year	Newsletter		Magazines		
	No. Of publications	Date of publication	No. of publications	Date of publication (Odd Sem)	Date of publication (Even Sem)
2018-19	1	25 May 2019	2	20 Dec 2018	16 Apr 2019
2019-20	1	18 June 2020	2	22 Dec 2019	25 Apr 2020
2020-21	1	15 May 2021	2	15 Dec 2020	10 May 2021
2021-22	1	28 April 2022	2		28 Apr 2022

a) Department of Electronics and Communication Engineering– Magazine
(The below table shows the general content available in each semester magazine)

Table 4.5.2.2 – Magazine Contents

S. No	Contents
1	Message(s)
2	Magazine Team members
3	Technical Articles
4	Non Technical Articles
5	Photography
6	Pencil sketches
7	Poems
8	Quiz and Mind Mapping Game

(b) Department of Electronics and Communication Engineering– Newsletter
(The below table shows the general content available in each year Newsletter)

Table 4.5.2.3 – Newsletter Contents

S. No	Contents
1	Message(s)

2	List of Teaching faculty
3	List of Ph.D awarded during the respective Year
4	Faculty Awards and Recognition
5	Conference/ Workshop / Symposium Organized
6	List of articles published in the journal of International Repute
7	List of Students Placed in Reputed Industries
8	Co curricular and Extra curricular events Organized

(c) Team involved in Magazine preparation and student participations:

Table 4.5.2.4 – Magazine Team

S. No.	Academic year	Semester	Editor	Co-editor	Students Participated
1.	2018-19	Odd Sem	Dr. S. Bama Associate Professor	Dhavanth.M, IV Year, Pranavi.A, III Year	110
2.	2018-19	Even Sem	Dr. S. Bama Associate Professor	Meghana.M, IV Year, Kumar Sai.G, III Year	135
3.	2019-20	Odd Sem	Dr. S. Bama Associate Professor	M.Siva Rama Krishnan, IV Year, M.Vijaya Darshini, II Year	140
4.	2019-20	Even Sem	Dr. K. S. Dhanalakshmi, Associate Professor	G.Likith, IV Year, E Pavithra, III Year	150
5.	2020-21	Odd Sem	Dr. K. S. Dhanalakshmi, Associate Professor	E Pavithra, III Year G.TarunSrinivasulu, II Year	225
6.	2020-21	Even Sem	Dr. K. S. Dhanalakshmi, Associate	A.Sravani, III Year, A.H.Vigneesh, II Year	240

7	2021-22	Odd Sem	Dr. K. S. Dhanalakshmi, Associate Professor	E Pavithra, IV Year G.TarunSrinivasulu, III Year	225
8	2021-22	Even Sem	Dr. K. S. Dhanalakshmi, Associate	A.Sravani, IV Year, A.H.Vigneesh, III Year	240

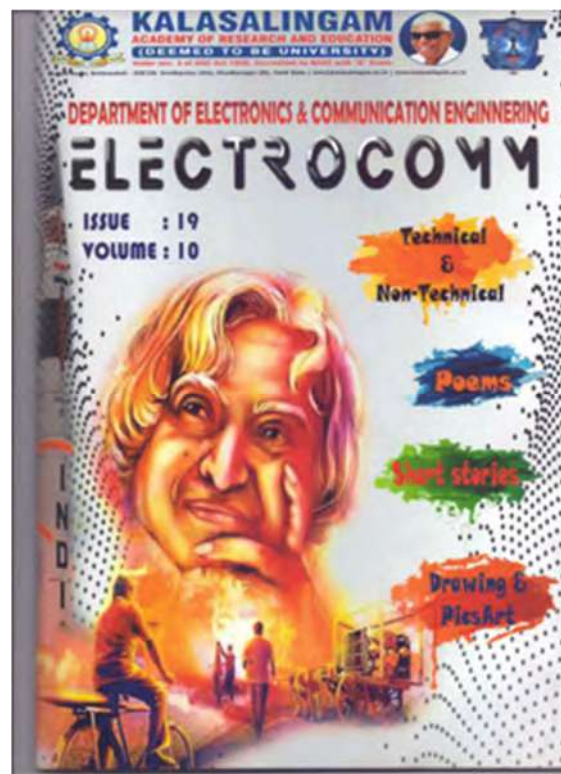


Figure 4.5.2.1: Electrocomm in 2018-2019 Odd sem



Figure 4.5.2.2: Department Magazine 2018 – 2019 Even sem

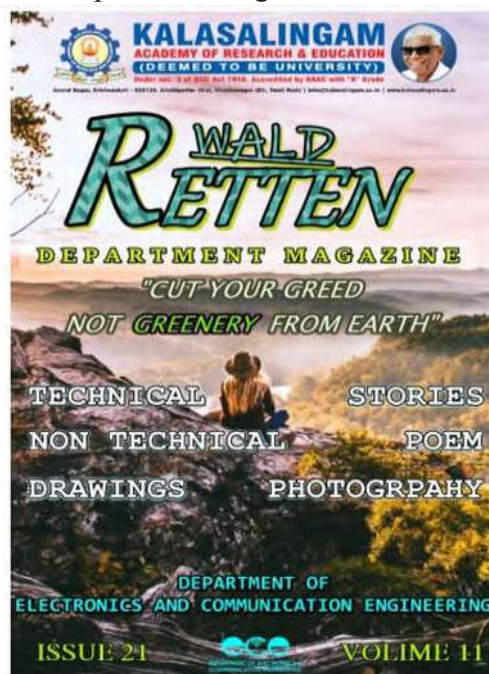


Figure 4.5.2. 3: Department Magazine 2019 – 2020 Odd sem

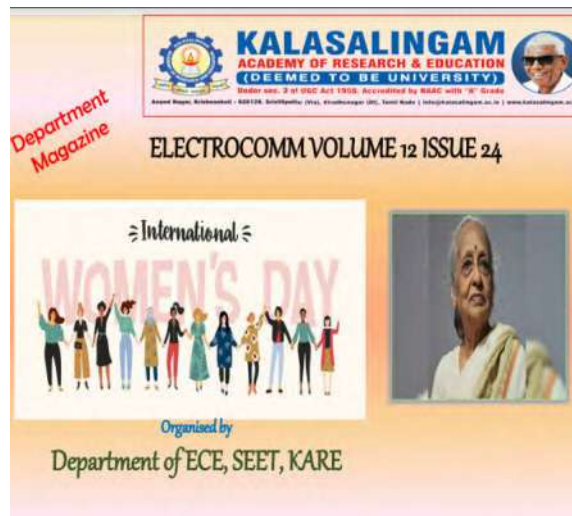


Figure 4.5.2.4: Electrocomm in 2019 – 2020 Even sem



Figure 4.5.2.5: Electrocomm in 2021 – 2022 Odd sem



Figure 4.5.2.6: Electrocomm in 2021 – 2022 Even sem

(d) Team involved in Newsletter preparation:

Table 4.5.2.5: Magazine Team

S. No.	Academic year	Editor	Co-editor
1	2018-19	Dr. K. S. Dhanalakshmi, Associate Professor	Dhavanth. M, IV Year
2	2019-20	Dr. K. S. Dhanalakshmi, Associate Professor	G. Likith, IV Year
3	2020-21	Dr. K. S. Dhanalakshmi, Associate Professor	A. H. Vigneesh, III Year
4	2021-22	Dr. K. S. Dhanalakshmi, Associate Professor	C.Sai Ganesh IV Year

Conference organized**KALASALINGAM GLOBAL CONFERENCE-2019**

The Kalasalingam Global Conference-2019 organized with a theme on Sustainable Development during 18.12.2019 to 20.12.2019 was grandeur and a remarkable interdisciplinary platform for the exchange of ideas among leading academicians, researchers, scientists, and research scholars in the emerging frontiers of research.



Figure 4.5.2.7: Dr. S. Shasi Anand Vice President KARE and Other plenary/keynote speakers released the KGC 2019 Proceedings





Figure 4.5.2.8: Dr. M. Kalpana HoD/ECE, Honoring the Chief Guest and the paper presented members in 9th Block



Figure 4.5.2.9: Dr. D. Devaraj, Dean SEET, Dr. Kim Prof/ECE, Dr. M. Kalpana HoD/ ECE, Dr. A. Ramkumar HoD/EEE, Dr. Yogeshwar HoD/ EIE with the Participants of KGC 2019



Figure 4.5.2.10: Prof. N. SundaraRajan, Emeritus Professor, Nanyang Technological University, Singapore delivered keynote address with the Research Team of SEET

ICASE2020

SEET school has organized International Conference with the Title "**International Conference on Recent Trends in Automation Signal Processing and Energy Systems**" on 19th and 20th June 2020 with the objective of initiating and sharing the research areas in various domains namely Image and Signal processing, Intelligent Systems and IoT, and Power and Energy Systems.

Various Committees comprising a group of faculties have been formed under the guidance of the School head as well as HoDs of ECE, EEE and EIE. The responsibilities and works to be carried out were discussed. Frequent meetings were conducted for the smooth conduction of the program.

Program committee members took part in organizing the program. Technical committee personnel took care of the paper receiving, reviewing, plagiarism checking etc. The Web and Internet committee undertook the web design, link creation etc. Certificate committee members took the responsibility of preparing the certificates.

The Invitation is shown in figure 4.5.2.9.


KALASALINGAM
 Academy of Research and Education
 (DEEMED TO BE UNIVERSITY)
(End U.S. 3 of HGC Act 1996 Accredited by MAAC with 'A' Grade)


**INTERNATIONAL CONFERENCE ON RECENT TRENDS IN AUTOMATION,
SIGNAL PROCESSING AND ENERGY SYSTEM (ICASE-2020)**

**19th & 20th
June 2020**



ABOUT THE CONFERENCE

The School of Electronics and Electrical Technology of Kalasalingam Academy of Research and Education is organizing the International Conference on Recent Trends in Automation, Signal Processing and Energy System-2020 on June 19th and 20th, 2020 through online. The objective of ICASE-2020 is to provide a common forum for the researchers, faculty members and students to exchange their ideas and research findings in the area of automation, signal processing and energy systems. The conference includes paper presentations and key note speeches by the experts on recent topics related to the above domains.

GUIDELINES FOR PAPER SUBMISSION

The Paper must be prepared in English limited to a maximum of 6 pages including references and must conform to IEEE format. Only the soft copy (.doc) of the paper should be submitted.

CALL FOR PAPERS

Original and unpublished research Papers are invited from the authors related to the following topics:

- Robotics and Industrial Automation
- IoT in Building Automation
- Intelligent control
- Industry 4.0
- Image processing
- Bio signal processing
- Medical imaging
- Wireless Communication
- Power System Optimization
- Renewable energy technology
- Microgrid
- Smart grid technology

Organizing Committee

Chief Patrons "Mayavallathil" Dr.K.Sridharan Chancellor Dr.S.Shasi Anand Vice President Mr.S.Arjun Kalasalingam Vice President Patrons Dr.R.Nagaraj, Vice Chancellor Dr.V.Vasudevan, Registrar	Conference Chair Dr.D.Devaraj Dean / SEET Organizing Secretaries Dr.A.Ramkumar HoOEEE Dr.M.Kalpana HoOECE Dr.V.Yogeshwar Chakrapani HoOIDE
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IMPORTANT DATES

Last date for paper submission :	18 th June, 2020
Estimation of paper selection :	12 th June, 2020
Last date for registration :	15 th June, 2020

REGISTRATION FEE

Faculty members and research scholars :	Rs. 500/-
UG / PG students :	Rs. 300/-
Authors from abroad :	10 \$

All the selected papers will be published in the conference proceeding with ISBN Number.

FOR FURTHER DETAILS:
<https://icase20.weebly.com/>

PAPER SUBMISSION LINK



ADDRESS FOR COMMUNICATION
Dr.D.DEVARAJ
 Dean - School of Electronics and Electrical Technology
 Kalasalingam Academy of Research and Education
 Anand Nagar, Krishnankoil, Srivilliputhur (via),
 Virudhunagar (DN), Tamil Nadu - 626 126.
 E-Mail: icasekarc2020@gmail.com

Organized by
School of Electronics and Electrical Technology, Kalasalingam Academy of Research and Education

Figure 4.5.2. 11: ICASE2020 Conference Brochure


 KALASALINGAM Academy of Research and Education CHENNAI UNIVERSITY Established in 1984, Accredited by NAAC with "A" Grade Affiliated to Anna University, Chennai School of ELECTRONICS and ELECTRICAL TECHNOLOGY (SEET)			
INTERNATIONAL CONFERENCE ON RECENT TRENDS IN AUTOMATION, SIGNAL PROCESSING AND ENERGY SYSTEM (ICASE2020)- 19th & 20th, June 2020 Program Schedule			
Day 1: 19.06.2020			
Time	Event		
10:00 am to 10:45 am	Inauguration Zoom Link: https://us02web.zoom.us/j/91052346153?pwd=MTI5RnU2NmE4UzRlTm9GeWp0QEdOQT09		
10:45 am to 11:30 am	Key note 1: Enterprises Transition to Smart grid in Saudi Arabia Dr.Mounir Bouzguenda , Electrical Engineering, King Faisal University, Saudi Session In charge: Dr.A.Ram Kumar, HoD/EEE Zoom Link: https://us02web.zoom.us/j/91052346153?pwd=MTI5RnU2NmE4UzRlTm9GeWp0QEdOQT09		
11:45 am to 1:00 pm	<table border="1"> <tr> <td> Session IA: Intelligent Systems and IoT Session In charge Mr.M.Karuppusamy pandiyan AP/EEE Mrs.P.Jeyanthi RS/EEE Session Chair (Internal) Dr.V.Agnies Idhaya Selvi Assoc. Prof/EEE KARE </td><td> Session IB: Image and signal processing Session In charge Mr. R. Radheep Krishna AP/ECE Ms.A.Kavi Priya RS/ECE Session Chair (Internal) Dr.Charles Pravin Assoc. Prof/ECE KARE </td></tr> </table>	Session IA: Intelligent Systems and IoT Session In charge Mr.M.Karuppusamy pandiyan AP/EEE Mrs.P.Jeyanthi RS/EEE Session Chair (Internal) Dr.V.Agnies Idhaya Selvi Assoc. Prof/EEE KARE	Session IB: Image and signal processing Session In charge Mr. R. Radheep Krishna AP/ECE Ms.A.Kavi Priya RS/ECE Session Chair (Internal) Dr.Charles Pravin Assoc. Prof/ECE KARE
Session IA: Intelligent Systems and IoT Session In charge Mr.M.Karuppusamy pandiyan AP/EEE Mrs.P.Jeyanthi RS/EEE Session Chair (Internal) Dr.V.Agnies Idhaya Selvi Assoc. Prof/EEE KARE	Session IB: Image and signal processing Session In charge Mr. R. Radheep Krishna AP/ECE Ms.A.Kavi Priya RS/ECE Session Chair (Internal) Dr.Charles Pravin Assoc. Prof/ECE KARE		

Figure 4.5.2.12: ICASE2020 Conference Schedule

Program started with the Inaugural function on 19th June 2020 @ 10:00AM. Dr.D.Devaraj, School Dean welcomed the delegates, dignitaries and participants. Dr. S.Shasi Anand, delivered the presidential address. The University Vice Chancellor delivered the special address to the gathering. Mr.MH.Ravichandran, Division Head, SASD /ISRO, IS Unit delivered the inaugural address. Dr.Mounir Bouzguenda, Electrical Engineering, King Faizal University, Saudi Arabia delivered the Keynote speech on “Enterprise Transition to smart grid in Saudi Arabia . Presentation sessions started in two parallel venues.

In the AN session, Dr.K.Shankar, EIE Department, NIT Silchar, delivered a keynote speech on “Pain and its Challenges” to the participants. On 20-June 2020, Dr.G.Thavasi Raja, ECE Department, NIT Trichy delivered keynote speech on “ Applications of Specialty optical fibers and Photonic Integrated circuits for Communications, Sensing, and Industrial Applications” to the participants. In the AN session, Dr.S.R.Mahadeva Prasanna, IIT Dharwad delivered a keynote speech on “Pattern Recognition to Deep Learning” to the participants.

Presentation venues on the Title “Image and Signal Processing, Intelligent Systems and IoT, Power and Energy Systems” were arranged to exhibit the research works. Experts from other Institutes and our own University Reviewed the presentations and identified best papers in each Titles. Apart from these, Students demonstrated the Poster presentation. A total of 40 papers from ECE have been reviewed in the Conference. The best papers are under process for publication in Scopus and SCI Indexed journals. The program Ended with a valedictory function. Dr. Mani. K.S, Deputy Director, IISU, ISRO delivered valedictory speech.

All the experts who supported the conference by delivering keynote address and special address are thanked with appreciation letters as well as honorarium. Session experts who reviewed the

papers are also acknowledged with appreciation letters and honorarium. All the participants are appreciated with the certificates. Best paper winners are additionally honored with special certificates.

S. No.	Category	Count
1	Total number of papers received	50
2	Number of Papers selected and Registered	40
3	Number of Internal Participants	32
4	Number of External Participants	8
5	Number of Venues arranged	3 +1 (Poster Presentation)
6	Number of Best papers selected	One from Each i.e 3
7	Number of papers recommended for Journal publication	Approximately 15 from ECE

VIRTUAL INTERNATIONAL CONFERENCE

The Kalasalingam Academy of Research and Education (KARE) organized the Virtual International Conference on “Innovations in Interdisciplinary Research” (VICIIDR-2020) during June 23&24, 2020 through online mode. The conference was inaugurated by our Vice- President Dr. S. Shasi Anand, Dr. R. Nagaraj, Vice- Chancellor of our University welcomed the participants. Dr. J.T. Winowlin Jappes (Deputy Organizing Chair) detailed the proceedings and agenda of the sessions. Eminent scientists from all over the world delivered the following lectures through online mode: 1. Dr. Filip Soute, Professor, Universidade Federal do Rio de Janeiro, Brazil, delivered the keynote address.

2. Dr. Shwetal Mehta, Faculty Member, Department of Neurobiology, Barrow Neurological Institute, USA, delivered a lecture on "Preclinical and Clinical Studies for Targeting Brain Tumors".

3. Dr. Nitin Muttli, Professor, Department of Civil Engineering, Victoria University, Melbourne, Australia, delivered a lecture on "Leak Management in a Water Distribution Network". 4. Dr. X. Felix Joseph, Faculty Member, Department of Electrical and Computer Engineering, Bule Hora University, Ethiopia, delivered a lecture on "A Novel Adaptive Morpho-Histo Wavelet Denoising (AMHW) method in Pre-processing for Dental X-ray images ".

5. Dr. Asai Asaithambi, Professor, Department of Computer Science, University of North Florida, USA, delivered a lecture on "Research Connections with Computer Science".

6. Dr. Gustavo F. S. Andrade, Faculty Member, Department of Chemistry, Federal University of Juiz de Fora, Brazil, delivered a lecture on "Preparation and Enhanced Spectroscopies of Plasmonic Nanostructures".

7. Dr. Sezen Arslan, Faculty Member, Department of English Learning Teaching, Yuzuncu Yil University, Turkey, delivered a lecture on " Dialogic Teaching in Digital Platforms for ELT ".

8. Dr. K.M. Ashifa, Faculty Member, Department of Social Work, Gelisim University, Turkey, delivered a lecture on "Interventions in Social Work Research".

9. Dr. K.R. Sundaravaradarajan, Professor, Department of Agricultural Economics, Annamalai University, India, delivered a lecture on "Interdisciplinary Research in Agricultural Sciences".

10. Ar. CJ. Kosalraman, Architect and Entrepreneur, Chennai, India delivered a lecture on "Architecture and Urban development".

600 Participants from all over the world attended the program and they were all benefitted by this International Conference.

 KALASALINGAM Academy of Research and Education DEEMED TO BE UNIVERSITY <small>Estd.U/S 3 of UGC Act 1956. Accredited by NAAC with "A" Grade</small> <small>Kandaswamy Nagar, Krishnankottai - 626128. Sri Lanka (Sri Lanka), Vellore (Tamil Nadu) info@kalasalingam.ac.in www.kalasalingam.ac.in</small>			
Virtual International Conference on Innovations in Interdisciplinary Research (VICIIDR – 2020) SCHOOL OF ELECTRONICS AND ELECTRICAL TECHNOLOGY – Keynote Schedule			
	DAY 1: 23.06.2020 10.30 - 11.30 am	Link	Moderators
 DR. V. JAYAPRAKASHAN <small>University Institute of Science and Technology Hyderabad</small> Keynote Session 1	DAY 1: 23.06.2020 10.30 - 11.30 am <u>Dr.V.Jayaprakashan</u> Professor Department of Electronics and Communication Engineering Sreenidhi Institute of Science and Technology Telangana	Zoom Meeting ID: 827 399 7603 Password: KARE https://zoom.us/j/8273997603?pwd=Imx3eGZXWnNGWnlQYlNvL2M4dDlBUT09	Mr. K. Vijayakumar Assistant Professor/EEE
 DR. X. FELIX JOSEPH <small>Bule Hora University, Ethiopia</small> Keynote Session 2	DAY 1: 23.06.2020 02.00 - 3.00 pm <u>Dr.X.Felix joseph</u> Assistant Professor, Electrical and Computer Engineering, Associate Dean for Wind farm Projects of Bule Hora University's Center for Excellence, Bule Hora University, Ethiopia	Zoom Meeting ID: 274 453 7068 Password: 9Jdyrg https://us02web.zoom.us/j/2744537068?pwd=aEcuMnJZZ2FsbVoiTCUuZWl1SHdoLT09	Dr. A. Lakshmi Associate Professor/ECE
 DR. S. BALAMURUGAN <small>Amrita University</small> Keynote Session 3	DAY 2: 24.06.2020 10.00 - 11.00 am <u>Dr.S. Balamurugan</u> HoD/EEE Amrita University Coimbatore	Zoom Meeting ID: 351 297 1771 Password: kare2020 https://us02web.zoom.us/j/3512971771?pwd=ZGZlZkxhR0tWRmdlT0lVKSZuBR0hGZz09	Mr.D. Ganesha Perumal Assistant Professor/EIE

Figure 4.5.2.13: Virtual International Conference on “Innovations in Interdisciplinary Research” (VICIIDR-2020) Keynote Schedule

4.5.3 Participation in inter-institute events by students of the program of study (10/10)

(The Department shall provide a table indicating those publications, which received awards in the events/conferences organized by other institutes)

Students are encouraged to participate in various inter-institute events conducted at reputed institutes such as International conference, National conference, Workshops, Seminars, Guest Lectures and Symposiums related to the Program. Third year students are motivated to participate in their Community Service Project work in inter-institute events and symposiums. Final year students are encouraged to publish their project work into conferences and journals. The consolidated details are specified in table 4.5.3.1.

Table 4.5.3.1: Academic year wise consolidated student participation details

Academic Year	Events within the State		Events outside the State		Published paper in Journals
	International / National Conference	Workshops / Seminars/ Symposium	International / National Conference	Workshops / Seminars/ Symposium	
2018-19	4	62	72	-	50
2019-20	3	23	48		96
2020-21	-	113	131	56	57
2021-22		95		65	

A. Events Participated within the state:

(i) List of students presented in the International / National conferences:

Table 4.5.3.A.1: Participation in International / National conferences

Sl. No.	Authors	Title	Conference	Venue	Date
---------	---------	-------	------------	-------	------

1	R Kalairani	Design And Simulation of 22nm FinFET Structure using TCAD	IEEE Conference on Devices, Circuits and Systems	Karunya University, Coimbatore	06.03.2020
2	R Jayalakshmi	An Optimization Technique for General Neural Network Hardware Architecture	IEEE Conference on Devices, Circuits and Systems	Karunya University, Coimbatore	06.03.2020
3	K Hemalatha	Image Compression using Haar Discrete Wavelet	IEEE Conference on Devices, Circuits and Systems	Karunya University, Coimbatore	06.03.2020
4	Hilal Khan A., Navaneethanath M., M. Azeem Ahamed	Eye for Blind People	International Conference on Trending Technologies in Engineering Research (ICTER-2019)	Mangayarkarai College of Engineering in Association with Seventh Sense Research Group	15.03.20219
5	Praveen Kumar B, K. Sathish	Automatic Shuttle Movement in Textile Technology	International Conference on New Scientific Creations in Engineering and Technology (ICNSCET-19)	Nadar Saraswathy College of Engineering and Technology	22.03.2019

6	K. Durga	Mobile Charger using Wind Turbine	International Conference on “Business Innovation through Technological Advancement”	Rathinam College of Arts and Science, Coimbatore	01.03.2019
7	Flavita Angeline Nivetha. K	Home Automation using Digital Controller	International Conference on “Business Innovation through Technological Advancement”	Rathinam College of Arts and Science, Coimbatore	01.03.2019

(ii) List of Students Attended/Presented Workshops/Seminars/Symposiums:

Class coordinators and Faculty Advisors always acknowledge the eager students to be present at workshops and seminars to sharpen their skills, learn new information from the presenters, brainstorm their ideas and get immediate feedback from the evaluators. Students are participating in seminars during their graduate study to get rich experience and exposure before facing interviews in their final year. It also helps students to get spin off ideas from others, get presentation skills along with materials for later study.

Table 4.5.3.A.2: Participation in Workshops/Seminars/Symposiums:

Sl. No.	Name of the Student	Event Name	Venue	Date
Academic Year 2018-19				
1	R Krishna Kumar	Hands On Training on PCB Layout Design using Eagle, Workshop	Rajalakshmi Engineering College, Chennai	27.09.2018
2	Talla Bhanu Teja	Arduino Wireless Communication	IPCS Automation, Chennai	29.09.2018

		Embedded Workshop		
3	Nagarajupalli Harsha Vardhan	Arduino Wireless Communication Embedded Workshop	IPCS Automation, Chennai	29.09.2018
4	B Abhilash	Unga - Disec, Snsimun 2k18	SNS College of Technology, Coimbatore	30.09.2018
5	Naveen Kumar S	Arduino Wireless Communication Embedded Workshop	IPCS Automation, Chennai	29.09.2018
6	S Sathyanand	Arduino Wireless Communication Embedded Workshop	IPCS Automation, Chennai	29.09.2018
7	Vamsi Krishna Korrapati	Arduino Wireless Communication Embedded Workshop	IPCS Automation, Chennai	29.09.2018
8	Hari Sunkireddy	Arduino Wireless Communication Embedded Workshop	IPCS Automation, Chennai	29.09.2018
9	R. Keerthivash	Hands On Training on PCB Layout Design Using Eagle	Rajalakshmi Engineering College, Chennai	27.09.2018

10	Dhileep Kumar Reddy J.	Hands on Training Workshop in Android Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018
11	Sumathi Devi V.	Hands on Training Workshop in Android Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018
12	M. Rayith Ahamed	Workshop on Simulation and Emulation of Self Organised Networks	Kongu Engineering College, Erode	18.08.2018
13	B. Senthil Kumar	Workshop on Simulation and Emulation of Self Organised Networks	Kongu Engineering College, Erode	18.08.2018
14	B. Sajeethmohan	Workshop on Simulation and Emulation of Self Organised Networks	Kongu Engineering College, Erode	18.08.2018
15	Murali Krishna D.	One Day Hands-on Training on Advanced Embedded Systems	K. Ramakrishnan College of Technology, Trichy	07.09.2018
16	Anil Kumar	One Day Hands-on Training on Advanced Embedded Systems	K. Ramakrishnan College of Technology, Trichy	07.09.2018
17	Vamshi Krishna G.	One Day Hands-on Training on Advanced Embedded Systems	K. Ramakrishnan College of Technology, Trichy	07.09.2018

18	Hilal Khan A.	One Day Hands-on Training on Advanced Embedded Systems	K. Ramakrishnan College of Technology, Trichy	07.09.2018
19	Harsha Vardhan Naidu G.	One Day Hands-on Training on Advanced Embedded Systems	K. Ramakrishnan College of Technology, Trichy	07.09.2018
20	Sai Krishna P.	One Day Hands-on Training on Advanced Embedded Systems	K. Ramakrishnan College of Technology, Trichy	07.09.2018
21	N. Santhosh Sivaraman	Training on TCAD For IC Design	VIT, Vellore	09.09.2018
22	Gowrishankar V.	Training on TCAD For IC Design	VIT, Vellore	09.09.2018
23	Rajkumar B.	Training on TCAD For IC Design	VIT, Vellore	09.09.2018
24	Vetriselvam	International Workshop on Internet of Things - Iwiot'18	PSG Institute of Technology and Applied Research, Coimbatore	18.08.2018
25	Paranikumar	International Workshop on Internet of Things - Iwiot'18	PSG Institute of Technology and Applied Research, Coimbatore	18.08.2018

26	Vijitha	International Workshop on Internet of Things - Iwiot'18	PSG Institute of Technology and Applied Research, Coimbatore	18.08.2018
27	J R Aravind	Workshop on Implementation of Image Processing Techniques Using MATLAB for Project Development	Kongu Engineering College, Erode	18.08.2018
28	Arumuga Perumal M	Workshop on Implementation of Image Processing Techniques Using MATLAB for Project Development	Kongu Engineering College, Erode	18.08.2018
29	N Arena Parveen	Workshop on Implementation of Image Processing Techniques Using MATLAB for Project Development	Kongu Engineering College, Erode	18.08.2018
30	Kasturi Chakraborty	Workshop on Implementation of Image Processing Techniques Using	Kongu Engineering College, Erode	18.08.2018

		MATLAB for Project Development		
31	T Naveen	Workshop on Robotics & Internet of Things	Technophilia Solutions, Hyderabad	19.08.2018
32	V Akhil	Workshop on Robotics & Internet of Things	Technophilia Solutions, Hyderabad	19.08.2018
33	Papasani Manoj Kumar Reddy	Workshop on Robotics & Internet of Things	Technophilia Solutions, Hyderabad	19.08.2018
34	Praneshwaran P	Workshop on VLSI Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018
35	Sathish Kumar S	Workshop on VLSI Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018
36	Manoj Kumar P	Workshop on VLSI Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018
37	Muppudathi P	Workshop on VLSI Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018
38	Atchaya S	Workshop on VLSI Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018

39	Jothikarthika A	Workshop on VLSI Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018
40	M Chandra Sekaran	Workshop on Implementation of Image Processing Techniques Using MATLAB for Project Development	Kongu Engineering College, Erode	18.08.2018
41	E Karuppasamy	Workshop on Implementation of Image Processing Techniques Using MATLAB for Project Development	Kongu Engineering College, Erode	18.08.2018
42	S B Vikesh	Workshop on Implementation of Image Processing Techniques Using MATLAB for Project Development	Kongu Engineering College, Erode	18.08.2018
43	Dhana Bhagyam G	Workshop on VLSI Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018
44	Keerthika N	Workshop on VLSI Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018

45	Madhumitha S	Workshop on VLSI Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018
46	Bharathi V	Workshop on VLSI Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018
47	Kowsalya K	Workshop on VLSI Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018
48	Alice Jemima S	Workshop on VLSI Application	Pantech Proed Pvt. Ltd, Madurai	10.08.2018
49	Menda Swathi	Workshop on Realisation of Embedded Applications using Arduino	M.A.M College of Engineering and Technology, Trichy	27.07.2018
50	T Keerthana	Workshop on Realisation of Embedded Applications using Arduino	M.A.M College of Engineering and Technology, Trichy	27.07.2018
51	R Tamil Selvi	Workshop on Embedded System Design	IIT Madras Research Park, Chennai	04.08.2018
52	K Gobika	Workshop on Embedded System Design	IIT Madras Research Park, Chennai	04.08.2018
53	J Krishna priya	Workshop on Embedded System Design	IIT Madras Research Park, Chennai	04.08.2018

54	S Vsaodevan	Workshop on Embedded System Design	IIT Madras Research Park, Chennai	04.08.2018
55	M Yuvaraj	Workshop on Embedded System Design	IIT Madras Research Park, Chennai	04.08.2018
56	Kathir Kaamesh S	Workshop on Embedded System Design	IIT Madras Research Park, Chennai	04.08.2018
57	H Mohamed Faizul Rahuman	Workshop on Arduino (Sensor-2018)	IIT Madras Research Park, Chennai	05.08.2018
58	D Jey Ganesh	Workshop on Arduino (Sensor-2018)	IIT Madras Research Park, Chennai	05.08.2018
59	Duvvuru Aneesh Kumar Reddy	Indian Technology Congress – 2018	NIMHANS Convention Centre, Bangalore	06.09.2018
60	K Durga	Two Days National Level Workshop on “Network Modelling and Simulation using OPNET Modeler	Sri Ramakrishna Engineering College, Coimbatore	07.03.2019 and 08.03.2019
61	S Ram Kishore	Workshop on IoT using Arduino and Android	Top Engineers at IIT Madras, Research Park	11.08.2018

62	Flavita Angeline Nivetha. K	Two Days National Level Workshop on “Network Modelling and Simulation using OPNET Modeler	Sri Ramakrishna Engineering College, Coimbatore	07.03.2019 And 08.03.2019
Academic Year 2019-20				
1	K Durga	Workshop on Internet of Things	IEEE And CSI Student Branch Mepco Schlenk Engineering College, Sivakasi	25.09.2019
2	S Ram Kishore	Design Of Microstrip Antenna, (DMA - 2019)	K. Ramakrishnan College of Technology, Trichy	19.09.2019
3	S Ram Kishore	Workshop on Ethical Hacking	Tech Byte at IIT Madras, Chennai	12.01.2019 And 13.01.2019
4	K Charan Teja	Googler Event, Symposium- Valiant 2020	AAA College of Engineering and Technology, Sivakasi	31.01.2020
5	M Sai Harsha Vardhan	Workshop on Development of IoT Applications using CC3200	Sri Ramakrishna Engineering College, Coimbatore	25.02.2020
6	D Nivetha	Workshop on Development of IoT Applications using CC3200	Sri Ramakrishna Engineering College, Coimbatore	25.02.2020

7	S Yuvasree	Workshop on Development of IoT Applications using CC3200	Sri Ramakrishna Engineering College, Coimbatore	25.02.2020
8	K Harsha Vardhan Kiriti	Workshop on Development of IoT Applications using CC3200	Sri Ramakrishna Engineering College, Coimbatore	25.02.2020
9	P Venkata Sai	Workshop on Development of IoT Applications using CC3200	Sri Ramakrishna Engineering College, Coimbatore	25.02.2020
10	Y V Adithya Kumar	Workshop on Development of IoT Applications using CC3200	Sri Ramakrishna Engineering College, Coimbatore	25.02.2020
11	R Ajith Kumar	Project Expo, National Science Day Celebration - Scimit'20	Manakula Vinayagar Institute of Technology, Puducherry	28.02.2020
12	M Navaneethan	Project Expo, National Science Day Celebration - Scimit'20	Manakula Vinayagar Institute of Technology, Puducherry	28.02.2020
13	B Subash Raj	Electric Vehicle Design Workshop, Techutsav - 2020	Thiagarajar College of Engineering, Madurai	04.03.2020

14	J Jolin Dorrothi	Role of Wireless Technologies in Sustainable Development, Workshop-Techutsav - 2020	Thiagarajar College of Engineering, Madurai	04.03.2020
15	R Nithya Shree	Role of Wireless Technologies in Sustainable Development, Workshop-Techutsav - 2020	Thiagarajar College of Engineering, Madurai	04.03.2020
16	S K Prabhavathy	Role of Wireless Technologies in Sustainable Development, Workshop-Techutsav - 2020	Thiagarajar College of Engineering, Madurai	04.03.2020
17	K Puneeth Sai	Googler Event, Symposium - Valiant 2020	AAA College of Engineering and Technology, Sivakasi	31.01.2020
18	K Gangadhar	Hustle Devices (Technical Event), Symposium - Valiant 2020	AAA College of Engineering and Technology, Sivakasi	31.01.2020
19	K Rajesh Kumar	Hustle Devices (Technical Event), Symposium - Valiant 2020	AAA College of Engineering and Technology, Sivakasi	31.01.2020
20	S Reddy Chanakya	Hustle Devices (Technical Event), Symposium - Valiant 2020	AAA College of Engineering and Technology, Sivakasi	31.01.2020

21	K Hemanth	Hustle Devices (Technical Event), Symposium - Valiant 2020	AAA College of Engineering and Technology, Sivakasi	31.01.2020
22	M Sushmitha	Googler, Symposium-Valiant 2020	AAA College of Engineering and Technology, Sivakasi	31.01.2020
23	M Maheswari	Befuddle (Technical Event), Symposium - Valiant 2020	AAA College of Engineering and Technology, Sivakasi	31.01.2020
Academic Year 2020-21				
1	D. Sai Subash	Guest Lecture on Job Opportunities in Electronics and Communication Field	Builders Engineering College, Tiruppur	19.06.2020
2	Meda Venkata Ganesh	Webinar on Mobile App Development	M.G.R Educational and Research Institute, Chennai	09.06.2020
3	K. Deepthi	Guest Lecture on Job Opportunities in Electronics and Communication Field	Builders Engineering College, Tiruppur	19.06.2020
4	Meda Venkata Ganesh	Webinar On Containers Cloud	Panimalar Engineering College, Chennai	20.06.2020

5	Murarisetty Venkata Rahul	A National Level of Webinar Defence Opportunities	PSG College of Arts and Science,	06.06.2020
			Coimbatore	
6	Meda Venkata Ganesh	Webinar on Data Science in ERP Applications	Mohamed Sathak A J College of Engineering, Chennai	20.06.2020
7	Meda Venkata Ganesh	Guest Lecture on Job Opportunities in Electronics and Communication Field	Builders Engineering College, Tiruppur	19.06.2020
8	Murarisetty Venkata Rahul	Webinar on Introduction to MATLAB	Builders Engineering College, Tiruppur	18.06.2020
9	Meda Venkata Ganesh	Webinar on Introduction to MATLAB	Builders Engineering College, Tiruppur	18.06.2020
10	Murarisetty Venkata Rahul	Industrial Lecture on Amazon Web Services	R.M.K Engineering College, Gummidipoondi	04.06.2020
11	Meda Venkata Ganesh	An Insight into Project Management	K. Ramakrishnan Engineering College, Trichy	18.06.2020
12	Meda Venkata Ganesh	Webinar on Role of Technology in	R.M.K Engineering College, Gummidipoondi	12.06.2020

		Post Covid World		
13	Meda Venkata Ganesh	Webinar on Agent Based Computing	Mohamed Sathak A J College of Engineering, Chennai	12.06.2020
14	Meda Venkata Ganesh	A National Level of Webinar Defence Opportunities	PSG College of Arts and Science, Coimbatore	06.06.2020
15	Meda Venkata Ganesh	Webinar on Mobile App Development	M.G.R Educational and Research Institute, Chennai	09.06.2020
16	Bommu Sai Vivek	Webinar on Data Science in ERP Applications	Mohamed Sathak A J College of Engineering, Chennai	20.06.2020
17	Bommu Sai Vivek	Webinar on Agent Based Computing	Mohamed Sathak A J College of Engineering, Chennai	12.06.2020
18	Nikhil Kumar Cherukuri	Guest Lecture on Job Opportunities in Electronics and Communication Field	Builders Engineering College, Tiruppur	19.06.2020

19	J. Pranav Reddy	Webinar on Data Science in ERP Applications	Mohamed Sathak A J College of Engineering, Chennai	20.06.2020
20	Pavithra Elango	Webinar on Future of Industry 4.0	Saveetha Engineering College, Chennai	17.06.2020
21	Pavithra Elango	Webinar on Image and Video Analytics	Loyola Institute of Technology, Thovalai	17.06.2020
22	Pavithra Elango	Guest Lecture on Job Opportunities in Electronics and Communication Field	Builders Engineering College, Tiruppur	19.06.2020
23	Pavithra Elango	Webinar on Get Awarded and Recognised with IEEE	Jansons Institute of Technology, Karumathampatti	14.06.2020
24	Pavithra Elango	Webinar on Open-Source Software and Tools for Modern Methodology	Dr. NGP Institute of Technology, Chennai	19.07.2020
25	Pavithra Elango	Workshop on Automotive Power Electronics	Skill Lync, Chennai	13.06.2020
26	J. Pranav Reddy	Guest Lecture on Job Opportunities in Electronics and Communication Field	Builders Engineering College, Tiruppur	19.06.2020

27	Madipally Hemanth Chandra	Guest Lecture on Job Opportunities in Electronics and Communication Field	Builders Engineering College, Tiruppur	19.06.2020
28	Murarisetty Venkata Rahul	Webinar on Data Science in ERP Applications	Mohamed Sathak A J College of Engineering, Chennai	20.06.2020
29	Murarisetty Venkata Rahul	Webinar on Big Data	K. Ramakrishnan Engineering College, Trichy	10.06.2020
30	N. Sai Chaithanya	Guest Lecture on Job Opportunities in Electronics and Communication Field	Builders Engineering College, Tiruppur	19.06.2020
31	E. Thanusha Reddy	Autonomous Vehicle Technology in Digital Era	Hindustan College of Engineering and Technology, Coimbatore	06.07.2020 To 08.07.2020
32	G. Manisha	Webinar on Introduction to MATLAB	Builders Engineering College, Tiruppur	18.06.2020
33	P. Ramprasad	Webinar on Big Data	K. Ramakrishnan Engineering College, Trichy	10.06.2020
34	P. Ramprasad	A National Level of Webinar	PSG College of Arts and Science,	06.06.2020

		Defence Opportunities	Coimbatore	
35	P. Ramprasad	Webinar on Containers Cloud	Panimalar Engineering College, Chennai	20.06.2020
36	P. Ramprasad	Webinar on Agent Based Computing	Mohamed Sathak A J College of Engineering, Chennai	12.06.2020
37	S. K. Prabhavathy	Webinar on Virtual Meeting on the Theme of Toastmasters	KPR Institute of Technology, Coimbatore	07.07.2020
38	Kishore Pagadala	National Level Webinar on Next Gen Mobile Automation Platform-Test Project	Hindustan Institute of Technology, Chennai	13.07.2020
39	B. Pavan Kalyan	Webinar on Data Science and Artificial Intelligence	Saveetha Autonomous Engineering College, Chennai	16.06.2020
40	M. Chenna Reddy	Webinar on Data Science and Artificial Intelligence	Saveetha Autonomous Engineering College, Chennai	16.06.2020
41	M. Chenna Reddy	Webinar on The Risk of Artificial Intelligence	St. Joseph Institute of Technology, Chennai	20.06.2020

42	M. Chenna Reddy	Workshop on Challenges and Impacts of ECE on Covid-19	Sri Eshwar College of Engineering, Coimbatore	03.07.2020
43	K. Sunil Raju	Webinar on The Risk of Artificial Intelligence	St. Joseph Institute of Technology, Chennai	20.06.2020
44	K. Sunil Raju	National Level Webinar on Next Gen Mobile Automation Platform – Test Project	Hindustan Institute of Technology, Chennai	13.07.2020
45	M. Tarak Gopi	Workshop on Challenges and Impacts of ECE on Covid-19	Sri Eshwar College of Engineering, Coimbatore	03.07.2020
46	Hariesh R	Webinar on 3D Printing Technology	St. Mother Theresa Engineering College, Tuticorin	15.06.2020
47	Hariesh R	Webinar on Android Insights	Loyola Institute of Technology, Thovalai	18.06.2020
48	Hariesh R	Webinar on Data Science and AI	Saveetha Engineering College, Chennai	16.06.2020
49	Hariesh R	Webinar on Future of Industry	Saveetha Engineering College, Chennai	17.06.2020

50	Hariesh R	Webinar on Innovation using Blockchain Technology	Saveetha Engineering College, Chennai	18.06.2020
51	Hariesh R	Webinar on MS Chat Bot	Saveetha Engineering College, Chennai	15.06.2020
52	Hariesh R	Webinar on Math Wiz 2020	Dr. MGR Arts and Science College, Chennai	29.05.2020 To 30.05.2020
53	Hariesh R	Webinar on Risk of AI	St. Joseph Institute of Technology	12.06.2020
54	D. Ram Prasad Reddy	Webinar on Role of IoT Engineer in Post Covid	Bharat Institute of Engineering and Technology	25.06.2020
55	P. Sai Hemanth	Webinar on Agent Based Computer	MSAJCE, Chennai	12.06.2020
56	P. Sai Hemanth	Webinar on Big Data	K. Ramakrishnan College of Engineering, Trichy	10.06.2020
57	P. Sai Hemanth	Webinar on An Insight into Project Management	K. Ramakrishnan College of Engineering, Trichy	18.06.2020
58	P. Sai Hemanth	Webinar on Introduction to MATLAB	Builders Engineering College, Tiruppur	18.06.2020

59	P. Sai Hemanth	Webinar on Job Opportunities in Electronics and Communication Field	Builders Engineering College, Tiruppur	19.06.2020
60	P. Sai Hemanth	Webinar on Containers Cloud	Panimalar Engineering College, Chennai	20.06.2020
61	P. Sai Hemanth	Webinar on Python in Research Lab	K. Ramakrishnan College of Engineering, Trichy	24.06.2020
62	P. Sai Hemanth	Webinar on Role of Technology in Post Covid World	R.M.K Engineering College	12.06.2020
63	P. Vivekananda Reddy	Webinar on An Insight into Project Management	K. Ramakrishnan College of Engineering	18.06.2020
64	P. Vivekananda Reddy	Webinar on Container Cloud	Panimalar Engineering College, Chennai	20.06.2020
65	P. Vivekananda Reddy	Webinar on Data Science in ERP Application	Mohammed Sathak A J College of Engineering, Chennai	20.06.2020
66	P. Vivekananda Reddy	Webinar on Agent Based Computer	Mohammed Sathak A J College of Engineering, Chennai	12.06.2020

67	P. Vivekananda Reddy	Webinar on Introduction to MATLAB	Builders Engineering College, Tiruppur	18.06.2020
68	P. Vivekananda Reddy	Webinar on Role of Technology in Post Covid World	R.M.K Engineering College, Gummidipoondi	12.06.2020
69	P.V Sainadh	Webinar on Job Opportunities in Electronics and Communication Field	Builders Engineering College, Tiruppur	19.06.2020
70	P.V Sainadh	Webinar On Agent Based Computing	Mohammed Sathak A J College of Engineering, Chennai	12.06.2020
71	P. Chaitanya	Webinar on Job Opportunities in Electronics and Communication Field	Builders Engineering College, Tiruppur	19.06.2020
72	R. Mastan	Webinar on Bigdata	Ramakrishnan College of Engineering	10.06.2020
73	R. Mastan	Webinar on Agent Based Computing	Mohammed Sathak A J College of Engineering, Chennai	12.06.2020
74	R. Mastan	Webinar on Role of Technology in a Post Covid World	R. M. K. Engineering College	12.06.2020

75	R. Mastan	Webinar on Mobile App Development	Dr. MGR Research Institute	09.06.2020
76	R. Mastan	Webinar on an Insight into Project Management	K. Ramakrishnan College of Engineering	18.06.2020
77	R. Mastan	Webinar on Job Opportunities	Builders Engineering College, Tiruppur	19.06.2020
78	R. Mastan	Webinar on Data Science in ERP Applications	Mohammed Sathak A J College of Engineering, Chennai	20.06.2020
79	R. Mastan	Webinar on Containers Cloud	Panimalar Engineering College, Chennai	20.06.2020
80	Subash Balaji A	Webinar on Job Opportunities in Electronics and Communication Field	Builders Engineering College, Tiruppur	19.06.2020
81	Subash Balaji A	Webinar on Introduction to MATLAB	Builders Engineering College, Tiruppur	18.06.2020
82	Subash Balaji A	Webinar on The Risk of Artificial Intelligence: A Security Perspective	St. Josephs Institute of Technology	12.06.2020

83	Sudhakar Reddy Venna	Webinar on Data Science in ERP Applications	Mohamed Sathak AJ College of Engineering, Chennai	20.06.2020
84	Dodla Sreekanth	Webinar on Controller Application on Automobiles	Visteon. Pvt. Ltd, Chennai	21.06.2020
85	C. Sathya Pradeep	Webinar on AI and Model Based Design	Chennai Institute of Technology, Chennai	25.06.2020
86	C. Sathya Pradeep	Techgyan Workshop Powered by Festember	NIT, Trichy	26.12.2020
87	Regula Venkata Ravi Choudary	Webinar on Recent Trends in Semiconductor Devices and Future Perspectives	SNS College of Technology, Coimbatore	29.07.2020
88	Shaik Fiza Sohail	Webinar on Lower Power VLSI Design Techniques	Sri Meenakshi Government Arts College, Madurai	03.07.2020
89	L. Anuradha	Entrepreneurship Webinar	PSG College of Arts and Science, Coimbatore	02.05.2020
90	L. Anuradha	3 Days Live Workshop on Python Game Development	Four Steps Training Solution, Chennai	02.05.2020

91	M. Likitha	3 Days Live Workshop on Python Game Development	Four Steps Training Solution, Chennai	02.05.2020
92	M. Venkata Karthik	3 Days Live Workshop on Python Game Development	Four Steps Training Solution, Chennai	02.05.2020
93	M. Lakshmi Sowmica	3 Days Live Workshop on Python Game Development	Four Steps Training Solution, Chennai	02.05.2020
94	M. Nagalaxmi	3 Days Live Workshop on Python Game Development	Four Steps Training Solution, Chennai	02.05.2020
95	Kamalapuri Suresh Babu	Webinar on Post Covid Employment Opportunities	Fine Mind Placement Academy Private Limited, Coimbatore	21.05.2020
96	Silvia L E	Lecture Series on Recent Trends in Dielectric Resonator Antennas for Wireless Applications	Kumaraguru College of Technology, Coimbatore	10.08.2020
97	Silvia L E	Lecture Series on 5G: Challenges and Enabling Technologies	Kumaraguru College of Technology, Coimbatore	11.12.2020
98	Silvia L E	Lecture Series on Antennas for Underwater Communication	Kumaraguru College of Technology, Coimbatore	12.08.2020

99	Silvia L E	Lecture Series on Full Duplex Antenna: Design and Challenges	Kumaraguru College of Technology, Coimbatore	13.08.2020
100	Silvia L E	Lecture Series on 3D Printed Antennas	Kumaraguru College of Technology, Coimbatore	14.08.2020
101	Silvia L E	Lecture Series on Future Antenna Technologies	Kumaraguru College of Technology, Coimbatore	10.08.2020
102	Subramani V	Training Program on Internet of Things & Cloud Interface	IETE in association with Pantech E Learning	22.06.2020
103	Siddhartha T	Workshop on Internet of Things & Cloud Interface (Code G)	IETE & Pantech E Learning	22.06.2020
104	Y. Joshnakar Reddy	Workshop on MATLAB Programme	AB Technologies, Chennai	20.11.2020
105	Jampana Likithsaidhar Reddy	Workshop on Flutter	Pantech Solutions	16-06-2021 To 18.06.2021
106	Jampana Likithsaidhar Reddy	Workshop on Image Processing using MATLAB	Pantech Solutions	12.04.2021 To 16.04.2021
107	Rapuri Monalisa	IEEE R10 EA Awards	IEEE Madras Section	24-6-2021 To 28.06.2021

108	C. Chandana	Workshop On AI	Pantech Solutions and Jai Shriram Engineering College	17.06.2021 To 19.06.2021
109	Akula Sai Tejaswani	Chatbot Using Python	Jeppiaar Engineering College, Chennai	14.06.2021
110	D. Pujitha	Workshop on AI	Pantech Solutions and Jai Shriram Engineering College	17.06.2021 To 19.06.2021
111	B. Prasanna	Workshop on AI	Pantech Solutions and Jai Shriram Engineering College	17.06.2021 To 19.06.2021
112	B. Haripriya	Workshop on AI	Pantech Solutions and Jai Shriram Engineering College	17.06.2021 To 19.06.2021
113	Sai Deepak	Workshop on AI	Pantech Solutions and Jai Shriram Engineering College	17.06.2021 To 19.06.2021
Academic Year 2021-22				

1	Vantherapalle Samara Simha Reddy	National Level E-Quiz On Electrical And Electronics Engineering	Sri Ramakrishna Engineering College, Coimbatore	14.08.2021
2	Vikash Mehta	National Level E-Quiz On Electrical And Electronics Engineering	Sri Ramakrishna Engineering College, Coimbatore	14.08.2021
3	Malasani Greeshma	National Level E-Quiz On Electrical And Electronics Engineering	Sri Ramakrishna Engineering College, Coimbatore	14.08.2021
4	Theerdhala Sandhya	National Level E-Quiz On Electrical And Electronics Engineering	Sri Ramakrishna Engineering College, Coimbatore	14.08.2021
5	Mohammad Rabiya Bathul	National Level E-Quiz On Electrical And Electronics Engineering	Sri Ramakrishna Engineering College, Coimbatore	14.08.2021
6	Chindaluru Ganesh	Webinar-Plan Your Future	Ms Teams Platform-Online	20/09/2021
7	Kode Vivek Srinivas	Webinar-Plan Your Future	Ms Teams Platform-Online	20/09/2021

8	V. Bargavram	Covid 19 Awareness Quiz	Care College Of Engineering	22/09/2021
9	K. Thrimurthy Reddy	Covid-19 Awareness Quiz	Care College Of Engineering	20/09/2021
10	Addepalli Hemavardhan Venkata Manikanta	Effective Ways Of Writing Research Articles	Department Of Eee At Sri Ramakrishna Engineering	24/09/2021
11	Addepalli Hemavardhan Venkata Manikanta	Plan Your Future	Pg & Research Department Of Commerce	20/09/2021
12	Rayalacheruvu Varshitha	Effective Ways Of Writing Research Articles	Department Of Eee At Sri Ramakrishna Engineering	24/09/2021
13	Rayalacheruvu Varshitha	Plan Your Future	Pg & Research Department Of Commerce	20/09/2021
14	Kummara Charanya	Effective Ways Of Writing Research Articles	Department Of Eee At Sri Ramakrishna Engineering	24/09/2021

15	Kummara Charanya	Plan Your Future	Pg & Research	20/09/2021
16	V.Nithish Kumar	Effective Ways Of Writing Research Articles	Department Of Eee At Sri Ramakrishna Engineering	24/09/2021
17	V.Nithish Kumar	Plan Your Future	Pg & Research	20/09/2021
18	Mupparaju Hema Priya	Effective Ways Of Writing Research Articles	Department Of Eee At Sri Ramakrishna Engineering	24/09/2021
19	Mupparaju Hema Priya	Plan Your Future	Pg & Research Department Of Commerce	20/09/2021
20	Gummidela Sirichandana	EFFECTIVE WAYS OF WRITING RESEARCH ARTICLES	Department Of EEE At Sri Ramakrishna Engineering	24/09/2021
21	Gummidela Sirichandana	PLAN YOUR FUTURE	PG & Research Department Of Commerce	20/09/2021

22	Thota Praneeth Krishna	EFFECTIVE WAYS OF WRITING RESEARCH ARTICLES	Department Of EEE At Sri Ramakrishna Engineering College	24/09/2021
23	Ramisetty Harsha Vardhan	EFFECTIVE WAYS OF WRITING RESEARCH ARTICLES	Department Of Electrical And Electronics Engineering	24 /09/2021
24	Nune Venkata Sri Vardhan	Plan For Future	Pg & Research Center	20/09/2021
25	Inamanamellur u V Sai Narayana Karthikeya	Plan Of Future	Pg&Research Center	20/09/2021
26	Inamanamellur u V Sai Narayana Karthikeya	Effective Ways Of Writing Reasearch Articles	Department Of Eee At Sri Ramakrishna Engineering College	24/09/2021
27	Chindaluru Ganesh	Next Generation High Energy Radiation Sheilding Materials	Saveetha School Of Engineering	30/09/2021
28	Chindaluru Ganesh	Virtual Industrial Visits	Quark	24/09/21-26/09/21

29	Chindaluru Ganesh	Design Thinking And Product Innovation	Arifa Institute Of Technology	1-10-21
30	Chindaluru Ganesh	Surface Enhanced Raman Scattering (SERS) For Biomolecule Detection	Saveetha School Of Engineering	7-10-21
31	Chindaluru Ganesh	"Test Your Knowledge In Reasoning"	Virudhunagar Hindu Nadar College	17/10/21
32	Chindaluru Ganesh	Remembering Mahatma Gandhi Awareness Campaign Of Indian National Movement (Inm)	Govt College Of Arts And Science	2-10-21
33	Chindaluru Ganesh	Internet Of Things Master Classes	Pan Tech	19/9/21 (30 DAYS)
34	Yalamanda Shaik Rabbani	Internet Of Things Master Class	Pan Tech	19/09/21

35	B Sree Madhu Kiran	All Certificates	Pan Tech	
36	Nune Venkata Sri Vardhan	Iot-Master Calss	Pan Tech	19/9/2021
37	Addepalli Hemavardhan Venkata Manikanta	Internet Of Things Master Classes	Pan Tech	19/09/2021
38	Mupparaju Hema Priya	Internet Of Things Master Classes	Pan Tech	19/09/2021
39	Thota Praneeth Krishna	Internet Of Things Master Class	Pan Tech	19/09/2021
40	Mohammad Ghousee Ali Siddiq	Sse Expert Talk	SAVEETHA SCHOOL OF ENGINEERING	07-10-2021
41	G.Siri Chandana	Internet Of Things Master Class	Pantech e Learning(online)	19-09-2021

42	G.Siri Chandana	International Webinar On Plan Your Future	Sri Nehru Vidyalyaya(online)	20-09-2021
43	G.Siri Chandana	National Level Seminar On Effective Ways Of Writing Research Articles	Sri ramakrishna engineering college(online)	24-09-2021
44	G.Siri Chandana	Aws Cloud Master Class-Discovery Day	Future skills prime(online)	29-09-2021
45	G.Siri Chandana	Covid-19 Awareness Quiz Contest	CARE college of engineering(online)	20-09-2021
46	M.Lokesh Kumar	Covid-19 Awareness Quiz Contest	CARE College of Engineering(Online)	20-09-2021
47	Mohammad Ghousee Ali Siddiq	Sse Expert Talk	SAVEETHA SCHOOL OF ENGINEERING	07-10-2021
48	Dasari Venkata Suryachandra Rao	SSE-Expet Talk	SAVEETHA SCHOOL OF ENGINEERING	10-07-2021

49	Dasari Venkata Suryachandra Rao	World Breastfeeding Week Celebration	The Standard Fireworks Rajaratnam For Women	08-08-2021
50	Nambi E	National Level E-Quiz On Electrical And Electronics Engineering	Online	14/08/2021
51	Andre Srinkanth	National Level E-Quiz On Electrical And Electronics Engineering	Sri Ramakrishna Engineering College, Coimbatore	14.08.2020
52	Pullagura Narasimha Raju	Iot Workshop	Sri Krishna College Of Engineering And Technology	15-09-2021
53	Pullagura Narasimha Raju	3d Printing Workshop	Sri Krishna College Of Engineering And Technology	15-09-2021
54	Pujari Lokesh	Additive Manufacturing In Automobile Applications	Bannari Amman Institute Of Technology Sathyamangalam	31-08-2021
55	Muthukumar M V	Iot Workshop	Sri Krishna College Of Engineering And Technology	15-09-2021

56	Muthukumar M V	Pcb Design Workshop	Pantech Solutions	16-08-2021
57	Prem Mathavan N	Interviewind	Sri Krishna College Of Engineering And Technology	13-09-2021
58	Prem Mathavan N	Electroloop	Sri Krishna College Of Engineering And Technology	14-09-2021
59	Prem Mathavan N	Talen Di Saade	Srm Valliammai Engineering College	28-08-2021
60	Prem Mathavan N	Pcb Design Workshop	Pantech Solutions	23-08-2021
61	Aravind I	Pcb Design Workshop	Pantech Solutions	23-08-2021
62	Aravind I	Iot Workshop	Sri Krishna College Of Engineering And Technology	15-09-2021

63	Aravind I	Project Presentation	Bannari Amman Institute Of Technology	21-08-2021
64	Gondrala Tarun Srinivasulu	Levaraging Ai And Iot In Smart Farming	Ieee Madras Section	09-07-2021
65	Madhura Prasad S	Talen-Di-Saade(Paper Presentation)	Srm Valliammai Engineering College	28-08-2021
66	Dinesh Kumar Burada	Industrial Training On Mechine Learning In Smartx Plt.	Smartx Connected Products Pvt.Ltd	21-06-2021
67	Y.Blessy Femina	National Level Virtual Project Presentation	Bannari Amman	20.08.2021
68	Jampana Likithsaidhar Reddy	Flutter	Pantech Solutions	16-06-2021
69	Jampana Likithsaidhar Reddy	Workshop On Image Processing Using Matlab	Pantech Solutions	12-04-2021

70	Rapuri Monalisa	Ieee R10 Ea	Leee Madras Section	24-6-2021
71	Pullagura Narasimha Raju	5 Day National Workshop On "Zero Coding:Data Analysis For Iot Using Red-Node"	Kongu Engineering College	20-10-2021
72	Pujari Lokesh	Szikra 2k21-National Level Technical Symposium (Paper Presentation)	Jai Shriram Engineering College	01-10-21
73	Pullagura Narasimha Raju	National Level Technical Symposium Szikra 2k21	Jai Shriram Engineering College	01-10-2021
74	Pitla Madhu	5 Day National Workshop On Zero Coding	Kongu Engineering College	20-10-21
75	Pitla Madhu	National Level Technical Symposium Szikra 2k21 (Paper Presentation)	Jai Shriram Engineering College	01-10-2021

76	Rudhrapati Bharath Kumar	A National Level Technical Symposium, Paper Presentation	Jai Shriram Engineering College	01-10-2021
77	Rudhrapati Bharath Kumar	Ieee Communication Society Madras Chapter	Ieee Communication Society Madras Chapter	16-07-2021
78	Neeraj Pokala	Workshops	Pantech solutions	28/06/2021
79	Aravind I	Workshops	Pantech solutions	16/06/2021
80	Aravind I	Paper Presentation (Symposium)	Krishna clg, Srm University, Sairam clg	16/06/2021
81	Aravind I	Interview, Non Technical Event (Ipl Auction)	Thiruvallur clg, Ramakrishna clg	16/06/2021
82	A.Sai Deepak	Workshops And Paper Presentation	pantech solutions and Jai Shriram Engineering College	17/06/2021, 1/10/2021

83	C.Chandana	Workshops And Paper Presentation	pantech solutions and Jai Shriram Engineering College	16/06/2021,1/10/2021
84	D.Pujitha	Workshops And Paper Presentation	pantech solutions and Jai Shriram Engineering College	16/06/2021,1/10/2021
85	B.Prasanna	Workshops And Paper Presentation	pantech solutions,Sri sai ram engineering college	16/06/21,21/10/21
86	B.Haripriya	Workshop And Paper Presentation	pantech solutions and Jai Shriram Engineering College	16/06/21,01/10/21
87	T. Deepika	Paper Presentation	Jai Shriram Engineering College	01-10-2021
88	R. Dinesh Reddy	Paper Presentation	Jai Shriram Engineering College	01-10-2021
89	M. Likitha	Paper Presentation	Jai Shriram Engineering College	10-01-2021

90	B.Sravan	Paper Presentation	jai shriram engineering college	10-01-2021
91	Neeraj Pokala	Paper Presentation	SRM valliammai engineering college	04-09-2021
92	Madhura Prasad S	Workshops	Pantech solutions	16/06/2021
93	Madhura Prasad S	Paper Presentation (Symposium)	Krishna clg, Srm University, Sairam clg	16/06/2021
94	Madhura Prasad S	Non Technical Event (Ipl Auction)	Ramakrishna clg	16/06/2021
95	Pagadala Kishore	Pcb Design Workshop	Pantech Prolabs India Pvt Ltd	23-Aug-2021

B. Events outside the state:

Students are encouraged to participate in workshops, seminars, and conferences outside the state also to get contemporary knowledge and to develop communication skills. Highly appreciated project work batches which comprises fast, average, and slow learners are regularly esteemed to

participate in International and National conferences conducted at IITs and NITs of outside the state.

(i) List of Students Attended/Presented Workshops/Seminars:

Table 4.5.3.B.1: Participation in Workshops/Seminars/Symposiums

Sl. No.	Name	Event	Venue	Date
1	Bethu Pavan Ramanendra Swamy	Webinar on an upcoming development in Brain computer interface	ITS Engineering College, Noida	28.05.2020
2	Hariesh R	Webinar on Launching a Nanosatellite	GMR Institute of Technology, Srikakulam	18.06.2020
3	P. Sai Hemanth	Webinar on Launching a Nanosatellite	GMR Institute of Technology, Srikakulam	18.06.2020
4	Nelavelli Brahma Manas	Webinar on Tips to Formulate Research Project Proposals and Write Technical Papers	GMR Institute of Technology, Srikakulam	21.06.2020
5	R. Mastan	Webinar on Launching of Nanosatellite	GMR Institute of Technology, Srikakulam	18.06.2020
6	Subash Balaji A	Webinar on Launching of Nanosatellites	GMR Institute of Technology, Srikakulam	18.06.2020
7	Sudhakar Reddy Venna	Webinar on Launching Nanosatellite	GMR Institute of Technology, Srikakulam	18.06.2020

8	Silvia L E	Webinar on Synthetic Applications of Donor - Acceptor Cyclopropanes	Government college, Rajahmundry	13.07.2020
9	Ganesh Raghunadh Mukkapati	Tips to formulate Research Project Proposals and write technical papers	GMR Institute of Technology, Rajam, Andhra Pradesh	21.06.2020
10	D. Sai Subash	Guest Lecture on Role of IoT engineer in post COVID	Bharat Institute of Engineering and Technology, Hyderabad	25.06.2020
11	D. Sai Subash	Industrial Lecture on Learn to develop android app	Amity School of Engineering and Technology, Amity University, Gwalior	24.05.2020
12	Murarisetty Venkata Rahul	Webinar on Launching a Nanosatellite	GMR institute of Technology, Srikakulam	18.06.2020
13	CH Tushara Supriya	Webinar on Solar Roof Top Design	IEC College of Engineering and technology, Greater Nodia	16.06.2020
14	K. Deepthi	Webinar on Solar Roof Top Design	IEC College of Engineering and technology, Greater Nodia	16.06.2020
15	Murarisetty Venkata Rahul	Webinar on Research in Big Data Analytics	Anurag University, Hyderabad	20.06.2020
16	S. Manoj Kanna	Webinar on Web Development	Infosys Limited, Bangalore	13.06.2020

17	Bommu Sai Vivek	Webinar on Applied Deep Learning	Indian servers, Vijayawada	14.06.2020
18	Bommu Sai Vivek	Webinar on Launching a Nanosatellite	GMR institute of Technology, Srikakulam	18.06.2020
19	Nikhil Kumar Cherukuri	Webinar on Robotic Principles and Application	IEEE Robotics and Automation Society	05.06.2020
20	Nikhil Kumar Cherukuri	RPA and Manufacturing	IEEE Robotics and Automation Society	03.06.2020
21	J. Pranav Reddy	Webinar on Web Development	Infosys Limited, Bangalore	13.06.2020
22	Pavithra Elango	Webinar on 5G Network Architecture and SDN	Parul University, Gujarat	15.06.2020
23	Pavithra Elango	Webinar on Solar Roof Top Design	IEC College of Engineering and Technology, Greater Nodia	16.06.2020
24	J. Pranav Reddy	Webinar on Launching a Nanosatellite	GMR institute of Technology, Srikakulam	18.06.2020
25	Madipally Hemanth Chandra	Guest Lecture on Role of IoT engineer in post COVID	Bharat Institute of Engineering and Technology, Hyderabad	25.06.2020
26	Madipally Hemanth Chandra	Webinar on Launching a Nanosatellite	GMR institute of Technology, Srikakulam	18.06.2020

27	K. Pavankalyan	Industrial Lecture on Digital electronics	Sri GCSR College of Education, Andhra Pradesh	08.07.2020
28	N. Sai Chaithanya	Webinar on Cyber Security	MIT ADT University, Pune	29.06.2020
29	G. Manisha	Webinar on Launching a Nanosatellite	GMR institute of Technology, Srikakulam	18.06.2020
30	N. Sai Krishna	Webinar on Web Development	Infosys Limited, Bangalore	13.06.2020
31	N. Sai Krishna	Webinar on Cyber Security	MIT ADT University, Pune	29.06.2020
32	K. Sunil Raju	A National Level three-day FDP on Digital Image Processing and Its Applications	Sai Spurhi Institute of Technology, Telangana	09.07.2020 to 11.07.2020
33	M. Vijaya Dharshini	Webinar on Web Development	Infosys Limited, Bangalore	13.06.2020
34	Subash Balaji A	Python Workshop	Packt, Mumbai	21.05.2020
35	Subash Balaji A	SQL Workshop	Packt, Mumbai	19.05.2020
36	R Sri Kanth	Webinar on Career Opportunities in Cloud Computing and AWS Certification Exam	MIT ADT University, Pune	13.07.2020
37	R. Mastan	Webinar on Applied deep learning	Indian services	14.06.2020

38	R Venkata Rao	A National Level three-day FDP on Digital Image Processing and Its Applications	Sai Spurhi Institute of Technology, Telangana	09.07.2020 to 11.07.2020
39	Nelavelli Brahma Manas	Webinar on Career Opportunities in Cloud Computing and AWS Certification Exam	MIT ADT University, Pune	13.07.2020
40	Hariesh R	Webinar on Solar Rooftop Designs	IEC College of Engineering and Technology, Greater Nodia	16.06.2020
41	Hariesh R	Webinar on Design of Brain controlled Applications	Dr. B. R. Ambedkar National Institute of technology, Jalandhar	26.06.2020
42	Hariesh R	Webinar on Face recognition using deep learning	Balaji Institute of technology & science, Warangal	30.06.2020
43	Hariesh R	Webinar on IoT using Arduino	Dr. Shyama prasad mukherjee university, Ranchi	16.06.2020
44	Hariesh R	Webinar on IoT using NODEMCU	Shiv Kumar Institute of technology & science, Madhya Pradesh	23.06.2020
45	Hariesh R	Webinar on IoT using Raspberry Pi	Institute of Engineering and Technology, Lucknow	19.06.2020
46	Hariesh R	Webinar on Effective Enlightening Expertise	KGRL College of Pharmacy, Andhra Pradesh	14.06.2020

47	Hariesh R	Webinar on 5G: Network Architecture and SDN	Parul University, Gujarat	15.06.2020
48	Padigi Raviteja Reddy	Webinar on Career edge	TCS	04.06.2020
49	G. V. Kiran Teja	Webinar on TCS Code Vita	TCS	26.05.2020
50	Gadiraju Likith	Training Program on Industry Ready Python Programming	AICL, Mumbai	04.07.2020
51	Manoj Kumar	Webinar on TCS Code Vita	TCS	31.05.2020
52	Shaik Fiza Sohail	Workshop on Post - pandemic computational science: challenge and opportunity	College of Engineering, Nashik	22.06.2020 to 28.06.2020
53	P. Bala Venkata Naga Sai Sumanth	Webinar on Role of IoT Engineer in Post Covid	Bharat Institute of Engineering and Technology, Odisha	25.06.2020
Academic Year 2021-22				
1	Mohammad Rabiya Bathul	Online National Webinar On "Yoga In @ As Sports"	Yogasana Sports Association A.P., And Yoga Mandir Trust, Bengaluru.	05.09.2021
2	Addepalli Hemavardhan Venkata Manikanta	Embedded System With Robotics	Finland Labs New Delhi (Online)	15/09/2021

3	Mupparaju Hema Priya	Embedded System With Robotics	Finland Labs New Delhi	15/09/2021
4	Chindaluru Ganesh	Embedded System With Robotics	Finland Labs New Delhi (Online)	15/09/2021
5	Thota Praneeth Krishna	EMBEDDED SYSTEM WITH ROBOTICS	FINLAND FINLAND LABS L	15/09/2021
6	Rayalacheruvu Varshitha	Embedded System With Robotics	Finland Labs New Delhi (Online)	15/09/2021
7	Gummidela Sirichandana	EMBEDDED SYSTEM WITH ROBOTICS	FINLAND LABS NEW DELHI (Online)	15/09/2021
8	Nune Venkata Sri Vardhan	Embedded System With Robotics	Finland Labs	15/09/2021
9	Rangisetty Yogananda Dheeraj	Embedded System With Robotics	Finland Labs	15/09/2021
10	Inamanamelluru V Sai Narayana Karthikeya	Embedded System With Robotics	Finland Labs	15/09/2021
11	M.Vinod Kumar	Embedded System With Robotics	Finland Labs	15/09/2021
12	M.Mohit Narayan	Embedded System With Robotics	Finland Labs	15/09/2021

13	K.Thrimurthy Reddy	Debate Competition On "Skill Study Is Better Than Scientific Study"	Iucee Ewb Mce Student Chapter	18/08/2021
14	Addepalli Hemavardhan Venkata Manikanta	Aws Cloud Master Class Discovery Day	Future Prime Skills	27/09/2021
15	Puli Ajay	Coincent	Coincent	05-07-2021
16	Kondareddy Revathi	Coinect	Coinect	05-07-2021
17	Kummara Charanya	Cloud Master Class Discovery Day	Future Prime Skills	27/09/2021
18	V.Bargavram	Workshop On Arduino And Embedded System	Cyberonics	25/09/2021
19	Mupparaju Hema Priya	AWS Cloud Master Class-Discovery Day	Futura Skills Prime	27/09/2021
20	Chindaluru Ganesh	Mental Well Being And Stress Management During C0vid-19 Pandemic	Youtube	29/09/2021
21	Chindaluru Ganesh	Rise By Lifting Others	Christ Nagar College	20/09/2021
22	Chindaluru Ganesh	Galctic Astronomy Quiz	Dare 2 Complete	26/09/2021

23	Chindaluru Ganesh	Cyber Security & Data Protection	F A Ahamed College	15/10/21
24	Chindaluru Ganesh	Python Machine Learning Project: Spam Classification In Gmail	Tech Learn	6-10-21
25	Chindaluru Ganesh	Data Science Career Map	Tech Learn	9-10-21
26	Thota Subba Rao	"Iot, Robotics And Embedded System	Iit Delhi (Online)	05-07-2021
27	P.Sumanth Kumar Reddy	How Google Deep Mind Reinforcement Learning Work	Tech Learn (Online)	15-09-2021
28	G.Siri Chandana	Webinar On Embedded System With Robotics	Finland Labs, New Delhi(Online)	15-09-2021
29	Shyam S N	Bootstrap 5 Project	Unschool	18/8/21
30	Shyam S N	Static Website Hosting	Unschool	18/8/21
31	Dasari Venkata Suryachandra Rao	Exploring The Educational Resources Of IEEE	IEEE Indian Council Webinar	27-02-2021
32	Dasari Venkata Suryachandra Rao	IEEE Students Humanitarian Technology Conference(SHTC)	IEEE	01-05-2021

33	Dasari Venkata Suryachandra Rao	<i>IEEE STUDENT MEMBER SHIP</i>	IEEE	
34	Dasari Venkata Suryachandra Rao	<i>IEEE QUIZ COMPETITION</i>	IEEE	10-05-2021
35	Nambi E	Introduduction To Programing Using Python	Microsoft	23/08/2021
36	Nambi E	Most Users To Talke An Online Computer Programming Lesson In 24 Hours	Guvi	24/04/2021
37	Nambi E	Artifical Intelligence With Python	Inmovidu	20/05/2021
38	Nambi E	Artifical Intelligence With Python-Training Completion	Inmovidu	20/05/2021
39	Pujari Lokesh	Neural Networks Using Python	Nitk – Step National Institute Of Technology, Karnataka, Surathkal	28-08-2021
40	Gondrala Tarun Srinivasulu	Ieee Sps Aiva 2021	Ieee Sps Chapter And Iiit-D	24-6-2021
41	Gondrala Tarun Srinivasulu	Education 4.0 - Role Of Educational Technologies	Ieee Sicsr Pune Student Branch And Educational Activities And Education Society Of Ieee Pune Section	15-07-2021
42	Silvia L E	Programming For Everybody (Getting Started With Python)	University Of Michigan(Online)	27-07-2021

43	Arani Hariprasad Vigneesh	Education 4.0 - Role Of Educational Technologies	Ieee Sicsr Pune Student Branch And Educational Activities And Education Society Of Ieee Pune Section	15-07-2021
44	Rapuri Monalisa	Education 4.0 - Role Of Educational Technologies	Ieee Sicsr Pune Student Branch And Educational Activities And Education Society Of Ieee Pune Section	15-07-2021
45	Lavanuru Anuradha	Debate Competition	IUCEE	03.09.21
46	Penumuchu Rahul	Online Training On Microcontroller Programming	Msme - Technology Development Centre , Government Of India Organization	04-08-2021
47	Neeraj Pokala	Udemy Online Course(Python Programming)	Udemy	01-11-2021
48	Neeraj Pokala	Future Skills Prime(Machine Learning)	Microsoft	18/10/2021
49	Neeraj Pokala	Future Skills Prime(AWS)	Amazon	25/10/2021
50	J.Likith Saidhar Reddy	Workshop And Industrial Lecture, Online Elementary FDP	IBM	24/07 /2021, 12/07 / 2021,15 /07/2021
51	Neeraj Pokala	365 Data Science E Learning Company	Microsoft	10-10-2021

52	R.Sravani	Future Skills Prime(Aws)	Microsoft	28/09/2021
53	S.Nandini	Future Skills Prime(Aws)	Microsoft	28/09/2021
54	Cherukuri Nikhil Kumar	Tessolve Online Internship Training	Tessolve (Online)	26-07-2021

(ii) List of students presented paper in symposium/Conferences:

Table 4.5.3.B.2: Participation of Paper presentation in Symposium

Sl. No.	Name	Title	Venue	Date
1	Aneem Seeta Reddy	SYMPO AAGNYA 2020	St. Martins Engineering College, Secunderabad	30.01.2020 and 31.01.2020
2	B Navya Sree	SITAR – 2K20	Prasad V. Potluri Siddhartha Institute of Technology, Vijayawada	25.01.2020
3	K. Siva Varshini	SITAR – 2K20	Prasad V. Potluri Siddhartha Institute of Technology, Vijayawada	25.01.2020

(iii) List of students published paper in conferences/Journals (Events outside the state):

Encouraging students to publish their final year project work and community service project work in international/nation conferences and journals.

Table 4.5.3.B.3: Academic year-wise Participation of Paper presentation in Conferences / Journals outside the State

Sl. No.	Project Title	Reg. No	Name of the Students	Conference Name
1	Performance Evaluation of Patient Using IoT	9915005112	Gangisetty Sai Krishna Sathvik	1 st IEEE EMBS International Student Conference 2018 India
		9915005184	Seggoju Teja	
		9915005190	Shaik Mohammed Sultan Sharif	
2	High Efficient Multiplier Circuit Using Wallace Architecture With Hybrid Power Gating Technology	9915005156	Madhumitha S	International conference on Innovative Trends in Science & Technology ICITST - 2018
		9915005028	Keerthika.N	
		9915005019	Dhana Bhagyam G	
3	Design and Implementation to Ensure Road Safety and Environment Using Embedded System	9915005235	Jeya Surya J	International Conference on New Scientific creations in Engineering and Technology ICNSCET - 19
		9915005218	Atchaya A	
		9915005048	Ragadharshini G	
4	Industrial Monitoring and Controlling Using WSN	9915005223	Kunduru Naveen Kumar Reddy	International Conference on Recent Scientific Research in Engineering and Technology
		9816005006	Goskulashivakumar	
		9915005230	Digumarthy Raj V S M S Chandrasek	

5	Object Recognition for Military Based Services Using Image Processing	9816005001	Chandra Sekaran M	International Journal of Innovative Research In Management, Engineering And Technology, ISSN (Online): 2456-0448
		9915005203	Vikesh S B	
		9915005025	Karuppasamy E	
6	LP-SVD Based on Enhancement Technique for MR And CT Images	9915005014	Ayesha Rizwana S	International Conference on Recent Trends in Science and Management ICRTSM -2018
		9915005007	Aravind J R	
		9915005009	Arumugaperumal M	
7	FPGA Based Real Time Temperature Measurement System	9915005127	Ambarapu Saddam Hussain	ICSET-2019 International Conference on Science, Engineering & Technology
		9915005107	Gali Vinod Kumar Naidu	
		9915005119	Gangavarapu Venkatesh Naidu	
8	DESIGN OF Parallel Pipelined Architecture for Wavelet Based Image Compression Using 2_D Daubechies Method	9915005215	Bandi Siva Sankar Reddy	2019 IEEE International Conference on Intelligent Techniques in Control, Optimization and Signal Processing
		9915005216	Eda Harsha Vardhan Reddy	

		9915005217	Garineni Gopi	
9	Low Cost and High Security System for Fuel Tank	9915005201	Vakati Sravan Kumar	National Conference on Recent Innovation in Engineering, science, and Humanities
		9915005098	Polavarapu Bhargav Sai	
		9915005181	Rishabh	
		9915005170	Pavan Kumar Reddy Bonthu	

International/National Journals: 2018-19

Sl. No.	Project Title	Reg. No	Students	Journal Name
1	Junction less Transistor for Low Power Application	9915005042	Nandhini S	International Journal of Emerging Technology and Innovative Engineering
		9915005020	Gayathri S	
2	Segregation Of Decomposable and Non-Decomposable Wastes Using Capacitive Sensor	9915005152	Karthik V	International Journal of Innovative Research in Management, Engineering and Technology
		9915005160	Mohamed Faizul Rahuman H	
		9915005147	Jey Ganesh D	

3	Design And Implementation of 64-Bit Vedic Multiplier	9915005206	Yazali Dinesh	International Journal of Scientific Research and Review
4	Automatic Gear Transmission (AGT) For Manual Gear Cars	9915005137	Devendran V	International Journal of Recent Technology and Engineering (IJRTE)
		9915005144	Jagannath K	
		9915005123	Gokulvasan K	

International Conferences: 2019-20

Sl. No.	Project Title	Reg. No	Name of the Students	Conference Name
1	A Novel Antenna Design for WiMAX Application using Metamaterials	9916005175	Yallamaraju Surendra Varma	Virtual International Conference On “Innovations in Interdisciplinary Research
		9916005178	Yechuri Venkata Sai Manidee	
		9916005047	Gadiraju Sai Santhosh	
2	Design and Analysis of Microstrip Dual Mode Impedance Transformer	9916005133	Rubankumar M	IEEE- 4 th International Conference on Inventive Systems and Controls
		9916005192	Ram Kishore S	
		9916005186	Gade Vamshikrishna	
3		9916005147	Siripuram Vamsi Krishna Redd	International Virtual Conference on

	IoT Based Smart Agriculture Monitoring System	9916005026	Bollineni Sai Gireesh	Recent Trends in Science, Engineering and Management (ICRTSEM 2020)
		9916005103	Mudduluru Manoj	
4	Computerized Smart Luminous System Using Passive Infrared by Motion Recognition (CSLS-WIFI)	9916005063	Jeyamohanaroopan K M K	IEEE Proceedings of the Fourth International Conference on Inventive Systems and Control (ICISC 2020)
		9916005107	Navaneethanath M	
5	Emotion Detection Based on Audio Signals	9916005172	Venkatarajugari Chandan Ku	International Conference on Recent Trends in Automation, Signal Processing and Energy Systems (ICASE 2020)
		9916005183	Shaik Mahammed Haneef	
		9916005039	Devireddy Venkata Phanindra	
6	FPGA Implementation for Advanced Encryption Algorithm	9916005012	Annabathina Rajiv	IEEE- International Conference on Modern Trends in Engineering and Research (ICMTER-2020)
		9916005046	Gadhamsetty Venkata Bala N	
		9916005079	Kethi Venkateswarlu	
7	Synthesis And Characteristics of MoS ₂ Based Devices	9916005020	Basireddy Rushikesava Reddy	IEEE- 2 nd International Conference on Smart Systems and Inventive Technology
		9916005031	Chevvu Saikumar	

		9916005055	Hanumanthu Sandeep	
8	Automated Detection of Glaucoma using Image Processing Technique	9916005033	Ch. Sampath	International Conference on Artificial Intelligence and Evolutionary Computations in Engineering system (ICAIECES-2020)
		9916005083	K.V Girish Kumar	
		9916005176	Y. Bharath Kumar	
		9817005003	B. Praveen Kumar	
		9916005035	D. Sri Venkata Nagendra	
9	Medicine Distribution Robot and Human Less Intervention for Covid-19 Affected People (AKM Med Assistive Bot)	9916005099	M. D. Arbas Ali Khan	International Conference on Applications of Machine Learning- ICAML - 2020 (Scopus Indexed)
		9916005084	M. R. Kylash	
		9916005105	M. Muralidharan	
10	Endo Illuminator Light Source using for Multiple Surgeries	9916005002	A Rohan	International Conference on Smart Electronics and Communication ICOSEC 2020
		9916005008	A Sreekanth	
		9916005027	A Rakesh	
11		9916005016	A. Pranavi	International Conference on Computational

	Evaluation of Breast Thermograms by Hybrid Classifiers	9916005117	P. Shoba Rani	intelligence and Applications
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International/Nation Journals: 2019-20

SI. No.	Project Title	Reg. No.	Name Of the Students	Journal Name
1.	Design And Analysis of Ridge Gap Waveguide For 5G Wireless Standard	9916005137	Sangaraju Jayasurya Varma	International Journal of Digital Communication and Networks (IJDCN)
		9916005101	Mounika S	
		9916005102	Muddeneni Manikanta	
2.	An Innovative Sanitation Solution with IoT Enabled Drainage System for Clean India	9916005091	Mallu Poorna Sree	International Research Journal of Modernization in Engineering Technology and Science
3.	A Reconfigurable Memory Based Fast VLSI Architecture for Computation of The Histogram	9916005130	Raya Ravicharan Reddy	International Journal of Emerging Technology in Computer Science & Electronics
		9916005067	Kadiveti Manoj Kumar Reddy	
		9916005080	Kommi Kalyan	

4.	Design And Analysis of End fire Microstrip Antenna for Aircraft Navigation System	9916005001	S. Abarna	International Journal of Advanced Science and Technology
		9916005126	K. Praveena	
		9916005184	T. Kalpana	
5.	IoT Based Water Level Controller for Irrigation	9817005002	J. Mahendran	Elsevier - Materials Today: Proceedings
		9817005001	M. Azeem Ahmed	
		9817005005	S. Siva Karthick	
6.	Traffic And Energy Aware Routing for Heterogeneous Wireless Sensor Networks	9916005187	K. Naveen Kumar	International Research Journal of Modernization in Engineering Technology and Science
		9916005076	K. Prasanth	
		9916005017	A. Vinay Kumar	
7.	Smart Snake Crawl Robot in Search and Rescue	9916005205	T. Keerthana	International Journal of Robotics and Automation
		9916005108	S. R. Naveen Prasath	
		9916005182	S. Hari Krishnan	
8.	Underwater Image Enhancement	9916005061	J. Jasim Ahmed	Journal of Interdisciplinary Cycle Research
		9916005197	S. Murugesan	

		9916005203	Abhishek Kumar Singh	
9.	Artificial Bridge Between Railway	9961005086	M. Sai Harsha Vardhan	International Journal of Computer Applications
		9916005081	K. Harsha Vardhan Kriti	
		9916005171	P. Venkata Sai	
10.	Medical Images Compression and Decompression using Neural Network	9916005029	T. Chenna Keshava Reddy	International Journal of Innovative Science and Research Technology
		9916005030	Ch. Nikhil Reddy	
		9916005098	M. Hari Siva	

International Conference: 2020-21

Sl. No.	Project Title	Reg. No.	Name of the Students	Conference Name
1.	Smart nursing robot for COVID-19 patients	9917005038	Gadiraju Likith	International conference on advance computing and innovative technologies in engineering
		9917005039	G Durga Prasad	

		9917005030	Dodla Sreekanth	
2.	Solar based fingerprint authentication voting system using IoT	9917005208	N.V. Vinay Varma	International Conference on Communication and Electronics Systems
		9917005211	K. Manideepak	
		9917005215	Guru Charan	
3.	Detecting of distraction under naturalistic driving using galvanic skin responses	9917005107	Maru Rithwik Seshu Reddy	Communication And Electronics Systems (ICCES)
		9917005128	P. Madhan Sai	
		9917005160	Shaik Mehatab	
4.	Development of the LoRaWAN-based Movement Tracking System	9917005096	Sai Sudheer Maddukuri	IEEE - ICSPC21
		9917005139	Vikas Charan Reddy Ponkala	
		9917005022	Yaswant Boppudi	
5.	Data Hiding Using Audio Steganography and Chaos Encryption with RC7 Encryption	9917005073	K. Kishore Chandra Sekhar	International Conference on Advanced Computing and Communication Technology-2021 (ICACCT)
		9917005101	M.Madhu	
		9917005056	G. Siddu Saif Shareef	
		9917005071	K. Gangadhar	

6.	IoT based Smart Shopping Cart using RFID and NodeMCU	9917005217	Ch. Manikanta Reddy	2 nd International Conference on Electronics and Sustainable Communication Systems ICESC 2021
		9917005192	Y. Sai Sandeep Reddy	
7.	Food Safety and Quality Analysis using Semiconductor Sensor	9917005007	A. Anumanjari	The 5 th International Conference on Trends in Electronics and Informatics (ICOEI 2021)
		9917005123	T. Pandimeena	
		9917005150	J. Safana Fathima	
8.	Enhanced Image Compression using Fractal and Tree Seed-Bio inspired algorithm	9917005065	Kalakuntla Puneeth Sai	6 th International conference on Communication and electronics system
		9917005174	Sutluru Reddy Chanakya	
		9917005034	Elchuri Ajay Kumar	
9.	Finger Knuckle print authentication system using Visual Threshold Cryptographic Techniques	9917005094	K. Hemanth Kumar	ICACT 2021
		9917005213	Y. Joshnakar Reddy	
		9917005218	Y. Tharun Babu	
10.	Smart crop protection from wild animals using PIC	9917005204	Koduru Vamsinath Reddy	2 nd International Conference On IOT Based Networks and Intelligent Systems
		9917005179	T. Ravikiran Naidu	

		9917005221	K. Bhanupradeep Kumar Reddy	
11.	Particle swarm optimization-based unequal and fault Tolerant trusting protocol for wireless networks	9917005009	A. Sumanth	ICIRMEEE 2021
		9917005042	G. Vigandhar Reddy	
		9917005163	B. M. Sharath Kumar	
12.	Semiconductor based device for Biosensor applications	9917005189	S. Vishali	ICOEI (International Conference on Trends in Electronics and Information
		9917005198	J. Yuva Sri	
		9917005206	R. Selva Jayanthi	
13.	IoT Based Wireless Home Security System	9917005070	Kanagasabapathy T S	ICICNIS 2021: 2 nd International Conference on IoT Based Control Networks and Intelligent Systems
		9917005046	Gokul P	
		9917005067	Kamaswaran S	
14.	Identification Of Timber Defects Using Convolution Neural Network	9917005170	Sivaraman K	6 th International conference on communication and electronics system (ICCES 2021)
		9917005165	Siddhartha T	
		9917005172	Subramani V	

15.	Electricity Monitoring and Auto Bill Generation Using IoT	9917005006	A. Bhargav Narasimha	3 rd IEEE ICSPC 2021
		9917005145	R. Guna Vardhan Reddy	
		9917005156	S. Sathish	
16.	Node MCU based landmine detection using Wireless Robot	9917005116	Nanda Rahul Bharadwaj	International Conference on Advanced Computing and Communication Technology (ICACCT-2021)
		9917005091	Krishnamannagari Sathish Kumar Reddy	
		9917005205	Mule Siva Reddy	
17.	Monitoring speaker sentiment in various conditions using Machine learning	9917005037	G. Yeshwitha	2 nd International Conference on Data Intelligence and Cognitive Informatics ICDICI 2021
		9917005187	V. Mounika	
		9917005055	G. Vinathi	
18.	IoT Based Low Power Transmission Line Fault Detection and Indication	9917005149	M. D. Rudra Prassanth	3 rd IEEE International Conference on Signal Processing and Communication (ICSPC 21).
		9917005144	G. Rajarajan	
		9917005117	N. Harshith	

International/National Journals: 2020-21

Sl. No.	Project Title	Reg. No.	Name of the Students	Journal Name
1	Low power ECG based processor for predicting ventricular arrhythmia	9917005032	D. Ajith Reddy	Annals of The Romanian Society for Cell Biology
		9917005054	G. Harsha Vardhan	
		9917005126	P. Venkata	
2	Bluetooth based car Garage opening system	9917005104	M Sushanth Varma	International Science and Research Journals
		9917005066	K Reddy Mohan Reddy	
		9917005059	G Pavan Kumar	
3	Design and Analysis of Nano antenna for satellite/ 5G Applications	9917005058	Gurram Puneeth	Journal of Huazhong University of Science and Technology
		9917005005	Akula Yogendra	
		9917005203	P Bhargav Reedy	
4	Motorcycle start-stop system based on intelligent Biometric voice Recognition and only by wearing helmet	9917005013	Balan Abhilash	Annals Of the Romanian Society for Cell Biology
		9917005133	P. Lakshmi Narayana	

		9917005087	Kotte Rajesh Kumar	
5	Prediction of Heart disease using big data analytics	9917005186	Vemuri Gopi Krishna	Annals of the Romanian Society for Cell Biology
		9917005194	Yenduru Sri Sai Naveen	
		9917005086	Kothuru Surya Sai Pranith	
6	Development of smart stick for visually challenged people	9917005108	M. Vineesh Reddy	Annals of the Romanian Society for Cell Biology
		9917005119	N. B. Sahul	
		9917005080	K. Sreenath	

C. Prizes/awards received in events:

Despite more participation from the programme, students received prizes and awards, too, at various occasions. These awards motivate the junior students of the programme on the participation in such events.

Table 4.5.3.C.1: Technical Prize/Awards received by students

Sl. No.	Name of the Student	Event Name	Venue	Date	Prize Won
1.	C Sathya Pradeep	Paper Presentation, Angel Arena 2018	Angel College of Engineering and Technology, Tirupur	29.09.2018	First

2.	C Sathya Pradeep	Technical Events, Angel Arena 2018	Angel College of Engineering and Technology, Tirupur	29.09.2018	Third
3.	Cherukuri Nikhil Kumar	IUCEE & EWB Student Leadership Course 2020 (Phase-3) Project Phase (Business Proposal)	IUCEE	December 2020 to May 2021	Rs. 2500
4.	MUTHU KUMAR M V	INTERVIEWIND	Sri Krishna College of engineering and technology	13-09-2021	2 nd prize
5.	ARAVIND I	INTERVIEWIND	Sri Krishna College of engineering and technology	13-09-2021	3 rd prize
6.	LAVANURU ANURADHA	Debate Competition	IUCEE	03.09.21	2 nd prize
7.	Chitrالا Himavanth Sai Ram	Oxygen Enriched Air Project Competition	IUCEE	June 10	Rs. 2000/-

8.	Cherukuri Nikhil Kumar	Design, Development and Maintenance of Webiste for IUCEE Student Development Programs	Indo - Universal Collobaration for Engineering Education (IUCEE)	June 2021	Rs. 5000/-
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Table 4.5.3.C.2: Sports Prize / Awards received by students:

Sl. No.	Name of the Event / Prize Won	Name of the Organizer	Name of the Student	Date of the Event
1.	Volleyball / Runner with cash Prize Rs. 4,000.	3 rd Avinashilingam Ayya Memorial Trophy – State Level Volleyball Tournament	S. Sobiya	27.09.2018
			Anusha. M	
2.	Basketball / Runner with cash Prize Rs. 9,000.	Chief Minister District Level Competition	Idiga Divya Bharathi	06.02.2019 & 07.02.2019
3.	Basketball / 4 th place	Sports Development Authority Tamil Nadu State Level Inter University Basketball (Men & Women) Tournament held at Noorul Islam University, Kanyakumari	Idiga Divya Bharathi	20.09.2018 to 22.09.2018
4.	Volleyball / Winner with cash Prize Rs. 12,000.	Chief Minister District Level Competition	S. Sobiya	06.02.2019 & 07.02.2019

5.	Volleyball / Winner with cash Prize Rs. 5,000.	44 th State level open Volleyball (Women) Tournament organized by Madathur Volleyball Club, Madathur, Tenkasi	S. Sobiya	09.02.2019
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Figure 4.5.3.C.1: ECE students S.Sobiya (Fifth from Left - of the players) and Anusha. M (First from Left - of the players) receiving the Trophy at the 3rd Avinashilingam Ayya Memorial Trophy – State Level Volleyball Tournament.



Figure 4.5.3.C.2: ECE student Idiga Divya Bharathi (Fourth from Left – of the players) at the Chief Minister District Level Competition



Figure 4.5.3.C.3: ECE student Idiga Divya Bharathi (Second from Left - of the players) receiving the Trophy at Sports Development Authority Tamil Nadu State Level Inter University Basketball (Men & Women) Tournament held at Noorul Islam University, Kanyakumari



Figure 4.5.3.C.4: ECE student S.Sobiya (Fourth from Left – of the players standing) at the Chief Minister District Level Competition



Figure 4.5.3.C.5: ECE student S. Sobiya (Second from Left – of the players standing) receiving the Trophy at 44th State level open Volleyball (Women) Tournament organized by Madathur Volleyball Club, Madathur, Tenkasi.

D. International Certifications

International certifications are helpful for the students to gain technical knowledge and skills and build up self-esteem and self-confidence in their professional careers. In addition, these courses provide profound knowledge to the student to sustain the competitive world increases marketability.

Faculty are motivating and encouraging students to complete the international certification courses. The student attains the international certification to enhance their modeling knowledge to attain PO attainment of various courses associated with software knowledge like Python programming, which plays an essential role in placement and higher studies. Students participated in international certifications are consolidated in table 4.5.3.D.1 and 4.5.3.D.7

Table 4.5.3.D.1: Consolidated list for CLAD, BEC and HPE

Academic Year	No. of students participated in CLAD	No. of students participated in BEC	No. of students participated in HPE
2018-19	26	76	33
2019-20	3	55	-

Table 4.5.3.D.2: CLAD qualified students 2018-19

Sl. No.	Registration number	Names of students selected/qualified	Certification Examination
1	9915005195	S. Manisha	CLAD
2	9915005097	S. Sukumar	CLAD
3	9915005155	K. Keerthi Sai Krishna	CLAD

4	9915005046	F. Pravin Raja	CLAD
5	9915005017	R. Devi Kamatchi	CLAD
6	9915107004	V. Sudhatharangini	CLAD
7	9915005141	D. Girish	CLAD
8	9915005118	C. MohanaTeja	CLAD
9	9915005105	P. Vaishnavi	CLAD
10	9915005109	Himaja. Y	CLAD
11	9915005173	P.P rasanna Kumar	CLAD
12	9915005174	P. Gowtham Kiran Varma	CLAD
13	9915005164	M. Dhavanth	CLAD
14	9915005146	P. Jeyashree	CLAD
15	9915005210	K. Triveni	CLAD
16	9915005202	V. Velmurugan	CLAD
17	9915005033	B. Mariammal	CLAD
18	9915005047	R Preethi	CLAD
19	9915005120	K Kowsalya	CLAD
20	9915005030	S Madhumitha	CLAD

21	9915005001	P. Aarth	CLAD
22	9915005017	V. Devika	CLAD
23	9915005068	R. Vetriseivam	CLAD
24	9915005004	A. Akalya	CLAD
25	9915005018	M. M. Dhaksheena	CLAD
26	9915005154	K. Vijay Kumar	CLAD

Table 4.5.3.D.3: CLAD qualified students 2019-20

SI. No.	Registration number	Names of students selected/qualified	Certification Examination
1	9916005124	M. Prakash	CLAD
2	9916005199	M. Swathi	CLAD
3	9916005205	Keerthana. T	CLAD

Table 4.5.3.D.4: BEC qualified students 2018-19

SI. No.	Registration number	Names of students qualified	Certification Examination
1	9915005001	Aarth P	BEC
2	9915005022	Jeslin Sneha J	BEC

3	9915005018	Dhaksheena M	BEC
4	9915005026	Kathir Kaamesh S	BEC
5	9916005001	Abarna S	BEC
6	9916005045	Flavita Angeline	BEC
7	9916005041	Durga K	BEC
8	9915005068	Vetriselvam R	BEC
9	9915005056	Senthil Kumar B	BEC
10	9915005215	Bandi Siva Sankar	BEC
11	9915005002	Afreena Parveen. N	BEC
12	9915005161	Md. Zaidh Ahmad	BEC
13	9915005190	S K M D Sharif	BEC
14	9915005191	A Siddhu	BEC
15	9915005015	Bharathi V	BEC
16	9915005006	Anu Mangai	BEC
17	9915005180	Ramya	BEC
18	9915005005	Alice Jemima	BEC
19	9915005042	Nandhini S	BEC

20	9915005210	K Triveni	BEC
21	9915005165	Muthuraj P	BEC
22	9916005051	Gujjula Harika	BEC
23	9516005301	Joshwin	BEC
24	9916005022	Benita Raja Sheba D	BEC
25	9916005003	M. Aishwarya	BEC
26	9916005149	K. Sivavarshini	BEC
27	9916005072	K Pavani	BEC
28	9916005100	P Mohana Varsha	BEC
29	9916005047	Saisanthosh	BEC
30	9916005025	Navya Sree	BEC
31	9916005117	Shobarani	BEC
32	9916005016	Pranavi	BEC
33	9916005092	Tanmayi	BEC
34	9916005126	Praveena	BEC
35	9916005004	Aishwarya	BEC
36	9916005145	Shivani	BEC

37	9916005058	Nachiyar	BEC
38	9916005021	Bavatharini	BEC
39	9916005037	Durga Lakshmi	BEC
40	9916005199	Bhanitejaswi	BEC
41	9916005151	Keerthana T	BEC
42	9916005069	Kaleeswari	BEC
43	9916005077	Keerthana S	BEC
44	9916005131	Deenadayal	BEC
45	9916005082	Billa Mahesh	BEC
46	9916005024	Shiva Sainath Reddy	BEC
47	9916005104	Chevu Sai Kumar	BEC
48	9916005055	H Sandeep	BEC
49	9916005141	Akram Javid	BEC
50	9916005099	Arbas Ali Khan	BEC
51	9916005128	Vignesh S	BEC
52	9916005204	Naveen Kumar S	BEC
53	9916005194	Vamshi Krishna K	BEC

54	9916005010	A Ravi Teja	BEC
55	9916005054	Kumar Sai Reddy	BEC
56	9916005089	C Teja Vyas	BEC
57	9916005042	Abhiram Reddy	BEC
58	9916005011	A Jayasai	BEC
59	9916005028	C Haveesh Kumar	BEC
60	9916005040	D Mohan Reddy	BEC
61	9916005196	Harshavardhan	BEC
62	9916005203	Abishek Kumar Singh	BEC
63	9916005146	Sathyaanand	BEC
64	9916005197	Murugesan S	BEC
65	9916005075	K Saivamsi Krishna	BEC
66	9916005121	P Sumanth	BEC
67	9916005122	P Venkata Sai	BEC
68	9916005043	D Anees Kumar Reddy	BEC
69	9916005057	A Hilal Khan	BEC
70	9916005114	V Naga Sai Sasidhar	BEC

71	9916005079	Venkateswarlu	BEC
72	9916005046	Gvb Nikhil	BEC
73	9916005012	A Rajiv	BEC
74	9917005045	Godwin S	BEC
75	9917005170	Sivaraman	BEC
76	9917005165	Siddhartha	BEC

Table 4.5.3.D.5: BEC qualified students 2019-20

Sl. No.	Registration number	Names of students qualified	Certification Examination
1	9916005092	Mana Tanmayi	BEC
2	9916005015	Anumala Sudhakar	BEC
3	9916005081	Kommuru Harsha Vardhan Kiriti	BEC
4	9916005086	Maddali Sai Harshavardhan	BEC
5	9916005093	Manchikalapati Dheeraj Singh	BEC
6	9916005053	Gunnam Reddy Bharath Sai	BEC
7	9916005203	Abhishek Kumar Singh	BEC
8	9916005197	Murugesan S	BEC

9	9916005204	Sathuluri Naveen Kumar	BEC
10	9916005151	Somisetty Bhanu Tejaswi	BEC
11	9916005004	Aishwarya S	BEC
12	9916005145	Shivani K	BEC
13	9916005206	Chitradevi P	BEC
14	9916005126	Praveena K	BEC
15	9916005196	Nagarajupalli Harshavardhan	BEC
16	9916005200	Muthu Kumar D	BEC
17	9916005159	Thirumanikandan S B	BEC
18	9916005194	Korrapati Vamsikrishna	BEC
19	9916005011	Allineni Jaya Sai	BEC
20	9916005010	Allampati Raviteja	BEC
21	9916005114	P Venkata Nagasai Sasidhar	BEC
22	9916005042	Duvvuru Abhiram Reddy	BEC
23	9916005054	Guntaka Kumar Sai Reddy	BEC
24	9916005024	Billa Mahesh	BEC
25	9916005082	Kondisetty Venkata Manikanta Deenadayal	BEC

26	9916005040	Duggireddy Mohan Reddy	BEC
27	9916005131	Revilla Prudhvi Sai Srinivas	BEC
28	9916005055	Hanumanthu Sandeep	BEC
29	9916005075	Kataru Saivamsikrishna	BEC
30	9916005079	Kethi Venkateswarlu	BEC
31	9916005104	Munagala Sivasainathreddy	BEC
32	9916005122	Polucharla Venkata Sai	BEC
33	9916005028	Challa Haveesh Kumar	BEC
34	9916005046	Gadhamsetty Venkata Bala Naga Nikhil	BEC
35	9916005146	Singamsetty Satyanand	BEC
36	9916005043	Duvvuru Aneesh Kumar Reddy	BEC
37	9916005177	Yaramasu Sai Kumar	BEC
38	9916005199	Menda Swathi	BEC
39	9916005128	Ragipudi Kalyan	BEC
40	9916005016	Arati Pranavi	BEC
41	9916005117	Papasani Shobarani	BEC
42	9916005025	Boggarapu NavyaSree	BEC

43	9916005144	Shiva Somu S S	BEC
44	9916005057	Hilal Khan A	BEC
45	9916005089	Mahimaluru CharanTeja Vyas	BEC
46	9916005167	Vardhireddy Venkata Nagendra Reddy	BEC
47	9916005037	Deris R	BEC
48	9916005058	Indiradevi Nachiyar S R	BEC
49	9916005099	Mohammed Arbas Ali Khan	BEC
50	9916005171	Ponnuru Venkata Sai	BEC
51	9916005141	Shaik Mohammad Akram Javid	BEC
52	9916005121	Polani Sumanth	BEC
53	9916005021	Bavathaarani B	BEC
54	9918005006	Cherukuri Nikhil Kumar	BEC
55	9917005036	Francischezhiyan J	BEC

Table 4.5.3.D.6: HPE qualified students 2018-19

Sl. No.	Roll number of the exam	Names of students qualified	Certification Examination
1	HPE/CoC/ET/1811-04028	Ajithkumar R	HDL/HPE

2	HPE/CoC/ET/1811-04021	Aravindh	HDL/HPE
3	HPE/CoC/ET/1811-04019	Bala Murali Krishna	HDL/HPE
4	HPE/CoC/ET/1811-04018	Bharath Sai	HDL/HPE
5	HPE/CoC/ET/1811-04008	Chakradhar Kakshith Reddy	HDL/HPE
6	HPE/CoC/ET/1811-04020	Chundu Avinash	HDL/HPE
7	HPE/CoC/ET/1811-04011	Dheeraj Singh	HDL/HPE
8	HPE/CoC/ET/1811-04026	Gattu Pranith Reddy	HDL/HPE
9	HPE/CoC/ET/1811-04017	Guntaka Kumar Sai Reddy	HDL/HPE
10	HPE/CoC/ET/1811-04016	Jeya Mohana Roopan Kmk	HDL/HPE
11	HPE/CoC/ET/1811-04029	Jeya Prakash K	HDL/HPE
12	HPE/CoC/ET/1811-04015	Jugunta Sharon Paul	HDL/HPE
13	HPE/CoC/ET/1811-04024	Kaku Naveen Kumar	HDL/HPE

14	HPE/CoC/ET/1811-04009	Karthy Gopalan	HDL/HPE
15	HPE/CoC/ET/1811-04014	Kethi Venkateswarlu	HDL/HPE
16	HPE/CoC/ET/1811-04013	Kylash	HDL/HPE
17	HPE/CoC/ET/1811-04012	Makkena Ajay	HDL/HPE
18	HPE/CoC/ET/1811-04031	Manikandan Palanivel	HDL/HPE
19	HPE/CoC/ET/1811-04010	Muralidharan M	HDL/HPE
20	HPE/CoC/ET/1811-04000	Nagarajupalli Harsha Vardhan	HDL/HPE
21	HPE/CoC/ET/1811-04023	Naveen P	HDL/HPE
22	HPE/CoC/ET/1811-03999	Padarthi Ragahvendra Anil Kumar	HDL/HPE
23	HPE/CoC/ET/1811-04007	Priyadharshini R	HDL/HPE
24	HPE/CoC/ET/1811-04030	Ramesh G	HDL/HPE
25	HPE/CoC/ET/1811-04006	Ravi Charan Reddy	HDL/HPE

26	HPE/CoC/ET/1811-04005	Sharmila Ravichandran	HDL/HPE
27	HPE/CoC/ET/1811-04001	Somasekhar Reddy	HDL/HPE
28	HPE/CoC/ET/1811-04022	Sunki Reddy Hari Obul Reddy	HDL/HPE
29	HPE/CoC/ET/1811-04025	Surendra Varma	HDL/HPE
30	HPE/CoC/ET/1811-04027	Swedheetha Chandrasekar	HDL/HPE
31	HPE/CoC/ET/1811-04002	Uma Mahes Wary	HDL/HPE
32	HPE/CoC/ET/1811-04004	Vanaja Nagarajan	HDL/HPE
33	HPE/CoC/ET/1811-04003	Venumbaka Avinash Reddy	HDL/HPE



Figure 4.5.3.D.1: Sample certificate for HPE

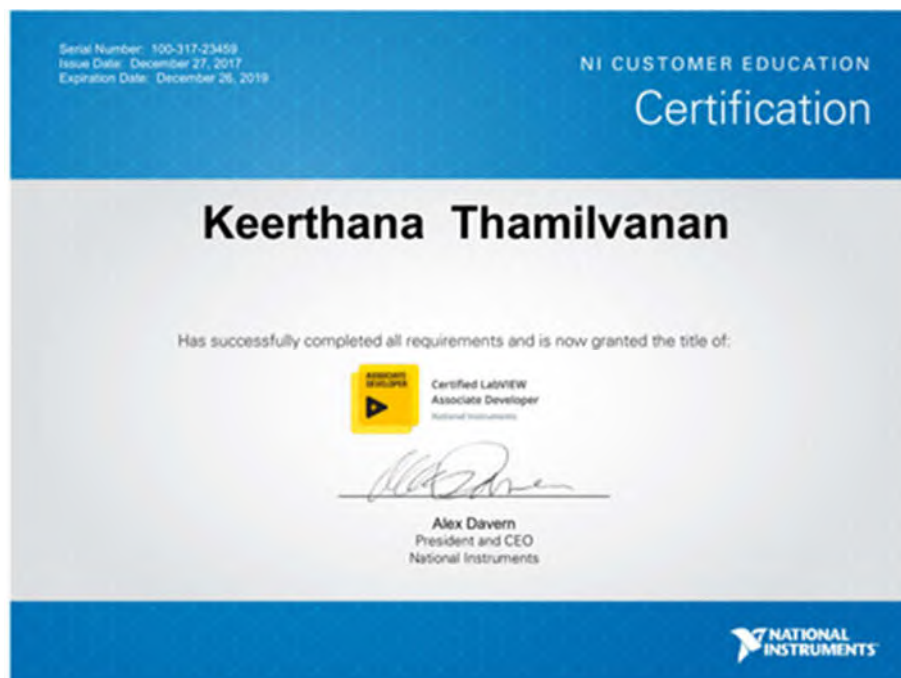


Figure 4.5.3.D.2: Sample certificate for CLAD

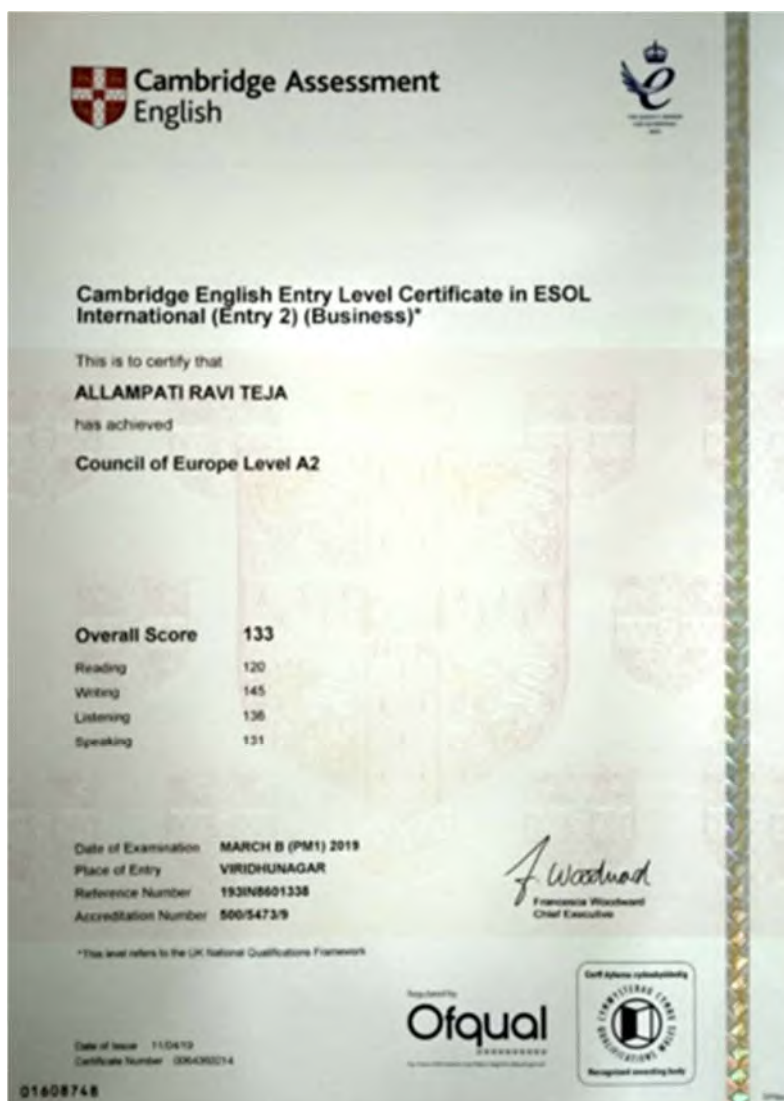


Figure 4.5.3.D.3: Sample certificate for BEC

Table 4.5.3.D.7: SAP Student Training Details

SAP INTERNATIONAL CERTIFICATION						
Academic Year	ABAP		MM		HCM	
	Appeared	Passed	Appeared	Passed	Appeared	Passed

2019-20	156	132	17	9	13	5
2020-21	179	175	12	12	11	11
2021-22	143	141	1	1	-	-

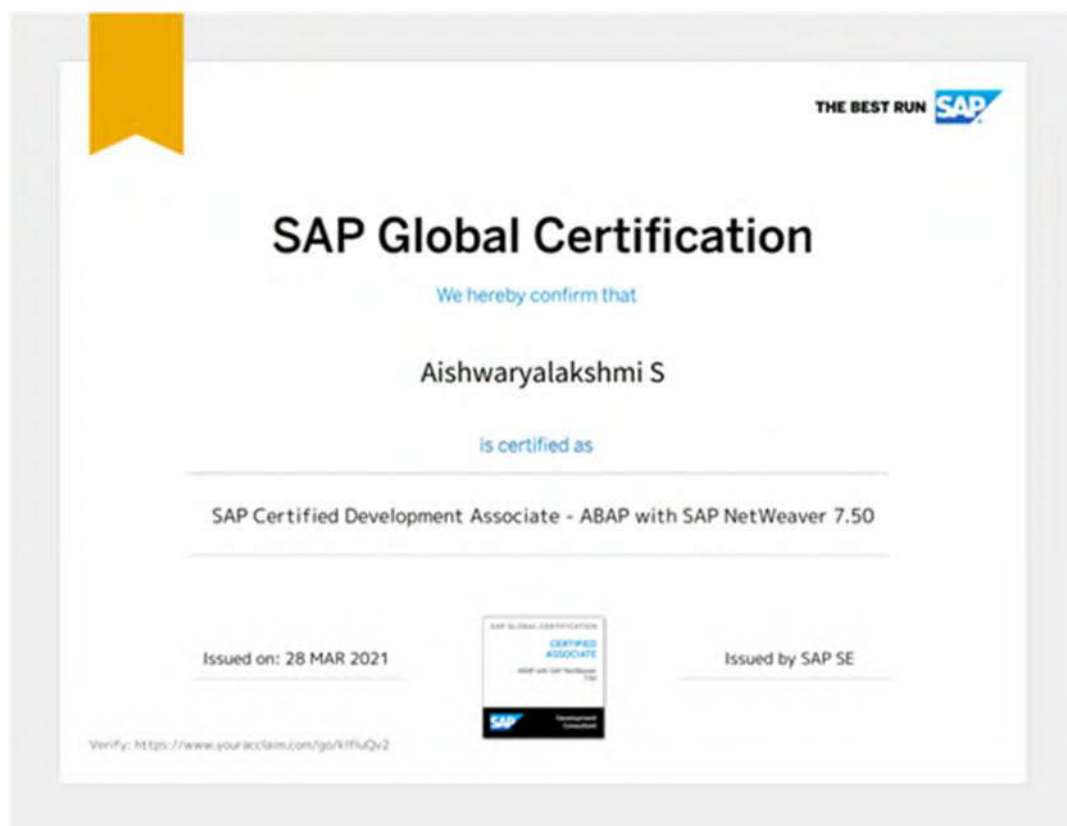


Figure 4.5.3.D.4: Sample SAP certificate

CRITERION 5	Faculty Information and Contributions	200/200
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Name of the Faculty Member	Qualification			Association with the Institution	Designation	Date on which Designated as Professor/ Associate Professor	Date of Joining the Institution	Department	Specialization	Research Paper Publications	Academic Research			Currently Associated (Y/N) Date of Leaving In case currently associated is 'No'	Nature of Association Regular/Contract
	Degree (highest degree)	University	Year of attaining higher Qualification								Ph.D. Guidance	Ph.D. Guiding	Faculty Receiving Ph.D. during the Assessment Years		
Dr. R. Nagaraj	Ph.D.	VTU	2006		Vice-Chancellor & Sr. Professor	29 Oct 2018	29 Oct 2018	ECE	Control System, Intelligent Control, Fault Tolerance, Signal Processing	130	11	6		Y	Regular
Dr. M. Kalpana	Ph.D.	AU	2011		HoD & Associate Professor	18 Jun 2018	18 Jun 2018	ECE	Networking, Bio Medical Image Processing	19	1	5		Y	Regular
Dr. Kyung Tae Kim	Ph.D.	Tohoku	1985		Sr. Professor	15 Dec 2014	15 Dec 2014	ECE	Image Processing	0	--			Y	Regular
Dr. M. Pallikonda Rajasekaran	Ph.D.	AU	2009		Professor	01 Sep 2012	04 Jun 2003	ECE	Image Processing	172	9	8		Y	Regular

Dr. P. Sivakumar	Ph.D.	AU	2013		Professor	01 Jul 2017	02 Oct 2004	ECE	VLSI Design	41	4	8		Y	Regular
Dr. B. Subathra	Ph.D.	NIT Trichy	2011		Professor	01 Jul 2017	03 Oct 2011	ECE	Control Optimization	13	1	6		Y	Regular
Dr. Seshadhri Srinivasan	Ph.D.	NIT Trichy	2011		Professor	08 Jun 2013	08 Jun 2013	ECE	Control Optimization	38				Y	Regular
Dr. V. Hima Deepthi	Ph.D.	Alpen-Adria-University of Klagenfurt	2011		Professor	01 July 2021	01 July 2021	ECE	Image Processing	37	1			Y	Regular
Mr. P. Murugan	M.E.	MKU	1992		Associate Professor	01 Jan 2008	01 Dec 2004	ECE	Power System	0	--			Y	Regular
Dr. B. Perumal	Ph.D.	KARE	2016		Associate Professor	01 Oct 2016	27 Jun 2006	ECE	Image Processing	12	2	6		Y	Regular
Dr. A. Muthukumar	Ph.D.	KARE	2014		Associate Professor	01 Jan 2015	11 Jun 2007	ECE	Image Processing	35	3	5		Y	Regular
Dr. A. Lakshmi	Ph.D.	KARE	2018		Associate Professor	20 Feb 2018	13 Jun 2007	ECE	Image Processing	22	-	-		Y	Regular
Dr. T. Senthil	Ph.D.	KARE	2017		Associate Professor	01 Jan 2018	09 Jun 2009	ECE	Networking	4				Y	Regular
Dr. T. Arun Prasath	Ph.D.	KARE	2015		Associate Professor	01 Sep 2015	29 Aug 2009	ECE	Image Processing	44	1	5		Y	Regular

Dr. G. Vishnu Varthanan	Ph.D.	KARE	2015		Associate Professor	01 Sep 2015	01 Jul 2011	ECE	Image Processing	50	3	4		Y	Regular
Dr. J. Deny	Ph.D.	Bharath	2017		Associate Professor	01 Dec 2017	01 Nov 2013	ECE	Image Processing	36	2	5		Y	Regular
Dr. J. Charles Pravin	Ph.D.	Karunya	2017		Associate Professor	29 Dec 2017	29 Dec 2017	ECE	VLSI Design	18	3	2		Y	Regular
Dr. S. Bama	Ph.D.	AU	2018		Associate Professor	25 Jun 2018	25 Jun 2018	ECE	Image Processing	5	--			Y	Regular
Dr. V. Yogeshwar Chakrapani	Ph.D.	IIT Madras	2018		Associate Professor	01 Jul 2019	11 Jul 2018	ECE	Biomedical Devices	3	0	1		Y	Regular
Dr. Parivazhagan A.	Ph.D.	AU	2020		Associate Professor	02 Jul 2019	02 Jul 2019	ECE	Digital Image Processing	3				Y	Regular
Dr. A. Thenmozhi	Ph.D.	AU	2010		Associate Professor	19 Aug 2019	19 Aug 2019	ECE	Communication Engineering	6				N	Regular
Dr. Shashi Kant Dargar	Ph.D.	SPSU	2017		Associate Professor	01 July 2021	01 July 2021	ECE	VLSI Design	45		3		Y	Regular
Dr. K. Pandiaraj	Ph.D.	KARE	2021		Assistant Professor		02 Jun 2008	ECE	VLSI Design	13				Y	Regular
Mr. K. Jeya Prakash	M.E.	KARE	2007		Assistant Professor		01 Jun 2009	ECE	VLSI Design	8				Y	Regular
Ms. R. Sumathy	M.E.	AU	2010		Assistant Professor		17 Jun 2009	ECE	Optical Communication	0				Y	Regular

Dr. G. Karthy	Ph.D.	KARE	2021		Assistant Professor		26 Jun 2009	ECE	VLSI Design	4				Y	Regular
Mr. P. Manikandan	M.E.	AU	2009		Assistant Professor		05 Aug 2009	ECE	Applied Electronics	9				Y	Regular
Mr. Jenyfal Sampson	M.Tech.	Karunya	2010		Assistant Professor		16 Aug 2010	ECE	VLSI Design	15				Y	Regular
Dr. S.P. Velmurugan	Ph.D.	KARE	2021		Assistant Professor		01 Jul 2011	ECE	Applied Electronics	21				Y	Regular
Ms. J. Nithya	M.Tech.	KARE	2011		Assistant Professor		01 Jul 2011	ECE	Digital Communication and Networking	0	--			Y	Regular
Dr. R. Radeep Krishna	M.Tech.	KARE	2021		Assistant Professor		01 Jul 2011	ECE	VLSI Design	4				N	Regular
Mr. S. Kalimuthukumar	M.Tech.	KARE	2011		Assistant Professor		01 Jul 2011	ECE	Embedded Systems	8				Y	Regular
Dr. Ganeshaperumal D.	Ph.D.	KARE	2019		Assistant Professor		01 Jul 2011	ECE	Embedded Systems	5	0	2		Y	Regular
Dr. S. Diwakaran	Ph.D.	BS Abdur Rahman	2020		Assistant Professor		01 Jul 2011	ECE	Networking	10	0	3		Y	Regular
Dr. K.S. Dhanalakshmi	Ph.D.	KARE	2018		Assistant Professor		01 Jul 2011	ECE	Networking	12	0	5		Y	Regular
Dr. M. Krishna Paramathma	Ph.D.	KARE	2021		Assistant Professor		07 Jul 2011	ECE	Power Electronics	8				Y	Regular
Mr. S. Balaji	M.Tech.	KARE	2013		Assistant Professor		14 Jul 2014	ECE	VLSI Design	1	--			Y	Regular
Mr. G. Ramesh	M.E.	AU	2010		Assistant Professor	1 Dec 2016	27 Jul 2015	ECE	VLSI Design	13				Y	Regular

Ms. M. Vijayalakshmi	M.Tech.	KARE	2014		Assistant Professor		27 Jul 2015	ECE	Digital Communication and Networking	0	--			Y	Regular
Ms. C. Swedheetha	M.E.	TCE	2015		Assistant Professor		02 May 2016	ECE	Communication Systems	0				Y	Regular
Mr. P. Naveen	M.E.	AU	2012		Assistant Professor		17 May 2016	ECE	Power Electronics and Drives	5				N	Regular
Dr. Josephine Selle Jeyanathan	Ph.D.	KARE	2019		Assistant Professor		01 Jun 2016	ECE	Image Processing	13				Y	Regular
Mr. S. Sakthivel	M.Tech.	VIT	2015		Assistant Professor		20 Dec 2016	ECE	Biomedical	28				Y	Regular
Ms. N. Bhuvaneswary	M.Tech.	AU	2012		Assistant Professor		12 Jun 2017	ECE	VLSI Design	21				Y	Regular
Mr. Rajaram M.	M.Tech.	KARE	2013		Assistant Professor		12 Jun 2017	ECE	VLSI Design	0	--			Y	Regular
Mr. M. Sakthimohan	M.Tech.	KARE	2009		Assistant Professor		12 Jun 2017	ECE	VLSI Design	6				Y	Regular
Ms. Shanmuga Sundaraselvi B.	M.E.	AU	2015		Assistant Professor		29 Jul 2017	ECE	Communication and Networking	0	--			Y	Regular
Mr. C. Jim Elliot	M.Tech.	VIT	2012		Assistant Professor		25 Jun 2018	ECE	Biomedical	8				Y	Regular
Dr. V. Muneeswaran	Ph.D.	KARE	2019		Assistant Professor		02 Jul 2018	ECE	Image Processing	26	0	3		Y	Regular

Ms. C. Vidya	M.E.	AU	2011		Assistant Professor		02 Jul 2019	ECE	Power Electronics and Drives	0				Y	Regular
Mr. S. Gnanasambanthan	M.E.	AU	2005		Assistant Professor		02 Jul 2019	ECE	Process Control and Instrumentation	0				Y	Regular
Ms. S. Parameswari	M.E.	AU	2009		Assistant Professor		02 Jul 2019	ECE	Communication Systems	3				Y	Regular
Mr. E. Raja	M.E.	AU	2009		Assistant Professor		02 Jul 2019	ECE	Power Electronics	2				Y	Regular
Mr. A. Manikanda Rakesh	M.E.	AU	2014		Assistant Professor		02 Jul 2019	ECE	Communication Systems	0				Y	Regular
Mr. P. Saravanakumar	M.E.	AU	2009		Assistant Professor		02 Jul 2019	ECE	Communication System	0				Y	Regular
Mr. V. Karthikeyan	M.E.	AU	2012		Assistant Professor		02 Jul 2019	ECE	Applied Electronics	2				Y	Regular
Dr. Raj Kamal	Ph.D.	IIT Delhi	1972		Professor	01 Jul 2014	01 Jul 2014	ECE	Embedded Systems	0				Y	Adjunct
Dr. N. Sundararajan	Ph.D.	University of Illinois	1971		Professor	01 Jul 2018	01 Jul 2018	ECE	Electrical Engineering	0				Y	Adjunct
Mr. Srinath B.K.	B.E.	Banglore University	1990		Assistant Professor		01 Jul 2020	ECE	Electronics	0				Y	Adjunct
Mr. B.K. Koushik	M.S.	Illinois Institute of technology	2008		Assistant Professor		01 Jul 2020	ECE	Electrical and Computer Engineering	0				Y	Adjunct
Dr.S. Nagarajan	Ph.D.	Bharthiar University	2018		Associate Professor		01 Jul 2020	ECE	Computer Science	0				Y	Adjunct

Dr. Vimalathithan R.	Ph.D.	AU	2013		Associate Professor	07 Sep 2018	07 Sep 2018	ECE	IoT	0				N	Adjunct
Dr. B. Kannapiran	Ph.D.	AU	2013		Associate Professor	07 Dec 2002	07 Dec 2002	ECE	Control Optimization	0				N	Regular
Dr. G. Dhanabalan	Ph.D.	AU	2016		Associate Professor	12 Jul 2017	12 Jun 2017	ECE	VLSI Design	2				N	Regular
Dr. S. Pradeep Narayanan	Ph.D.	NIT Trichy	2018		Associate Professor	25 Jun 2018	25 Jun 2018	ECE	VLSI Design	1				N	Regular
Dr. Krishnasamy M	Ph.D.	NIT Silchar	2018		Associate Professor	02 Jul 2018	02 Jul 2018	ECE	VLSI Design	1				N	Regular
Mr. V. Karutharaja	M.Tech.	NIT Trichy	2011		Assistant Professor		01 Jul 2011	ECE	VLSI Design	0				N	Regular
Ms. J. Abarna	M.Tech.	VIT	2015		Assistant Professor		12 Jun 2017	ECE	Mechatronics	0				N	Regular
Ms. A. Ahyisha Shabana	M.E.	AU	2017		Assistant Professor		12 Jun 2017	ECE	Communication Systems	0				N	Regular
Ms. Amutha S	M.Tech.	SASTRA University	2012		Assistant Professor		20 Jun 2018	ECE	Nano Electronics	1	--			N	Regular
Mr. Nirajkumar	M.Tech.	VIT	2010		Assistant Professor		05 Jul 2018	ECE	Nano Electronics	3	--			N	Regular
Mr. M. Thilagaraj	M.E.	AU	2010		Assistant Professor		01 Jul 2010	ECE	Industrial Engineering	0				N	Regular

Table B.5

5.1. Student-Faculty Ratio (SFR) (20/20)*(To be calculated at Department Level)*

No. of UG Programs in the Department (n): 1

No. of PG Programs in the Department (m): 1

No. of Students in UG 2nd Year= **240+8**No. of Students in UG 3rd Year=**240+22**No. of Students in UG 4th Year= **240+4**No. of Students in PG 1st Year=**12**No of Students in PG 2nd Year= **12****No. of Students = Sanctioned Intake + Actual admitted lateral entry students***(The above data to be provided considering all the UG and PG programs of the department)***S**=Number of Students in the Department = $UG1+UG2+UG3+PG1+PG2$ **F** = Total Number of Faculty Members in the Department (excluding first year faculty)**Student Faculty Ratio (SFR) = S / F**

Year	CAY (2021-2022)	CAYm1 (2020-2021)	CAYm2 (2019-2020)
u1	240+8	240+22	240+4
u2	240+22	240+4	240+1
u3	240+4	240+1	240+6
UG1	754	747	731
p1	12	12	12
p2	12	12	12
PG1	24	24	24
Total No. of Students in the Department (S)	754+24=778	747+24=771	731+24=755
No. of Faculty in the Department (F)	57	58	57
Student Faculty Ratio (SFR)	778/57=13.65	771/58=13.29	755/57=13.25
Average SFR	SFR = (13.65+13.29+13.25)/3 = 13.39		

Table B.5.1

5.1.1. Provide the information about the regular and contractual faculty as per the format mentioned below:

	Total number of regular faculty in the department	Total number of contractual faculty in the department
CAY	53	04
CAYm1	54	04
CAYm2	54	03

Table 5.1.1

5.2. Faculty Cadre Proportion (20/20)

The reference Faculty cadre proportion is 1(F1):2(F2):6(F3)

F1: Number of Professors required = $1/9 \times$ Number of Faculty required to comply with 20:1 Student-Faculty ratio based on no. of students (N) as per 5.1

F2: Number of Associate Professors required = $2/9 \times$ Number of Faculty required to comply with 20:1 Student-Faculty ratio based on no. of students (N) as per 5.1

F3: Number of Assistant Professors required = $6/9 \times$ Number of Faculty required to comply with 20:1 Student-Faculty ratio based on no. of students (N) as per 5.1

Year	Professors		Associate Professors		Assistant Professors	
	Required F1	Available	Required F2	Available	Required F3	Available
CAY (2021-22)	4.32	8	8.65	12	25.94	33
CAYm1 (2020-21)	4.28	6	8.57	13	25.70	35
CAYm2 (2019-20)	4.19	6	8.38	12	25.17	36
Average Numbers	RF1= 4.26	AF1=6.67	RF2=8.53	AF2= 12.33	RF3= 25.60	AF3=34.66

Table B.5.2

Cadre Ratio marks

$$= [1.56] + [1.44 \times 0.6] + [1.35 \times 0.4] \times 10 \approx 29.64 \text{ (Maximum to 20)}$$

List of Faculty Members in Each Academic Year

2021-22		
Sl. No.	Name	Designation
1	Dr. R. Nagaraj	Vice-Chancellor & Sr. Professor
2	Dr. M. Kalpana	HoD & Associate Professor

3	Dr. Kyung Tae Kim	Sr. Professor
4	Dr. M. Pallikonda Rajasekaran	Professor
5	Dr. P. Sivakumar	Professor
6	Dr. B. Subathra	Professor
7	Dr. Seshadhri Srinivasan	Professor
8	Dr. V. Hima Deepthi	Professor
9	Mr. P. Murugan	Associate Professor
10	Dr. B. Perumal	Associate Professor
11	Dr. A. Muthukumar	Associate Professor
12	Dr. A. Lakshmi	Associate Professor
13	Dr. T. Senthil	Associate Professor
14	Dr. T. Arun Prasath	Associate Professor
15	Dr. G. Vishnu Varthanan	Associate Professor
16	Dr. J. Deny	Associate Professor
17	Dr. J. Charles Pravin	Associate Professor
18	Dr. S. Bama	Associate Professor
19	Dr. V. Yogeshwar Chakrapani	Associate Professor
20	Dr. Shashi Kant Dargar	Associate Professor
21	Dr. Parivazhagan A.	Assistant Professor
22	Mr. K. Pandiaraj	Assistant Professor
23	Mr. K. Jeya Prakash	Assistant Professor
24	Ms. R. Sumathy	Assistant Professor
25	Mr. G. Karthy	Assistant Professor
26	Mr. P. Manikandan	Assistant Professor
27	Mr. Jenyfal Sampson	Assistant Professor
28	Mr. S.P. Velmurugan	Assistant Professor
29	Ms. J. Nithya	Assistant Professor
30	Mr. S. Kalimuthukumar	Assistant Professor
31	Dr. Ganeshaperumal D.	Assistant Professor
32	Dr. S. Diwakaran	Assistant Professor
33	Dr. K.S. Dhanalakshmi	Assistant Professor
34	Dr. M. Krishna Paramathma	Assistant Professor
35	Mr. S. Balaji	Assistant Professor
36	Mr. G. Ramesh	Assistant Professor
37	Ms. M. Vijayalakshmi	Assistant Professor
38	Ms. C. Swedheetha	Assistant Professor
39	Dr. Josephine Selle Jeyanathan	Assistant Professor
40	Mr. S. Sakthivel	Assistant Professor
41	Ms. N. Bhuvaneswary	Assistant Professor

42	Mr. Rajaram M.	Assistant Professor
43	Mr. M. Sakthimohan	Assistant Professor
44	Ms. Shanmuga Sundaraselvi B.	Assistant Professor
45	Mr. C. Jim Elliot	Assistant Professor
46	Dr. V. Muneeswaran	Assistant Professor
47	Ms. C. Vidya	Assistant Professor
48	Mr. S. Gnanasambanthan	Assistant Professor
49	Ms. S. Parameswari	Assistant Professor
50	Mr. E. Raja	Assistant Professor
51	Mr. A. Manikanda Rakesh	Assistant Professor
52	Mr. P. Saravanakumar	Assistant Professor
53	Mr. V. Karthikeyan	Assistant Professor
2020-21		
Sl. No.	Name	Designation
1	Dr. R. Nagaraj	Vice-Chancellor & Sr. Professor
2	Dr. M. Kalpana	HoD & Associate Professor
3	Dr. Kyung Tae Kim	Sr. Professor
4	Dr. M. Pallikonda Rajasekaran	Professor
5	Dr. P. Sivakumar	Professor
6	Dr. B. Subathra	Professor
7	Dr. Seshadhri Srinivasan	Professor
8	Mr. P. Murugan	Associate Professor
9	Dr. B. Perumal	Associate Professor
10	Dr. A. Muthukumar	Associate Professor
11	Dr. A. Lakshmi	Associate Professor
12	Dr. T. Senthil	Associate Professor
13	Dr. T. Arun Prasath	Associate Professor
14	Dr. G. Vishnu Varthanan	Associate Professor
15	Dr. J. Deny	Associate Professor
16	Dr. J. Charles Pravin	Associate Professor
17	Dr. S. Bama	Associate Professor
18	Dr. V. Yogeshwar Chakrapani	Associate Professor
19	Dr. Parivazhagan A.	Assistant Professor
20	Dr. A. Thenmozhi	Associate Professor
21	Mr. K. Pandiaraj	Assistant Professor
22	Mr. K. Jeya Prakash	Assistant Professor
23	Ms. R. Sumathy	Assistant Professor
24	Mr. G. Karthy	Assistant Professor
25	Mr. P. Manikandan	Assistant Professor

26	Mr. Jenyfal Sampson	Assistant Professor
27	Mr. S.P. Velmurugan	Assistant Professor
28	Ms. J. Nithya	Assistant Professor
29	Mr. R. Radeep Krishna	Assistant Professor
30	Mr. S. Kalimuthukumar	Assistant Professor
31	Dr. Ganeshaperumal D.	Assistant Professor
32	Dr. S. Diwakaran	Assistant Professor
33	Dr. K.S. Dhanalakshmi	Assistant Professor
34	Dr. M. Krishna Paramathma	Assistant Professor
35	Mr. S. Balaji	Assistant Professor
36	Mr. G. Ramesh	Assistant Professor
37	Ms. M. Vijayalakshmi	Assistant Professor
38	Ms. C. Swedheetha	Assistant Professor
39	Mr. P. Naveen	Assistant Professor
40	Dr. Josephine Selle Jeyanathan	Assistant Professor
41	Mr. S. Sakthivel	Assistant Professor
42	Ms. N. Bhuvaneshwary	Assistant Professor
43	Mr. Rajaram M.	Assistant Professor
44	Mr. M. Sakthimohan	Assistant Professor
45	Ms. Shanmuga Sundaraselvi B.	Assistant Professor
46	Mr. C. Jim Elliot	Assistant Professor
47	Dr. V. Muneeswaran	Assistant Professor
48	Ms. C. Vidya	Assistant Professor
49	Mr. S. Gnanasambanthan	Assistant Professor
50	Ms. S. Parameswari	Assistant Professor
51	Mr. E. Raja	Assistant Professor
52	Mr. A. Manikanda Rakesh	Assistant Professor
53	Mr. P. Saravanakumar	Assistant Professor
54	Mr. V. Karthikeyan	Assistant Professor
2019-20		
Sl. No.	Name	Designation
1	Dr. R. Nagaraj	Vice-Chancellor & Sr. Professor
2	Dr. M. Kalpana	HoD & Associate Professor
3	Dr. Kyung Tae Kim	Sr. Professor
4	Dr. M. Pallikonda Rajasekaran	Professor
5	Dr. P. Sivakumar	Professor
6	Dr. B. Subathra	Professor
7	Dr. Seshadhri Srinivasan	Professor
8	Mr. P. Murugan	Associate Professor

9	Dr. B. Perumal	Associate Professor
10	Dr. A. Muthukumar	Associate Professor
11	Dr. A. Lakshmi	Associate Professor
12	Dr. T. Senthil	Associate Professor
13	Dr. T. Arun Prasath	Associate Professor
14	Dr. G. Vishnu Varthanan	Associate Professor
15	Dr. J. Deny	Associate Professor
16	Dr. J. Charles Pravin	Associate Professor
17	Dr. S. Bama	Associate Professor
18	Dr. V. Yogeshwar Chakrapani	Associate Professor
19	Mr. Parivalagan A.	Associate Professor
20	Dr. A. Thenmozhi	Associate Professor
21	Mr. K. Pandiaraj	Assistant Professor
22	Mr. K. Jeya Prakash	Assistant Professor
23	Ms. R. Sumathy	Assistant Professor
24	Mr. G. Karthy	Assistant Professor
25	Mr. P. Manikandan	Assistant Professor
26	Mr. Jenyfal Sampson	Assistant Professor
27	Mr. S.P. Velmurugan	Assistant Professor
28	Ms. J. Nithya	Assistant Professor
29	Mr. R. Radeep Krishna	Assistant Professor
30	Mr. S. Kalimuthukumar	Assistant Professor
31	Mr. Ganeshaperumal D.	Assistant Professor
32	Dr. S. Diwakaran	Assistant Professor
33	Dr. K.S. Dhanalakshmi	Assistant Professor
34	Mr. M. Krishna Paramathma	Assistant Professor
35	Mr. S. Balaji	Assistant Professor
36	Mr. G. Ramesh	Assistant Professor
37	Ms. M. Vijayalakshmi	Assistant Professor
38	Ms. C. Swedheetha	Assistant Professor
39	Mr. P. Naveen	Assistant Professor
40	Dr. Josephine Selle Jeyanathan	Assistant Professor
41	Mr. S. Sakthivel	Assistant Professor
42	Ms. N. Bhuvaneswary	Assistant Professor
43	Mr. Rajaram M.	Assistant Professor
44	Mr. M. Sakthimohan	Assistant Professor
45	Ms. Shanmuga Sundaraselvi B.	Assistant Professor
46	Mr. C. Jim Elliot	Assistant Professor
47	Mr. V. Muneeswaran	Assistant Professor
48	Ms.C.Vidya	Assistant Professor

49	Mr. S. Gnanasambanthan	Assistant Professor
50	Ms. S. Parameswari	Assistant Professor
51	Mr. E. Raja	Assistant Professor
52	Mr.A.Manikanda Rakesh	Assistant Professor
53	Mr. P. Saravanakumar	Assistant Professor
54	Mr. V. Karthikeyan	Assistant Professor

5.3. Faculty Qualification (20/20)

$FQ = 2.0 \times [(10X + 4Y)/F]$ where x is no. of regular faculty with Ph.D., Y is no. of regular faculty with M. Tech., F is no. of regular faculty required to comply 20:1 Faculty Student ratio (no. of faculty and no. of students required are to be calculated as per 5.1)

	X	Y	F	$FQ = 2.0 \times [(10X + 4Y)/F]$
CAY	29	24	39.00	19.79
CAYm1	27	31	38.00	20.74
CAYm2	22	35	37.00	19.46
Average Assessment				20

Table B.5.3

2021-2022			
Sl. No.	Name	Qualification	Designation
1	Dr. R. Nagaraj	Ph.D.	Vice-Chancellor & Sr. Professor
2	Dr. M. Kalpana	Ph.D.	HoD & Associate Professor
3	Dr. Kyung Tae Kim	Ph.D.	Sr. Professor
4	Dr. M. Pallikonda Rajasekaran	Ph.D.	Professor
5	Dr. P. Sivakumar	Ph.D.	Professor
6	Dr. B. Subathra	Ph.D.	Professor
7	Dr. Seshadhri Srinivasan	Ph.D.	Professor
8	Dr. V. Hima Deepthi	Ph.D.	Professor
9	Mr. P. Murugan	M.E.	Associate Professor
10	Dr. B. Perumal	Ph.D.	Associate Professor
11	Dr. A. Muthukumar	Ph.D.	Associate Professor
12	Dr. A. Lakshmi	Ph.D.	Associate Professor
13	Dr. T. Senthil	Ph.D.	Associate Professor
14	Dr. T. Arun Prasath	Ph.D.	Associate Professor
15	Dr. G. Vishnu Varthanan	Ph.D.	Associate Professor
16	Dr. J. Deny	Ph.D.	Associate Professor
17	Dr. J. Charles Pravin	Ph.D.	Associate Professor
18	Dr. S. Bama	Ph.D.	Associate Professor

19	Dr. V. Yogeshwar Chakrapani	Ph.D.	Associate Professor
20	Dr. Parivazhagan A.	Ph.D.	Associate Professor
21	Dr. Shashi Kant Dargar	Ph.D.	Associate Professor
22	Dr. K. Pandiaraj	M.E.	Assistant Professor
23	Mr. K. Jeya Prakash	M.E.	Assistant Professor
24	Ms. R. Sumathy	M.E.	Assistant Professor
25	Dr. G. Karthy	M.Tech.	Assistant Professor
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27	Mr. Jenyfal Sampson	M.Tech.	Assistant Professor
28	Dr. S.P. Velmurugan	M.E.	Assistant Professor
29	Ms. J. Nithya	M.Tech.	Assistant Professor
30	Mr. S. Kalimuthukumar	M.Tech.	Assistant Professor
31	Dr. Ganeshaperumal D.	Ph.D.	Assistant Professor
32	Dr. S. Diwakaran	Ph.D.	Assistant Professor
33	Dr. K.S. Dhanalakshmi	Ph.D.	Assistant Professor
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37	Ms. M. Vijayalakshmi	M.Tech.	Assistant Professor
38	Ms. C. Swedheetha	M.E.	Assistant Professor
39	Dr. Josephine Selle Jeyanathan	Ph.D.	Assistant Professor
40	Mr. S. Sakthivel	M.Tech.	Assistant Professor
41	Ms. N. Bhuvaneswary	M.Tech.	Assistant Professor
42	Mr. Rajaram M.	M.Tech.	Assistant Professor
43	Mr. M. Sakthimohan	M.Tech.	Assistant Professor
44	Ms. Shanmuga Sundaraselvi B.	M.E.	Assistant Professor
45	Mr. C. Jim Elliot	M.Tech.	Assistant Professor
46	Dr. V. Muneeswaran	Ph.D.	Assistant Professor
47	Ms. C. Vidya	M.E.	Assistant Professor
48	Mr. S. Gnanasambanthan	M.E.	Assistant Professor
49	Ms. S. Parameswari	M.E.	Assistant Professor
50	Mr. E. Raja	M.E.	Assistant Professor
51	Mr. A. Manikanda Rakesh	M.E.	Assistant Professor
52	Mr. P. Saravanakumar	M.E.	Assistant Professor
53	Mr. V. Karthikeyan	M.E.	Assistant Professor

2020-2021			
Sl. No.	Name	Qualification	Designation
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5	Dr. P. Sivakumar	Ph.D.	Professor
6	Dr. B. Subathra	Ph.D.	Professor
7	Dr. Seshadhri Srinivasan	Ph.D.	Professor
8	Mr. P. Murugan	M.E.	Associate Professor
9	Dr. B. Perumal	Ph.D.	Associate Professor
10	Dr. A. Muthukumar	Ph.D.	Associate Professor
11	Dr. A. Lakshmi	Ph.D.	Associate Professor
12	Dr. T. Senthil	Ph.D.	Associate Professor
13	Dr. T. Arun Prasath	Ph.D.	Associate Professor
14	Dr. G. Vishnu Varthanan	Ph.D.	Associate Professor
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18	Dr. V. Yogeshwar Chakrapani	Ph.D.	Associate Professor
19	Dr. Parivazhagan A.	Ph.D.	Associate Professor
20	Dr. A. Thenmozhi	Ph.D.	Associate Professor
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35	Mr. S. Balaji	M.Tech.	Assistant Professor
36	Mr. G. Ramesh	M.E.	Assistant Professor

37	Ms. M. Vijayalakshmi	M.Tech.	Assistant Professor
38	Ms. C. Swedheetha	M.E.	Assistant Professor
39	Mr. P. Naveen	M.E.	Assistant Professor
40	Dr. Josephine Selle Jeyanathan	Ph.D.	Assistant Professor
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50	Ms. S. Parameswari	M.E.	Assistant Professor
51	Mr. E. Raja	M.E.	Assistant Professor
52	Mr. A. Manikanda Rakesh	M.E.	Assistant Professor
53	Mr. P. Saravanakumar	M.E.	Assistant Professor
54	Mr. V. Karthikeyan	M.E.	Assistant Professor

2019-20			
Sl. No.	Name	Qualification	Designation
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5	Dr. P. Sivakumar	Ph.D.	Professor
6	Dr. B. Subathra	Ph.D.	Professor
7	Dr. Seshadhri Srinivasan	Ph.D.	Professor
8	Mr. P. Murugan	M.E.	Associate Professor
9	Dr. B. Perumal	Ph.D.	Associate Professor
10	Dr. A. Muthukumar	Ph.D.	Associate Professor
11	Dr. A. Lakshmi	Ph.D.	Associate Professor
12	Dr. T. Senthil	Ph.D.	Associate Professor
13	Dr. T. Arun Prasath	Ph.D.	Associate Professor
14	Dr. G. Vishnu Varthanan	Ph.D.	Associate Professor
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26	Mr. Jenyfal Sampson	M.Tech.	Assistant Professor
27	Dr. K.S. Dhanalakshmi	Ph.D.	Assistant Professor
28	Mr. R. Radeep Krishna	M.Tech.	Assistant Professor
29	Mr. Ganeshaperumal D.	M.Tech.	Assistant Professor
30	Mr. S.P. Velmurugan	M.E.	Assistant Professor
31	Dr. S. Diwakaran	Ph.D.	Assistant Professor
32	Ms. J. Nithya	M.Tech.	Assistant Professor
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34	Mr. M. Krishna Paramathma	M.Tech.	Assistant Professor
35	Mr. S. Balaji	M.Tech.	Assistant Professor
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51	Mr. E. Raja	M.E.	Assistant Professor
52	Mr.A.Manikanda Rakesh	M.E.	Assistant Professor
53	Mr. P. Saravanakumar	M.E.	Assistant Professor
54	Mr. V. Karthikeyan	M.E.	Assistant Professor

5.4. Faculty Retention (10/10)

Total number of faculty retained (2020-2021)/ Total number of faculty= 51/54=94.4%

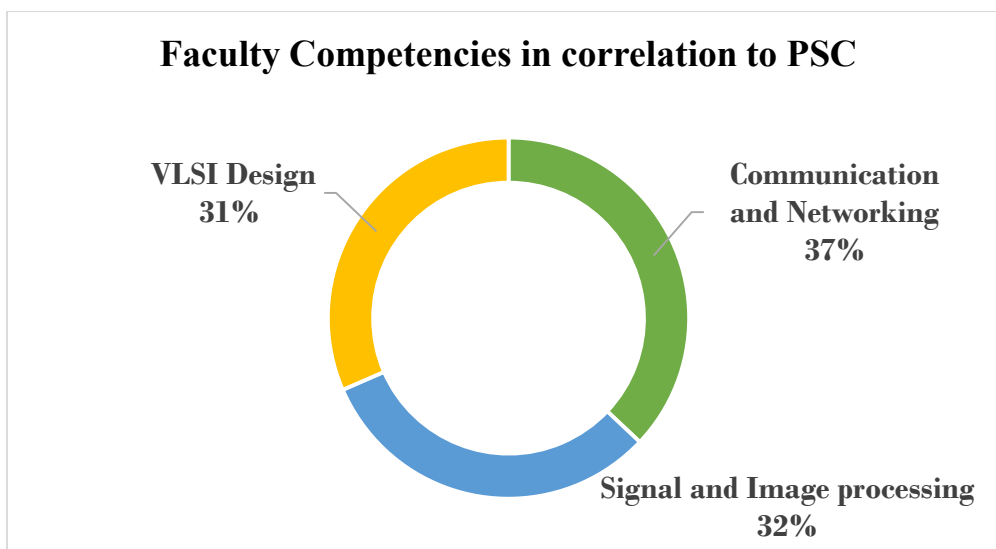
Sl. No.	Name	Date of Joining	Sl. No.	Name	Date of Joining
1	Dr. R. Nagaraj	29-10-2018	28	Dr. S.P. Velmurugan	01-07-2011
2	Dr. M. Kalpana	18-06-2018	29	Ms. J. Nithya	01-07-2011
3	Dr. Kyung Tae Kim	15-12-2014	30	Mr. S. Kalimuthukumar	01-07-2011
4	Dr. M. Pallikonda Rajasekaran	04-06-2003	31	Dr. Ganeshaperumal D.	01-07-2011
5	Dr. P. Sivakumar	01-10-2004	32	Dr. S. Diwakaran	01-07-2011
6	Dr. B. Subathra	03-10-2011	33	Dr. K.S. Dhanalakshmi	01-07-2011
7	Dr. Seshadhri Srinivasan	08-06-2013	34	Dr. M. Krishna Paramathma	07-07-2011
8	Dr. V. Hima Deepthi	01-07-2021	35	Mr. S. Balaji	14-07-2014
9	Mr. P. Murugan	01-12-2004	36	Mr. G. Ramesh	27-07-2015
10	Dr. B. Perumal	27-06-2006	37	Ms. M. Vijayalakshmi	27-07-2015
11	Dr. A. Muthukumar	11-06-2007	38	Ms. C. Swedheetha	02-05-2016
12	Dr. A. Lakshmi	13-06-2007	39	Dr. Josephine Selle Jeyanathan	01-06-2016
13	Dr. T. Senthil	09-06-2009	40	Mr. S. Sakthivel	20-12-2016
14	Dr. T. Arun Prasath	29-08-2009	41	Ms. N. Bhuvaneswary	12-06-2017
15	Dr. G. Vishnu Varthanan	01-07-2011	42	Mr. Rajaram M.	12-06-2017
16	Dr. J. Deny	01-11-2013	43	Mr. M. Sakthimohan	12-06-2017
17	Dr. J. Charles Pravin	29-12-2017	44	Ms. Shanmuga Sundaraselvi B.	29-07-2017
18	Dr. S. Bama	25-06-2018	45	Mr. C. Jim Elliot	25-06-2018
19	Dr. V. Yogeshwar Chakrapani	11-07-2018	46	Dr. V. Muneeswaran	02-07-2018
20	Dr. Parivazhagan A.	02-07-2019	47	Ms. C. Vidya	02-07-2019
21	Dr. Shashi Kant Dargar	01-07-2021	48	Mr. S. Gnanasambanthan	02-07-2019
22	Dr. K. Pandiaraj	02-06-2008	49	Ms. S. Parameswari	02-07-2019
23	Mr. K. Jeya Prakash	01-06-2009	50	Mr. E. Raja	02-07-2019
24	Ms. R. Sumathy	17-06-2009	51	Mr. A. Manikanda Rakesh	02-07-2019
25	Dr. G. Karthy	26-06-2009	52	Mr. P. Saravanakumar	02-07-2019
26	Mr. P. Manikandan	05-08-2009	53	Mr. V. Karthikeyan	02-07-2019
27	Mr. Jenyfal Sampson	16-08-2010			

5.5. Faculty competencies in correlation to Program-Specific Criteria (10/10)

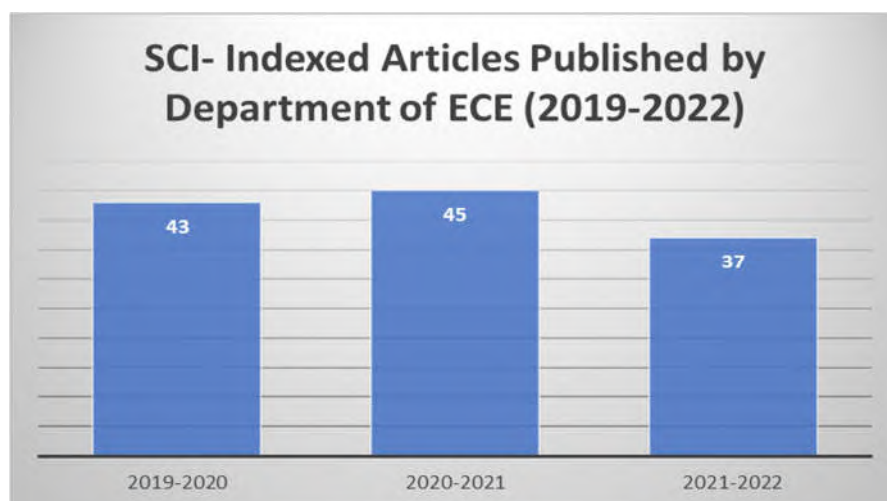
The faculty competency in the Department of ECE is measured contingent to the Advisory and guidelines set by the National Technical bodies such as AICTE, ABET, IEEE and other Associations/Societies of Electronics and Communication Engineering based on the quality

contribution by faculty in the Program Specific Criteria. The following are some of the highlights of the Programme Specific Competence of the faculty members:

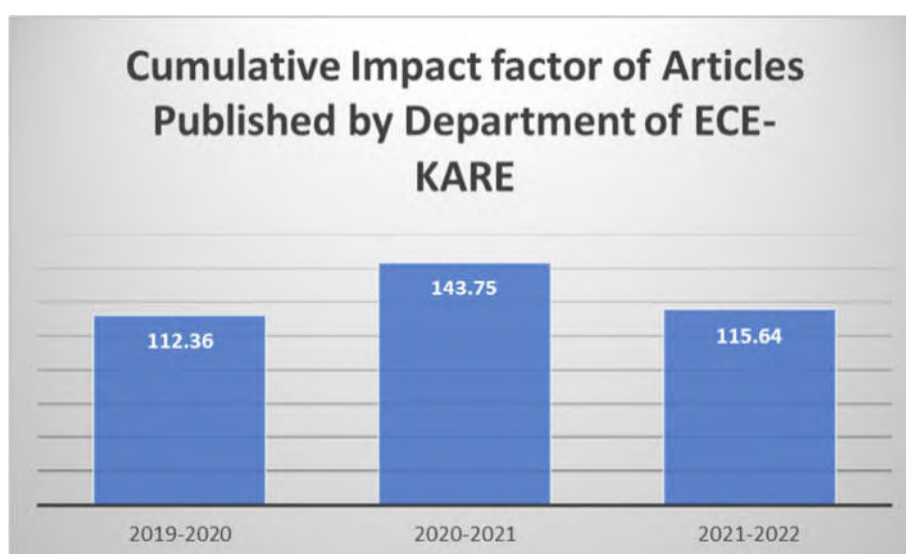
- The department has a variety in the subject specialization of the faculty member that leads to offering a variety of specializations, including thrust areas such as communication and networking, signal and image processing, and VLSI design, to name a few.
- Owing to the diversity in technical expertise and domains, It becomes more significant of the role of our faculty's specialization when our students perform and participate in several platforms such as contests, hackathons, project participation, and competitions of idea/technical paper presentations. Based on the domain knowledge and guidance required, the department is in a position to address and comply effectively. Furthermore, various specializations have created a relevant research ecosystem that resulted in collaborative and impactful research with other institutions/laboratories.
- Our faculty members have demonstrated excellent competence in research publications during the Assessment years by publishing their research findings in over 400 research articles ranging in high-quality and impact journals, reputed conference proceedings, and book chapters of reputed publishers.
- In addition, they are actively involved and contribute by their domain-specific expertise and services to the industries as consulting works.
- Since the publishing and contributions by our faculty in the peer-reviewed research articles and course-developmental activities for Teaching & Learning in specific domains correlate closely (as also inferred in statistics depicted in the chart Figure 5.5.1) to the departments' specialization and program-specific criteria, we do possess competency level in the establishment.



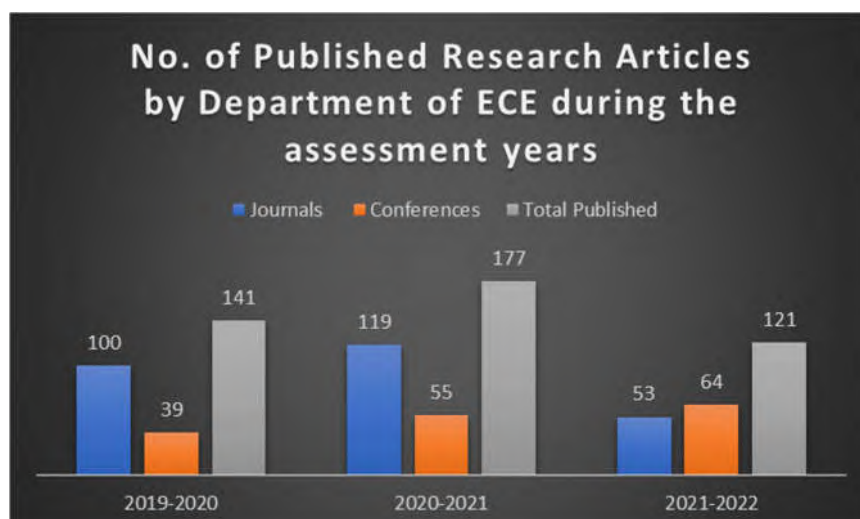
(a)



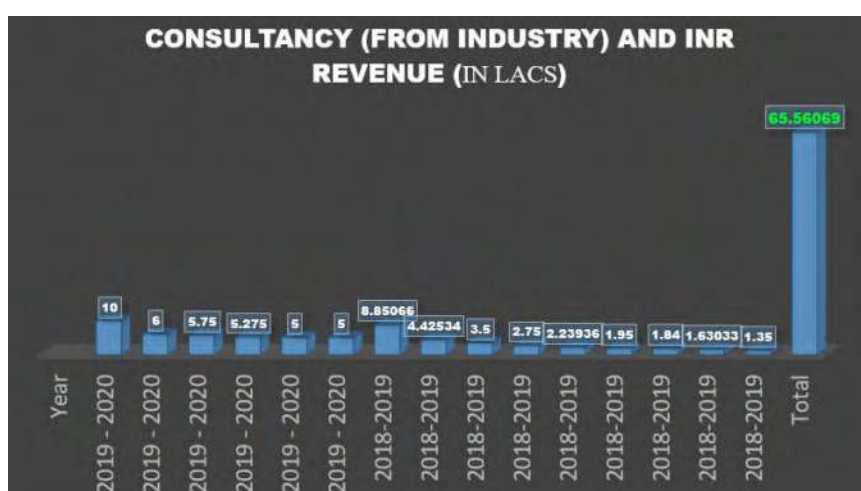
(b)



(c)



(d)



(e)

Figure. 5.5.1 Faculty Competencies in correlation to PSC (a) Specialization wise statistics (b) Research contribution in SCI-indexed Journals (c) Impact factors of published SCI articles (d) Research Articles published during NBA assessment years by the department (e) Consultancy services by the ECE faculty Members

The faculty competency level is measured considering the following factors and their contributions.






















❖ Specialization	❖ Laboratory established
❖ Research Publications	❖ Overseas collaboration and knowledge experience
❖ Research grant received in the thrust area	❖ Training and other programs attended
❖ Products developed	
❖ Course developed	

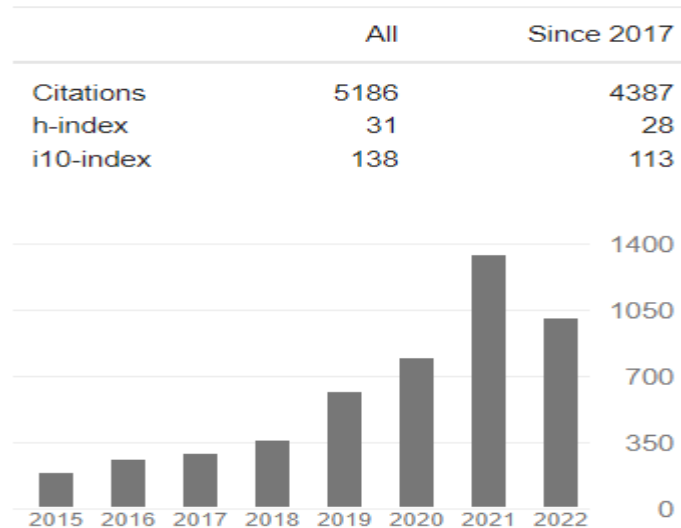
Table 5.1. Details of research and sponsored projects received during and out of assessment years

Year	Research Publications	Research grant received (INR)	Products developed	Laboratory established	Overseas visit	Patent
CAY	121	400000	1	1	0	17
CAYm1	193	28693669	6	0	0	11
CAYm2	144	33634830	2	0	1	7

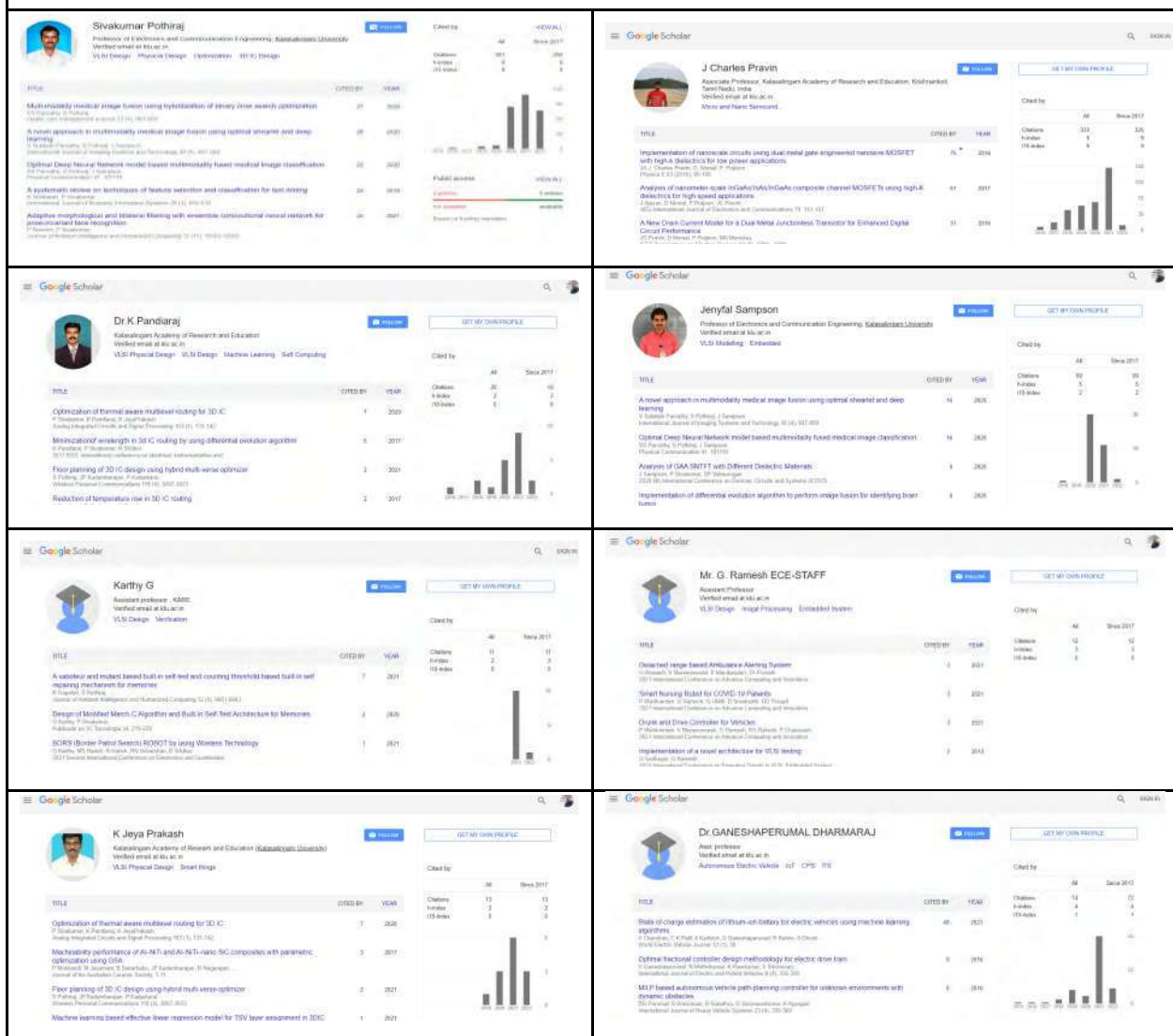
Table 5.2. Faculty google scholar citation profile depicting Research contributions and Impact

Department of ECE Google Scholar and Citations Profile

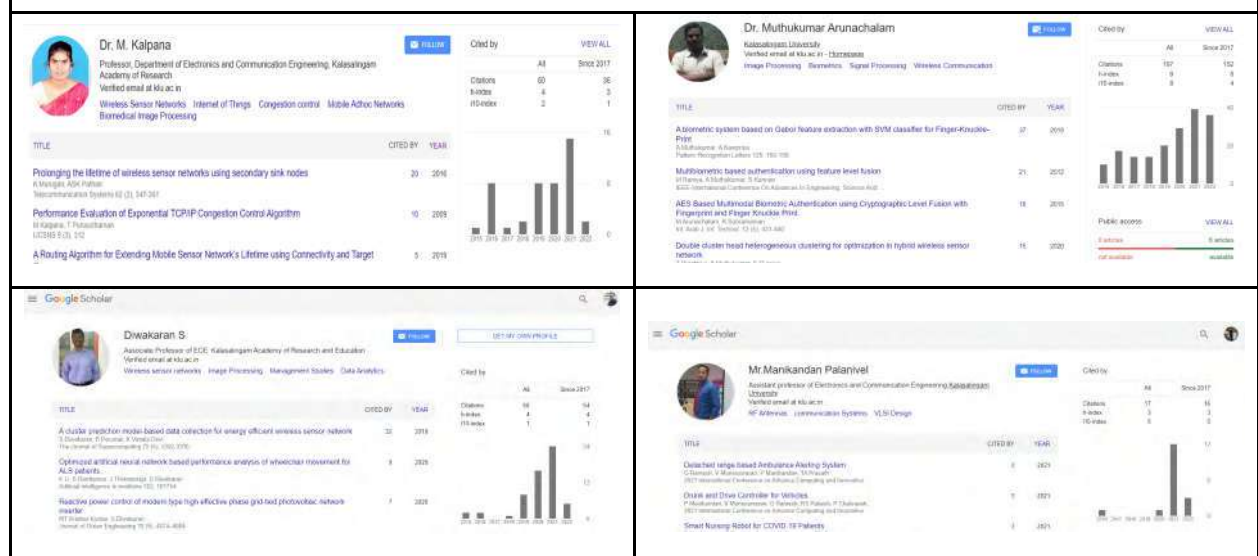
 <p>Department of ECE, KARE Kalasalingam Academy of Research and Education Verified email at klu.ac.in Electronics and Communic...</p> <p>FOLLOWING</p>		 Pallikonda Rajasekaran Murugan KALASALINGAM UNIVERSITY >	
		 Sivakumar Pothiraj Professor of Electronics and Co... >	
		 B. Subathra Professor, Kalasalingam University >	
		 Dr.V. Muneeswaran,M.E.,Ph.D., Associate Professor, Department... >	
		 Dr.B.Perumal KALASALINGAM ACADEMY OF... >	
		 Dr. Shashi Kant Dargar Kalasalingam Academy of Resea... >	
		 Dr. J. DENY Associate Professor, Department... >	
		 J. Charles Pravin Associate Professor, Kalasalinga... >	
		 Dr. A. Lakshmi Associate Professor, Electronics ... >	
		 Dr. Muthukumar Arunachalam Kalasalingam University >	
		 Sakthivel Sankaran Assistant professor of Biomedica... >	
		 Subbiah Parvathy Velmurugan Assistant Professor, Kalasalinga... >	
		 Jenyfal Sampson Professor of Electronics and Co... >	
		 Arun prasath.T Associate professor,Department... >	
		 N.BHUVANESWARY Assistant Professor >	
		 Dr. M. SAKTHIMOHAN Associate Professor / ECE, Kala... >	
		 Dr.K.Pandiaraj Kalasalingam Academy of Resea... >	
		 Dr. M. Kalpana Professor, Department of Electro... >	
		 Karthy G Assistant professor, KARE >	
		 Mr.Manikandan Palanivel Assistant professor of Electronic... >	



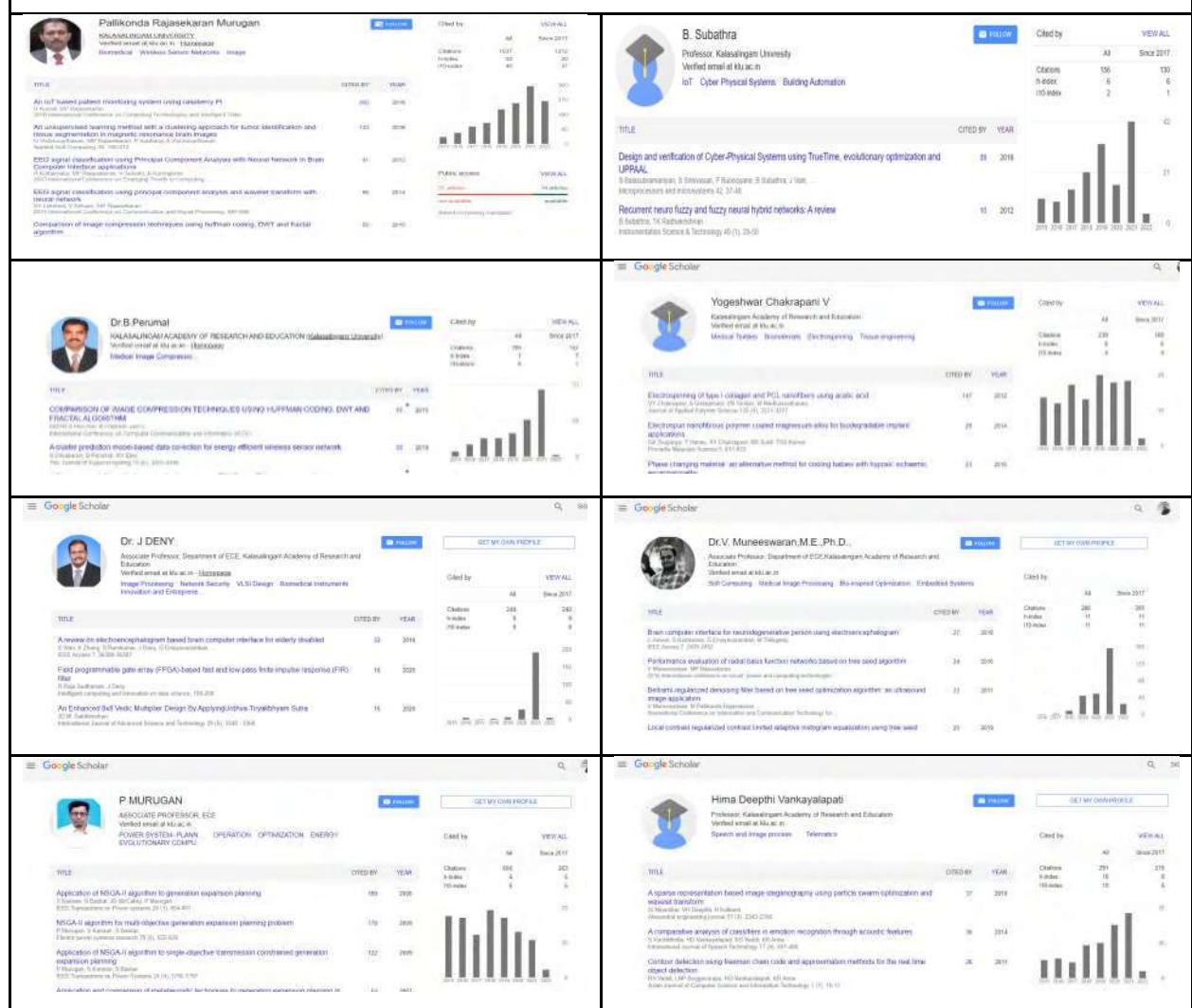
Faculty Google Scholar Citations Profiles- VLSI Design Group



Faculty Google Scholar Citations Profiles- Communication and Networking Group



Faculty Google Scholar Citations Profiles- Signal and Image processing Group



A. Specialization*Table 5.3. Faculty specialization*

Thrust Area	No of Faculty			No of Publications		
	CAY (2021- 2022)	CAYm1 (2020- 2021)	CAYm2 (2019- 2020)	CAY (2021- 2022)	CAYm1 (2020- 2021)	CAYm2 (2019- 2020)
Communication and Networking	20	20	21	13	48	62
Signal and Image processing	17	17	17	30	56	35
VLSI Design	16	17	16	10	29	3

B. Research Publications*Table 5.4. Faculty research publications*

Sl. No	Year	Publication in Journals (Impact and SCI Journals)	Publication in Proceeding (Conference Proceedings)
1.	CAYm1 (2021-2022)	53	64
2.	CAYm1 (2020-2021)	35	98
3.	CAYm2 (2019-2020)	33	67
Total		121	229

C. Course Developments*Table 5.5. Faculty competency in course development*

SI No	COURSE	DEVELOPED BY	THRUST AREA
1	Dr. M.Kalpana	Analog Integrated Circuits	Communication and Networking
2	Mr.Jenyfal Samson	Analog and Digital Electronics	Communication and Networking
3	Dr.A.Lakshmi	Analog Communication Systems	Communication and Networking
4	Mr. M. Sakthimohan	Analog Integrated Circuits	Signal and Image processing
5	Dr.A.Thenmozhi	Antenna and Propagations	Signal and Image processing
6	Mr. K. Pandiaraj	Basic Electronic Engineering	Communication and Networking
7	Mr. K.Jeyaprakash	Computer and Communication Networks	Communication and Networking

8	Mr. P. Naveen	Control Systems	Signal and Image processing
9	Dr.S.Bama	Cryptography and Network Security	Communication and Networking
10	Mr. G. Karthy	Data Communication and Networking	Communication and Networking
11	Mr. G. Karthy	Digital Circuits and System Design	VLSI Design
12	Ramesh G	Digital Electronic Principles	VLSI Design
13	Mr. M. Sakthimohan	Digital Electronics	VLSI Design
14	Dr.A.Muthukumar	Digital Image Processing	Signal and Image processing
15	Dr.V.Muneeswaran	Electromagnetic Waves and Transmission Lines	Signal and Image processing
16	K.Pandiaraj	Electronic Circuits	Communication and Networking
17	N.Bhuvaneshwary	Electronic Product Design and Its Manufacturing	Communication and Networking
18	Dr.A.Lakshmi	Fibre Optic Communication	Communication and Networking
19	K.Jeyaprakash	Fpga Based System Design	VLSI Design
20	Dr.M.Kalpana	High Speed Switching Architecture	Communication and Networking
21	Mr. M. Sakthimohan	Linear Integrated Electronics	Communication and Networking
22	Dr.V.Muneeswaran	Medical Imaging Techniques	Signal and Image processing
23	Mr. Jenyfal	Microcontrollers (Arduino) Programming	Communication and Networking
24	Mr. M. Sakthimohan	Microcontrollers and Programmable Digital Signal Processors	Communication and Networking
25	Mr. M. Sakthimohan	Microprocessors and Microcontrollers	Communication and Networking
26	Mrs. N.Bhuvaneshwary	Microwave Engineering	Communication and Networking
27	Jenyfal	Mobile Computing	Signal and Image processing
28	Dr.Diwakaran .S	Network Management	Communication and Networking

29	K.Jeyaprakash	Network Theory	Communication and Networking
30	P.Manikandan	Numerical Analysis Using MATLAB	Signal and Image processing
31	Dr.A.Muthukumar	Signals and Systems	Signal and Image processing
32	K.Pandiaraj	Vlsi Design Basics	VLSI Design
33	Dr.V.Muneeswaran	Vlsi Fabrication	VLSI Design
34	Dr.B.Perumal	Wireless Communication	Communication and Networking

D. Conferences Organized by the Faculty Members in the Thrust Areas

Table 5.7. Sum of National/International events organized by the faculty members

Academic	Lectures	Workshops	Conferences	Symposium	Others	Total
CAY year	5	3	0	1	2	11
CAYm1	10	11	0	1	0	22
CAYm2	12	16	1	1	0	30
Total	27	30	1	3	2	63


E. Conferences Organized by the Faculty Members in the Thrust Areas

Table 5.8. Details of National/International Conferences organized by the faculty members

Sl. No.	Conference Title	Organizer	Thrust Area	Funding
1.	Kalasalingam Global Conference KGC 2019	KARE	Global Conference	KARE

Our dynamic faculty members have represented the department in various National and International platforms events throughout the Assessment period. During the assessment year, their Participation has received appreciation and thankful acknowledgment to the departments. We are privileged to obtain global and national recognition of their contributions. These events include the category where our distinguished faculty members were invited, elected, or welcomed to share knowledge in and around countries. To highlight a few of them, selective pictures of the event are outlined in the department repository and gallery, and also, some are available over the free internet making the technical workforce feel motivated and encouraged. Hereunder is the some of photographs captured in dignified event participation (selective only):

Table 5.9. Photograph of events organized and Faculty members represented the department of ECE

 <p>DR. P Sivakumar, Professor ECE KARE at AICTE UKIERI (Technical Leadership Development Programme) in New Delhi</p>	 <p>DR. P Sivakumar, Professor ECE KARE at AICTE UKIERI (Technical Leadership Development Programme) in New Delhi</p>
<p>DR. P Sivakumar, Professor ECE KARE as Selected Participant in AICTE UKIERI -AY 2019-20 (Technical Leadership Development Programme) by AICTE, MHRD, GOI in New Delhi during 9th -12th December 2019.</p>	
	 <p>DR. CHARLES J PRAVIN, Faculty ECE KARE 9th -11th October 2019 at Bucharest, Romania</p>
<p>DR. Charles J Pravin, Associate Professor ECE KARE delivered oral presentation of his research innovation in 42nd International Semiconductor Conference in Bucharest, Romania, organised by National Institute of Research and Development in MicroTechnologies (& IEEE EDS) during 9th -11th October 2019</p>	



DR. JOSEPHINE J SELLE, Faculty
ECE KARE 28-31 Oct 2018 at Jeju,
Korea



Josephine Selle Jeyanathan
Assistant Professor, ECE Dept.
Kalasalingam Academy of Research & Education (KARE)
Krikkumbuli-626126
Mob. No. 9940786395

CERTIFICATE OF GRATITUDE

Dear Ms. Josephine Selle Jeyanathan,

I gracefully thank you for delivering a fruitful lecture about 'Breast Thermography and its Case Studies in South India' on 30.10.2018. The audiences who were undergraduate, graduate students, some post-doctorate researchers and professors who were interested in this biomedical application were greatly benefitted by your lecture.

Sincerely,

Dong-Guk Paeng, Ph.D.

Dong-Guk Paeng

Professor



DR. JOSEPHINE J SELLE, Faculty
ECE KARE with Dr. Dong-Guk Paeng

DR. Josephine J Selle, Faculty ECE KARE, delivered oral presentation of his research innovation in (a) IEEE TENCON Jeju Korea during 28-31 October 2018 (Left) and delivered lecture of her innovation at Jeju National University during 30th October 2018 (Right)

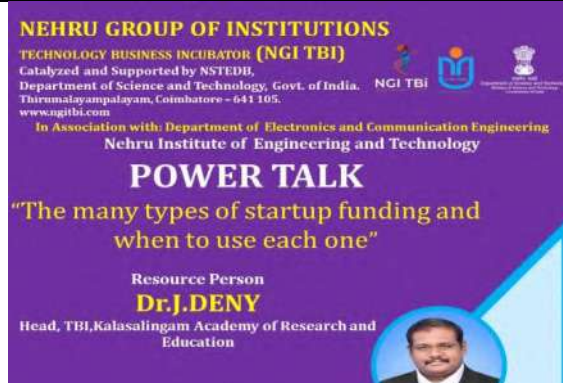


DR. A. MUTHUKUMAR, Associate Professor ECE
KARE at CII Higher Education Conclave 2019

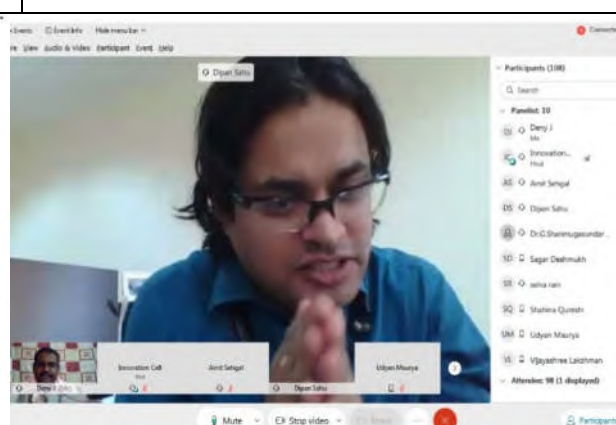
DR. A. Muthukumar, Associate Professor ECE KARE, represented University at CII Higher Education Conclave in 2019.



DR. J. Deny, Faculty ECE KARE, was honoured for his valuable insights on Entrepreneurship Development at IIC of Cape Institute of Technology on 16th March 2020.



DR. J. Deny, Faculty ECE KARE, was an invited expert for Power Talk on Start up and Funding Opportunities Nehru Group of Institutions on 16th March 2021.



DR. J. Deny, Faculty ECE KARE, was elected and invited as panelist innovation Ambassador in AICTE as a panelist for Interactive Session to provide a better understanding of the Innovation Ambassador program



Dr. V. Muneswaran, Faculty ECE KARE, addressing the questions in YESIST, IEEE Eventas invited Speaker in 2021

Dr. V. Muneswaran, Faculty ECE KARE, was invited as Jury for evaluating 12th YESIST innovations event, IEEE in 2021





	
<p>DR. A. Muthukumar, Associate Professor addressing and delivering talk on the Academic Regulations at KARE in 2020</p>	<p>Dr. B. Perumal and Dr. V. Muneswaran, Faculty ECE KARE, delivered Webinar as invited Speaker in 2021</p>
	
<p>One of the in-campus Event (virtual mode) on Low Power VLSI Design with invited resource person (Academician) Dr. Ramakomaragiri from Bennett University, India presenting the screen</p>	<p>One (selective only) In-campus Event in virtual mode Seminar on Business Process Automation with invited resource person from TNPL, India presenting the screen</p>
<p>Figure. 5.5.2 Photographs of event participation and organized by the Department Faculty members during the assessment years (Selective Only)</p>	

Table 5.10. Details of Various events organized from the department

S.No	Title	Resource Person	Date	Funding Agency
1	Applications of electronic circuits for an industrial perspective	Mr. B. Veerasamy, Associate Professor, Department of ECE, Hindusthan College of Engineering and Technology, Coimbatore.	25-10-2018	Internal
2	Numerical Analysis using Matlab	Dr. Mahesh Anand, CTO, SCS India, Chennai	22-10-2018	Internal

3	Two days technical workshop on RF Applications & Software Defined Radio Using NI LabVIEW & Hardware (NI-USRP)	Mr.Sathya Narayana, VI Solutions Bangalore.	26-10-2018	Internal
4	Workshop for Core Competent Electronics Engineers	Dr.Vimalathithan Director, Krish Tech, Coimbatore	25-10-2018	Internal
5	ENIAC2k18	Mr. Pitchai Muthu, Sr. Project Manager Pantech solutions, Madurai Mr. Balaji A, Lead , HCL Technology.	23-03-2018	Internal
6	Guest lecture on "Joy of vision in image processing"	Dr. Mansoor Roomi, Asso Prof, TCE, Madurai	19-09-2019	Internal
7	ASELCOME, ECE Inaguration Function	Dr. Mansoor Roomi, Asso Prof, TCE, Madurai	19-09-2019	Internal
8	Electronic Product Design And IOT	Mr. Dinesh, Mr.Ajay-E2a Technologies, Chennai	21-09-2019	Internal
4	Guest Lecture on Fiber Optics-Challenges, Applications & Future Prospects	Mr. Makesh Kannan, Lead, Reliance Jio Telecom, Mr. Moideen, RF Engineer, Reliance Jio Telecom, Mr. Rajan, Fiber Engineer, Reliance Jio Telecom	25-01-2020	Internal

5	One Day Workshop on Intellectual Property Rights	Mrs. N. Kumutha, Patent Analyst in MAAS Research Solutions LLP, Madurai	29-02-2020	Internal
6	National Level Faculty Development Program on “Recent Trends in Wireless and IoT-enabled Networks”	Dr. Venkatesh . S, MCA, PhD., Technical Head, Elysium Academy Private Limited, Anna Nagar, Madurai. Mr.SenthilKumar, CEO, Cofounder of Jiovio Healthcare Mr.MathanKumar, Product Lead, Mr.Deepak, Hardware Engineer, Mr.Raj Gokul, R & D Engineer, Mr.Vishnu, R & D Engineer, Elysium Academy, Anna Nagar, Madurai.	19th to 25th May, 2020	Internal
7	Training Program on “RECENT TRENDS ON INTELLIGENT THINGS (AI & IoT)	Mr. KIRAN D Technical Program Manager and Solution Architect (IoT) Mr. MURASOLISELVAN KARUNANITHI Director Engineering - Embedded, IoT and Automotive We Grow Technology, Malaysia	11-06-2020	Internal
8	Research Opportunities In IoT And Robotics	Dr.VIMALATHITHAN, Director Krish Tec, and Senior Software engineer, Robert Bosch,Bangalore	30-05-2020	Internal
9	Webinar on “DIGITAL PEDAGOGY & VIRTUAL LAB”	Mr.K.Jeya Prakash, AP/ECE, KARE	15.05.2020	Internal
10	Machine learning with Tensor flow	Dr. Kim , KARE	25.06.20 to 01.07.20	Internal

11	Effective and Attractive Documentation using Latex	Dr. A. Ramesh Babu, Department of Mathematics, School of Engineering, AMRITA Vishwa Vidhyapeetham, Coimbatore.	20-05-2020	Internal
12	Accept No Limits (Sharing Industrial Experience and PLM Technology)	Mr. Sangaran Nagendran, PLM Enovia Systems Developer, Faraday Future Inc, Los Angeles, USA	21-05-2020	Internal
13	Intellectual Property Rights- An Overview	Dr. J. Deny, President-IIC, KARE	29-05-2020	Internal
14	Different areas of Entrepreneurship	Mr. Hari, Director of Big Foxx Branding & Technology, Chennai	29-05-2020	Internal
15	Image Processing using MATLAB	Dr. S. Bama, Associate Professor-ECE/KARE, Dr. J. Josephine Selle, Assistant Professor-ECE/KARE	29-05-2020	Internal
16	Innovation Project Contest (Providing Solutions for COVID 19)	Dr. M. Kalpana, HoD/ECE & Dr. J. Deny, President- IIC/KARE	31-05-2020	Internal
17	Challenges on Agile methodology in Embedded system projects	Mr. Malaikannan Ramaraj, Embedded Software Engineer, Continental Automotive Singapore Pte. Ltd, Singapore	05-06-2020	Internal
18	BUILDING A NEW INTERNET	Mr. Wilson Bright, Co- founder, Block Survey, Bangalore	05-06-2020	Internal
19	CMOS-VLSI Design	Dr. S. KRISHNA PRIYA, Associate Professor, MUTHOOT INSTITUTE OF TECHNOLOGY &	08-06-2020	Internal

		SCIENCE,KOCHI, KERALA		
20	Web Development in 2020	Ms. P. Senthilkumari, Technical Consultant, Infosys bangalore	13-06-2020	Internal
21	Electronic Packaging	Dr. Arun Chandrasekar, Sr. Principal Engineer, Packaging Technologies & Design, Intel Corporation, Bangalore	15-06-2020	Internal
22	5G Technologies	V. Lingasamy, Team Lead, HCL Technologies, Bengaluru	17-06-2020	Internal
23	Job Opportunities in Solar PV Energy System	Dr. K. Pushpanathan, TIAS energy Pvt. Ltd.,Chennai	19-06-2020	Internal
24	Opportunities for an Engineer and the Skills needed	Mr. S. Sriram Gowtham, Blue Yonder, Bengaluru	20-06-2020	Internal
25	Fundamentals of Electromagnetic Waves and Antennas	Dr. Pragnan Chakravorty, Principle Director, Clique for Applied Research in Electronic Technology, Bhilai, India	21-06-2020	Internal
26	Controller Applications in Automobiles	Mr. Venkatesan Ponnusamy,Hardware Project Manager,Visteon Technical and Service Centre, Chennai	21-06-2020	Internal
27	Career Guidance on Pursuing LabVIEW	Mr. S. Sakthi Selva, Test Engineer,Tessolve Semiconductor Pvt. Ltd., Bangalore	21-06-2020	Internal

28	Security Challenges in The Pandemic Period And Solutions	Dr.Dhinakaran Nagamalai, Vice President, wireilla, Sydney, Australia	05-05-2020	Internal
29	Emerging Areas in SoC,M2M and Internet of Things	Dr. Raj Kamal, Electronics and Communication Engineering Department, Prestige Institute of Engineering Management and Research, Indore, Madhya Pradesh.	18-05-2020	Internal
30	Scope of Automation in Future Industries	Er. Harish Ravi, Biass, Koyamputhoo	22-06-2020	Internal
31	Cyber Security in IoT	Mr. David N Samuel, Principal Security, Engineer, Accenture (Security), UK	22-06-2020	Internal
32	Innovation to Reality	Mrs. S. Muthulakshmi, Freelancer	24-06-2020	Internal
33	Role of IoT engineer in Post Covid	Dr. K. S. Balamurugan, Associate Professor/ECE,Bharath Institute of Engg. & Tech., Hyderabad	25-06-2020	Internal
34	Cupcarbon- A Simulator Tool For Industry 4.0	Dr.Vimalathithan, Director Krish Tec, and Senior Software engineer, Robert Bosch,Bangalore	26-06-2020 to 28-06-2020	Internal
35	Introducing the World of Analog IC Design	Dr. Immanuel Raja, AP-AVIONICS/IIST	29-06-2020	Internal
36	Low Power VLSI Design Techniques	Dr. Rama Komaragiri, Dean Academic Affairs, Professor, Dept. of ECE,School of Engineering and Applied Sciences,Bennett University, UP	03-07-2020	Internal

37	Finishing House Automation	V.Thiruppathy, Deputy General manager (Instrumentation), TamilNadu Paper Limited	15.07.2020	Internal
38	Role of supply chain Management in Industries	Mr.S.Rajkumar, IT Analyst, SEAGATE Technology, California, United States	16.07.2020	Internal
39	Android mobile application development and testing	Mr.V.Akilan,IT analysy & programmer,ISPP global,martthandam,alumni 2009-13	25.07.2020	Internal
40	Decode your career path	Mrs.Selva nayagi Sundaram,Functional business analyst,unisys deucsthland Gmbh,germany	27.07.2020	Internal
41	Overview of HW product development life cycle	Mr.S.Sinkaravelan,Senior Technical manager,HCL chennai,alumni 1999-2003	25.7.2020	Internal
42	Industry 4.0	Mr.S.selvakumar,Assistant manager,FAURECIA,Bangalore	26.7.2020	Internal
43	Flexible Electronics	Mr.Vithyasaagar,R&D Manager,Glabs Innovations,Incubation centre,IIT Guwahati. Alumni 2008-12	29.07.2020	Internal
44	Communication skills for Engineers (webinar)	Ms.Ammu Maria Ashok, Faculty & Trainer, Department of English, Mar baselios college of engineering & Technology	28.07.2020	Internal

45	Faculty Development Programme on “Analog and Digital Electronics with Programming Languages”	Nanochip Solutions	17th- 30th - 07- 2020	Internal
46	Embracing the change - Simple and Impactful ways to manage the stress and anxiety during the COVID phase(webinar)	Ms. ISHITA IYER, trainer & Counsellor, TEDX Speaker, Mumbai	30.07.2020	Internal
47	IEEE MEMBERSHIP & RESOURCES (webinar)	Dr. Lance Chun Che Fung, Emertius professor, Murdoch University, Australia	11.08.2020	Internal
48	IC layout challenges (career guidance webinar)	Mr. Vishnu Sankar, Design Engineer, Elvego circuits bangalore, alumni 2007-11	24.07.2020	Internal
49	Webinar on Next step for success	Prof. Thirukoshtiyur K Manikandan, Director, Grow your self organization	25.07.2020	Internal
50	Do's and Don't's in Engineering	Mr. S. Arvind, Consultant, Mirage Telecom	31.07.2020	Internal
51	Python for Image Processing	Dr. V.B. Sundarabalan, Director Geosensing imaging consultancy, Former research scientist, NASA GSFC, alumni 2005-2007	31.07.2020	Internal
52	Importance of core competency for Electronic Engineer	Mrs. P. Karthiga, Test Engineer, Tessolve semiconductors, Bangalore, alumni	1st August 2020	Internal
53	Project way finder to career opportunities for Electronics Engineering Graduates	Mr. C.V. Renjith, Product Designer, Philips India Ltd, Pune	05-08-2020	Internal

54	A National Level Technical Virtual Symposium & Non Technical Extra Vagenza Eniac & Espresso 2k20	Mr.Allen Antony, Principle Engineer,Sonos, Boston, US. Prof. Korhan Cengiz, Farabi Faculty coordinator, Dept of Telecommunications,Trakya University, Edirne, Turkey	08.08.2020	Internal
55	“NEXT GENERATION NETWORKS”	Mr. R.Vasu, Senior IT – Training Consultant	9th-October-2020	Internal
56	AICTE Sponsored one Week Short Term Training Programme (STTP)s on "Cyber Physical Systems (CPS) Design Techniques and Applications"	Abdul Wadood	20th July 2020 to 25th July 2020 (Phase I),	AICTE
57	AICTE Sponsored one Week Short Term Training Programme (STTP)s on "Cyber Physical Systems (CPS) Design Techniques and Applications"	Mr. Sudhakar B,Technical lead -AWS Solution Architect,Wegrow Technology. Mr. Arunsenthil,Technical Lead in Networking TestingWegrow Technology. Mr. Narendra Babu P, Technical Architect -BNY Mellon Technology, Chennai Dr Sankaraiah Sreeramula, Ph.D, Head Data Scientist APP Sinar Mas, Indonesia Mr. Kanagaraj J Senior QA specialist, Grow labs Technology Pvt Ltd, Chennai	27th July 2020 to 1st Aug 2020 (Phase II),	AICTE
58	Faculty Development Program On Artificial Intelligence & Deep Learning	1. Dr.V.Sowmaya, Associate Professor, Amrita Vishwa Vidyapeetham 2. Dr.Raj Kamal, Ph.D. (IITD)Professor/ECE Prestige Institute of	31-12-2020 to 07-01-2021	AICTE

		<p>Engineering Management and Research, Indore, Madhya Pradesh.</p> <p>3. Dr.Kyung Tae Kim Senior Prof./ECE KARE 4. Shivam Sham Agrawal Associate Professor/ETE Pankaj Laddhad Institute of Technology and Management Studies, Buldana 5. Dr.D.Anil Kumar Assistant professor Pace institute of technology and sciences, Ongole 6. Mr. B. Premjith Faculty Associate (CEN), Amrita Vishwa Vidyapeetham 7. Dr. I. Sheik Arafat Associate Professor and Head/ECE Mohamed Sathak Engineering College, Kilakarai, 8. Dr Lalit Mohan Goyal Assistant Professor/ CE J.C. Bose University of Science, and Technology, Haryana</p>		
59	Electrocomm Vol 12 Issue 23	Prof. Korhan Cengiz, Dept of Telecommunications, Trakya University, Edirne, Turkey	07-12-2020	Internal
60	IETE SPONSORED Industrial Lecture on SAP Orientation Program – Next level in 2021	<p>1. Mr. Balamuralikrishna</p> <p>2. Mr. Abishek Kumar Singh</p> <p>3. Mr. Sunil kumar</p> <p>4. Mr. Sivasaikumar Programmer Analyst Trainee, CTS</p>	02-01-2021	Internal
61	IEEE SPONSORED WRITING A PROJECT PROPOSAL FOR FUNDING	Dr. J. Deny, President, MHRD Innovation Cell-KARE	12-01-2021	IEEE

62	IEI SPONSORED IIoT AND DIGITAL TRANSFORMATION	Mr. K. Nikhil Vannan, Design Engineer, Kalycito InfoTech Pvt Ltd, Coimbatore	08-01-2021	IEI
63	Industrial Lecture on AI For Smart Devices	Dr.Athif sha,Founder,ABE semiconductors	05-Jan-20	Internal
64	A carrer guidance webinar "Machine learning and its industrial role in association with THE INSTITUTION OF ENGINEERS (INDIA)	Ms. Baslis Divya, Data Associate, Amazon, Alumni - ECE, KARE	7th January 2021	IE
65	Workshop On Android Mobile Application Development In Association With Institution Of Engineers (India)	Mr. V.C.Agilan, Alumini (2009-2013) IT anlayst ISPP Global	10th January 2021	Internal
66	One day National level workshop on Data Engineering & Big Data analytics with Backend Serverless system	Mr. Ajish Ramachandran, Senior Data eng,Amazon US & Mr Mayank Sinha (Alumni) Software Engineer MTS,Salesforce, Hyderabad	11-Jan-21	Internal
67	Embedded system development cycle (IEI)	M Shanmugam System Engineer Coimbatore Bosch	05-Jan-21	Internal
68	Faculty Training Program	Nanochip Solutions	8th - 13th Jan 2021	Internal

69	National level Industrial Lecture On “How The Latest Technology Impact Our Current Industry?”	Mr.C.Navagridhar Ramsait, MEAN Stack Developer Farshore	13-01-2021	Internal
70	“Introduction To Rtl Design For Combinational And Sequential Circuits And Opportunities In Semiconductor”	S Rengaraja Southkorea	11-Jan-20	Internal
71	IPR Know About Patent Filing	Dr. J. Deny, President, MHRD Innovation Cell-KARE	13-01-2021	Internal
72	Dr. A P J ABDUL KALAM YOUNG SCIENTIST AWARD (Sponsored by IETE)	Dr. J. Deny, President, MHRD Innovation Cell-KARE	19-03-2021	Internal
73	Webinar on Inverters in Electronic Cars and Bootloader in Automotive Industry	Mr. Peri N Thiagaraj (1998-2002 ECE), Feature Group Lead, Bootloader, Valeo Siemens eAutomotive GmbH, Germany	20th March 2021	Internal

74	Workshop on applications of Industry info in Automotive Electronics based on MCU8051IDE - An open source tool	Mr. Muthurasu Beemarajan (2000-2004 ECE) Senior Project Manager, Robert Bosch Engineering and Business Solution Pvt Ltd Coimbatore, Mr. Mukuntharaj C AP/Karpagam college of Engineering, Coimbatore	12th June 2021	Internal
75	Handson FDP on Statistical and Machine Learning ASIC Design Flow with Embedded IoT	Dr.Nagarajan, Ms. Nagma Ms. Vijayashree Ms. Srinath Ms. Shilpa	11-16 June 2021	Internal
76	A career guidance webinar on " International Trends and Innovation in Career Guidance"	Ms.S.Parkavi	27.06.2021	Internal
77	YUVA - 2k21	Internal	26.02.2021	Internal
78	National Level Webinar On Ideation to Start-Up Generation	Dr. J. Deny, (Alumni 2010-12), President, Institution Innovation Council-KARE,	07.07.2021	Internal
79	Design ideas for Capstone Project	Dr. N. Pothirasan, Director, Hashan Medicare, Rajapalayam	12-07-2021	Internal
80	SAP Orientation Program	Mr.M.Prakash (Alumni 2016-20) Program Analyst CTS, Mr.Harikrishnan (Alumni 2016-20), Program Analyst, CTS	17-07-2021	Internal

81	Career Planning and Development	Ms.Meghna (Alumni 2015-19), Application Developer, Wipro Mr.V.Sravan Kumar (Alumni 2015-19), Project Engineer, Wipro	24-07-2021	Internal
82	DRAWING COMPETITION 2021	NIL	20-07-2021	Internal
83	Engineers choosing job as pilot	Mr Libin Koshy, Airline Pilot Air Canada	th July 2021 [Sunday]	Internal
84	“Developments and opportunities in Networking”	Er.Vishnu Ravichandran System Engineer Netcon Technologies India Pvt. Ltd. [KARE-ECE-ALUMNI-2014-18]	24-07-2021	Internal
85	Fundamentals of Electronics	Er.U. Uma Maheswaran, Managing Director, Spectrum Info Tech, Virudhnagar	11.12.2021	Internal

E. International Collaboration

Table 5.11. Details of international collaborators associated with faculty members

Sl. No.	Collaborator	Collaboration	Collaboration Outcome		
			Publications	Proposals	Events
1	SHAO FANG,School of Economics and Management, Zhongyuan University of Technology, Zhengzhou 450000, China, 2School of Materials, The University of Manchester, Manchester M13 9PL, U.K.	Research	1		
2	AHMED FAEQ HUSSEIN,Biomedical Engineering Department, College of Engineering, Al-	Research	1		

	Nahrain University, Baghdad 10072, Iraq				
3	XIN WAN,Huazhong University of Science and Technology, Wuhan, China	Research	1		
4	KEZHONG ZHANG,Huazhong University of Science and Technology, Wuhan, China	Research	1		
5	AHMED FAEQ HUSSEIN,Al- Nahrain University, Baghdad 10072, Iraq	Research	1		
6	Victor Hugo C. de Albuquerque,Universidade de Fortaleza, Fortaleza, Brazil	Research	1		
7	Deepesh Upadrashta, Yaowen Yang,School of Civil and Environmental Engineering, Nanyang Technological University, Singapore 639798.	Research	1		
8	Jassiel R. Rodriguez, Vilas G. Pol,Davidson School of Chemical Engineering, Purdue University, West Lafayette, Indiana 47907, United States	Research	1		
9	Wenping Tang, Aiqun Wang,Jilin University China	Research			
10	Al-Sakib Khan Pathan,Department of Computer Science and Engineering Independent University, BANGLADESH	Research	1		
11	Dr Korhan Cengiz,Department of Telecommunications , Trakya University, Edrine, Turkey,220304	Research	2		

F. Editorial Services:

Table 5.12. Details of faculty members as Guest editors to National/International journals

Sl. No	Name of the faculty	Journals
1.	Dr. M. Pallikonda Rajasekaran	Contrast Media & Molecular Imaging, Hindawi

		Guest editor for Scientific Programming, Hindawi
2.	Dr.V.Muneeswaran	Guest Editor for Applied Soft Computing Journal, Elsevier. Guest editor for Scientific Programming, Hindawi
3.	Dr.M.Kalpana	VSRD International Journal of Electrical, Electronics & Communication Engineering
4.	Dr.M.Kalpana	International Journal of IoT and Sensor Networks.

Journal Reviewer:

Table 5.13. Details of faculty members acted as potential reviewers to various peer reviewed SCI journals

S.No	Name of the faculty	Journals
1	Dr.A.Muthukumar	Elsevier Journal- “Biomedical Signal Processing & Control”
		Elsevier Journal-“ Microprocessors and Microsystems”
		IET Journal- “Biometrics”
		Inderscience Journal-“The International Journal of Computer Aided Engineering and Technology”
		IEEE Journal-“IEEE Transactions on Systems, Man and Cybernetics: Systems”
		Bentham journal- “International Journal of Sensors, Wireless Communications and Control”
		Taylor and Francis Journal- “IETE Technical Review Journal”
		Springer Journal –“Wireless Personal Communications
		Springer Journal –“Multimedia Tools and Applications”
2	Dr.V.Muneeswaran	Journal of Testing and Evaluation.
		Circuit World
		Wireless Communications and Mobile Computing
		Contrast Media & Molecular Imaging
		Journal of Healthcare Engineering
		International Journal of Machine Learning and Cybernetics
		Scientific Programming
		Wireless Personal Communications
		Arabian Journal of Geosciences

		Microprocessors and Microsystems
		Multimedia Tools and Applications
		Future Generation Computer Systems
		Cognitive Systems Research.
3	Dr.K.Pandiaraj	Wireless Personal Communications
		IEEE Systems Journal
		WORK: A Journal of Prevention, Assessment & Rehabilitation
		Journal of Testing and evaluation
		Journal: Scientific Programmin
		Journal of Healthcare Engineering
		Contrast Media & Molecular Imaging
		Computational Intelligence and Neuroscience
		Arabian Journal of Geosciences
4	Dr.M.Kalpana	The Journal of Engineering
		International Journal of Digital Multimedia Broadcasting
		Journal of PLOS ONE
		Journal of Circuit World
		Journal of JEET
		Reviewer for AICTE Student Learning Assessment (SLA) Project.
5	Dr. D. Ganeshaperumal	Hindawi Scientific Programming
6	Dr. K. S. Dhanalakshmi	IEEE ACCESS
7	Dr. V. Hima Deepthi	International Journal of Intelligent Systems
8	Dr. B.Perumal	Multimedia Tools and Applications

Doctoral Committee Member:

Table 5.14. Details of faculty members as Doctoral Committee members to PhD scholars of various universities

S.No	Name of the faculty	Name of the University	Number of scholars
1	Dr. M.Pallikonda Rajasekaran	Anna University, Chennai	10
2	Dr.P.Sivakumar	Anna University, Chennai	10
3	Dr.A.Muthukumar	Anna University, Chennai	4
4	B.Perumal	Anna University, Chennai	3
5	Dr.J.Charles Pravin	Anna University, Chennai	1
6	Dr.M.Kalpana	Anna University, Chennai	1
7	Dr.Josephine Selle J	Anna University, Chennai	1

5.6. Innovations by the Faculty in Teaching and Learning

A. Statement of clear goals, use of appropriate methods, significance of results, effective presentation (4)

Goal and Objective of the Innovative teaching in the Department of ECE KARE:

As a department, in our view, teaching is a significant and rewarding part of education. In our research-driven careers, mostly it is overlooked that our future legacy is as much in our contributions to the progression of science as educationalists. Though occasionally regarded as related but dissimilar tasks, research and teaching are two faces of the same coin. We believe that great in research makes exciting things to share; and that expertise in teaching so that things we share sound stimulating and compelling. We attempt to be sensitive to the fact that students come to a course with different backgrounds and skill levels. The challenge in teaching is to coach weaker students while not losing the attention of quicker students without squandering their initial enthusiasm for higher-level discussions.

The Faculty at the Department of ECE always strive to provide the perception behind the techniques and theories being presented and draw the students' attention to the fundamental concepts underlying the materials taught. Besides, when presenting basic mathematical concepts or abstractions, we seek to identify the potential applications of these concepts in the solution of real-world problems. It helps us attract and support students' interest, and that, in our view, is a crucial element of effective teaching. One of our goals as educators is to get students to think critically, instilling a taste for challenging what they are taught. As engineers and scientists, we spend most of our time challenging established or perceived facts, and this is arguably the way we mature and manage to solve problems. Furthermore, we favor an accessible and interactive teaching style that invites student participation. Guided class discussions that encourage the students to think of possible solutions to a given problem is an excellent tool for us.

We do not think this is a coincidence but a manifestation of the fact that it takes years to become an excellent educator. We understand our limitations and strive to become better in teaching and Learning. We encourage students to express their comments about their progress, our teaching ability, and how the course is structured by providing them the opportunity to evaluate these aspects formally. It is always a positive experience to address their concerns and make changes as needed. We put significant effort into creating an enjoyable classroom environment and usually develop friendly relationships with students, which helps get valuable feedback. We firmly believe in wedding research with the university's educational vision at both in graduate and the undergraduate levels. Even though undergraduates have to be inculcated with the field's core concepts in the short span of four years, we think they greatly benefit from closer interaction with faculty.

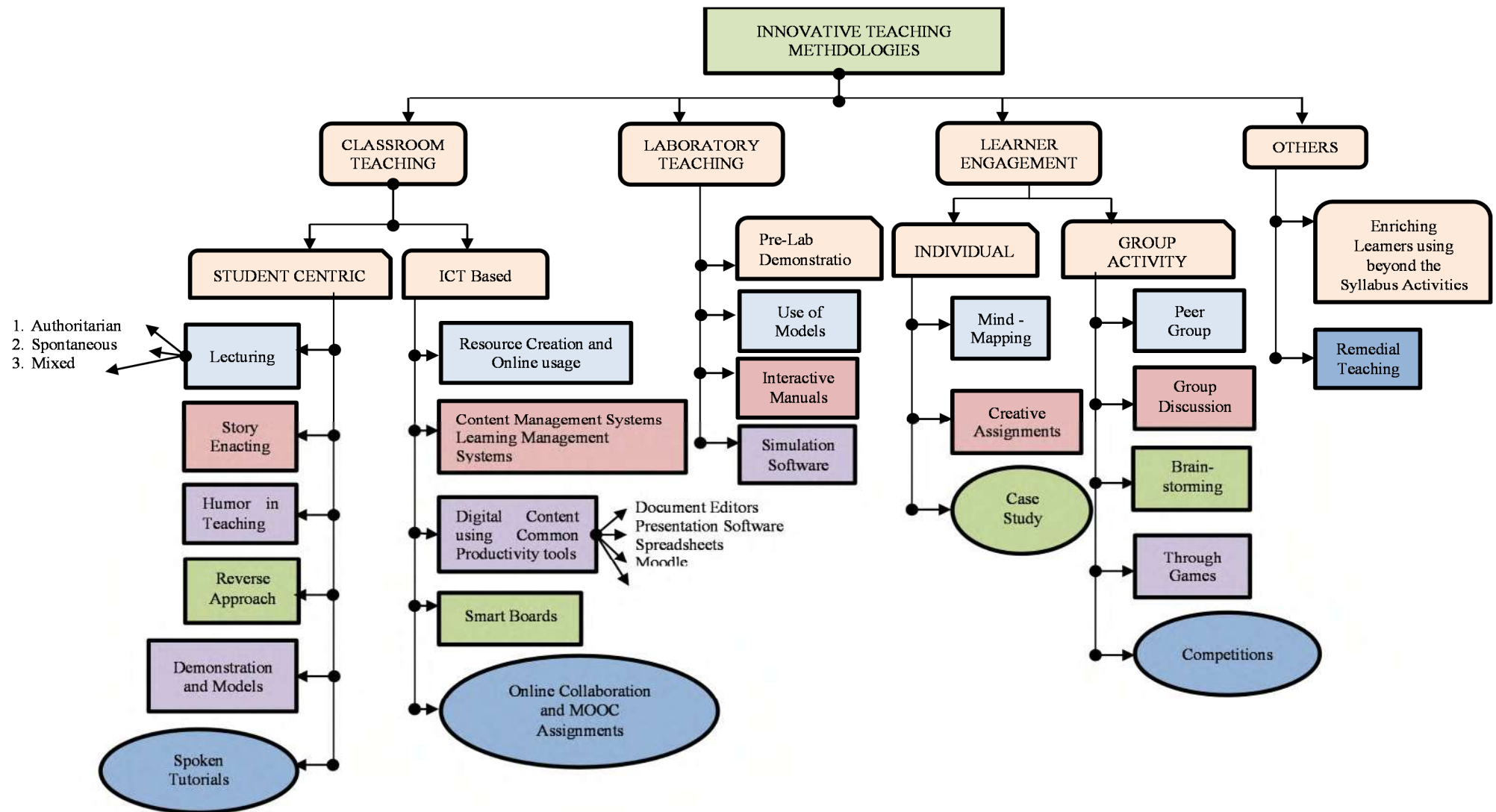


Figure 5.6.1. Various teaching methodologies used for teaching electronics engineering in the Department

The Department has effective practices and teaching methods for efficient use with computer-based technology solutions and integration with conventional methods. As each method results distinctly in the teaching-learning process at Higher Education; therefore, we believe that the innovative teaching methods not only organize the teacher's assignment but also significantly impact the student learning towards the engineering courses. It becomes crucial to develop and transfer the subject information and the students' consistent assessment of acquired knowledge. The Integration of Communication and Technology (ICT) based teaching methods help to define, create, and update subject matter and efficiently disseminate information from the teachers. Incorporating the simulation approach in conjunction with physical experiments also significantly improves the students learning in the laboratory with appropriate pre-laboratory demos, innovative models, and manuals. The remedial classes and experience sharing of renowned subject experts also help in building the same foundation among the student group of the same class. Figure 5.6.1 shows the categorisation of various methodologies used for engineering teaching in the Department.

The lectures as a teaching method are evident because they narrate directly to the real skills of the teacher (lecturer) than to the teaching method itself. We categorize various electronic engineering education teaching pedagogy and methods for effective teaching in the undergraduate electronic engineering context.

To improve teaching effectiveness in an engineering context, traditional lecturing we reform to a student-centric strategy rather than a teacher-centric one. In general, teachers follow three ways of lecturing, namely Authoritarian (monologue), Spontaneous (dialogue), and hybrid (both monotonous and spontaneous). Outlining stories plays an integral role in maintaining interest amongst the audience and their eagerness to know the finishing. We believe developing any technology phase or background offered using the enacted story can make lecturing very significant and easy to understand. For example, the history of microwave devices can be framed in the story starting from the development of crucial electromagnetic equation by Maxwell to present magnetron by Hull can be linked within and between research of velocity modulation and klystron evolution by Varian brothers. An infectious sense of *humor in teaching* develop a welcome relief while trying to follow a difficult lecture on a complicated subject and maintains genial associations between learner and tutor. The *Reverse Approach* is an effective practice that involves explaining a particular concept(s) with a real-world application before teaching theorems and definitions. For example, in Electronic communication subject while teaching Microelectronics or VLSI, first the fascinating practical applications of the small devices in relatable to the student's day to day life must be explained which would create interest amongst students followed by the theory behind. For example, brief introduction of mobile phone gadgets (for VLSI and Microelectronic), LCD or LED television screen (for semiconductor nanotechnology), microwave oven (for RF and Microwave engineering), remote control (for communication), and Automatic washing machine (for microprocessor and embedded systems) drags the students interest to the subject area.

Tutorials are among the interactive and promising method used in comparison to book or lecture and seek to teach by example. Depending on the context, the tutorials are organized in various forms instructions to complete the task to an interactive problem-solving session. Almost all the subjects/ modules in engineering are associated with a laboratory where they conduct practical's and confirm experimentally the theoretical concepts taught to them.

The *Mind Maps* as a way of helping students to make notes that use only keywords and images, but teachers can also use the mind map to explicate concepts in an innovative way incorporating word, image, number, logic, rhythm, color, or spatial awareness. These techniques are prevalent and find extensively used for teaching-learning. In electronics engineering courses, for example, teaching color code sequence of resistor components Black, Brown, Red, Orange, Yellow, Green, Blue, Violet, Gray, and White corresponding to 0 to 9 values can be quickly made learned to the student creating an exciting sentence to recognize the sequence as “*B B ROY of Great Britain has a Very Good Wife.*” This method helps in teaching & learning quickly and stay longer without rehearsing.

Creative Assignments are certainly an impactful technique to make students self-work for Learning. This approach is highly appropriate for most electronics and communication engineering courses. Another essential tool is *Case Study*, which is based on a tricky open-ended situation that requires the in-depth formulation and improves the ability to retain concepts throughout their professional life. The exciting but not too frustrating difficulties from the electronics subjects such as digital circuits and systems, electronic circuits and devices, control systems, circuit analysis, and design assembly language programming, memory designing and peripheral, etc. help the student to explore, inspect, study, and encourage interaction from outside world facilitators. This method is often productive if the case studies are used with student-generated work reports.

Based on simple methods, *Demonstrations* make the student observe, collect data, assist in setting experiments for the facilitator initially, and later perform the given task independently.

Group discussion, i.e., verbal exchange of ideas and *Brainstorming*, involves using different techniques like Problem Solving, Model Making, and Simplification with the allotment of a task theme to make the students work on it individually. The Learning by gaming is without boredom and untiring, and help the students to hold interest and never-lasting Learning of the subject. The subjective debates, elocutions, topical seminars, symposiums, workshops, pick and speak, and quizzes significantly affect Learning, with competitions generating fearlessness to address crowds. The other things which encourage active participation of students are also conducted. The *peer group* develops collaborative learning practice, and it is the best practice of combining them in a group for a thorough discussion circuit analysis in most of the courses.

Integration of ICT Based Teaching Methods in Teaching and Learning

A computer is an unavoidable tool currently, using which various applications for learning to engineer are realized—for instance, showing presentations and 3D graphics to make teaching effective and attractive. The difficulties in teaching linear programming can be resolved using a computer tool such as a solver available in Excel. With interpretation, the presentable digital media can be effectively displayed using Over Head Projector (OHP) or LCD Projectors. The traditional handouts or lecture notes are also created into the digital content using multimedia technologies such as *Photoshop* to create image and video files, *Sound Forge*, and *video converter* to make the sound and animation for presentation. Particularly electronics engineering, where visualization plays an important role, animations and video can be a handy way for an explanation of working of electronic devices such as diode, various transistors, MOSFETs, power electronics thyristors, traveling wave tubes, etc. Also, the method can be helpful in representing complex notions such as electromagnetics,

communication signals, optical communication, etc. *Smartboards* are innovating technology that connects with computers and allows real-time lectures storage. Utilizing the ICT-based methods with the root concept of inverted classroom popular as the *flipped classroom* is an integrated strategy for teaching and enhanced learning in undergraduate electronics studies. The instructional contents are delivered and managed using online methods. Newer technologies, such as cloud-based study resources, model questions, lectures with supplementary videos, as well as ppt notes, are being used to meet the educational needs of the students. Each course instructor has developed and adapted their inventive approach to incorporate this modern technology into the classroom to enhance and assure the quality of students' Learning.

The Department seeks to motivate students to pay full attention during class hours by using cutting-edge and novel teaching methods and assessment methods to improve student learning. Such implementations improve knowledge of the notion, accompanied by a rise in merit. In addition, slow learners are encouraged to engage more actively in the classroom environment.

Use of appropriate methods

Since the program's commencement, all the students are enrolled in a digital database using our education ERP portal named KALVI (@klustudentportal). (See Fig. 5.6.7). Furthermore, all course materials and essential technological supports, such as course handouts, course plans, PowerPoint slides, videos, question banks, sample questions, and previous question papers, are being uploaded and distributed to students using the Learning and Management System (LMS) system, accessible via the internet and intranet. (See Fig. 5.6.2 and Fig. 5.6.3.) In addition, Kalvi SIS (Fig. 5.5 & 5.6) facilitates track of students' attendance and associated student information and their performance on examinations and other assessments and other information.

Furthermore, the sophistication of classroom instruction is enhanced by the use of current tools such as "presentation," "animated videos/demonstration records," and "videos of demonstrations" for both theoretical and problematic courses. Student-created/downloaded clips for laboratory courses have increased the overall level of knowledge across all categories of students. Among the qualities of theory with practice and laboratory with projects are the merits of best practices/innovation by faculty on the development of upper-class students, which are divided into two categories: theory with practical and laboratory with projects.

Following are some additional measures to understand the innovative practices by the faculty members towards the complete Learning of students,

1. The Department innovates the teaching and learning most explicitly. First, after careful preparation by the course teacher, the Course Coordinator, and the Program Coordinator, verify the course content. Then, final approved content and teaching materials are uploaded for the LMS to make it available for the students.
2. LMS is the acronym of Learning Management System; an indigenous development of access portal where all the course materials and the study matters by the faculty are put in the shared access for all the faculty, and endeavor the correction and error rectification by critique is possible and can be made to its enrichment.

3. EASY login and SIS login are the other distinct portal systems for the data assignment with the student marks and relevant student details accessible to the concerned course teacher, the assigned class coordinators, and the faculty advisors for close interaction and monitoring of academic activities.
4. The Easy login portal of each staff contains the complete access of his ward assigned to him under the faculty advisory system and can be monitored by the concerned faculty advisor.
5. The faculty members also effectively handle the classroom through “Google Classroom” to adopt the flipped classroom, assignments and quiz submissions, and virtual Learning.

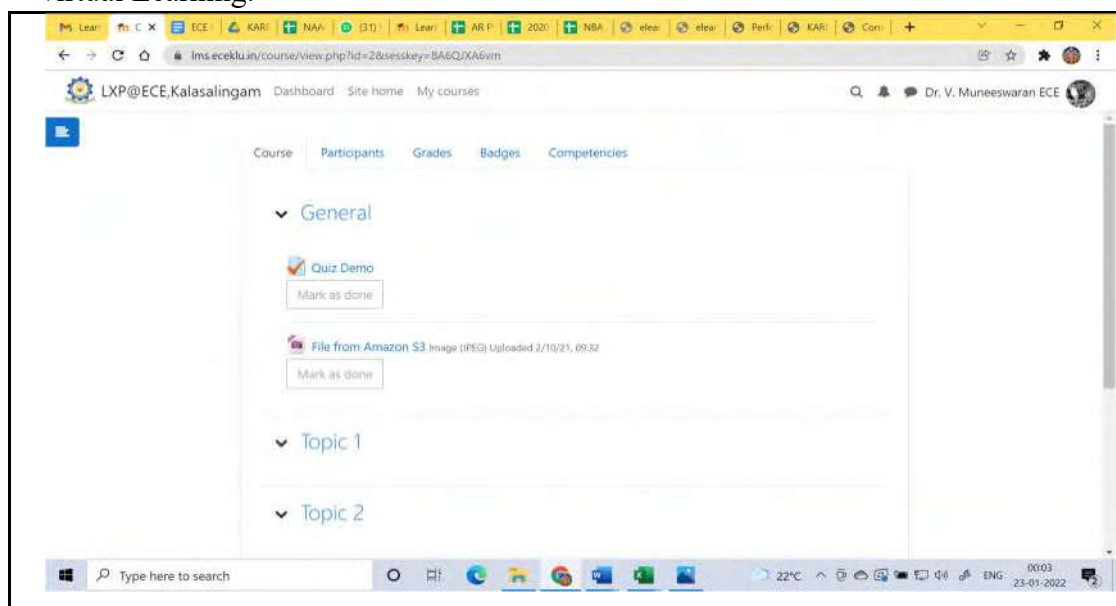


Figure 5.6.2. Screenshot of Learning Management System followed in Learning Experience Platform in the ECE Department

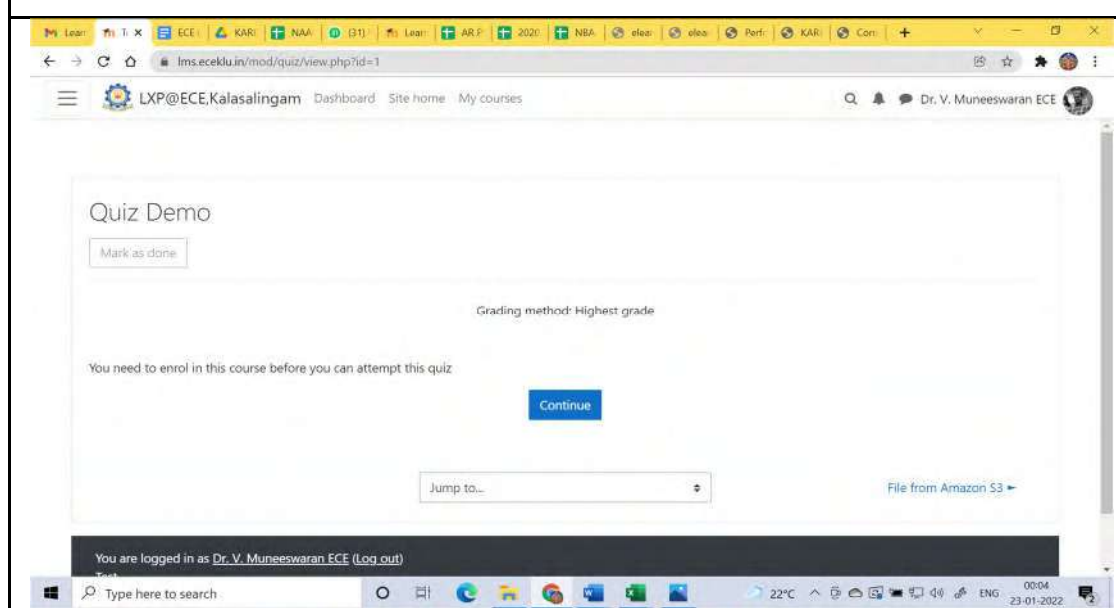
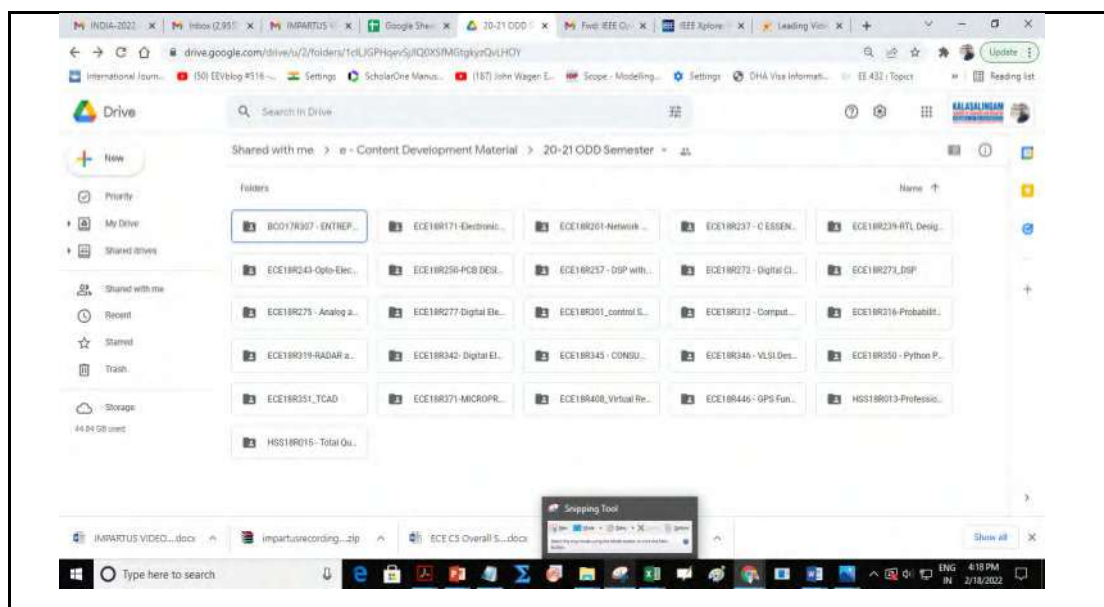


Figure 5.6.3. Screenshot of Resource Page of Learning Experience Platform @ ECE Department

6. The course plan includes the curriculum contents as Theory with Practical and Laboratory components with the project for measuring performance in practical exposure of the content. Course study resources, including flipped video lectures and periodic assignments, are also available to the students to prepare for the classroom. The practice has led to better interaction in the classrooms and laboratories.
7. Invited by experts from the industry and academia, the departments organize add-on courses to cover content beyond the syllabus and recent trends. In addition, MOUs are signed with leading industries to bridge the gaps in the curriculum relevant to industrial needs.
8. Such practices led to innovative new ideological systems and few projects with improved techniques.
9. All the faculty members utilize online learning portals like NPTEL, CLAD, COURSEERA, MITopencourseware, and so on to stay aligned to the technological progression in their domains, and the best course outcomes are rewarded at the entities.
10. Uses of PPT, interactive classes, and Google classroom have eventually elevated learning stances in and along with the student and the instructor.
11. After completing each sessional examination, the student's results are analyzed by the Course coordinator, Module coordinator, and further by the Program coordinator. The feedback and the course outcomes by the students and regularly checked.
12. The faculty members' innovation was encouraged by indulging them to participate in the workshop and faculty development programmes and were envisaged to make the best out of the nut.
13. The faculties actively use research portals like ResearchGate to share and comment on the Co-colleagues' research work.



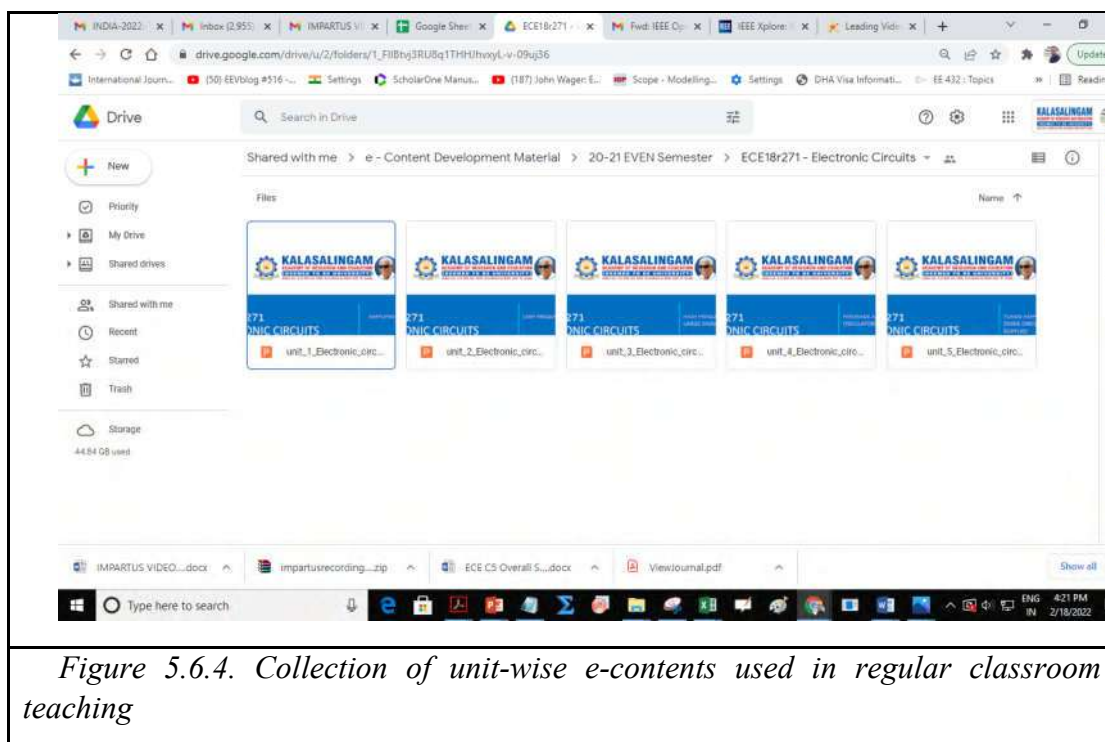
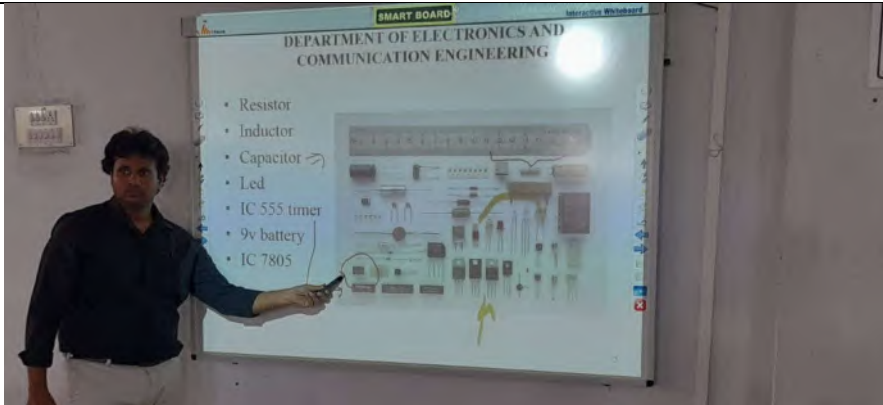
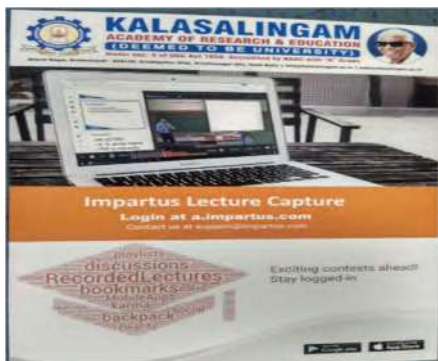



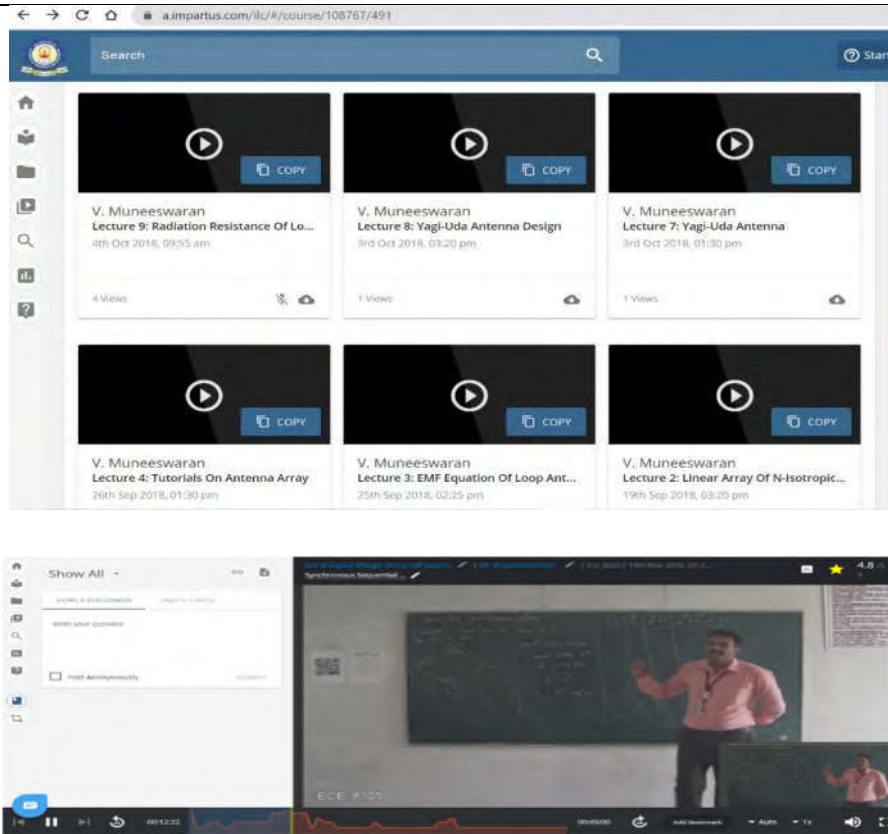
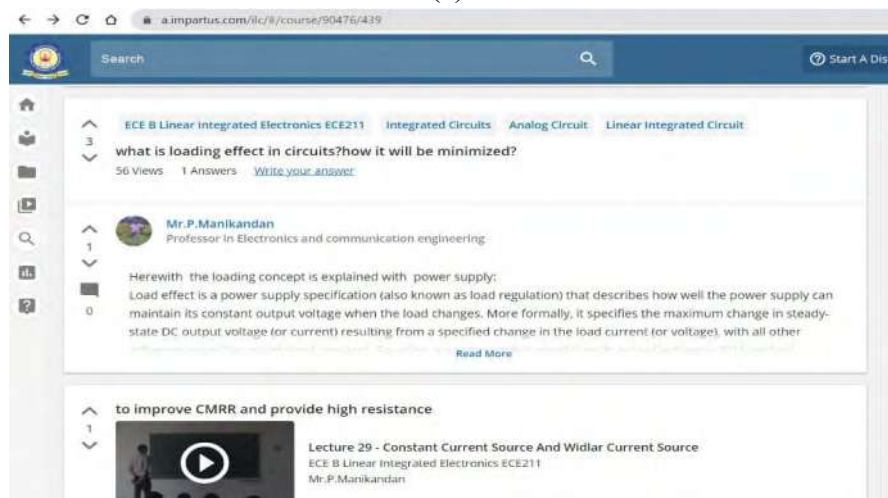
Figure 5.6.4. Collection of unit-wise e-contents used in regular classroom teaching

14. The use of virtual prototypes/simulations also plays a role in mitigating the technological limitation of students in understanding the basic working principle of any engineering system. For example, using a prototype to explain the working principles of an antenna system and communication is good to know virtual modules. Furthermore, it helps to eliminate any misconceptions that students may have due to videos and gifs in the format that assists in real-time incorporation of technological ideas and application by the student in the project's development.
15. The Department also provides faculty members with technical visits to national and internationally renowned institutions to inculcate ideation.
16. Our faculty members also accompany students on their often planned field trips or technical visits to realize theory into practice. The field trips motivate our students to develop ideas on their projects and produce excellent results.

Innovative method by faculty in Teaching and Learning

Sl.No	Facilities	Remark
1	Smart Classroom	Smart classroom boards with interactive capabilities are available in almost all classrooms. Because of the variety of ways that information may be presented on smart boards, instruction becomes more engaging. Videos and presentations are utilized extensively in Smart classes. Students are more receptive to this type of instruction since it is aesthetically engaging. As a result, the animated graphics help students connect ideas more quickly. Students' auditory and visual senses are focused in this method, which aids in their comprehension of the material.

		 <p><i>Figure 5.6.5. Photograph of a classroom using Smartboard</i></p>
2.	IMPARTUS Video Capturing	<p>In addition to that video capturing facility, this method used by the Department of ECE is one of the unique options to impart quality in teaching and Learning and the student outcomes. The benefit of the used video capturing system is as below.</p> <ul style="list-style-type: none"> ▪ Impartus videos can be accessed through www.klu.impartus.com with a browser or by mobile application. ▪ Automatically record complete classroom proceedings ▪ Secure videos accessible from the web and mobile applications ▪ Platform for collaborative Learning, content sharing, advance search and analytics ▪ Seamless integration with Blackboard, Moodle, Canvas, D2L and other LMS <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>(a)</p> </div> <div style="text-align: center;">  <p>(b)</p> </div> </div>

		 <p>(c)</p>  <p>(d)</p>
2.	Theory with practical component	<p>When used in conjunction with a well-structured discussion, the demonstration method is a highly effective teaching technique. The courses in the Department's curriculum are structured so that they include both theoretical and practical components. Students' understanding of concepts is enhanced by using theory classes and</p>


		laboratory sessions in combination with laboratory sessions in isolation.
3	Online Courses	<p>Coursera, Edx, NPTEL, Spoken tutorial, etc. are used by faculty and students to take online courses. It enables them to gain a better understanding of current trends and also to develop expertise in multiple fields. Certified by national and international universities, they are committed to lifelong education. In addition, experts and students from all over the world can interact and share ideas through online forums.</p>  <p>The certificate is awarded to ADAPALA ROHAN for successfully completing the course Introduction to Internet of Things with a consolidated score of 87%. Online Assignments: 28.80/28 Proctored Exam: 61.5/75. Total number of candidates certified in this course: 5439. Issued on: 20th April 2018. Prof. Aditya Ganesan, Head, Learning Services & NPTEL Coordinator, IIT Kharagpur.</p>
4	Google classroom	<p>Google Classroom is an application designed to improve the learning experience that has been integrated into our teaching and learning process to help students succeed, especially in this pandemic period. It allows you to interact with students 24 X 7, by posting technical content, notes, and assignments. It also makes it easier to conduct and evaluate online quizzes and tests. In addition, the tools provide opportunities for real-time collaboration and the ability to work from anywhere in the world.</p>
5	Innovative assignments and Real-time problems	<p>Assignments are given based on real-world engineering problems to assist students in understanding and to present solutions to those problems. Students are also given group assignments to help them improve their self-learning and teamwork skills.</p>
6	Technical presentation	<p>To transfer knowledge and overcome stage fright, students are encouraged to give presentations on any technical topic in their area of interest to their peers. It also helps them improve their communication skills and benefit them as they progress in their careers.</p>
7	Weekend Activities	<p>Every weekend, co-curricular and extracurricular activities are held to motivate students and to help them improve their problem-solving abilities, leadership abilities in multidisciplinary settings, cooperation in teamwork, awareness of professional ethics, and ability to deal with critical situations in a professional environment. Webinars, aptitude training, social welfare camps, problem-solving, entrepreneurship development programs, critical thinking, group discussions, and other activities are examples of these types of activities.</p>

Figure 5.6.7. Online courses for Teaching & Learning

8	Industrial Visit / Training	Industrial visits and training sessions are organized to bridge the gap between theoretical Learning and practical training in a real-world environment. During industrial visits, students gain an understanding of industrial practices as well as an organizational hierarchy. In addition to the usual classroom learning, industrial visits provide active/interactive learning experiences outside the classroom environment.
9	Student's club	There are numerous student club activities at the departmental and institutional levels, such as the photography club and the Tamil Mandram club. To improve communication skills and help students overcome stage fright, students are encouraged to give a 5-minute presentation during class hours on a topic of their choosing whenever possible.
10	Project Based Learning	The Department's curriculum is structured so that students gain the knowledge and skills necessary to design and build complex electronic systems through various activities, including projects. Such projects frequently require students to employ various learning techniques to be successful, including research, logical deduction, and iterative Learning (trial and error). In addition, as the projects are typically too large and complex for a single student to complete on their own, project-based Learning tends to encourage students to work in groups.
11	Value Added Courses	These events and methods are used to enhance employability skills and life-oriented skills.

The visiting lectures and activities are organized for student and faculty development, enrichment, and ideation programs. The faculty members are encouraged to participate in State/National level seminars at institution cost assistance. Stimulating and thought-provoking assignments and projects are given to the students to improve their intellectual caliber, sharpen their interest, induce them to experience the thrill of Learning, and enjoy the pleasure of achievement.

Table 5.15. Details joint events organized (selective only) with international collaboration

Sl. No	Event	Organizer	Collaborator
1.	IEEE MEMBERSHIP & RESOURCES (webinar)	Mr.R.Radeep Krishna	Dr. Lance Chun Che Fung, Emeritus Professor, Murdoch University, Australia

In order to enhance the quality of classroom teaching, the following methodologies/tools have been used for a better understanding of the courses.

1. Theory with practical component.

2. Mentor and Mentees system.
3. One credit course through industrial expert scientist beyond the syllabus.
4. Research related topic conduct delivered in a class room.
5. Organizing the guest lecture/ workshop - specific topic related subject.
6. Providing E-learning material.
7. NPTEL and other online recourses.
8. Encouragement of participative Learning.
9. Extend of use of experimental Learning.
10. Extend to use of smart board and ICT facilities
11. Use of virtual lab.
12. Flipped class room - mini project from the laboratory course.
13. Simple prototype to enhance the students' knowledge.
14. Students and faculty members go on an industrial visit (field visit)
15. Faculty development programs.
16. Students and faculty sign up for NPTEL courses.
17. Students attend conference organized at IITs/NITs/IISc/ any central level institutes and inside KLU /outside KLU.
18. Awards and accomplishments for contests at the regional, state, and national levels, as well as within the Department and the KLU as a whole.
19. Projects sponsored by government agencies/fellowship/internship from industries or research organization/KLU/Private agencies.
20. Faculty members participate in technical workshops and conferences held at the national and international levels.
21. Publishing paper in reputed journals and conferences of students and faculty members

A. Availability of work on the Institute Website

The following are the website links for EASY (Kalvi portal), SIS respectively in which all the details about faculty, students, and faculty event participation and API is made available.

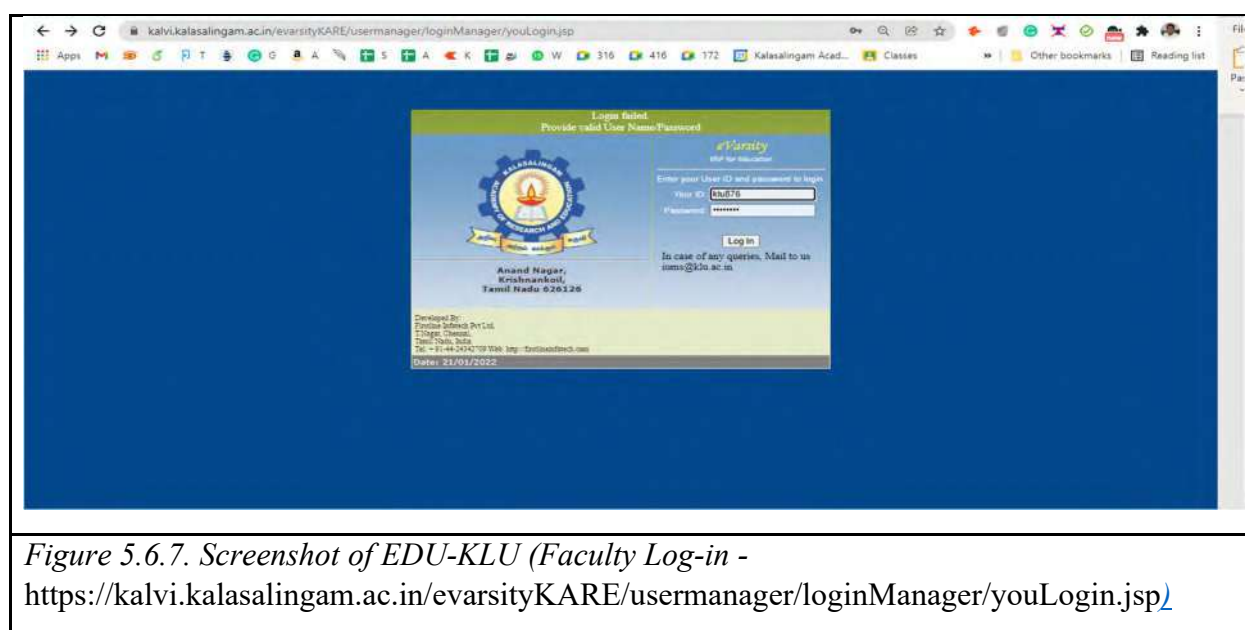



Figure 5.6.7. Screenshot of EDU-KLU (Faculty Log-in - <https://kalvi.kalasalingam.ac.in/varsityKARE/usermanager/loginManager/youLogin.jsp>)



STUDENT PROFILE

Student Name	SELVABHARATHI R	Current Status: Active
Course	B.Tech-Electronics and Instrumentation Engineering [UG - Full Time]	
Academic Year / Semester / Section	2021-2022 / VII SEMESTER / -	
Institution	Kalasalingam Academy of Research and Education	
D.O.B. / Gender	09-Oct-2000 / Male	
Father Name / Mother Name	RAJ M / UMA MAHESWARE R	
Residential Address	7KAMARAJ NAGAR ,1ST ST,SANKARANKOILTRUNELVELI	
Student Contact Number / Email	NULL / MESSIL68224@GMAIL.COM	
Parent Contact Number / Email	9080876935 /	
Admitted Date	01-Jul-2018	
Admission Number	9819007001	
Register Number	9819007001	
Blood Group	Not Provided	
Nationality / Religion	INDIAN / Hindu	
Community / Caste	SC / NA	
Hosteller	No	

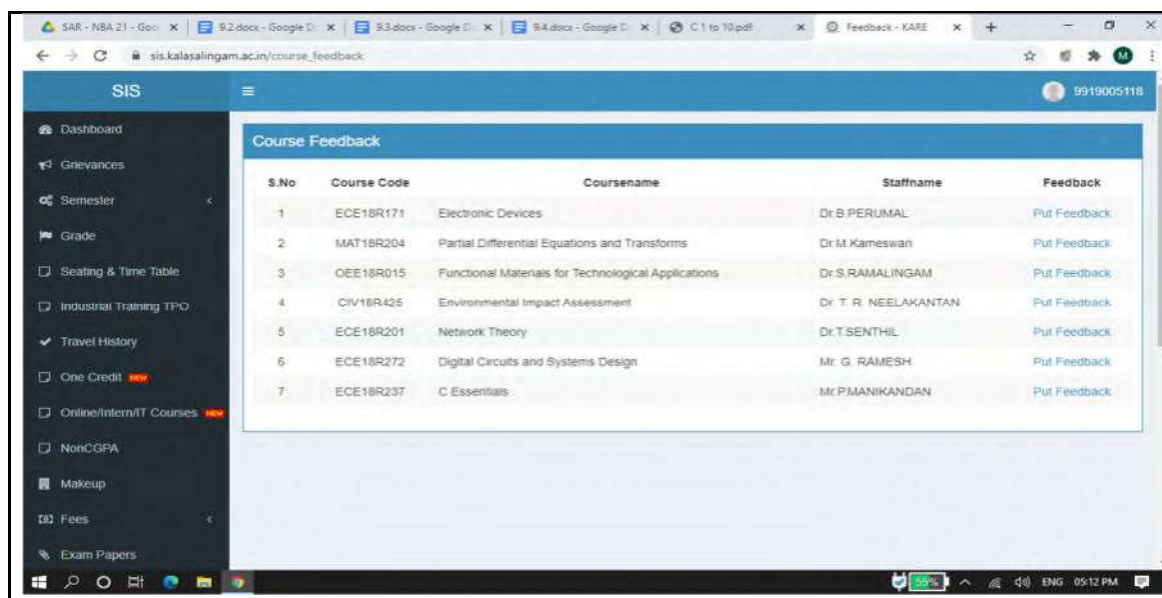
Welcome SELVABHARATHI R

- Class Timetable
- Personal Details
- Student Wise Subjects
- Attendance Details
- Hour Wise Attendance
- Fees Paid Details
- Fees Due Details
- Course Registration
- Transport Registration
- Change Password
- Sign Out

Figure 5.6.8. Screenshot of kalvi portal(Student Log-in - <https://kalvi.kalasalingam.ac.in/klustudentportal/students/loginManager/youLogin.jsp>)

B. Availability of work for peer review and critique

All the contents are available for peer review and critique by the course expert and course coordinator of the particular course and program. In addition, all the innovative practices were assessed through the University IQAC employing specific rubrics for each innovative practice. For every semester, students give feedback of every course teacher. They provide the ratings for a list of questionnaires used to enhance the teaching-learning process. The same thing is evaluated based on IQAC rubrics.



SIS

Course Feedback

S.No	Course Code	Course name	Staff name	Feedback
1	ECE18R171	Electronic Devices	Dr.B.PERUMAL	Put Feedback
2	MAT18R204	Partial Differential Equations and Transforms	Dr.M.Kameswari	Put Feedback
3	OEE18R015	Functional Materials for Technological Applications	Dr.S.RAMALINGAM	Put Feedback
4	CIV18R425	Environmental Impact Assessment	Dr. T. R. NEELAKANTAN	Put Feedback
5	ECE18R201	Network Theory	Dr.T.SENTHIL	Put Feedback
6	ECE18R272	Digital Circuits and Systems Design	Mr. G. RAMESH	Put Feedback
7	ECE18R237	C Essentials	Mr.P.MANIKANDAN	Put Feedback

Figure 5.6.9. Digital student feedback system through online portal (SIS)

1. One advantage of using e-learning materials is that they are accessible in an open forum with a specific IP address and can be seen by all students and faculty members. It allows faculty members and students even to recapitulate engineering concepts.
2. Those E-learning materials are the open courseware, lecture videos, and the journals
3. These resources help the scholar, faculty, and student stick towards the subject knowledge.
4. The citation of the scholar in their research paper shows the real-time reproducibility and reusability of the available resources

After the projects and reports of the scholars are examined and verified by the steering committee, it has been a strict practice to segregate the works in the scholar's domain to make it available to reproductive as literature for reusability of data as technological resources in the university community.

Faculty members and research scholars of our ECE department working in the Signal/Image processing domain use to have a regular practice of submitting/uploading their codes, share custom applications, classes, functions in MATLAB file exchange platform where other students, scholars, faculty members from KARE and external world can use and rate files using one to five stars (lowest to highest) together with usage notes with the author and other community members as shown in Figure 5.6.10. Through this the developer of the code will get motivation and from the critique he/she will have the chance to explore the opportunities to improve it. A sample of such critique is shown in Figure 5.6.11. Our ECE faculty members also utilize the MATLAB file exchange for the provision to discuss questions, answers, or comments related to a submission with other community members.

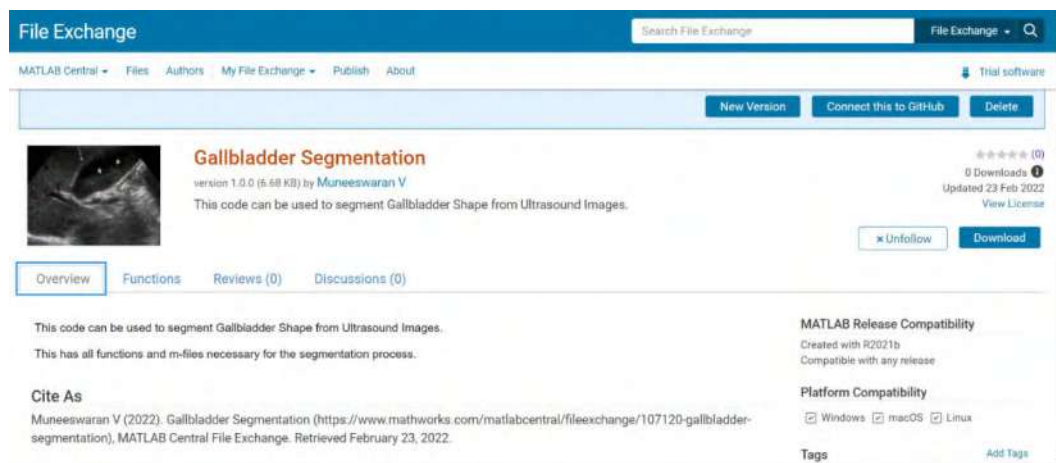


Figure 5.6.10 Work uploaded by a KARE-ECE faculty in the MATLAB file exchange platform (Selective only)

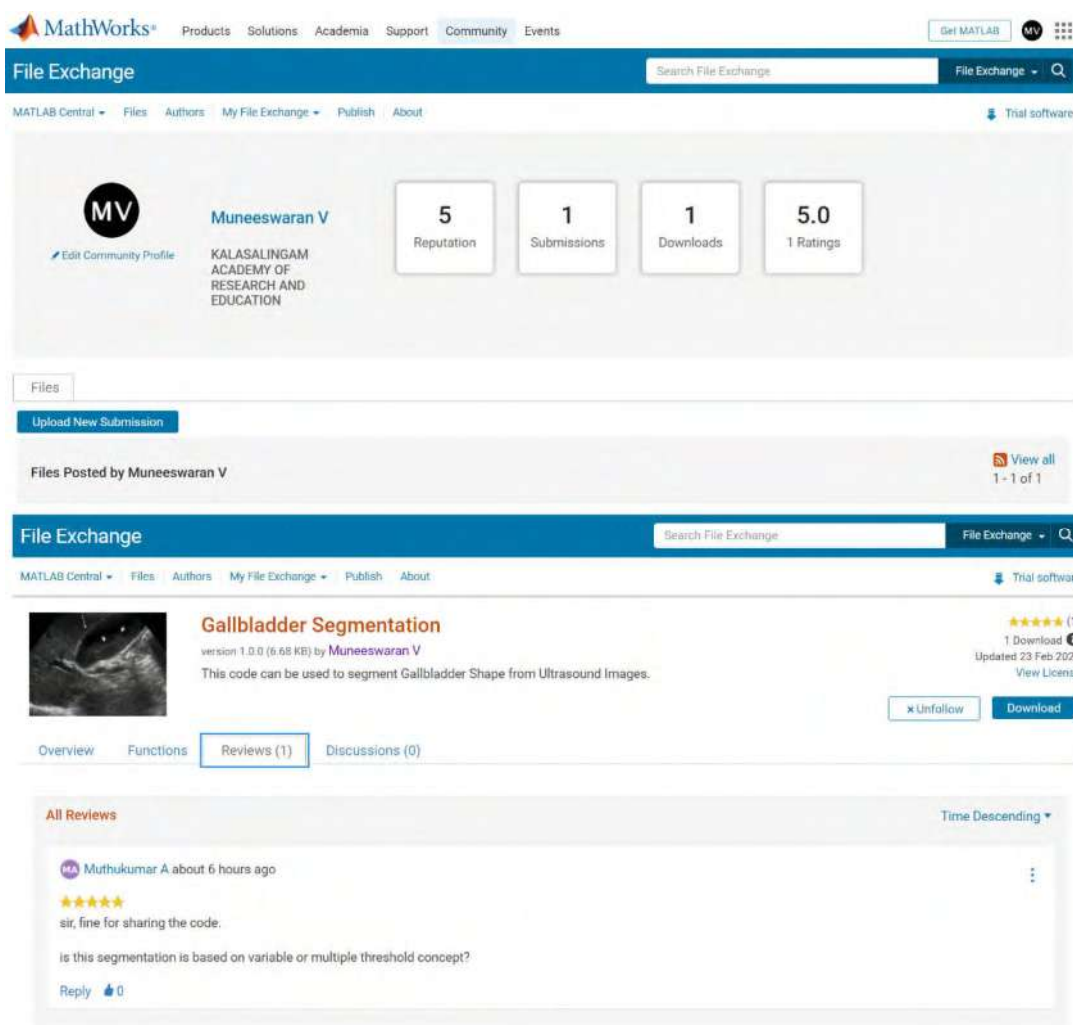


Figure 5.6.11 Comments/Critiques made for a work uploaded by a faculty in the MATLAB file exchange platform

5.7. Faculty as participants in Faculty development/training activities/STTPs (15/15)

- A Faculty scores maximum five points for participation
- Participation in 2 to 5 days Faculty/ Faculty development program: 3 Points
- Participation >5 days Faculty/ Faculty development program: 5 points

Name of the Faculty member	Max. 5 per Faculty		
	CAYm1 (20-21)	CAYm2 (19-20)	CAYm3 (18-19)
Dr. R. Nagaraj	5	5	5
Dr. M. Kalpana	5	5	5
Dr. Kyung Tae Kim	5	5	5

Dr. M. Pallikonda Rajasekaran	5	5	5
Dr. P. Sivakumar	5	5	5
Dr. B. Subathra	5	5	5
Dr. Seshadhri Srinivasan	5	5	5
Mr. P. Murugan	5	5	5
Dr. B. Perumal	5	5	5
Dr. A. Muthukumar	5	5	5
Dr. A. Lakshmi	5	5	5
Dr. T. Senthil	5	5	5
Dr. T. Arun Prasath	5	5	5
Dr. G. Vishnu Varthanan	5	5	5
Dr. J. Deny	5	5	5
Dr. J. Charles Pravin	5	5	5
Dr. S. Bama	5	5	5
Dr. V. Yogeshwar Chakrapani	5	5	5
Dr. Parivazhagan A.	5	5	5
Dr. A. Thenmozhi	5	5	5
Dr. K. Pandiaraj	5	5	5
Mr. K. Jeya Prakash	5	5	5
Ms. R. Sumathy	5	5	5
Dr. G. Karthy	5	5	5
Mr. P. Manikandan	5	5	5
Mr. Jenyfal Sampson	5	5	5
Dr. S.P. Velmurugan	5	5	5
Ms. J. Nithya	5	5	5
Mr. R. Radeep Krishna	5	5	5
Mr. S. Kalimuthukumar	5	5	5
Dr. Ganeshaperumal D.	5	5	5
Dr. S. Diwakaran	5	5	5

Dr. K.S. Dhanalakshmi	5	5	5
Dr. M. Krishna Paramathma	5	5	5
Mr. S. Balaji	5	5	5
Mr. G. Ramesh	5	5	5
Ms. M. Vijayalakshmi	5	5	5
Ms. C. Swedheetha	5	5	5
Mr. P. Naveen	5	5	5
Dr. Josephine Selle Jeyanathan	5	5	5
Mr. S. Sakthivel	5	5	5
Ms. N. Bhuvaneswary	5	5	5
Mr. Rajaram M.	5	5	5
Mr. M. Sakthimohan	5	5	5
Ms. Shanmuga Sundaraselvi B.	5	5	5
Mr. C. Jim Elliot	5	5	5
Dr. V. Muneeswaran	5	5	5
Ms. C. Vidya	5	5	5
Mr. S. Gnanasambanthan	5	5	5
Ms. S. Parameswari	5	5	5
Mr. E. Raja	5	5	5
Mr. A. Manikanda Rakesh	5	5	5
Mr. P. Saravanakumar	5	5	5
Mr. V. Karthikeyan	5	5	5
Dr. B. Kannapiran	--	--	5
Dr. G. Dhanabalan	--	--	5
Dr. S. Pradeep Narayanan	--	--	5
Dr. Krishnasamy M	--	--	5
Mr. V. Karutharaja	--	--	5
Ms. J. Abarna	--	--	5
Ms. A. Ahyisha Shabana	--	--	5

Ms. Amutha S	--	--	5
Mr. Nirajkumar	--	--	5
Mr. M. Thilagaraj	--	--	5
Sum	270	270	320
RF= Number of Faculty required to comply with 20:1 Student-Faculty ratio as per 5.1	39	38	37
Assessment = $3 \times (\text{Sum}/0.5 \text{ RF})$ (Marks limited to 15)	41.53	42.63	51.89
Average assessment over last three years (Marks limited to 15)	45.35		

*Table B.5.7***5.8. Research and Development (75/75)****5.8.1. Academic Research (20/20)**

Academic research includes research paper publications, Ph.D. guidance, and faculty receiving Ph.D. during the assessment period.

- Number of quality publications in refereed/SCI Journals, citations, Books/Book Chapters etc. (15)
- Ph.D. guided /Ph.D. awarded during the assessment period while working in the institute (5)

All relevant details shall be mentioned.

The faculty in the department of ECE has active participation in research and has contributed extremely fine in publishing their research articles in peer-reviewed journals in impact factor journals and reputed databases. The table below indicates the consistent number of contributions from our faculty in Journals Conferences of the research conducted in their area of expertise. Including 273 articles in Journals and 129 articles in reputed Scopus Conference Proceeding, there are 408 publications published by the department during the assessment years. The graph below shows the years-wise publication in conferences and Journals by the department of ECE. The list of all articles mentioned with the indexing of the articles is furnished in the following table.

Year	Journal	Conference	Book	Book Chapter
2019-20	100	39	0	5
2020-21	119	55	0	19
2021-22	53	64	0	4

Furthermore, during the AY, the department has published 110 SCI-indexed articles with the highest impact factor of 10.215 and 76 articles > I.F. 3.0 and 16 articles above < I.F. 5.0 with a cumulative impact factor of 339.56 during the assessment years.

Year	SCI Indexed	Scopus Indexed	Others
2019-20	43	68	22
2020-21	45	99	28
2021-22	37	10	6

H-index: 31

I10 index: 138

Total Citations: 5186

S.No	DEPARTMENT OF FACULTY PUBLICATION	INDEXING SCIE /SCOPUS/OTHER	ACADEMIC YEAR
1.	S Sairam, S Seshadhri, G Marthiseni, S Srinivasan, Giancarlo marafioti, Korkut Bekiroglu Edge-based Explainable Fault Detection Systems for photovoltaic panels on edge nodes(2021)Renewable Energy()-8.63	8.63	2021-2022
2.	Abdullah, S. Sheik; Rajasekaran, M. Pallikonda Automatic detection and classification of knee osteoarthritis using deep learning approach(2022)RADIOLOGIA MEDICA127(4)398-4066.31	6.31	2021-2022
3.	Kottaimalai Ramaraj., Vishnuvarthanan Govindaraj., Yu-dong Zhang., Shui-hua Wang., Pallikonda Rajasekaran Murugan., Arun Prasath Thiyagarajan., Sakthivel Sankaran Agnostic multimodal brain anomalies detection using a novel single-structured framework for better patient diagnosis and therapeutic planning in clinical oncology(2022)Biomedical Signal Processing and Control77()-5.08	5.08	2021-2022
4.	Kottaimalai Ramaraj., Vishnuvarthanan Govindaraj., Yu-dong Zhang., Shui-hua Wang., Pallikonda Rajasekaran Murugan., Arun Prasath Thiyagarajan., Sakthivel Sankaran Agnostic multimodal brain anomalies detection using a novel single-structured framework for better patient diagnosis and therapeutic planning in clinical oncology(2022)Biomedical Signal Processing and Control77()-5.08	5.08	2021-2022
5.	Le D.-N., Parvathy V.S., Gupta D., Khanna A., Rodrigues J.J.P.C., Shankar K. IoT enabled depthwise separable convolution neural network with deep support vector machine for COVID-19 diagnosis and classification(2021)International Journal of Machine Learning and Cybernetics12(11)3235-32484.38	4.38	2021-2022
6.	Sekhar P., Benedict Jose T.J., Parvathy V.S., Laxmi Lydia E., Kadry S., Pin K., Nam Y. Deep learning enabled predictive model for p2p energy trading in tem(2021)Computers, Materials and Continua71(1)1473-14873.86	3.86	2021-2022

7.	Thamizhazhagan P., Sujatha M., Umadevi S., Priyadarshini K., Parvathy V.S., Pustokhina I.V., Pustokhin D.A. AI based traffic flow prediction model for connected and autonomous electric vehicles(2021)Computers, Materials and Continua70(2)3333-33473.86	3.86	2021-2022
8.	Gyanendra Prasad Joshi., E Laxmi Lydia., T M Nithya., K Vijayalakshmi., Jeya Prakash Kadambarajan., Sung Won Kim Enhanced Archimedes Optimization Algorithm for Clustered Wireless Sensor Networks(2022)Computers, Materials and Continua73(1)477-4923.86	3.86	2021-2022
9.	Wang S.-H., Khan M.A., Govindaraj V., Fernandes S.L., Zhu Z., Zhang Y.-D. Deep rank-based average pooling network for Covid-19 recognition(2021)Computers, Materials and Continua70(2)2797-28133.86	3.86	2021-2022
10.	M. Thilagaraj , B Dwarakanath , S Ramkumar , K Karthikeyan ,A Prabhu ,Gurusamy Saravanakumar , M Pallikonda Rajasekaran , N Arunkumar Eye Movement Signal Classification for Developing Human-Computer Interface Using Electrooculogram(2021)Journal of healthcare engineering()1-113.82	3.82	2021-2022
11.	Sunanthini, V; Deny, J.; Kumar, E. Govinda; Vairaprakash, S.; Govindan, Petchinathan; Sudha, S.; Muneeswaran, V; Thilagaraj, M. Comparison of CNN Algorithms for Feature Extraction on Fundus Images to Detect Glaucoma(2022)JOURNAL OF HEALTHCARE ENGINEERING2022()-3.82	3.82	2021-2022
12.	Kinga Korniejenco., Marek Nykiel., Arumugam Velayutham., Diwakaran Soundarapandian., Thirumalai Kumaran Sundaresan., Marimuthu Uthayakumar Prediction of Abrasive Waterjet Machining Parameters of Military-Grade Armor Steel by Semi-Empirical and Regression Models(2022)Materials5(12)4368-3.75	3.75	2021-2022
13.	Manne S., Lydia E.L., Pustokhina I.V., Pustokhin D.A., Parvathy V.S., Shankar K. An intelligent energy management and traffic predictive model for autonomous vehicle systems(2021)Soft Computing25(18)11941-119533.73	3.73	2021-2022
14.	Naveen P., Sivakumar P. Adaptive morphological and bilateral filtering with ensemble convolutional neural network for pose-invariant face recognition(2021)Journal of Ambient Intelligence and Humanized Computing12(11)10023-100333.66	3.66	2021-2022
15.	Sudharsan R.R., Deny J., Muthukumaran E., Varatharajan R. FPGA based peripheral myopathy monitoring using MFCV at dynamic contractions(2021)Journal of Ambient Intelligence and Humanized Computing12(7)7019-70273.66	3.66	2021-2022
16.	R Raja Sudharsan., Deny John Samuvel., E Muthukumaran., R Varatharajan Retraction Note to: FPGA based peripheral myopathy monitoring using MFCV at dynamic contractions(2022)Journal of Ambient Intelligence and Humanized Computing()1-13.66	3.66	2021-2022
17.	Sujitha B., Parvathy V.S., Lydia E.L., Rani P., Polkowski Z., Shankar K. Optimal deep learning based image compression technique for data transmission on industrial Internet of things applications(2021)Transactions on Emerging Telecommunications Technologies32(7)-3.31	3.31	2021-2022
18.	Sandeep V., Pravin J.C. Influence of Graded AlGaN sub-channel over the DC and Breakdown characteristics of a T-gated AlGaN/GaN/AlInN MOS-HEMT(2021)Superlattices and Microstructures156()-3.22	3.22	2021-2022

19.	Thilagaraj, M.; Ramkumar, S.; Arunkumar, N.; Durgadevi, A.; Karthikeyan, K.; Hariharasitaraman, S.; Rajasekaran, M. Pallikonda; Govindan, Petchinathan Classification of Electroencephalogram Signal for Developing Brain-Computer Interface Using Bioinspired Machine Learning Approach(2022)COMPUTATIONAL INTELLIGENCE AND NEUROSCIENCE2022()-3.12	3.12	2021-2022
20.	Singh, Arjun; Dargar, Shashi Kant; Gupta, Amit; Kumar, Ashish; Srivastava, Atul Kumar; Srivastava, Mitali; Kumar Tiwari, Pradeep; Ullah, Mohammad Aman Evolving Long Short-Term Memory Network-Based Text Classification(2022)COMPUTATIONAL INTELLIGENCE AND NEUROSCIENCE2022()-3.12	3.12	2021-2022
21.	Dargar, Shashi Kant; Dargar, Abha; Srivastava, Jitendra Kaushal; Birla, Shilpi Analytical Modeling of Cylindrical Surrounding Double-Gate MOSFET Including Channel Quantum Confinement(2022)SILICON()-2.94	2.94	2021-2022
22.	Sridevi, R.; Pravin, Charles J.; Babu, Ramesh A.; Kumar, Ashok S. Investigation of Quantum Mechanical Effects in Back Gated Molybdenum Disulfide Transistor(2022)SILICON()-2.94	2.94	2021-2022
23.	Muthukumar N., Srinivasan S., Subathra B., Ramkumar K. Teaching Industrial Internet-of-Things-Based Model-Predictive Controller(2021)IEEE Transactions on Education64(3)267-2752.74	2.74	2021-2022
24.	Krishna Paramathma M., Devaraj D., Agnes Idhaya Selvi V., Karuppasampandian M. Development of online demand response framework for smart grid infrastructure toward social welfare(2021)International Transactions on Electrical Energy Systems31(7)-2.64	2.64	2021-2022
25.	Jayakumar, T.; Rubavathy, S. Jaanaa; Karpagam, R.; Diwakaran, S.; Jayadhas, S. Arockia; Ahamed, Maqsood; Sureshkumar, Shanmugam Experimental Analysis of the Thermal Performance of a Latent Heat Energy of Helical Coil for the Application of Solar Energy(2022)INTERNATIONAL JOURNAL OF PHOTOENERGY2022()-2.54	2.54	2021-2022
26.	Alagarsamy S.B., Murugan K. Multimodal of Ear and Face Biometric Recognition Using Adaptive Approach Rungeâ€“Kutta Threshold segmentation and Classifier with Score Level Fusion(2021)Wireless Personal Communications()-2.02	2.02	2021-2022
27.	Alaguselvi R., Murugan K. Quantitative analysis of Fundus Image Enhancement in the Detection of Diabetic Retinopathy Using Deep Convolutional Neural Network(2021)IETE Journal of Research()-1.88	1.88	2021-2022
28.	Misra, Aishani; Birla, Shilpi; Singh, Neha; Dargar, Shashi Kant High-Performance 10-Transistor Adder Cell for Low-Power Applications(2022)IETE JOURNAL OF RESEARCH()-1.88	1.88	2021-2022
29.	Manikandan P., Sivakumar P. A novel pinwheel fractal multiband antenna design using particle swarm optimization for wireless applications(2021)International Journal of Communication Systems34(15)-1.88	1.88	2021-2022
30.	Arunachalam, Muthukumar; Raju, Sumathy Power efficient Space Division Multiplexing-Wavelength Division Multiplexing system using multimode EDFA with elevated refractive index	1.88	2021-2022

	profile(2022)INTERNATIONAL JOURNAL OF COMMUNICATION SYSTEMS35(6)-1.88		
31.	Azhagesan D., Periyasamy M., Manickavasagam Parvathy S., Sridharan M., Baladhandautham C.B. Predictive current control of FL-shunt active power filter for dynamic and heterogeneous load compensation(2021)Electrical Engineering103(4)2147-21601.63	1.63	2021-2022
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33.	Radha S., Maragathasundari S., Manikandan P. Queuing strategy in Deep-ocean Assessment and Reporting of Tsunamis (DART)(2021)Journal of Testing and Evaluation49(6)-1.33	1.33	2021-2022
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36.	Sankaran S., Murugan P.R. Design And Development Of A Device For Reduction Of Data Loss And Time Taken For Transferring The Data Into An Artificial Biocomposite Socket Prosthesis Through Arduino(2022)Journal of Mechanics in Medicine and Biology()-0.88	0.88	2021-2022
37.	Sankaran S., Murugan P.R. Design And Development Of A Device For Reduction Of Data Loss And Time Taken For Transferring The Data Into An Artificial Biocomposite Socket Prosthesis Through Arduino(2022)Journal of Mechanics in Medicine and Biology()-0.88	0.88	2021-2022
38.	Parvathy V.S., Pothiraj S., Sampson J. Multimodality medical image fusion based on non-sub-sampled contourlet transform(2021)International Journal of Computer Applications in Technology65(4)358-367Scopus	Scopus	2021-2022
39.	Deny J., Raja Sudharsan R., Muthu Kumaran E. An orbicularis oris, buccinator, zygomaticus, and risorius muscle contraction classification for lip-reading during speech using sEMG signals on multi-channels(2021)International Journal of Speech Technology24(3)593-600Scopus	Scopus	2021-2022
40.	Likith G., Jayram N.D., Yaswanth B., Sreekanth D., Deny J., Karuthapandi M., Vishwa S.V. Designing of low-cost spectrometer for sensor application(2021)Journal of Optics (India)50(3)489-494Scopus	Scopus	2021-2022
41.	Manikandan P., Sivakumar P., Rajini N. Multi-band Antenna with CSRR Loaded Ground Plane and Stubs Incorporated Patch for WiMAX/WLAN Applications(2022)Pertanika Journal of Science and Technology30(1)35-52Scopus	Scopus	2021-2022
42.	Natarajan S., Govindaraj V., Venkata Rao Narayana R., Zhang Y.-D., Murugan P.R., Kandasamy K., Ejaz K. A novel triple-level combinational framework for brain anomaly segmentation to augment clinical diagnosis(2021)Computer Methods in Biomechanics and Biomedical Engineering: Imaging and Visualization()-Scopus	Scopus	2021-2022

43.	Natarajan S., Govindaraj V., Venkata Rao Narayana R., Zhang Y.-D., Murugan P.R., Kandasamy K., Ejaz K. A novel triple-level combinational framework for brain anomaly segmentation to augment clinical diagnosis(2021)Computer Methods in Biomechanics and Biomedical Engineering: Imaging and Visualization()-Scopus	Scopus	2021-2022
44.	Sankaran S., Deny J., Priyadharshini V., Shanmugananthini K., Malathi V. Design and Development of muscle stimulation for cervicgia patient using wearable coat(2021)Proceedings of the 6th International Conference on Communication and Electronics Systems, ICCES 2021()1279-1286Scopus	Scopus	2021-2022
45.	Jeyakumar V., Nachiappan M., Alagarsamy T. Design of compact coplanar waveguide feed inverted - P antenna for biomedical implants(2021)EUROCON 2021 - 19th IEEE International Conference on Smart Technologies, Proceedings()51-54Scopus	Scopus	2021-2022
46.	Sakthimohan M., Elizabeth Rani G., Ramprasad P., Reddy C.V., Prasad B.S. Digital Fuel Monitoring System for Automobiles(2021)Proceedings of the 2nd International Conference on Electronics and Sustainable Communication Systems, ICESC 2021()6-10Scopus	Scopus	2021-2022
47.	Perumal B., Deny J., Alekhya K., Maneesha V., Vaishnavi M. Air Pollution Monitoring System by using Arduino IDE(2021)Proceedings of the 2nd International Conference on Electronics and Sustainable Communication Systems, ICESC 2021()797-802Scopus	Scopus	2021-2022
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51.	Karthy G., Kumar M.S., Bhargav G., Subramanyam K. Medication Alerts and Supervisory of Health Using IOT(2021)Proceedings of the 2nd International Conference on Electronics and Sustainable Communication Systems, ICESC 2021()811-815Scopus	Scopus	2021-2022
52.	Karthi S.P., Arvinthlakshman M.V., Arasu Nachiapan S., Ashwanth B., Krishna Kumar R. Smart Health Monitoring System Using ANN Algorithm(2021)Proceedings of the 6th International Conference on Communication and Electronics Systems, ICCES 2021()-Scopus	Scopus	2021-2022
53.	Murugan K., Murugeswari S., Reddy J.P., Chandra M.H., Reddy P.V. Smart Medical Telemetry Acquisition System(2021)Proceedings of the 2nd International Conference on Electronics and Sustainable Communication Systems, ICESC 2021()1289-1297Scopus	Scopus	2021-2022

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55.	Nagaraj P., Muneeswaran V., Muthamil Sudar K., Revathi L., Vinothini V. Voice Ordered Home Mechanization System with Deployment of Arduino Uno and MIT App Inventor(2021)Proceedings of the 2nd International Conference on Electronics and Sustainable Communication Systems, ICESC 2021(218-222Scopus	Scopus	2021-2022
56.	Sakthimohan M., Elizabeth Rani G., Reddy B.G., Reddy S.L., Chennareddy V. Wireless Power Transmission Science Model(2021)Proceedings of the 2nd International Conference on Electronics and Sustainable Communication Systems, ICESC 2021(577-581Scopus	Scopus	2021-2022
57.	Sivasankari Narasimhan, Muthukumar Arunachalam ENCRYPTED FUSION OF FACE AND IRIS BIOMETRICS(2021)3C TECNOLOGIA(513-535Others	Others	2021-2022
58.	B Perumal, R Sindhiya Devi , M Pallikonda Rajasekaran EXTERMINATION METHODS OF IMAGE NOISES: A REVIEW(2021)3C TECNOLOGIA(243-259Others	Others	2021-2022
59.	A Chrispin Jiji, Nagaraj Ramrao HYBRID TECHNIQUE FOR IMPROVING UNDERWATER IMAGE(2021)3C TECNOLOGIA(645-665Others	Others	2021-2022
60.	M Thilagaraj, M Pallikonda Rajasekaran, U Ramani IDENTIFICATION OF DRIVERS DROWSINESS BASED ON FEATURES EXTRACTED FROM EEG SIGNAL USING SVM CLASSIFIER(2021)3C TECNOLOGIA(579-595Others	Others	2021-2022
61.	R Rajalakshmi, S M Ramesh, P Sivakumar IMPROVED RESULT OF TSV AND SLEW AWARE 3D GATED CLOCK TREE SYNTHESIS USING CHARGE RECYCLING CONFIGURATION(2021)3C TECNOLOGIA(667-687Others	Others	2021-2022
62.	PS Subudhi, M Thilagaraj, S Ganesh, S Diwakaran, P Naveen, S Gurusamy, MP Rajasekaran Current-Fed Bidirectional DC-DC Converter Topology for Wireless Charging System Electrical Vehicle Applications(2021)Hindawi Wireless Communications and Mobile Computing2021(1-15Scopus	Scopus	2021-2022
63.	T. Senthila , B Jaya Shankarb , J Chaithanyac , C Lavanya An Iot Controlled octahedron Frequency Reconfigurable Antenna For Rf Sensing Applications(2021)Proceedings of the International Conference on IoT Based Control Networks and Intelligent Systems()-Others	Others	2021-2022
64.	Manikandan P., Reddy M.R.S., Mehatab S., Sai P.M. Automobile Drivers Distraction Avoiding System Using Galvanic Skin Responses(2021)Proceedings of the 6th International Conference on Communication and Electronics Systems, ICCES 2021(1818-1821Scopus	Scopus	2021-2022
65.	Karthy G., Harish M.S., Harish R., Srivarshan R.N., Sridhar B. BORS (Border Patrol Search) ROBOT by using Wireless Technology(2021)Proceedings of the 2nd International Conference on Electronics and Sustainable Communication Systems, ICESC 2021(449-456Scopus	Scopus	2021-2022

66.	Nagaraj P., Muneeswaran V., Muthamil Sudar K., Sharan E.S., Kumar K.S., Madhuri G. CONCEAL FACE MASK RECOGNITION USING CONVOLUTIONAL NEURAL NETWORKS(2021)Proceedings of the 6th International Conference on Communication and Electronics Systems, ICCES 2021()1787-1793Scopus	Scopus	2021-2022
67.	Shobana Pandi., Deny John Samuvel Image Fusion based Removal of Color Artifacts for the Enhancement of Dermoscopy Images(2022)2022 International Conference on Smart Technologies and Systems for Next Generation Computing()1-6Scopus	Scopus	2021-2022
68.	Bhuvaneswary Narayanasamy., A Lakshmi., Ediga Bhuvaneswari., Pulivendula Jameel Ahmed., Mopidevi Vaishnavi Multi Modal Image Fusion Technique For Detecting Brain Tumor(2022)2022 6th International Conference on Computing Methodologies and Communication (ICCMC)()1364-1371Scopus	Scopus	2021-2022
69.	Kalpana Murugan., Muneeswaran Vasudevan., Ram Prasad Reddy., Y Venkata Krishna., K Suresh Prototype Implementation of Neural Networks based Agricultural Farm Monitoring and Rain Prediction(2022)2022 International Conference on Smart Technologies and Systems for Next Generation Computing()1-6Scopus	Scopus	2021-2022
70.	B Mohith Kumar., K Rama Krishna Rao., Nagaraj Palanigurupackiam., Muthamil Sudar Kabilan., Muneeswaran Vasudevan Tobacco Plant Disease Detection and Classification using Deep Convolutional Neural Networks(2022)2022 International Conference on Sustainable Computing and Data Communication System()490-495Scopus	Scopus	2021-2022
71.	Sunethra B., Sreeya C., Dhannushree U., Nagaraj Palanigurupackiam., Muthamil Sudar Kabilan., Muneeswaran Vasudevan A Systematic Parking System Using bi-class Machine Learning Techniques(2022)2022 International Conference on Sustainable Computing and Data Communication Systems()221-226Scopus	Scopus	2021-2022
72.	K Saiteja., K Kalyan Ram., K Mani Kanta., S Krishna Aditya., Nagaraj Palanigurupackiam., Muneeswaran Vasudevan University Recommender System based on Student Profile using Feature Weighted Algorithm and KNN(2022)2022 International Conference on Sustainable Computing and Data Communication Systems()479-484Scopus	Scopus	2021-2022
73.	Nagaraj Palanigurupackiam., Muneeswaran Vasudevan., Dharanidharan A., Balanathanan K., Arunkumar Mk., Rajkumar C A Prediction and Recommendation System for Diabetes Mellitus using XAI-based Lime Explainer(2022)2022 International Conference on Sustainable Computing and Data Communication Systems()1472-1478Scopus	Scopus	2021-2022
74.	K Kalai Selvi., Dhanalakshmi Krishnan Sadhasivan Performance Optimization in Recessed Modified Junctionless FET(2022)2022 6th International Conference on Trends in Electronics and Informatics (ICOEI)()255-260Scopus	Scopus	2021-2022
75.	Jenyfal Sampson., M Sridharan., Vankadara Jaswanth., Sudhakar Reddy Venna Smart Vehicle Locking System Using Pollution Sensor (Mq-07)(2022)2022 6th International Conference on Trends in Electronics and Informatics (ICOEI)()347-353Scopus	Scopus	2021-2022

76.	Bhuvaneswary Narayanasamy., Challa Venkata Reddy., C Aravind., Kammari Hari Prasad Smart Voting Machine using Fingerprint Sensor and Face Recognition(2022)2022 International Conference on Applied Artificial Intelligence and Computing()1159-1166Scopus	Scopus	2021-2022
77.	Kottaimalai Ramaraj., Vishnuvarthanan Govindaraj., Yu-dong Zhang., Pallikonda Rajasekaran Murugan., Arunprasath Thiyagarajan Brain Anomaly Prediction with the Intervention of Fuzzy Based Clustering and Optimization Techniques for Augmenting Clinical Diagnosis(2022)2021 3rd International Conference on Advances in Computing, Communication Control and Networking()872-877Scopus	Scopus	2021-2022
78.	K Lalitha., S Gayathri., K Jeyapiriyaa., Jeya Prakash Kadambarajan Detection and Identification of Things for Blind People Using Raspberry PI(2022)2021 4th International Conference on Computing and Communications Technologies()194-196Scopus	Scopus	2021-2022
79.	Pandiaraj Kadarkarai., Sivakumar Pothiraj THERMAL AND CONGESTION AWARE ALGORITHM FOR 3D INTEGRATED CIRCUITS(2021)3C tecnologia()313-331Others	Others	2021-2022
80.	T Senthil CROSSTALK MEASURE OF THE FM â€“ EDFA IN MDM TRANSMISSION USING PM-QPSK(2021)3C Tecnologia()231-241Others	Others	2021-2022
81.	Gorla Sujansouri., Gummala Sainath Reddy., Panditi Prem Sagar., Hima Deepthi Vankayalapati Real-Time Smart Attendance Monitoring System With Thermal Scanning(2022)2022 International Conference on Electronic Systems and Intelligent Computing()376-381Scopus	Scopus	2021-2022
82.	Josephine Selle Jeyanathan., Amilia Aminuddin., Kalaivani Chellappan Benefit of Foot Thermogram Analysis in the Treatment of Diabetic Foot Ulcer: A Systematic Review(2022)Biomedical Research and Therapy9(5)5029-5042Others	Others	2021-2022
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382.	Devi BA, Rajasekaran MP. Optimal choice of supervised techniques for MR image classification. (Scopus Index)	Scopus Indexed	2019-20
383.	Sankaran S, Murugan PR, Johnson JC, Abdullah HJ, Raj CM, Ashokan D. Prevention of skin problems in patients using prosthetic limb: A review of current technologies and limitations. In 2019 International Conference on Communication and Signal Processing (ICCSP) 2019 Apr 4 (pp. 0077-0081). IEEE. (Scopus Index)	Scopus Indexed	2019-20
384.	Devi BA, Rajasekaran MP. Performance Comparison of ANN-BP, ELM for MRI Pancreas Image Classification. In 2019 IEEE International Conference on Clean Energy and Energy Efficient Electronics Circuit for Sustainable Development (INCCES) 2019 Dec 18 (pp. 1-5). IEEE. (Scopus Index)	Scopus Indexed	2019-20
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387.	Meyyappan PL, Rajasekaran MP, Soroopan RS. An Experimental and Analytical Investigation on the Characteristics of Light Weight Concrete Using Waste Burnt Ash and Pumice Stones. In National Conference on Structural Engineering and Construction Management 2020 May 14 (pp. 543-551). Springer, Cham. (Scopus Index)	Scopus Indexed	2019-20
388.	Ramesh G, Phanindra DV, Chandan VK, Haneef MS. Emotion Detection based on Audio Signals. International Conference on Automation, Signal Processing and Energy System-19th & 20th June 2020 (ICASE 2020). (Scopus Index)	Scopus Indexed	2019-20
389.	Sampson J, Sivakumar P, Velmurugan SP. Simulation and Performance Analysis of a Triple-material Gate GAA SNSTFT. J. Nano- Electron. Phys. 12 No 6, 06006 (2020). DOI: https://doi.org/10.21272/jnep.12(6).06006 . (Scopus Index)	Scopus Indexed	2019-20

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391.	Jeyanathan JS, Shenbagavalli A. The Efficacy of Capturing Lateral View Breast Thermograms. In2019 IEEE International Conference on Clean Energy and Energy Efficient Electronics Circuit for Sustainable Development (INCCES) 2019 Dec 18 (pp. 1-4). IEEE. (Scopus Index)	Scopus Indexed	2019-20
392.	Sivakumar P, Pandiaraj K, JeyaPrakash K. Optimization of thermal aware multilevel routing for 3D IC. Analog Integrated Circuits and Signal Processing. 2020 Apr;103(1):131-42. (Scopus Index)	Scopus Indexed	2019-20
393.	Paramathma MK, Devaraj D. Genetic algorithm based approach for the determination of optimal locations and observability of phasor measurement unit (PMU) under smart grid environment. In2019 IEEE International Conference on Clean Energy and Energy Efficient Electronics Circuit for Sustainable Development (INCCES) 2019 Dec 18 (pp. 1-4). IEEE. (Scopus Index)	Scopus Indexed	2019-20
394.	Sakthimohan M, Deny J. An Enhanced 8x8 Vedic Multiplier Design By ApplyingUrdhva-Tiryakbhyam Sutra. International Journal of Advanced Science and Technology. 2020;29(5):3348-58. (Scopus Index)	Scopus Indexed	2019-20
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396.	Paramathma MK, Pravin AC, Rajarajan R, Velmurugan SP. Development and Implementation of Efficient Water and Energy Management System for Indian Villages. In2019 IEEE International Conference on Intelligent Techniques in Control, Optimization and Signal Processing (INCOS) 2019 Apr 11 (pp. 1-4). IEEE. (Scopus Index)	Scopus Indexed	2019-20
397.	Pothirasan N, Rajasekaran MP, Muneeswaran V. Priority Based an Accident Prevention System Using V2V Communication. Journal of Advanced Research in Dynamical and Control Systems, 2020 Apr 12(3):480-485 (Scopus Index)	Scopus Indexed	2019-20
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405.	Nivetha V, Subathra B, Srinivasan S. Wi-Fi based Occupancy Detection in a Building with Indoor Localization. In2019 IEEE International Conference on Intelligent Techniques in Control, Optimization and Signal Processing (INCOS) 2019 Apr 11 (pp. 1-4). IEEE.	Scopus Indexed	2019-20
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407.	Ozyetkin, M. M., Bekiroglu, K., & Srinivasan, S. (2020, December).A Parameter Tuning Method for Fractional Order PD Controllers.In 2020 16th International Conference on Control, Automation,Robotics and Vision (ICARCV) (pp. 1-6). IEEE.	Scopus Indexed	2019-20
408.	Ditton, S., Tekeoglu, A., Bekiroglu, K., & Srinivasan, S. (2020,March). A Proof of Concept Denial of Service Attack AgainstBluetooth IoT Devices. In 2020 IEEE International Conference onPervasive Computing and Communications Workshops (PerComWorkshops) (pp. 1-6). IEEE.	Scopus Indexed	2019-20
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411.	Bekiroglu, K., Srinivasan, S., Su, R., & Poolla, K. (2019, June). A Scalable Contract Based Approach for Integrating Building Flexibility to Energy Grids. In 2019 18th European Control Conference (ECC) (pp. 2394-2399). IEEE.	Scopus Indexed	2019-20
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415.	Perumal B, Deny J, Sudharsan R, Muthukumaran E, Raja Subramanian R, Year: 2021, Analysis of Amplify Forward, Decode and Amplify Forward, and Compression Forward Relay for Single and Multi-node Cognitive Radio Networks, ICASISSET, EAI, DOI: 10.4108/eai.16-5-2020.2304196.	Other	2020-21
416.	Muthu Kumar A, Jayasai A , Raja Mohan Reddy M , P. Sai Kumar Raju , Smart door lock control system using face recognition and detection through viola jones algorithm by neural networks in matlab , International Journal of Emerging Technology in Computer Science & Electronics (IJETCSE) , ISSN: 0976-1353, Volume 27, Issue 3 – Sep 2020.	Other	2020-21
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419.	Dhanalakshmi KS, S. Magesh Raj, K. Santhosh Kumar, R. Keerthivash, Solar Panel Cleaning Robot Using Wireless Communication , Annals of R.S.C.B., ISSN: 1583-6258, Vol. 25, Issue 4, 2021, Pages. 17107-17116	Other	2020-21
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421.	Deny J, Sundarajan M, Sudharsan R, Muthukumaran E, Perumal B. Reduction of speckling noise of SAR Images using Dual Tree Complex Wavelet (DTCW) and Shearlet Transforms.(2021)	Other	2020-21
422.	T.Happila, K.Pandiaraj, M.Thilagaraj Sensor-Based Quality, and Safety Ensured Agriculture Followed By Neural Network-Based Plant Disease Management , Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 6, 2021, Pages. 2524-2528.	Other	2020-21
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430.	Sampson J, Francischezhiyan J, Badiginchala Jagadish Chandra Prasad, Pravin Kumar S Multipliers Designs Using Low Power Full Swing Exclusive-OR and Exclusive-NOR Structures , International Journal of Emerging Technology in Computer Science & Electronics, Vol. 28, Issue 3, 2021, Pages. 5-8.	Other	2020-21
431.	Sampson J, G. Arunsai Kumar, C. Balaji Dileep, G. Vinay Kumar, B. Venkata Kiran, Auto Power Supply Control from Three Different Sources , International Journal of Creative Research Thoughts, Volume 9, Issue 3, March 2021.	Other	2020-21

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433.	D.S.Kirankumarreddy,Kammari Hariprasad,Masula Balachandra,K.Jeya Prakash, "Rf And Internet Based Advanced Street Light Controlling System", International Journal Of Creative Research Thoughts (Ijcr), Issn:2320-2882, Volume.9, Issue 5, Pp.D587-D598, May 2021	Other	2020-21
434.	Udayakumar MD, Devi AS, Raja E, Ali AN, Stonier AA. Augmentation of Low Voltage Ride through (LVRT) Capability using ANN based electric spring for a Grid-tied Wind Energy Conversion System. InIOP Conference Series: Materials Science and Engineering 2021 Feb 1 (Vol. 1055, No. 1, p. 012156). IOP Publishing.	Other	2020-21
435.	V.Karthikeyan, S.Thayammal, E.Raja IOT And Wireless Sensor Based Healthcare re Monitoring System For Victim Persons. on Smart Engineering for Sustainable Development Special Issue of IJECSCSE, ISSN 2277-947761st IETE Annual Convention 2018	Other	2020-21
436.	Chandra Mouli D, G Indira Devi, B Venkatesh, TV Madhusudhana Rao, E Laxmi Lydia, Velmurugan Subbiah Parvathy Brain Controlled Assistive Appliances for Physically Challenged Individuals using Brain-Computer Interfaces Journal of Critical Reviews, 7(10), 1796 – 1804, 2020	Other	2020-21
437.	Pilaka Anusha, Kaki Leela Prasad, G Ravi Kumar, E Laxmi Lydia, Velmurugan Subbiah Parvathy Facial Detection Implementation using Principal Component Analysis (PCA) Journal of Critical Reviews, 7(10), 1863 – 1872, 2020	Other	2020-21
438.	Bhuvaneswary N,Raviteja,Hariprakash,M,Anand, FPGA based home automation and power monitoring automation system in International journal of emerging technology in computer science and electronics	Other	2019-20
439.	Bhuvaneswary N, S.Keerthana,Naveen prasad, Harikrishna, Smart Snake crawl Robot in search and Inspection in International journal of emerging technology in computer science and Electronics	Other	2019-20
440.	Sumathy Raju and Muthukumar Arunachalam, Bending loss of Multimode Fiber with various dip depths and elevation heights at core refractive index Kalasalingam Global Conference- International Conference on Sustainable development(KGC-2019), organized by Kalasalingam University, Krishnan koil on 18th – 20th December 2019.	Other	2019-20
441.	Rajendran S, Muthukumar A, Manoj S, Raj Abisekh V and Karthik M, Alarm Based Solar Fencing and Pump Control System Kalasalingam Global Conference- International Conference on Sustainable development(KGC-2019), organized by Kalasalingam University, Krishnan koil on 18th – 20th December 2019.	Other	2019-20

442.	Rajendran S, Muthu Kumar A, Kalimuthu Kumar S, Rajesh K, Vijaya Kumar K and Hari Prasath T, Enhancing Reactive Power Compensation with Statcom Using SVPWM Kalasalingam Global Conference- International Conference on Sustainable development(KGC-2019), organized by Kalasalingam University, Krishnan koil on 18th – 20th December 2019.	Other	2019-20
443.	Muthukumar A, Hari Sunkireddy, Bhanu Tejaswi S, Dinesh P, Feature level fusion in multimodal biometrics with FKP and EAR by using Gabor filter and GLCM algorithm International Conference Automation, Signal processing and Energy systems(ICASE2020) organized by Kalasalingam University, Krishnan koil on 19th and 20th June 2020 (ISBN:9789390082193)	Other	2019-20
444.	A.Muthukumar, Sathya pradeep, Vineesh reddy, Automatic Headlight Dimmer. International Conference Automation, Signal processing and Energy systems(ICASE2020) organized by Kalasalingam University, Krishnan koil on 19th and 20th June 2020 (ISBN:9789390082193)	Other	2019-20
445.	A.Muthukumar. N.Venkata Vinay Varma, CH.Manikanta Reddy, SMART PARKING SYSTEM International Conference Automation, Signal processing and Energy systems(ICASE2020) organized by Kalasalingam University, Krishnan koil on 19th and 20th June 2020 (ISBN:9789390082193)	Other	2019-20
446.	K.S.Dhanalakshmi, A.Sindhu, K. Elavarasi, R.Karthick, Rfid Technology To Aid In Navigation For The Blind Using Blavigator Gloves International Journal of Advanced Science and TechnologyVol. 29, No. 12s, (2020), pp. 988-992	Other	2019-20
447.	K.S.Dhanalakshmi, A.Sindhu, S. Selvakumar, S. Subabalasathiya, R.Karthick Cardless E-ATM With Secured Biometric Authentication Using Labview International Journal of Advanced Science and TechnologyVol. 29, No. 12s, (2020), pp. 686-692	Other	2019-20
448.	Samuvel DJ, Perumal B, Elangovan M. Music recommendation system based on facial emotion recognition.	Other	2019-20
449.	Nagesh HR, Rajasekaran MP, Ramalingam HM. WBAN Implementation in a Parallel Processing Environment for E-Healthcare Applications. International Journal of Future Generation Communication and Networking. 2020;13(4):4963-9.	Other	2019-20
450.	Ramalingam HM, Nagesh HR, Rajasekaran MP, Nadu T. Review on bio-signal processing software packages., International Journal of Advance Research, Ideas and Innovations in Technology, 6(5) 365-369, 2020	Other	2019-20
451.	G. Ramesh, M. Swathi, G. Pavan Kumar, N. Harshavardhan, An Efficient Image Denoising Method using Edge Preserving Filter - International Research Journal of Modernization in	Other	2019-20

	Engineering Technology and Science - Volume:02, Issue:09, September-2020, 836-840 [e-ISSN:2582-5208].		
452.	Josephine Selle J, A Shenbagavalli, Shedding Shyness: A perspective from Tamil Nadu, Gender, Law and Health International Perspectives, 228	Other	2019-20
453.	Prakash KJ, Sivakumar P. Memetic algorithm based on hill climbing algorithm for IC partitioning.	Other	2019-20
454.	Krishna Paramathma, Devaraj Development of Consumer Preference based Demand Response Model for Home Energy Management International Journal of Recent Technology and Engineering (IJRTE) ISSN: 2277-3878, Volume-8 Issue-4S2, December 2019	Other	2019-20
455.	P. Manikandan, P. Sivakumar, K. Sai Vamsi Krishna, P. Sumanth, T. Poornesh. (2020). A Fractal Based CSRR Loaded Multi-Band Antenna for Wireless Applications. International Journal of Advanced Science and Technology, 29(7s), 4486 - 4492.	Other	2019-20
456.	Maragathasundari S, Prabhu C, Manikandan P. A study on stages of queuing system in aircraft control system. 3C Tecnología. Glosas de innovación aplicadas a la pyme, Edición Especial, (noviembre, 2021), 155-177.	Other	2019-20
457.	S. Maragathasundari, R.S.Somasundaram, P. Karunakaran, P. Manikandan, Queuing System Modeling for Supermarkets, International Journal of Innovative Technology and Exploring Engineering (IJITEE) ISSN: 2278-3075, Volume-9, Issue-2S2, December 2019	Other	2019-20
458.	Sivakumar P, Velmurugan SP, Sampson J. Implementation of differential evolution algorithm to perform image fusion for identifying brain tumor.	Other	2019-20
459.	Jenyfal Sampson, S. P. Velmurugan, D. Abhiram Reddy, G. Kumar Sai Reddy, G. Harika A Low Budget Touch less Door Bell with Integrated Intruder Alerting Safety System International Journal of Innovative Technology and Exploring Engineering (IJITEE), 9(8), 926-930, 2020	Other	2019-20
460.	Sairam S, Srinivasan S, Marafioti G, Subathra B, Mathisen G, Bekiroglu K. Explainable Incipient Fault Detection Systems for Photovoltaic Panels. arXiv preprint arXiv:2011.09843. 2020 Nov 19.	Other	2020-21
461.	Sairam S, Srinivasan S, Marafioti G, Subathra B, Mathisen G, Bekiroglu K. Explainable Incipient Fault Detection Systems for Photovoltaic Panels. arXiv preprint arXiv:2011.09843. 2020 Nov 19.	Other	2020-21

List of Ph.D Awarded during 2021-2022

S.No	Name and details	Title	Supervisor
1	Mr. K. Pandiaraj	Optimization of thermal aware multilevel routing for 3D IC	Dr. P. Sivakumar

2	Mr. P. Senthil	Design of stateful firewall with network function virtualisation for software defined network	Dr. R. Ramalakshmi
3	Mr. R. Radeep Krishna	Simulation and optimisation of 3D IC physical design flow	Dr. P. Sivakumar
4	Mr. S.P. Velmurugan	Design and development of efficient system for brain tumor classification using multimodal fusion approach based on image transformations and optimization techniques	Dr. P. Sivakumar
5	Mrs. B.Aruna devi	Performance evaluation of artificial neural networks (ANN) in classification of multiorgan MR images	Dr. M. Pallikonda Rajasekaran
6	Mr. P. Rajesh Kumar	Alzheimer's disease classification in MR brain images using soft computing technique	Dr. T. Arunprasath
7	Mr. A.Santham Bharathy	Multimodal biometrics recognition based on AARK threshold segmentation and classifications with SRMED security algorithm	Dr. M. Kalpana
8	Ms. R. Sridevi	Modeling and simulation of Molybdenum Disulfide 2D material based field effect transistors	Dr. J. Charles Pravin
9	Mr. S. Vigneshwaran	Pathological identification in multi-sequence MR brain images using soft computing techniques	Dr. G. Vishnuvarthan
10	Mr. G. Karthy	Optimized test pattern generation and built-in redundancy analysis schemes for memories	Dr. P. Sivakumar
11	Mrs.A. Kavipriya	Biometric authentication and recognition study on FKP and ear with fuzzy vault and SVM using feature level fusion	Dr. A. Muthukumar
12	Mr. S. Ashok Kumar	Analysis of doped and undoped multi channel based FET for low power applications	Dr. J. Charles Pravin
13	Mr. V. Sandeep	Modelling and simulation of AlGaIn/GaN/AlInN metal oxide semiconductor-high electron mobility transistors	Dr. J. Charles Pravin

List OF Ph.D Awarded during 2020-2021

S.No	Name and details	Title	Supervisor
1	V.Muneeswaran	Gallbladder Shape Extraction From Ultrasound B Mode Images using Soft Computing Techniques	Dr.M.Pallikonda Rajasekaran
2.	Mrs.T.Preethiya	Enhancement of Lifetime in Heterogeneous Cluster Based Mobile Wireless Sensor Network using Energy Optimization	Dr.A.Muthukumar

3.	Mrs.M.Kalaiyarasi	Estimation of Deforestation Rate for SAR Images using Soft Computing Techniques	Dr.B.Perumal
4.	Mr.N.Pothirasan	A study on controller design for rechargeable e vehicle and augmentation of intelligent transportation system	Dr.M.Pallikonda Rajasekaran
5.	Mrs.N.Sivasankari	Study of Aging Resistant and PUF Based Hardware Random Number Generators for Authentication in Biometric Templates and Devices without Trusted Third Party	Dr.A.Muthukumar
6	Mr.D.Ganesha Perumal	Development of Extremum Seeking and Behaviour Based Autonomous Operation of Micro Electric Vehicle	Dr.B.Subathra

LIST OF Ph.D Awarded during 2019-2020

S.No	Name and details	Title	Supervisor
1	Mrs.Anish Pon Yamini (201208208)	Design of Power Optimized Cross Layer Protocol for Performance Enhancement in MANETS	Dr.K.Suthendran
2.	Mrs. Anitha N (20160136)	Heterogeneous Tumor Detection and Tissue Segmentation in Magnetic Resonance Brain Images using Clustering and Optimization Techniques	Dr.M.Pallikonda Rajasekaran
3.	Mr.T.Ramu (201208210)	Enhanced Keystroke Biometric Recognition Using Soft Biometrics	Dr.K.Suthendran Dr.T.Arivoli
4.	Mr.S.Diwakaran (201207216)	Data Aware Energy Reduction Techniques For Wireless Sensor Networks	Dr.B.Perumal
5.	Mrs.V.Navya (201408126)	Design of Energy Efficient Routing protocols for critical data transmission in wireless body area networks	Dr.P.Deepalakshmi

5.8.2. Sponsored Research (20/20)

S. No	Assessment Year	Number of Projects	Total fund received
1	CAY	2	400000
2	CAYm1	6	28293669
3	CAYm2	7	33634830
4	CAYm3	6	8709886
Total		26	7,10,38,385

CAY

S.No	Name of the Scheme/Project/ Endowment s/ Chairs	Name of the Principal Investigator/ Co Investigator (if applicable)	Name of the Funding agency	Type (Government/ Non-Government)	AY	Funds provided (INR in lakhs)	Duration of the project
1	Toycathon 2021	Dr.J.Deny	AICTE-MIC	Government	2021-2022	200000	NA
2	Wearable / Portable electrical muscle stimulation belt for cervicalgia patients	Dr.J.Deny	EDII, TN	Government	2021-2022	200000	2

CAYm1

S.No	Name of the Scheme/Project/ Endowments / Chairs	Name of the Principal Investigator/ Co Investigator (if applicable)	Name of the Funding agency	Type (Government/ Non-Government)	AY	Funds provided (INR in lakhs)	Duration of the project
1	AICTE-ATAL FDP on Future Perspective of Semiconductor devices	Dr.J.Charles Pravin	AICTE	Government	2020-2021	93000	NA
2.	Remote Tasking of Sanitization and Health Assurity for mitigating risk in the wake of the pandemic	Mr. R. Radeep Krishna	IEEE, HAC	Non-Government	2020-2021	36469	1

3	Scheme for Promoting Interests, Creativity & Ethics among Students' (SPICES) Scheme	Dr.P.Sivakumar	AICTE	Government	2020-2021	100000	1
4	ATAL Community Innovation Center	Dr.Seshadri Srinivasan	AIM, NITI Aayog, GoI	Government	2020-2021	25000000	3
5	Non-Invasive Sonometer along with clinically practiced dexta images for estimating bone mineral density for osteoporosis detection in elderly women	Dr.M.Pallikonda Rajasekaran, Dr.G.Vishnuvarthanan, Dr.V.Muneeswaran	DST	Government	2020-2021	2840200	2
6	Optimum Energy Solar System (IVP)	Dr.J.Deny	EDII-Tamilnadu	Government	2020-2021	224000	1

CAYm2

S.No	Name of the Scheme/Project/Endowments/ Chairs	Name of the Principal Investigator/ Co Investigator (if applicable)	Name of the Funding agency	Type (Government/ Non-Government)	AY	Funds provided (INR in lakhs)	Duration of the project
1	MSME-TBI	Dr. J. Deny	MSME	Government	2019-2020	25000000	5 Years
2	Proposal for Embedded System and Robotics Lab	Dr.P.Sivakumar	MODROB	Government	2019-2020	1959830	

3	Cyber Physical systems: Design Techniques and Applications SDTP	Dr.P.Sivakumar	MODROB	Government	2019-2020	400000	3 Months
4	S&T Tinkering Workshp and Demonstration for School Children in districts of Madurai, Tirunelveli & Rameshwaram (aspirational districts) and Chennai	Dr. Seshadhri Srinivasan, Dr. B. Subathra	DST-NCSTC	Government	2019-2020	3720000	6 Months
5	Organization of STEM Exhibition & Activity Corners for Rural Students of Virudhunagar District	Dr.P.Sivakumar	DST-STEMM	Government	2019-2020	1475000	3 Months
6	Study effectiveness of Technology Business Incubators in South India	Dr.J.Deny	NSTMIS	Government	2019-2020	700000	3

7	DST NIMAT Project for Entrepreneur Awareness Camp (EAC)/Technology based Entrepreneurship Development Programme (TEDP)	Dr.J.Deny	National Implementing and Monitoring Agency for Training (NIMAT) under the aegis of NSTEDB, Department of Science & Technology, GoI	Government	2019-2020	380000	1
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CAYm3

S.No	Name of the Scheme/Project/Endowments/Chairs	Name of the Principal Investigator/Co Investigator (if applicable)	Name of the Funding agency	Type (Government/Non-Government)	AY	Funds provided (INR in lakhs)	Duration of the project
1	Resilient and optimal micro-Energy-grid (ROME)	Dr. Seshadhri Srinivasan, Dr. V. Vasudevan, Dr. B. Subathra	International Bilateral Cooperation Division	Government	2018-2019	1989000	3
2	3D printed flexible optical fibers using biodegradable PHBV/Graphene Nanocomposites for Biophotonics applications	Dr.M.Pallikonda Rajasekaran	DST	Government	2018-2019	780000	3

3	An IoT based Smart Artificial Pancreas and an ICT Platform for Treating Diabetes in Elderly	Dr. Seshadhri Srinivasan, Dr. B. Subathra, Dr. Kim	DST-SEED	Government	2018-2019	5640886	3 Years
4	Development of Electronics Lockers with multiple keys using Visual Cryptography Scheme	Mr.Harish R, Dr.Suthendra n	DST-EDII	Government	2018-2019	100000	1
5	Smart Tube Light	Dr.J.Deny	DST-EDII	Government	2018-2019	100000	1
6	DST NIMAT Project for Conducting Entrepreneurship Awareness Camp	Dr.J.Deny	National Implementing and Monitoring Agency for Training (NIMAT) under the aegis of NSTEDB, Department of Science & Technology, GoI	Government	2018-2019	100000	1

5.8.3. Development activities (15/15)

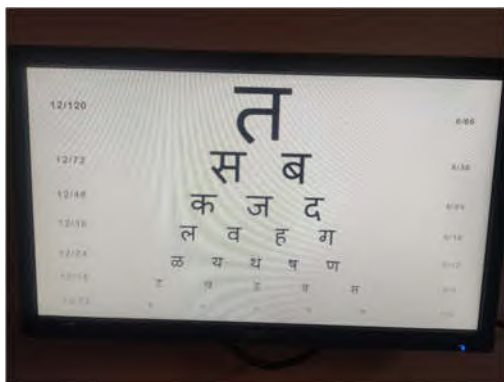

A. Product developed:





- The patent and other items that were generated as a result of the students' efforts are detailed in the report. Based on views of innovation and applicability, management and external financing bodies (IEDC, TNSCST etc.) have even backed the creation of new products and services on such innovation
- The department of ECE, by several means and measures, constantly effort to inculcate ideation and encourage students to realize their unique ideas into products through numerous research programs and community service projects.
- To expedite these procedures and encourage the development, the IEDC cell and ACIC-KIF of our campus have raised and rendered financial support to our students (up to INR 3 Lakhs)

Table 5.8.1 list few of the Products developed by the department of ECE during the Assessment years (Selective Only)

S.No	Name of the Product	Developed by	Industrial Support
1	Low-Cost Photomograph for Thyroid Dysfunction	Dr. M. Pallikonda Rajasekaran, Dr.P.Sivakumar	Raj Bio Electronics And Intelligent Private Limited
2	Programmable Vision Chart for screening test	Dr. M. Pallikonda Rajasekaran, Dr.V.Muneeswaran	Raj Bio Electronics And Intelligent Private Limited
3	Detection of Osteoarthritis using multiple edge detection techniques	Dr. J. Deny	ACIC - KIF
4	Real-time Smart Attendance monitoring system with Thermal Scanning	Dr. V. Hima Deepthi	ACIC - KIF
5	Alzhemier's Disease Detection using Ensemble of Classifiers	Mr. G. Ramesh	ACIC - KIF
6	Portable Temperature meter	Dr. M. Kalpana	ACIC - KIF
7	Automated system to monitor and prevent the spreading of Contagious (SARS cov-19) diseases using screening methodology	Hariesh R Pavan Kalyan B Chenna Reddy M	SELF

Table 5.8.2 Products Developed (Selective Only)

 <p><i>Programmable Vision Chart for screening test</i></p>	 <p><i>Low-Cost Photomograph for Thyroid Dysfunction</i></p>
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 <p>Cherakulam, Tamil Nadu, India Cherakulam Bus Stop, Ramanujampudur Rd, Cherakulam, Tamil Nadu 628622, India Lat N 8° 34' 38.7552" Long E 77° 49' 13.4436" 27/03/21 12:58 PM</p>	 <p>Ramanujampudur, Tamil Nadu, India Aircel, Ramanujampudur Rd, Ramanujampudur, Tamil Nadu 628622, India Lat N 8° 34' 7.2732" Long E 77° 49' 4.5768" 27/03/21 12:18 PM</p>
<p><i>Mr. Harish provided information on the developed Product to Front line workers</i></p>	
 <p><i>Mr. Harish handing over his Product to a Front-line workers</i></p>	 <p><i>Mr. Harish Demonstrating his work to health officials in a public health care center, Tuticorin, Tamilnadu</i></p>

List of Patents Registered/Published in the year 2018-2019

S.No	Name of the Faculty Members	Name of the Student Members	Title of the Patent	Application No./C.B.R.No/	Status of the Patent Filed/Granted	Date of Registration/ Publication
1	S.Shasi Anand, P.Jayakumar, P.Sivakumar, G.Ramesh, K.Pandiaraj, R.Radeep Krishna	-	Audible Digital Vernier Caliper for Visually Impaired	201841034106	Patent Published	15-11-2019
2	S.Shasi Anand, P.Jayakumar, K.Jeya Prakash, Mr.P.Naveen, Mr.P.Manikandan,	Ch.Nikhil Kumar	Automatic Toilet Cleaning Indicator for the Blind	201841034107	Patent Published	15-11-2019
3	Dr.B.Perumal	-	Rulayesh Bags	201841034621	Patent filed	14/9/2018
4	Mr.Sathivel Sankaran and Dr.J.Deny	-	Assistive device for Visually challenged people to read books using LabVIEW	201841034618	Patent filed	14/9/2018

5	Dr.J.Deny	-	ADMAS-VPMS	201841034616	Patent filed	14/9/2018
6	Dr.B.Perumal	Mr.G.Jayahari Prabu,	Smart Village Eco-System	201841034620	Patent filed	14/9/2018
7	Dr.J.Deny, Dr.B.Perumal	Mr.R.Vengat Rahul	Energy harvesting Stove	201941006938	Patent Published	22/02/2019
8	Mr.V.Muneeswaran, Dr.M.Pallikonda Rajasekaran, Mr.M.Thilagaraj,	Mr.Ravicharan Reddy, Mr.Raviteja Reddy	Automatic abnormal yarn tension detection and control in handloom machines	201941016868	Patent Published	29/04/2019
9	Mr.V.Muneeswaran, Dr.M.Pallikonda Rajasekaran, Mr.M.Thilagaraj,	Mr.B.Praveen Kumar, Mr.K.Sathish, Mr.S.Sivakarthick	Automatic shuttle movement detection in handloom machine	201941016866	Patent Published	29/04/2019

List of Patents Registered/Published in the year 2019-2020

1	S.Shasi Anand, P.Jayakumar, J.Deny, P.Naveen, G.Ramesh	-	Mouse Trap Fencing	201941014434	Patent Published	04-10-2019
2	S.Shasi Anand, P.Jayakumar, J.Deny, P.Naveen, G.Ramesh	-	Tactile mat with sensor	201941014408	Patent Published	04-10-2019
3	S.Shasi Anand, P.Jayakumar, J.Deny, P.Naveen, G.Ramesh	-	IV Fluid level alarming device	201941014409	Patent Published	04-10-2019
4	Dr.J.Deny	V. Sailesh	Smart Intelligence Automated Braking System	201941048498	Patent Published	27/11/2019
5	Dr.A.Lakshmi	-	Design and Fabrication of Child Rescue Machine from Tube Wells with weight constraint using sensors and wireless camers	202041030735 A	Patent Published	31-07-2020
6	Franklin Vinod, V.Muneeswaran		IoT based AntiHeist System	202041047694	Patent Published	11-02-2020
7	Mr.K.Jeyaprakash, , Mr.G.Ramesh, Dr.J.Deny	M.Sivaramakrishnan, K.Sudhakar, S.B.Thirumanikandan	Ambulance alerting Device using XBEE Digimesh	202041047685	Patent Published	11-02-2020

List of Patents Registered/Published in the year 2020-2021

1	Dr.K.S.Dhanalakshmi		Electrical Switch with State Indication	202041049843	Patent Published	16-11-2020
2	Dr.J. Charles Pravin	Ravuru Siva Rakesh, Nagireddy Sumanth, Peddysetty Chakraesh	Anger prediction and control using machine learning	202141007582	Patent Published	26-02-2021
3	Dr.S.Diwakaran		Solar Powered Escalator	202141017941	Patent Published	23-04-2021
4	Dr. V.Muneeswaran, Dr. Kalpana Murugan	Mr.Mangala Madhu, Mr.G.Siddu Sai Shareef, Mr.Guttapalli Pavan Kumar, Mr.Gudipati Harsha Vardhan	Smart Socket-An Technology Enabler To Prevent Electrical Hazards in Household Applications	202141023148	Patent Published	06-11-2021
5	Dr. Kalpana Murugan, Dr. V. Muneeswaran.	Mr.Sadda Ashok Reddy, Mr.Rachakonda Dharmendra, Mr.Shaik Imran	Fall Detection and Avoidance System for Oldsters	202141022991	Patent Published	06-11-2021
6	Dr. V. Muneeswaran, Dr. Kalpana Murugan,	Ms.Pavithra E, Ms.Ediga Bhuvaneswari, Ms.Kurugunta Joshna	Automatic Injection System for Healthcare Applications	202141022958	Patent Published	18-06-2021
7	Dr. Kalpana Murugan, Dr. V. Muneeswaran		MK Med Assistive Bot	202141022985	Patent Published	18-06-2021
8	Dr. Kalpana Murugan, Dr. V. Muneeswaran,	Mrs. R. Jenitha ,Mr. Poolavenkata Varun, Mr. Peddireddy Harivardhan Reddy, Mr. Patan Salman Khan	Agri Care Device	202141022937	Patent Published	18-06-2021
9	Dr. Kalpana Murugan, Dr. V. Muneeswaran,	Mrs. S. Murugeswari, Mr. A. Rahul Kumar Reddy, Mr. T. Monish kumar, Mr. P. Ammaar	Real Time Patient Health Monitoring and Indication to Doctors Using IOT	202141022856	Patent Published	06-11-2021
10	Dr. V. Muneeswaran, Dr. Kalpana Murugan,	Mr.S.Godwin, Mr.P.Gokul, Mr.T.Gokul, Mr.M.Jegatheswaran	An Intellectual Approach for Energy Preservation in Communal Lightning Scheme using IOT	202141024843	Patent Published	06-11-2021

11	Dr.K.S.Dhanalakshmi		A Roadmap For Building An Sla Management Architecture For Iot Networks	202141026587	Patent Published	07-02-2021
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List of Patents Registered/Published in the year 2021-2022

S.No	Name of the Faculty Members	Name of the Student Members	Title of the Patent	Application No./C.B.R.No/	Status of the Patent Filed/Granted
1	Dr.Kalpana Murugan	Ms. J. Krishnapriya, Ms. P. Gayatri, Mr.C.Sathya Pradeep	Smart Facial Door Lock System	202141022959 A	Patent Published
2	Dr.V.Muneeswaran		Artificial Intelligence Tailored Interactive Smart Mirror	202141039094 A	Patent Published
3	M.Sakthimohan, G.Elizabeth Rani	Marreddyvamsidhar Reddy, Poleboinagnaneswarnsaivivek, Prattipatitharun	Garbage Bin Overflow Indication System and Method	202141058377	Patent Published
4	Dr. T. Arunprasath Sakthivelsankaran Dr.M.Pallikondarajasekaran Dr.G.Vishnuvarthanan Dr J Deny	Manimegalairavichandran M. Dhineshkumar	System and Method for Obstacle detection	202141061360	Patent Published
5	Dr.Kalpanamurugan	Cherukuri Nikhil Kumar, Donthu Sai Subash	SPEECH BASED SECURITY SYSTEM	202141058511	Patent Published
6	Dr.V.Himadeepthi	M.Rohith Reddy, Ch.Satwik, K.Praharsha	BIOMETRICS BASED LOCKER SECURITY SYSTEM AND METHOD	20214105851	Patent Published
7	Dr. J .Deny	K. Alekhya, Amarnath Reddy, V. Maneesha	SYSTEM AND METHOD FOR DETECTING OSTEOARTHRITIS USING IMAGE ENHANCEMENT TECHNIQUES	202141058578	Patent Published
8	A.Robert Singh Dr.J.Deny	Sunil Kumar U, Vignesh S	Saline Level Monitoring System And Method	202141058032	Patent Published
9	Dr. K. S. DHANALAKSHMI	E. PAVITHRA, AKASH ARJUN, K. JOSHNA	SYSTEM AND METHOD FOR EYE DISEASE DETECTION	202241001743	Patent Published
10	Sakthivelsankaran Dr.G.Vishnuvarthanan Dr. J. Deny Dr.T.Arunprasaththiyagarajan	Sagarikarathinakumar, Vijay Mallaiyamallaiyan, Selva Ganesh Ayyavu	Surveillance System For Miners And Method Thereof	202141057081	Patent Published
11	Sakthivelsankaran Dr.J.Deny Dr.G.Vishnuvarthanan Dr.T.Arunprasaththiyagarajan	Mohanamuthupandi, Manikandalagarsamy, Gokulnathchandrasedkaran	Health Monitoring Device And Method	202141057949	Patent Published

12	Dr. B. Perumal Dr. J. Deny	Subashbalaji A, Nimmala Sai Krishna, Yelagapudi Ravi Kumar	Electric Vehicle Battery Monitoring System And Method Thereof	202141056796	Patent Published
13	Mr.G.Ramesh	Dharmendra Rachakonda, Shaik Imran, Sadda Ashok Reddy	System And Method For Alzheimer Disease Recognition	202141056795	Patent Published
14	Dr. K S Dhanalakshmi	S. Manoj Kanna, S. Deva Kishore Reddy, S. Sailanjaliajitha	Smart Jacket For Soldiers	202141057943	Patent Published
15	Dr. Shashi Kant Dargar	M.Vijayadharshini, G.Manisha, K.Deepthi	Medical Chatbot And Method Of Providing Voice Assistance	202141057944	Patent Published
16	Dr.V.Himadeepthi	Gorla Sujansouri, Gummalasainath Reddy, Panditipremsagar	System And Method For Automatic Attendance With Thermal Scanning	202141056976	Patent Published
17	Dr.M.Kalpana	R.Jenitha, D.Ram Prasad Reddy, Y.Venkata Krishna, K.Suresh	System And Method For Weather Prediction	202141056974	Patent Published

B. Research laboratories –

A multi-disciplinary research center catering to the teachers and researchers of the Department of Electronics and Communication engineering has been created by the university's administration in order to satisfy worldwide standards for excellence in teaching and research.

List of Research Laboratories

- DST-FIST Sponsored VLSI Research Laboratory
- National Instruments Technology Innovation Centre
- Semiconductor Testing Laboratory

DST-FIST Sponsored VLSI Research Laboratory

Table 5.8.3 List of equipment available with VLSI Research Laboratory

S.NO	ITEMS DESCRIPTION	QUANTITY
1	Desktop Computer (Core2Duo, 250Gb Hard Disk, 3GB RAM)	56
2	LAN-T Trainer Kit (Benchmark)	13
3	MATLAB R2014a	10
	Parallel computing Toolbox	2
	Optimization Toolbox	2
	Global Optimization Toolbox	2
	Neural Network Toolbox	2
	Fuzzy logic toolbox	2

	Signal Processing Toolbox	2
	DSP System Toolbox	2
	Communication System Tool box	2
	Wavelet Toolbox	2
	RF Toolbox	2
	Image processing Toolbox	2
	Image Acquisition Toolbox	2
	MATLAB Coder	2
	HDL Coder	2
	HDL Verifier	2
	Fixed Point Designer	2
	Fitter Design HD Coder	2
	MATLAB Compiler	2
	Simulink	2
4	RSOFT OPTSIM v2015.06 Software Node Locked Academic Perpetual Licence for windows 7/8	1
5	BENQ: DLP PROJECTOR	1
6	EXIDE BATTERY	26
7	HP Printer 1020Laser Printer	1
8	MEF Laser Printer	2
9	DESKTOP COMPUTER; Gat Way - 12 Lenovo - 15 HP - 4	31
10	PANDA BOARD-TI OMAP 4460 Processor,	2
11	XTION PROLIVE MOTIN Controller Dual Camera 3D VISION Capture Analysis,	1
12	Code Composer Studio IDE 5.0	1
13	OMAPL-DSP Starter Kit,	6
14	DM6437 Digital Video Development Kit With Emulator CSS And Camera	6
15	Multicore DSP Evaluation Module (6678)	1
16	OMAP 3730 Evaluation Module	1

17	Beagle Bone Black (CORTEX-A8) Board	1
18	Lenovo Sever – TCAD Software	1

List of Publication Outcomes from VLSI Research Laboratory

S.No	Details of the Publication	Impact factor	AY
1	Ashok Kumar S, Pravin JC. Performance Evaluation of Sub 5 nm GAA NWMBCFET using Silicon Carbide Source/Drain Material. IETE Journal of Research. 2021 Mar 26:1-6.. IF-2.333	2.333	2020-21
2	Gopalan K, Pothiraj S. A saboteur and mutant based built-in self-test and counting threshold-based built-in self repairing mechanism for memories. Journal of Ambient Intelligence and Humanized Computing. 2021 Jun;12(6):6651-63. IF-7.104	7.104	2020-21
3	Kadambarajan JP, Pothiraj S. TSV Aware 3D IC Partitioning with Area Optimization. Arabian Journal for Science and Engineering. 2021 Apr 13:1-9. IF-2.334 .	2.334	2020-21
4	Pandiaraj K, Sivakumar P, Prakash KJ. Machine learning based effective linear regression model for TSV layer assignment in 3DIC. Microprocessors and Microsystems. 2021 Jun 1;83:103953. IF-1.525	1.525	2020-21
5	Pothiraj S, Kadambarajan JP, Kadarkarai P. Floor Planning of 3D IC Design Using Hybrid Multi-verse Optimizer. Wireless Personal Communications. 2021 Feb 16:1-7. IF- 1.671	1.671	2020-21
6	Sridevi R, Pravin JC, Babu AR, Ajayan J. Lowering the Schottky Barrier Height by Titanium Contact for High-Drain Current in Mono-layer MoS 2 Transistor. Journal of Electronic Materials. 2021 Jun;50(6):3295-301. IF-1.938	1.938	2020-21
7	Sridevi R, Pravin JC, Babu AR, Nirmal D. Investigation of Quantum Confinement Effects on Molybdenum Disulfide (MoS2) Based Transistor Using Ritz Galerkin Finite Element Technique. Silicon. 2021 Feb 25:1-7. IF-2.670	2.67	2020-21
8	Sudharsan RR, Deny J, Muthukumaran E, Selvi SC. Design, implementation, and estimation of MFCV for 4-different position of human body using FPGA. Microelectronics Journal. 2020 Nov 1;105:104890. IF: 1.4	1.4	2020-21
9	Sudharsan RR, Deny J, Muthukumaran E, Varatharajan R. FPGA based peripheral myopathy monitoring using MFCV at dynamic contractions. Journal of Ambient Intelligence and Humanized Computing. 2021 Jul;12(7):7019-27. IF: 4.594	4.594	2020-21
10	V. Sandeep, J. Charles Pravin, A. Ramesh Babu and P. Prajoon, "Impact of AlInN Back-Barrier Over AlGaIn/GaN MOS-HEMT With HfO2 Dielectric Using Cubic Spline Interpolation Technique," IEEE Transaction on Electron Devices, vol. 67, pp. 3558 – 3563, Sep. 2020, doi:10.1109/TED.2020.3010710. IF-2.917	2.917	2020-21
11	Sivakumar P, Pandiaraj K, JeyaPrakash K. Optimization of thermal aware multilevel routing for 3D IC. Analog Integrated Circuits and Signal Processing. 2020 Apr;103(1):131-42.. IF-1.44	1.44	2019-20
12	Shukla P, Amutha S, Sen A. Exploring Surface and Tunneling Properties of Defect-Oriented Quasi-Graphene/Poly (vinylidene fluoride) Nanocomposite Films as Flexible 2D Materials for Electronic Applications. ACS omega. 2019 Jul 25;4(7):12696-701. IF-2.584	2.584	2019-20
13	Prajoon P, Menokey MA, Pravin JC, Ajayan J, Rajesh S, Nirmal D. Investigation of efficiency enhancement in InGaIn MQW LED with compositionally step graded GaN/InAlN/GaN multi-layer barrier. Superlattices and Microstructures. 2018 Apr 1;116:71-8. IF - 2.658	2.658	2018-19
14	Pravin JC, Prajoon P, Nesamania FP, Sriresh G, Kumar PS, Nirmal D. Nanoscale high-k dielectrics for junctionless nanowire transistor for drain current analysis. Journal of Electronic Materials. 2018 May 1;47(5):2679-86. IF:0.381	0.381	2018-19
15	Bhuvaneshwary N, Pravallika S, Jayapriya V, Himabindu K. Night Surveillance Military Spy Robot using Raspberry Pi. Annals of the Romanian Society for Cell Biology. 2021 Jun 1:5740-7. (Scopus Index)	Scopus Indexed	2020-21

16	Bhuvaneswary N, A.Lakshmi Design and implementation of intelligent ARM based verification methodology for low computation time and high performance in International Journal of Advanced Science and Technology. (Scopus Index)	Scopus Indexed	2020-21
17	Kumar RK, Diwakaran S, Thilagaraj M. Reactive power control of modern type high effective phase grid-tied photovoltaic network inverter. Journal of Green Engineering. 2020;10(9):4874-84. (Scopus Index)	Scopus Indexed	2020-21
18	Thermal analysis for power efficient 3d IC routing using memetic algorithm based on hill climbing algorithm Pandiaraj, K., Sivakumar, P., Jeyaprakash, K., Diwakaran, S. Journal of Green Engineering, 2021, 11(1), pp. 998–1010 (Scopus Index)	Scopus Indexed	2020-21
19	Kumar SA, Pravin JC. Influence of Tunable Work Function on SOI-based DMG Multi-channel Junctionless Thin Film Transistor. (Scopus Index)	Scopus Indexed	2020-21
20	Sandeep V, Pravin JC, Babu AR, Prajoon P. CSI based Analytical Model for evaluation of DC Characteristics in AlGaIn/GaN/AlInN MOS-HEMT using high-k dielectrics. In2020 4th International Conference on Electronics, Communication and Aerospace Technology (ICECA) 2020 Nov 5 (pp. 471-478). IEEE. (Scopus Index)	Scopus Indexed	2020-21
21	Pravin JC, Jayanthi RS, Sri JY, Vishali S. Effect of Nickel material over the DC characteristics of a Silicon Nanowire Cylindrical MOSFET. In2021 5th International Conference on Trends in Electronics and Informatics (ICOEI) 2021 Jun 3 (pp. 1204-1206). IEEE. (Scopus Index)	Scopus Indexed	2020-21
22	Pravin JC, Anumanjari A, Pandimeena T, Fathima JS. Evaluation of DC Characteristics for a Zinc Oxide (ZnO) based Thin Film Transistor by influence of a Cobalt material. In2021 5th International Conference on Trends in Electronics and Informatics (ICOEI) 2021 Jun 3 (pp. 123-125). IEEE. (Scopus Index)	Scopus Indexed	2020-21
23	Karthy G, and Sivakumar P, An Efficient High-Speed Test Pattern Generation Schemes for Memory Built-In Self-Test." Published in Journal of Green Engineering"- Volume 10, Issue 11, 2020 (Scopus Index)	Scopus Indexed	2020-21
24	Pandiaraj, K, P. Sivakumar, K. Jeya Prakash, and S. Diwakaran, Thermal Analysis for Power-Efficient 3d IC Routing using Memetic Algorithm based on Hill Climbing Algorithm, in the Proceedings of Journal of Green Engineering, 11 (1) (2021), 998-1010. (SCOPUS) (Scopus Index)	Scopus Indexed	2020-21
25	Jeya Prakash Kadambarajan, Sivakumar Pothiraj, and Pandiaraj Kadarkarai “ GPU Implementation of Thermal Aware 3D IC Floorplanning “, in the proceedings of International Journal of Computer Information Systems and Industrial Management Applications, Volume 13 (2021) 043-050. (SCOPUS) (Scopus Index)	Scopus Indexed	2020-21
26	Pandiaraj K, Gobika K, Mounika T, Tamilselvi R. RFID Based Automatic Lane Clearance for Ambulance. In2021 International Conference on Advance Computing and Innovative Technologies in Engineering (ICACITE) 2021 Mar 4 (pp. 1019-1022). IEEE. (Scopus Index)	Scopus Indexed	2020-21
27	Kadambarajan, J.P., Pothiraj, S., Kadarkarai, P., GPU Implementation of Thermal Aware 3D IC Floorplanning, International Journal of Computer Information Systems and Industrial Management Applications, 2021, pp 043-050 (Scopus Index)	Scopus Indexed	2020-21
28	S. Pandiaraj, K., Sivakumar, P., Jeyaprakash, K., Diwakaran, Thermal analysis for power efficient 3d IC routing using memetic algorithm based on hill climbing algorithm, Journal of Green Engineering, 11 (1), pp 998–1010 (Scopus Index)	Scopus Indexed	2020-21
29	Sakthimohan M, Deny J, An Efficient Design of 8 * 8 Wallace Tree Multiplier Using 2 and 3-Bit Adders, Proceedings of International Conference on Sustainable Expert Systems. Springer, Lecture Notes in Networks and Systems, 176, (2021), 23 - 39. https://doi.org/10.1007/978-981-33-4355-9_3 (Scopus Index)	Scopus Indexed	2020-21
30	Karthikeyan V, Suja Priyadharsini S. A strong hybrid AdaBoost classification algorithm for speaker recognition. Sādhanā. 2021 Sep;46(3):1-9. (Scopus Index)	Scopus Indexed	2020-21
31	JSampson J, Velmurugan SP. Analysis of GAA SNTFT with Different Dielectric Materials. In2020 5th International Conference on Devices, Circuits and Systems (ICDCS) 2020 Mar 5 (pp. 283-285). IEEE. (Scopus Index)	Scopus Indexed	2020-21
32	Sivakumar P, Pandiaraj K, JeyaPrakash K. Optimization of thermal aware multilevel routing for 3D IC. Analog Integrated Circuits and Signal Processing. 2020 Apr;103(1):131-42. (Scopus Index)	Scopus Indexed	2019-20

33	Vinopoornima P, Dhanabalan G. Identification of Stuck-at-faults of Full Adder using FPGA as a Testing Device. In 2019 IEEE International Conference on Intelligent Techniques in Control, Optimization and Signal Processing (INCOS) 2019 Apr 11 (pp. 1-4). IEEE. (Scopus Indexed)	Scopus Indexed	2018-19
34	Deny J, Sundarajan M, Raja Sudharsan R, Muthukumaran E, Perumal B, Year: 2021, Reduction of speckling noise of SAR Images using Dual Tree Complex Wavelet (DTCW) and Shearlet Transforms, ICASISSET, EAI, DOI: 10.4108/eai.16-5-2020.2304197.	Other	2020-21
35	Muthu Kumar A, Jayasai A, Raja Mohan Reddy M, P. Sai Kumar Raju, Smart door lock control system using face recognition and detection through viola jones algorithm by neural networks in matlab, International Journal of Emerging Technology in Computer Science & Electronics (IJETCSE), ISSN: 0976-1353, Volume 27, Issue 3 – Sep 2020.	Other	2020-21

NI TECHNOLOGY INNOVATION CENTRE LAB

Table 5.8.4 List of equipment available with NI technology innovation centre lab

S.NO	ITEM DESCRIPTION	QUANTITY	Laboratory Outcome
1.	Power Chord 250v,10A	16	CLAD Certification Training to students and Faculty Memebrs
2.	Pitsco My Quake,Quantity 5	1	
3.	Pitsco My VTOL,Quantity 5	1	
4.	Pitsco My Temp,Quantity 5	1	
5.	Emona My DSP,Quantity 5	1	
6.	Emona My GLCD,Quantity 5	1	
7.	NI My Rio Kits:Mechatronics Kit Common Sensors And Actuators For Mechatronics Projects	4	
8.	NI My RIO:Embedded Kit Common Sensors,Devices And Display For Embedded Projects	4	
9.	Stratom CAN Adates For My RIO	4	
10.	Evaluation Unit Of NimyRIO(Academic Custom Only)	4	
11.	Emona Date Telecommunication Board For ELVIS(Board Only)	4	
12.	Emona ETT-Scope Set	4	
13.	Emona ETT-2mm-Pc Set	4	
14.	Emona ETT-2/4mm-DM Set	4	
15.	Emona ETT-211 FOTEX Fiber Optic Communication Trainer For NI ELVIS	4	
16.	Emona ETT –Scope Set	4	
17.	Emona ETT-2mm-Pc Set	4	
18.	Emona ETT-2/4mm-DM Set	4	
19.	Emona ETT-FO Patch Set	4	
20.	NI Digital Electronics FPGA Board	4	

21.	Quanser QNET Dc Motor Board For NI ELVIS (Academic Only) Lab VIEW Control Design And Simulation Module And PID Toolkit	1
22.	Emona Sigex Signal And Systems Experiment For NI ELVIS (Board Only)	4
23.	Software Radio Educational Lab Station:Two NI USRP-2920 Bundles With Lab Materials	2
24.	144 MHZ,400 MHZ,1200 MHZ Tri-Band 7-Inch Vertical Antenna	8
25.	NI ELVIS 2+Hardware(For Academic Only)	16
26.	NI Sb RIO Inverter GPIC Evaluatio(SW Eval,Sb RIO-9606,NI-9683,PS-2,Stands Offs,Screws)	1
27.	CRIO-9076 Integrated Controller And Chassis Systems 400 MHZ Power Pc Controller,LX45 Gate FPGA,4-SLOTS	2
28.	Nips-15 Power Supply ,24-VDC,5A,100-120/1200-240V VAC Input	4
29.	CRIO-90688-Slot Integrated Controller And Chassis System, Artix-7FPGA	2
30.	NI 9201 Screw Term,+/-10V ,12-Bit,500 Ks/S,8 -Ch A1 Module	2
31.	NI 9263 Screw Term,+/-10v ,16-Bit,100 Ks/S/Ch,4-Ch Ao Module	2
32.	NI 9421 Screw Term,24v, 100s S-Ch Sinking D1 Module	2
33.	NI 9472 S-Ch 24v,100s,Sourcing Do Module	2
34.	NI 9227 4ch Current Input,5Amp,180,50k,24-Bit	2
35.	NI 9244,400 Vrms L-N,24-Bit,50ks/S/Ch,3-Ch,Aimodule	2
36.	CDACS-9184 Compact DACS Chassis(4 Slot Ethernet)	2
37.	NIPS-IS Power Supply,24 VDC,5A,100-120/200-240VAC Input	2
38.	Cable Assembly,CAT-5E Ethernet,Thin Profile,2m	2
39.	NI 9201 ScerwTerm,+/-10v,12-Bit,500 Ks/S,8-Ch A1 Module	2
40.	NI 9263 Screw Term ,24v,100s ,8-Ch Sinking D1 Module	2
41.	NI 9263 Screw Term,+/-10v ,16-Bit,100 Ks/S/Ch,4-Ch Ao Module	2
42.	NI 9472 S-Ch 24v,100s,Sourcing Do Module	2
43.	NI My DAQS-University Kit Hardware Only	30
44.	NI Academic Site License-Labview Teaching Only ASL 1 Seats NOT CONCURRENT 1year Academic Sute License Teaching Standard Service Program	1

45.	NI Academic Site License Multisim Teaching Only ASL 1 Seats NOT CONCURRENT 1 Year Academic Site License Teaching Standard Service Program	1	
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Semiconductor Testing Laboratory

Tessolve Semiconductors Pvt, Ltd., Bangalore, is an Electronics Core Testing based company. An MoU was signed between the Department of ECE, Kare, and Tessolve to train students in the core domain. In this regard, a Training Laboratory specifically for Tessolve was established in the department. Followed by which few Faculties from the department were provided training from Tessolve at the inception. Later, the department faculty have begun training the students under the banner of the Semiconductor Test Engineering – Skill Development Course (STE-SDC). A maximum of 10 students can attend the training every year as per the industry norms. Hence interested students having a good foundation in Electronics are provided training. As of now, till the Academic year 2021, 8 students have been placed. The students benefit that they first attend their internship during the last semester, followed by becoming employees.

Table 5.8.5 List of equipment available with Semiconductor Testing Laboratory

S.NO	ITEMS DESCRIPTION	QUANTITY
1	LG-LITE ATE WITH UNIVERSAL LOAD BOARD 50MH,LPG 125	05 Nos
2	Lenovo system	10 Nos
3	U-Power UPS 20KVA with 20Nos Battery	1No

Placement Outcome through training program conducted on Semiconductor Testing Laboratory

Academic Year	Number of students Placed
2018 - 19	1
2019 - 20	4
2020 - 21	3

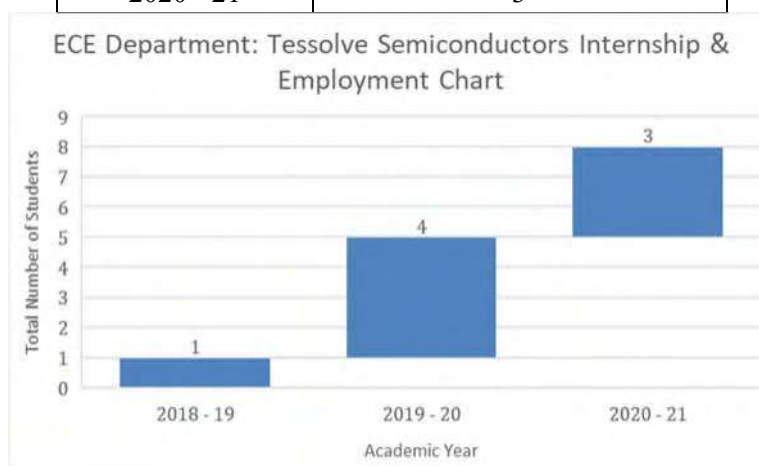


Figure 5.8.1 Tessolve Semiconductors Employment and Internship from ECE-KARE

C. Instructional Materials

Table 5.8.6 List of instructional materials available with department

Sl. No	Teaching Methodology	Nature of Instructional Materials
1	Class Room Chalk & Board	Course Notes
		Online Videos
		Powerpoint Presentations
		Assignments
		Tutorials
		Question Banks
		Model Question Papers
		Working Models
2	Flipped Classroom	Course Notes
		Video Lecture by Faculty
		LMS
		Lecture Presentations
3	Google Classroom	Assignments
		Quiz
		Online Comments

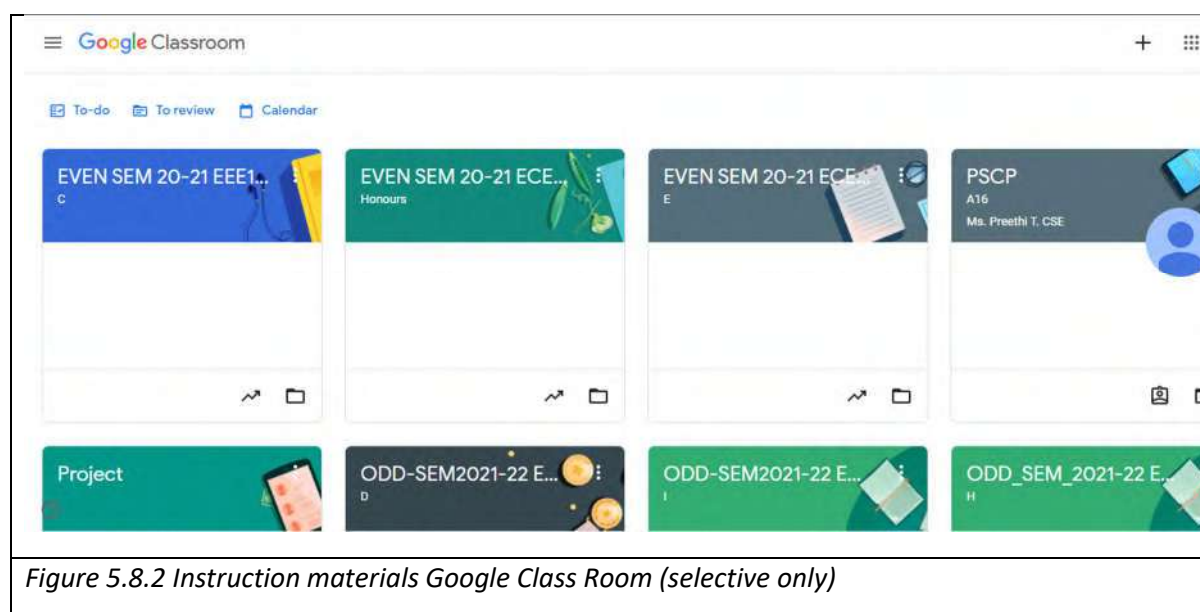


Figure 5.8.2 Instruction materials Google Class Room (selective only)

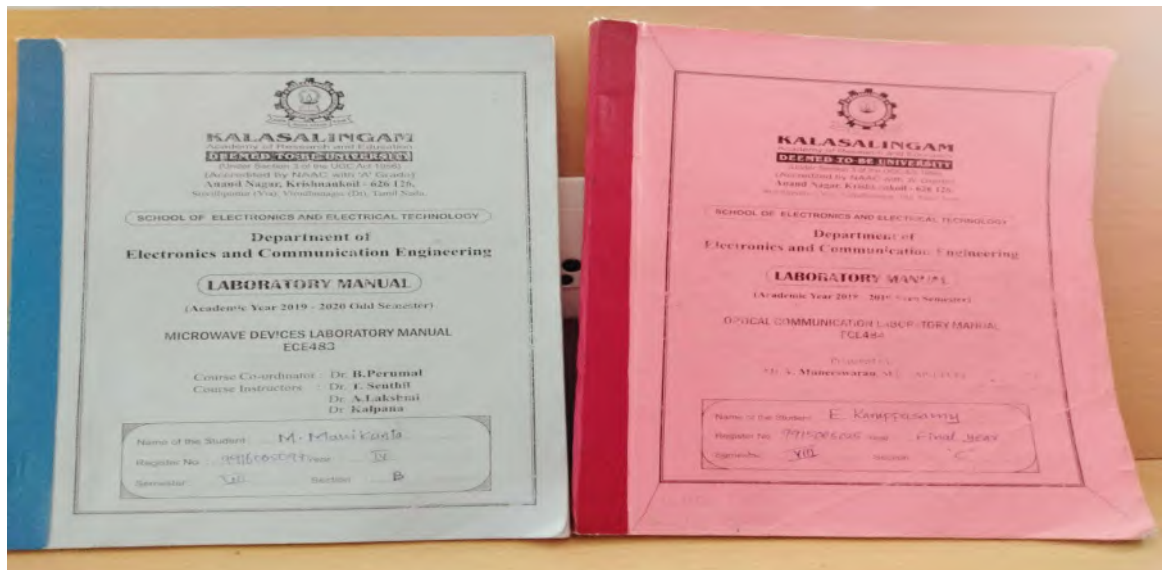


Figure 5.8.3 Instruction materials (selective only)

Activity	Due Date
External Exam slot 2	Due Nov 27, 2021
END SEM EXAM SLOT1	Due Nov 27, 2021, 12:10 PM
LAB OBSERVATION	Due Nov 26, 2021, 9:00 PM
Model Lab	Due Nov 10, 2021, 4:00 PM
LAB Model Exam	Due Oct 6, 2021, 3:20 PM
EXP-5 Design of Decoders and Encoders	Posted Sep 15, 2021
EXP-4- Design of Multiplexer and Demultiplexers	Posted Sep 15, 2021
EXP-3 Design of Comparator	Posted Sep 15, 2021

Figure 5.8.4 Instruction materials (selective only)

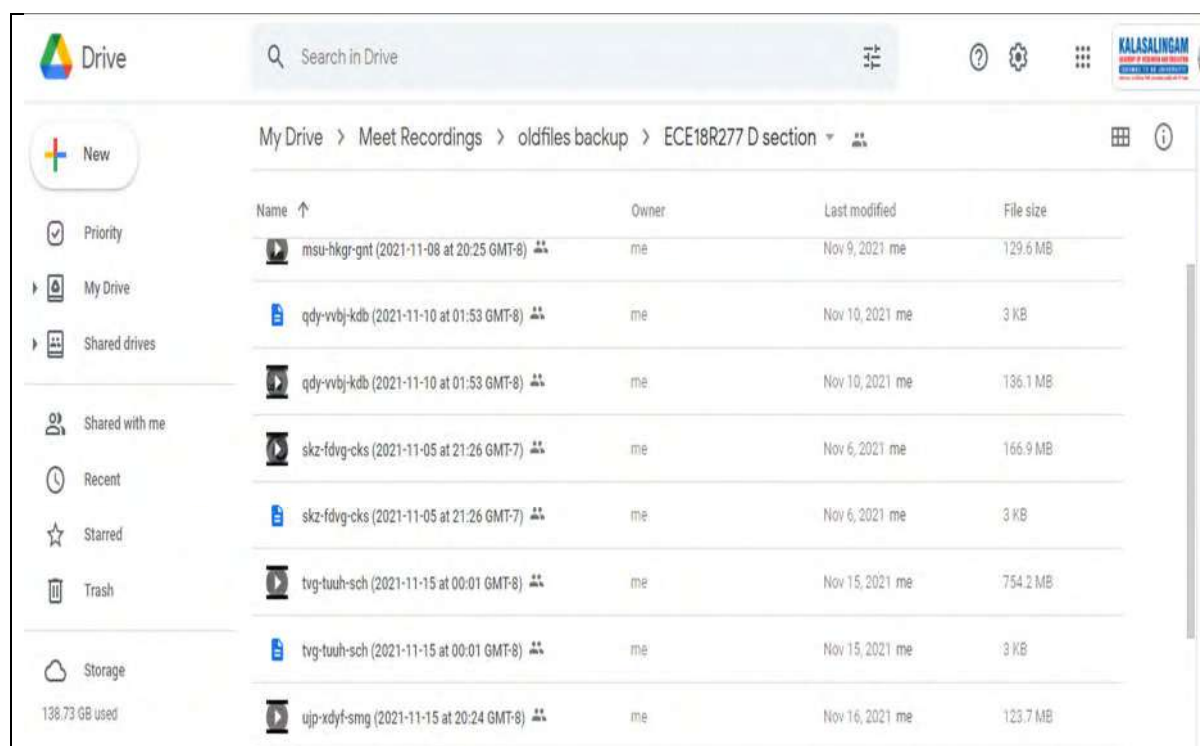


Figure 5.8.5 Flipped class videos (selective only)

D. Working models/charts/monograms etc.

The department is highly concerned about giving its fellow students with a basic comprehension of the topics by emphasising on the student's capacity to apply them.

As a stringent requirement for teaching, any concept using charts and working models for theoretical and laboratory courses, among other things. Therefore, several graphics and working models are included in this report, and some are displayed.

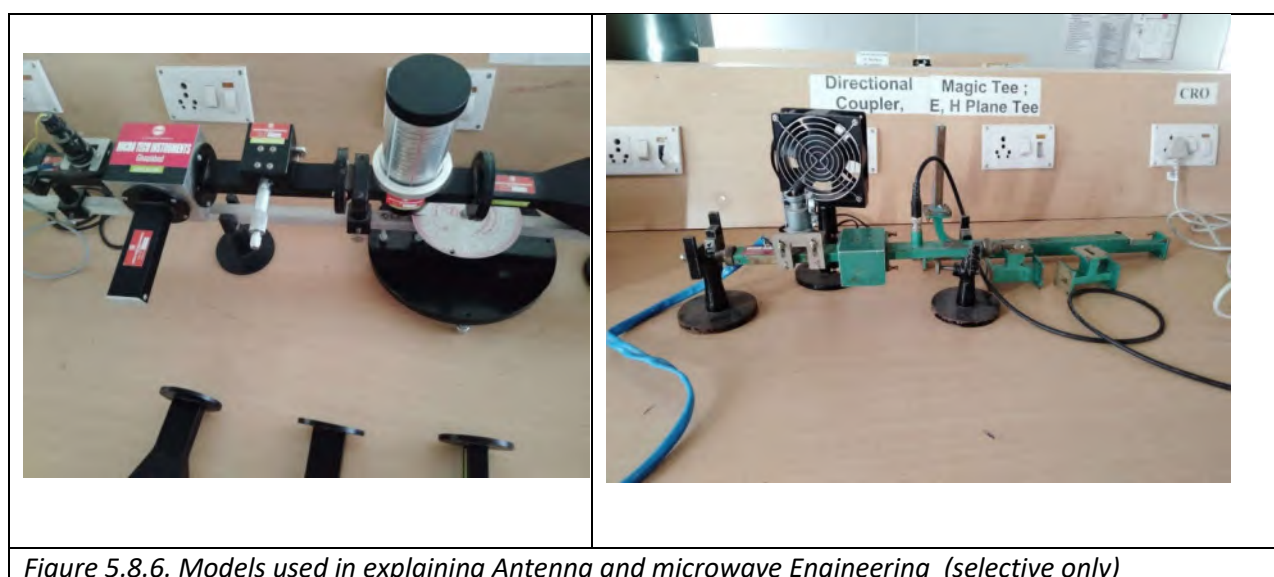


Figure 5.8.6. Models used in explaining Antenna and microwave Engineering (selective only)

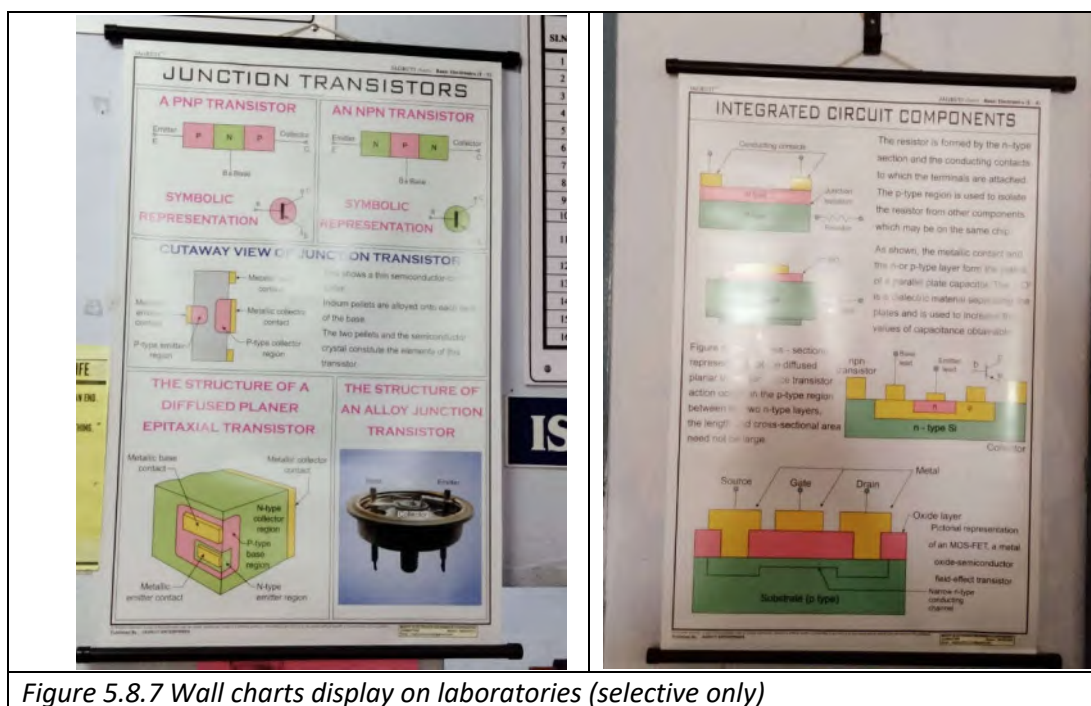


Figure 5.8.7 Wall charts display on laboratories (selective only)

5.8.4. Consultancy (from Industry) (20/20)

2020-21(CAYm1)

S.No	Name of the consultant	Project Title	Duration	Funding Agency	Amount in Rupees
Nil					

2019-20 (CAYm2)

S.No	Name of the consultant	Project Title	Duration	Funding Agency	Amount in Rupees
1	Dr. J. Deny	An analysis of different biopotential electrodes used for electromyography	1 Year	Rashtriya Chemicals & Fertilizers Ltd.	1000000
2	Dr.A.Muthu Kumar	An energy-efficient clustering and multipath routing for mobile wireless sensor network using game theory	1 Year	Kolte-Patil Developers Ltd.	600000
3	Dr.A.Muthu Kumar	Double Cluster Head Heterogeneous Clustering for Optimization in Hybrid Wireless Sensor Network	1 Year	NBCC (India) Ltd.	575000
4	Dr.B.Perumal	A quantitative assessment of speckle noise reduction in SAR	1 Year	Gujarat Fluorochemicals Ltd.	527500

		images using TLFFBP neural network			
5	Dr.B.Perumal	Automatic knee joint segmentation using Douglas-Rachford splitting method	1 Year	Granules India Ltd.	500000
6	Dr.B.Perumal	Medical imaging data security using modified honey encryption algorithm with ant-lion optimization technique	1 Year	Shipping Corporation of India Ltd.	500000
Total					3702500.00

2018-19 (CAYm3)

S.No	Name of the consultant	Project Title	Duration	Funding Agency	Amount in Rupees
1	Dr. Kyung Tae Kim	Construction of Korean - Hindi language database	1 Year	Hannam University	885066
2	Dr. B. Kannapiran	Establishment of organization-wide experimental micro grid	1 Year	Minniyal Private Limited	625000
3	Dr. Kyung Tae Kim	Translation technology for Hindi - Korean spoken language	1 Year	Hannam University	442534
4	Dr.M.PallikondaRajasekaran	Tumor Segmentation and Feature Extraction with MRI Classification	1 Year	Ashwini Hospitals	350000
5	Mr. M. Thilagaraj	Development of efficient processing methodologies for traditional dishes	1 Year	Avitaa Masala	275000
6	Dr. S Subathra	Simulation of heat generation and efficient laying of AC units in tropical climate regions	1 Year	Northumbria University	223936
7	Dr. M. P. Rajasekaran	Financial literacy in villages in Virudhunagar district	1 Year	Institute of Cost Accountants of India	195000
8	Dr. A. Muthukumar	Analysis of wireless systems and proposal for efficient management of wifi	1 Year	Solamalai Group	184000
9	Dr. Seshadhri Srinivasan	Realtime monitoring of heat factor in buildings in tropical regions	1 Year	Northumbria University	163033

10	Dr. V. Muneeswaran	Pedagogical intervention in Tamil grammar for primary school students	1 Year	Arumuga Palaniguru Modern School	135000
Total					3478569.00

2017-18 (CAYm4)

S.No	Name of the consultant	Project Title	Duration	Funding Agency	Amount in Rupees
1	Dr. V. Vishnuvarthanan	Artificial pancreas and smart insulin injection for patients with diabetes	1 Year	Ashwini Hospitals	2200000
2	Dr. Pallikonda Rajasekaran	Bed-side monitoring system for cardiac patients	1 Year	Madurai City Hospital	1000000
3	Dr. P. Sivakumar	Development of chips in a low cost methodology	1 Year	Barakath Communications	700000
4	Dr. T. Senthil	Improving efficiency and throughput for power saving suggestions for Barakath Communications	1 Year	Barakath Communications	700000
5	Dr.P.Sivakumar	Enhancing the efficiency of an IC Test and Validation Platform	1 Year	Amogaa Solutions	350000
Total					4950000.00

Cumulative Amount = 12131069.00

5.9. Faculty Performance Appraisal and Development System (FPADS) (10/10)

A. Notified performance appraisal and development system; Appraisal Parameters; Awareness

Faculty Performance Appraisal form is collected from each faculty members mainly focuses on major areas like Teaching learning and evaluation activities, Co-curricular activities, professional activities, Research and consultancy related contributions.

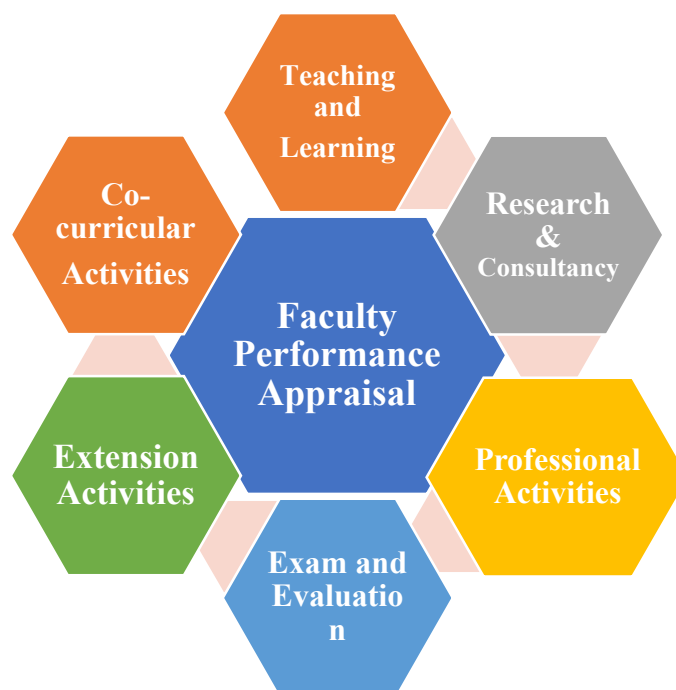


Figure 5.9.1 Faculty Performance Appraisal

Teaching, Learning and Evaluation Activities:

- This parameter endorses the faculty to complete 100% syllabus, conduct seminar/Workshop/Seminar and tutorial classes.
- This also encourages the faculty to emphasize on Innovative teaching learning methodologies and assessments that can be used by the faculty in imparting knowledge/Skills to the students.
- The faculty contribution towards the development of E-Content/MOOCs for the courses is also a criterion used for self-evaluation to test their teaching competency.

Co-curricular, Extension and Professional Activities:

- Faculty's interaction with outside world can be measured by looking into parameters like Orientation Course /Refresher Courses/ Research Methodology/Workshops/ Syllabus Upgradation Workshop/ Soft Skills development Programmes/Teaching-Learning-Evaluation/ Technology Programmes, Faculty Development Programs, seminars attended by the faculty.
- Faculty contribution as session chair, judge, reviewer, editorial board member of journals/Conferences, invited lectures/ Resource Person/ Paper presentation in Seminars/ Conference is also a criterion used for self-evaluation.

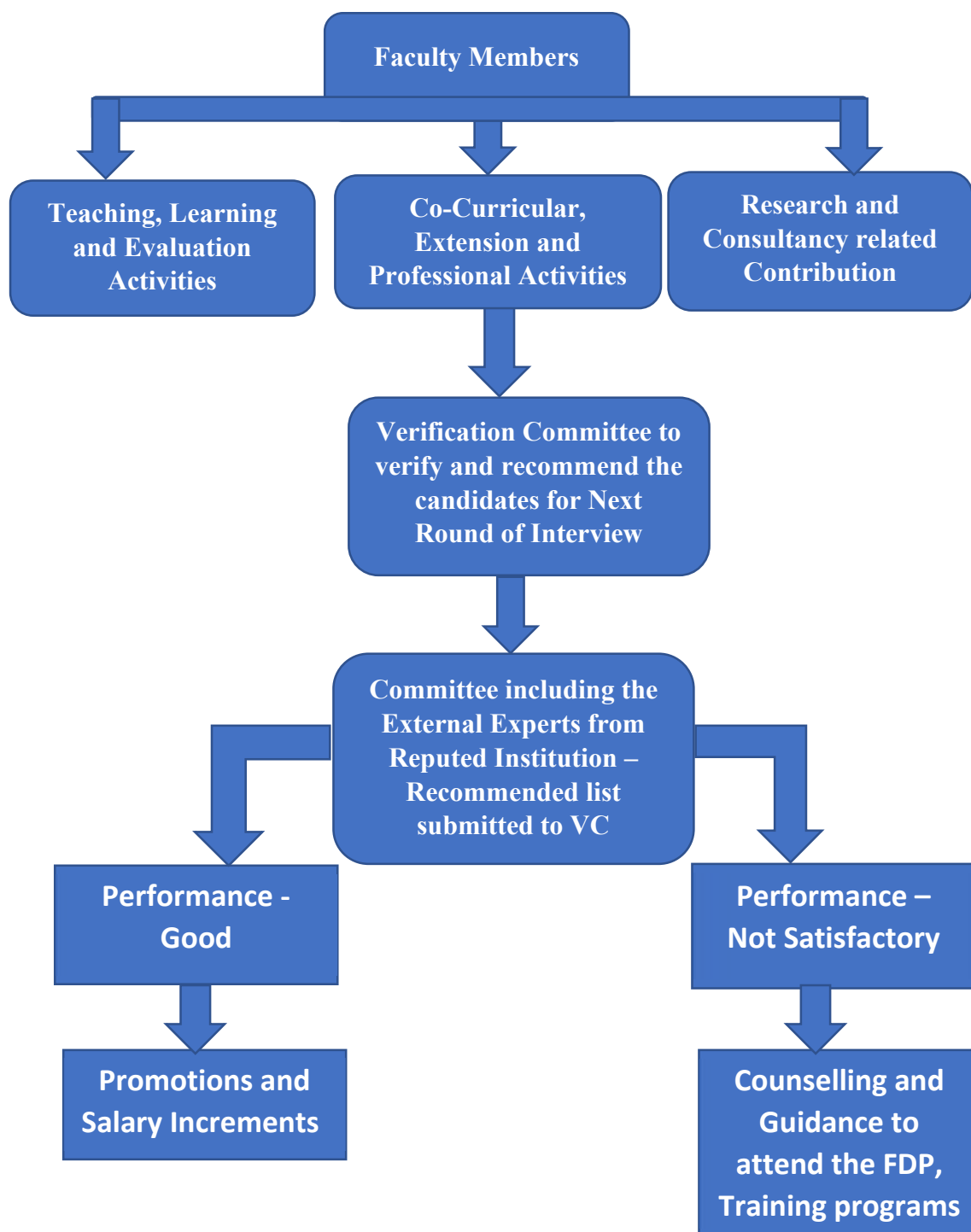


Figure 5.9.2 Faculty Performance System followed

Research and consultancy related contributions:

- To promote quality research publications, more weightage is given to Scopus and SCI journals in comparison with other journals.
- In addition to this, to promote quality research, more weightage is given to IEEE, Elsevier and springer conferences in comparison with other international conferences.

- Faculty members are encouraged to author books, book chapters (National and International Publisher) and knowledge-based volumes.
- This parameter also gives lot of Importance to sponsored research projects from government and non-Government agencies The weightage of marks has varied in accordance with the amount mobilized.
- To motivate the faculty for applying national and international patent and technology transfer Maximum marks is being allotted which includes applying as well as sanctioning.
- Faculty members are also expected to provide consultancy services to the industry by providing real time solution.

B. Implementation, Transparency and Effectiveness

- Each faculty is supposed to submit the self assessment cum performance appraisal form duly filled bi-annually (in the month of June and December) as a systematic procedure.
- A committee comprising of the senior faculty is constituted to evaluate and recommend the candidates for promotion, as per the Career Advancement notification issued by the Vice Chancellor.
- Based on the details filled in the form and upon producing the corresponding evidences, the committee evaluates the performance of the faculty and may/may not recommend the faculty to the next level of interview for promotion under the Career Advancement Scheme (CAS).
- Shortlisted faculty members are meant to appear before the screening committee which consist of external expert from reputed institution and make a brief presentation which includes the present research standing and future plan towards teaching and research for 10 minutes.
- Based on the presentation by the faculty members, suitable actions are taken. Best faculty members are awarded with the promotion, increment in salary and those who needs improvements are counselled and guided appropriately to improve their performances in forthcoming semester.
- The entire process is based on the guidelines suggested by the UGC on promotion and assessment.

Circulars for Annual Appraisal Process issued by Vice-Chancellors Office

Kalasalingam Academy of Research and Education
(Deemed to be University)
Anandnagar::Krishnankoil

Office of Director (IQAC)

Circular

No. KARE/IQAC/Circular/095/2018/123

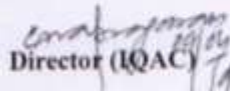
Date: 09.04.2019

The Annual Appraisal Process for the Academic Year 2018-19 will be carried out as per the schedule given below:

12.04.19	Submission of Self Appraisal Form by the faculty to the Reporting Officer (HoDs concerned)
17.04.19	Submission of Reporting Officer report by the Reporting Officer for the individual faculty to Reviewing Officer (Deans concerned)
24.04.19	Submission of Reviewing Officer Report by the Reviewing Officer for the individual faculty to VC Office

The following guidelines need to be followed by all concerned:

1. The faculty members have to complete the self appraisal form (enclosed) with all the necessary proofs and submit to their reporting officer along with their self score on the prescribed form.
2. The reporting officer is requested to verify the documents and give their score/remarks in the prescribed form strictly based on the merit of the faculty member. In order to remove subjectivity in the reporting officer scores across the departments, the reporting officers are strongly recommended to follow the rubrics for various items as per the existing KARE-API.
3. The reviewing officer is requested to give their confidential comments in the prescribed form. They can also do any random verification, if deemed necessary.
4. All the concerned members are requested to take the reviewing process seriously.
5. For faculty members who are aspiring for promotion, a separate call for will be made in due course.
6. Faculty members who are in full time administrative work or research work are requested to submit the self appraisal form directly to VC office


Director (IQAC)


Vice Chancellor

Copy submitted to Chancellor and Vice Presidents – for kind information
cc: to Registrar & Controller of Examinations
cc: to all Directors, Deans and HoDs – for circulation among faculty members

KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION
(Deemed to be University)

Anand Nagar : Krishnankoil 626 126.

No. KARE/Circular/095/2021/51

Date: 10.03.2021

CIRCULAR

The faculty appraisal for the academic year 2020 – 2021 is to be conducted. The formats for the same are enclosed herewith. The reports must be submitted to the undersigned latest by 18.03.2021.



VICE CHANCELLOR

Encl: Formats

Copy submitted to the Chancellor & Directors – for kind information

cc: to Registrar & Controller of Examinations

cc: to all Deans, Directors and all HODs

**KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION
(Deemed to be University)**

Anand Nagar: Krishnankoil 626 126.

No. KARE/Circular/095/2021/95

Date: 02.07.2021

CIRCULAR

PROMOTION THROUGH CAREER ADVANCEMENT SCHEME

Faculty members who wish to be considered for promotion under Career Advancement Scheme are invited to apply for the same through proper channel to the undersigned stating that s/he fulfils all qualifications under CAS and submit the Performance Based Appraisal System (PBAS- attached herewith) proforma as evolved by the University and duly supported by all credentials. The faculty members may apply latest by 24th July, 2021.

Who can apply: The incumbent teacher must be on the role and active service of the University on the date of consideration by the Selection Committee for CAS Promotion. Candidates shall offer themselves for assessment for promotion, if they fulfil the minimum eligibility indicated in the CAS Regulations 2020, by submitting an application and the required PBAS proforma. Candidates who do not fulfil the minimum score requirement under the CAS or those who obtain less than 50% in the expert assessment of the selection process will have to be re-assessed only after a minimum period of one year.

Vice Chancellor

CS to The Chancellor, and Vice-Presidents– for favour of information
CC to Registrar and CoE
CC to Directors, Deans and HoDs

5.10. Visiting/Adjunct/Emeritus Faculty etc. (10/10)**Details of Visiting Faculty and Mode of Interaction**

Sl.no	Name of the Faculty	Qualification	Mode of Interaction	Interaction Hours Per year(for each assessment year)
1	Dr.N.Vimaladhithan	Ph.D	One credit course, Value Added Course, and Invited Lecture	54
2	Dr.Rajkamal	Ph.D	Technical workshop to research scholars, faculty members and students	54
	Dr.N.Sundarrajan	Ph.D	Technical workshop to research scholars, faculty members and students	54
3	Mr. Venkatesh Prasad	B.E	Expert lecture (Industry expert from Nanochip Soutions)	54
4	Mr. Srinath B.K.	B.E	Expert lecture (Industry expert from Nanochip Soutions)	54
5	Mr. B.K. Koushik	M.S	Course Handling faculty (Industry expert from Nanochip Soutions)	54
6	Dr.Nagarajan Srinivasan	Ph.D	Course Handling faculty (Industry expert from Nanochip Soutions)	54
7	Kishor Zingre	Ph.D	Research collaboration and Technical workshop to research scholars, faculty members and students (Expert from Northumbria University)	54
8.	Korkut Bekiroglu	Ph.D	Research collaboration and Technical workshop to research scholars, faculty members and students (Expert from SUNY	54

			Polytechnical University)	
9	Giovanni Palmieri	Ph.D	Research collaboration and Technical workshop to research scholars, faculty members and students (Expert from Kineton, Italy)	54

Summary of One credit course delivered by Dr.Vimalathithan, Director, Kris Tech, Coimbatore

S. No	Code	Course Name	Academic year & Sem.	No of students
1	ECEX012	M2M for smart cities	2018-2019 ODD	63
2	ECEX014	LoRa Gateway Design & Applications	2019-2020 ODD	43
3	ECEX015	IOT Using Mongoose OS	2019-2020 EVEN	59
4	ECEX016	CupCarbon- A Simulator Tool for Industry 4.0	2020-2021 ODD	166
5	ECEX017	Machine Learning - Application Perspective	2020-2021 ODD	78

Sample Photo proof for Interaction with adjunct faculty



Figure 5.10.1 Dr. Rajkamal delivering a Guest Lecture on “Recent Trends in IoT” to the faculty Members of ECE on 02-04-2021



Figure 5.10.2 Group photo taken on the Valedictory Session of ECX012-M2M for smart cities conducted on (2018-2019) ODD Sem.



Figure 5.10.3 Group photo taken on the Valedictory Session of ECX014-LoRa Gateway Design & Applications conducted on (2019-2020) ODD Sem.



Figure 5.10.4 Group photo taken on the Valedictory Session of ECX015-IOT Using Mongoose OS Course conducted on (2019-2020) EVEN SEM.

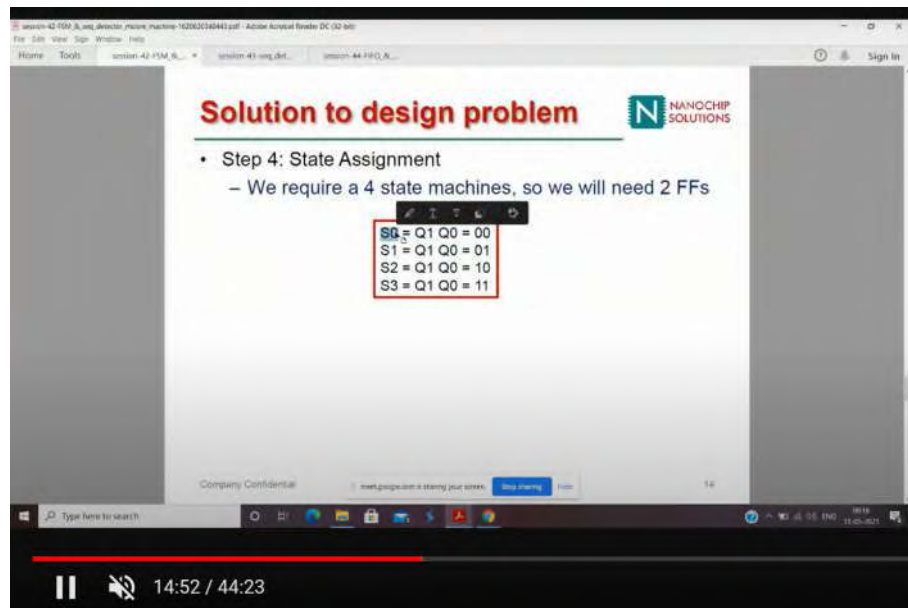


Figure 5.10.5 Industrail Expert from Nanochip solutions handling a lecture for the students of ECE-KARE.

CRITERIA 6

CRITERION 6	Facilities and Technical Support	80
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6.1 Adequate and well-equipped laboratories and technical manpower

Table 6.1.A. Laboratory Equipment and Utilization

S. No.	Name of the Laboratory	No. of students per setup	Name of the Important Equipment	Weekly utilization status	Overall Ambience
1	N.I. Laboratory	4 / Batch	<ul style="list-style-type: none"> • NI My Rio Kits: Mechatronics Kit Common Sensors and Actuators for Mechatronics Projects, • NI. My R.I.O.: Embedded Kit Common Sensors, Devices and Display for Embedded Projects, • NI ELVIS 2+Hardware, • CRIO-9076 Integrated Controller and Chassis Systems 400 MHZ Power Pc Controller, • LX45 Gate FPGA,4-SLOTS 	32 Hours	Good
2	Communication Laboratory	4 / Batch	<ul style="list-style-type: none"> • Spectrum Analyser, • Digital Storage Oscilloscope, • Cathode Ray Oscilloscope, • Function Generator, • Dc Regulated Power Supply, • Antenna Trainer System, • AM & F.M. Transmitter & Receiver Kit, Pulse Code Modulation & Demodulation Kit 	15 Hours	Good
3	Digital Signal Processing and System Design Laboratory	4 / Batch	<ul style="list-style-type: none"> • Desktop Computer, • LAN -Trainer Kit, • MATLAB Software, • Network Interface Card of LAN Trainer Kit, 	30 Hours	Good
4	Microwave Devices and Optical	4 / Batch	<ul style="list-style-type: none"> • Microwave antenna trainer system full setup J band, 	15 Hours	Good

	Communication Laboratory		<ul style="list-style-type: none"> • Microwave power meter, • C.S.T. studio suite, • Fiber optics L.E.D. and Pin photo diode Characteristics, • Digital storage oscilloscope, • OFT patch guard 		
5	Linear and Digital Integrated Circuits Laboratory	4 / Batch	<ul style="list-style-type: none"> • Digital I.C. Trainer Kit – 16 Bit, • Cathode Ray Oscilloscopes, • Digital Storage Oscilloscope, • Cathode Ray Oscilloscope, • Dual (D.C Regulated) Power Supply, Linear I.C. Tester, • Digital I.C. Tester 	15 Hours	Good
6	Microprocessor and Microcontroller Laboratory	4 / Batch	<ul style="list-style-type: none"> • 8085 Based Microprocessor Trainer Kits, 8086 Based Microprocessor Trainer Kits, • 8051 Microcontroller Trainer Kits, • A.D.C. & D.A.C. Interface, • 8051 Development Board & Programmer kits, • Arduino U.N.O. essential kit, 8051 Development board, and Programmer kit 	15 Hours	Good
7	VLSI Laboratory	1 / Batch	<ul style="list-style-type: none"> • Universal- Multivendor Development kit, • Universal CPLD/FPGA VHDL Trainer kit with Xilinx, • A.R.M. Microcontroller kit, • FPGA board NEXYS-3, VIRTEX-5, • XUP-5, ALTERA VLSI KIT DE-1, XILINX 	28 Hours	Good

			Spartan - 3 FPGA Trainer kit, <ul style="list-style-type: none"> Digital Storage Oscilloscope, Arduino (U.N.O.), Arduino (MEGA) 		
8	VLSI Design Research Laboratory	1 / Batch	<ul style="list-style-type: none"> Panda board – TI OMAP 4460 Processor, GPU, Xtion Pro live motion controller Dual camera(3D), Microphone, Motion capture analysis, I.R. sensor integration, DM6437 Digital video development kit with C.C.S. and Camera, Beagle bone black (CORTEX-A8) board, OMAP L-138/6748 DSP starter kit with emulator and code composer studio, Code composer studio IDE 5.0, Multicore DSP evaluation module (6678), OMAP3730 evaluation module, HP Desktop Computer 	15 Hours	Good
9	DSP Laboratory	4 / Batch	<ul style="list-style-type: none"> Rsoft OPTISIM v2015.06 software node locked academic perpetual licence for windows7/8 MATLAB Software, TMS320C50 Based DSP Trainerkit DSP Starter Kit 6713 CDMA DSSS Trainer Kit (Scientech ST 2131) LAN Trainer Kit 	15 Hours	Good
10	Tessolve and Open-Source Research Laboratory	4 / Batch	<ul style="list-style-type: none"> LG-LITE ATE Universal Load Board 50MHZ LGPG125, 24 Port Gigabit Managed Switch 	15 Hours	Good

Availability of adequate and qualified technical supporting staff:

Table 6.1.B. Technical Supporting Staff (Non-Teaching)

S. No	Name of Technical Staff	Designation	Qualification	Exclusive / Shared work	Date of Joining	Responsibility
1	Mr. R. Muthukani	Clerk / ECE	M.Com	Exclusive	01.09.2012	E.C.E. Department
2	Mr. N. Pandikumar	Lab Technician	B.E(E.E.E.)	Exclusive	29.06.2018	N.I. Technology Innovation Center Laboratory
3	Mr. S. Duraipandian	Lab Technician	I.T.I (Electrician)	Shared	01.09.2009	Communication Laboratory
4	Mr. S. Sivaraman	Lab Technician	D.E.C. E	Shared	01.08.2005	DSP System Design Laboratory & VLSI Research Laboratory
5	Mr. M. Veeramani	Lab Technician	B. Tech (E.C.E.)	Shared	15.02.2018	Linear and Digital Integrated Circuits Laboratory & Tessolve and Open-Source Research Lab
6	Mr. M. Jagathieswaran	Lab Technician	B.E(E.E.E.)	Shared	13.06.2018	VLSI Laboratory & DSP Laboratory
7	Mr. M. Vairamuthu	Lab Technician	B. Tech (E.C.E.)	Shared	15.02.2018	Microwave & Optical Laboratory and MPMC Laboratory
8	Mr.R.Venkatesh	Lab Technician	B. Tech (E.C.E.)	Shared	01.07.2021	N.I. Technology Innovation Center Laboratory
9	Mr.C.Sivasubramani	Lab Technician	B. Tech (E.C.E.)	Shared	03.07.2021	Microwave & Optical Laboratory

1.2. Laboratories maintenance and overall ambiance

As per the curriculum, the following laboratories are mandatory. The laboratories lists are following,

Table 6.2 List of Laboratory

S. No	Name of the Laboratory
1.	NI Technology Innovation Center Laboratory
2.	Communication Laboratory
3.	DSP System Design Laboratory
4.	Microwave and Optical Laboratory
5.	Linear and Digital Integrated Circuits Laboratory
6.	Microprocessor and Microcontroller Laboratory
7.	VLSI Laboratory
8.	VLSI Research Laboratory
9.	DSP Laboratory
10.	Tessolve and Open-Source Research Laboratory

The table 6.3 shows that how each laboratory is utilized by the curriculum subjects and also it shows that how the each curriculum subject is mapped with the course outcomes, programme outcomes and programme specific outcomes. The PO mapping describes how the curriculum laboratory is mapped with the final students outcomes like engineering knowledge, problem analysis, design/development of solutions, conduct investigations of complex problems, modern tool usage, the engineer and society, environment and sustainability, ethics, individual and team work, communication, project management & finance and life-long learning.

Table 6.3 Curriculum Laboratory Utilization

S. No	Laboratory Name	Curriculum Utilization	Related CO's	Related P.O.'s	Related PSO's
1.	N.I. Technology Innovation Center Laboratory	ECE18R171 Electronic Devices Laboratory	CO5, CO6	4, 5, 6, 7, 8, 9, 10, 12	2, 3
		ECE18R272 Digital Circuits and Systems Design Lab	CO5, CO6, CO7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	1, 2, 3
2.	Communication Laboratory	ECE18R373 Computer and Communication Networks Laboratory	CO5, CO6	8, 9, 10, 11, 12	2, 3
		ECE18R275 Analog and Digital Communication Laboratory	CO5, CO6	1, 2, 3, 4, 7, 8, 9, 10, 12	1, 2, 3
3.	DSP System Design Laboratory	ECE18R273 Digital Signal Processing Laboratory	CO5, CO6, CO7	1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12	1, 2, 3

		ECE18R275 Analog and Digital Communication Laboratory	CO5, CO6	1, 2, 3, 4, 7, 8, 9, 10, 12	1, 2, 3
4.	Microwave and Optical Laboratory	ECE18R372 Antennas and Propagation Laboratory	CO1 to CO5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12	1, 2, 3
		ECE18R274 Electromagnetic Waves and Transmission Lines Laboratory	CO1, CO2, CO5, CO6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	1, 2, 3
5.	Linear and Digital Integrated Circuits Laboratory	ECE18R203 Analog Integrated Circuits Laboratory	CO2, CO3, CO4	1, 2, 3, 4, 5, 7, 12	1, 2, 3
		ECE18R272 Digital Circuits and Systems Design Laboratory	CO5, CO6, CO7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	1, 2, 3
		ECE18R271 Electronic Circuits Laboratory	CO6, CO7	4, 5, 6, 7, 8, 9, 10, 11, 12	2, 3
6.	Microprocessor and Microcontroller Laboratory	ECE18R371 Microprocessors and Microcontrollers Laboratory	CO5, CO6	1, 2, 3, 4, 5, 8, 9, 10, 11, 12	1, 2, 3
7.	VLSI Laboratory	ECE18R272 Digital Circuits and Systems Design Laboratory	CO5, CO6, CO7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	1, 2, 3
		ECE18R371 Microprocessors and Microcontrollers Laboratory	CO5, CO6	1, 2, 3, 4, 5, 8, 9, 10, 11, 12	1, 2, 3
		ECE18R274 Electromagnetic Waves and Transmission Lines Laboratory	CO1, CO2, CO5, CO6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	1, 2, 3
8.	VLSI Research Laboratory	ECE18R5182 RTL Simulation and Synthesis with PLDs Laboratory	CO1, CO2	6, 7, 8, 9, 10, 11, 12	2, 3
		ECE18R5183 ASIC CAD Laboratory	CO1 to CO4	6, 7, 8, 9, 10, 11, 12	2, 3
9.	DSP Laboratory	ECE18R253 Numerical Analysis using MATLAB	CO4, CO5	4, 5, 8, 9, 10	2, 3
10.	Tessolve Laboratory	ECE18R5184 Analog and Digital CMOS VLSI Design Laboratory	CO1, CO2	1, 2, 5, 6, 7, 8, 9, 10, 11, 12	2, 3
		ECE18R5185 VLSI Design Verification and Testing Laboratory	CO1, CO2	2, 5, 6, 7, 8, 9, 10, 11, 12	2, 3



Fig 6.2.1 Communication Laboratory



Fig 6.2.2 LDIC Laboratory



Fig 6.2.3 Tessolve Laboratory



Fig 6.2.4 DSPSD Laboratory



Fig 6.2.5 NI Laboratory



Fig 6.2.6 DSP Laboratory



Fig 6.2.7 VLSI Laboratory



Fig 6.2.8 Optical and Microwave Laboratory



Fig 6.2.9 MPMC Laboratory

Fig 6.2.10 VLSI Research Laboratory

Teaching faculty (Laboratory Incharge) details:

Table 6.4 Technical Supporting Staff (Teaching)

S.No	Name of the faculty	Designation	Qualification	Name of the Laboratory
1.	Dr. K. S. Dhanalakshmi	Associative Professor	Ph.D	NI Technology Innovation Center Laboratory
2.	Dr. Ganesha Perumal	Associative Professor	Ph.D.	Communication Laboratory
3.	Dr. V. Hima Deepthi	Professor	Ph.D.	DSP System Design Laboratory
4.	Dr. Shashi Kant Dargar	Associative Professor	Ph.D.	Microwave and Optical Laboratory
5.	Dr. A. Muthukumar	Associative Professor	Ph.D.	Linear and Digital Integrated Circuits Laboratory
6.	Mr. G. Ramesh	Assistant Professor	M.E.	Microprocessor and Microcontroller Laboratory
7.	Dr. Shashi Kant Dargar	Associative Professor	Ph.D.	VLSI Laboratory
8.	Dr. V. Muneeswaran	Associative Professor	Ph.D.	VLSI Research Laboratory
9.	Dr. M. Sakthimohan	Assistant Professor	M.Tech.	DSP Laboratory
10.	Mr. Jenyfal Sampson	Assistant Professor	M.E.	Tessolve and Open-Source Research Laboratory

Details of workshops attended by Technical Staff:

Table 6.5 workshops attended by Technical Staff

S. No	Name of Technical Staff	Events Attended	Organizing Institute	Duration
2.	Mr. R. Muthukani	Communicative English	Kalasalingam Academy of Research and Education	05.01.2018
		Positive Mindset for Accelerated Growth		11.08.2018
		Time Management		10.10.2019
3.	Mr. N. Pandikumar	Communicative English	Kalasalingam Academy of Research and Education	05.01.2018
		Positive Mindset for Accelerated Growth		11.08.2018
		Time Management		10.10.2019
4.	Mr. S. Duraipandian	Communicative English	Kalasalingam Academy of Research and Education	05.01.2018
		Positive Mindset for Accelerated Growth		11.08.2018
		Time Management		10.10.2019
5.	Mr. S. Sivaraman	Communicative English	Kalasalingam Academy of Research and Education	05.01.2018
		Positive Mindset for Accelerated Growth		11.08.2018
		Time Management		10.10.2019
6.	Mr. M. Veeramani	Communicative English	Kalasalingam Academy of Research and Education	05.01.2018
		Positive Mindset for Accelerated Growth		11.08.2018
		Time Management		10.10.2019
7.	Mr. M. Jagathieswaran	Communicative English	Kalasalingam Academy of Research and Education	05.01.2018
		Positive Mindset for Accelerated Growth		11.08.2018
		Time Management		10.10.2019
8.	Mr.R.Venkatesh	Communicative English	Kalasalingam Academy of Research and Education	10.07.2021
		Positive Mindset for Accelerated Growth		01.02.2022
9.	Mr.C.Sivasubramani	Communicative English	Kalasalingam Academy of Research and Education	10.07.2021
		Positive Mindset for Accelerated Growth		01.02.2022

Laboratories Maintenance:

1. Regular check-up of equipment is carried out at the end of every semester before the next semester.
2. Breakdown & Maintenance register is maintained in the laboratories.
3. Minor repairs are carried out by the department's technical staff based on available resources and expertise.
4. As and when required, minor repairs are carried out by the lab technicians & faculty members.
5. Calibration of Instruments is done frequently.
6. Chart assisted learning to demonstrate the process

7. Informative notice board containing safety, Do's & Don'ts is properly maintained.

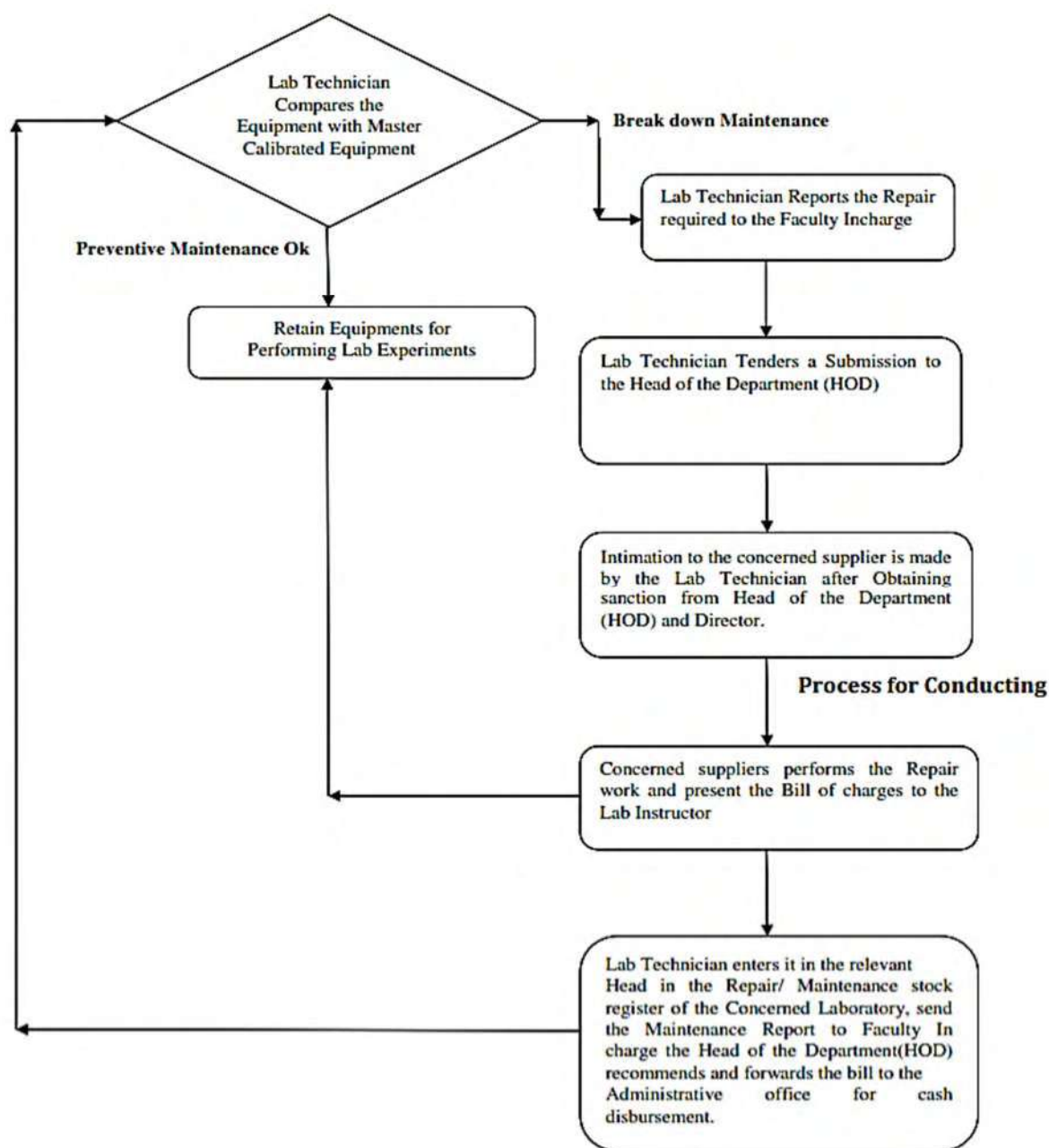


Fig 6.2.11 Process for Conducting Maintenance and Repairs of Lab Equipment's

- **Adequate, well-equipped labs to meet the curriculum requirements as well as P.O.s**

The department has a sufficiently adequate laboratory for the courses mentioned in the curriculum. All laboratories are well enriched with the state-of-the-art instruments to attain the program outcomes. Moreover, the labs can accommodate a batch of 60 students.

- **Availability of computing facilities in the department**

Enough numbers of computers (60) are available in laboratories. A laser & dot-matrix Printing facility is provided with a 20MBPS internet connection.

- **Availability of laboratories with technical support during and beyond working hours**

The laboratory facilities are open for the students and faculty during and beyond working hours. The laboratory timings are extended for four hours per week, as mentioned in the laboratory timetable. Also, the laboratories and department library are made available at night on students' demand.

Maintenance of Laboratory Equipment

- Regular check-up of equipment is carried out at the end of every semester.
- Weekly, a Monthly register is maintained for all the labs.
- Calibration of equipment is done every year for all the equipment
- The breakdown register is maintained in the laboratories.
- As and when required minor repairs are carried out by the lab assistant & faculty member.
- Maintenance of computers is taken care of by I.T. and Computer department.
- Significant repairs are outsourced by following the procedure of the institute.
- Systematic and routine cleaning, adjustment, or replacement of instrument and equipment parts are performed periodically, daily, weekly, and monthly.
- Notice board displays essential information regarding university exam schedules, internal communication circulars, and Laboratory schedules.

Overall Ambience

All laboratories are equipped with state-of-the-art equipment to meet the requirements of the curriculum.

- Laboratory manuals are prepared and are available in soft and hard copy.
- All laboratories are well equipped.
- Laboratories kept open beyond office hours as and when required.
- All laboratories have enough natural light, good ventilation, tubes, and fan arrangement.
- The overall ambience of the laboratories is good and best suited for the study.

The following procedures have been adopted to maintain the KARE campus as a green one.

- Students are not permitted to bring in/use their vehicles (bikes/ cars) inside the campus throughout the year.
- Office vehicles of University/ Authorized vehicles of Govt. Agencies and University authorities only are permitted to operate with restrictions.
- University bus services are operated before and after class hours only.
- Trees in large numbers are planted throughout the campus, and a team of staff of the agriculture section develops and maintains grass lanes, plants, and trees.
- An exhaust gas analyzer is available to measure exhaust gases in the environment.

Laboratory Maintenance

- All the necessary equipment is available in the laboratories for conducting all the experiments listed in the curriculum.
- The respective lab technicians are taking utmost care in maintaining their lab equipment. The regular Servicing and calibration are done internally and externally (if needed) before the commencement of the Laboratory's sessions.
- Each Laboratory has at least one faculty to oversee that the laboratory equipment in that Lab appropriately supports the course laboratory components served in such labs. In addition, the faculty in charge is responsible for providing the details for additional purchase/ replacement and new equipment to ensure proper performance of the laboratories.
- First-aid and ambulance services are available throughout the day on call.
- A team of staff of the electrical maintenance section takes care of the operation and maintenance of power generators meant for each block to ensure the availability of power supply at the time of power failure.
- The electrical section maintains the electrical system of the department.
- Firefighting equipment is kept/ placed in a designated place to ensure the safety of the stakeholders.
- Unnecessary movement of students in the department is monitored, and any approach towards the department by any stranger/parent/ public is restricted at the vigilance of security guards.
- Fans are provided for effective air circulations in all laboratories, and mainly Air Conditioner is provided.
- Glass windows for natural lighting
- Adequate space for accommodating students, furniture, and movement of the students
- The department building has wide verandas for enabling smooth and fast movement of students.

Basic amenities

- A mineral water supply is provided to students through 500 liter Sintex tanks (Cleaned periodically and filled every day) kept at the center of each floor.
- Washbasins with multiple taps are available on each floor of the block.
- A team of staff of the water supply section ensures water level in Over Head tanks in each building by operating pumps periodically, monitoring practical usage, and minimizing wastage.
- Surroundings are cleaned every day (including roads).
- Banks, Canteen, A.T.M., Post office and Stationery store facilities are available within the reach, close to the department, inside the campus.

Comfort/ Convenience

- Wi-Fi internet connectivity is available for registered students throughout the campus.

- Refreshment is provided at each floor of the building during intervals at nominal cost.
- Lift facility with operator is available for use during working hours (Lift for boys and lift for girls).
- Staircases at the two ends of the block and at the middle for safe, secured, smooth passage.

Guidance to students regarding usage of Laboratory

- As per the direction of Course Instructor or Lab Instructor, utilize the equipment properly.
- Keep an eye on the written and verbal instructions before start doing laboratory experiments. If you do not understand a direction or part of a procedure, ask your concern faculty before proceeding with the activity.
- As per faculty direction, handle the equipment carefully.
- As per direction by faculty students instructed to do allotted experiments in the Laboratory.
- Report the faculty immediately in case of failure or breakdown of equipment.
- Carefully handle the plug points and electric wires.
- Always conduct yourself in a responsible manner in the Laboratory. Don't talk aloud or crack jokes in Lab.
- Lab coat should wear during laboratory experiments.
- Dress properly during a laboratory activity. Long hair, dangling jewelry and loose or baggy clothing are a hazard in the Laboratory.
- Observe good housekeeping practices. Replace the materials in proper place after work to keep the lab area tidy.
- Do not wander around the room, distract other students, startle other students, or interfere with the laboratory experiments of others.
- Do not eat food, drink beverages or chew gum in the Laboratory and do not use laboratory glassware as containers for food or beverages. Smoking is strictly prohibited in lab area.
- Do not open any irrelevant internet sites on lab computer
- Do not use a flash drive on lab computers.
- Do not upload, delete, or alter any software on the lab P.C.
- Students can work extra hours in Laboratory in the presence of faculty or instructor. Students can use the Lab during the regular sessions, in case of additional requirements prior permission from the Lab Instructor and Faculty concern must be obtained

Table 6.6 Do's and Dont's in Laboratory

Do's	Dont's
<ul style="list-style-type: none"> • Be on time. At the start of the lab period, there will be a short introduction to the experiment you will perform that day. • Inform the instructor if there is a problem. You will have their immediate attention if you have cut yourself (even if you consider it minor), if something broke and needs cleaning up, or if you are on fire. 	<ul style="list-style-type: none"> • Do not eat, drink, chew gum, smoke or apply cosmetics in the Lab. Just being in Lab makes your hands dirtier than you can imagine and you don't want

- | | |
|--|--|
| <ul style="list-style-type: none"> • Be aware of all the safety devices. Even though the instructor will take care of emergencies, you should know where to find the first aid kit, the chemical spill kit, the eye wash, and the safety shower. • Wash your hands before you leave the Lab for the day. • Be aware of others in the Lab. Areas of the room may be crowded at times and you should take care not to disturb the experiments of others in the Lab. • Bring your lab notebook and an open mind to every lab meeting. | <p>to accidentally eat any reagent.</p> <ul style="list-style-type: none"> • Do not put pieces of lab equipment in your mouth. It sounds obvious but you'd be surprised! • Do not use the phone or computer with gloves on your hands. |
|--|--|

First Aid Procedures

Minor injuries can be treated at Health Services or by trained E.C.E. Staff. In case of doubt, call Health Services 9486009006. Phoning 9486009006 can handle major injuries or illness. First aid posters are located near the door in all labs, classrooms, common rooms, and student offices. If you encounter someone who is suffering from a medical condition or injury, take the following action: If an ambulance is required contact 9486009006 or Krishnankoil Police Station 04563 289431 advising of your location and the condition of the individual.

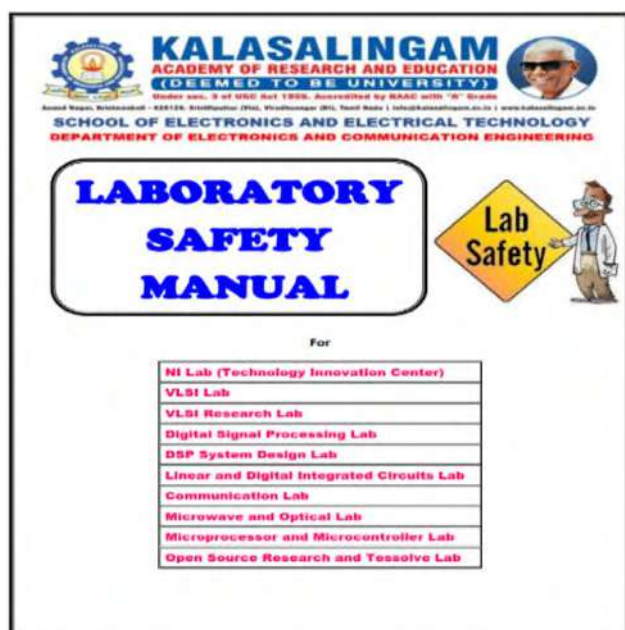


Fig 6.2.12 Laboratory Manual



Fig 6.2.14 First Aid Box

Fig 6.2.13 Fire Extinguisher



Fig 6.2.15 Display of Ambulance Number

Standard Calibration Laboratory
Always ahead in technology...

Mobile: 98946 24324
Phone: +91 422 4382198

#45, Ramanna Lay-out, Bharathi Park Road 2,
Sathya Colony, Coimbatore - 641 043
E-mail: standardcalibration@gmail.com
Website: www.standardcalibration.com

CALIBRATION CERTIFICATE

Certificate No: SCL/CRO/0109 Pages 1 of 2

Calibrated For: KALASALINGAM UNIVERSITY
Anand Nagar,
Krishnankoil-626 126,
Virudhunagar Dist.

INSTRUMENT DESCRIPTION & IDENTIFICATION

Instrument	1 Cathode Ray Oscilloscope
Date of Calibration	11-03-2019
Next Calibration Due on	10-03-2021
Identification No	1 KLU/CRO-04
Range	1 Multi
Resolution	1 Multi
Make	1 Scientific
Location	1 LDC LAB
Temp : Ambient	Humidity : Ambient

Master Instrument Details & Traceability Information

Description	Master Instrument-1	Master Instrument-2
Instruments Name	Universal Calibrator	Digital Multimeter
Traceability Certificate No	C-181124-4-1	1K/C/ET/19318
Next Calibration Due on	30-11-2020	22-12-2019
Range	Multi function	Multi Range
Resolution	Multi function	Multi Range
Make	Radix	Metech
SL.No	113010862	052101841
Model No	Microcal	M9802R

Summary: A Cathode Ray Oscilloscope of Range Multi From KALASALINGAM UNIVERSITY was calibrated by standard calibration Laboratory. The calibration was carried out using Universal Calibrator, Digital Multimeter which is traceable to National Standards.

Calibrated By: [Signature] Verified By: [Signature] Authorised By: [Signature]

Standard Calibration Laboratory
Always ahead in technology...

Mobile: 98946 24324
Phone: +91 422 4382198

#45, Ramanna Lay-out, Bharathi Park Road 2,
Sathya Colony, Coimbatore - 641 043
E-mail: standardcalibration@gmail.com
Website: www.standardcalibration.com

CALIBRATION CERTIFICATE

Certificate No: SCL/AMM/032 Page 02 of 02

Calibrated For: JAMNATE

CALIBRATION RESULTS

Master Reading	Indicated Readings in mA	Mean reading	Bias	Std Dev	System Uncy	Random Uncy	Total Uncy
in mA	1 2 3 4 5	in mA	in mA	in mA	in mA	in mA	in mA
1 0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 100.00	99.00	100.00	100.00	100.00	100.00	100.00	100.00
3 200.00	199.00	200.00	200.00	200.00	200.00	200.00	200.00
4 300.00	299.00	300.00	300.00	300.00	300.00	300.00	300.00
5 400.00	399.00	400.00	400.00	400.00	400.00	400.00	400.00
6 500.00	499.00	500.00	500.00	500.00	500.00	500.00	500.00

SAMPLE CALCULATION

of no 1 in Table

Mean Value of Trials

Random Uncertainty

Systematic Uncertainty

Total Uncertainty

Measurement Uncertainty is better than ± 0.798 mA for 95 % confidence level

Remarks: ALL READINGS ARE WITHIN ACCURACY LIMITS

Calibrated By: [Signature] Verified By: [Signature] Authorised By: [Signature]

Fig 6.2.16 Calibration Certificate Samples

6.3. Safety measures in laboratories

Regarding the safety measures the following carried out in the all the Laboratory

- Specific Safety Rules in the form of Do's and Don'ts are Displayed in the Laboratory.
- First Aid Box and Fire Extinguishers were available for safety

Table 6.7 Safety Measures in Laboratory

S. No	Name of the Laboratory	Safety Measures
1	N.I. Technology Innovation Center Laboratory	<ol style="list-style-type: none"> 1. The 5V supply or specified voltage level should not be exceeded since this will damage the I.C.s (Integrated Circuits) used during the experiments. 2. Incorrect connection of power to the I.C.s could result in them exploding or becoming very hot - with the possible serious injury occurring to the students working on the experiment. 3. Ensure that the power supply polarity and all components and connections are correct before switching on power. 4. Plug the I.C.s properly into the breadboard and not shorting the I.C. pins and point all the chips in the same direction with pin 1 at the upper-left corner. 5. All P.C.s are provided with anti-virus software; Ports of P.C.s are protected to avoid interruption by external devices like pen-drives, for proper working. 6. Specific Safety Rules in the form of Do's and Don'ts are Displayed in the Laboratory. 7. First Aid Box and Fire Extinguishers were available for safety
2	Communication Laboratory	<ol style="list-style-type: none"> 1. Make sure mobile is switched off before entering Lab. 2. Make sure that equipment working on electrical power are grounded properly. 3. Remove all metal jewellery since rings, wrist watches or bands, necklaces, etc. make excellent electrodes in the event of accidental contact with electric power sources. 4. Never handle electrical equipment with wet hand. 5. Specific Safety Rules in the form of Do's and Don'ts are Displayed in the Laboratory. 6. First Aid Box and Fire Extinguishers were available for safety
3	DSP System Design Laboratory	<ol style="list-style-type: none"> 1. If any problem arises with system report it to the Lab in charge. 2. Keep all your files in one folder with proper password. 3. Sign in the logout register before leaving the Lab. 4. For any debugging, virus problems consult the programmer 5. Don't inserts floppies, C.D.s, and Pen drives without prior permission. 6. Don't tells your password to any other person. 7. Don't forgets to shut down your system properly. 8. All P.C.s are provided with anti-virus software; Ports of P.C.s are protected to avoid interruption by external devices like pen-drives, for proper working. 9. Specific Safety Rules in the form of Do's and Don'ts are Displayed in the Laboratory. 10. First Aid Box and Fire Extinguishers were available for safety

4	Microwave and Optical Laboratory	<ol style="list-style-type: none"> 1. Care must be exercised to look through a fiber cable, to ensure that there is visible light coming through the cable. 2. Prior to looking into the end of a cable, use an optical tracer or continuity checker to determine if the fiber is dark. 3. Contact lens wearers – Beware! – After handling fiber optics, someone who wears contact lenses must wash their hands very thoroughly before handling their contact lenses. Glass shards can lodge in the surface of the eye and cause lacerations. 4. Keep hands away from face. Tiny splinters from the fibers can penetrate the soft skin on the face and be very difficult to remove. Make sure mobile is switched off before entering Lab. 5. Make sure that equipment working on electrical power are grounded properly. 6. Remove all metal jewellery since rings, wrist watches or bands, necklaces, etc. make excellent electrodes in the event of accidental contact with electric power sources. 7. Never handle electrical equipment with wet hand. 8. Specific Safety Rules in the form of Do's and Don'ts are Displayed in the Laboratory. 9. First Aid Box and Fire Extinguishers were available for safety
5	Linear and Digital Integrated Circuits Laboratory	<ol style="list-style-type: none"> 1. The specified voltage level Vcc should not be exceeded since this will damage the I.C.s (Integrated Circuits) used during the experiments. (e.g., Do not apply voltage more than 15 V to IC 741) 2. Incorrect connection of power to the I.C.s could result in them exploding or becoming very hot - with the possible serious injury occurring to the students working on the experiment. 3. Ensure that the power supply polarity and all components and connections are correct before switching on power. 4. Capacitors can store dangerous quantities of energy. After switching off, discharge any capacitors that were in the circuit. 5. If you use electrolytic capacitors, do not put excessive voltage across them 6. Set Multirange Meters to highest range before connecting to an unknown source. 7. The 5V supply or specified voltage level should not be exceeded since this will damage the I.C.s (Integrated Circuits) used during the experiments. 8. Incorrect connection of power to the I.C.s could result in them exploding or becoming very hot - with the possible serious injury occurring to the students working on the experiment. 9. Ensure that the power supply polarity and all components and connections are correct before switching on power. 10. Plug the I.C.s properly into the breadboard and not shorting the I.C. pins and point all the chips in the same direction with pin 1 at the upper-left corner. 11. Specific Safety Rules in the form of Do's and Don'ts are Displayed in the Laboratory. 12. First Aid Box and Fire Extinguishers were available for safety

6	Microprocessor and Microcontroller Laboratory	<ol style="list-style-type: none"> 1. Properly connect the 8085 / 8086 -microprocessor kit with power supply terminals. 2. Switch on the power supply after checking connections 3. Handle the Trainer kit carefully.
7	VLSI Laboratory	<ol style="list-style-type: none"> 1. If any problem arises with system report it to the Lab in charge. 2. Keep all your files in one folder with proper password. 3. Sign in the logout register before leaving the Lab. 4. For any debugging, virus problems consult the programmer 5. Don't inserts floppies, C.D.s and Pen drives without prior permission. 6. Don't tells your password to any other person. 7. Don't forgets to shut down your system properly. 8. All P.C.s are provided with anti-virus software; Ports of P.C.s are protected to avoid interruption by external devices like pen-drives, for proper working. 9. Specific Safety Rules in the form of Do's and Don'ts are Displayed in the Laboratory. 10. First Aid Box and Fire Extinguishers were available for safety
8	VLSI Research Laboratory	<ol style="list-style-type: none"> 1. The 5V supply or specified voltage level should not be exceeded since this will damage the I.C.s (Integrated Circuits) used during the experiments. 2. Incorrect connection of power to the I.C.s could result in them exploding or becoming very hot - with the possible serious injury occurring to the students working on the experiment. 3. Ensure that the power supply polarity and all components and connections are correct before switching on power. 4. Plug the I.C.s properly into the breadboard and not shorting the I.C. pins and point all the chips in the same direction with pin 1 at the upper-left corner. 5. All P.C.s are provided with anti-virus software; Ports of P.C.s are protected to avoid interruption by external devices like pen-drives, for proper working. 6. Specific Safety Rules in the form of Do's and Don'ts are Displayed in the Laboratory. 7. First Aid Box and Fire Extinguishers were available for safety
9	DSP Laboratory	<ol style="list-style-type: none"> 1. If any problem arises with system report it to the Lab in charge. 2. Keep all your files in one folder with proper password. 3. Sign in the logout register before leaving the Lab. 4. For any debugging, virus problems consult the programmer 5. Don't inserts floppies, C.D.s, and Pen drives without prior permission. 6. Don't tells your password to any other person. 7. Don't forgets to shut down your system properly. 8. All P.C.s are provided with anti-virus software; Ports of P.C.s are protected to avoid interruption by external devices like pen-drives, for proper working. 9. Specific Safety Rules in the form of Do's and Don'ts are Displayed in the Laboratory. 10. First Aid Box and Fire Extinguishers were available for safety

10	Tessolve and Open-Source Research Laboratory	<ol style="list-style-type: none"> 1. The 5V supply or specified voltage level should not be exceeded since this will damage the I.C.s (Integrated Circuits) used during the experiments. 2. Incorrect connection of power to the I.C.s could result in them exploding or becoming very hot - with the possible serious injury occurring to the students working on the experiment. 3. Ensure that the power supply polarity and all components and connections are correct before switching on power. 4. Plug the I.C.s properly into the breadboard and not shorting the I.C. pins and point all the chips in the same direction with pin 1 at the upper-left corner. 5. All P.C.s are provided with anti-virus software; Ports of P.C.s are protected to avoid interruption by external devices like pen-drives, for proper working. 6. Specific Safety Rules in the form of Do's and Don'ts are Displayed in the Laboratory. 7. First Aid Box and Fire Extinguishers were available for safety
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6.4. Project laboratory

- Project labs are utilized by the students for their projects.
- Discussions and implementations of innovative ideas about mini projects and final year projects are carried out in Project laboratory.
- Project lab is exclusively for the research and project work with the hardware and software facilities listed below:

Table 6.8 Project Laboratory

S. No.	Name of the Laboratory	Name of the Important Equipment	Total Cost (₹)	Utilization
1	N.I. Laboratory (204.96 m ²)	<ul style="list-style-type: none"> • N.I. My Rio Kits: Mechatronics Kit Common Sensors and Actuators for Mechatronics Projects, • N.I. My R.I.O.: Embedded Kit Common Sensors, Devices and Display for Embedded Projects, • NI ELVIS 2+Hardware, • CRIO-9076 Integrated Controller and Chassis Systems 400 MHZ Power Pc Controller, • LX45 Gate FPGA,4-SLOTS 	₹1,83,12,474	32 hours
2	Communication Laboratory (132.58 m ²)	<ul style="list-style-type: none"> • Spectrum Analyser, • Digital Storage Oscilloscope, • Cathode Ray Oscilloscope, • Function Generator, • Dc Regulated Power Supply, 	₹21, 69,696	15 hours

		<ul style="list-style-type: none"> • Antenna Trainer System, • AM & FM Transmitter & Receiver Kit, Pulse Code Modulation & Demodulation Kit 		
3	Digital Signal Processing and System Design Laboratory (133.78 m ²)	<ul style="list-style-type: none"> • Desktop Computer, • LAN -Trainer Kit, • MATLAB Software, • Network Interface Card of LAN Trainer Kit, 	₹45, 13,937	30 hours
4	Microwave Devices and Optical Communication Laboratory (102 m ²)	<ul style="list-style-type: none"> • Microwave antenna trainer system full setup J band, • Microwave power meter, • C.S.T. studio suite, • Fiber optics L.E.D. and Pin photo diode Characteristics, • Digital storage oscilloscope, • OFT patch guard 	₹66, 98,040	15 hours
5	Linear and Digital Integrated Circuits Laboratory (172.2 m ²)	<ul style="list-style-type: none"> • Digital I.C. Trainer Kit – 16 Bit, • Cathode Ray Oscilloscopes, • Digital Storage Oscilloscope, • Cathode Ray Oscilloscope, • Dual (D.C Regulated) Power Supply, • Linear I.C. Tester, • Digital I.C. Tester 	₹12, 77,286	15 hours
6	Microprocessor and Microcontroller Laboratory (88.45 m ²)	<ul style="list-style-type: none"> • 8085 Based Microprocessor Trainer Kits, 8086 Based Microprocessor Trainer Kits, • 8051 Microcontroller Trainer Kits, • A.D.C. & D.A.C. Interface, • 8051 Development Board & Programmer kits, • Arduino U.N.O. essential kit, 8051Development board and Programmer kit 	₹3, 74,581	15 hours
7	VLSI Laboratory (191.86 m ²)	<ul style="list-style-type: none"> • Universal- Multivendor Development kit, • Universal CPLD/FPGA VHDL Trainer kit with Xilinx, • A.R.M. Micro controller kit, • FPGA board NEXYS-3, VIRTEX-5, • XUP-5, ALTERA VLSI KIT DE-1, • XILINX Spartan - 3 FPGA Trainer kit, • Digital Storage Oscilloscope, • Arduino (U.N.O.), • Arduino (MEGA) 	₹37, 94,194	28 hours

8	VLSI Design Research Laboratory (80.52 m ²)	<ul style="list-style-type: none"> • Panda board – TI OMAP 4460 Processor, • GPU, Xtion Pro live motion controller • Dual camera(3D), • Microphone, Motion capture analysis, • I.R. sensor integration, • DM6437 Digital video development kit with C.C.S. and Camera, • Beagle bone black (CORTEX-A8) board, • OMAP L-138/6748 DSP starter kit with emulator and code composer studio, • Code composer studio IDE 5.0, • Multicore DSP evaluation module (6678), • OMAP3730 evaluation module, • HP Desktop Computer 	₹22, 94,443	15 hours
9	DSP Laboratory (91.02 m ²)	<ul style="list-style-type: none"> • Rsoft OPTISIM v2015.06 software node-locked perpetual academic licence for windows7/8 • MATLAB Software, • TMS320C50 Based DSP Trainerkit • DSP Starter Kit 6713 • CDMA DSSS Trainer Kit (Sciencetech ST 2131) • LAN Trainer Kit 	₹30, 34,102	15 hours
10	Tessolve and Open-Source Research Laboratory (90.20 m ²)	<ul style="list-style-type: none"> • LG-LITE ATE Universal Load Board 50MHZ LGPG125, 24 Port Gigabit Managed Switch 	₹4,05,699	15 hours





Fig 6.4.1 Students Project Samples

Virtual Laboratory:

- The Virtual Labs provides the result of an experiment by one of the following methods (or possibly a combination)
- Modeling the physical phenomenon by a set of equations and carrying out simulations to yield the result of the experiment. It can, at best, provide an approximate version of the 'real-world' experiment.
- Providing measured data for virtual lab experiments corresponding to the data previously obtained by measurements on an actual system.
- In another method, it remotely triggers an experiment in an actual lab and provides the student with the experiment's result through the computer interface. Such a process entails carrying out the actual lab experiment remotely.
- Virtual Labs are made more practical and realistic by providing additional inputs to the students like accompanying audio and video streaming of an actual lab experiment and equipment.

- To provide remote access to Labs in various disciplines of Science and Engineering. These Virtual Labs would cater to students at the undergraduate level, postgraduate level, and research scholars.
- To enthuse students to conduct experiments by arousing their curiosity. Moreover, it helps them learn basic and advanced concepts through remote experimentation.
- To provide a complete Learning Management System around the Virtual Labs where the students can avail the various tools for learning, including additional web resources, video lectures, animated demonstrations, and self-evaluation.
- To share costly equipment and resources that are otherwise available to a limited number of users due to constraints on time and geographical distances.
- The virtual Lab is accessed by: <https://portal.eceklu.in/vlab>
- In VLSI Research Laboratory, the following software's is accessed remotely'.
 - SYNOPSIS
 - MATLAB

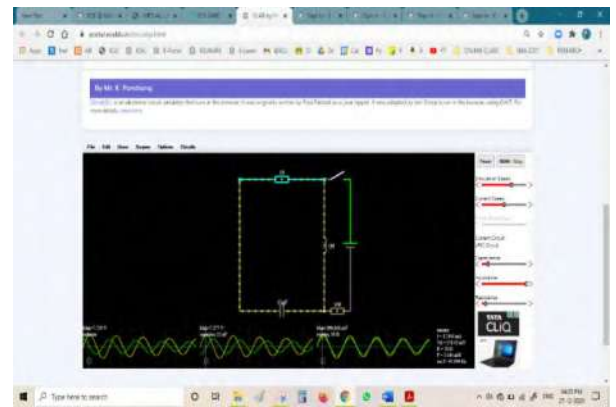
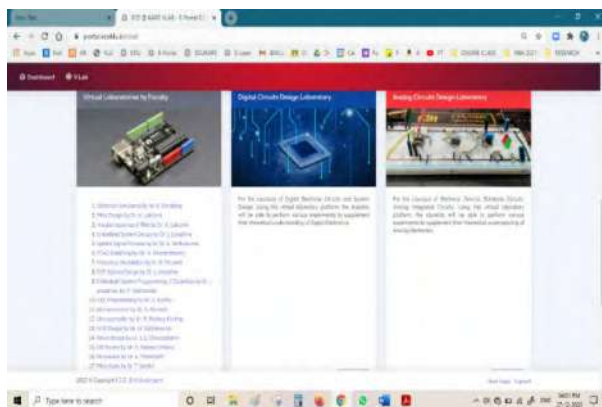


Fig 6.4.2 Virtual Laboratory

The following virtual laboratory facilities are available in the electronics and Communication Engineering department:

- Digital Circuits Design Laboratory
- Analog Circuits Design Laboratory
- Communication Engineering Laboratory
- Electronic Simulation Laboratory
- DSP System Design Laboratory
- C Essentials Laboratory
- HDL Programming Laboratory
- Microprocessor Laboratory
- Microcontroller Laboratory
- VLSI Design Laboratory

CRITERION 7	Continuous Improvement	75
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7. Continuous improvement

7.1. Actions taken based on the results of evaluation of each of the COs, POs & PSOs (30)

The department of ECE has a system in place where specific remedial actions are taken based upon the student's performance outcomes analysis in achieving Program Outcomes (PO). Be it a teaching and learning process, modifying curriculum content, or inclusion of academic flexibility, the corrective measures are immediately taken. As attained Course Outcome (CO) directly reflects in the accomplishments of PO, all such changes during all the assessment years have been focused on uplifting the CO attainment by each student. Table 7.1 describes the correlation between pos and cos for all the courses offered. In the table, digit 1, 2, or 3 indicates low, medium, or high levels, respectively.

Table 7.1 Program Articulation Matrix for the courses studied by the batch 2016-2020

S. No	Course code	Program Outcomes & PSO														
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
		P O 1	P O 2	P O 3	P O 4	P O 5	P O 6	P O 7	P O 8	P O 9	PO 10	PO 11	PO 12	PS O1	PS O2	PS O3
1	ECE201	3	3	2				1					2	3	1	2
2	ECE203	3	3	1				2					2	2	2	2
3	ECE205	3	3	2			2	2	1				2	3	2	3
4	ECE209	3	2	1	2	2	3	2					2	3	2	2
5	ECE284	2	2	3	2	3	2	2	1	2	3		2	2	2	2
6	ECE285	3	3	2	2	3		3	3	3	3	2	2	3	3	2
7	ECE206	3	2	2	1	1					2		2	2	1	2
8	ECE208	3	3	2		2		1					1	3	2	1
9	ECE210	3	2	3		3		2	1	1	1		2	3	2	2
10	ECE211	3	3	2	1	2		3	1		2		3	2	2	2
11	ECE283	3	3	3	3	3			1	2	2	1	2	3	1	2
12	ECE316	3	2	3				2					1	3	2	1
13	ECE301	3	3	2	1	2							2	2	2	2
14	ECE304	3	1	2	1	2	1	1	2	1	1	1	2	2	2	2
15	ECE307	3	3	2	2	2	2	3	1	1	1	1	2	2	1	2
16	ECE308	3	2	1	1	1		2		1			2	3	2	2
17	ECE381	3	3	2	3	2	1	1	3	3	3	3	3	3	2	3
18	ECE385	1	2	3	1	2	1	1	1	1	1	1	2	2	2	2

19	ECE398	2	2	2	3	3	3	3	2	2	3	3	3	2	2
20	ECE309	3	3	3	2	2	1	3	2	2	2	1	2	3	2
21	ECE346	3	1	1		2		1	1	1	1	1	1	2	1
22	ECE306	3	2	2			2	3	2	1	3		2	2	2
23	ECE386	3	3	3	2	3	1	2	3	3	3	3	3	3	2
24	ECE399	2	2	2	3	3	3	3	2	2	3	3	3	3	2
25	ECE403	3	2	1	2	2	1	1	3	3	3	3	2	2	2
26	ECE404	3	2			2		1	3	2	2	2	1	3	2
27	ECE431	3	2	1	2	1	1	3				3	1	3	2
28	ECE445	3	3		1		1	1					1	3	1
29	ECE483		1	2	2	3	2	2	1	3	3		1	2	3
30	ECE484	3	3	3	2	3	2	2	1	3	2		2	3	2
31	ECE499	3	3	3	3	3	3	3	2	2	3			2	2
32	ECE429	3	2	2	1	2							3	2	2
33	ECE435	3	3		1	1		2					2	3	2
34	ECE438	3	3	2	2	1		1					2	3	1

The CO and PO attainment calculation is based on the above correlation, which is a base for comparing with the target level. If a specific target was not achieved, the curative action plan was adopted to improve the value of underperformance. In addition, if the POs meet the attainable target level, enhancement action plans were also implemented to improve and achieve the next level. The process mentioned above was uniformly adopted to improve the level in all courses throughout the programme completion. New target and the attainment of PO for the next batch of students were indicated in (*) and (**) respectively.

Pos	Target level	Attainment level	Observations
PO1 Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialisation to solve complex engineering problems.			
PO1	1.8 1.8*	2.3 2.2**	Target Level attained, however the contribution towards PO attainment was very low in the subjects ECE 206- Signals and systems and ECE304-Microprocessor and Microcontrollers Contribution towards PO attainment was very low.

			<p>Because:</p> <ol style="list-style-type: none"> 1. The lack of CO2 attainment is due to students found difficulty to use their knowledge to solve different domain transformation. 2. The lack of CO5 attainment is due to students found difficulty to acquire knowledge on programming a microcontroller to develop a microcontroller-based system. <p>To improve and reach the next level of PO attainment the following actions were incorporated.</p>
<p>Action 1:</p> <p>Tutorial problems and more flipped class videos were realized for better understanding in the mathematics and science concepts such as domain transformation and other mathematics and science concept also.</p> <p>Action 2:</p> <p>Animation videos, NPTEL Videos have been adopted in lectures for better understanding of programming a microcontroller and in other engineering fundamental concepts also.</p> <p>Action 3:</p> <p>Quiz sessions have conducted to improve the understanding of the engineering fundamentals.</p> <p>Action 4:</p> <p>Curriculum structure was reframed, Integrated courses were introduced in the curriculum 2018.</p>			

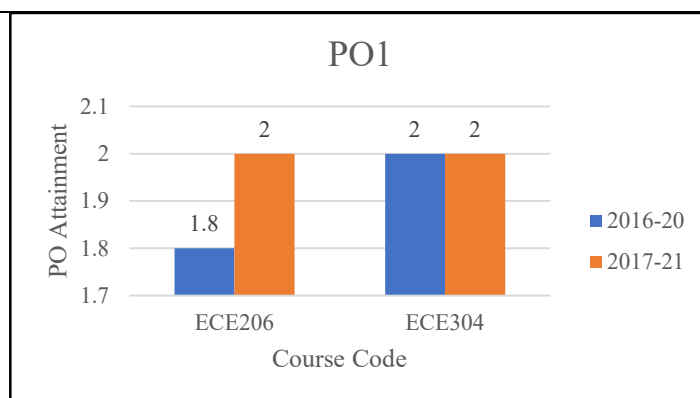


Fig 7.1 (a) Improvement in PO1

PO2 Problem analysis:

Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO2	1.8 1.8*	1.9 2.0**	<p>Target Level attained, however the contribution towards PO attainment was very low in the subjects ECE210- Digital Design using HDL and ECE304-Microprocessor and Microcontrollers.</p> <p>Because:</p> <ol style="list-style-type: none"> 1. The CO5 attainment is low due to lack of demonstration and understanding of user applications techniques like FPGA, PLD's. 2. The students' inability to analyse complicated engineering problems and inadequate practice to select a microcontroller required for a real time application. <p>The following actions were taken to improve and reach the next level.</p>
Action 1:			

Activity based learning and Multimedia Approach were introduced to demonstrate and understand the user applications techniques.

Action2:

Tutorial sessions were organized in the class to track more practice.

Action 3:

Concept map and Minute paper assessment tools were also used to develop their analytical skills.

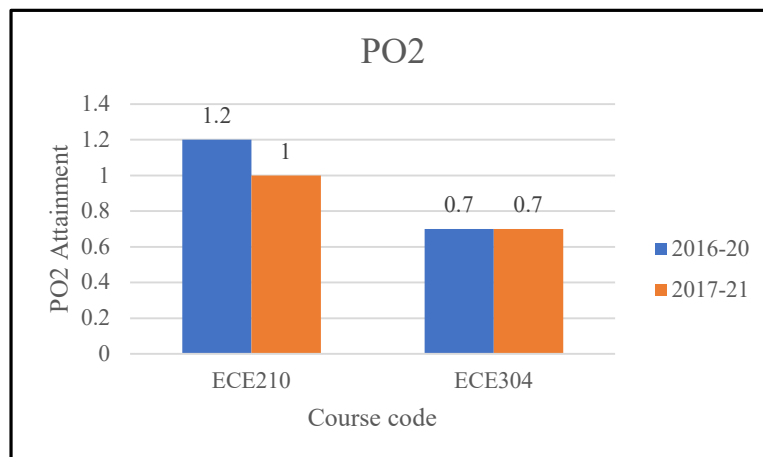


Fig 7.1 (b) Improvement in PO2

PO3 Design/development of solutions:

Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for public health and safety and the cultural, societal, and environmental considerations.

PO3	1.8 1.8*	1.8 1.8**	<p>Target Level attained, however the subjects ECE201- Electron Devices and ECE205- Electronic Circuits contribution towards PO attainment was very low.</p> <p>Because:</p> <ol style="list-style-type: none"> 1. Students encountered difficulty in the characteristics of semiconductor devices that involved both design and analysis concepts which leads to lack of attainment of CO 1,2.
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			<p>2. The CO 5,6 attainment is low because students could not relate public health safety and the cultural, societal, and environmental considerations in functioning of power supply circuits and designing circuits using transistor.</p> <p>The following actions were taken to improve and reach the next level.</p>									
<p>Action1:</p> <p>To support the skill development in design and analysis, workshops were conducted.</p> <p>Action 2:</p> <p>The students are provided with video lecture of the concern topics. After watching the lecture, the students are informed to do the practical in the laboratory. This enables them to understand the concept of designing circuits.</p> <p>Action 3:</p> <p>Curriculum structure was reframed, Integrated courses were introduced in the curriculum 2018.</p> <div> <table border="1"> <caption>PO3 Attainment Data</caption> <thead> <tr> <th>Course code</th> <th>2016-20</th> <th>2017-21</th> </tr> </thead> <tbody> <tr> <td>ECE201</td> <td>0.8</td> <td>2.4</td> </tr> <tr> <td>ECE205</td> <td>1.2</td> <td>2.0</td> </tr> </tbody> </table> </div> <p>Fig 7.1 (c) Improvement in PO3</p>				Course code	2016-20	2017-21	ECE201	0.8	2.4	ECE205	1.2	2.0
Course code	2016-20	2017-21										
ECE201	0.8	2.4										
ECE205	1.2	2.0										
<p>PO4 Conduct investigations of complex problems:</p> <p>Use research-based knowledge and research methods, including design of experiments, analysis, interpretation of data, and synthesis of the information to provide valid conclusions.</p>												
PO4	1.8 1.8*	1.6 2.0**	Target Level not attained, the following subjects ECE211-Linear Integrated circuits and									

			<p>ECE209-Electromagnetic waves and transmission lines has contribution towards PO attainment was very low.</p> <p>Because:</p> <ol style="list-style-type: none"> 1. The lack of CO5 attainment is due to students' deficiency in the use of research-based knowledge and research methods in the design and analyses of data converter advancement in operational amplifier. 2. Students found difficulty in analyse and interpretation of solutions of Maxwell's equation in electrodynamics and synthesising a concept which leads to lack of CO2. <p>To improve the attainment level of PO the following actions were incorporated.</p>
<p>Action 1:</p> <p>The attainment has improved by making the students to do project based on their theory classes to fill the gap and to enhance the research scope.</p> <p>Action 2:</p> <p>Concept map/Mind map assessments were incorporated to enhance interpretation skills in students.</p> <p>Action 3:</p> <p>Students are instructed to refer various journals and recent developments to ensure research in electrodynamics.</p>			

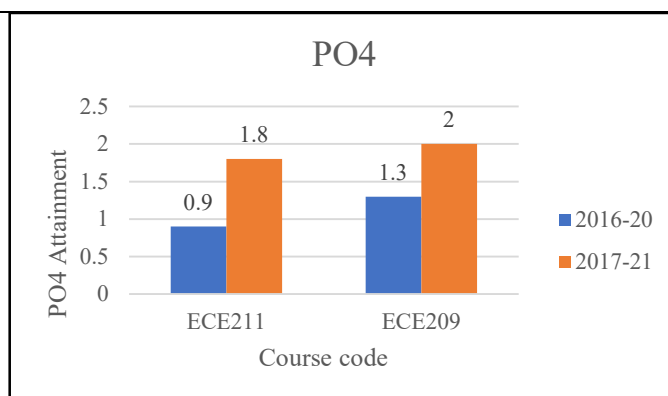


Fig 7.1 (d) Improvement in PO4

PO5 Modern tool usage:

Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities to understand the limitations.

PO5	1.8 1.8*	1.9 1.9**	<p>Target Level attained, however the following subjects, ECE 209- Electromagnetic waves and Transmission lines, ECE304-Microprocessors and Microcontrollers and ECE309-VLSI Design contributions towards PO attainment was low because:</p> <ol style="list-style-type: none"> 1. The CO3 attainment is low because students encountered difficulty in learning tools fundamental to solving directivity, antenna gain, effective area, radiation, resistance, antenna noise temperature, Friis formula in simple communication links. 2. Students found little harder in the development of the processor programming language using modern tool usage which lacks CO2 attainment.
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			<p>3. The mapping level is low because the students failed to apply modern tools to solve complex engineering problems.</p> <p>To improve and reach the next level of PO attainment the following actions were incorporated.</p>
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Action 1:

To increase the attainability the student will be made to learn the parameter calculation by means of imparting usage of modern tools such as CST studio.

Action2:

Organized hands-op workshops with the focused session on Programming tutorials involving industry expertise and interactions.

Action 3:

The contemporary software and design tools were procured to upgrade learning skills, such as TCAD, TINA and LTSPICE.

Action 4:

Learning in a Virtual lab environment of inter/intra-college was probed and encouraged.

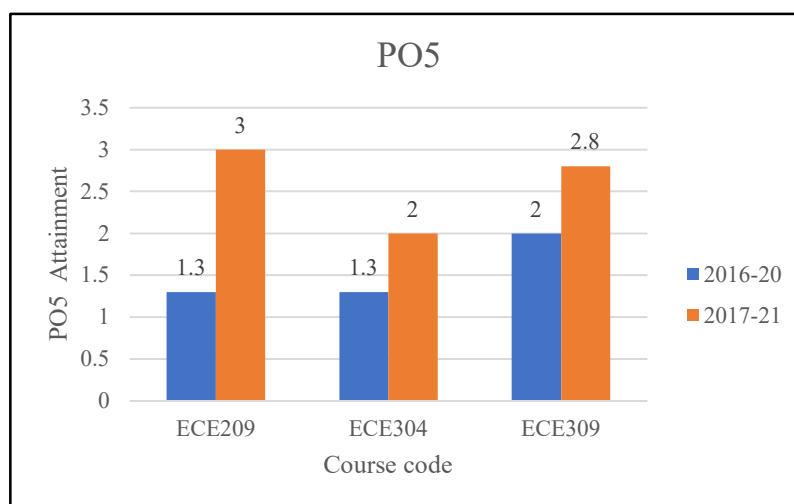


Fig 7.1 (e) Improvement in PO5

PO6 The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional engineering practice.			
PO6	1.8 1.8*	1.7 1.8**	Target Level not attained, the following the subjects, ECE 205- Electronic Circuits and ECE309-VLSI Design Contributions towards PO attainment was low because: <ol style="list-style-type: none"> 1. The CO2 attainment is less as the student lacked in understanding the usage of the course associated with the societal safety and cultural issues while designing amplifier circuits. 2. The level of attainability is low because students lack in understanding of the CMOS Design and contextual knowledge associated with societal and cultural issues. To improve the target level of PO attainment the following actions were incorporated.
Action 1: To elucidate the importance of the electronic circuits in the safety of the society the student will be taught with the courses importance with the equipment vulnerabilities especially in amplifier circuits using videos Action 2: Learning with real-world examples in view was applied to foster understanding and grasp contextual knowledge. Action 3: The learning through Case-study involving societal safety and cultural issues was adopted to understand the relevancy better.			

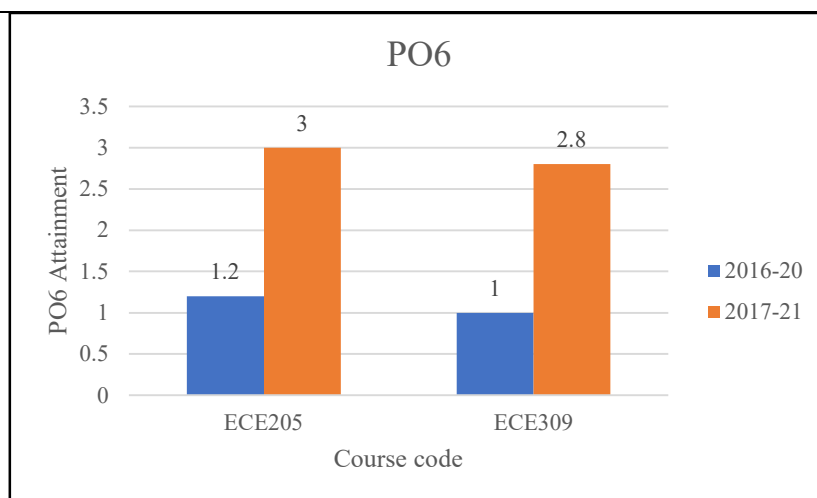
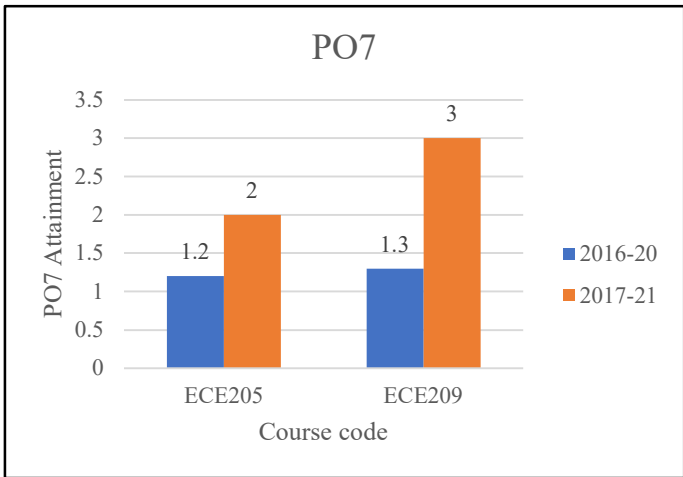


Fig 7.1 (f) Improvement in PO6

PO7 Environment and sustainability:

Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO7	1.8 1.8*	1.8 1.8**	<p>Target Level attained, however the following the subjects, ECE 205- Electronic Circuits and ECE209- Electromagnetic waves and Transmission lines contributions towards PO attainment was low.</p> <p>Because,</p> <ol style="list-style-type: none"> 1. The lack in CO3 attainment is due cause of the flaw in imparting the importance of applying their understanding about the behaviour of sinusoidal oscillator circuit for the given specifications with environmental aspects. 2. The CO1 attainment is low because students failed to apply the mathematical concepts of vector analysis to the solution of electrostatic and magneto static problems.
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			Hence the following action was incorporated to improve and reach the next level attainment.
<p>Action 1:</p> <p>Students will be focused to impart the knowledge of the sinusoidal oscillator circuit with environmental aspects used in the industrial application and its importance on the industries.</p> <p>Action 2:</p> <p>NPTEL Videos have been adopted in lectures for better understanding of impact of engineering topics such as vector analysis and their concepts.</p>			
 <p>Fig 7.1 (g) Improvement in PO7</p>			
<p>PO8 Ethics:</p> <p>Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.</p>			
PO8	1.8 1.8*	1.6 2.0**	<p>Target Level not attained, the following subjects ECE205 Electronic Circuits and ECE210-Digital Design using HDL contribution towards PO attainment is low</p> <p>Because,</p> <ol style="list-style-type: none"> 1. The lack of attainment is less as the lab is not associated with the outcome of any working module that performs ethical compatibility to the society.

			<p>2. Students has lack of knowledge in implementing Boolean algebra techniques to design logic functions which leads to deficient in the CO2.</p> <p>To reach the target level the following action has incorporated.</p>									
<p>Action 1:</p> <p>As Integrated course developed in the curriculum 2018 to develop the lab that performs ethical compatibility.</p> <p>Action 2:</p> <p>Activity based learning and Lab components NI -Elvis’s kit were introduced to design a digital logic technique</p> <div> <table border="1"> <caption>PO8 Attainment Data</caption> <thead> <tr> <th>Course code</th> <th>2016-20</th> <th>2017-21</th> </tr> </thead> <tbody> <tr> <td>ECE205</td> <td>0.6</td> <td>2.0</td> </tr> <tr> <td>ECE210</td> <td>0.6</td> <td>1.5</td> </tr> </tbody> </table> </div> <p>Fig 7.1 (h) Improvement in PO8</p>				Course code	2016-20	2017-21	ECE205	0.6	2.0	ECE210	0.6	1.5
Course code	2016-20	2017-21										
ECE205	0.6	2.0										
ECE210	0.6	1.5										
<p>PO9 Individual and teamwork:</p> <p>Function effectively as an individual and/or a leader in diversified and interdisciplinary teams.</p>												
PO9	<p>1.8</p> <p>1.8*</p>	<p>1.8</p> <p>2.0**</p>	<p>Target Level attained, however the following subjects, ECE 210- Digital design using HDL and ECE285- HDL Programming Laboratory Contributions towards PO attainment was low. Because,</p>									

			<ol style="list-style-type: none"> 1. The attainment is less as the students are not focused on teamwork and multidisciplinary activities 2. The attainment is low as the student lack in team work in laboratory. <p>To improve and reach the next level of PO attainment the following actions were incorporated.</p>									
<p>Action 1:</p> <p>The students were indulged in Mini projects groups to improve and showcase their teamwork capability and contribution.</p> <p>Action 2:</p> <p>Students are made to do practical in team and with projects to apply the theoretical knowledge in practical work to increase the leadership and group activities.</p> <p>Action 3:</p> <p>Students were probed to conduct symposiums/conferences to endorse their teamwork capabilities.</p> <div data-bbox="461 1184 1115 1644" data-label="Figure"> <table> <caption>PO 9 Attainment Data</caption> <thead> <tr> <th>Course code</th> <th>2016-20</th> <th>2017-21</th> </tr> </thead> <tbody> <tr> <td>ECE210</td> <td>0.6</td> <td>1.5</td> </tr> <tr> <td>ECE285</td> <td>2.0</td> <td>1.5</td> </tr> </tbody> </table> </div> <p>Fig 7.1 (i) Improvement in PO9</p>				Course code	2016-20	2017-21	ECE210	0.6	1.5	ECE285	2.0	1.5
Course code	2016-20	2017-21										
ECE210	0.6	1.5										
ECE285	2.0	1.5										
<p>PO10 Communication:</p> <p>Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.</p>												

PO10	1.8 1.8*	2.0 2.1**	<p>Target Level attained, however the following the subjects, ECE284- Electronic devices and circuits Laboratory and ECE 210- Digital Design using HDL PO attainment was low.</p> <ol style="list-style-type: none"> 1. The lack in attainment is because of the ineffective comprehension in the lab hours among the students 2. The attainment is low as the students failed to communicate on complex engineering problems for VLSI Circuits. <p>Hence the following actions were incorporated to reach the next level attainment.</p>
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Action 1:

Organized one-minute paper writing activities and examined them in individual student presentation activity to improve and uphold communication in terms of written and oral skills.

Action 2:

To attain the target more practice will be provided to the student to practice the procedural steps in the solution process so as to focus better on the understanding of VLSI Circuits.

Action 3:

Assessment tool, e.g., Zero Minute speech, was conducted to practice oral presentation.

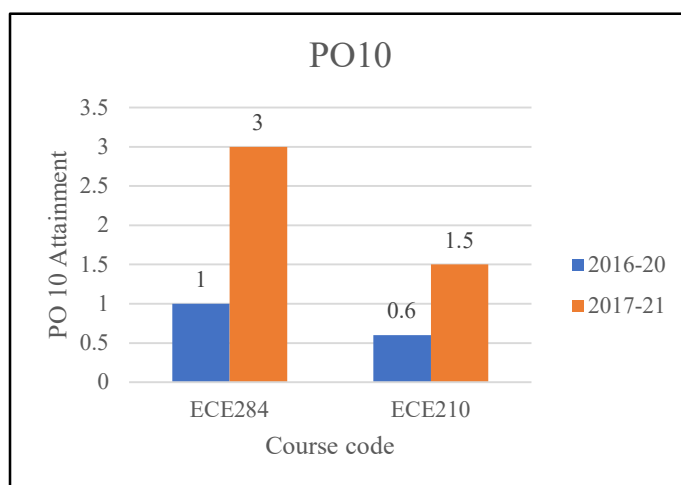


Fig 7.1 (j) Improvement in PO10

Fig 7.1 (j) Improvement in PO10			
PO11 Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.			
PO11	1.8 1.8*	1.7 1.8**	Target Level not attained, the following subjects, ECE304-Microprocessors and Microcontrollers and ECE309- VLSI Design PO attainment was low. <ol style="list-style-type: none"> 1. The CO5 attainment is less as the student lack of utilisation of knowledge in programming a microcontroller in project management. 2. The attainment is less as most of the project work detained in relying on the concepts of CMOS and dynamic logic. Hence the following actions were incorporated to attain the target level.
Action 1: In all such courses, group-oriented tasks activity has been adapted to necessitate exhibit skillset in a team and as an individual.			
Action 2: Case studies will be discussed in the class of the courses related to project management.			

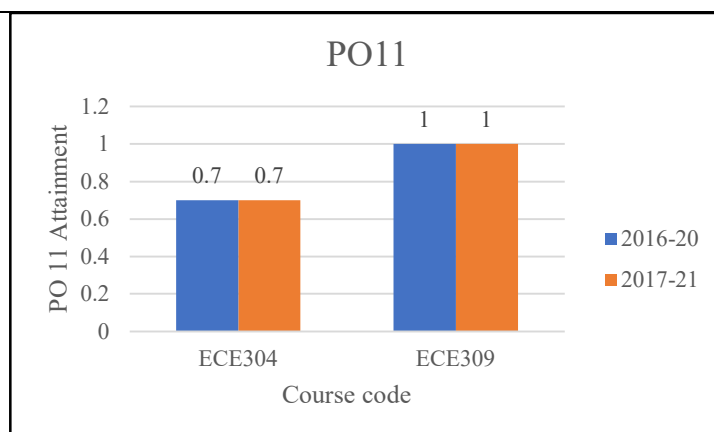


Fig 7.1 (k) Improvement in PO11

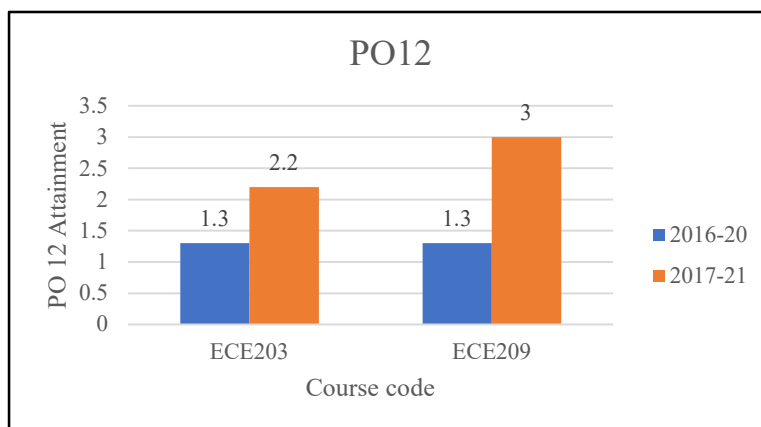
PO12 Life-long learning:

Recognise the need for and prepare and engage in independent and life-long learning in the broadest context of technological change.

PO12	1.8 1.8*	1.6 1.6**	<p>Target Level not attained, because students of lack of engagement in the lifelong learning skills and understanding the broadest context of the technology's changes in following subjects ECE203-Network analysis and ECE209-Electromagnetic waves and transmission lines.</p> <ol style="list-style-type: none"> 1. The CO2 attainment is low as the students lacked in ability to engage in lifelong learning of network theorems. 2. The CO4 attainment is low because students found difficulty in correlating the distributed circuit concepts with RF circuits. <p>The following actions were taken to attain the target level.</p>
Action 1: Model-based learning, including real-time applications, was emphasized to enhance students' life-long learning skills.			

Action 2:

To understand the broadest context of the technological changes, guest lectures, seminars were organized in the recent technologies.



PSO1 - Apply the basic sciences and engineering knowledge in the design and development of complex systems in the areas related to electronics and communication engineering.

PSO1	1.8 1.8*	2.0 2.0**	<p>Target Level attained because:</p> <ol style="list-style-type: none"> 1. Students had lack of practical exposure in analytical based subjects. 2. The students' inability to analyse complicated engineering problems and inadequate practice. 3. Students encountered difficulty in the subjects that involved both design and analysis concepts. <p>The following actions were incorporated to reach the next level attainment.</p>
-------------	---------------------------	----------------------------	---

Action1:

Tutorial sessions were organized in the class to track more practice. NPTEL Video, Multimedia Approach also used to understand the design and analysis concepts.

Action 2:

Integrated courses were introduced to adapt practical components with the theory course to increase analytical ability.

Action3: To support the skill development in design and analysis, workshops were conducted.			
PSO2: Use the cutting-edge hardware and software tools with the obtained technical and managerial skills to design software and systems for applications including signal processing, communication engineering, computer networks, VLSI design and embedded systems			
PSO2	1.8 1.8*	1.5 1.6**	Target Level not attained because: <ol style="list-style-type: none"> 1. Students encountered difficulty in learning programming concepts and tools fundamental to solving given problems. 2. Lack of understanding of the contextual knowledge associated with societal safety and cultural issues. The following actions were taken to attain the target level.
Action 1: The students were showcased with the hardware-software implementation using demonstrations to comprehend the programming logic. Action2: We organized hands-op workshops with the focused session on Programming tutorials involving industry expertise and interactions. Action 3: The contemporary software and design tools were procured to upgrade learning skills, such as CST Studio suite and MAT LAB, to name a few. Action 4: In plant training and Internship were prompted to understand the significant aspects of safety and cultural issues. Action 5: Learning with real-world examples in view was applied to foster understanding and grasp contextual knowledge. Action 6:			

The learning through Case-study involving societal safety and cultural issues was adopted to understand the relevancy better.			
PSO3: Possess the attitude of continuous learning for producing effective solutions for the applications directly and indirectly related to Electronics and Communication engineering			
PSO3	1.8 1.8*	1.7 1.7**	Target Level not attained; the following actions were taken to attain the target level.
Action 1: Model-based learning, including real-time applications, was emphasized to enhance students' life-long learning skills. Action 2: Collaborative study, learning and case studies were demonstrated to the students to provide effective solutions for real time problems.			

Indicates attainment level of batch 2016-2020.

Continuous Improvement

The necessary actions that have been taken to improve the department, program, and University level continuously are described as below:

Department Level

The following teaching aids have been additionally employed with the existing teaching plans of the courses where utmost possible.

- Interactive Quizzes
- Lecture with Practical components
- Animated videos
- Flipped-class materials
- Guest lectures
- Workshops

- Online course materials
- Frequent curriculum review and revisions
- Review and revisions of the teaching and learning process
- Review of the assessment procedure and revisions based on interpreted results
- Revision of feedback system

University level

- Implementation of Information and Communications Technology (ICT) tools for teaching
- Faculty Development Program through Center for Learning Technology (CLT)
- Online examinations – NPTEL, Coursera
- International certification courses for the faculty members
- Centre for Competitive Examination
- Monitor educational activities through Internal Quality Assurance Cell (IQAC) and Academic office.
- Implement Non – CGPA Activities
- Pre-placement training through the office of corporate relation

In addition to the plans and policies mentioned above, several other strategies are also in practice at the department level to enhance the quality of teaching and learning among the students, faculty, and supporting staff. Figure 7.1.1 highlights different strategies-in placed by the department to offer continuous improvement



Figure. 7.1.1 Continuous Improvement strategies

Best practices followed by the Department/ University for the attainment of CO, pos, and psos

- Associating Theory with Practical
- Lab with Project
- Flipped class
- Online course
- One credit course
- International Certifications

Theory with Practical

Theory with the practical course components has been integrated to impart synchronized practical knowledge for an in-depth understanding of the fundamental concepts. The in-use

template of the certificate issued upon successful lab completion by the student in an integrated course is shown in fig.7.1.2.

KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION
(Deemed to be University)
ANAND NAGAR, KRISHNANKOIL-626126



SCHOOL OF ELECTRONICS AND ELECTRICAL TECHNOLOGY
DEPARTMENT OF ELECTRONICS AND COMMUNICATION
ENGINEERING

BONAFIDE CERTIFICATE

Certified that this Theory with laboratory report on “ECE18R352-CMOS DESIGN” is
the work of**S.Raja sri**.....
Reg. No ...**9917005167**.....” who carried out the Laboratory work during the academic
year 2019-2020 (EVEN Semester)

SIGNATURE

Mr. G. KARTHY, M. Tech., (Ph.D.)

Assistant Professor

Department of ECE

Kalasalingam Academy of Research and Education

SIGNATURE

Dr. M. Kalpana, M. E., Ph.D.,

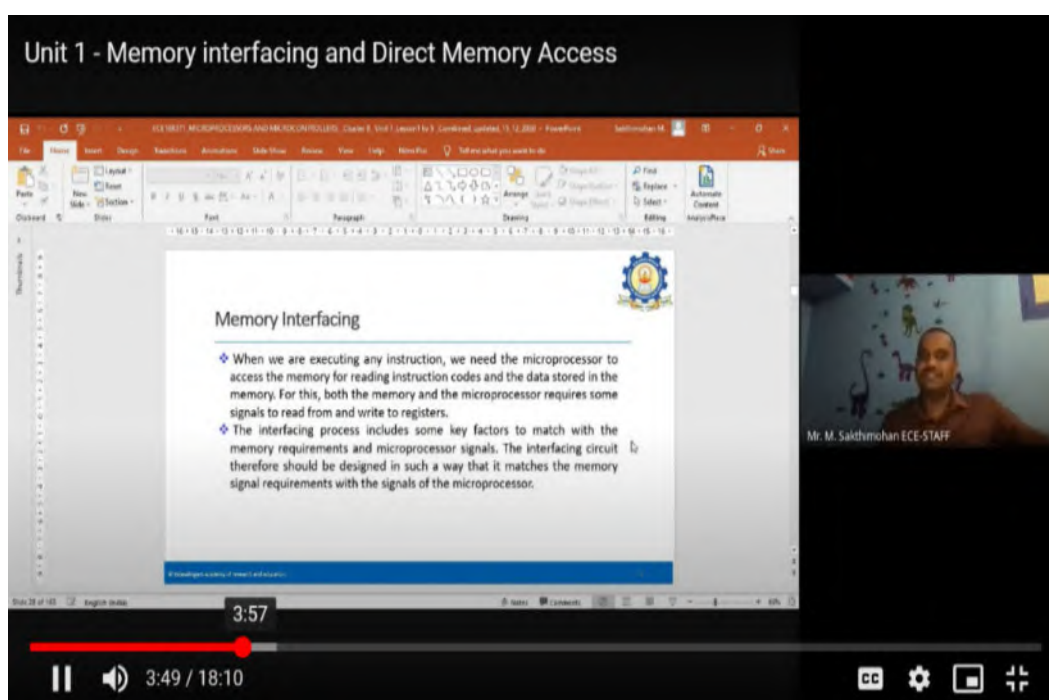
Associate Professor & Head

Department of ECE

Kalasalingam Academy of Research and Education

Figure. 7.1.2 Theory with Practical students bonafide sample**Flipped classroom videos**

Prior to the class, staff video lecture will be given to the students and the interactive session will be conducted by the staff to clear the doubts to the students incase if they have any doubts. Sample is given in the Figure 7.1.3 for the subject ECE304-Microprocessor and Microcontrollers.

**Figure. 7.1.3 Flipped classroom Sample****Online courses**

The Students are encouraged to attempt online courses from NPTEL/Coursera/EDX standard platforms. However, they are advised to opt for courses that are not already in their programme curriculum so as to provide the backing of additional learning. One such participation certificate obtained by our student is displayed in Figure 7.1.4 at his successful completion course on Introduction to Internet of things.



Figure. 7.1.4 Online course certificate Sample

One credit course

The department offers one-credit courses to enhance students' skills in line with industrial skill requirements. An industry-based resource person organizes the delivery of the course and contents. One-credit Course duration is fixated to 15 hours in all. Figure 7.1.5 shows a group photo of one credit course -ECX014-lora Gateway Design & Applications



Figure. 7.5 ECX014-lora Gateway Design & Applications Course Handled by Dr.Vimalathithan, Director, Krish Tech, Coimbatore,(2019-2020) ODD Sem.

International certification

The department also conducts certification courses to enrich the skills and make the students industry-ready. For example, Figure 7.1.6 shows a certificate course organized by Hewlett Packard Enterprise awarded a certificate of "VLSI, VHDL & PCB Design" to a student.

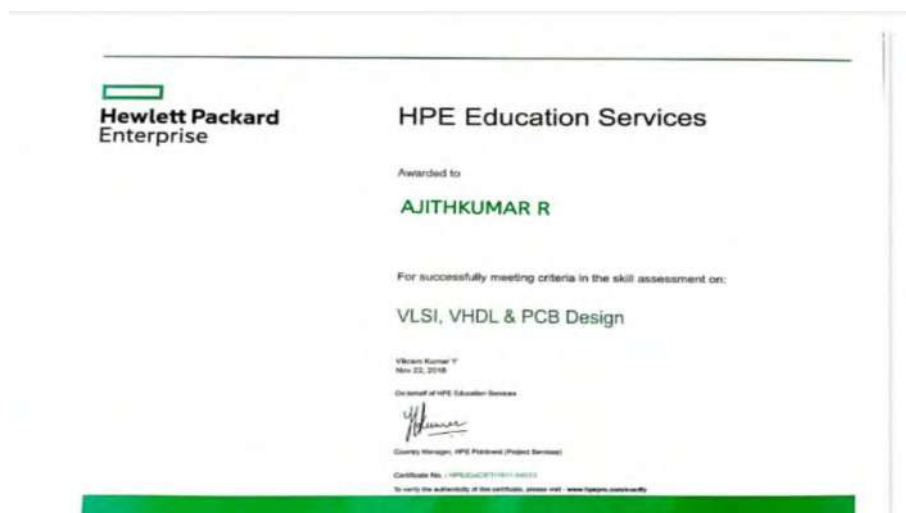


Figure. 7.1.6. Student Sample International certification

Class committee Meeting Minutes

Each semester, a Class Committee organizes the faculty-student meeting thrice to discuss and address the students' difficulties grievances related to course teaching and assessment methods, analyze the sessional Examination performances, and other co-curricular and non-co-curricular activities.

The meeting aims to improve the educational performance systems of students without a delay of escalating. Figure 7.1.7 is mentioned as a sample of a Class committee meeting minutes.

II CLASS COMMITTEE MEETING MINUTES

15th March 2021

The class committee meeting (II) for **II Year B.Tech. E.C.E. 'A' section** held on **12th March 2021** from **12.45 PM** in the google meet link <https://meet.google.com/ozo-pcvn-hrb> . The following members were attended the meeting.

Course Faculty Details (include all CBCS course faculty names):

Sl.	Course Code	Course Name	Faculty Name
1	ECE18R271	Electronic Circuits	DR.P.SIVAKUMAR
2	ECE18R274	Electromagnetic Waves and Transmission Lines	MR.R.RADEEP KRISHNA
3	ECE18R202	Signals and Systems	DR.KYUNG TAE KIM
4	ECE18R251	Data Structures	MR.JENYFAL SAMPSON
5	MEC18R211	Engineering Mechanics	MR.T.PREMKUMAR
6	ECE18R310	Display Systems	MR.G.KARTHY
7	ECE18R317	Bio-Medical Electronics	DR.V.MUNEESWARN

Faculty Advisor Details:

Sl.	Faculty Advisor Name
1.	MR.G.KARTHY
2.	MR.G.RAMESH

Student Representatives

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Student Class committee members

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2.	9919005038	CHEPALAMADUGU GREESHMA SAI
3.	9919005079	T. HARISH MUTHU KUMARAN
4.	9919005088	S. JAYASUNTHARI
5.	9919005098	KOUSHIK REDDY KAMIDI

Figure. 7.1.7. Sample Class committee meeting minutes

If the student's performance is not up to level, coaching/remedial classes are planned in addition to upholding the slow learner's performance. Figure 7.8 Shows the coaching class circular for the slow learners.



School of Electronics and Electrical Technology

Department of Electronics and Communication Engineering

2018-19 Odd Semester

Circular

17.07.2018

As per the circular received from the office of Director Academics, the department of ECE is planned to conduct the coaching classes for the weaker students. Hence all the batch coordinators are requested to prepare the schedule for the coaching class and submit it to the office of ECE.

HoD/ECE

Figure. 7.1.8. Coaching class circular mail

Process adopted by the department to assess the continuous improvement

Figure 7.9 pictures the process adopted by the department to measure continuous improvement. A student's performance in the sessional, laboratory, end semester examinations along with whatsoever other internal evaluations e. G. Quizzes, assignments, and innovative methods associated to each course are used to assess the cos, pos, and psos of the department.

If the target level is not attained, immediate action plans and countermeasures are taken to achieve the target level; otherwise, action plans are framed to further improve the attainment level.

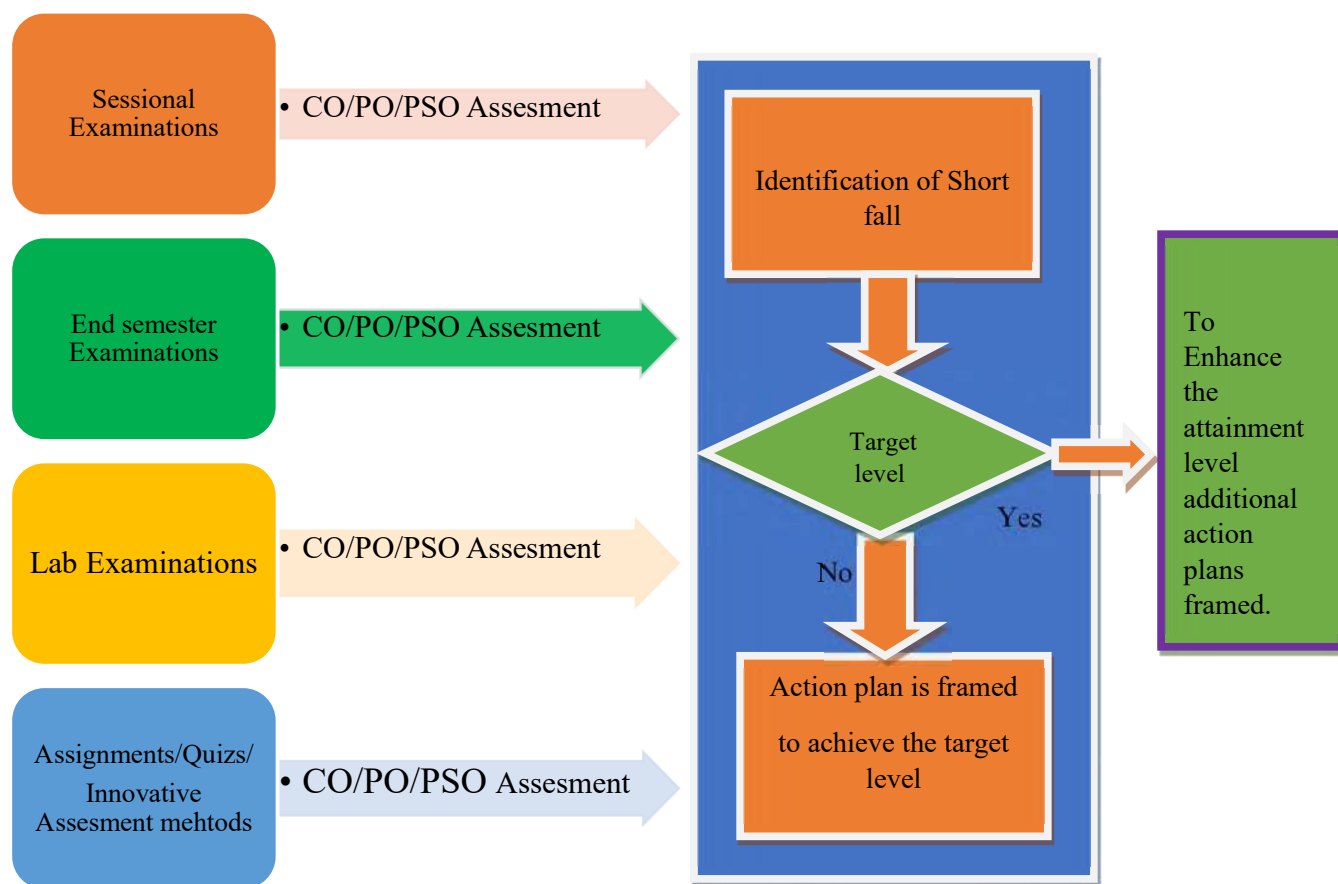


Figure. 7.1.9 Continuous improvement Assessment method

Plan of action to bridge the gaps

Figure 7.10 shows the plan of actions to bridge the gaps in the process of CO/PO/PSO attainment levels. The department uses Revision of syllabus, content delivery methodologies, enhancement of infrastructure and lab tools, Innovative pedagogy, and assessment tools, Industrial visits, Mini-project, Remedial classes and Summer term for slow learners, conduction of fdps, training programs, workshops, seminars, guest lectures, usage of Modern ICT tools and Virtual labs to bridge the gaps in the process of attainment.

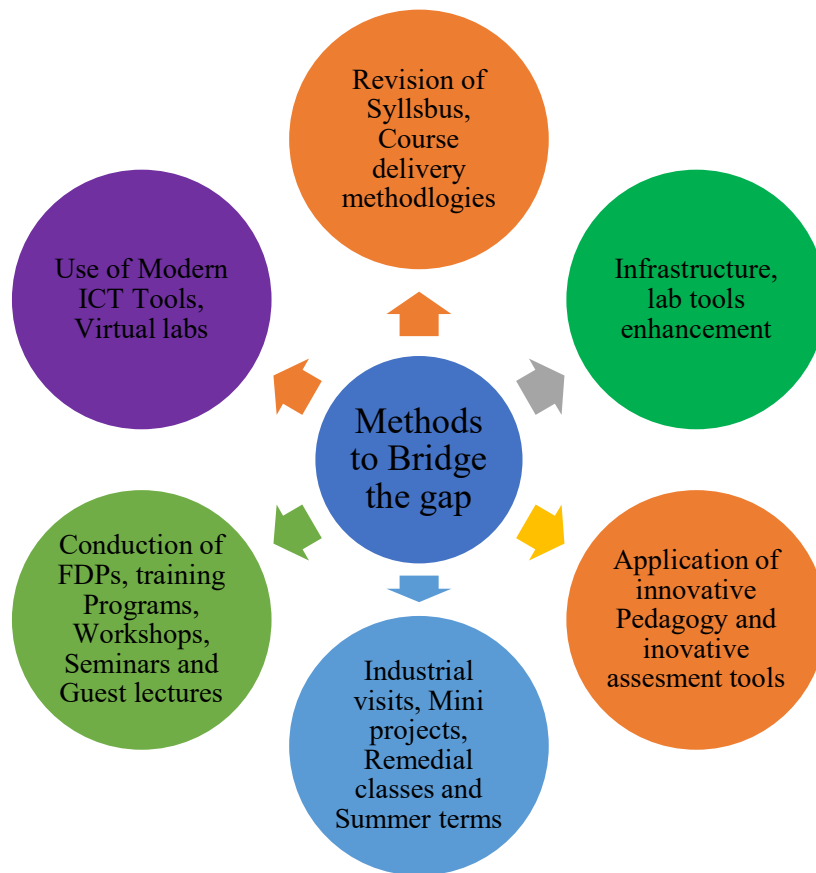


Figure. 7.1.10. Methods to Bridge the gaps in the attainments

7.2 Academic Audit and Actions Taken Thereof during the Period of Assessment

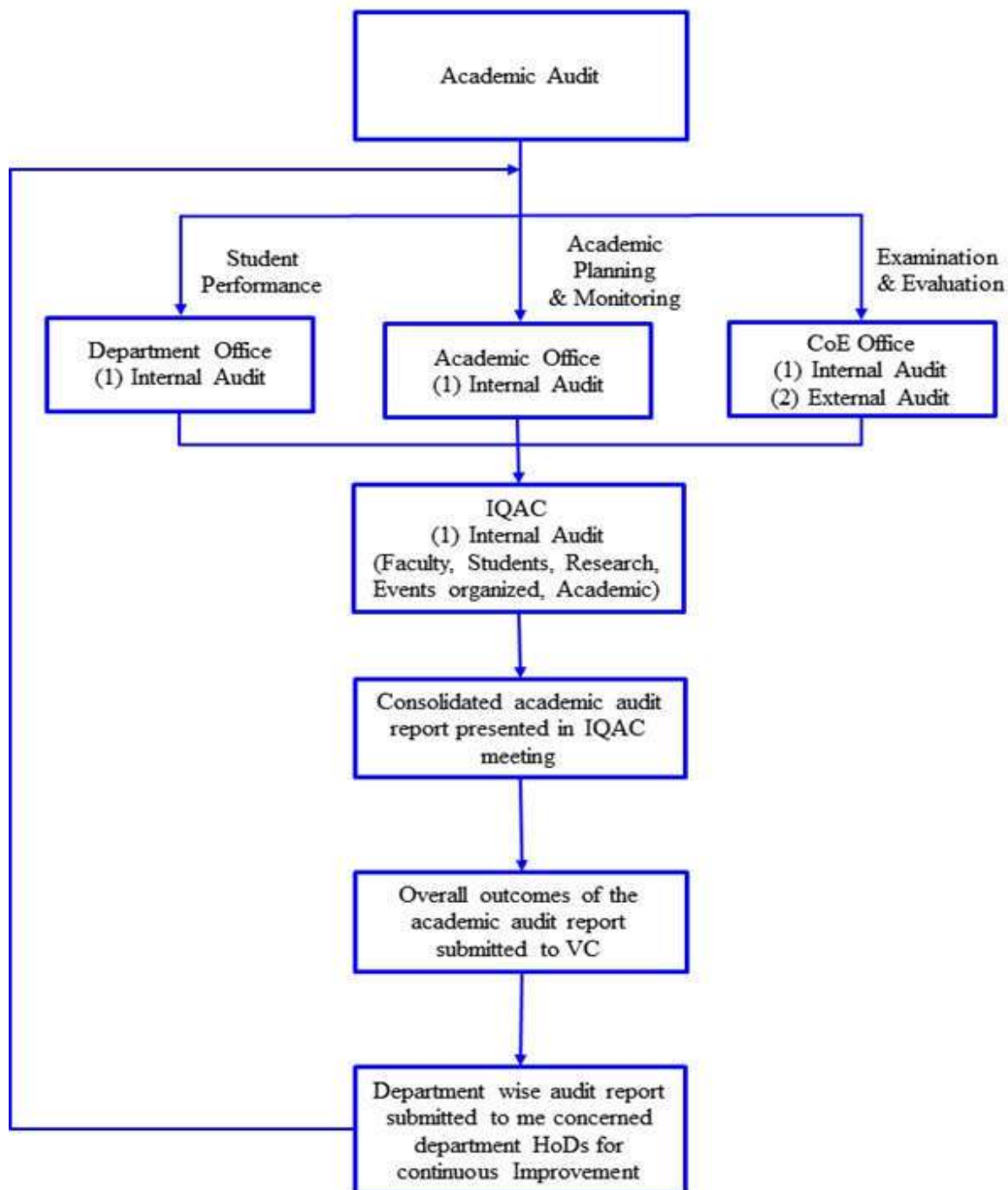
KARE regularly conducts the academic audit by its own scientific and systematic approach referring to the guidelines prescribed by the accreditation bodies such as NAAC and NBA. The entire process of academic audit is taken care of by the Internal Quality Assurance Cell (IQAC) focusing on the key indicators such as student performance, curriculum enrichment, student feedback, research performance and extension activities. The IQAC has designed its own metrics and rubrics to assess the performance of the individual faculty and the departments. The academic audit process is performed once a year.

KARE-IQAC has performed this academic audit process with the following objectives:

1. To identify and understand the self-reflection of the departments with respect to strengths and weaknesses.
2. To ensure the quality enhancement in the curriculum innovations, teaching-learning process, examinations and evaluations and research
3. To propose the methodology for the continuous improvement to the departments through scientific analysis and judgement

The academic audit is performed every academic year with different timelines based on the process shown in Figure 7.2.1 to continuously strive for quality assurance in the academic activities.

The auditing process adopted by the IQAC has a dual purpose viz., to audit the process as well as to train the faculty to meet the compliance. The auditing is done by internal peer team members proposed by Director (IQAC) and approved by Vice-Chancellor. The peer team conducts the audit based on the detailed rubrics for each category. The review report is analysed and the summary is discussed in the next IQAC quarterly meeting. The Heads of the Departments are requested to take necessary action to improve of teaching-learning process.

PROCESS OF ACADEMIC AUDIT ADOPTED IN THE KARE-IQAC SYSTEM**Figure. 7.2.1 Process of Academic Audit Adopted by KARE-IQAC**

In addition, the academic audit for all the departments in the KARE will be held at different levels based on their guidelines using different mechanisms. The following Table 7.2 displays the details of academic audits with periodicity, schedule of audit and mechanism used by the various offices and the type of auditors used to perform the task.

Table 7.2 Different key indicators and evaluation criteria used for the various levels of academic audit

S.No	Level of Academic Audit	Key Indicators	Periodicity	Possible schedule of visits	Mechanisms to be followed for the evaluation
1.	Department Office	Student Performance	Twice in a Year	July and January	Proceedings of Class committee meetings, course coordinator and module coordinator and faculty advisor meeting, The Class committee is formed by the hod in the department comprising with Chair person, faculty and student representatives
2.	Academic Office	Academic Planning and monitoring	Twice in a Year	July and January	Physical verification of documents with the faculty by the Internal expert committee members nominated by the Director-Academic OR Dean of the School
3.	Coe Office	Examinations and evaluation	Twice in a Year	November and May	Verification of the quality of the question papers based on the outcomes-based education by the module coordinator and the evaluation of answer script by the external peers
4.	IQAC office	Student Achievements	Once in a Year	May	Data with respect to defined quality metrics and proof of evidence can be verified by the internal expert committee members nominated by the IQAC with the approval VC
		Faculty performance			
		Research and Consultancy			
		Events organized			
		Academic activities			

1. Department office level academic audit:

The department level academic audit will be conducted appointing some senior faculty members as auditors and also utilizing the services of course coordinators, module coordinators and programme coordinators. There are three levels in which the department used to perform the academic audit to ensure the quality assurance in the upcoming semester.

(a) Class committee meeting:

Every class of the B.Tech. Programme will have a batch Committee consisting of Faculty Members and Students. The constitution of the batch Committee will be as follows

- (i) A Senior faculty member who is not associated with teaching the particular batch nominated by the Director (Academic)/ Head of the Department concerned, to act as the Chairman of the Class Committee.
- (ii) Course Coordinators of all the lecture-based courses
- (iii) Five students (in the combination of two from the toppers and three from the remaining students) from the respective batch to be chosen by the students of the batch from amongst themselves (and)
- (iv) Faculty Advisors of the students of the respective Class students.

The basic responsibilities of the Class Committees are

- (i) To review periodically the progress of the Batch
- (ii) To discuss problems concerning curriculum, syllabi and conduct of the classes, for both CGPA and Non-CGPA courses.
- (iii) To resolve issues related to slow learners in regular semesters and in summer terms.

(b) Program Coordinator Meeting: The course outcome mappings, the quality of course materials and assessment methods, rubrics for the courses and the target for the course outcomes and programme outcomes shall be verified before the starting of the academic session.

(c) Faculty advisor meeting- The faculty advisory meeting will be held three times in a semester during the starting of the academic session, mid semester and the end of the semester. During this time, the FA audit the course registration of the student, attendance, academic performance and completion of credits and record the same in the corresponding Faculty advisor diary of the student.

Report – (sample CCM minutes)**II CLASS COMMITTEE MEETING MINUTES****15th March 2021**

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5	MEC18R211	Engineering Mechanics	MR.T.PREMKUMAR
6	ECE18R310	Display Systems	MR.G.KARTHY
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4.	9919005088	S. JAYASUNTHARI
5.	9919005098	KOUSHIK REDDY KAMIDI

Figure. 7.2.2.(a) CCM Minutes sample

6.	9919005141	MOHAMMAD SOHAIB
7.	9919005146	MUTHUKUMAR M V
8.	9919005159	N. V NARASIMHA SATYA SAI DATHA GANESH

Mr. K. Jeya Prakash, the Batch coordinator chaired the meeting. The following points were discussed.

1. Sessional Exam-I result analysis.

S.no	Course		Appeared	Max	Min	Avg	Summary									
	Code	Course Name / Staff					<40	%	>=40	%	40-60	%	60-80	%	80-100	%
1	AER18R405	Aircraft Repair and Maintenance / Mr. KARTHIK	5	93.0	38.0	67	1	20	4	80	1	20	2	40	1	20
2	AUT18R205	Modern Vehicle Technology / Dr. S. GOWTHAMAN	5	68.0	35.0	55	1	20	4	80	3	60	1	20	0	0
3	BIT18R321	Human Diseases and Prevention / Mr. P. PRIYA	10	88.0	35.0	78	1	10	9	90	0	0	4	40	5	50
4	ECE18R202	Signals and Systems / DR. KYUNG-TAE KIM	68	80.0	5.0	53	10	14.71	58	85.29	39	57.35	19	27.94	0	0
5	ECE18R251	Data Structures / Mr. JENYAL SAMPSON	68	98.0	28.0	86	1	1.47	67	98.53	0	0	18	26.47	49	72.06
6	ECE18R271	Electronic Circuits / Dr. PSIVAKUMAR	68	100.0	28.0	80	2	2.94	66	97.06	2	2.94	25	36.76	39	57.35
7	ECE18R274	Electromagnetic Waves and Transmission Lines / Mr. RADEEP KRISHNA RADHAKRISHNAN NAIR	68	85.0	15.0	47	20	29.41	48	70.59	38	55.88	9	13.24	1	1.47
8	ECE18R310	Display Systems / Mr. G. KARTHIY	18	98.0	23.0	82	1	5.56	17	94.44	0	0	5	27.78	12	66.67
9	ECE18R317	Bio-Medical Electronics / Mr. V. MUNESWARAN	18	100.0	70.0	84	0	0	18	100	0	0	6	33.33	12	66.67
10	FT18R312	Fermented Food Products / REGINOLD JEBITTA	7	88.0	63.0	78	0	0	7	100	0	0	4	57.14	3	42.86
11	MEC18R211	Engineering Mechanics / T. PREM Kumar	68	88.0	3.0	68	3	4.41	65	95.59	17	25	38	55.88	10	14.71
12	MEC18R323	Materials Management / Mr. J. MANIVANNAN	5	100.0	93.0	97	0	0	5	100	0	0	0	0	5	100
13	MEC18R347	3D Printing / Mr. K. ARUN PRASATH	5	80.0	60.0	67	0	0	5	100	2	40	3	60	0	0
14	MEC18R427	Enterprise Resource Planning / Dr. S. KAVITHA, Mr. T. RAJ PRADDEESH	12	100.0	48.0	88	0	0	12	100	1	8.33	2	16.67	9	75
15	MEC18R428	Productivity Management and Reengineering / Dr. MADAM KHAN, Mr. M. SELWIN	14	90.0	60.0	79	0	0	14	100	1	7.14	6	42.86	7	50
16	MEC18R446	Industrial Psychology / Mr. R. MANIKANDAN, Dr. S. BATHURINATH	5	78.0	50.0	62	0	0	5	100	3	60	2	40	0	0

Exam	1 Arrear	2 Arrear	3 Arrear	4 Arrear	>4 Arrear	Appeared	Passed	Pass%
Sessional-I	16	7	2	1	0	68	42	62

It is observed that Pass percentage is 62 %. So, the chairperson advised the students to Improve the pass percentage in the SE-II.

2. Long absentees

There is no Absentees in this class.

3. Syllabus coverage

Students Informed that Two units were covered in all subjects.

4. Identification of fast and slow learners based on SE-I results.

The following students were identified as Slow learners. For them Coaching class is planned.

Figure. 7.2.2.(b) CCM Minutes sample

S.No	register_no	stu_name	course_code	course_name	marks	Count
1	9919005139	MESINENI BALARAM	AER18R405	Airframe Repair and Maintenance	38	1
2	9919005104	KARUMANCHI MANOJ KUMAR	AUT18R205	Modern Vehicle Technology	35	1
3	9919005079	HARISH MUTHU KUMARAN T	BIT18R321	Human Diseases and Prevention	35	1
4	9919005020	BASWARAJULA SAI KUMAR	ECE18R202	Signals and Systems	38	1
5	9919005031	BURLA GHANA RAJ	ECE18R202	Signals and Systems	40	2
6	9919005052	DARISA VENKATA TILAK	ECE18R202	Signals and Systems	38	3
7	9919005063	ESAKKI RAJA S	ECE18R202	Signals and Systems	20	4
8	9919005066	GAJULA THARUN VENKATA SAI	ECE18R202	Signals and Systems	35	5
9	9919005079	HARISH MUTHU KUMARAN T	ECE18R202	Signals and Systems	30	6
10	9919005083	ISUKALA SHASHANK	ECE18R202	Signals and Systems	40	7
11	9919005107	KEERTHANA S	ECE18R202	Signals and Systems	40	8
12	9919005110	KOUMPALLE MADHU BABU	ECE18R202	Signals and Systems	28	9
13	9919005118	KONDURU KUMAR	ECE18R202	Signals and Systems	18	10
14	9919005119	KUNDA VENKATA NAGA GOPI MANIKANTA	ECE18R202	Signals and Systems	35	11
15	9919005140	MOHAMMAD SHOAIB	ECE18R202	Signals and Systems	5	12
16	9919005143	MOOD MAHESH NAIK	ECE18R202	Signals and Systems	15	13
17	9919005140	MOHAMMAD SHOAIB	ECE18R251	Data Structures	28	1
18	9919005065	GADEGUDURU KALYAN	ECE18R271	Electronic Circuits	33	1
19	9919005066	GAJULA THARUN VENKATA SAI	ECE18R271	Electronic Circuits	28	2
20	9919005011	ARUN KUMAR T	ECE18R274	Electromagnetic Waves and Transmission Lines	30	1
21	9919005020	BASWARAJULA SAI KUMAR	ECE18R274	Electromagnetic Waves and Transmission Lines	33	2
22	9919005031	BURLA GHANA RAJ	ECE18R274	Electromagnetic Waves and Transmission Lines	35	3
23	9919005039	CHIGIRISETTY PAWAN KUMAR	ECE18R274	Electromagnetic Waves and Transmission Lines	38	4
24	9919005052	DARISA VENKATA TILAK	ECE18R274	Electromagnetic Waves and Transmission Lines	30	5
25	9919005060	KUNCHA VIJAYA KUMAR REDDY	ECE18R274	Electromagnetic Waves and Transmission Lines	40	6
26	9919005065	GADEGUDURU KALYAN	ECE18R274	Electromagnetic Waves and Transmission Lines	25	7
27	9919005066	GAJULA THARUN VENKATA SAI	ECE18R274	Electromagnetic Waves and Transmission Lines	33	8
28	9919005073	GUDA MALLIKARJUNA REDDY	ECE18R274	Electromagnetic Waves and Transmission Lines	35	9
29	9919005074	BASAM MADHUMOHAN REDDY	ECE18R274	Electromagnetic Waves and Transmission Lines	35	10
30	9919005079	HARISH MUTHU KUMARAN T	ECE18R274	Electromagnetic Waves and Transmission Lines	33	11
31	9919005098	KAMIDI Koushik REDDY	ECE18R274	Electromagnetic Waves and Transmission Lines	33	12
32	9919005104	KARUMANCHI MANOJ KUMAR	ECE18R274	Electromagnetic Waves and Transmission Lines	38	13
33	9919005107	KEERTHANA S	ECE18R274	Electromagnetic Waves and Transmission Lines	38	14
34	9919005108	KOKKANTI THIRUMALA KUMAR	ECE18R274	Electromagnetic Waves and Transmission Lines	30	15
35	9919005116	KOTHARU TEJA SIVA SAI	ECE18R274	Electromagnetic Waves and Transmission Lines	23	16
36	9919005119	KUNDA VENKATA NAGA GOPI MANIKANTA	ECE18R274	Electromagnetic Waves and Transmission Lines	28	17
37	9919005126	MACHUNURI MAHENDRA	ECE18R274	Electromagnetic Waves and Transmission Lines	40	18
38	9919005138	MEKALA RAJESH KUMAR REDDY	ECE18R274	Electromagnetic Waves and Transmission Lines	30	19
39	9919005139	MESINENI BALARAM	ECE18R274	Electromagnetic Waves and Transmission Lines	30	20
40	9919005140	MOHAMMAD SHOAIB	ECE18R274	Electromagnetic Waves and Transmission Lines	15	21
41	9919005143	MOOD MAHESH NAIK	ECE18R274	Electromagnetic Waves and Transmission Lines	40	22
42	9919005163	PAPISSETTI SAI HARSHA	ECE18R274	Electromagnetic Waves and Transmission Lines	35	23
43	9919005047	REMALA NANDAKISHORE REDDY	ECE18R310	Display Systems	23	1
44	9919005003	AILURI SAI KUMAR REDDY	MEC18R211	Engineering Mechanics	3	1
45	9919005073	GUDA MALLIKARJUNA REDDY	MEC18R211	Engineering Mechanics	28	2
46	9919005140	MOHAMMAD SHOAIB	MEC18R211	Engineering Mechanics	35	3

5. Framing the remedial action for slow learners, plan for fast learners

Chairperson informed that the Circular will be circulated through timetable cell PC for Slow learners. He asked the students to attend the coaching class without fail.

6. Availability of Course materials, Lab manual and Course plan.

Students informed that Course materials for all subjects are available also they informed course plans are also available in their SIS login.

7. Completion of assignment and tutorials of individual subjects.

Students informed that at least one assignment is given all the subjects and tutorial session also handled by the staff member.

Figure. 7.2.2.(c) CCM Minutes sample

8. **Meeting with Faculty Advisor**
Students informed that FAs are conducting meeting through online regularly, through which their grievance received and addressed.
9. **Progress of Non-CPGA Courses**
Chairperson advised the students to Complete the NON-CGPA as early as possible.
- The meeting ended with thanks by the chair at 1.15pm



Figure. 7.2.2.(d) CCM Minutes sample

Gap Analysis:

- ❖ Slow learners and Fast learners are identified based on the performance of the sessional examination.
- ❖ More number of failures in Signals and Systems and Electromagnetic waves and Transmission lines, hence class pass percentage has decreased.
- ❖ Non-CGPA related activities need to be provided to the students.

Actions Taken:

- ❖ For the slow learners' Remedial classes are framed. Fast learners are encouraged to take part in symposium/ conference and workshops.
- ❖ For the better understanding of signals and systems concepts, more number of tutorials are provided.
- ❖ For the Subject Electromagnetic waves and Transmission lines Animation based videos, Interactive based learning and Real time examples are given to the students.
- ❖ Non-CGPA related activities like Sports/ Club related activities/ International languages /NSS are provided to the students to enable them to complete Non-CGPAs.

(2) Academic office level academic audit:

The academic office used to audit the preparedness of course plan, and course content, E-learning resources and other teaching-learning aids as per the academic calendar for the starting of every academic session. Further, the academic activities like delivery methods, student feedback will be monitored in between the semester through class room monitoring committee and the concerned hods. At the

beginning of each semester the internal auditors will be appointed by the academic office notifying the same to the faculty to attend the audit in person with the required documents. The list of the sub clauses of evaluation criteria to be considered for the academic audit is included in the Table 7.2 under the academic office. Any deficiency in the evaluation criteria will be informed to the concerned faculty through the concerned school Deans and IQAC office for further actions.

Figure 7.2.3. Indicates Auditing Team details and Circular, and Figure 7.2.4 indicates academic audit report sample for course material verification.

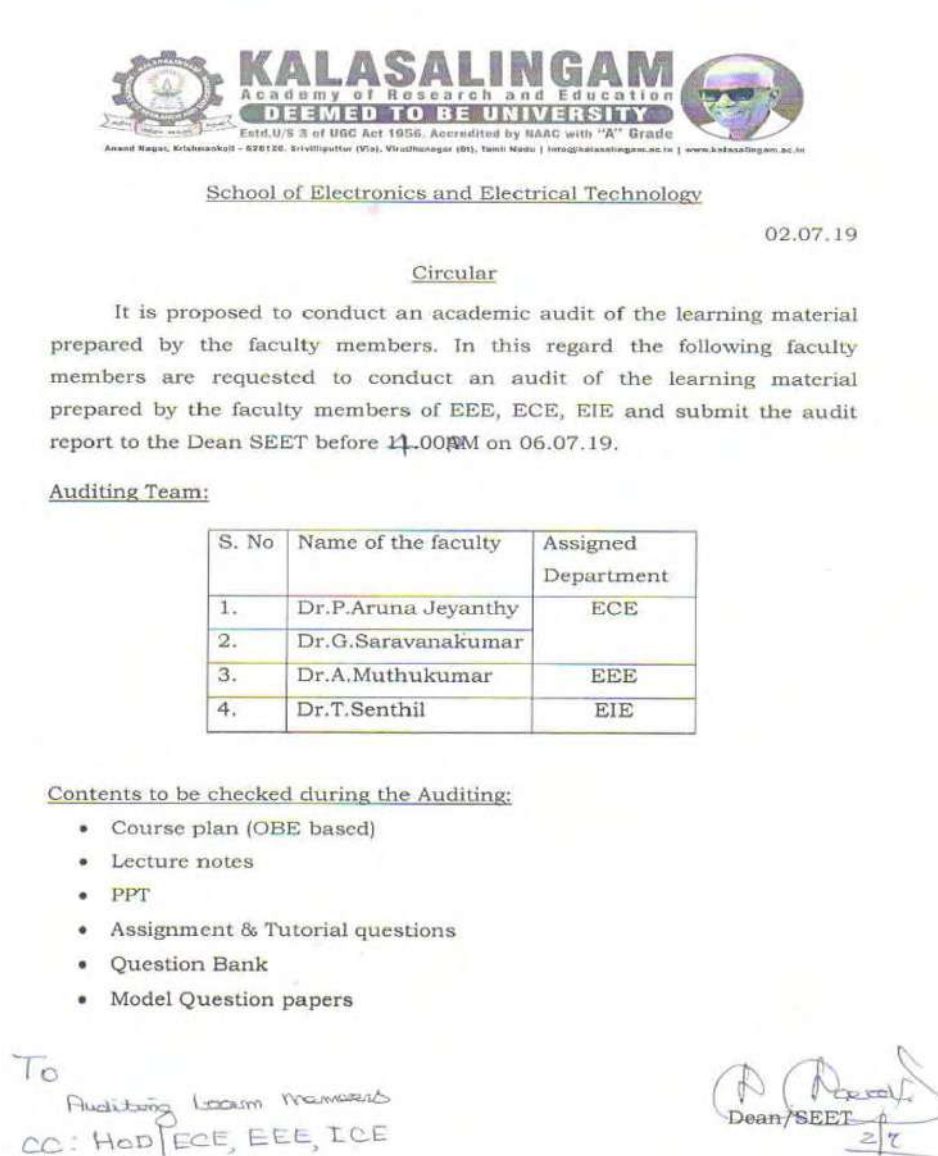
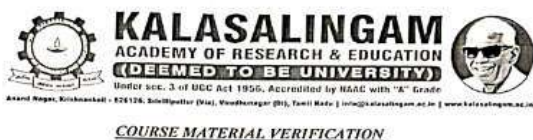


Figure. 7.2.3. Academic Audit circular



ECE

COURSE MATERIAL VERIFICATION

Name of the Course Faculty/Instructor: Dr.M.Kalpna Name of the Course Coordinator: Mr.M.Sakthimohan (ECE18R203)/Dr.M.Kalpna (ECE435) Name of the Evaluator: Dr.P.Aruna Jeyanthi

S.No	Course Code/Name	Verified by Evaluator	INSTRUCTIONAL MATERIALS TO BE VERIFIED								*Minutes of Meeting CC/MC/PC (YES/NO)
			Course Plan as Per ODE (Theory/Lab)	Question Bank	Lecture Notes Hand Copy	E-Learning (PPT/MPTEL)	Flipped/Google Class Room	Tutorial Problems	Assignments	Use of Pedagogy Tools	
1.	ECE18R203/Analog Integrated Circuits IV ECE	Yes/NO	/	/	/	/	/	/	/	/	NA
		Quality of Content (%)	100	100	100	100	100	100	100	100	
		Observations									
	ECE435/High Speed Switching Architecture IV ECE	Yes/NO	/	/	/	/	/	/	/	/	Yes
		Quality of Content (%)	100	100	100	100	100	100	100	100	
		Observations									

*This is only applicable for course coordinators, module coordinator, and program coordinator

H. Kalpna
Signature of the Course Faculty/Instructor

Dr.P.Aruna Jeyanthi
Signature of the Evaluator

Figure. 7.2.4. Course material verification Sample Report

Gap Analysis:

Some faculty have not prepared the complete unit materials as per the format.

Actions Taken:

The faculty asked to prepare the materials as per prescribed format and asked them to submit on or before the deadline.

(3) Coe office level academic audit

The Academic audit from the COE office will be conducted for the faculty members based on the feedback from the students in the previous semester. The Audit will be done by the external experts from reputed institution. They will be verifying the following documents and give their suggestions to improve their performance in coming semesters.

1. Course material Files
2. Evaluation Rubrics
3. Teaching methodology
4. Assessment Methods
5. Quality of the sessional examination, End semester examination question paper

External and Internal Audit of Question papers:

The audit and scrutiny of External question papers will be done by the experts from other reputed institutions. They will verify the standard of the questions, availability of all data for answering and also will identify any questions set out of syllabus in the question paper.

After the External Audit, the Office of Controller of Examination will invite the Senior Faculty members/Module Coordinator/Program Coordinator for verification of

questions. They also cross verify the standard of the questions, data availability of the questions, any requirement for answering the questions and check for the out of syllabus questions in the question papers. After the successful external and internal auditing, the question paper will be printed in the office of CoE.

Answer booklet Audit After Valuation:

The answer booklets of end semester examinations will be evaluated by the external experts from reputed institution. The valued answer booklets will be audited in random by other experts to ensure the quality in evaluation process. If the variation is found large, the valuated experts will be debarred from the valuation. The figure 7.2.5 depicts post academic auditing members details.



 KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION ((DEEMED TO BE UNIVERSITY)) <small>Under sec. 3 of UGC Act 1956. Accredited by NAAC with "A" Grade</small> <small>Anand Nagar, Krishnankeli - 626126, Srivilliputtur (Via), Virudhunagar (Dt), Tamil Nadu info@kalasalingam.ac.in www.kalasalingam.ac.in</small> 			
OFFICE OF CONTROLLER OF EXAMINATIONS			
POST ACADEMIC AUDITING – NOV/DEC 2018			
S.No	Name of the Department	Name of the External Expert	Date of Auditing
1.	MAT	Dr. R. MOHANRAJ Department of Mathematics University VOC College Of Engg Thoothukudi	28.12.2018
2.	BIOTECH	Dr. A. Rajasekar Associate Professor Thiruvalluvar University, Senkadu, Vellore	28.12.2018
3.	IT	Dr. P.Karthikeyan Associate Professor Thiagarajar College Of Engg, Madurai	28.12.2018
4.	CSE	B. Rajesh Kanna School of Computer Science & Engg VIT, Chennai.	28.12.2018
5.	MCA	Dr. K. PERUMAL, Professor Department of Computer Applications Madurai Kamaraj University Madurai	28.12.2018
6.	CIVIL	Dr. S. THIRUGNANA SAMBANDAM Dept Of Civil & Structural Engg Annamali University, Chidambaram	28.12.2018
7.	ECE	Dr. P.S. PERISAMY Professor & Head Department Of ECE KSR College Of Engineering Tiruchencode	29.12.2018

Figure. 7.2.5.(a) Post Academic Auditing Committee member details

S.No	Name of the Department	Name of the External Expert	Date of Auditing
8.	MECH	Dr. V.HARIHARAN Professor/Mechanical Engg Kongu Engineering College Perundurai	29.12.2018
9.	ENG	Dr. T.S. Varadharajan Assistant Professor Of English PG & Research Department Department of English Thiagarajar college, Madurai	29.12.2018
10.	ARCH	Ar. K.P. BALAMURUGAN Professor Excel College of Architecture and Planning Sungari West, Kumarapalayam	29.12.2018
11.	E&I	Dr. G. Sakthivel Associate Professor Department Of E&I Annamalai University Chidambaram	29.12.2018
12.	MAT	Dr.SC.SIVASUNDARAM ANUSHAN Professor visting Dept of Management Of Studies Madurai Kamaraj University Madurai	29.12.2018
13.	COM	Dr. R. SENTHILKUMAR Associate Professor of Commerce NMSS Vellaichamy Nadar college, Nagamalai, Madurai	29.12.2018

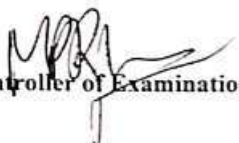

 Controller of Examinations

Figure. 7.2.5.(b) Post Academic Auditing Committee member details

External Audit

The department also undergoes an Academic audit by invited experts from external bodies.


The External Audit occurs every semester end, and during the Audit, the following academic elements are verified.

- Course plan
- Maintenance of Logbook
- Additional Topic covered
- Course material Files
- Quality of Assignment Questions
- Conduction of Tutorials/ Quizzes/Seminars

- Quality and Evaluation of Sessional Examination Questions
- Textbooks and Reference books used
- Self-learning
- Quality of E-materials
- Encouragement of Participative learning
- Use of Experimental learning
- Use of Smartboard/ICT facilities
- Use of Virtual lab
- Support to the fast learners
- Actions taken keenly to the slow learners
- Follow up and of preventive and corrective measures.

Figure 7.2.6 is a typical external report sample of the Audit conducted in 2018-2019 (Odd Semester).

ECC


KALASALINGAM
 Academy of Research and Education
DEEMED TO BE UNIVERSITY
ESTD 05/3 of UGC Act 1956. Accredited by NAAC with "A" Grade
www.kalasalingam.ac.in | 1860 425 7884 | 1860 425 9395

Anand Nagar, Krishnankoil – 626 126
 Srivilliputhur (vill), Virudhunagar (DT)
 Tamilnadu, INDIA
 Ph: 04563-289300
 e-mail: coc@klu.ac.in

NOV/DEC 2018

OFFICE OF THE CONTROLLER OF EXAMINATIONS

EXTERNAL AUDIT REPORT ON ACADEMIC PROCESS

Department: ECE Sem: V

Course Name with Code: Analog and Digital communication - I / ECE307 Credit: 4

Theory / Practical: Theory

Name of the Staff Member: Dr M. KALPANA Designation: Associate prof

Rating and Quality of Academic Procedure:

S.No	Activities	Rating	Suggestion for improvement
1.	Course Plan	9	
2.	Maintenance of Log Book	9	
3.	Additional Topics covered	6	To be improved
4.	Course Material File	8	
5.	Quality of Assignment Questions	8	
6.	Conduct of Tutorials / Quizzes/Seminars	9	
7.	Quality of SE I / SE II / SE III questions	9	
8.	Valuation of SE I / SE II / SE III Answer books	8	
9.	Number of Text Books/Reference Books used	7	
10.	Self Learning is ensured through assignments	6	
11.	Quality e-learning materials	7	
12.	Encouragement of participative learning	8	
13.	Extent of use of experimental learning	8	
14.	Extent of use of Smart Board / ICT facilities	7	
15.	Use of Virtual Lab	8	
16.	Extent of support offered to improve fast/advanced learners	7	

Figure. 7.2.6(a). External Auditing sample

S.No	Activities	Rating	Suggestion for improvement
17.	Special Efforts taken on Slow learners	7	
18.	Follow up of Preventive and Corrective measures	7	

General Observation / Comments: *More years of Experience. Can be improve some Teaching methodology*

Name and Designation: *Dr. S. R. J. A. A. M.* Signature(s) of the Expert(s) with date *S.R.*

Institution : *Thiagarajar College of Engg.*

Major Observation / Deficiency:

Minor Observation : *I have covered OPAH & Multitasking carrier systems additional topics.*

Noted by:

H. S. R. J. A. A. M. Course Teacher *H. S. R. J. A. A. M.* Course Co-ordinator *H. S. R. J. A. A. M.* Head of the Department

Figure. 7.2.6 (b). External Auditing sample

IQAC Audit Report**Name of the Department:** Electronics and Communication Engineering

S.No	Parameters	Observation/Remarks
1	Department faculty strength	As per regulation body norms- satisfactory
2	Sponsored Research projects	Department needs to obtain more projects- satisfactory
3	Quality of PG Projects	All the PG projects are satisfactory and converted into publications
4	Quality of UG Projects	The outcome of the UG projects are good .
5	Publication in journals Indexed in Scopus, WOS	Publication is good
6	Publications in National and International Conferences	Good
7	Textbooks, Edited Books, Chapters Published	Department must focus to improve the publication of books
8	Patent publication	It is good
9	Faculty Awards and recognition	More faculty can apply for awards

10	FDPs and STTP attended by faculties	Almost all faculty involvement observed
11	Seminars, Workshop attended by faculties	Almost all faculties participation noticed
12	Extension activities	Satisfactory
13	Value added courses	It is more satisfactory
14	Event organized	Department organized quality international and national conferences, seminars/workshops.
15	Details of New Academic Programme Introduced	Nil
16	Students' Achievements – Extracurricular Activities	It is quite good
17	Students' Achievements – Co Curricular Activities	Department must encourage students for more achievements

The Figure 7.2.7 Indicates IQAC-Faculty audit sample.

Kalasalingam Academy of Research and Education
Anand Nagar, Krishnankoil-626126
Office of Director (IQAC)

Faculty Self Appraisal Evaluation Sheet 2018

Name of the Faculty: Mr. K.PANDIARAJ

Department: ECE

S. No	Category	Score
1. Teaching, Learning and Evaluation Related Actions		
1.1	Student Performance	2.33
1.2	Details of Contribution in Imparting Syllabus-oriented Knowledge	3.21
1.3	Participatory and Innovative Teaching/Learning Methodologies	1.52
1.4	Details of Catering to Slow Learners, Average Learners and Fast Learners	1.67
1.5	Details of Question Paper Setting and Evaluation	3.5
GPA_1		2.38
2. Co - Curricular, Extension and Professional Development related Activity		
S. No	Category	Score
2.1	Student-based Co-curricular activities/Nature of Duty	2.3
2.2	Professional Development Activities	1.6
GPA_2		1.95
S. No	Category	Score
3. Research, Consultancy and Extension Activities		
3.1	Details of Research Papers published	1
	(a) Publication in Journal	2
	(b) Publication in the Conference	0
3.2	Text or reference books by international/National publishers	0
3.3	Details of Major / Minor Research Projects	0
3.4	Research Guidance	2
	(a) Details of UG/PG Project Guiding	-
	(b) Details of M.Phil / Ph.Ds Awarded / Thesis Submitted	0
3.5	Details of collaboration	0
3.6	Academic Extension / Out-reach / Societal Contribution	0
3.7	Consultancy Activity	0
3.8	Details of Patent	0
GPA_3		0.53
4. Contribution in Administrative activities and Organizing Events		
4.1	(a) Central Administration	4
	(b) Department Administration	3.58
4.2	(a) Event Organized	0.7
GPA_4		2.1
Total GPA		1.91



Figure. 7.2.7 IQAC – Faculty Audit sample

Table 7.3- Actions Taken and Implementations for Continuous Improvement

Type/Level of academic audit	Gap Analysis	Actions Taken	Implementations for Continuous Improvement
Sponsored Research projects	More Research Projects need to be done.	Funding related Seminar and workshops were organized.	Funds generated through IEDC, DST and FIST projects.
Textbooks, Edited Books, Chapters Published	Few publications only done in the Book chapters; Publication of Textbooks are limited	Faculty were encouraged to publish the papers in book chapters and Textbooks	Faculty published their papers in Book chapters, and few showed involvement in releasing the textbooks

Students' Achievements – Co Curricular Activities	Students Achievements is less	More Co-curricular events such as Guest lectures, workshops, Seminars, Technical Symposium were organized	More number of students started participated in the Co-curricular events, thus in turn their co-curricular skills were enriched and its got reflected in the placement records.
--	-------------------------------	---	---

7.3 Improvement in Placement, higher studies and Entrepreneurship

Department is taking corrective measures to improve the students' placement record by conducting various training programs such as SAP, JAVA, CLAD, and company-specific training programs. As a result, the growth in the highest salary package is raised gradually from one batch to other during all the assessment years. Figures 7.3.1 and 7.3.2 shows Sample of SAP and JAVA certificates.

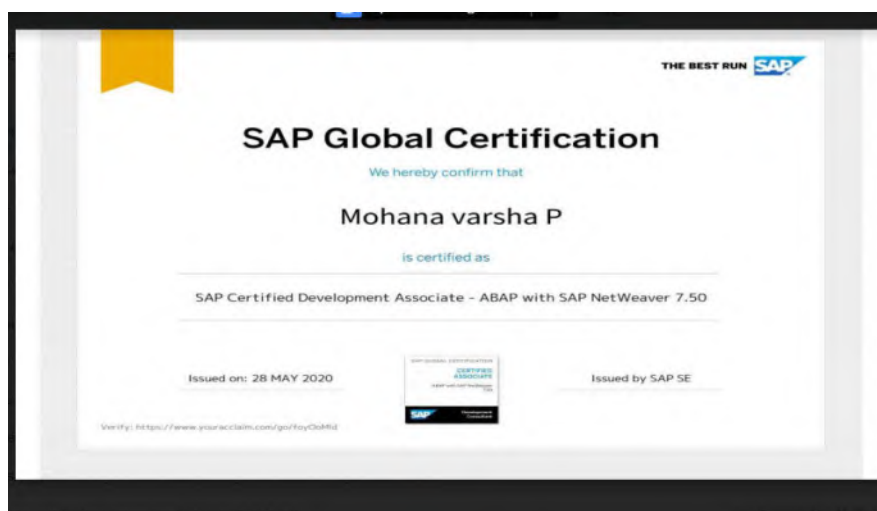


Figure. 7.3.1 Sample SAP Certificate



Figure. 7.3.2 Sample JAVA Certificate

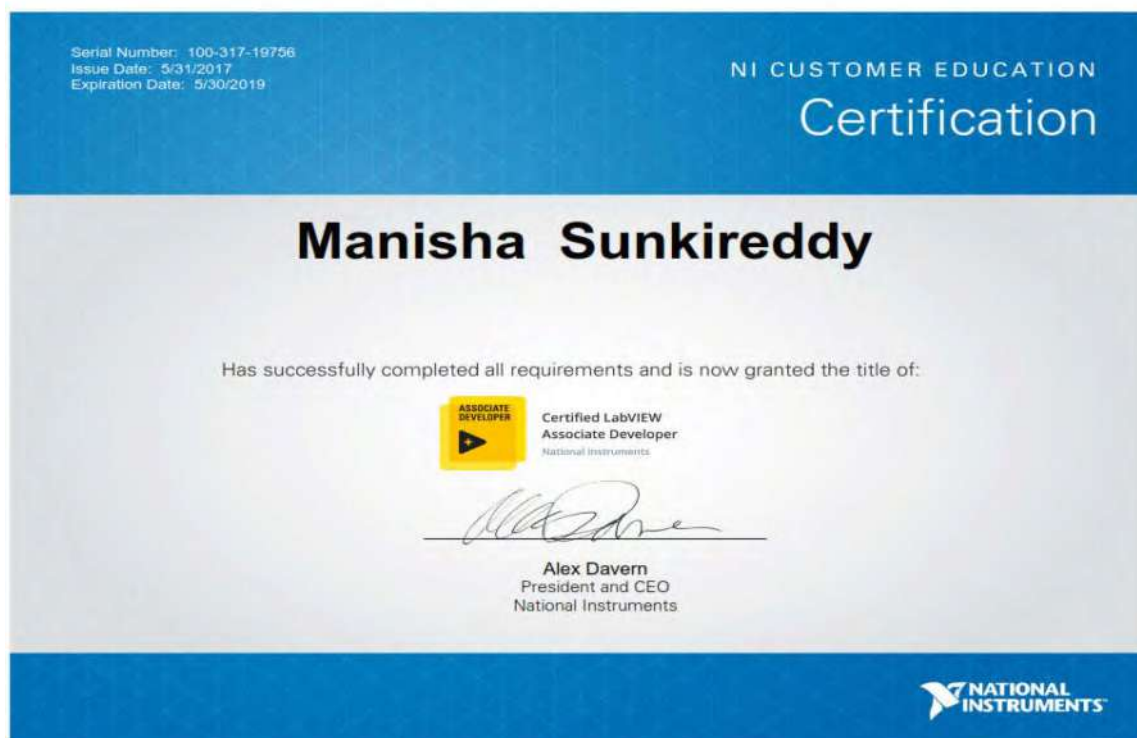


Figure. 7.3.3 Sample CLAD Certificate

Figure 7.3.3 shows the sample CLAD certificate attained by our students. In addition, the Training and Placement (TPO) cell also conducted company-specific training programs to uplift the placement readiness. The circular of one such event by the University TPO cell is depicted in Figure 7.3.4



26.12.2018

No.: KARE/OCR/Training/2018-19/017

CIRCULAR

Office of Corporate Relations is organizing 5 days JAVA training for Third Year circuit branch students on 3rd, 4th, 5th, 11th & 12th Jan, 2019. Students are requested to pay the training fees of Rs.2000/- (Two Thousand only) on or before 13th Jan, 2018 through Easy SIS. Concerned department Placement Coordinators are requested to inform the students. Attendance will be strictly monitored.

Training Timings: 9.00 am – 6.00 pm.

Director Corporate Relations

Registrar

Vice Chancellor

Copy submitted to the Chancellor and Vice President – for favor of information.
CC to: All Directors, Deans, Controller of Examinations and HoD's
CC to: PRO

Encl: Training approval copy.

Figure. 7.3.4 Sample Company-specific training Program circular**Table 7.4. Placement, higher studies students count details**

Item	Year 2020- 2021	Year 2019- 2020	Year 2018- 2019
Total No. of Final Year Students	203	186	186
Total Number of Placed students count	196	161	157
Number of students pursuing higher studies	5	11	2

Table 7.4 indicates our students' opted placement and higher studies details in the last three assessment years.

Placement comparison:

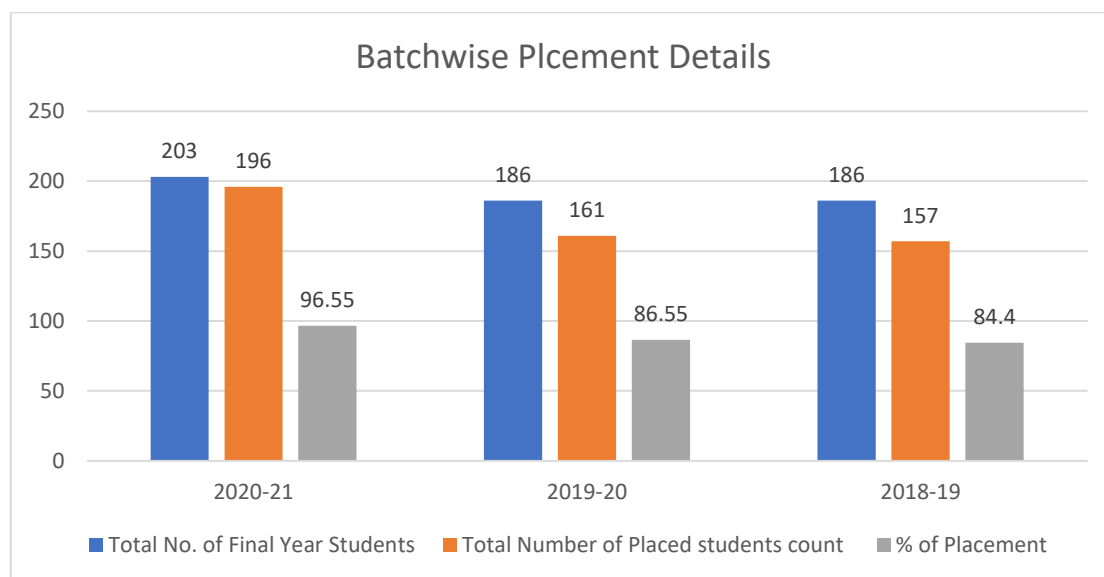


Figure. 7.3.5. Placement comparison chart

The batch-wise job placement growth of our students is demonstrated in Figure 7.3.5. In addition, Figure 7.3.7, shows a sample appointment order of a student.



July 23, 2019

IBM India Private Limited
Manyata Embassy Business Park,
G2 Block, Nagwara Outer Ring Road,
Bangalore – 560045, India.
Tel : 91-80-49139999
<http://www-07.ibm.com/in/careers/>

Dear Madhurapantula Meghana

We are pleased to offer you the position of Associate Systems Engineer, in band 06G at IBM India Pvt Ltd (IBM or Company). The terms and conditions of your employment contract at IBM are detailed below. Please read these important details carefully, including your compensation and benefits.

Initially, you will have to undergo an IBM trainee program specially designed for all college campus hires. This training is to enable you to acclimatize to the industry and post qualifying, accelerate your transition to a live project.

You must complete your formal course of education, including final semester examinations to establish your qualifications, before joining. Further, this offer is contingent upon your obtaining the degree, consistent academic performance, minimum aggregate or equivalent of 65% or 6.5 CGPA in Bachelors & Post-Graduation and 60% or 6.0 CGPA in SSLC or X, HSC/PUC/XII, Diploma or the equivalent, failing which IBM may, at its sole discretion, withdraw this offer of employment.

Acceptance and Commencement

Your appointment will be effective on your joining date, i.e July 26, 2019. Please contact us immediately if you require an alternative joining date. If you do not confirm your acceptance or we are unable to set an alternative date, this offer will be withdrawn.

To confirm your acceptance of this offer, you are required to:

- Accept this offer by selecting the 'accept' option at the bottom of the form. Please note that if you do not provide your acceptance, you will not be allowed to join on the joining date specified above.
- On your first day of employment, please report at 9:00 am to the Main Lobby located at Block D3, Manyata Embassy Business Park, Nagawara Outer Ring road, Bangalore-560045.

If you have questions about your First Day Documentation, send an email to eschoolhiring@in.ibm.com

On your joining date, please bring (i) 1 copy of this letter duly signed and dated by you (ii) 2 self photographs (passport size, color with white background) (iii) One set of print outs of the completed on boarding forms &

2

Figure. 7.3.6. Sample Appointment order of the student

Improvement in the higher studies

To prepare the competitive examination (CCE) and Higher studies, the GATE Training Program is conducted in the department for the III year and Final year students. GATE circular is shown in the Figure 7.3.8 and Figure 7.3.9 illustrates sample GATE scorecard of the student.



School of Electronics and Electrical Technology
Department of Electronics and Communication Engineering

Ref. No. SEET/ECE/CCE-PD/2018-19-01

Date: 12.07.2018

Circular

The Department of Electronics and Communication, KARE, it is proposed to schedule the GATE coaching for second, third and final year students in the academic year 2018-19. Tabulated are the syllabus coverage plan for the GATE coaching, respective Resource Persons are requested to adhere with the course plan and make it convenient to handle the classes as per the timetable.

The Resource Person who handle the classes are expected to follow the below points during the coaching,

- Be on time to coaching classes
- Prepare course materials
- Strictly follow students' attendance
- Intimate the student's absentees to the concern coordinator
- Conduct Mock test when prompted from the CCE and submit result
-

S. No.	Topic	Resource Person
1.	Network Theory	Mr.P.Murugan
2.	Electromagnetic Waves And Transmission Lines	Mr.P.Manikandan
3.	Analog Circuits and Digital Circuits	Mr.K.Pandiaraj
4.	Electron Devices	Dr.T.Senthil
5.	Signals and Systems	Dr.A.Muthukumar
6.	Engineering Mathematics	Mr.Radeep Krishna R
7.	Communications	Dr.A.Lakshmi
8.	Control Systems	Mr.Radeep Krishna R

Figure. 7.3.7. GATE coaching class circular

Welcome, Eda Harsha Vardhan Reddy

GATE 2020 Result

Name
EDA HARSHA VARDHAN REDDY

Registration Number
EC20S47104158

Gender
Male

Examination Paper
Electronics and Communication Engineering (EC)
Sections:

Marks out of 100[#]
38.68

All India Rank in this paper
6137

Qualifying Marks^{}**
General/OBC (NCL) 28.8
SC/ST/PwD 19.2

GATE Score
409

[#] Normalized marks for multisession papers (CE and ME)
^{**} A candidate is considered qualified if the marks secured are greater than or equal to the qualifying marks mentioned for the category for which a valid Category Certificate, if applicable, is produced along with this scorecard.

Figure. 7.3.8 Sample GATE Scorecard of the student

BEC Certification course.

To improve their language skills BEC training Program is conducted starting from the second year onwards. Sample is given in the Figure 7.3.10.

Cambridge Assessment English

Business English Certificate Preliminary

Statement of Results

Candidate name
G. KUMAR SAI REDDY

Place of entry
VIRIDHUNAGAR

Reference No.
193IN8601339
To be quoted on all correspondence

Session
March B (PM1) 2019

Result
Pass

Overall Score
141

CEFR Level
B1

CEFR Level	Cambridge English Scale	Certificated Results	Reading	Writing	Listening	Speaking
B2	170	Distinction				
B1	160	Merit				154
	150	Pass		145		
A2	140	Level A2	135		131	
	130					
	120					
	110					

Business Preliminary assesses English used in the context of business at Level B1 in the Council of Europe's Common European Framework of Reference.

Candidates achieving a Pass with Distinction (between 160 and 170 on the Cambridge English Scale) receive a certificate stating that they have demonstrated ability at Level B2. Candidates achieving Pass with Merit or Pass (between 140 and 159 on the Cambridge English Scale) receive a certificate at Level B1.

Candidates whose performance is below Level B1, but falls within Level A2 (between 120 and 139 on the Cambridge English Scale), receive a certificate stating that they have demonstrated ability at Level A2.

Examination results can be quickly and securely verified online at: www.cambridgeenglish.org/verifiers

Results	Score
Pass with Distinction	160 — 170
Pass with Merit	153 — 159
Pass	140 — 152
Level A2	120 — 139

Candidates who take Business Preliminary and score between 102 and 119 on the Cambridge English Scale do not receive a result, CEFR level or certificate.

Cambridge English Scale scores below 102 are not reported for this examination.

Other
X - the candidate was absent from part of the examination
Z - the candidate was absent from all parts of the examination
Pending - a result cannot be issued at present, but will follow in due course

Figure. 7.3.9 Sample BEC results

Higher studies details:

The table 7.5 and 7.6 indicate, students pursuing the higher studies across the world.

Table 7.5. Higher studies pursuing students' details

S.no	Register number	Name of the student	Name of institution joined	Country/ City	Name of programme admitted
1.	9916005093	Dheeraj Singh Manchikalapati	University of Hertfordshire	United Kingdom	Masters
2.	9916005090	Makkena Ajay	Northwest Missouri state University	US	Masters
3.	9916005034	Avinash Chundu	Northwest Missouri state University	US	Masters
4.	9916005047	Sai Santhosh Gadiraju	North Eastern University	US	Masters
5.	9916005015	Sudhakar Anumala	Hochschule Heilbronn, German University of Applied Sciences	Germany	Masters
6.	9916005177	Yaramasu Sai Kumar	Northwest Missouri State University	US	Masters
7.	9916005194	Vamsi Krishna Korrapati	Binghamton University	US	Masters
8.	9916005054	Guntaka Kumar Sai Reddy	California state university	US	Masters
9.	9916005101	Mounika S	PSR Engineering College	Sivakasi	MBA
10.	9916005164	Valmiki Sailesh	JNTU	Hyderabad	M.Tech
11.	9915005221	Sai Dev Prakash	University of North Texas	US	Masters

12.	9915005195	Sunki Reddy Manisha	University of Leicester	UK	Masters
13.	9915005149	Kurra Bharath Kumar	Melbourne Institute of Technology	Australia	Masters
14.	9915005216	Eda Harsha Vardhan	NIT	Agartala	M.Tech
15.	9915005063	Subharisha R	Xavier institute of business administration	Tirunelveli	MBA
16.	9815005001	Abijith Vignesh	Warsaw University of technology	Poland	MBA
17.	9516005501	Pon Rohini	Kamaraj College Engineering Technology	Viruthu nagar	Master
18.	9914005027	Mr.S.Naresh Kumar	Swansea University	UK	Masters

Table 7.6. Ph.D., pursuing students' details

S. No	Year of Registration	Name	Research Domain/Title of Research	Institution
1	2018	Mr. S. Vithyasaahar	Material Science	University of South Australia
2	2018	Mr. R. Rajasudharsan	An Effective Solution for Muscle Disorder using Electromyogram (EMG) Signals in FPGA	Kalasalingam Academy of Research and Education, Krishnankoil
3	2018	Mr.Sheik Abdullah S	Analysis of Cartilage Regeneration in Adult Stem Cells using Biomedical Image Processing techniques	Kalasalingam Academy of Research and Education, Krishnankoil



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March 18, 2021.

Avinash Chundu
7-67/1 Pedakurapadu
Guntur, India 522402

Dear Avinash,

Congratulations! You have been accepted into the MS: Applied Computer Science program at Northwest Missouri State University beginning in the fall 2021 semester. This is pending an official, final copy of your undergraduate transcript. This must be submitted to the Graduate Office before the end of your first semester.

You are required to meet the following prerequisite, in addition to the courses required for the MS: Applied Computer Science program:

1. 44-460 Database Systems: You must complete this course with a grade of "B" or better prior to completion of 15 hours of graduate work. This will remove the prerequisite requirement in Database Systems.

This prerequisite is 3 credit hours and there are some required courses in the program that cannot be taken until you have completed this course. You will be required to pay the associated fees for this class, as well as the graduate courses required for your program. You may calculate this cost at <https://www.nwmissouri.edu/bursar/costworksheet.htm>

The program coordinator for your major is Dr. Ajay Bandi. If you would like to contact him for advisement, his e-mail is ajay@nwmissouri.edu and his phone number on campus is 660-562-1199.

Please review this letter carefully and contact the Graduate Office at 660-562-1144 with any questions or concerns.

All coursework submitted to fulfill a master's degree must be completed within an eight-year time period.

Northwest Missouri State University is proud of a long tradition of academic excellence, a fine faculty and a strong academic curriculum. We are happy for the opportunity to help you meet your educational goals.

Sincerely,

Gregory Haddock
Associate Provost of Graduate and Professional Studies

GH/zr

CRIME RATE DISCLOSURE
Northwest is committed to assisting all members of the Northwest community in providing for their own safety and security. Information regarding campus security, personal safety and fire safety including topics such as crime prevention, university police law enforcement authority, crime reporting policies, crime statistics for the most recent three year period and disciplinary procedures is available on the UPD website at <http://www.nwmissouri.edu/crimeprevention.htm>. If you would like a paper copy containing this information, you can contact a representative of the University Police Department at the Support Service Building, 800 University Drive, Maryville, Missouri 64468 or by phone at (660) 562-1254.

Figure 7.3.10 Higher study admission Proof sample

Improvement in entrepreneurship

To develop the entrepreneurship skills among the students' training programs, seminars, webinars are organized through Innovation and Entrepreneurship Centre (IEDC) cell, Table 7.7 indicates list of IEDC cell activities for the ECE department students.

Table 7.7 List of IEDC Cell Activities

S. No	Date	Expert Members	Title of the Event
1	10.08.2018	Mani James, Forst & Sullivan	Industrial Workshop on Mega Trends & IPR
2	15.02.2019 to 18.02.2019	Mr. N. Pothirasan, Director, Raj Bio Electronics And, Intelligent Private Limited Mr. Sankaranarayanan G, Business Consultant, JCI, Rajapalyam	Entrepreneurship Awareness Camp

3	06/08/2019	Prof.K.Vijayaragavan Principal Scientific Adviser to the Government of India.	Agni -Enabling Technology Commercialization
4	21/02/2020 to 23/02/2020	Mr Rammiah Chidambaran Founder-CEO Whizifi Robotics Pvt.Ltd Dr.J.Deny, President-IIC, KARE,	Entrepreneurship Awareness Camp
5	6/09/2020	Dr. J. Daniel Chellappa Senior Scientist, Atomic Energy (India) and Indira Gandhi centre for Atomic Research, Chennai	Pathway of Innovations into Startups

Figure. 7.3.12 shows the circular of webinar conducted by IEDC cell.



KARE-Institute Innovation Council
(Approved by MHRD, GOI)

No: KARE/IEDC-IIC/2020-21/001

Date: 04 .09.2020

Circular

A Webinar on “Pathway of Innovation into Startups” through Google-meet on 6th of September 2020 from 11.30 am to 12.30 pm is being organized. In this regard, All Final-year students are advised to attend the program without fail.

Speaker: Dr. J Daniel Chellappa, Senior Scientist with Department of Atomic Energy (India) and Indira Gandhi Centre for Atomic Research, Chennai

Registration Link: <https://forms.gle/nmy2i8JuM7PLtP2HA>

President – Institution Innovation Council

Vice Chancellor

Copy submitted to Chancellor & Vice President – for kind information
Copy to all Registrar & Controller of Examinations
Cc: to All Deans, Directors & HODs- for Circulation among faculties and students

Figure 7.3.12. IEDC cell Activity circular.

Table 7.8. IEDC Project sanctioned students list

S. No	Title of the Project	Guide Name	Students Name
1	Development of Electronic Lockers with Multiple keys using Visual Cryptography Scheme	Dr. K.Suthendran	Harish R
2	Smart Tube light	Dr.J.Deny Mr.V.Ramachandran	Vengat Rahul R

Table 7.9. Entrepreneurship details

S. No.	Student Name	Company Name/ Nature of Entrepreneurship
1	Vengat Rahul R	Yugti Smart Solutions Pvt. Ltd.
2	Mr. Raja Sudarsan	M/s HCTRONIQS
3	Mr. V. Muneeswaran & Mr. N. Pothirajan	Raj Bioelectronics and Intelligent Pvt. Ltd

Table 7.8 and 7.9 students received Projects from IEDC and Entrepreneurship student details.

7.4.Improvement in the quality of students admitted in the program

The admission process includes all the activities starting from inviting applications to enrollment a candidate in our academic program. A candidate willing to seek admission to the B.Tech Electronics and Communication Engineering Program has to fulfill the minimum requirements of the institute's general admission policies. The flow chart in Figure 7.4.1 elucidates the detailed process for various categories like Indian Nationals, Non-Resident Indians (NRI), and International Students. In addition to the requirements mentioned above, a prosperous candidate has to pass the Kalasalingam Engineering Entrance Examination (KEEE) for eligibility, conducted each year by the Standing Admissions Committee constituted by the Vice-Chancellor. The team comprises the Director (Admission), Director (Academic), Head of the Department, and a Department Admission Coordinator.

All appeared students are ranked based on the percentage of marks secured in the KEEE. Consequently, those students who qualify for the minimum cut-off marks as normalized by the institution are called for counseling procedure based orderly to KEEE ranking, taking into account the choice of the branch indicated by the candidates and the availability of vacancies in each branch in that particular year. The following are the eligibility criteria of various categories:

- a) Indian Citizens
- b) Non-Resident Indians (NRI) / Person of Indian Origin (PIO)
- c) International Students
- d) Lateral Entry Students

a) Indian Citizens:

The students of Indian citizenship must satisfy the following eligibility criteria before applying for admission to the Kalasalingam Academy of Research and Education (KARE)

- Students should have passed in higher secondary (+2 / Intermediate or two-year Pre-University) of State Board, CBSE, Matric and any other Board of Education recognized by the State and Central Governments and must have secured a minimum of 50 % marks in Physics, Chemistry, and Mathematics (PCM).

(Or)

- Two-year course of the Joint Services Wing of the National Defence Academy

- A candidate who is seeking admission to the first year of B.Tech. Program in a particular year should not have completed 21 years of age as on 1st July of that year, and 22 years of age for B.Tech lateral entry.

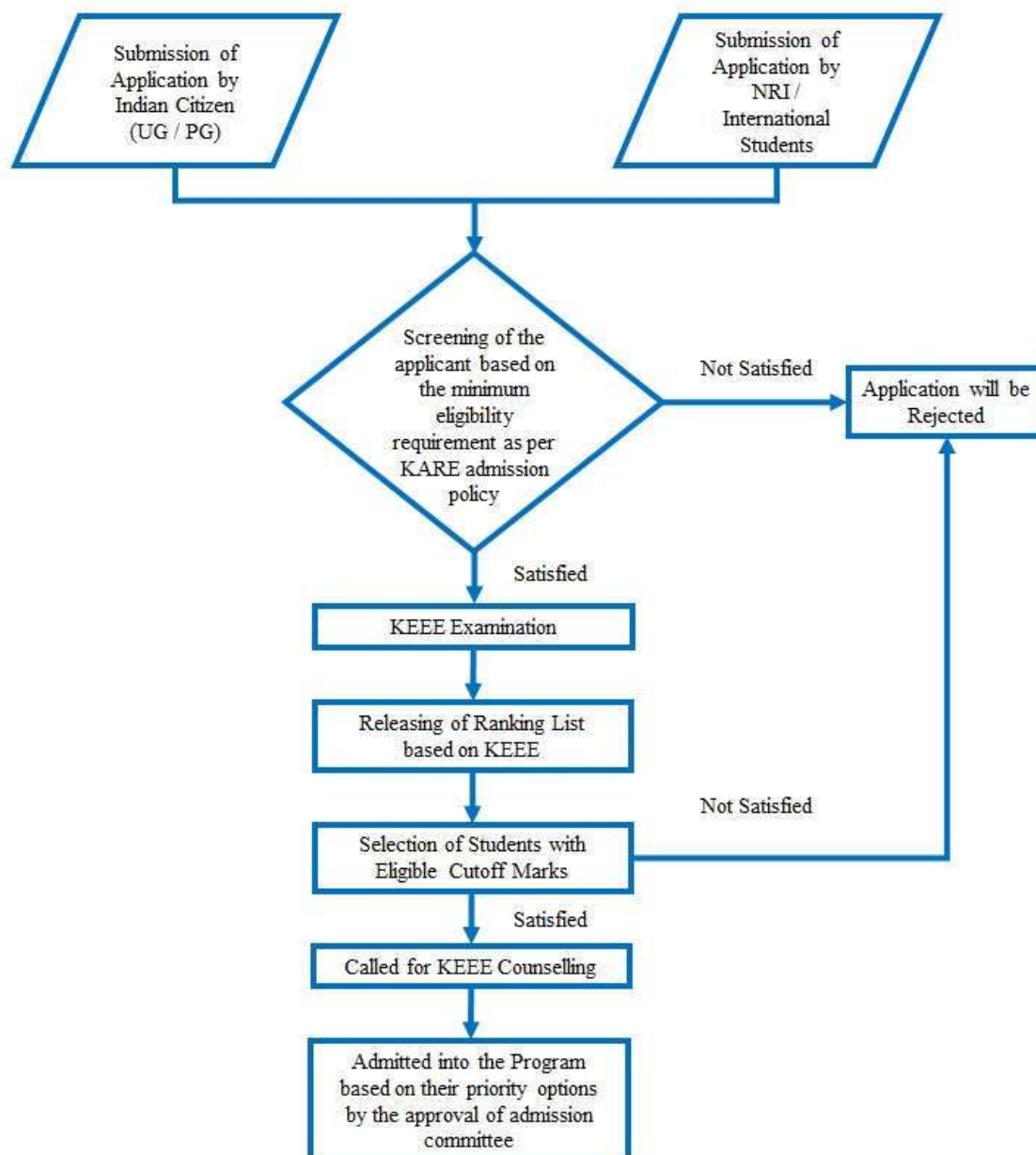


Figure 7.4.1 Flow Chart on Admission Process

b) Non-Resident Indians (NRI) / Person of Indian Origin:

- The students opting/seeking admissions for B.Tech courses should have completed 12 years of schooling, which should be equivalent to the 10 + 2 basic education system followed in India with 60% marks secured in the PCM or he/she should have qualified in the Intermediate or two-year pre-institute course conducted by a recognized board/ institution.
- NRI students should have completed their schooling with English as one of the courses.

- Students who is a Person of Indian Origin (PIO), who held a passport in a country other than Afghanistan, Bangladesh, Bhutan, China, Nepal, Pakistan, Sri Lanka and provided with an Overseas Citizen of India Card (previously PIO Card) by Govt. Of India. If a PIO passed the qualifying exam (i.e. 12th equivalent) from India, even then they will be considered for admission under this category.
- In case of letter grading system, the candidate has to produce equivalent grade sheet with percentage of marks. In case of negligence in providing the equivalent certificate to the board, the decision of the admission committee regarding his/ her eligibility shall be final.

c) International Students:

- International students should have completed their school education with English as a medium of instruction. It is mandatory to have completed Mathematics and Physics at A level/Form VI/ Senior VI or its equivalent and should have secured a minimum of 60% aggregate marks in the above-mentioned subjects (\geq "C" grade) in class 12 or its equivalent.
- The candidates from Nepal should have secured 60% aggregate in the aforementioned subjects for both Class 11 and Class 12 (both the Class marks would be considered for percentage calculation).
- Those students who have completed the following board of examinations are also eligible for the admissions:
 - General Certificate Education (GCE) Examination (London/ Cambridge/ Sri Lanka) at the Advanced (A) level.
 - High School Certificate Examination of the Cambridge University, UK,
 - Any Public School/ Board/ University Certificate examinations in India or in a foreign country recognized by the Association of Indian Universities as equivalent to the 10+2 system.

At any stage, if a candidate is found guilty of fraudulent, impersonating, or submitting counterfeit documents for the admission processes, the Admission Committee holds the right to withhold or cancel his/her candidature and recommend the same to the academic council.

d) Lateral Entry Students:

A student, who has passed the final examination of the three-year diploma course recognized by the State Board of Technical Education / AICTE, with the specialization relevant to the branch of Electronics and Communication Engineering, may be admitted to

the B.Tech. Degree of Electronics and Communication Engineering programme under the lateral entry scheme.

Table 7.10 Quality of Students Admission details

ITEM		CAY (2021-22)	Caym1 (2020- 21)	Caym2 (2019-20)
National level Entrance exam (JEE, AIEEE)	No of students	10	10	7
	Admitted			
	Opening score	92.15	92.69	92.06
	Closing score	71.29	76.71	71
State / Institute / Level entrance exam / Others (KEEE)	No of students	240	197	240
	Admitted			
	Opening score	98	98	66
	Closing score	60	60	31
Name of the entrance Exam for lateral entry or lateral entry details	No of students	12	8	22
	Admitted			
	Opening score	Nil	Nil	Nil
	Closing score	Nil	Nil	Nil
Average CBSE / Any Other board result of admitted students		86.3%	86.3%	83.76%

Table 7.10 illustrates the quality of the students admitted in the last three academic years.

CRITERION8	First Year Academics	50
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8.1. First Year Student-Faculty Ratio (FYSFR) (5)

Data for first year courses to calculate the FYSFR:

Academic Year	No. of Students (Approved Strength) (N)	No. of Faculty (Considering Fractional Load) (F)	FYSFR(N/F)	Assessment (5x20)/FYSFR (Limited to 5)
2019-2020	1290	88	15	5
2020-2021	1470	100	15	5
2021-2022	1590	110	15	5
Average	1450	99	15	5

Table.8.1.

*Note: If FYSFR is greater than 25, then assessment equal to zero.

8.2. Qualification of Faculty Teaching First Year Common Courses (5)

Assessment of qualification = $(5x + 3y)/RF$, x= Number of Regular Faculty with Ph.D., y = Number of Regular Faculty with Post-graduate qualification RF= Number of faculty members required as per SFR of 20:1, Faculty definition as defined in 5.1

Academic Year	No. of Regular Faculty with Ph.D. (X)	No. of Regular faculty With Post-Graduation(Y)	RF (No. of Faculty required for SFR 1:20)	Assessment for faculty Qualification $((5x+3Y)/RF)$
2019-2020	52	37	65	5
2020-2021	57	39	74	5
2021-2022	70	40	80	5
Average Assessment				5

Table B.8.2

8.3. First Year Academic Performance (10)

Academic Performance = ((Mean of 1st Year Grade Point Average of all successful Students on a 10 point scale) or (Mean of the percentage of marks in First Year of all successful students/10)) x (number of successful students/number of students appeared in the examination) Successful students are those who are permitted to proceed to the second year.

Academic Performance	CAYm1 (2020-21)	CAYm2 (2019-20)	CAYm3 (2018-19)
Mean of CGPA or Mean Percentage of all Successful Students (X)	7.8	7.46	6.81
Total Number of Successful Students (Y)	1228	1160	752
Total Number of Students appeared in the Examination (Z)	1228	1160	752
API $[X*(Y/Z)]$	7.8	7.46	6.81

Average API $(AP1+AP2+AP3)/3$: 7.356

8.4. Attainment of Course Outcomes of first year courses (10)

8.4.1. Describe the assessment processes used to gather the data upon which the evaluation of Course Outcomes of first year is done (5)

A. Assessment tools for evaluation of Course Outcomes (COs)

The data collection process for the attainment of Course Outcomes begins from the collection of the relevant data using various assessment tools. Most of the data for the direct attainment are collected from written examinations. In the regulation for 2020-2021 admitted batch, the written examination includes sessional examinations, semester end examinations and descriptive assignments. The next major form of assessment methodology is practical based examinations which examines the ability of the students to solve the problems. Some of the other data collection techniques include quizzes using online tools, seminars, paper presentations, projects, model creation, etc. During the evaluation process, data collection tools represented above are coming under the head of assignment. The list of tools adapted for the data collection is listed in the Table 8.4.

Table 8.4 Assessment Tools for data collection process to evaluate Course Outcome (COs)

Evaluation tool	Description
THEORY COURSES	
Sessional Examinations (SE) (Online)	<p>For the 2020-2021 admitted batch, there are 2 sessional examinations (online mode) conducted and both focusses on attainment of each course outcome during the semester.</p> <p>Question pattern for sessional examination I:</p> <p>Multiple choice questions (MCQs) = 40</p> <p>The marks scored by the students are converted into 100. Both CO1 and CO2 are equally weighted (20 MCQs from each COs).</p> <p>Further, among the 40 MCQs, 10 MCQs are common for the all the students to measure the CO attainment and they are equally weighted as well (i.e., CO1 = 5 Questions and CO2 = 5 Questions).</p>

	<p>Question pattern for sessional examination II:</p> <p>Multiple choice questions (MCQs) = 40</p> <p>The marks scored by the students are converted into 100. Both CO3 and CO4 are equally weighted (20 MCQs from each COs).</p> <p>In addition, among the 40 MCQs, 10 MCQs are common for the all the students to measure the CO attainment and they are also equally weighted (i.e., CO3 = 5 Questions and CO4 = 5 Questions).</p>
<p>Assignments (ASS)</p>	<p>Assignments are given by the faculty in order to inspect the level of understanding of the students during study. Some of the assignments utilized for the evaluations are descriptive type ones, quizzes using online tools, seminars, mini projects, models creation, etc.</p> <p>Assignment: 50 marks:</p> <p>For each COs, a minimum of one assignment is given and the total marks secured by the students for a particular CO is converted as the cumulative marks out of 10 and stored.</p> <p>By adopting similar strategy, marks for rest of the COs are gathered.</p> <p>COs evaluated: CO1, CO2, CO3, CO4 and CO5.</p> <p>Question pattern for assignment:</p> <p>No specific question pattern for the assignments is suggested, however, the course coordinator can guide the course faculty in connection with the same.</p> <p>Specifically in the pandemic, all the faculty used the online module such as Google classroom to manage assignments.</p>

Semester End Examination (University level evaluation) (SEE) (Online)	<p>In the case of semester end examinations conducted through online mode, multiple choice questions (MCQs) are used.</p> <p>Semester End Examination: 100 marks</p> <p>Question pattern for semester end examination:</p> <p>Multiple choice questions (MCQs) = 80</p> <p>The marks secured by the students are converted into 100. All the COs such as CO1, CO2, CO3, CO4 and CO5 are almost equally weighted.</p> <p>Further, among the 80 MCQs, 25 MCQs are common for the all the students in order to evaluate the CO attainment. All the COs such as CO1, CO2, CO3, CO4 and CO5 are equally weighted.</p>
LABORATORY BASED COURSES	
Continuous Internal Evaluation (Practical) (CIEP) (Online)	<p>For the online mode of continuous internal evaluation (Practical), virtual labs, online compilers, mobile based CAD tools etc. are commonly used.</p> <p>Continuous Internal Evaluation: 50 marks</p> <p>Internal marks secured by the students for a particular CO is converted as the cumulative marks out of 10 and stored.</p> <p>Similar approach has been adopted for all the COs such as CO1, CO2, CO3, CO4 and CO5.</p>
Semester End Practical (SEP) (Online)	<p>The semester end practical examination (online mode) is conducted at the end of the semester for 3 hours. It is evaluated based on rubrics framed by the course coordinator for the corresponding laboratory course.</p> <p>Semester End Practical Examination: 100 marks</p> <p>Semester end practical examination marks secured by the students for a particular CO is converted as the cumulative marks out of 20 and stored.</p>

	Similar strategy has been adopted for all the COs such as CO1, CO2, CO3, CO4 and CO5.
SURVEYS	
COURSE END SURVEY	<p>At the end of every semester, each student is asked to provide a feedback report on the courses he/she has studied with assigned rubrics. The course end survey is assessed based on rubrics which are designed by the course coordinator.</p> <p>Course End Survey: 5-point scale evaluation</p> <p>COs evaluated: CO1, CO2, CO3, CO4 and CO5.</p> <p>During the study period of virtual mode, the surveys are collected through online forms such as Google forms etc.</p>

B. Types of the courses and their evaluation weightage

The courses are categorized into four major types based on the knowledge level need to be inculcated to the students.

1. Theory courses (T)
2. Laboratory courses (P)
3. Theory with practice courses (TP)
4. Integrated courses (IC)

The weightage for evaluation of the course outcomes for each course is different and the same is furnished in the Table 8.5.

Table 8.5 Weightage for the evaluation of the course outcomes

Type of course	INTERNAL				EXTERNAL			OA
	SE	ASS	CIEP	Total	SEE	SEP	Total	Total
Theory courses	35	15		50	50		50	100
Practical Course			50	50		50	50	100
Theory with Practical	20	15	15	50	50		50	100
Integrated course	20	15	15	50	30	20	50	100

*OA = Overall attainment

C. Illustration of CO attainment procedure

There are 5 COs for each course in the curriculum. The following procedure shows the calculation of CO attainment for a single CO of a course.

- STEP 1. Setting Benchmark score for the course
- STEP 2. Setting the level of attainment of the course
- STEP 3. Selection of weightage for the respective course
- STEP 4. Calculating Cumulative internal mark for the course
- STEP 5. Calculating Cumulative external mark for the course
- STEP 6. Calculating Cumulative total mark for the course
- STEP 7. Calculation of number of students attained
- STEP 8. Calculation of percentage of students attained
- STEP 9. Calculation of level of CO assessment
- STEP 10. Calculation of Direct CO attainment by considering average attainment of all COs

8.4.2. Record the attainment of Course Outcomes of all first-year courses (5)

The list of basic courses offered from humanities, sciences and engineering to the first year UG students in the academic year 2020-2021 is depicted in Table 8.6a. In total, there are 23 courses offered in the first year for various branches.

The PO attainment calculation for the first-year academics is based on the basic courses offered in both the semesters.

The CO attainment for all the courses imparted in the first year are calculated based on the steps provided above and the outcomes are furnished in Table 8.6b.

Table 8.6a List of basic courses offered to first year students (2020-2021 admitted batch)

S. No	Course Code	Course name
1	BIT18R101	Biology for Engineers
2	ECE18R171	Electronic devices
3	CHY18R171	Chemistry
4	CSE18R171	Programming for Problem Solving
5	CSE18R153	Programming in C
6	CSE18R108	IT Infrastructure Landscape Overview
7	CSE18R174	Computer Architecture and Organization
8	CSE18R254	Introduction to Python Programming
9	EEE18R171	Basic Electrical and Electronics Engineering
10	EEE18R172	Basic Electrical Engineering
11	HSS18R151	English for Technical Communication
12	MAT18R101	Calculus and Linear Algebra
13	MAT18R102	Multiple Integration, Ordinary Differential Equations and Complex Variable
14	MAT18R103	Multiple Integration, Ordinary Differential Equations and Vector Spaces
15	MAT18R104	Multiple Integration, Ordinary Differential Equations, probability and statistics
16	MEC18R151	Engineering Graphics and Design
17	MEC18R152	Engineering Practice
18	PHY18R171	Introduction to Electromagnetic Theory
19	PHY18R172	Introduction to Mechanics
20	PHY18R173	Oscillations, Waves and Optics
21	PHY18R174	Semiconductor Physics
22	PHY18R175	Optics, Electromagnetism and Quantum Mechanics
23	PHY18R176	Physics for Biotechnology

Table 8.6b Consolidation of CO attainment for the first year students (2020-2021 admitted batch)

S. No	Course Code	Course name	Benchmark	CO attainment
1	BIT18R101	Biology for Engineers	50	2.20
2	ECE18R171	Electronic Devices	70	2.60
3	CHY18R171	Chemistry	70	1.20
4	CSE18R171	Programming for Problem Solving	70	1.20
5	CSE18R153	Programming in C	70	2.80
6	CSE18R108	IT Infrastructure Landscape Overview	65	2.20
7	CSE18R174	Computer Architecture and Organization	65	2.60
8	CSE18R254	Introduction to Python Programming	65	1.60
9	EEE18R171	Basic Electrical and Electronics Engineering	70	2.20
10	EEE18R172	Basic Electrical Engineering	65	1.40
11	HSS18R151	English for Technical Communication	65	2.80
12	MAT18R101	Calculus and Linear Algebra	55	1.80
13	MAT18R102	Multiple Integration, Ordinary Differential Equations and Complex Variable	55	1.60
14	MAT18R103	Multiple Integration, Ordinary Differential Equations and Vector Spaces	60	1.60
15	MAT18R104	Multiple Integration, Ordinary Differential Equations, Probability and Statistics	55	2.60
16	MEC18R151	Engineering Graphics and Design	70	1.60
17	MEC18R152	Engineering Practice	70	2.00
18	PHY18R171	Introduction to Electromagnetic Theory	70	2.60
19	PHY18R172	Introduction to Mechanics	70	1.20
20	PHY18R173	Oscillations, Waves and Optics	70	1.80
21	PHY18R174	Semiconductor Physics	70	1.80
22	PHY18R175	Optics, Electromagnetism and Quantum Mechanics	70	1.60
23	PHY18R176	Physics for Biotechnology	70	1.60

STEP 1. Setting Benchmark score for the course:

The benchmark score is fixed by taking approximation of previous end semester marks average during first meeting of the course coordinators at the beginning of the course.

BIT18R101-Biology for Engineer was taken as an example, threshold value/benchmark value decided in the course coordinator minutes and the same is highlighted in the attainment sheet.

D887

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Fig. 1. Snapshot of Benchmark score in the attainment

STEP 2. Setting the level of attainment of the course:

The level of attainment of the course is based on the capability of the students during the entry of the course.

For 2020-2021 admitted batch, the attainment level for the students was fixed as shown in the following snapshot, the same has been decided in the meeting of the course coordinators.

Attainment Levels fixed for the class						
		I	M	% Students reached the threshold value		
LS	Level	0		in Between	0	60
S	Level	1	Low	in Between	60	70
G	Level	2	Mid	in Between	70	80
E	Level	3	High	in Between	80	100
*LS-Less Satisfactory, S-Satisfactory, G-Good, E-Excellent, I-Indication, M-Level of Correlation						

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH																						
		Course Title										Course code										Course Type										Year of examination																							
		Biology for Engineers										BIT18R101										Theory										1																							
Assessment Methodology (%)	CO / Exam		INTERNAL				EXTERNAL				OA		Verification status																				Correlation																						
			SE	ASS	IPE	TOT	ESE	EPE	TOT	TOT	Verified By		Approved By																		1					2					3					4					5				
	CO1		35	15	0	50	50	0	50	100																					1					2					2					2									
	CO2		35	15	0	50	50	0	50	100																					2					3					2					3									
	CO3		35	15	0	50	50	0	50	100																					3					3					2					3									
	CO4		35	15	0	50	50	0	50	100											4					3					2					3																			
	CO5			50	0	50	50	0	50	100	5										3					2					2																								
		Threshold value										CO ATTAINMENT																				PO ATT																							
		(i.e., Set attainment level values decided in the Course coordinator meeting and the same approved by PAC)																																																					
		50																																																					
		Attainment Levels fixed for the class																																																					
		I		M		% students reached the threshold value																																																	
LS		Level		0		in Between		0		60																																													
S		Level		1		Low		in Between		60		70																																											
G		Level		2		Mid		in Between		70		80																																											
E		Level		3		High		in Between		80		100																																											
		*LS-Less Satisfactory, S-Satisfactory, G-Good, E-Excellent, I-Indication, M-Level of Correlation																																																					
		*CO-Course Outcome, CIE-Continuous Internal Evaluation, EXT-University End Evaluation, TOT-Total																				*PO-Program Outcome, Arr. Mat. Attainment																																	
		CONSOLIDATION OF CO ATTAINMENT																																																					
		MICRO ANALYSIS																																																					
		BIT18R101 ECE18R171 CHY18R171 CSE18R171 CSE18R153 CSE18R108 CSE18R174 CSE18R254 EEE18R171 EEE18R172 HSS18R151 MAT18R101 MAT18R102																																																					
		MACRO ANALYSIS																																																					

Fig. 2. Snapshot of attainment levels in the attainment sheet

STEP 3. Selection of weightage for the respective course:

Selecting the weightage for continuous internal evaluation (CIE) and semester end examination (SEE) are based on the weightages mentioned in Table 8.5 as per the category of the course.

For example, BIT18R101-Biology for Engineer is chosen. This is a theory course, the weightage for the course is Sessional Examination – 35, Assignment – 15, and Semester End Examination – 50. The marks split ups for the COs are highlighted in the snapshot provided.


A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ																																							
																																																																										
KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION Krishnankoil - 626 126																																																																										
Course Title Biology for Engineers										Course code BIT18R101										Course Type Theory					Year of examination 1																																																	
Assessment Methodology (%)	CO / Exam	INTERNAL				EXTERNAL				OA		Verification status										Correlation																																																				
		SE	ASS	IPE	TOT	ESE	EPE	TOT	TOT	Verified By										Approved By																																																						
	CO1	35	15	0	50	50	0	50	100											1 2 3 4 5 6 7																																																						
	CO2	35	15	0	50	50	0	50	100											2 2 3 2 3 2 2																																																						
	CO3	35	15	0	50	50	0	50	100											3 3 2 3 2 3 2																																																						
	CO4	35	15	0	50	50	0	50	100											4 3 2 3 3 3 3																																																						
CO5		50	0	50	50	0	50	100											5 3 2 2 2 3 3																																																							
Threshold value <small>(i.e., Set attainment level values decided in the Course coordinate meeting and the same approved by PAC)</small>										50																																																																
Attainment Levels fixed for the class																																																																										
		I	M	% students reached the threshold value																																																																						
LS	Level	0		in Between		0	60																																																																			
S	Level	1	Low	in Between		60	70																																																																			
G	Level	2	Mid	in Between		70	80																																																																			
E	Level	3	High	in Between		80	100																																																																			
*LS-Less Satisfactory, S-Satisfactory, G-Good, E-Excellent, I-Indication, M-Level of Correlation										*CO-Course Outcome, CIE-Continuous Internal Evaluation, EXT-University End Evaluation, TOT-Total																																																																
*PO-Program Outcome, Arr. Mat.-Program Attainment																																																																										
BIT18R101										ECE18R171					CHY18R171					CSE18R171					CSE18R153					CSE18R108					CSE18R174					CSE18R254					EEE18R171					EEE18R172					HSS18R151					MAT18R101					MAT18R102					MAT18R103				

Fig. 3. Snapshot of Weightage shown in the attainment sheet

STEP 4. Calculating Cumulative internal mark for the course:

To calculate the CO attainment for a particular course outcome, the cumulative internal mark has been calculated as follows.

For example, BIT18R101-Biology for Engineer is chosen.

$$\text{i.e., } \left(\frac{3}{5} \times 35\right) + \left(\frac{9}{10} \times 15\right) = 34.5$$

The formula used for calculating the internal marks is depicted in the following snapshot.

=IF(C43="A",0,(C43/SC541*SC510))+IF(G43="A",0,(G43/SG541*SG510))+IF(L43="A",0,(L43/SL541*SL510))																																																												
Methodology of Assessment	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO																				
	SE	ASS	IPE	TOT	ESE	EPE	TOT	Verified By																	Approved By																	CO Nos																		
	CO1	35	15	0	50	50	0	50	100																																			1	2	3	4	5	6	7	8	9	10	11	12					
	CO2	35	15	0	50	50	0	50	100																																			2	3	2	3	2												
	CO3	35	15	0	50	50	0	50	100																																			3	3	2	3	2										1		
	CO4	35	15	0	50	50	0	50	100																																			4	3	2	3	3												
CO5	50	0	50	50	0	50	100																																			5	3	2	2	3												1		
																										Arr. Mat.												2.8	2	2.6	2.6																		1	
																										(Arr. Mat.)												3	2	3	3																			1
Threshold value																																																												
See attainment level values decided in the Course coordination meeting and the same approved to FRIC																																																												
50																																																												
Attainment Levels fixed for the class																																																												
I M % students reached the threshold value																																																												
S	Level	0	1	2	3	4	5	6	7	8	9	10	11	12																																														
S	Level	1	Low	in	Between	60	70																																																					
G	Level	2	Mid	in	Between	70	80																																																					
E	Level	3	High	in	Between	80	100																																																					
LS-Less Satisfactory, S-Satisfactory, G-Good, E-Excellent, I-Indication M-Level of Correlation																																																												
CO ATTAINMENT																																																												
DIRECT CIE EXT TOT CUM INDIRECT TOT																																																												
CO Nos 1 2 2 2 2 2 2.1																																																												
2 2 1 1.5 2 2.3																																																												
3 1 2 1.5 2 2.9																																																												
4 1 1 1 2 2.1																																																												
5 3 1 2 3 2.5																																																												
Average attainment: 1.6 2.2 2.4																																																												
CO-Course Outcome, CIE-Continuous Internal Evaluation, EXT-University End Evaluation, TOT-Total																																																												
PO ATTAINMENT																																																												
Direct PO																																																												
Att. 1 2 3 4 5 6 7 8 9 10 11 12																																																												
2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2																																																												
Indirect PO																																																												
Att. 1 2 3 4 5 6 7 8 9 10 11 12																																																												
2.4 2.4 2.4 2.4 2.3 2.3 2.3 2.3 2.3 2.3 2.3 2.3																																																												
*PO-Program Outcome, Arr. Mat-Program Articulation Matrix, Att.-Attainment																																																												
CONSOLIDATION OF CO ATTAINMENT																																																												
MICRO ANALYSIS MACRO ANALYSIS																																																												
CONDITION Sessional Assignment Practical Examination End semester End Practical Internal External Total																																																												
CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5																																																												
Total Strength 841																																																												

Fig. 4. Snapshot of calculation of cumulative Internal marks of the students appeared for the course.

STEP 5. Calculating Cumulative external mark for the course:

To calculate the CO attainment for a particular course outcome, the cumulative external mark has been calculated as follows.

For example, BIT18R101-Biology for Engineer is chosen.

$$\text{i.e., } \left(\frac{4}{5} \times 50\right) = 40$$

The formula used for calculating the external marks is furnished in the following snapshot.

The screenshot displays an Excel spreadsheet used for calculating cumulative external marks. Key sections include:

- CO / Exam Scores:** A table showing scores for CO1 to CO5 across different exams (SE, ASS, IPE, TOT, ESE, EPE, TOT, TOT).
- Verification status:** Fields for Verified By and Approved By.
- Threshold value:** A section for setting attainment levels (LS, S, G, E) and their corresponding marks.
- Attainment Levels fixed for the class:** A table showing the percentage of students meeting the threshold for each level.
- CO ATTAINMENT:** A section for calculating Direct, Indirect, and Average attainment for each CO.
- PO ATTAINMENT:** A section for calculating Program Outcome attainment.
- Consolidation of CO Attainment:** A large table summarizing the attainment for all COs and POs across different student groups.
- Student Marks Table:** A detailed table at the bottom showing marks for individual students (e.g., BIT18R101, ECE18R171, CHY18R171, etc.) across various exams and courses.

Fig. 5. Snapshot of calculation of cumulative External marks of the students appeared for the course

STEP 6. Calculating Cumulative total mark for the course:

To calculate the CO attainment for a particular course outcome, the cumulative total mark has been calculated as follows.

i.e., *Internal marks + External marks*

For example, BIT18R101-Biology for Engineer is chosen.

$$34.5 + 40 = 74.5$$

The formula used for calculating the cumulative marks is furnished in the following snapshot.

Fig. 6. Snapshot of calculation of cumulative marks of the students appeared for the course

Number of students secured above benchmark score, set by the course coordinator have been calculated as follows.

15

<

Fig. 7. Snapshot of number of students attained the COs shown in the attainment sheet

STEP 8. Calculation of percentage of students attained:

To calculate the percentage of attainment of the students for the CO of a course, the formula mentioned in equation (1) is used.

$$\text{i.e., } \frac{\text{Total no of students attained the particular CO of the course}}{\text{Total no of students appeared for the course}} \quad (1)$$

For example, BIT18R101-Biology for Engineer is chosen. In total cumulative marks for CO1 out of 841, 631 students are crossed the benchmark score. Using the formula mentioned in eqn (1), the percentage of students attained the CO is calculated. i.e., $631/841 = 0.75$ i.e., 75%. Similarly, the values are calculated for all other COs.

<

Fig. 8. Snapshot of percentage of students attained the COs shown in the attainment sheet

STEP 9. Calculation of level of CO assessment:

To calculate the level of CO attainment, the cumulative internal assessment based on sessional examinations, internal practical and assignments has been made as per the strategy provided below:

If > 80% = Level 3 = High

If > 70% but < 80% = Level 2 = Medium

If > 60% but < 70% = Level 1 = Low

If < 60% = Level 0 = Not attained

For example, BIT18R101-Biology for Engineer is chosen. In total cumulative marks, 75% of students attained the CO. By using the above levels, the level of attainment is "2". Similarly, the values are calculated for all other COs.

Fig. 9. Snapshot of level of program for the COs shown in the attainment sheet

$$\frac{((Level\ of\ CO1) + (Level\ of\ CO2) + (Level\ of\ CO3) + (Level\ of\ CO4) + (Level\ of\ CO5))}{5}$$
$$((2 + 2 + 2 + 2 + 3))/5 = 2.2$$

Fig. 10. Snapshot of direct CO attainment of the course shown in the attainment sheet

8.5. Attainment of Program Outcomes from first year courses (20)

8.5.1. Indicate results of evaluation of each relevant PO and/or PSO if applicable (10)

The Program Outcome attainment of a particular batch is based on the academic regulation's evaluation strategies, and the types of courses provided. The Program Outcome attainment can be calculated by both direct and indirect methods. Direct method represents that the attainment is calculated based on the academic marks. On the other hand, the indirect method represents that the attainment is calculated based on the feedbacks from the students. Table 8.7 describes the list of assessment tools, its measuring frequency and person responsible for the assessment and evaluation process.

Table 8.7 Assessment tools for POs attainment

Assessment Tools	Frequency (Per course)	Responsible Person
Direct Assessment		
Sessional	Twice in a semester	Course Coordinator
Assignment	Five in a semester	Course Teacher
End Semester	Once in a semester	Course Coordinator
Laboratory / Practical Examination (Model & End Semester)	Once in a Semester	Course Coordinator
Indirect Assessment		
Course Exit survey	Every Semester	Program Coordinator

A. Illustration of Program Outcome attainment procedure:

The procedure used to calculate PO attainment is explained below.

STEP 1. Calculation of Program articulation matrix:

The Program articulation matrix for the basic courses in the first-year curriculum is calculated and the same is provided in Table 8.8

Table 8.8. Program Articulation matrix for the first-year courses (2020-2021 admitted batch)

S. No	Course code	Course name	Program outcome											
			1	2	3	4	5	6	7	8	9	10	11	12
1	BIT18R101	Biology for Engineers	3	2		3		3						1
2	ECE18R171	Electronic devices	3	3	2	1	3	3	3		2			2
3	CHY18R171	Chemistry	2	2			1				1			1
4	CSE18R171	Programming for Problem Solving	3	3	3	3	3	2	2				2	2
5	CSE18R153	Programming in C	3	3	3	3	3	2	2				2	2
6	CSE18R108	IT Infrastructure Landscape Overview	3	3	3	3	3	2	2				2	1
7	CSE18R174	Computer Architecture and Organization	3	3	3	3	3	2			2		2	1
8	CSE18R254	Introduction to Python Programming	3	3	3	3	3	2					2	1
9	EEE18R171	Basic Electrical and Electronics Engineering	3	2		3		3						
10	EEE18R172	Basic Electrical Engineering	3	2		3		3			1			1
11	HSS18R151	English for Technical Communication						1		2	1	3		2

S. No	Course code	Course name	Program outcome											
			1	2	3	4	5	6	7	8	9	10	11	12
12	MAT18R101	Calculus and Linear Algebra	3	3		3		3			1			1
13	MAT18R102	Multiple Integration, Ordinary Differential Equations and Complex Variable	3	2		3		3						
14	MAT18R103	Multiple Integration, Ordinary Differential Equations and Vector Spaces	3	3		3	2		1					
15	MAT18R104	Multiple Integration, Ordinary Differential Equations, probability and statistics	3	3		3	2		1					
16	MEC18R151	Engineering Graphics and Design	2	2	2		3		3					2
17	MEC18R152	Engineering Practice	2	1	1			2	2		2			1
18	PHY18R171	Introduction to Electromagnetic Theory	3	2		3		3						
19	PHY18R172	Introduction to Mechanics	3	2		3		3						
20	PHY18R173	Oscillations, Waves and Optics	3	2		3		3						
21	PHY18R174	Semiconductor Physics	3	2		3		3						
22	PHY18R175	Optics, Electromagnetism and Quantum Mechanics	3	2		3		3						
23	PHY18R176	Physics for Biotechnology	3	2		3		3						

As a model, MAT18R101 - Calculus and Differential Equation has been chosen and the Course articulation matrix is presented below. The Program Articulation matrix is calculated by taking the average of correlation of all correlated COs.

Correlation		PO											
CO Nos	1	3	3		2		3			1			
	2	3	3		3		2			1			
	3	3	3		3		2			1			1
	4	3	3		3		3			1			1
	5	3	2		2		3			1			1
Arr. Mat.		3	2.8		2.6		2.6			1			1
(Arr. Mat.)		3	3		3		3			1			1

Consider, PO1, the Program Articulation matrix is calculated as follows

$$\text{Program Articulation} = \frac{3+3+3+3+3}{5} = 3$$

Similarly, the Program Articulation Matrix is calculated for all the first-year courses.

STEP 2. Calculation of Program Outcome attainment

The PO attainment, based on the basic courses offered to first year students, is calculated based on the level of correlation between the course and program Outcomes. The Program Outcome attainment for all the courses are shown in the table 8.9.

Program Outcome attainment is calculated using the below mentioned formula

PO attainment

$$= \frac{\sum_{i=1}^5 (\text{Correlation between the course outcome}_i \text{ and PO} \times \text{CO attainment}_i)}{\text{Sum of Correlation}}$$

Where, i = Number of Course outcomes of a particular course

Table 8.9. PO attainment of first year courses (2020-2021 admitted batch)

S. No	Course code	Course name	PO											
			1	2	3	4	5	6	7	8	9	10	11	12
1	BIT18R101	Biology for Engineers	2.21	2.20		2.15		2.23						2.33
2	ECE18R171	Electronic devices	2.67	2.33	2.83	2.75	3.00	3.00	3.00		3.00			3.00
3	CHY18R171	Chemistry	1.18	1.18			1.25				1.20			1.00
4	CSE18R171	Programming for Problem Solving	1.20	1.67	3.00	1.25	1.25	3.00	3.00				2.50	3.00
5	CSE18R153	Programming in C	2.80	3.00	3.00	2.75	2.75	3.00	3.00				3.00	3.00
6	CSE18R108	IT Infrastructure Landscape Overview	2.20	2.00	2.09	2.08	2.08	2.00	2.33				2.33	2.29
7	CSE18R174	Computer Architecture and Organization	2.60	2.75	2.73	2.69	2.69	2.63			2.63		2.67	2.57
8	CSE18R254	Introduction to Python Programming	1.60	1.75	1.73	1.69	1.69	1.63					1.67	1.57
9	EEE18R171	Basic Electrical and Electronics Engineering	2.21	2.20		2.15		2.23						
10	EEE18R172	Basic Electrical Engineering	1.40	1.50		1.31		1.38			1.40			1.00
11	HSS18R151	English for Technical Communication						2.86		2.78	2.80	2.80		2.88
12	MAT18R101	Calculus and Linear Algebra	1.80	1.71		1.69		1.85			1.80			1.67
13	MAT18R102	Multiple Integration, Ordinary Differential Equations and Complex Variable	1.57	1.60		1.46		1.69						

S. No	Course code	Course name	PO											
			1	2	3	4	5	6	7	8	9	10	11	12
14	MAT18R103	Multiple Integration, Ordinary Differential Equations and Vector Spaces	1.60	1.57		1.36	1.50		1.50					
15	MAT18R104	Multiple Integration, Ordinary Differential Equations, probability and statistics	2.60	2.57		2.45	2.50		2.50					
16	MEC18R151	Engineering Graphics and Design	1.80	1.38	1.90		1.90		1.90					1.89
17	MEC18R152	Engineering Practice	2.00	1.67	1.83			1.89	1.60		2.00			1.86
18	PHY18R171	Introduction to Electromagnetic Theory	2.64	2.60		2.62		2.62						
19	PHY18R172	Introduction to Mechanics	1.21	1.20		1.15		1.23						
20	PHY18R173	Oscillations, Waves and Optics	1.86	1.80		1.77		1.85						
21	PHY18R174	Semiconductor Physics	1.79	1.80		1.69		1.85						
22	PHY18R175	Optics, Electromagnetism and Quantum Mechanics	1.57	1.60		1.46		1.69						
23	PHY18R176	Physics for Biotechnology	1.60	1.60		1.57		1.60						
	Direct PO attainment		1.91	1.89	2.39	1.90	2.06	2.12	2.35	2.78	2.12	2.80	2.43	2.16

Akin to the same, the calculation of PO attainment of all courses of the first year has been executed.

Consider PO1 in the table 8.9, overall PO attainment is calculated by the sum of all the PO attainment values divided by number of courses correlated to PO1.

Similar calculation has been made for rest of the POs

8.5.2. Actions taken based on the results of evaluation of relevant POs (10)

The direct attainment levels (student performance) and their targets are presented in the following table.

POs	Target Level	Attainment Level	Observations
PO1: Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.			
PO1	2.1	1.91	The PO1 is not attained, the following courses need improvement
			CHY18R171 1. The students felt Unit-1 and Unit-5 were tough for them as they both deal with higher level concepts. 2. Since the classes were online, the understanding of the students was poor.
			MAT18R102 1. Students were unable to understand the basic concepts of the mathematics. 2. Students were found difficulty in learning through the online teaching, most of the students used mobile phones instead of laptops.
			PHY18R172 1. Students were unable to understand the basic concepts. 2. Students lack writing practice.
			BIT18R101: Commonly the usage of the virtual tools for the study was newer for the students. 1. The concept of the infection and immunity were not understood by the students because the students are mostly from the computer science background.

			2. Students were unable to present themselves in the examinations since it was quiz-based examination.
Action 1: Conducted bridge courses for the chosen students to provide a basic knowledge on the given subjects.			
Action 2: Coaching classes for the slow learners were conducted in order to make them understand the concepts. Also, recorded sessions and the handouts were shared among the students to accelerate the learning.			
Action 3: More writing practice were given on important topics. The assignments related to description were also given.			
Action 4: Coaching classes were conducted for the slow learners. The students were advised to take special attention on Assignments.			
PO2: Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.			
PO2	2.1	1.89	The PO2 is not attained, the following courses require improvement.
			CHY18R171 1. The students felt the concepts were tough for them as they deal with higher level of chemistry. 2. Identification of the practical experiments were troubling because of lack of resources among the students.
			CSE18R171 1. The students felt tough to deal with programming fundamentals.
			MAT18R102 1. The students were unable to understand the applications of the common mathematical concepts. So answering the real time based questions are difficult.

			MEC18R151 1. Students were unable to understand the concepts and the applications of the projections.
			PHY18R172 1. Students were unable to understand the real applications of the physics.
Action 1: Conducted special classes to improve the understanding which made the students to grasp the concept. A newer platform for practicals using the mobile resources (android option) were identified and implemented for the benefit of the students.			
Action 2: Conducted special classes to improve the understanding which made the students to write the algorithm.			
Action 3: Conducted tutorial classes for the students to enrich their knowledge towards understanding the concept of the problem.			
Action 4: Conducted additional classes for the students to enrich their knowledge towards understanding the concept of the problem. More visual based materials with animations were given to improve the learning level of the students.			
Action 5: Conducted bridge courses for the students to enhance their knowledge towards understanding the application of the physics.			
PO3: Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.			
PO3	2.1	2.39	The PO3 is attained but the following courses got scope for improvement
			CSE18R254 1. Students' knowledge towards fundamentals of computers was lagging. Obviously, it was difficult for them to grasp the knowledge of programming for those students. Writing newer algorithm for the real time issue was quite difficult.

			MEC18R151 1. The projected concept was found to be tough for the students especially they were undergone the quiz-based examination.
Action 1: Conducted special classes to improve the understanding in connection with grasping the concept. A newer platform for practicals using the mobile resources (android) were identified and implemented for the benefit of the students. Web resources and online platform were shared to the students to learn.			
Action 2: Conducted animated classes to improve the understanding. Web resources and online platform-based quiz examinations were conducted for the welfare of the students.			
PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.			
PO4	2.1	1.9	The PO4 is not attained, the following courses need improvement.
			CSE18R171 1. Students found difficult to grasp the real time applications of programming. Writing newer algorithm for the real time issue was quite difficult.
			EEE18R172 1.Difficult to solve problems in Mesh and Nodal Analysis. 2. Difficult to understand the construction and principle of operation of electrical machines.
			PHY18R172 1. Students were unable to understand the real applications of the physics.
Action 1: Conducted classes by using the real time problems. Moreover, the assignments were also given to understand smaller level real time issues.			
Action 2: Students were given more tutorial exercises on problems and also provided with more simple Animations and Flipped videos.			

Action 3: Conducted bridge courses for the students to enhance their knowledge towards understanding the application of the physics.			
PO5: Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.			
PO5	2.1	2.06	The PO5 is not attained, the following courses need improvement
			CHY18R171 1.Students were unable to present themselves in the examinations since they were quiz-based examinations. 2. Students were unable to concentrate more on the classes as they were exclusively online.
			CSE18R171 1.Students were unable to present themselves in the examinations since they were quiz-based ones. 2. Students were mostly relying on the mobiles for compiling the program during the laboratory classes seem difficult for the C programming.
			MAT18R103 1.Students were unable to present themselves in the examinations as they were quiz-based ones. 2. Students were mostly relying on the mobiles (android) for compiling the program for the laboratory classes seem difficult for MATLAB. 3. Usage of scientific calculators was difficult for the students.
Action 1: Provided practice classes for the needy students and started more demo to demonstrate procedure to improve the level of concentration of the students.			
Action 2: Provided practice classes for the needy students and compiling the codes using the online tools in the class helped the students. Secondly, students were trained in the online compiler available on the android-based mobiles.			

Action 3: Provided practice classes for the needy students and secondly, students were trained in the online compiler available on the android-based mobiles for MAT Lab applications.			
PO6: Engineer and Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues, and the consequent responsibilities relevant to the professional engineering practice.			
PO6	2.1	2.12	The PO6 is attained but the following courses got scope for improvement
			EEE18R172 1. Students found difficult to grasp the real time applications of electrical machineries in the society.
			PHY18R172 1. Students were unable to understand the societal impact of the physics.
			BIT18R101 1. Students were unable to draw the scientific diagrams which influence the real societal issues. Since the classes were conducted through online, the understanding of the students was poor.
Action 1: Provided societal based problems in the assignments to improve the concentration towards the learning.			
Action 2: A case study related to usage of physics in solving the real time issue in the regular class was provided which motivated the students to critically think about the application.			
Action 3: Students were motivated to take literature study on basics of infection and immunity.			
PO7: Environment and Sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts and demonstrate the knowledge of need for sustainable development.			
PO7	2.1	2.35	The PO7 is attained but the following courses got scope for improvement

			MAT18R103 1. Students experienced difficult to understand the impact of mathematics in the societal issues.
			MEC18R152 1. Students found difficulty in understanding the concepts and importance of sustainability.
Action 1: Provided societal based problems in the assignments to improve the concentration towards the learning.			
Action 2: Provided sustainable based product and program developments in the assignments to improve the concentration towards the learning.			
PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.			
			The PO8 is attained but the following courses got scope for improvement
			HSS18R151 1. Students experienced difficulty in committing the ethical guidelines in the practical classes. Since it is based on both individual and group activity, some of them were not involved much in the classes.
PO8	2.1	2.78	
Action 1: Provided classrooms by virtual mode by having the discussion rooms in the G-meet, Zoom helped the students in discussion of practical experiments. Specific rubrics to clearly analyse the individual contribution towards the work completion motivated the students to learn ethical behaviour in practice.			
PO9: Individual and Teamwork: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.			
PO9	2.1	2.12	The PO9 is attained but the following courses got scope for improvement

			CHY18R171 1. Since it was online based, the practical classes and project-based experiments were both individual and group activity. A few were not involved much in the classes. 2. Insufficient resources were notified by the students.
			EEE18R172 1. Involving all the students in the online mode was difficult.
Action 1: Provided classrooms by virtual mode by having the discussion rooms in the G-meet, Zoom helped the students in discussion of practical experiments. Specific rubrics to clearly analyse the individual contribution towards the work completion. Conducted periodic reviews for addressing the difficulty in the timely manner.			
Action 2: Provided classrooms by virtual laboratory to train the students during free hours. Provided periodic reviews for addressing the difficulty in the timely manner.			
PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.			
PO10	2.1	2.8	The PO10 is attained but the following courses got scope for improvement
			HSS18R151 1. The students faced problems in Word Formation since they lack basic knowledge about the origin of words. Some of the students lack resources for the learning.
Action 1: Provided online seminars to improve the level of communications. Third party quiz and Word Formation tools were utilized to know about the root of any words.			
PO11: Project Management and Finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.			

PO11	2.1	2.43	The PO11 is attained but the following course got scope for improvement
			CSE18R254 1. Some of the students lack resources for the learning. 2. Students lack industrial knowledge towards the application of the python. 3. Some students were not concentrating much because some of the assignments were group tasks.
Action 1: Easy tools using the mobile phones were shared among the students for learning. Some classes were conducted by the industrial expert and the same person evaluated based on the problems / project completed. Provided periodic reviews to understand the involvement of all the students.			
PO12: Life-long learning: Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.			
PO12	2.1	2.16	The PO12 is attained but the following course got scope for improvement
			CHY18R171 1. Students lack motivation in understanding their responsibilities towards learning the newer concepts.
Action 1: Provided the advantage of the continuous learning and provided a program development in the assignments to motivate the learning.			



STUDENT SUPPORT SYSTEMS (50)

9.1 Mentoring system to help at individual level (5)

KARE offers a well-established student support and mentoring system. The student support system is monitored by the office of Director Students' Affairs. Based on the strength of the class the Mentors are allocated to the students and they will function as per the guidelines given in the B.Tech Regulation.

Faculty Advisory System (FAS)

FAS assist in academic, personal and career advancement through the centralized monitoring process. For every 20 students one Mentor is allocated. A software EDU_KARE exclusively designed for the FAS has been established provides the academic information (CGPA, Non-CGPA, attendance, etc.,) of the students with regular updates. The academic and personal information of the students are available in the EDU_KARE for tracking the students. Sample screen-shot of EDU_KARE software showing the academic information of wards under the tab Faculty Advisor' is given in Figure 9.1.1.

The screenshot shows the EDU-KARE Faculty Advisor interface. On the left is a sidebar menu with options: Class Co-Ordinator, Faculty Advisor (selected), Student Personal Details, CGPA Report, Course Registration Report, Attendance Report, Marks Report, Fees Pending, Backlog Approval, Amser Approval, Hostel Leave Approval, and Industrial Training. The main area displays a 'Student Details' table with columns: ID, Action, Gender, Register no, Student Name, Pgm, Batch, Sec, and Email. The table contains three rows of student data.

ID	Action	Gender	Register no	Student Name	Pgm	Batch	Sec	Email
28750	---	MALE	9920005123	BURRA VISHNU VARDHAN REDDY	ECEUG	2020	C	BURRAVISHNUVARDHANREDDY.1234@GMAIL.COM
28751	---	MALE	9920005124	Mz ***** Vif	Processing...		C	VINODMADAMANCHI44@GMAIL.COM
28752	---	MALE	9920005125	RANGISSETTY YOGANANDA CHIEEDA	ECEUG	2020	C	DHEERAJRANGISSETTY@GMAIL.COM

Figure 9.1.1 Sample Screenshot of the academic information of wards under FAS in EDU-KARE software



Summary of mentoring system

- Frequency of meeting:
 - **Attendance Monitoring:** Daily
 - **Class feedback:** Weekly once
 - **Academic discussion, result analysis and diary updating:** 3 Per Semester
 - **Any other guidance:** Any time based on student's requirement
- Faculty Mentors continuously monitor their wards to identify the slow-learners and advanced learners.
- Slow-learners are given special coaching to improve their academic performance and advised in selecting the courses, based on performance / ability.
- Fast learners are advised to register for additional courses and to undergo special training and certifications.
- The Faculty Mentor maintains a regular contact with parents/guardians of the wards and updates them about the wards' performance.
- External and internal professional counselors are available in special cases wherever a student needs special assistance (Counseling, Meditation, etc.).

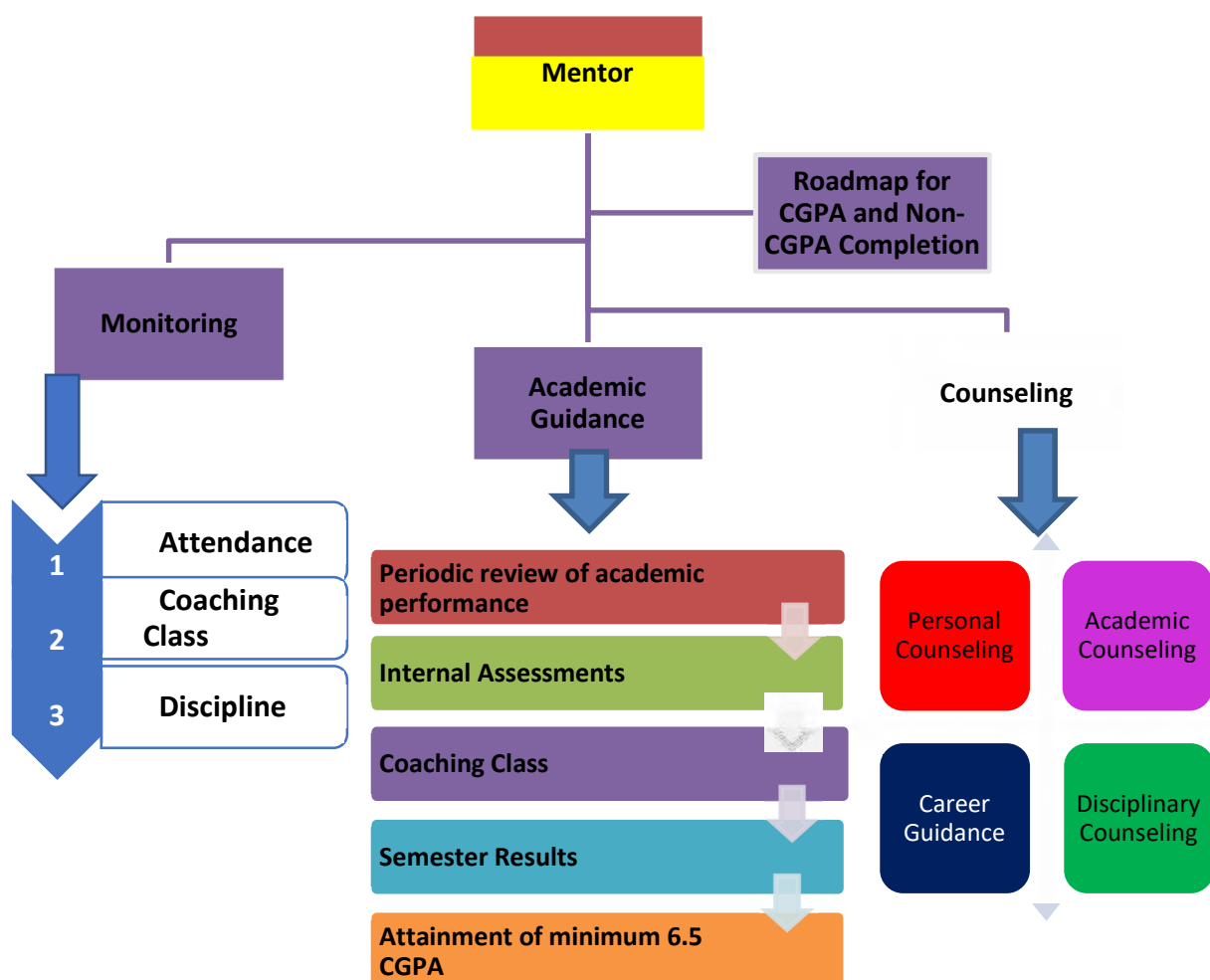


Figure 9.1.2 Responsibility chart for the FAS

Figure 9.1.2 explains the responsibility of the FAS

Support offered to slow-learners

1. Constant monitoring and interaction by mentors help to encourage, and arrange special classes by the faculty members and the peers.
2. Mentors are available and accessible to the students to interact one-on-one.
3. Faculty members repeat teaching the tough topics as per the students' request and provide university question bank, discuss the ways of presenting the answers in the examinations.
4. The summer-term provides facility to undergo the failed courses during the summer.
5. ICT enabled tools and aids, such as animation videos, descriptions using models etc., to visualize the concepts, are provided.

6. Co-teaching/Team Teaching Concept: Course teacher along with additional subject experts works together in theory and laboratory sessions and provides one-to-one teaching or re-teaching so as to satisfy the special needs of slow-learners.
7. Bridge courses are also conducted for courses based on the requirement.

Samples of slow-learner improvement

Sample of improvement in slow-learner performance by mentor is shown in Fig 9.1.3.

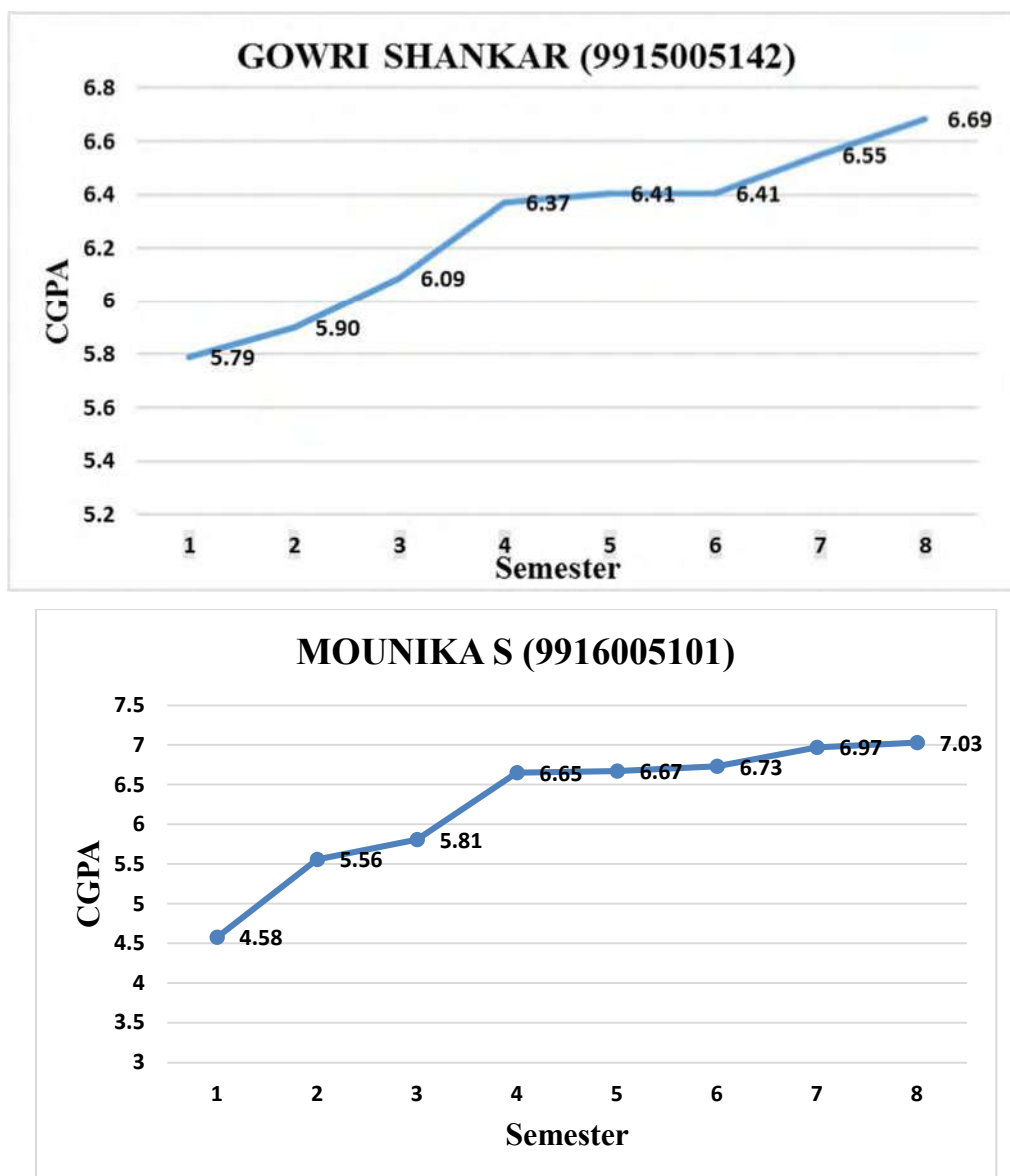


Figure 9.1.3 Sample proof for student's improvement in CGPA through FAS

Support for Advanced Learners:

The FAS also helps the advanced learners to upgrade their knowledge and skills to reach the next level of their career growth. The Methodologies followed by the FAS for fast learners is explained in Figure 9.1.4.

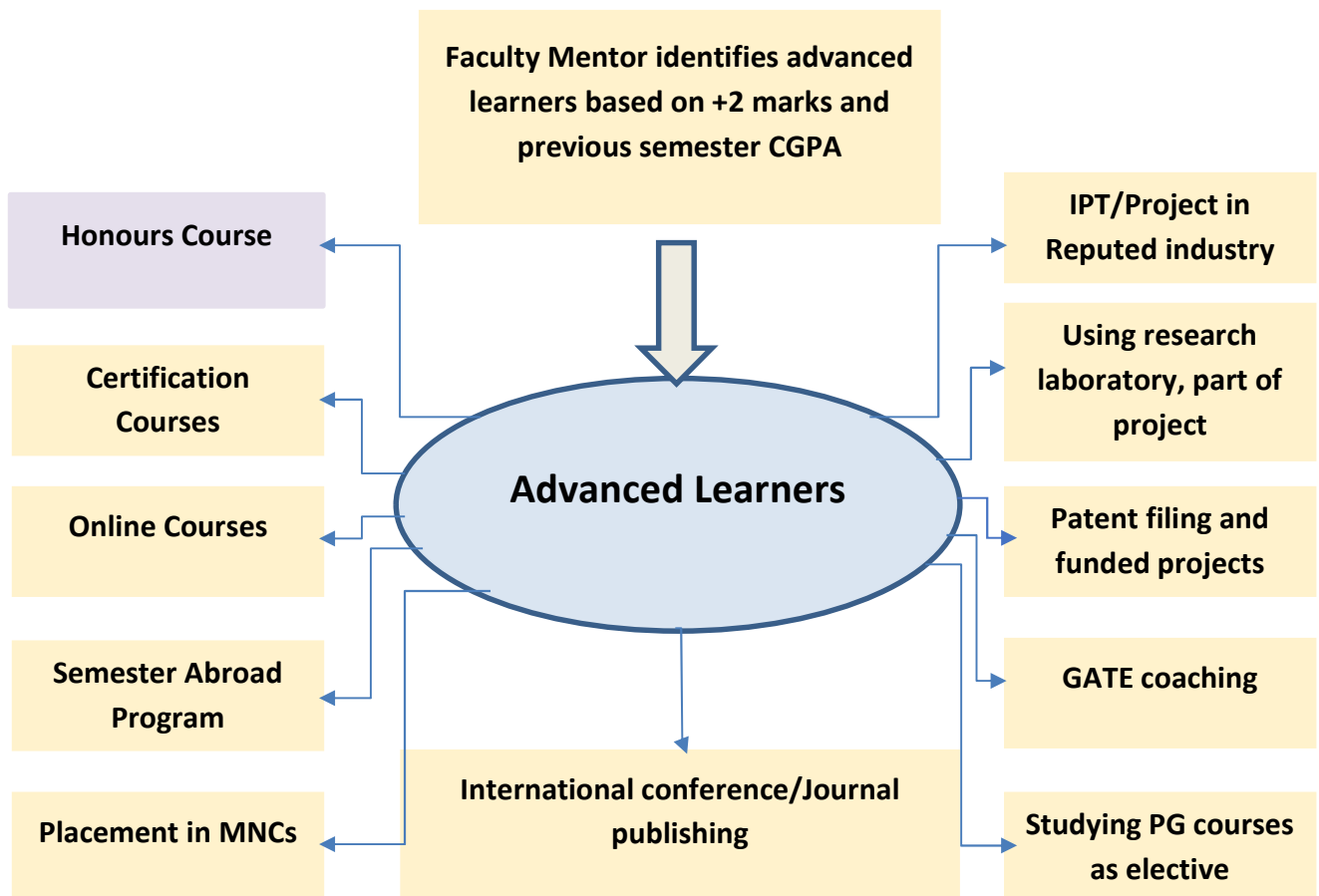


Fig.9.1.4 Methodologies followed by the FAS for advanced learners

Programs offered to advanced learners:

1. Provisions for receiving Honors degree and First Class with distinction degree are available.
2. Advanced learners are encouraged to study MOOC courses in NPTEL, SWAYAM, etc. with credits transfer provision.
3. ERP-SAP training is offered to suitable students. Students are encouraged to be members of professional bodies such as CSI, IEEE, ISTE, IETE, BSOI, and organize technical events.
4. Students participate in events such as hackathons, group discussions, and quizzes.
5. KARE offers training and guidance for appearing in competitive examinations such as GATE, GRE, TOEFL, IELTS, CAT and Banking Examinations.



6. Rank holders and the best project teams are provided with certificates and cash prizes.
7. Students are financially supported to participate in seminars etc, and to file patents.
8. Students are encouraged to participate in IUCEE students' events and network with other peer students.
9. Options such as associating in sponsored projects, taking internships in reputed industries, institutions in India and abroad, utilizing the Semester Abroad Scheme, and participating in Coders' Club, Researchers Club are well-utilized by students.
10. One-credit courses offered by the industrial experts enable the students to keep abreast of the needs of the industry.

9.2. Feedback analysis and reward /corrective measures taken, if any (10)

a. Feedback collected for all courses (Yes/No): Yes

b. Specify the feedback collection process

The feedback collection process takes place twice in a semester.

(i). After Sessional Exam I

(ii). After Sessional Exam II

- A standard feedback questionnaire as given in Annexure 9.1 and 9.2 is prepared by the IQAC for all the students for every semester, and course wise. Feedback mechanism is systematically organized in the University and it is taken periodically in each semester to improve the teaching skills of the faculty members. The feedback is collected online.
- At the beginning of the feedback collection process, it is defined and communicated to the student about the purpose of the assessment. The students normally understand the purpose and outcome of the process and accordingly give their feedback.
- **Percentage of students participating:** 95 - 100%.

Feedback analysis process

The feedback analysis process takes place in the following steps:

- All the parameters mentioned in the feedback form are analyzed.
- Ability of teaching with respect to each item and comprehensive ability of the teachers is analyzed.
- All the comments provided by the students in the feedback forms are communicated to the respective faculty members along with their feedback levels (score) to know their strengths and weaknesses and to enhance their teaching skills.



- The feedback is obtained online, and a descriptive summary of the feedback is submitted to the Head of Department for each faculty.
- The outcome of the evaluation process is reported back to the staff concerned and actions are taken based on that feedback.
- **Feedback through Impartus Lecture Capture System:** KARE has Impartus Lecture Capture System in all the departments which have been used more extensively and giving a greater impetus to use and experience the power of digital platform in education. Through the Lecture Capture System faculty teaching ability and performance is evaluated and also provide a base for flipped class where the students can retrieve the lecture at any time.

Record of corrective measures, if any

- Feedback along with the comments given by the students in the feedback forms is communicated to the respective faculty members to know their strengths and weaknesses and to enhance their teaching skills.

Corrective Measures: Faculty members who get average feedback below 0.8 on a 1.0 scale are identified.

- The score obtained through student feedback on different attributes helps faculty to plan improvement strategies. The faculty members who get a low feedback score are asked to prepare an action plan to improve their teaching skills.
- As part of the action plan, senior faculty members in the department mentor the junior faculty.
- Needy faculty members are deputed to attend workshops and Faculty Development Programs to improve their teaching skills.

Center for Learning Technology (CLT) plans and organizes such programs based on the feedback analysis for individual faculty. Fig.9.2.1 shows the participants attended Faculty Development Program on 'Quality Enhancement in Teaching and Learning through Outcome Based Education' on 10.07.2018.



Fig.9.2.1.Group Photo – Guests, Trainers and Participants attended Faculty Development Program on ‘Quality Enhancement in Teaching and Learning through Outcome Based Education’ on 10.07.2018

Reward to Faculties on Best Performance

- Faculty who gets the best feedback are appreciated and rewarded by the best teacher award. The best teacher awards, the best researcher awards and the best department awards are given through the office of IQAC as shown in Fig 9.2.2.(a)



Fig.9.2.2. (a) Dr. K. S. Dhanalakshmi Receiving the Best Teacher award in 2019

- The IQAC Day function is celebrated every year on Engineers Day. In the IQAC day function, faculty members will be awarded for best teacher, best faculty advisor, best project, best lab with mini project and research competence as shown in Fig 9.2.3 (b-d).



Fig.9.2.2. (b) Mr. G. Ramesh Receiving the award for Best Mentor for Project



Fig.9.2.2. (c) Dr. Josephine Receiving the award for Best Mentor Mini project



Fig.9.2.2. (d) Mr. Jeya Prakash Receiving the award for Lab with Mini Project

9.3. Feedback on facilities (5)

The feedback on academic infrastructure, hostel and other facilities are obtained through the questionnaire as shown in the Annexure 9.3 and the corrective actions are initiated.

Infrastructure - Classrooms/Laboratories/ Internet facilities - In Class Committee Meetings held thrice a semester, the students provide feedback on any issues related to classrooms, lab equipment which are communicated to the authorities concerned and are rectified.

Hostel- Hostel committee meetings are held at the hostel every month where hostel inmates raise problems, if any, related to hostels. Also, the Wardens, the Deputy Wardens and the teaching staff visit hostels daily and provide feedback on the food and other maintenance-related issues, if any. They are brought to the notice of the wardens and the maintenance department and are rectified immediately. Anti-ragging squads consisting of teaching staff visit all hostels every evening and interact with students to acquaint themselves with any issue. If any complaints are received, they are immediately addressed.

Others- When issues related to food courts, bank facilities, medical facilities etc. arise they are reported to the Faculty or the respective Dean, and the issues are resolved immediately.



Analysis and Corrective Actions taken

The feedback collected online is compiled and statistically analyzed by a central committee of the University. The feedback analysis is deliberated in the IQAC meeting and the corrective measures are decided accordingly. The positive and the negative aspects of the feedback are communicated to the respective Heads of Departments/Facilities for effective implementation of easy and comfortable use of facilities. KARE created and upgraded the facilities wherever required and is also in the process of building better facilities based on students' feedback. The consolidated No. of grievances appealed, and No. of grievances redressed are as shown the Table 9.3.1. Table 9.3.2 gives the exact requirements from the students collected through the feedback and corrective action taken.

Table 9.3.1 Consolidated grievances appealed and grievances redressed

Year	No. of grievances appealed		No. of grievances redressed	Average time for grievance redressal in number of days
		Total		
2021-22	3	13	3	7
2020-21	3		3	7
2019-20	2		2	7
2018-19	5		5	7

Table 9.3.2 Corrective action taken.

Year	No of cases received	No of cases redressed	Name of the cases received from Students	Name of the case redressed
2021-22	3	1	Requested to conduct the vaccination Camp within the campus for 2 nd Dose	Vaccination Camp conducted within the campus in two times.
		2	Requested to conduct the cultural fest program in our university.	One Cultural fest was conducted in our campus.
		3	Need Online Learning study materials.	KALVI LMS portal was created for online learning management system.
2020-21	3	3	Requested to conduct the vaccination Camp within the campus	Vaccination Camp conducted within the campus in two times.



			Requested to conduct the Mack test for online examination.	Mack test for online examination was conducted in three times.
			Requested to conduct the online fest program in our university.	Based on the request, conducted cultural fest for inter and intra college fest through online mode.
2019-20	2	2	Requested to open the Xerox shop in working hours	Permitted to open the Xerox shop from 9.00 am to 7.30 pm
			Requested to conduct the fest program in our university.	Based on the request, conducted cultural fest for inter and intra college fest
2018-19	5	5	Need to improve the food quality	Implemented SODEXO
			Need for laundry facilities for hostel inmates	Implemented Sunshine
			Requested to no limit to be fixed for washing and ironing the clothes.	Based on the request, for hostel inmates there is no limit for washing and ironing the clothes and for others payment basis with minimum rate.
			Requested to provide the North Indian Menu	Based on the request, implemented South Indian, North Indian and Andhra Menu for preparing the students
			Requested to arrange the internship/ industrial training program for all the students.	Implemented and mandatory for all the students, and included in the curriculum.

9.4. Self-Learning (5)

Scope for Self-learning: Apart from classroom interaction, provisions are available for self-learning of the students. These self-learning activities are more essential to stay motivated. These self-learning activities provide hands-on exercise while studying the theory subjects. KARE provides Wi-Fi facility throughout the campus which enables students to access the self-learning materials such as NPTEL, LMS etc. To enhance the self-learning activity seminar, workshop guest lectures are also organized. The following are the initiatives at KARE for self-learning.

- NPTEL provides 343 web courses and 327 video courses in engineering/science and humanities and have been available in the library for self-learning.
- MIT Open Courseware is a free publication of MIT course materials that reflects almost all the undergraduate and graduate subjects taught at MIT and it could be accessed in the central library
- Coursera is a U.S.-based massive open online course provider, offer online certification courses on variety of subjects.
- Learning management system (LMS)

The course materials are organized by course coordinators with the help of module coordinators and the same is uploaded to the server. Students can retrieve the course material using their username and password provided to them in the web portal <http://kalasalingam.ac.in/elearn> as shown in Fig.9.4.1.

User name: Register number;

Password: Register number

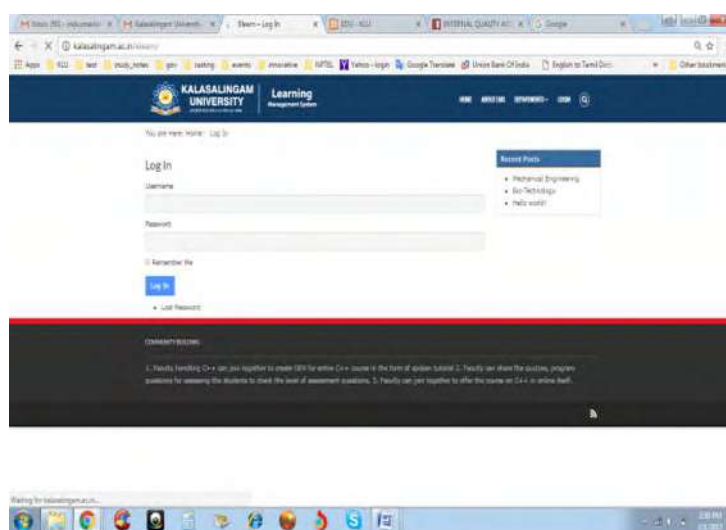


Fig.9.4.1. Learning Management System (LMS) - student's login

Fig 9.4.1 shows the Learning Management System (LMS) of students' login.

- **Kalvi LMS**

Kalvi LMS is utilized for managing all the materials for the course. The course teachers can upload the contents, quiz and assignments for their courses. The students can view and download the course materials for the learning purpose. The course teachers can also view their reports of quiz and assignment submission and evaluation. This system supports the development of the student career and enhance the learning skills.



Fig.9.4.2. KALVI-Learning Management System (LMS) - student's login

Fig 9.4.2 shows the Learning Management System (LMS) of students' login.

- **Open Virtual Lab**

It provides remote access to laboratories in various disciplines of Science and Engineering. These Virtual Laboratories would cater to students at the undergraduate level, postgraduate level as well as research scholars.

- **Self-Study Elective:** During their project period, the student has to select one elective course from the major elective as self-study elective. This is a teacher-directed self-study elective in which the pattern of evaluation is similar to that of other courses.
- **Others:** X Option, Theory with Practical and Integrated Course options are available for the students to solve the real-time case studies through and hands-on exercise.
- Facility for self-learning activity at KARE is as shown in Table 9.4.2.

Table.9.4.2. Facility for self-learning activity



Sl No	Facility	Description
1	Digital Library	2000+ CD's and computers with journal links
2	E-learning resources	NPTEL, e-books, Intranet server
3	Central computer centre	200 computers with internet and intranet facilities
4	Wi-Fi Facility	All buildings are provided with Wi-Fi Facility
5	Department laboratories	Computers with internet and intranet facilities, Usage of Software and hardware facilities.
6	Events encouraging self-learning	Seminar, Workshop, Conferences, Guest lectures, Career guidance, Industrial tours, Associations Activity, ISTE, IETE, IEEE, IPT, Industrial Visit

9.5. Career Guidance, Training, Placement (10)

a. Carrier guidance program for higher studies and placements

- The institution has a very active Training and Placement Section which is part of the Office of Corporate Relations. The students are given comprehensive training in aptitude, group discussion and interview skills that help them in securing placements.
- The institution also offers career guidance and counselling programs to develop competencies in knowledge, educational and occupational exploration, and career planning.

b. Centre for Competitive Examinations

- ✓ A Deputy Director is appointed for Centre for Competitive Examinations (CCE) under the Director (Student Affairs). The CCE organize various activities and motivates the students to take up competitive examinations such as GATE/GRE, GMAT etc. to pursue higher studies in the leading institutions in India and abroad.
- ✓ GATE/GRE, GMAT etc. training programs are provided to our students through CCE.

Pre-placement Training

- Appropriate reforms have been made in the curriculum recently, for example, a course on “Soft Skills” carry one credit and has been incorporated into the regular curriculum and the students undergo “Soft Skills” course in semesters II, III, IV and V. ‘Soft Skills’ courses are conducted by the HR Personals out-sourced from various soft-skills training providers as given in Table 9.5.1.



- During First year, the students are trained under soft skills such as creativity, Analytical thinking, Emotional Intelligence, Interpersonal communication skills, Judgment, decision making and leadership skills
- During Second year, the students are trained under Aptitude which includes Numerical Reasoning, logical and verbal ability.
- During Third year, technical proficiency training will provide to enhance the skills on Programming languages such as C, C++, Python, Java, IOT and Artificial Intelligence based programs.
- Pre-Assessment will be conducted during third year to analyze the strength and weakness of the students.
- Based on Assessment Reports, the list of students will be segregated, and specific training programs will be planned from end of 6th semester.

Table.9.5.1 Soft Skill & Placement Training programme

Academic Year	Batch	Period	Training Name	No. of Students
2017-18	2014-18	21 July 2017	Training program on Placement Preparation (Mock Interview)	43
2017-18	2014-18	27/07/2017 to 06/08/2017	Training on “C and Java”	45
2017-18	2014-18	13 th to 15 th , 28 th & 29 th October 2017	Java Training Program	45
2017-18	2014-18	22 nd to 24 th Aug, 2017	Aptitude and Verbal Training	45
2017-18	2014-18	22 nd Aug – 24 th Aug, 2017	WIPRO Specific Training Programme	42
2017-18	2014-18	28 th Aug – 30 th Aug, 2017	Java Training for WIPRO eligible students	42
2017-18	2014-18	03/01/2018	Industry Ready Engineers-2020	45
2017-18	2014-18	15 th Sep, 2017	Verbal & Group Discussion for M/S.WIPRO Camps Drive	45
2017-18	2014-18	13, 14, 15, 28 & 29 Oct, 2017	JAVA Training Programme for Pre-Final Year Students	182
2017-18	2014-18	10/01/2018 and 24/01/2018	Guest Lecture on “Resume Preparation and Interview skills”	45



Academic Year	Batch	Period	Training Name	No. of Students
2017-18	2014-18	24/01/2018	Preparation of Resume and Interview Skills	45
2017-18	2014-18	24 Jan 2018 To 30 Jan 2018	WIPRO Ltd Company Specific Training	45
2017-18	2016-20	10 th April – 14 th April, 2018	Industry Specific Training for Second Year B. Tech Students	182
2018-19	2015-19	24 th -26 th July, 2018	Company Specific Training for ZOHO Corp eligible students Program by M/s. Top Freshers, Chennai	67
2018-19	2015-19	01 st Aug – 07 th Aug 2018	Company Specific Technical Training for ZOHO Corp eligible students Program by M/s. Top Freshers, Chennai	67
2018-19	2015-19	3 rd Oct, 2018	TCS Ninja Specific training program by Mr. MeyappanNatrajan/ Managing Director- Top Freshers	20
2018-19	2015-19	29 th Sep – 4 th Oct, 2018	WIPRO Specific Training Program for WIPRO eligible students by Top Freshers	112
2018-19	2015-19	13 th & 14 th Oct, 2018	Hexaware Company Specific Training Program for Hexaware eligible students by M/s Top Freshers	112
2018-19	2015-19	22 nd & 23 rd Oct, 2019	IBM Company Specific Training Program for IBM eligible students by Mission Ignite	112
2018-19	2015-19	19 th Nov, 2018	Soft Skills conducted for all the Final Year soft skills arrear students from by M/s Smart Learning Resources	186
2018-19	2015-19	19 th Nov, 2018	Training cum AMCAT test conducted based on Aptitude, C programming for all WIPRO eligible students by M/s Aspiring Minds	182
2018-19	2015-19	3 rd – 13 th Jan, 2019	Company Specific Training program by ABC Group	143
2018-19	2015-19	3 rd , 4 th , 5 th , 11 th & 12 th Jan, 2019	JAVA Training Program by Campus Connection	164
2018-19	2015-19	26 th & 27 th Jan, 2019	Cognizant Specific Training program by FACE	30



Academic Year	Batch	Period	Training Name	No. of Students
2018-19	2015-19	2 nd & 3 rd Feb, 2019	Cognizant Specific Training program by Mission Ignite	60
2018-19	2015-19	2 nd Feb, 2019	Mock online assessment by AMCAT	112
2018-19	2015-19	28 th Feb – 2 nd March, 2019	Conducted Diagnostic Test on Aptitude, Verbal, Logical ability & Programming language	112
2018-19	2015-19	July – Nov, 2019	Advanced Soft skills by M/s Smart training Resources	112
2018-19	2015-19	19 th Nov, 2018	Soft skills by SMART Learning	186
2019-20	2016-20	3 rd to 13 th Nov, 2018	Aptitude and Mock Interview Preparation by ABC Group	143
2019-20	2016-20	20 th June to 19 th July, 2019	SAP Training	823
2019-20	2016-20	2 nd Sep, 2019	Mphasis Training	124
2019-20	2016-20	5 th Sep, 2019	Svar And Writex Training	116
2019-20	2016-20	16 th Sep, 2019	Amcat Assessment	182
2019-20	2016-20	18 th Sep, 2019	Refreshing Training for Mphasis	143
2019-20	2016-20	24 th Sep, 2019	Technical Training	164
2019-20	2016-20	5 th Oct, 2019	IBM Training	186
2019-20	2016-20	15 th Oct, 2019	Wipro Training	162
2019-20	2016-20	18 th Oct, 2019	Tcs Training	112
2019-20	2016-20	20 th Oct, 2019	Cts Training	306
2019-20	2016-20	3 rd Nov, 2019	Cts Refreshing Training	306
2019-20	2016-20	6 th Feb, 2020	Java Training	312
2019-20	2016-20	24 th Feb, 2020	Industry Specific training Programme	163



Academic Year	Batch	Period	Training Name	No. of Students
2020-21	2017-21	8 th June to 2 nd July (Except 12 th & 23 rd June)	TCS NINJA	483
2020-21	2017-21	7 th Aug to 16 th Aug	Company Specific Training (Capgemini, Aspire, IBM)	424
2020-21	2017-21	19 th Aug to 22 nd Aug	ZIFO Specific Training	178
2020-21	2017-21	27 th to 29 th Aug & 31 st Aug to 5 th Sep	Automata Fix Training	306
2020-21	2017-21	5 th Sep to 14 th Sep	CTS Specific Training	308
2020-21	2017-21	3 rd Oct to 9 th Oct	CTS Specific Training	511
2020-21	2017-21	14 th Dec to 18 th Dec	TCS Specific Training	33
2020-21	2017-21	16 th Dec to 21 st Dec	Accenture Specific Training	639
2020-21	2017-21	4 th Jan to 13 th Jan	Aptitude and Technical (Programming) Training	289
2020-21	2017-21	26 th Feb to 28 th Feb	Aspire Specific Training	54
2020-21	2017-21	1 st to 5 th March	Java Specific Training	65
2020-21	2017-21	12 th Mar to 14 th Mar	Capgemini Specific Training	48



Academic Year	Batch	Period	Training Name	No. of Students
2020-21	2017-21	17 th , 18 th , 24 th , 25 th Apr & 1 st , 2 nd May	Interview and Employability skill Training	54
2020-21	2017-21	5 th & 6 th May	Accenture Specific Training	25
2020-21	2017-21	11 th May to 14 th May	Wipro Specific Training	19
2020-21	2017-21	24 th & 25 th May	Capgemini Specific Training	94
2020-21	2017-21	31 st May to 5 th June	Employability skill Training	205
2020-21	2017-21	7 th to 11 th June	DXC and HCL Specific Training	326
2020-21	2017-21	12 th & 13 th June	DXC and HCL Specific Training- Extension	134
2020-21	2017-21	18 th , 19 th & 21 st June	C Specific Training	324
2020-21	2017-21	24 th & 25 th June	Analytical & Verbal Training	304
2021 - 22	2018 - 22	18th June 2021 – 20th June 2021	C Programming Training	324
2021 - 22	2018 - 22	30th July 2021 – 06th Aug 2021	Training on Automata Fix	191
2021 - 22	2018 - 22	24th & 25th June 2021	Analytical and Verbal Training Programme	304
2021 - 22	2018 - 22	03rd & 04th July 2021	C Programming Training	249
2021 - 22	2018 - 22	12th July – 26th July 2021	Capgemini Specific Training	347



Academic Year	Batch	Period	Training Name	No. of Students
2021 - 22	2018 - 22	30th Aug – 3 Sep 2021	Cognizant Specific Training	404
2021 - 22	2018 - 22	2nd & 3rd Sep 2021	Group Discussion	143
2021 - 22	2018 - 22	11th – 13th Sep 2021	Accenture Specific Training	538
2021 - 22	2018 - 22	16th – 19th Sep 2021	Zoho Specific Training	72
2021 - 22	2018 - 22	25th & 26th Sep 2021	CTS – Specific Training	211
2021 - 22	2018 - 22	13th Nov – 16th Nov 2021	Programming Skills Training	187
2021 - 22	2018 - 22	20th Nov – 27th Nov 2021	Training Programme on SoftSkills, Communication and Aptitude	233
2021 - 22	2018 - 22	25 Nov 2021	Edvoy Specific Training	92

c. Placement Process and Support

i. Campus Recruitment Process

Requirements of a company are received by the Director Corporate Relations (CR) for campus recruitment. The same is formalized by initiating a meeting of the recruitment committee. The committee approves the campus placement, and a circular is sent to the Department Heads and the students about the recruitment. The department shortlists the candidates and send the same to the Training and Placement Office. Consequently, the list of students is forwarded to the respective company.

ii. Off Campus Recruitment

The Training and Placement office shortlists the students from the database matching the company requirements and sends the list to Heads of the Departments and the Placement cell PDs of the respective departments. The list of students is forwarded to the respective company.

iii. Placement Process and Rules



- Companies are expected to give a Pre-Placement Talk [PPT] laying out the details of the company and the offer before the process. In case there is no PPT by the company, then the Training and Placement office gives the job description to the students.
- Once the student appears for the process, the student cannot reject the offer made by the company.
- In case if a company has a specific requirement / request, the recruitment committee has all the rights to nominate a set of / individual student(s) and it is mandatory that the student/s has/have to attend the interview. If the student is selected and an offer is made, then he/she is free to decide about the same.
- Every student is eligible for multiple offers.
- A company is free to make their choice of students irrespective of their specialization
- The Director CR shall decide on slots for companies. No company is allowed to make offers before the slotted day and time
- If, for any reason, a company wants to conduct its process before the slotted day and time they are free to do so.
- In case a student who is placed through the institute placement process takes up private placement as well in another company, the Director, in consultation with the companies concerned, shall nullify both the offers
- Students who have got an internship offer are eligible to attend placements provided the date of joining of the company is only after the completion of their internship period.
- If a student gets placed in IT or Core Company, then he/she is eligible for the IT/Core Company if the CTC of the company is at least Rs. 2lakhs more than the CTC of the company in which he/she has got already placed.
- All correspondence to and from the company is routed through the Office of Corporate Relations only.

9.6. Entrepreneurship Center (5)

Innovation and Entrepreneurship Development Center

About The Centre

The Innovation and Entrepreneurship Development Centre (IEDC) at Kalasalingam University is established as an initiative of National Science and Technology Entrepreneurship Development Board (NSTEDB), Department of Science and Technology (DST), New Delhi, with an aim of developing institutional mechanism to create entrepreneurial culture in



academic institutions to foster growth of innovation and entrepreneurship amongst the faculty and students.

Every year this centre is providing financial support to a number of students for developing innovative products. Apart from this financial support, mentoring and Infrastructural support are provided for these projects. Moreover, the centre is arranges so many classes and camps to promote technology-based innovation and entrepreneurship among the students. The Vision of IEDC is "To be a self-funded department catering to the needs of young entrepreneurs with innovative ideas of national/international importance and societal needs" with the mission to Develop a mechanism with required infrastructure that can enable students and faculty to innovate and prototype their innovation with support from Govt., industry and academic institution

The KARE was 6th Rank in Deemed University category in Atal Ranking of Institutions on Innovation Achievements (ARIIA)-2021. KARE also got 5 star rating for Entrepreneurship, Innovation and Startup activities in 2019-20KARE was approved as a Knowledge partner for Innovation Voucher Program (IVP), supported by Entrepreneurship Development and Innovation Institute, Government of Tamilnadu. The following Table 9.6.1 gives the activities conducted of IEDC for the benefit of the students

Table 9.6.1 Activities conducted by IEDC

S.No	Year	Number of Activities	Number of students Benefitted / Attended
1	2018-19	14	1204
2	2019-20	11	1148
3	2020-21	25	2334
4	2021-22	24	2115

Record on students Benefitted

The following funds are used for conducting entrepreneurship awareness training programs and seed fund support for product development to the students' community. The funding details are shown in Table 9.6.2.

Table 9.6.2.Funds Received for Innovation and Entrepreneurship Activities



S.No	Year	Project Title	Funding Agency	Funded Amount
1	2018-2019	NIMAT-2018-19	EDII, Gujarat	Rs. 1,00,000
2	2018-2019	IEDC (Innovation and Entrepreneurship Development Centre)	DST	Rs. 8,00,000
3	2018-2019	DST STARTUP NIDHI	DST, EDII, Gujarat	Rs. 20,00,000
4	2019-2020	NIMAT-2019-20	EDII, Gujarat	Rs. 3,80,000
5	2019-2020	Technology Business Incubators(TBI)	MSME	Rs.2, 50,00,000*
6	2020-2021	Innovation Voucher Program	EDII,Tamilnadu	Rs. 3, 64, 400
7	2021-2022	Innovation Voucher Program	EDII,Tamilnadu	Rs.1,63, 280

Student's projects supported by IEDC:

The following students' innovative projects are supported by IEDC (Innovation and Entrepreneurship Development Centre). Each project got Rs. 1 Lakh for product development. The list of projects and students innovators is shown in Table 9.6.3.

Table 9.6.3 IEDC Supported Projects

S.No	Title of the Project	Department	Guide Name	Students Name
1	Development Of Juice To Prevent Gastro-Intestinal Tract Cancer Using Banana Stems	Biotech	Dr. K. Palanichelvam	Mulla Sariyanaz N.S. Supraja Sahana Parveen
2	Bio Polymer and Graphene Nano Sheet Based Food Packing Material Which Can Be Efficiently Used For Carbonated Beverage Packaging	Food	Mr. S. I. JeyanthAllwin	Ritujasree Anet B George Sreelakshmi
3	Development of Electronic Lockers with Multiple keys using Visual Cryptography Scheme	CSE ECE	Dr.K.Suthendran	Sai Anand.M Harish R
4	Attachable Wheelchair Automator	Automobile	Mr. G. Balamurugan	A.Deepak Praveen K. Vijay



				R. Gurumoorthy
5	Smart Tube light	ECE	Dr.J.Deny Mr.V.Ramachandran	R.Vengat Rahul

Student's projects supported by DST STARTUP NIDHI:

The following students' innovative projects are supported by DST STARTUP NIDHI. Each project got Rs. 10 Lakh for product development. The list of projects and team of innovators is shown in Table 9.6.4.

Table 9.6.4 DST STARTUP NIDHI Supported Projects

S.No	Title of the Invention	Department	Student Team	Mentor
1.	ECO friendly Manufacturing of Tiles from used PET Bottles	Mechanical	VB. Saravanan G. Ramkumar	Dr.I.Siva
2	Low cost Smart Cleaner for Solar Panels	EEE	G.P.Santhosh Ram M.AbubakkarSiddhik	Mr. K.Vijayakumar

Twelve students' start-up companies are functioning in the University campus as shown in Table 9.6.5.

Table 9.6.5 Student Start-up Companies incubated in KARE

S.No	Project Title	Dept	Company Name
1	Noise Reduction in Muffler	Auto	NAV Mufflers Pvt.Ltd
2	Production of Biofungicide with Earthworm	Bio Tech	IWO Biosciences Pvt. Ltd
3	Beneficial Enzyme for Bio processing Agro Industrial Waste	Bio Tech	SKIM Biotech Pvt. Ltd
4	Smart Cart for Super Market	CSE, ECE	Yugti Smart Solutions Pvt. Ltd.
5	Efficacy of Bio control Agents viz. Pseudomonas sp and Trichoderma sp. and control of onion diseases	Bio Tech	RingarBiocontrol Pvt. Ltd



6	Design and Development of Low Cost Photomograph for Identification of Thyroid Dysfunction	ECE	Raj Bioelectronics and Intelligent Pvt. Ltd
7	Low Cost High Performance Inverter	EEE	Minniayal Pvt. Ltd
8	ECO friendly Manufacturing of Tiles from used PET Bottles	Mechanical	Compimero Makers Pvt.Ltd
9	Low cost Smart Cleaner for Solar Panels	EEE	ThaaniyalPvt.Ltd
10	SunFish - Hybrid Powered Low Cost Solar fish Dryer	ECE	M/s Optimum Energy Solar System
11	HC-EMG device: A Pamphlet sized Electromyography for Detecting Nerve Disorders	ECE	M/s HCTRONIQS
12	Wearable / Portable electrical muscle stimulation belt for cervicgia patients	BME	M/s PSM Enterprise

Other successful Milestones:

- i. **Innovation Ambassadors:** The following faculty members successfully completed Innovation Ambassador Training Program conducted by the Ministry of Education's Innovation Cell and AICTE.

Foundation Level:

- 1) Dr.Viji.R/MBA
- 2) Dr S. Suprakash/IT
- 3) Dr.B. Perumal/ECE
- 4) Dr Muneeswaran V/ECE
- 5) Mrs P Priya/EEE
- 6) Mr. M. Sakthimohan/ECE
- 7) Mr.S.Sakthivel/BME
- 8) Dr.S.Kavitha/Mech
- 9) Mrs. G. Elizabeth Rani/CSE
- 10) Dr. K. Pandiaraj/ECE

Advance level:

- 1) Dr. J Deny/IEDC
- 2) Dr.S.B. Inayath Ahamed/MBA
- 3) Mr. K Vijayakumar/EEE
- 4) Mr. D. Prem Raja/IT
- 5) Mr.Ramesh G/ECE

- ii. **IIC Mentor-Mentee Program**



Through IEDC academic institutions are also guided for successful implementation of IIC. The following intuitions are joined as a mentee to our University under the IIC Mentor-Mentee Program

1. P A C Ramasamy Raja Polytechnic College
2. AAA College of Engineering and Technology
3. M.Kumarasamy College of Engineering
4. Kamaraj College of Engineering
5. Vellaichamy Nadar Polytechnic College

iii. **Atal Community Innovation Center-Kalasalingam Innovation Foundation**

Atal Community Innovation Center-Kalasalingam Innovation Foundation (ACIC-KIF) is a non-profit community innovation center established by April 2021 with the support of Atal Innovation Mission, NITI Aayog, Govt. of India. The aim of ACIC is to promote economy, employment, and enable community-oriented innovations. We encourage innovative projects from all stages starting from ideation, early traction, validation, and scaling. The ACIC-KIF provides community innovation space at subscription charges to innovators and start-ups, handholding, prototyping, validation, POC, pre-commercial versions, software development and other services required for start-ups. We also conduct extensive training on different technological aspects, patenting and other services required for start-ups and innovators. Once the Proof-of-concept (POC) is developed, we provide scaling services to convert your POC to pre-commercial and commercial versions. So far, this center has incubated 24 start-ups and few common issues faced by the nearby community are identified and solved by ACIC-KIF.

9.7. Co-curricular and Extra-curricular Activities (10)

a. Co-curricular Activities

The University encourages students to participate in various co-curricular and extra-curricular activities. Students actively participate in various co-curricular activities including in-plant training, industrial visit, conferences/ seminars and workshops.

Table 9.7.1: List of Co-curricular Activities Organized

S.No	Year	No of Conferences/ Seminars	No. of Guest Lectures/Industrial Lectures/Webinars	No of Workshops/ Training Programmes	No of Project Contest
1	2018-19	12	95	89	5
2	2019-20	51	43	33	6



3	2020-21	34	33	21	6
4	2021-22	1	47	27	3

a. Extra-curricular activities

Students are encouraged to participate in various club activities and students have been actively organizing, participating in the activities of their choice. Students are encouraged to participate in extra-curricular activities as part of non-CGPA courses such as Tamil Mandram, Nature Club, Music Club, Photographic Club, Fine Arts Club, Youth Red Cross (YRC), NSS, Entrepreneurs Cell, NCC and Aquatic Club.

1. Availability of Sports Facilities:

A state-of-the-art infrastructure for both indoor and outdoor games is established. Playgrounds with athletic tracks and floodlights are available for training students to take part in State and National level games such as Cricket, Hockey, Football, Basketball, Volleyball, etc. These facilities are built according to the appropriate standards followed by the various sports associations in India.

Indoor Facilities:

A standard multipurpose Indoor Stadium (1298 m²) with wooden flooring and following facilities is established as given in table 9.7.2.

Table 9.7.2 Indoor Facility Details

Game	Dimension of Play Area (Court/Field)	Number of Courts / Rooms
Badminton	82 m ²	3
Basketball	420 m ²	1
Volley Ball	162 m ²	1
Boxing Training Hall	298 m ²	1
Wrestling Training Hall	298 m ²	1

Outdoor Facilities

Table 9.7.3 Outdoor Facility Details



Game facility	Dimension of Play Area (Court/Field)	Number of units
Athletic track and field	400 m Track with 8 Lanes(Std. Track)	1
Basketball Court	420 m ²	3
Volley ball courts	162 m ²	3
Tennis courts	195 m ²	1
Football field	7000 m ²	2
Hockey Field	5027 m ²	1
Kabaddi Court	130 m ²	2
Throw ball court	223.26 m ²	1
Kho-Kho court	464 m ²	1
Ball Badminton	288 m ²	1
Cricket	Radius 60 yards.	2
Hand ball	800 m ²	2
Swimming Pool	50m x 25m	1

Gymnasium: A standard gymnasium for training the students and ensuring their physical fitness equipped with the following facilities is available.

- 16 station multi gym, cross over machine
- Elliptical cross trainer
- Peck and deck butterfly
- Power station with leg press
- Recumbent bike
- Roman chair
- Late rowing bar
- Belt vibrator
- Cheat press
- Squat stand
- Weightlifting stand
- Weight plates
- Dumble bells
- Push- up stand
- Olympic weight bench
- Bar bell rod
- Karalakkatai
- Thigh press
- Weighingmachine etc.

Further, additional gyms are available in the hostels.

Swimming Pool: An Olympic standard swimming pool (50 m x 25 m) 8 lanes, 5 feet deep, with modern filtering and chlorination facility, is one of the major attractions of the campus. Most of the state level and national level swimming competitions are periodically conducted here. The pool is provided with clinically sterile water. Male and female lifeguards are available full-time to assist in case of emergencies.

(i) National Cadet Corps (NCC)

The National Cadet Corps in Kalasalingam Academy of Research and Education (KARE) formerly Kalasalingam University was formed with the National Cadet Corps Act of 1948. It



was raised in September 2003 under the Unit 4(TN) Engineering Company NCC, Madurai. Our Technical Unit was started with a sanctioned strength of 100 cadets. This subunit has achieved several landmarks and has added several feathers to the cap of the university.

Our NCC cadets are trained in various activities like drill for smart composure, weapon training for confidence, map reading for self-reliance, field craft for calculations and lateral thinking, physical training for toughness, social service for leadership and selflessness, Shooting, cycling, trekking activities and sports. The students participate in the various training camps, which consolidate their training every year. Moreover, they participate in special camps and centrally organized camps like Republic Day camp, National integrated camp, Army/Navy/Air force attachment camps and all India trekking camps. The B and C certificates are offered by the NCC, after one-year and two years of training respectively. From 2016 to the present 188 students have been successful in B certificate examination and 132 students have successfully cleared the C certificate examination. In addition, the NCC unit also conducts activities for the nation building and encourages the cadets to participate in all the events. The detail of the annual students' activities conducted is as shown in Table 9.7.4.

Table 9.7.4 Activities conducted by NCC

S.No.	Year	Number of Activities	Number of students Benefitted / Attended
1	2018-19	11	100
2	2019-20	6	100
3	2020-21	8	100
4	2021-22	5	100

List of Some Major Activities:

1. Republic Day Celebration
2. Independence Day celebration
3. SWACHHTA PAKHWADA
4. Awareness Rally
5. Annual Training Camp

(ii) National Service Scheme



National Service Scheme (NSS) has been introduced in the erstwhile Arulmigu Kalasalingam College of Engineering in 1987 as part of the academic programmes and ever since NSS has been functioning as a regular feature in the realm of the University. Students are encouraged to participate in the NSS Programmes as a part of non-CGPA course. The NSS has 17 units with 100 volunteers in each unit. There is one NSS Programme officer. Every year, during the semester holidays, NSS camps are organized through which many villages have been served. Besides this, there are regular NSS activities organized throughout the year. The endowment awards are also given to the best male and the best female NSS Volunteers to encourage the students. The details of the annual students' activities conducted are as shown in Table 9.7.5.

Table 9.7.5 Activities conducted by NSS

S.No.	Year	Number of Activities	Number of students Benefitted / Attended
1	2018-19	82	1769
2	2019-20	86	1827
3	2020-21	40	1822
4	2021-22	15	825

List of Some Major Activities:

1. Kerala Flood Relief Program
2. Youth Parliament
3. International Yoga day
4. NSS Day Celebration
5. Fit India Cyclothon 2020
6. Republic Day & Independence Day celebration
7. Blood donation camp

(iii) Nature Club

One of the active and popular clubs around Viruthunagar is Nature Club, KARE and it was started on September 20, 2008. It aims to inculcate a sense of awareness about the environment and how to improve it amongst the students and the general public. This club is formed mainly to create awareness among the campus community. The motto of the Nature Club is -**“to strengthen the unity of mankind and nature-for nature’s sake”**. This club actively helps in creating awareness among the people and in helping them to protect nature and wild life for



the benefit of the future generations. The detail of the annual students activities conducted is as shown in Table 9.7.6.

Table 9.7.6 Activities conducted by Nature Club

S.No.	Year	Number of Activities	Number of students Benefitted / Attended
1	2018-19	2	238
2	2019-20	4	382
3	2020-21	5	496
4	2021-22	6	475

List of Some Major Activities:

1. Vithai 2K19- world water conservation day Celebration
2. Orion 2K19- Intra-college event
3. Drizzle 2k19-intra university competition
4. Zoophiles-2020
5. Greenolin-2K21

(iv) YOUTH RED CROSS

In the University Youth Red Cross Club was inaugurated in the year 2015-16 Youth represent a substantial part of the membership of the Red Cross for its humanitarian commitment. Young volunteers can make a significant contribution to meeting the needs of the most vulnerable people within their local communities through Red Cross youth programme. The detail of the annual students' activities conducted is as shown in Table 9.7.7.

Table 9.7.7 Activities conducted by Youth Red Cross

S.No.	Year	Number of Activities	Number of students Benefitted / Attended
1	2018-19	5	303
2	2019-20	5	542
3	2020-21	3	759
4	2021-22	4	600

**List of Some Major Activities:**

1. Help for Kerala
2. Blood donation camp
3. Help for Delta
4. Water conservation Rally
5. Save Environment Rally
6. Awareness program on Hygiene practices

(v) Green Army

The Green Army works on the Vision to bring zero pollution level in the university by means of adopting new technologies and continuous monitoring through survey and analyze energy usage and emission of greenhouse gases in the area in order to reduce the amount of carbon footprint without affecting the output(s). The Energy Audits are conducted within the campus; it is the need of a dedicated team to work in all aspects of energy conservation and environment protection. This thought leads to the birth of the Green Team and the Green Army. The Green Army is the group of student volunteers who will be responsible to keep a watch on the judicious use of resources (Energy and water) and green environment. The detail of the annual student's activities conducted is as shown in Table 9.7.8.

Table 9.7.8 Activities conducted by Green Army

S.No	Year	Number of Activities	Number of students Benefitted / Attended
1	2018-19	4	74
2	2019-20	7	116
3	2020-21	5	84
4	2021-22	2	120

List of Some Major Activities:

1. Energy Conservation for Sustainable development
2. Energy Auditing and Management for reducing the wastage of Power
3. Vehicle free day on all final Saturday of each Month
4. Carbon Footprint Calculation for each academic year
5. Motivational seminars on Renewable Energy Resources

(vi) Fine Arts Club

The energetic and charming bludgeon of the college is the Fine Arts Club. The Fine Arts Club is one of the popular clubs of the institution organizing Inter and Intra College Fest every year



by providing the students, a platform to exhibit their talents to the world. On the aphorism of bringing out the unprecedented talents of students in KARE and also to cater to those students who have an aptitude for dance or other talents in fine arts. The Fine Arts Club consists of many teams like Music, Dance, Variety, Art, Fashion, Gaming with more than 100+ talented members. Opportunities are given to all students to register for extra-curricular activities conducted by the Fine arts Club members to celebrate their club functions. The details of the annual students activities conducted is as shown in Table 9.7.9.

Table 9.7.9 Activities conducted by Fine Arts Club

S.No.	Year	Number of Activities	Number of students Benefitted / Attended
1	2018-19	06	1962
2	2019-20	03	824
3	2020-21	05	1848
4	2021-22	2	973

List of Some Major Activities:

1. Intra College Fest - MIRTH 2K19
2. National Level Event - SPARKZ 2020
3. Online Intra College Fest - MIRTH 2020

C. Annual Students Activities.

i. Freshman Induction Programme (FIP) : Freshmen Induction Programme (FIP) is conducted every year. An orientation programme about KARE's academic system, hostel residency, placement and other details are given by Vice Chancellor and respective Deans. The FIP is a full-time on-campus fully residential program conducted for one full week. It starts with yoga classes in the morning, and throughout the day students are trained in various aspects on personality development as expected for a budding Engineer. In the FIP, the students are given in the training on the topics:

- English for Engineers, Presentation Skills, Communication Skills, Socializing and Etiquette, Learning Focus, Career Planning, Team Building, Goal Setting, Success through Inner Journey, Aptitude Test, Computer Skills, Voice and Accent and Personality Tests.

**ii. Club activities**

The student's activity is planned for various students club such as NSS, NCC, Sports, Nature club, Tamil Mandram, YRC, Fine Arts, Green Army, Photography and others by director of students affairs for every semester. This plan of activity will be disseminated to the students community through HoD's and Faculty Advisors. Students are encouraged to participate in the club activities to improve their skills and show their talents.

Table 9.7.10 Annual events conducted by all Clubs

S.No	Event Name	Club Name
1.	Online Blood donation Awareness Program	NSS
2.	Online AIDS Awareness Program	
3.	Online Health Awareness Program	
4.	International Peace Day	
5.	National Road Safety month 2022	
6.	NSS Day	
7.	Yoga Awareness Program	
8.	National Blood Donation Day	
9.	Communal Harmony Day	
10.	First Year Registration	
11.	UBA Program	
12.	Swatch Bharat program	
13.	National Integration Day	
14.	World AIDS Day	
15.	World Human Rights Day	
16.	One student one Tree	
17.	Unnatbharatabhiyan	
18.	REPUBLIC DAY	
19.	Blood donation Awareness camp	
20.	Pulse Polio awareness program	
21.	Climate Change Education and Awareness	
22.	Unnatbharatabhiyan	
23.	Global warming awareness program	



S.No	Event Name	Club Name
24.	Swatch Bharath Awareness program	
25.	International Women Day	
26.	Anti-Terrorism Day	
27.	7 days NSS Camp	
28.	National Sports Day & Fit India Movement Celebration	Sports
29.	Anandammal & Kalasalingam Memorial State level Swimming Competition	
30.	State level Inter Collegiate Volleyball Men Tournament	
31.	KARE- ANNUAL SPORTS DAY	
32.	State level Inter Collegiate Kabaddi Men Tournament	
33.	NON-CGPA Sports Registration	
34.	Commencement of Non –CGPA Sports Class for UG and PG Course Students.	
35.	Fit India Movement Activities	
36.	38th Annual Sports Day Registration	
37.	1st Tamil Nadu State Kalvivallal Thiru.T.Kalasalingam Memorial Swimming Competition.	
38.	Intramural Sports and Games	
39.	NON CGPA Sports Practical	
40.	NON CGPA Result	
41.	KARE - 38th Annual Sports Day	
42.	Kalasalingam Sports Festival (Kabaddi, Volleyball, Taekwondo)	
43.	Fit India Movement Activities	
44.	Swimming Summer Coaching Camp for School Kids	
45.	Fit India Movement Activities	
46.	Independence Day Celebration	NCC
47.	Enrollment for 1st year students	
48.	Health awareness program	
49.	Swachh week celebration	
50.	Sadar Patel Jayanthi	



S.No	Event Name	Club Name
51.	SamvidhanDiwas (Constitution Day)	
52.	NCC day	
53.	Swachh Pakhwada	
54.	Flag day	
55.	CATC Camp – 3rd year	
56.	CATC Camp – 2nd year	
57.	National Youth Day Celebration	
58.	Republic day celebration	
59.	Blood donation camp	
60.	B certificate Exam	
61.	C certificate exam	
62.	Traffic Awareness Program	
63.	Zero Emissions Day-Celebration	Nature club
64.	World FOOD Day Celebration	
65.	World Soil Day Celebration	
66.	Envirofest	
67.	H2ODay	
68.	Ozonus	
69.	Healthify	
70.	Teachers' Day Celebration	Tamil Mandram
71.	International Literacy Day	
72.	Gandhi Jayanthi	
73.	Thai Pongal Thiruvizha	
74.	International Mother Language Day (Tamizhi)	
75.	World Poetry Day	
76.	Valam (Tamil New Year)	
77.	May Day (Kalanjiyam)	
78.	Yureon	YRC
79.	Mathara	
80.	Born to Win	



S.No	Event Name	Club Name
81.	Blood donation and Social Awareness Camp	
82.	YuReCa	
83.	Fantasy	
84.	Aarambh	Fine Arts
85.	Intra College Cultural Fest	
86.	Club Event	
87.	Net Zero Buildings	
88.	Strategies for energy conservation in Buildings	Green Army
89.	Energy auditing – Methodolgy	
90.	Reduce Heat Island Risks	
91.	Energy Conservation in Academic Campus – Guest Lecture	
92.	Global Warming & Plastic Ban – Awareness campaign at Srivilliputhur	
93.	Energy Auditing at KARE	
94.	Vehicle Free Day at University Campus	
95.	Carbon Footprint Calculation – Guest Lecture	
96.	'My Waste, My Responsibility' – Essay competition for Secondary School students	
97.	Tree Plantation – Watrap Taluk Government and Aided Schools	
98.	Trekking – Sadhuragiri Hills	
99.	WORLD PHOTOGRAPHY DAY	Photography Club
100.	NOSTALGIA	
101.	FOTOGRAFIA 3.0	
102.	KAPTURED	
103.	ATTAIN 3.0	
104.	PHOTOPEDIA	
105.	Kaptured	
106.	Enfoque	
107.	Trekking	



S.No	Event Name	Club Name
108.	Kameraia	
109.	Awareness Program on Anti-Ragging Law Ragging Menace – Awareness Campaign Anti-Ragging and Anti-Drugs	Anti-Ragging Committee
110.	Awareness Program on Anti-Ragging Law Ragging Menace – Awareness Campaign Anti-Ragging and Anti-Drugs	Anti-Discrimination Committee
111.	Legal Empowerment of Women in India's Changing Scenario	Internal Complaint Committee
112.	Sexual Harassment of women at Workplace-Act & Rules	
113.	Sexism- a Psychological Perspective	
114.	Women Health & Hygiene	Women Empowerment Cell
115.	Cancer Prevention: Strategies for the younger generation	
116.	Violence against Women	
117.	International Women's Day 2022	

**Annexure 9.1****KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION****(Deemed to be University)****Anand Nagar, Krishnankovil-626126****Office of Director (IQAC)****STUDENT FEEDBACK FORM-Phase 1 2018-19 (Odd) (Theory courses)**

Name of the Faculty & Dept:

Name of the Course:

Year/Sec:

Name & Reg No of the Student:

I. Course Plan /Text Books

1. The course teacher given the course plan as prescribed by the University
 - (a) Course plan was given on first day itself.
 - (b) Course plan was given during first week
 - (c) Course plan was given after one week.
2. Classes conducted as per course plan
 - (a) All classes was conducted as per course plan
 - (b) Most Classes were conducted as per course plan with some deviations.
 - © Not allowed as per course plan
3. Course plan having innovative Teaching learning methods /assignments /projects are
 - (a) Course plan includes Innovative Teaching learning methods/assignments/projectsetc.
 - (b) Course plan has minimal innovative Teaching learning methods.
 - © Course plan do not have any innovative component.
4. Has the Text book/Xerox material issued on time?
 - (a) Materials and books received on first day of class
 - (b) Materials and books received during first week
 - © Materials and Books received after first week

II Teaching Learning

1. Punctuality of the Course teacher
 - (a) Always comes punctually to the classroom.
 - (b) Mostly comes punctually to the classroom.
 - (c) Rarely comes punctually to the classroom.
2. Basic concepts are taught clearly.



- (a) Concepts are taught at the level understood by all students
 - (b) Concepts are taught at the level understood by fast learners
 - (c) Mostly dictation from notes/book and concepts not taught clearly
3. Adequate numbers of questions are discussed to explain concepts.
- (a) Sufficient questions are discussed.
 - (b) A few questions and examples discussed.
 - (c) Questions are not discussed adequately.
4. Flipped mode of teaching is adopted.
- (a) Practical case study based question are discussed for flipped class
 - (b) Only review questions are discussed for flipped class
 - (c) No flipped classroom mode of teaching is adopted.

III Testing and Evaluation

1. Regular Class tests/unit tests are conducted (before SE -1)
- (a) At least 2 class tests were conducted
 - (b) One class test was conducted
 - (c) No class test conducted
2. Teacher gives input to improve based on class tests/unit tests.
- (a) Gave inputs to fast, average&slow-learners
 - (b) Gave inputs to slow-learners only.
 - (c) No input was given
3. Assignments are given
- (a) At least two assignments per unit given
 - (b) One assignment per unit given
 - (c) No assignment was given
4. Assignments are evaluated on timely manner
- (a) Within 2 days, assignments are evaluated and returned back
 - (b) Within a week, assignments are evaluated and returned back
 - (c) After a week, assignments are evaluated and returned back

IV Communication Skill

1. Teacher uses only English as language of Communication
- (a) Always uses English as language of communication



- (b) Mixing of English and local language of communication
 - (c) Mostly local language used for communication
- 2. Teacher adopts ICT (like LCD, animation etc) to communicate different topics.
 - (a) All difficult topics are covered by using ICT methods
 - (b) Only a few topics are covered by using ICT methods
 - (c) No topics covered by using ICT methods
- 3. Audibility and clarity in speech
 - (a) Clearly audible up to last benchers.
 - (b) Clearly audible up to 2nd to 3rd benchers only.
 - (c) Clearly audible for first benchers only.

**Annexure 9.2****Kalasalingam Academy of Research and Education****(Deemed to be University)****Anand Nagar, Krishnankoil-626126****Office of Director (IQAC)****STUDENT FEEDBACK FORM – Phase I (Lab Courses)**

Name of the Faculty & Dept:

Name of the Course:

Year/Sec:

Name & Reg.No. of the

Student:

I. Conduction of Lab Experiments

1. Has the teacher given the course plan for experiments as prescribed by the University?

- (a) Course Plan was given on first day.
- (b) Course Plan was given within one week
- (c) Course Plan was given after one week.

. Are Experiments conducted as per the course plan?

- (a) All the experiments conducted as per course plan
- (b) Most experiments conducted as per course plan with some deviations
- (c) Not followed as per course plan

II. Explanation about Lab Experiments

3. Lab Experiments are explained properly

- (a) Experiments explained by course teacher
- (b) Experiments explained partly by course teacher and partly by lab technician
- (c) Experiments explained by lab technicians or not explained at all

4. Teacher uses only English language of communication

- (a) Always uses English as language for communication
- (b) Mixing of English and local language for communication
- (c) Mostly local language for communication

5. Lab Technician has knowledge about experiments

- (a) Well knowledgeable about all experiments
- (b) Well knowledgeable about few experiments
- (c) No knowledge about experiments

6. Flipped mode of conducting lab experiments is adopted



- (a) More than 2 experiments were explained using flipped mode of teaching
- (b) At least 1 experiment was explained using flipped mode of teaching
- (c) Not flipped mode of teaching was adopted

III. Support offered for results/Calculations

7. Teacher gives constructive comments on results/calculations

- (a) Constructive comments given for all experiments
- (b) Constructive comments given for few experiments only
- (c) No specific comments given for any experiments

IV. Working Condition of Lab equipments

8. Working Condition of Lab equipments

- (a) All equipments are in good condition
- (b) Some experiment setups are not working properly
- (c) Most of the equipments are not working properly



Annexure 9.3

SAMPLE FORM OF STUDENT FEEDBACK ON FACILITIES WITHIN THE KARE CAMPUS

Date:

Name :

Degree :

Department :

Year/Semester: (.....) I/II/III/IV

Address :

.....

.....

Mobile :

Email :

Feedback on Facilities within the KARE campus. [Please tick (√) in the relevant cell]

Sl.No	Item	Very good	Good	Average	Poor	Very poor
1	Lab Facilities					
2	Library Facilities					
3	Computer Facilities					
4	Hostel Facilities					
5	Food quality in the hostel					
6	Recreational facilities					
7	Extra-curricular activities					
8	Sport Facilities					
9	Bus Facilities					
10	Wi-Fi Facilities within the campus					
11	Food facility in the canteen					
12	Mineral water facility in campus					
13	Availability of wash rooms					

Signature of the student

10. GOVERNANCE, INSTITUTIONAL SUPPORT AND FINANCIAL RESOURCES (120)**10.1 Organization, Governance and Transparency (55)****10.1.1 State the Vision and Mission of the Institute (5)****Response:**

Vision:“ To be a University of Excellence of International Repute in Education and Research.”.

Mission:

1. To provide a scholarly teaching-learning ambience which results in creating graduates equipped with skills and acumen to solve real-life problems.
2. To promote research and create knowledge for human welfare, rural and societal development.
3. To nurture entrepreneurial ambition, industrial and societal connect by creating an environment through which innovators and leaders emerge.

10.1.2 Availability of the Institutional Strategic Plan and its Effective Implementation and Monitoring (25)**Response:**

The Strategic Plan-2026 and a Case Study report for effective implementation of strategic plan on Research Activities are given below:

STRATEGIC PLAN FOR THE NEXT 10 YEARS – 2017- 2026**KARE reflect its commitment to:**

- ❖ Conserving, advancing and disseminating knowledge through teaching, learning, research and creative work of the highest standard.
- ❖ Creating a diverse, mutually respectful academic community with rational and high ethical standards.
- ❖ Placing a strong emphasis on serving our student body.
- ❖ Working to advance the intellectual, cultural, environmental, economic and social wellbeing of the people of state, country and abroad.

- ❖ Providing equal opportunities to all who have the potential to succeed in an Institution of international grade.
- ❖ Engaging with national and international scholars for both education and research to enhance intellectual development, educational quality and research productivity.
- ❖ The development and commercialization of enterprise based on the University's research and creative works.

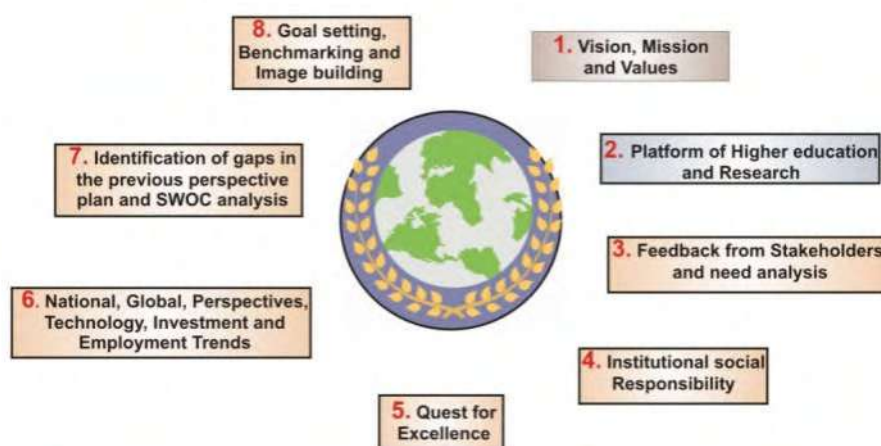


Fig. 10.1.2.1 Strategic Plan of the Institution

KARE aims to:

- ❖ Be a community of highly accomplished and well supported academic and professional faculty and staff.
- ❖ Attract students of high academic potential and give them an outstanding Institution experience so that they become successful and influential graduates and loyal alumni.
- ❖ Benefit society by conducting and applying research of the highest quality.
- ❖ Develop strong partnerships with key organizations and communities, nationally and internationally.
- ❖ Be a Institute of global standing that serves India, Asia and the World.

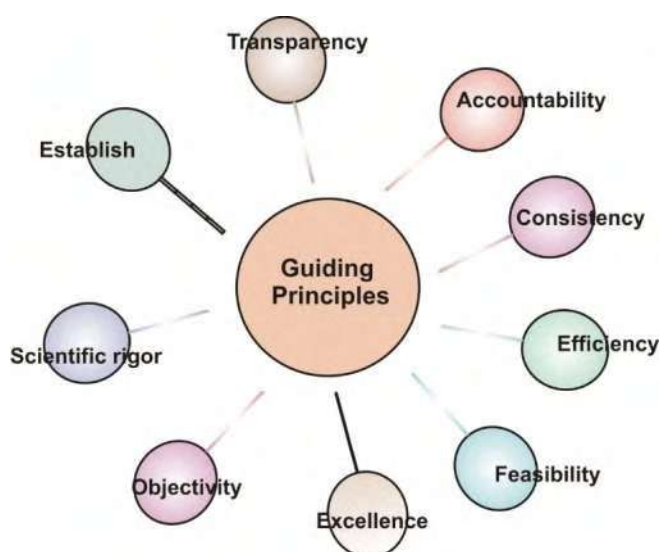


Fig 10.1.2.2

Guiding Principles

Objective 1: FACULTY and STAFF

A work environment is clear expectations, development of potential, extensiveness, high achievement and rewarding performance

We have to use innovative employment practices to attract and retain outstanding academic and professional staff from India and internationally experienced staff. We need to provide staff with an environment that develops rewards their talents, and community responsibilities. These things must be achieved in the face of intense national and international competition for staff. However, we will be better placed to do this as the Institute becomes more successful through the achievements of its staff.

Measures:

- Student: academic staff ratio.
- Academic: Professional staff ratio.
- Increasing Postgraduate students
- Introduce many Postgraduate Research program
- Increasing Doctoral students with KARE fellowship.
- Increasing Peer-reviewed publications
- Citations per Scopus.
- Number of prestigious awards held by staff.

- Number of national teaching excellence awards held by staff.
- Proportions of equity group staff in academic and professional positions by expertise and seniority.
- Equal opportunity to women employees
- Creating corpus fund for supporting the young faculty members

Key actions:

- Use innovative employment practices to recruit and retain high performing academic and professional staff, including those from diverse backgrounds.
- Ensure that all staff has clear performance expectations aligned to their roles and prospects of career development in the context of the University's strategy.
- Ensure that all staff has effective and regular performance feedback that links to reward, recognition and future development planning.
- Enhance staff research through fund generation, guiding graduate students, and peer publications.
- Provide career development opportunities and practices that support the aspirations of staff.

Objective 2: Decentralized

An environment in which distributed leadership is developed and valued

As a complex and highly devolved organization, the Institute relies on staff providing excellent leadership in relation to a number of activities, academic and administrative, in all parts and at all levels of the organization. It is also important to the University's role as a leading organization that staff provide leadership in their professional capacities outside the Institute and to the wider community, nationally and internationally.

Measures:

- Proportion of staff positive about leadership in staff surveys.

Key actions:

- Develop a clear understanding of leadership expectations at all levels in the University.
- Embed leadership expectations in processes for appointment of staff.

- Determine professional development needs of those progressing to leadership roles and invest in appropriate leadership development opportunities.

Objective 3: student

A diverse student body of the highest possible academic potential

Leading universities must attract students who have high academic potential, are prepared for Institute study, have the ability to take advantage of degree study involving critical thinking, problem solving, and research-based teaching, and have a desire to learn and be challenged intellectually.

Measures:

- Proportion of school levels entering with 80% of minimum marks and secured scoring of Kalasalingam engineering entrance examination (KEEE).
- Scholarship from Institutional, national (State and Central) and private bodies (including first graduate, Sports quota students).
- Students will be admitted from other state and abroad
- Proportions of domestic students from equity groups at undergraduate and postgraduate levels.
- Numbers of students successfully transitioned into Institute through student equity support initiative.

Key actions:

- To provide KARE student fellowship of highly successful of both education and athletes.
- Ensure that the characteristics, aspirations and expectations of the students of high academic potential we wish to attract and retain within the Institute are well understood.
- Ensure that our processes for promoting the Institute to such students and for securing their interest and enrolment respond to their needs and are based on sound research.
- Ensure that we provide the kind of environment, both academic and extracurricular, that is particularly attractive to students of high academic potential.

Objective 4: Student community**A substantial increase in annual completions of taught undergraduate, masters, research masters and doctorates**

As the major national centers of higher education, universities have a particular role in UG, PG and graduate education. As the largest and highest ranked Research Institute in the country, KARE will be a pre-eminent place in this regard. The number and achievements of our graduates have a significant bearing on the University's reputation and ranking, and on our contribution to society.

Measures: The following targets

Table 10.1.1 Achievements of Graduates

Programs	2017	2026
Undergraduate	6,000	25,000
Postgraduate	1,000	10,000
Doctoral	125	1000

Key actions:

- Enhance processes for staff-student enthusiastic interactions such as faculty advisory system / training mentors and allocating students to them so as to maximize the quality of supervision and probability of student success.
- Provide students with clear expectations as to the scope and duration of their studies.
- Support proper mentoring of both undergraduate and postgraduate students to ensure that they complete their programs within the allotted time.



Objective 5: Teaching and learning environment

A high quality learning environment that maximizes the opportunity for all our students to succeed and provides them with comprehensive, intellectually challenging and transformative educational experience

Our reputation with students, their parents and families, and our communities rests significantly on the quality of our teaching and learning. We expect our graduates to be independent and critical thinkers, open to new ideas, possessing intellectual curiosity and integrity, and to have a mastery of a body of knowledge and professional skills. Our distinctive learning environment, we bring different insights into our classrooms, drive innovation in learning and research, and ensure our society remains open to the experience of other countries.

Curriculum design, enrichment and academic flexibility



Fig. 10.1.2.4 Teaching and Learning Environment

Measures:

- Course completions.
- Qualification completions.
- Outcomes of student satisfaction and engagement surveys (academic).
- Number of UG and PG degrees accredited by professional associations / NBA, and ABET accreditation bodies.
- Increase learning environment in the campus.
- Teaching and Learning Process
- Students Participation in Research Projects
- Summer fellowships
- Earning an International Certification

- Internships in industry
- Appearance and securing scores in GATE, GRE and other standardized tests

Key actions:

- Ensure that our curricula reflect the relevant graduate profiles and deliver high quality programs that meet national needs and international standards in an efficient manner.
- Enrich teaching, learning and outreach activities by drawing on international best practice in the use of new technologies.
- Provide all students with the opportunity at each level of study to interact with senior staff and researchers, and ensure that they gain the educational benefits of research informed and research-based teaching and learning.
- Develop a coordinated, research-informed suite of programs to support equity students to succeed in their studies at all levels in the University.
- Develop objective measures and benchmarks of an outstanding teaching and learning environment and review

Objective 6: Extracurricular

A distinctive, high quality extracurricular experience that maximizes the value to our alumni of their Institute experience

As well as achieving world-ranked qualifications, our students acquire increased independence, lifelong friends, a much broadened world view and – if we get it right – an enduring interest in and affection for their University. These are critical components of the student experience as a whole, and we must be very aware of their importance not only to our students and future alumni, and to the communities they will serve, but also to the reputation and standing of the University. The ability to access University-supported accommodation and to participate in shared extracurricular activities is crucial to the engagement of students with the University, as well as to their academic success. Engagement will in turn lead to lifelong, reciprocal relationships with alumni that connect them to the Institute and to one another.

Measures:

- Outcomes of student satisfaction surveys (extracurricular).

- Outcomes of graduate destination surveys.
- Proportions of graduates who have participated in international learning and research activities abroad and in India.
- -Alumni with whom the Institute is actively engaged.
- Philanthropic support per alumnus.

Key actions:

- Ensure that we have graduate profiles which clearly lay out the desired attributes of graduates and the value that students will obtain from their extracurricular, as well as their academic, university experiences.
- Encourage activities and events that engage students in campus life, and in the unique cultural attributes of Tamil Nadu, India and the Asian Pacific region.
- Collaborate with undergraduate and postgraduate student representatives as requirements for facilities and services that support the social, recreational, cultural and spiritual needs of students are determined.
- Actively engage with alumni to seek their financial, political and societal support for the Institute to benefit future generations of students.



Fig. 10.1.2.5 Extracurricular Activities

Objective 7: Research Perspective

A growing output of excellent research across all our disciplines

High quality research which is reflected through guiding graduate students, peer-reviewed publications, and grant in full range of disciplines. This recognition of research excellence will in turn support the recruitment and retention of high quality staff and students, and enhance Indian's international standing and connectedness.

Measures:

- Increasing number of Ph.D students with URF, CSIR, UGC - JRFs/SRFs
- Number of peer-reviewed research and creative outputs.
- Consecutive increase in high-impact research articles every year
- Proportion of publications authored jointly with international colleagues.
- Increasing the success rates of research grants from both national and International funding agencies such as DST, SERB, DBT, CSIR, DHR, DRDO, ICMR, IEDC, NIH, WHO etc.,
- Increasing community service based research and enhances betterment of both students and state community.

Key actions:

- Establishment of new Research Centers and modern research laboratories
- Ensure that research quality and productivity are key attributes evaluated when academic staff are employed, continued or promoted.
- Invest in professional development activities that will enhance the quality and quantity of research performance across the University.
- Ensure that the importance of maximizing citations and impact is recognized across the Institute and is reflected in publishing behaviors.
- Ensure that our infrastructure is appropriate for the support of research.



Fig. 10.1.2.6 Research perspective

Objective 8: Create vibrant and unique research group

Establishment of New Research Laboratories

The establishment of International Research Center at Kalasalingam University has greatly increased our identity and reputation as a research institution. To further strengthen our research activities, in the next five years we will establish at least four more research centers besides strengthening the existing centers.

- Energy particularly alternate energy and Smart Grid
- Water Technology
- Drug Design and Development
- Computing Sciences with a focus on Security and Big Data Analytics

Center for Energy

As Energy is the need of the hour and the country and the world are looking for alternate source of energy. The thrust areas of the center would be:

- Development of Technology for Performance enhancement of Solar PV System
- Development of Embedded Processor based Smart meter
- Energy Auditing and Energy Management
- Modeling and Controller Design

Center for Water Technology

The existing Center for Water Technology would be further strengthened. The research at this Center will focus on water resources and waste water treatment.

Center for Drug Design and Development

The need for potential new drugs is increasing as there is still a lack of suitable medicines for many diseases. The drug discovery research has taken a new avenue in the post-genomic era. The Center for Drug Design and Development will carry out research in the following dimensions.

- Target Identification and validation
- Lead Identification using Computer Aided Drug Design
- Identification of Lead compounds from natural resources
- Synthesis of novel lead molecules using organic synthesis route
- Lead Optimization

Objective 9: partnerships

Strong partnerships with key organizations and communities which have a positive impact on both parties

An international, research-intensive Institute has many communities which contribute to and draw upon its research, teaching and ideas. The Institute engages with a variety of communities. Reputed research and academic institutes from both national and international are the key partners for national and local employers and businesses. The Institute must continue to strengthen its links with Asia, and enhance engagement with increasingly important Asian communities.

Measures:

- Number of engaged MoU with reputed Institute.

Key actions:

- Identify key partners with whom the University has or can develop strong relationships from within the very wide group of potential partners (including business communities, professional organizations, artistic and creative communities, and partner universities).
- Make available the expertise of the University to key partners.
- Keep partners well informed of the University's strategic direction and performance, and give them the opportunity to play a part in its future development.
- Develop a comprehensive, University-wide alumni engagement program.

Objective 10: infrastructure facility

An infrastructure of the highest quality possible to support our teaching, learning, research, and community engagement

The infrastructural elements that support our core academic and administrative activities – buildings, grounds, plant, equipment, information systems, and libraries – are also crucial enablers of our success. We have committed ourselves to refurbished and new buildings, and of investment in library collections, research and teaching equipment, commensurate with that of the Asia.

Measures:

- Space benchmarks.

- Utilizations benchmarks.
- Benchmarked construction of buildings

Key actions:

- Construction of 3000 seated Auditorium for campus activities
- Construction of tower buildings for faculty and staff quarters for create vibrant research communities
- Ensure that the University's capital planning is guided by appropriate benchmarks of the nature and extent of physical infrastructure provided by peer international universities.
- Ensure that all existing infrastructure is maintained and used as efficiently as possible.
- Continue investment in buildings, plant and equipment at an appropriate level, allowing for the proper maintenance of existing infrastructure and replacement of assets for teaching and research activities.

CASE STUDY ON RESEARCH**KARE providing a growing output of excellent research across all our disciplines**

This case study shows that how KARE improved in Research and Development activities yearwise. KARE has significant improvement by offering University Research Fellowship (URF) for doing Ph.D. students every year along with government-funded projects (CSIR, SERB, DBT, DRDO, and MOEF). In 2017-18 contributed 15 URF and gradually increased 103 Ph.D. students in 2021-22. The 4.22 crores are received during 2017-18, 8.67 crores in 2018-19, 4.25 crores in 2019, and 7.30 crores in 2020-21. Altogether past four years received 24.22 crores from both government and non-government organizations. The output of research publications also gradually increased every year from 2017 (317), 2018 (432), 2019 (1256), 2020 (1278). Therefore, 4 folds of publications are increased over the four years. The faculty with international collaborations are 2017-18 (70), 2018 (107), 2019 (329), 2020 (271), and the collaborations are increased 3 folds during this period.

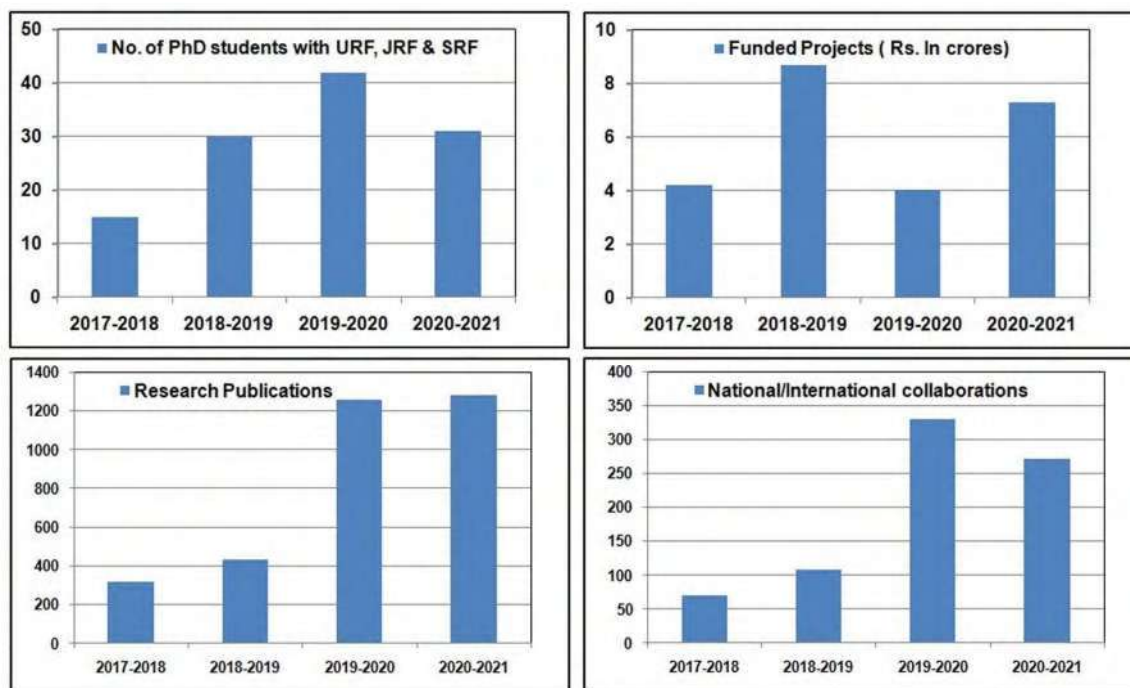


Fig. 10.1.2.7 Research and Development Activities

10.1.3 Governing body, administrative setup, functions of various bodies, service rules, procedures, recruitment and promotional policies (10)

(List the governing, senate, and all other academic and administrative bodies; their memberships, functions, and responsibilities; frequency of the meetings; and attendance therein, in a tabular form. A few sample minutes of the meetings and action-taken reports should be annexed. The published rules including service rules, policies and procedures; year of publication shall be listed. Also state the extent of awareness among the employees/students.)

Response:

1. Chancellor of the institution holds the highest office and is involved in the furtherance of the objectives of the institution.
2. The Vice-Chancellor functions as the Ex-officio Chairperson of all statutory bodies which have specific functions. The Vice-Chancellor exercises powers relating to the governance and administration of the institution and functions as prescribed by the regulations and byelaws and is ably assisted by the Registrar, Finance Officer, Controller of Examinations, Directors, Deans, HOD's, and other teaching and non- teaching staff.
3. The Registrar is the ex-officio Secretary of the Board of Management, the Academic Council and the Planning and Monitoring Board. The Registrar directly reports to the Vice-Chancellor. The Registrar is responsible for the smooth conduct of all administrative activities such as record maintenance, official correspondence, convening meetings and represents the institution in all official meets and legal proceeds
4. The Director-Student Affairs guides and coordinates the activities of the students.

5. The Director (Research and Development) coordinates the research and consultancy activities
6. The Controller of Examinations is responsible for organizing examinations and evaluations.
7. The Director-Accreditation and Ranking carries out the works related to Accreditation and Ranking.
8. The Director-Faculty Affairs and IQAC coordinates the Quality Related activities and Faculty empowerment strategies.
9. The Finance Officer is responsible for the preparation of annual estimates, statements of account for submission to the Finance Committee and ensures mobilization of funds and its proper utilization.
10. The Estate Officer oversees the maintenance and upkeep of the infrastructure facilities. The Public Relations officer ensures communication with the public and press.
11. Every one of the Directors of the Institution is assisted by Deputy Directors.
12. The Heads of the Department Coordinate the Department level Academic and administrative activities.
13. The Class Coordinator of each class is responsible for the overall development of students in his/her class such as organizing seminars/workshops, etc.,
14. The Class Committee Chairperson reviews periodically the progress of the classes, monitors the progress of syllabi coverage and resolves issues related to slow-learners.
15. For a group of 20-25 students, there is a Faculty Advisor who helps the students in getting general advice on the academic programme. Faculty Advisor maintains regular contact with the parents/guardians of their wards.
16. The practice of rotation of HoDs and Deans is taking place once in three years.
17. Every faculty member gets a chance to organize Faculty Development Programmes (FDP), National Conferences/Seminars/Workshops.
18. The faculty members also play a role as Programme Coordinator, Module Coordinator, Course Coordinator, Assistant Wardens and Deputy Wardens to facilitate academic and administrative needs.

Various Statutory Bodies:

1. Board of Management
2. Academic Council
3. Planning and Monitoring Board
4. Finance Committee
5. Internal Quality Assurance Cell

Non-Statutory Bodies:

1. Library Committee
2. Board of Studies

The grievance redressal mechanism comprises of:

1. Anti-ragging cell
2. Women's Empowerment Cell
3. Internal Complaints Committee
4. Anti-Discrimination Committee
5. Grievance Redressal Committee

6. EMGRC

Table 10.1.3.1: Frequency of Meeting

SNo	Name of the Authority	Frequency of meetings
1	Board of Management	4 meetings per Annum
2	Finance Committee	2 meetings per Annum
3	Planning & Monitoring Board	1 meeting per Annum
4	Academic Council	3 meetings per Annum
5	Internal Quality Assurance Cell	4 Meetings per Annum
6	Anti-Ragging Committee	At least One meeting per Annum
7	Internal Complaints Committee	At least One meeting per Annum
8	Anti-Discrimination Committee	At least One meeting per Annum
9	Grievance Redressal Committee	At least One meeting per Annum
10	Board of studies	2 Meetings per Annum
11	Women Empowerment Cell	At least One meeting per Annum
12	Library Committee	2 Meetings per Annum
13	EMGRC	Whenever Required

Table 10.1.3.2: Composition of Board of Management

S.No	MEMBERS	DESIGNATION
1.	Thiru. K. Sridharan	Chancellor
2	Dr. S.Arivalagi, Pro Chancellor	Member – Representing Sponsoring Society
3	Dr. R. Nagaraj, Vice Chancellor, Kalasalingam Academy of Research and Education	Vice Chancellor

4	Dr. G. Swaminathan Retd. Dean, Madurai Medical College, Madurai	Trust Chairman
5	Dr. Chandrakant Kokate Vice Chancellor KLE Academy, Belgaum, Karnataka	Member- Chancellor's Nominee
-6	Dr. Rajkamal Former Vice Chancellor Devi Ahila University, Indore	Member- Chancellor's Nominee
7	Dr. H. Devaraj, Former Vice Chairman UGC	Member – Representing Sponsoring Society
8	Dr. Shasi Anand, Director, Kalasalingam Academy of Research and Education	Member – Representing Sponsoring Society
9	Mr. S. Arjun Kalasalingam Director, Kalasalingam Academy of Research and Education	Member – Representing Sponsoring Society
10	Dr. C. Ramalingan, Dean - FE, Kalasalingam Academy of Research and Education	Member
11	Dr. R. Viji, Dean – KBS, Kalasalingam Academy of Research and Education	Member
12	Dr. B. Subathra, Professor, Department of EIE, Kalasalingam Academy of Research and Education	Member
13	Dr. V. Aruna Janani, Associate Professor, Department of Food Technology Kalasalingam Academy of Research and Education	Member
14	Dr. V. Vasudevan Registrar Kalasalingam Academy of Research and Education	Member Secretary

Rules and Responsibility of Board of Management (BOM):

1. The Board of Management shall be the principal executive authority of the University and, as such, shall have all powers necessary to administer the University subject to the provisions of the University Act and the Statutes made there under; and may make regulations for that purpose and also with respect to matters provide hereunder.
2. The Board of Management shall have the following powers and functions, namely:-

1. To recommend the names of three persons to the Chancellor for appointment as Registrar of the University on the recommendations of the selection committee constituted for that purpose by it and headed by the Vice-Chancellor;
2. A report on the working of the University;
3. Audited Statement of accounts;
4. Budget proposals for the ensuing academic year;
5. To manage and regulate the finances, accounts, investments, properties, business and all other administrative affairs of the University and for that purpose, constitute committees and delegate the powers to such committees or such officers of the University as it may deem fit;
6. To invest any money belonging to the Institution, including any unapplied income, in such stock, funds, shares or securities, as it may, from time to time, think fit, or in the purchase of immovable property, with the like power of varying such investments from time to time; except land acquired or building constructed with the assistance of the Government, in which cases the prior approval of the Government shall be required;
7. To enter into vary, carryout and cancel contracts on behalf of the University and for that purpose to appoint such officers as it may think fit;
8. To provide the buildings, premises, furniture and apparatus and other means needed for carrying on the work of the Institution ;
9. To entertain, adjudicate upon, and if it think fit, to redress any grievances of the officers, teachers, students and employees of the University;
10. To create teaching, administrative, ministerial and other necessary posts, to determine the number and emoluments of such posts, to specify the minimum qualifications for appointment to such posts on such terms and conditions of service as may be prescribed by the Regulations made in this behalf;
11. To appoint examiners and moderators, and if necessary to remove them and to fix their fees, emoluments and travelling and other allowances, after consulting the Academic Council ;
12. To select a common seal for the University;
13. To exercise such other powers and to perform such other duties as may be considered necessary, or imposed on it by or under the University Act.
14. The Board of Management shall meet, at least, once in three months and not less than fifteen days' notice shall be given of such meetings.
15. The meeting of the Executive Council shall be called by the Registrar under instructions of the Vice-Chancellor or at the request of not less than five members of the Board of Management.
16. One-half of the members of the Board of Management shall form the quorum at any meeting.
17. In case of difference of opinion among the members the opinion of the majority shall prevail.
18. Each member of the Board of Management shall have one vote and if there be equality of votes on any question to be determined by the Board of Management, the Chairman of the Board of Management or as the case may be, the member presiding over that meeting shall, in addition, have a casting vote.
19. Every meeting of the Board of Management shall be presided over by the Vice-Chancellor and in his absence by a member chosen by the members present.

20. If urgent action by the Board of Management becomes necessary, the Vice-Chancellor may permit the business to be transacted by circulation of papers to the members of the Board of Management. The action so proposed to be taken shall not be taken unless agreed to by a majority of members of the Board of Management. The action so taken shall be forthwith intimated to all the members of the Board of Management. In case the authority concerned fails to take decision, the matter shall be referred to the Chancellor whose decision shall be final.

Table 10.1.3.3: Members of Academic Council

S.No	Name of the Person	Designation	
1	Dr. Nagaraj Ramarao	Vice - Chancellor	Chairperson, Ex-officio
Dean(s) of Faculties:			
S.No	Name of the Person	Designation	Member
1	Dr. N. Lakshmi Thilagam	Dean - Kalasalingam School of Architecture	Ex-officio
2	Dr.R.Rajam	Dean - School of Bio, Chemical and Processing Engineering	Ex-officio
3	Dr.P.Sivakumar	Dean - School of Electronics, Electrical and Biomedical Technology	Ex-officio
4	Dr.P.Deepalakshmi	Dean - School of Computing	Ex-officio
5	Dr.N.Rajini	Dean - School of Mechanical, Aero, Auto and Civil Engineering	Ex-officio
6	Dr. Jesu Edward George	Dean - Kalasalingam School of Agriculture & Horticulture	Ex-officio
7	Dr.R.Viji	Dean - Kalasalingam Business School	Ex-officio
8	Dr. Dattatri. K. Nagesha	Dean - School of Advanced Sciences	Ex-officio
9	Dr.V.Pandiyarajan	Dean - School of Liberal Arts and Education	Ex-officio
10	Dr. C. Ramalingan	Dean – School of Freshman Engineering	Ex-officio
Heads of the Department			
S.No	Name of the Person	Designation	Member
1	Dr. D. Sivakumar	HoD - Agricultural Engineering	Ex-officio
2	Dr.Vasumathi	HoD - Agriculture	Ex-officio
3	Mr.H.Ahamed Fazeel Akram	HoD - Architecture	Ex-officio
4	Dr.S.Arunvinthan	HoD - Aeronautical	Ex-officio

		Engineering	
5	Dr.Thirumalaikumaran	HoD - Automobile Engineering	Ex-officio
6	Dr.T.Kathiresan	HoD - Biotechnology	Ex-officio
7	Dr.G.Vishnuvarthanan	HoD - Biomedical Engineering	Ex-officio
8	Dr. P. L. Meyappan	HoD – Civil Engineering	Ex-officio
9	Dr. Vikranth Volli	HoD - Chemical Engineering	Ex-officio
10	Dr.K.K.Praneeth	HoD - Chemistry	Ex-officio
11	Dr.K.Kartheeban	HoD - Computer Applications and Computer Science & Information Technology	Ex-officio
12	Dr.S.Karthik	HoD - Commerce	Ex-officio
13	Mr.J.Prabhu	HoD - Catering Science and Hotel Management	Ex-officio
14	Dr.A. Ramkumar	HoD - Electrical and Electronics Engineering	Ex-officio
15	Dr. V.Yogeshwar Chakrapani	HoD - Electronics and Instrumentation Engineering	Ex-officio
16	Dr. S. Remadevi	HoD - English	Ex-officio
17	Ms. A.V. Surabhi	HoD - Forensic Science	Ex-officio
18	Dr. Selvarani	HoD- Horticulture	Ex-officio
19	Dr.S.Dhanasekaran	HoD - Information Technology	Ex-officio
20	Dr.S.Kameshwari	HoD - Mathematics	Ex-officio
21	Dr.V.Arumuga Prabhu	HoD - Mechanical Engineering	Ex-officio
22	Dr. B. Selvakumar	HoD - Physics	Ex-officio
23	Dr.M.Maria Antony Raj	HoD - Social Work	Ex-officio
24	Mr.D.M.Rajan	HoD - Special Education	Ex-officio
25	Dr. K. Karthigadevi	HoD – Ship	Ex-officio
26	Mr.Prabhakar	HoD - Visual Communication	Ex-officio
Professor			
S.No	Name of the person	Designation	Member
1	Dr.S.Sampath	Professor - Computer Science and Information Technology	Member
2	Dr.D.Devaraj	Professor - Electrical and Electronics Engineering	Member
3	Dr.B.Subathra	Professor - Electronics and Instrumentation Engineering	Member
4	Dr.V.Yegna Narayanan	Professor - Mathematics	Member
5	Dr.S. Asath Bahadur	Professor - Physics	Member

Associate Professors			
S.No	Name of the person	Designation	Member
1	Ar.L.Vinu Pandian	Associate Professor - Architecture	Member
2	Dr.Muthukumaran	Associate Professor - Biotechnology	Member
3	Dr.G.Delina	Associate Professor - Business Administration	Member
4	Dr.M.Kalpana	Associate Professor - Electronics and Communication Engineering	Member
5	Dr.K.Suthendran	Associate Professor - Information Technology	Member
Assistant Professors			
S.No	Name of the person	Designation	Member
1	Dr.E.V. Ramkumar	Assistant Professor - English	Member
External Members - Academia			
S.No	Name of the person	Designation	Member
1	Prof.Maniklal Das	Professor, Computer Science, Dhirubhai Ambani Institute of Information and Communication Technology (DA-IICT), Gandhinagar, India	Member
2	Prof.Jagadeesh Gopalan	Professor, Department of Aerospace Engineering, Indian Institute of Science, Bangalore, India	Member
3	Dr.Sharad Mhaikar	Pro Vice Chancellor · NMIMS University	Member
External Members - Industry			
S.No	Name of the person	Designation	Member
1	Shri Vithal Madyalkar	Country Manger - IBM Innovation, Centre for Partners at IBM India Ltd.	Member
2	Shri Venkatesh Prasad	Nanochip Solutions Pvt. Ltd.	Member
Secretary			
S.No	Name of the person	Designation	Member
1	Dr.V.Vasudevan	Registrar	Ex-officio
Permanent Invitees			
S.No	Name of the person	Designation	Member
1	Dr. A. Koteswararao	Director Academics	Ex-officio
2	Dr.M.Pallikonda Rajasekaran	Director - Research and Development	Ex-officio
3	Dr.P.Sarasu	Director - International Relations and Industry	Ex-officio

		Interactions	
4	Dr.M.Muthukannan	Director - Student Affairs	Ex-officio
5	Dr.T.R.Neelakantan	Director - Ranking and Accreditation	Ex-officio
6	Dr.S.Seshadhri Srinivasan	Director - International Research Centre	Ex-officio
7	Dr.C.Sivapragasam	Director - FALT	Ex-officio
8	Dr. R. Ramalakshmi	Director – Centre for Distance and Online Education	Ex-officio
9	Dr.J.T.Winowlin Jappes	Controller of Examinations	Ex-officio

The Academic Council is principal academic body of the Institute and shall subject to the provisions to the Memorandum of Association and the Rules and Bye-Laws shall have the control over and be responsible for the maintenance of standards of education, teaching and training, inter departmental co-ordination, research, examinations and tests with in the Institute and shall exercise such other powers and perform such other duties and functions as may be imposed or conferred upon it by the Rules and Bye-Laws.

Composition of Finance Committee

The functions and duties of the Finance Committee shall be as follows:-

1. to examine and scrutinize the annual budget of the Institution and to make recommendations on financial matters to the Board of Management;
2. to consider all proposals for new expenditure and to make recommendations to the Board of Management;
3. To consider the periodical statements of accounts and to review the finances of the Institution from time to time and to consider re-appropriation statements and audit reports and to make recommendations to the Board of Management;
4. The Finance Committee shall meet at least, twice in every year. Three members of the Finance Committee shall form the quorum.
5. The Vice- Chancellor shall preside over the meetings of the Finance Committee, and in his absence, a member elected at the meeting shall preside. In case of deference of opinion among the members, the opinion of the majority of the members present shall prevail.
6. The constitution, powers and functions of the other authorities which may be declared by the Statutes to be the authorities of the Institution, shall be such as may be prescribed.

Table : 10.1.3.4 Composition of Finance Committee

S.No	MEMBERS	DESIGNATION
1.	Dr. K. Sridharan, Chancellor, Kalasalingam Academy of Research and Education	CHANCELLOR,
2	Dr. R. Nagaraj Vice Chancellor, Kalasalingam Academy of Research and Education	CHAIRMAN Finance Committee
3	Dr. S. Shasi Anand, Vice President, Kalasalingam Academy of Research and Education	MEMBER Nominated by Trust
4	Mr. T. Krishnamoorthy, No.30, 1 st Cross Street, Kasturba Nagar, Adyar, Chennai 600 020.	MEMBER Nominated by Board of Management
5	Dr. G. Swaminathan Retd. Dean, Madurai Medical College, Madurai	MEMBER Nominated by Board of Management
6	Dr. V. Vasudevan Registrar, Kalasalingam Academy of Research and Education	Special Invite
7	Mrs. Sundari Ramakrishnan, Finance Officer Kalasalingam Academy of Research and Education	Member Secretary Finance Committee

Composition of Planning and Monitoring Board:**Table 10.1.3.5: Planning and Monitoring Committee**

S. No.	Name and Address	Designation
1.	Prof. R. Nagaraj Vice Chancellor Kalasalingam University	Chairman
2.	Dr. S. Shasi Anand, Vice President, Kalasalingam University	Member – Nominated by Board of Management
3.	Prof. S.K. Singh, Professor & Dean (AA), Department of Civil and Environmental Engineering, Delhi Technological University, New Delhi 110 042.	Member - UGC Nominee
4.	Prof. P. Gunasekaran Vice Chancellor VIT Bhopal University, Bhopal	Member – Nominated by Board of Management
5.	Prof. S. Sivasubramanian, Former Vice Chancellor, A-3, Lake View Apartment, 1, Anna Nedunchalai, Perungudi, Chennai 600 096.	Member – Nominated by Board of Management
6.	Prof. G. Arumugam, Former Professor, Dept. of Computer Science, MKU, 7/64, Punnagai Illam, Vellington Road, NGGO Colony, Nagamalai, Madurai - 625 010.	Member – Nominated by Board of Management
7.	Dr. D. Devaraj, Dean - SEET & Director – Academics, Kalasalingam University	-do-
8.	Dr. K. Sundar, Dean – SBCE & Director - IRC Kalasalingam University	-do-
9.	Dr. S. AsathBahadur, Director – Student Affairs, Kalasalingam University	-do-
10.	Dr. S. Balamurali, Director – R & D Kalasalingam University	-do-
11.	Dr. C. Sivapragasam, Director (IQAC) Kalasalingam University	-do-

The Planning Board shall be the principal planning body of the University and shall have the following powers and functions:

1. to prepare and recommend short-term and long-term plans of the University;
2. to conduct periodic impact assessment of the educational programmes offered by the University;
3. to recommend new structures to be created in the Institution such as Schools / Centres;
4. to frame structures, rules, norms and processes to facilitate smooth functioning and quality enhancement;
5. to identify and recommend to the Academic Council / Board of Management on new areas of study keeping in view the vision and mission of the University;
6. to develop financial models and recommend ideas for resource mobilization, funding initiatives and fund management;
7. to recommend the principles and policy framework for financial and human resource planning and norms for allocation for various activities of the University;
8. to develop and recommend modes, designs and strategies of instruction, and structures required for these;
9. to plan and review the infrastructure development of the University;
10. to plan and recommend the design framework of comprehensive information system covering all aspects of the functioning of the University;
11. any other work that the Planning Board can take for itself, or which other statutory bodies assign the Planning Board.

EMPLOYEE SERVICE RULE

Employees appointed in KARE are governed solely by the rules and regulations laid down by the Board of Management.

1. Authority

KARE is wholly administered by a Trust and its Board of Management reserves its right to alter or amend or repeal or annul any or all of the rules and regulations.

2. Appointment

1. Qualifications for various posts shall always be in accordance with the norms prescribed by the Board of Management from time to time.
2. Employees appointed shall deposit all the original certificates of their academic qualifications with KARE on the date of joining duty. In cases where original certificates cannot be deposited due to reasons beyond their control, a security deposit equivalent to three months salary and allowances will have to be made on the date of joining. The deposit will be refunded on the date when the employee submits all original certificates.
3. When the employee has to necessarily produce the originals to an external body, the employee shall produce the proof of such a requirement and deposit a sum equivalent to 3 months gross salary (including allowances) of the employee and collect the originals from KARE. The holding of the certificates by the employee in such cases shall not exceed one month from the date of such withdrawal. The deposit amount will be refunded on surrendering all the certificates to KARE.

3. Accountability and Responsibility

1. Employees should maintain punctuality always. They should not leave the campus before the closing time of work for the day without obtaining the permission from the concerned authority.
2. Every faculty shall complete the syllabus for the courses as prescribed by KARE.
3. Every faculty is normally held responsible for the results of the students taught by him.
4. Absence from duty without obtaining prior sanction of leave, or habitual late attendance will amount to gross misconduct attracting summary termination of service.

4. Salary

1. Salary payable to any employee is formulated by KARE from time to time.
2. Salary is credited to the account maintained in the Bank by the employee within 7 working days in the succeeding month.

5. Provident Fund

1. Employees are governed by the Employees Provident Fund Miscellaneous Act 1952.

6. Promotions and Increments

1. Promotions shall be made only on the basis of 'merit and performance.'
2. The Board of Management has the right to prescribe the mode to assess the performance of the employee. Faculty members desires of promotion should apply when the application is called for in the proper format.
3. The eligibility criteria for applying promotion are given in the table below. For Arts and Management, 2 papers in SCIE journal can be equated to 1 book publication through a reputed national level or international publisher. For higher categories of promotion, student feedback and examination results are not mentioned explicitly assuming that the aspirants are experienced teachers.

Table 10.1.3.6: Minimum Expectation for Promotion

Category	Engineering / Technology	Science/Arts/Management
ACP to Professor	Any three of the below <ul style="list-style-type: none"> • 10 papers in SCIE indexed journals maintaining undisputed quality and having impact factors • 2 Ph.D.s produced • 2 research grants received • 4 years of service as ACP 	Any three of the below <ul style="list-style-type: none"> • 10 papers in SCIE indexed journals maintaining undisputed quality and having impact factors • 4 Ph.D.s produced • 2 research grant received • 6 years of service as ACP
APIII to Associate Professor (ACP)	Any three of the below <ul style="list-style-type: none"> • 5 papers in SCIE indexed journals maintaining undisputed quality and having impact factors • 2 Ph.D.s guiding • 1 research grant • 4 years of service as APIII 	Any three of the below <ul style="list-style-type: none"> • 7 papers in SCIE indexed journals maintaining undisputed quality and having impact factors • 1 Ph.D. produced • 1 research grant • 6 years of service as APIII
APII to	Any three of the below	Any four of the below

AP-III	<ul style="list-style-type: none"> • Good feedback from students and 90% results in examinations • Ph.D. qualification • 2 papers in SCIE indexed journals maintaining undisputed quality and having impact factors • 4 years of service as APII 	<ul style="list-style-type: none"> • Good feedback from students • 90% results in examinations • 2 Ph.D.s guiding • 4 papers in SCIE indexed journals maintaining undisputed quality and having impact factors • 6 years of service as APII
API to APII	Any four of the below <ul style="list-style-type: none"> • Good feedback from students • 90% results in examinations • Ph.D. registration confirmed • 2 papers in scopus indexed journals with SNIP • 4 years of service as API 	Any four of the below <ul style="list-style-type: none"> • Good feedback from students • 90% results in examinations • Ph.D. qualification • 2 papers in SCIE indexed journals maintaining undisputed quality and having impact factors • 5 years of service as API

4. When the authorities realise extra-ordinary contributions from a faculty member, fast-track promotion will be conferred without separate application and processing. Fast-track promotion is possible in the case of extra-ordinary performance of faculty member in teaching and/or research and/or administration.
5. DA revisions and increments are decided based on the prevailing situations frequently.

7. Leave

Leave cannot be claimed as a matter of right. The essence of the leave regulations is to enhance the sense of responsibility in a faculty member to impart, without any break, credible and effective teaching to the students given to his or her charge during the academic session. Hence, any leave application expected to state alternative arrangements made for the academic activities. Wherever suitable, the necessity of granting the leave in terms of benefits to the student community and administration of KARE is also to be stated. Granting of any leave is at the discretion of KARE.

1. Faculty members can apply for on-duty leave on their own for a period not exceeding 10 days in an academic year. On-duty leave may be granted to a staff member for attending conferences, Faculty Development Programmes, undertaking examiner-ship in a university, etc. On-duty leave can be availed after getting approval from HoD, Dean and Director-Accreditation and Ranking. During academic teaching session, applying for on-duty leave shall be avoided.
2. By completion of a month of service, an employee is eligible for a casual leave of one day. Employees are permitted to avail 12 days of casual leave in a year (July to June). Casual leave counting start afresh from July of every year and Casual leave is not carried over. However, staff working for admission and administration may be allowed to avail casual leave in special circumstances by the approval of the Vice-Chancellor.
3. The maximum period for which casual leave can be taken is not more than 3 days at a time, except under special circumstances. For more than 3 continuous days of casual leave approval is to be obtained from Vice-Chancellor. Sundays and holidays, when prefixed or suffixed to casual leave, will not count towards casual leave.

4. Employees are expected to avail casual leave with prior approval. Casual leave availed without prior sanction, or refusal of sanction by the competent authority or leave extended beyond the sanctioned period can be treated as leave on loss of pay and repeated such incidents may result in disciplinary action. Employees, after exhausting the casual leave, if required to proceed on leave on loss of pay, shall get prior sanction from the Vice-Chancellor through proper channel, clearly stating the emergency. The Vice-Chancellor treat appropriately the leave on loss of pay availed by the faculty without prior sanction.
5. Those who did not exhaust their casual leave at the end of June of every year are entitled for earned leave equal to $\frac{1}{3}$ rd of the remaining casual leave + 2 day in a year. While casual leave is not carried over to the next year, earned leave can be accumulated to a maximum of 30 days. Earned leave can be encashed at a minimum interval of two years and the approval will be based on budget allocation.
6. Leave on medical grounds with full pay shall be granted to any Employee subject to (i) availability of casual and earned leaves at his credit and (ii) production of a medical certificate from a registered medical practitioner. Such a medical certificate should accompany the requisition for leave. At the time of rejoining duty, a certificate of fitness issued by a registered medical practitioner should be produced. KARE reserves the right to instruct that employee to appear before any medical practitioner for medical examination, before sanctioning the leave and for fitness verification to rejoin.
7. Employees with more than 5 years of service can apply for the earned leave for any unavoidable reasons other than sickness with prior permission. Members of the teaching faculty cannot avail the earned leave while the academic session is in progress. Earned leave can be availed at a maximum of one occasion in a year.
8. Generally circular for vacation leave is issued by the end of odd and even semesters. Faculty member attending to teaching work who have completed three years of services as on 30th June of the year are entitled to vacation leave which shall not exceed 30 days (20 days in summer and 10 days in winter) in an academic year. However, if duties assigned during vacation-leave should be given priority and attended. Faculty members who did not teach at KARE, and those who availed leave on loss of pay in any one or both of the immediate earlier semesters are not entitled for vacation. HoD need to submit and get approval of the vacation leave proposal of all faculty members of the department and ensure that at least $\frac{1}{3}$ of the faculty members are available anytime.
9. Faculty members can be granted study leave and deputed for higher studies. Such a leave shall not exceed 36 months in the whole of the employee's career. In such cases, the employee has to execute an agreement, as prescribed by KARE, to serve KARE for a minimum period which will be not less than three times of the leave availed of from the date of re-joining.
10. Sabbatical leave for research work shall be granted for faculty members with more than 3 year of experience at KARE. The maximum period of sabbatical leave can be 2 weeks. Leave for post doctoral fellowship shall be granted for a maximum of 1 year for faculty members with more than 1 year of experience at KARE. Once availed, the next sabbatical leave may be granted after a minimum period of 2 years considering the outcomes of previous sabbatical leave.
11. No employee shall remain absent after the expiry of his leave period without obtaining prior sanction for extension of leave. Such overstay will be treated as dereliction of duty and attract penalty.

12. All married female employees with more than 3 years of experience at KARE are eligible for maternity leave. Maternity leave with full pay for a maximum of 26 weeks at each instance can be availed by female employees with less than two surviving children.
13. Staff can avail a maximum of 5 days of compensation leave for 'Work on Holiday' (WH) in a year. If a staff is to be assigned WH beyond 5 days in a year, prior written permission should be obtained from Vice-Chancellor stating necessity and the history of WH of the staff in the year.

8. Code of Conduct

1. Employees should maintain absolute integrity and absolute devotion to duty at all times.
2. Those holding responsible posts should maintain independence, and impartiality in the discharge of their duties.
3. Report to superiors the fact of your arrest or conviction in a Criminal Court and the circumstances connected therewith, as soon as it is possible to do so.
4. If any legal proceedings are instituted for the recovery of any debt due from employee or for adjudging employee as an insolvent, is to be reported to the immediate authority.
5. Employees are expected to maintain high ethical standards and honesty; promote the principles of merit, fairness and impartiality in the discharge of duties; maintain accountability; and use resources efficiently, effectively and economically.
6. Employees are expected to refrain from doing anything which is or may be contrary to any law, rules, regulations and established practices.
7. Employees are expected to use the IT infrastructure and facilities for official use only.
8. Employees are expected not to engage in canvassing business of Life Insurance Agency, Commission Agency or Advertising Agency owned or managed by family members or others.
9. Employees are expected to keep away from demonstrations organized by political parties in the vicinity/neighbourhood of Government offices and maintain political neutrality.
10. Employees are expected not to receive gifts from students, parents and subordinates.

9. Seeking other employments, part time work etc.

1. No employee shall accept a paid employment either on part time or advisory basis in any company, educational KARE, mutual benefit societies or any other society or firm or act as an agent either on salary or commission basis.
2. No employee shall, except with the prior sanction of KARE, own wholly or in part, conduct or participate in any business activities including private tuition.
3. Employees applying for higher education and employment in other KAREs should route their application through the proper channel.
4. In cases where applications have been routed through the proper channel, before attending any interview, employee should obtain prior permission from the Vice- Chancellor, through the proper channel. A photo copy of such call letter shall accompany his request.
5. In an academic year only 2 applications seeking employment elsewhere will be forwarded, with a ceiling of 6 applications in his service in this KARE.

10. Publications, Public Utterances etc

1. Employee should not use official position or influence for publication or the sale of books and other publications (written, audio and video) that contain political or other aspersions, objectionable material and views against the policies of the Government.

2. No employee shall be a member of, or be associated with any political party or any organization which takes part in politics nor shall he take part or subscribe or associate or assist in any manner in political movements or activities.
3. No employee shall be a member, representative or office bearer of any association representing or purporting to represent the employee member unless the association shall not indulge in any activities detrimental to the interests, growth and functioning of KARE and the association shall not indulge in any activities defaming KARE or other colleagues or superiors.
4. No employee shall engage himself or participate in any activity that is anti-secular or which tends to create disharmony in any society, or in any demonstration which is prejudicial to the interest of the sovereignty and integrity of India, security of the State and the relationship between State and the Centre, relationship between KARE and the Government both at the Centre and the State.
5. Any employee involved in criminal or civil proceedings shall inform KARE of such proceedings.
6. No employee shall associate and / or participate in any strike or incitement thereto or in similar activities, which shall also include absence from work or instigating others or neglect of duties with the aim of getting a demand accepted by the superiors or KARE.
7. If any question arises, as to whether a membership or activity falls within the scope of this rule, the decision of KARE shall be final and binding.

11. Marriage and Morality

1. No employee shall enter into or contract a marriage with a person having a living spouse. No employee, having a living spouse, shall enter into or contract a marriage with another person.
2. No employee shall engage himself in the activities of a tout.
3. Employees shall endeavour to avoid habitual indebtedness, loss or insolvency. No employee shall indulge in money lending business in KARE.
4. No employee shall involve himself in any act of moral turpitude on his/her part which may cause embarrassment or bring discredit to KARE.
5. As KARE is an educational institution, all employees are forbidden from consuming liquor or narcotics either in the campus or outside the campus while on duty or otherwise. Employee should be a role model to students.
6. Every employee shall maintain absolute integrity and attention to duty at all times and shall do nothing which is unbecoming of an employee of KARE.
7. Employees have a bounden responsibility to protect the dignity and modesty of the employees and students. Any act of moral turpitude reported on any employee shall entail summary termination, after an enquiry. The service certificate shall carry a due endorsement of such moral turpitude.

12. Disclosure of documents and information

No employee shall in the performance of the duties assigned to him release or disclose, directly or indirectly, any official documents or any part thereof or information to any other person to whom he is not authorized to communicate such information or documents.

13. Plagiarism / Intellectual Property Rights

Disciplinary proceedings will be initiated against an employee indulging in plagiarism, violation of intellectual property rights, copyrights and other unlawful activities. If found necessary, such case will be referred to the law-enforcing authority.

14. Strike and Demonstrations

No employee shall associate and / or participate in any strike or incitement thereto or in similar activities, which shall also include absence from work or instigating others or neglect of duties with the aim of getting a demand accepted by the superiors or KARE.

15. Age of Superannuation

1. The age of superannuation shall be 65 years and the member will be relieved from the services at the end of that academic year.
2. KARE reserves its right to extend the service of a superannuated employee on yearly basis and / or appoint superannuated candidate on contract basis.

16. Suspension

KARE has the absolute right to place any employee under suspension for any breach of rules. During the period of suspension, KARE shall pay him subsistence allowance every month at the rate of 1/4 of the basic pay which the employee was drawing at the time of suspension. The pay does not include DA or any other allowance payable to him.

17. Disciplinary Proceedings

1. The Registrar shall be the Disciplinary Authority in respect of all employees and the Vice-Chancellor shall be the Appellate Authority.
2. In case of the Registrar, the Vice-Chancellor shall be the Disciplinary Authority and the Board of Management shall be the Appellate Authority.
3. Any employee aggrieved by the order of the Disciplinary Authority may prefer an appeal to the Appellate Authority within 30 days from the date of the order of the Disciplinary Authority. The Appellate Authority shall pass an order within 45 days on receipt of an appeal from the aggrieved employee. If in any case the delinquent employee seeks adjournment of personal hearing, the ceiling of 45 days shall not apply.
4. If an enquiry is found necessary, an Enquiry Officer shall be appointed by the Vice-Chancellor who shall conduct the proceedings of the enquiry in a venue chosen by the Enquiry Officer. If the venue is other than the campus the delinquent employee shall be entitled to TA as admissible. In the course of an enquiry, the employee has to defend himself. Enquiry Officer may be appointed either from among the members of staff or from outsiders.

18. Punishment

Violation of any of the above rules or regulations in force and are to be framed and implemented from time to time, shall entail termination of service or dismissal without notice.

19. Resignation and Termination

1. The notice given by any employee who intends to leave the service of KARE should be co-terminus with the end of a semester. The end of the semester is generally taken as 30th November or 30th April of every year. However, faculty member should carry out the work of the whole term during the semester to justify the allocation of the students or project.
2. During the first year of service at KARE, any member of staff can leave the service by giving 30 days notice or on payment of 30 days salary in lieu thereof to KARE. Similarly KARE shall also be at liberty to terminate the services of members of staff by serving 30 days notice or on payment of 30 days salary in lieu thereof.

3. After a service of one year, employee can get relieved from services by serving 3 months advance notice to KARE of his intention to leave the services, or by remitting 3 months salary in lieu thereof. The Appointing Authority may either reduce this period or call upon the employee concerned to continue till the end of the academic session in which the notice is received. Similarly KARE shall also be at liberty to terminate the services of members of staff by serving 3 months notice or paying 3 months salary in lieu thereof.
4. Any employee who is desirous of leaving the services when the academic session is in progress (ie. before 30th November or 30th April) will have to pay to KARE an additional compensation of one month salary.
5. The employee who applied for relief from service shall not be granted any leave except casual leave during the notice period.
6. Any employee dismissed or terminated from services for gross misconduct or for inefficiency or insubordination or causing loss of reputation or monetary loss to KARE is not entitled to any Gratuity and / or Superannuation benefits.
7. The Appointing Authority has the power to dismiss or terminate the services of a member for reasons such as gross misconduct, repeated inefficiency records in discharging duties, insubordination, causing loss of reputation, causing monetary loss to KARE, retention in service is considered undesirable due to medical reasons, anytime without any notice and without any payment.
8. The Appointing Authority reserves the right to terminate the services of any employee at anytime without giving prior notice and without assigning any reason thereto.

20. Saving Clause

These rules framed for the conduct of KARE shall supersede the earlier rules if they are not in consonance with the rules presently framed. The rules in force shall be applicable to all the paid employees of KARE.

10.1.4 Decentralization in working and grievance Redressal mechanism (5)

(List the names of the faculty members who have been delegated powers for taking administrative decisions. Mention details in respect of decentralization in working. Specify the mechanism and composition of grievance redressal cell including Anti Ragging Committee & Sexual Harassment Committee.)

Response:

1. KARE follows a decentralized and participative management in decision making.
2. A bottom-up approach is adopted including all stakeholders in planning and execution of activities. In its constant endeavor towards ensuring quality education, the Board of Management, provides valuable suggestions and advice towards holistic growth of the Institution.
3. There are 10 Schools and 27 Departments. Each school is headed by the Dean, while the Departments by the HoD. Schools and Departments are autonomous entities which are entitled to create/amend course curriculum, conduct PAB and BoS meetings, organize regular classes, continuous assessment, student progression, research workshops, guest lectures, approve staff/student leaves, collect feedback from various stakeholders, recommend purchase of required

hardware/software and maintenance of Department Association Finances in a completely decentralized manner

4. ERP software modules developed in-house like Exam Administrative System (EASY), Faculty Information System (FIS), Smart SMS (SSMS), Parents Corner (PACO), Attendance Information and Maintenance System (AIMS), Staff Attendance and Leave Tracking (SALT) and Student Information System (SIS), helps the university in extending the autonomy further in administering various day to day activities seamlessly.
5. The hostel management committee, comprising of student members plays an active role in formulating various hostel policies leading to the comfort of inmates.
6. Class committee comprising of student members and faculty helps the department in efficient deployment and utilization of its resources and time. Students' council further strengthens the process of decision making by providing timely suggestions.
7. Alumni Association contributes its might in various policy making committees such as curriculum review, placement training, IQAC etc.,
8. Various statutory committees such as Anti-ragging, Grievance redressal, Gender equity cell, Women empowerment cell etc., contribute towards framing of policies as prescribed by AICTE/UGC. In addition to the above, Board of Management, Academic Council, Planning and Monitoring Board and Finance Committee comprises of members drawn out from various stakeholders and these committees take active role in nurturing the growth of the university as per its strategic plan.

Functions of Board

Table 10.1.4.1: List the names of the faculty members who have been delegated powers for taking administrative decisions

S.No	Name of the Schools	Dean	Departments	Head of the Department
1	Kalasalingam School of Architecture (KSOA)	Dr. N. Lakshmi Thilagam	Architecture	Ar. H. Ahmed Fazeel Akram
2	School of Bio, Chemical and Processing Engineering (SBCE)	Dr. R. Rajam	Biotechnology	Dr. T. Kathiresan
			Chemical Engg	Dr. V. Aruna Janani
			Food Tech.	Dr. R. Rajam (i/c)
			Agri Engineering	Dr. Jagmohan Meher
3	Dean – School of Electronics, Electrical and Biomedical Technology (SEET)	Dr. Sivakumar Pothiraj	ECE	Dr. Sivakumar Pothiraj (i/c)
			EEE	Dr. A. Ramkumar
			EIE	Dr. Yogeshwar Chakrapani
			BME	Dr. G. Vishnuvarthanan
4			CSE	Dr. P. Deepalakshmi (i/c)
			Stream Coordinators	
			1	Dr. B. S. Murugan

S.No	Name of the Schools	Dean	Departments	Head of the Department
	Dean – School of Computing (SoC)	Dr.P.Deepalakshmi	2	Dr. N. C. Brintha
			3	Mr. R.Rajasubramaniam
			4	Dr. C. Balasubramaniam
			Information Tech	Dr. S. Dhanasekaran
			Computer Applications	Dr. K. Kartheeban
			CS & IT	
5	Dean – School of Mechanical, Aero, Autoand Civil Engineering (SMACE)	Dr. Rajini Nagarajan	Mechanical	Dr. V. Arumugaprabhu
			Automobile	Dr. S. Thirumalaikumaran
			Aeronautical	Dr. S. Arunvinthan
			Civil	Dr. P. L. Meyappan
6	Kalasalingam School of Agriculture & Horticulture (KSAH)	Dr. Jesu Edward George	Horticulture	Dr. K. Selvarani
			Agriculture	Dr. S. Vasumathi
7	Dean – Kalasalingam Business School (KBS)	Dr. R. Viji	Business Administration	Dr. R. Viji (i/c)
			Commerce	Dr. S. Karthik
			Social Work	Dr. M. Maria Antony Raj
			SHIP	Dr. K. Karthiga Devi
8	Dean – School of Advanced Sciences (SAS)	Dr. Dattatri Nagesha	Mathematics	Dr. M. Kameshwari
			Physics	Dr. B. Selvakumar
			Chemistry	Dr. K.K. Praneeth
			Forensic Sc	Ms. A. V. Surabhi
9	Dean – School of Liberal Arts and Education (SLASE)	Dr. V. Pandiyarajan	English	Dr. S. Rema Devi
			Visual Communication	Mr. K. Prabakar
			Catering Science & Hotel Management	Mr. J. Prabhu
			Special Education	Mr. D. M. Rajan
10	Dean – School of Freshman Engineering	Dr. C. Ramalingan		

Table 10.1.4.2: Administrative Portfolio

S.No	Portfolio	Position	Incharge
1	Registrar Office	Deputy Registrar (Public Relations)	Dr. P. G. Gurusamy Pandian
		Deputy Registrar (Nodal Officer)	Dr. B.S. Murugan
		Deputy Registrar (Legal)	Dr. S. R. Srikumar
2	Academics	Director	Dr. Koteswara Rao Anne
3	Student Affairs	Director	Dr. M. Muthukannan
		Deputy Director (Extn. Activities & CCE)	Dr. S. Rajesh (MECH)
4	IQAC, Accreditations & Rankings	Director	Dr. T. R. Neelakantan
		Deputy Director	Dr. V. Pandiyarajan
5	Research and Development	Director	Dr. M. P. Rajasekaran
		Deputy Director	Dr. S. Karthikeyan
6	FALT	Director	Dr. C. Sivapragasam
		Deputy Director	Dr. K. Rajesh (EEE)
7	Examinations	Controller of Examinations	Dr. J.T. Winowlin Jappes
		Deputy CoE (Examinations)	Dr. E. V. Ramkumar
		Deputy CoE (Evaluation)	Dr. Jayato Nayak
8	Corporate Relations	Director	Dr. A. Alavudeen
9	IRC	Director	Dr. S. Seshadri Srinivasan
10	Industry/International Relations/General Administration	Director	Dr. P. Sarasu
		Deputy Director (Branding and Media)	Dr. S. Suprakash
		Deputy Director (Online Marketing)	Dr. T. Senthil Muthukumar
		Deputy Director (Innovation and Entrepreneurship Development Cell)	Dr. J. Deny
11	Admissions	Director	Mr. A. Lingusamy
12	Centre for Distance and Online Education (CDOE)	Director	Dr. R. Ramalakshmi
13	Campus Residence	Director	Dr. J. T. Winowlin Jappes
		Deputy Director (Boys)	Dr. S. P. Balakannan

		Deputy Director (Girls)	Dr. C. Sangeetha
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Grievance and Redressal Mechanism:

A Grievance Redressal Committee has been constituted for the redressal of the problems reported by the Students of the Institution with the following objectives:

- Upholding the dignity of the Institution by ensuring strife free atmosphere in the Institution through promoting cordial Student-Student relationship and Student teacher relationship etc.
- Encouraging the Students to express their grievances / problems freely and frankly, without any fear of being victimized.
- Suggestion / complaint Box have been installed in front of the various Blocks in which the Students, who want to remain anonymous, put in writing their grievances and their suggestions for improving the Academics / Administration in the Institution.
- Advising Students of the Institution to respect the right and dignity of one another and show utmost restraint and patience whenever any occasion of rift arises.

The Committee formally meets to review all cases, prepares a statistical reports about the number of cases received, attended to and the number of pending cases, if any, which require direction and guidance from the higher authorities.

In the case, the complainant not satisfied with the decision of the Committee, they may send their appeals to the “OMBUDSMAN” of the University. The OMBUDSMAN will fix a date for hearing the Complainant which shall be communicated to the Institute and the aggrieved person.

ANTI-RAGGING COMMITTEE

RAGGING IN ANY FORM IS A CRIME

Ragging is totally banned and punishable as per the government order. If any student is found indulging in any sort of ragging or harassment to juniors or other fellow students, inside or outside the campus, bus, hostel, he/she will be dismissed immediately from the university and criminal action will be taken against them as per the rules. Excerpts of TAMILNADU PROHIBITION OF RAGGING ACT 1997 for general

Information

This Act is called the Tamil Nadu Prohibition of Ragging Act 1997. It extends to the whole of the State of Tamil Nadu

Definition

In this Act, unless the context otherwise requires, “ragging” means display of noisy, disorderly conduct doing any act which cause or is likely to cause physical or psychological harm or raise apprehension or fear or shame or embarrassment to a student in any educational institution and includes

- a) Testing ,abusing of playing practical jokes ,on causing hurt to such student
Or
- b) Asking the students to do any act or perform something which such students will not in the ordinary course willingly do

Prohibition of ragging

Ragging within or without any educational institutional is prohibited

Penalty for Ragging

Whoever directly or indirectly commits, participates, in abets or propagates “ragging” within or without any educational institution, shall be punished with imprisonment for a term which may extend to two years any shall also be liable to a fine which may extend to ten thousand rupees.

Dismissal of student

Any student convicted of an offence under section 4 shall be dismissed from the educational institution and such student shall not be admitted in any other educational institution.

Suspension of student

1) Without prejudice to the foregoing provisions, whenever any student complains of ragging to the Hand of an Educational Institution, or to any other person responsible for the management of the educational institution he/she shall inquire in to the same immediately and if found true shall suspend the student who has committed the offence, from the educational institution.

2) The decision of the Head of the Educational institution or the person responsible for the management of the Educational Institution that any student has indulged in ragging under subsection (1) shall be final

DUTIES OF ANTI-RAGGING COMMITTEE

Anti-ragging committee to take all necessary steps require to enforce provision of UGC regulations 2009 in this regard as well as the provision of any law for the time being in force concerning ragging, and also to monitor and oversee the performance of the anti-ragging squad in the prevention of ragging in the institution

DUTIES OF ANTI-RAGGING SQUAD

1. To carryout surprise raids in the hostels and any other places vulnerable to incidents of ragging.
2. To conduct an on-the-spot enquiry into any incident of ragging referred to it by Head of the Institution, members of faculty, members of staff, any student, any parent or guardian, any employee of service provider or any other person. The enquiry report along with recommendations shall be submitted to anti-ragging committee. The anti-ragging squad shall conduct such an enquiry observing a fair and transparent procedure based on the principles of natural justice and after giving adequate opportunity to the student or students accused of ragging and other witnesses to place before it the facts, documents and views concerning the incident of ragging, and considering such other relevant information as may be required.



Ref No: KARE/SA/GR/Circular/20-21/1

Date: 10.07.2020

Circular

An Anti-Ragging Committee consisting of the following is reconstituted for the academic year 2020 – 2021, to prevent the menace of ragging in the University premises.

Sl.No	Name of the Faculty	Designation	Role in ARC
1.	Dr. V. Vasudevan	Registrar	Convener
2.	Dr. P. Sivakumar	Director (Student Affairs)	Co-Convener
3.	Dr. K. Suthendran	Warden	Member
4.	Dr. C. Ramalingam	Dean/ SAS	Member
5.	Dr. S. P. Balakannan	Deputy Director (Campus Life)	Member
6.	Mrs. S. Kavitha	Deputy Director (Student Affairs)	Member
7.	Dr. V. Muneeswaran	Assistant Professor, ECE	Member
8.	Ms. S. Banupriya	Assistant Professor, English	Member
9.	Deputy Superintendent of Police	Srivilliputtur	Member
10.	Tahsildar	Srivilliputtur	Member
11.	Mr. M. Jeyaraj	Reporter, Thinakaran & Tamil Murasu, Srivilliputhur	Member
12.	Mr. D. Jagaveera Pandian	District Information and Public Relation Office Collectorate, Virudhunagar	Member
13.	P. Gokul	IV Year B. Tech / ECE	Member
14.	A. Ragasree	III Year B. Tech / Civil	Member
15.	R. Karthiga Chandran	IV Year B. Tech / Biotech	Member
16.	Gopu Siva Rama Reddy	III Year B. Tech / Mech	Member
17.	Saddikuti Jeevan Reddy	III Year B. Tech / CSE	Member
18.	R Bhuvhanesan	III Year B. Tech / EEE	Member
19.	Mr. R. Jeyakumar	Estate Engineer	Member
20.	Dr. B.S. Murugan	Associate prof, IT	KARE UGC Nodal Officer

To
The Members concerned
cc: to KARE – website i/c. to update the above committee in our website immediately.



VICE CHANCELLOR

Fig. 10.1.4.1 Composition of Anti Ragging Committee



Ref No: KARE/SA/GR/Circular/20-21/2

Date: 10.07.2020

Circular

An Anti-Ragging Squad Committee consisting of the following is reconstituted for the academic year 2020 – 2021, to prevent the menace of ragging in the University premises.

Sl.No	Name of the Faculty	Designation	Role in ASC
1.	Dr. V. Vasudevan	Registrar	Convener
2.	Dr. P. Sivakumar	Director (Student Affairs)	Co-Convener
3.	Dr. S. P. Bala kannan	Deputy Director (Campus Life)	Member
4.	Mrs. S. Kavitha	Deputy Director (Student Affairs)	Member
5.	Dr. Viji	HoD/ MBA	Member
6.	Dr. K. Suthendran	Warden	Member
7.	Dr. M. Sivasubramanian	Dy. Warden – Bhagath Singh Hostel	Member
8.	Dr. P. Aruna Jayanthi	Dy. Warden – Sarojini Naidu Ladies Hostel	Member

To


 VICE CHANCELLOR

The Members concerned

cc: to KLU – website i/c. to update the above committee in our website immediately.

Fig 10.1.4.2 Composition of Anti Ragging Squad



KALASALINGAM

ACADEMY OF RESEARCH & EDUCATION

(DEEMED TO BE UNIVERSITY)



Under sec. 3 of UGC Act 1956. Accredited by NAAC with "A" Grade
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Anti-Ragging Committee (ARC)

No. KARE/SA/ARC/Circular/2019-20/1

Date: 15.7.2019

Circular

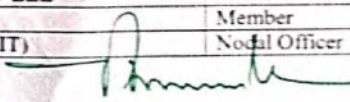
This is to inform the Anti-Ragging committee members that a meeting is scheduled on 16.7.2019 at 4.00 pm in the meeting hall, Admin Block. All the members of the committee are requested to make themselves convenient to attend the meeting.

Agenda:

Discussion about the issues related to ARC

Committee Members:

S.No	Name	Designation	
1	Dr. V. Vasudevan	Registrar	Convener
2	Dr. P. Sivakumar	Director (Student Affairs)	Member
3	Dr. C. Ramalingam	Dean / SAS	Member
4	Dr. S. P. Balakannan	Deputy Director (Student Affairs)	Member
5	Mrs. S. Kavitha	Deputy Director (Student Affairs)	Member
6	Dr. K. Suthendran	Deputy Warden	Member
7	Deputy Superintendent of Police	Virudhunagar	Special invitee
8	Tahsildar	Virudhunagar	Member
9	Mr. M. Jeyaraj	Reporter, Thinakaran & Tamil Murasu, Srivilliputhur	Member
10	Mr. R. Jaya Arulpathi	District Information and Public Relation Office Collectorate, Virudhunagar	Member
11	Mr. K. Balasubramanian	Member, Executive Committee, Parents Teachers Association, KARE	Member
12	Mrs. R. Rajalakshmi	Member, Executive Committee, Parents Teachers Association, KARE	Member
13	Mr. M. Prakash	IV Year B.Tech /ECE	Member
14	Ms. M. Vijayadharsini	II Year B.Tech /ECE	Member
15	Ms. R. GuruPreya	III Year B.Tech / Biotech	Member
16	Mr. R. Rajesh Kanna	IV Year B.Tech /Mech	Member
17	Ms. P. Shruthi	IV Year B.Tech / CSE	Member
18	Mr. S. Srinivas	IV Year B.Tech / EEE	Member
19	Mr. R. Jeyakumar	Estate Engineer	Member
20	Dr. B.S. Murugan	Associate prof (IT)	Nodal Officer


 Convener
 Anti-Ragging Committee (ARC)



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Anti-Ragging Cell (ARC)

No. KARE/SA/ARC/Minutes/2019-20/1

Date: 17.7.2019

Minutes of the meeting of Anti-Ragging Committee

The meeting of Anti-Ragging Committee of Kalasalingam Academy of Research and Education was held on 16.7.2019 at Admin Block Meeting hall. Dr.V.Vasudevan, Registrar, Convener of the committee chaired the meeting to review and strengthen the measures to reduce the threat of ragging in the university for the odd semester 2019-20. In this regard, the ARC has been reconstituted for implementing the same with the following institutions, press media, parents and students as members. The following members attended the meeting.

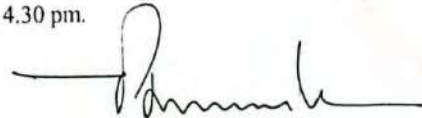
S.No	Name	Designation	
1	Dr. V. Vasudevan	Registrar	Convener
2	Dr. P. Sivakumar	Director (Student Affairs)	Member
3	Dr. C. Ramalingam	Dean / SAS	Member
4	Dr. S. P. Balakannan	Deputy Director (Student Affairs)	Member
5	Mrs. S. Kavitha	Deputy Director (Student Affairs)	Member
6	Dr. K. Suthendran	Deputy Warden	Member
7	Deputy Superintendent of Police	Virudhunagar	Special invitee
8	Tahsildar	Virudhunagar	Member
9	Mr. M. Jeyaraj	Reporter, Thinakaran & Tamil Murasu, Srivilliputhur	Member
10	Mr. R. Jaya Arulpathi	District Information and Public Relation Office Collectorate, Virudhunagar	Member
11	Mr. K. Balasubramanian	Member, Executive Committee, Parents Teachers Association, KARE	Member
12	Mrs. R. Rajalaksmi	Member, Executive Committee, Parents Teachers Association, KARE	Member
13	Mr.M.Prakash	IV Year B.Tech /ECE	Member
14	Ms.M. Vijayadharsini	II Year B.Tech /ECE	Member
15	Ms.R.GuruPreya	III Year B.Tech / Biotech	Member
16	Mr.R.Rajesh Kanna	IV Year B.Tech /Mech	Member
17	Ms.P.Shruthi	IV Year B.Tech / CSE	Member
18	Mr.S.Srinivas	IV Year B.Tech / EEE	Member
19	Mr. R. Jeyakumar	Estate Engineer	Member
20	Dr. B.S. Murugan	Associate prof (IT)	Nodal Officer

The committee was noticeable that UGC regulations on curbing the menace of ragging in higher educational institutions 2019. And other instructions issued as per the directions of the Honorable Supreme Court of India and the Regulations of State Govt. have already been implemented. UGC and State regulations along with measures to be taken for curbing the menace of ragging were circulated to all the UTDs/institutes. Instructions in this regard were also issued to the affiliated/maintained colleges by the Dean of Colleges.

Important points discussed in this meeting are summarized below:

1. To display Flex Boards carrying anti-ragging message along with relevant Telephone Nos at various prominent places on the University Campus. And steps to be taken in our university for curbing the menace of ragging.
2. All Heads, Deans, and Director on the campus of the university will be the responsibilities and take the self-declaration from the enrolled students and their parents during the time of admission.
3. Heads and senior faculty members of the university will address their students and to create the awareness of the anti-ragging mechanism and preventive measures in the university.
4. ARC keep a continuous watch and vigil over ragging to prevent its occurrence and recurrence. And to provide students with the information of contact address and telephone numbers of the person(s) identified to receive complaints/distress calls;
5. ARC consider the complaints received from the students and conduct enquiry and submit a report to the Anti- Ragging Committee along with punishment recommended for the lawbreakers. Oversee the procedure of obtaining an undertaking from the students in accordance with the provisions
6. ARC will periodically review the situation and the information supplied by the ARS and recommended actions as per UGC regulations.
7. Nodal officer will take all necessary measures for prevention of ragging inside the Campus/ Hostels from time to time are properly implemented.
8. Chief warden convenes the meeting to the deputy wardens/ assistant wardens of all the hostels and bring to their notice the necessity of their active involvement in "No Ragging" Programme and put them on 24 hours visit to ensure that no incident of ragging takes place on the campus.

9. CSO will have periodical meetings with their staff to review the position from time to time and to put the information to the Anti-Ragging Committee.
10. With a vote of thanks to the chair, the meeting ended at 4.30 pm.



Convener

Anti-Ragging Committee (ARC)

Copy of the minutes, duly approved by the Vice Chancellor is forwarded to the following for the information and further necessary action:-

- All the members of the committee
- Deans and Directors
- COE and HODs
- Chief Warden and Chief Security Officer

Fig. 10.1.4.3 Sample Minutes on Anti Ragging Committee(Action Taken Report)



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Ref No: KARE/SA/GR/Circular/20-21/6

Date: 10.07.2020

Circular

The Student Grievances Redressal Committee is reconstituted with the following faculty members for the academic year 2020-2021.

- | | |
|---|------------|
| 1. Dr. V. Vasudevan, Registrar | - Chairman |
| 2. Dr. P. Sivakumar, Director - Student Affairs | - Convener |
| 3. Dr. M. Pallikonda Rajasekar, Controller of Examination | - Member |
| 4. Dr.N. Rajini, Director – Academic | - Member |
| 5. Dr.V. Muneeswaran, Assistant Professor, ECE | - Member |
| 6. Ms.S. Banupriya, Assistant Professor, English | - Member |
| 7. Mr. Lingusamy, Admission | - Member |
| 8. Dr. M. Sivasubramanian, Asso. Prof, Auto, Dy. Warden | - Member |
| 9. Mr. Ramharish, Administrative Staff | - Member |
| 10. Mr. R. Jeyakumar, Estate Officer | - Member |
| 11. Dr.B.S. Murugan, KARE UGC Nodal Officer | - Member |
| 12. S. Madhavan, Food Technology, Student | - Member |
| 13. S. Sathyashree, Civil Engineering, Student | - Member |



To

The Members concerned

cc: to KLU – website i/c. to update the above committee in our website immediately

VICE CHANCELLOR

Fig. 10.1.4.4 Composition of Grievance Redressal Committee


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OFFICE OF THE STUDENT AFFAIRS


STUDENTS GRIEVANCES REDRESSAL COMMITTEE

Ref: KLU/SA/SGRC/2018-19/ Circular/004 Date: 7.1.2019

Circular

As per VC instructions, the following committee members are requested to attend SGRC meeting regarding grievances received from the students dated on 8.1.2019 The HODs and Deans are requested to inform the faculty and Student members of their department to attend the SGRC meeting without fail.

Sl.No	Name of the Faculty	Designation	Role in SGRC
1	Dr.P.Venkumar	Professor, Mechanical, Nodal Officer	Member
2	Mr.Jeyakumar	Estate Officer	Member
3	Dr. S. Balasubramanian	Warden, Hostel	Member
4	Tadiboina Chandra Sekhar (9918028029)	I Year B. Tech / AGRI	Student Representative
5	Rasik Ranvir Ramana V (9918001037)	I Year B. Tech / BIO	Student Representative
6	Shaik Astubaigari Sohel Basha (9917005158)	II Year B. Tech / ECE	Student Representative


Dr.S.AsathBahadur
 Convener - SGRC

Copy Submitted to the Chancellor & Director – for Kind Information
 CC: to Registrar and Academic – for Kind information
 CC: to all Deans, Directors and Head of Departments – for Information
 CC: to Committee Members



KALASALINGAM
ACADEMY OF RESEARCH & EDUCATION
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OFFICE OF THE STUDENT AFFAIRS

STUDENTS GRIEVANCES REDRESSAL COMMITTEE

Ref: KLU/SA/SGRC/2018-19/ Minutes/004

Date: 9.1.2019

Minutes of Student Grievances Redressal Committee

The fourth SGRC meeting of the academic year 2018-19, held on 8.1.2019 at 4.10 pm in Director Student affairs office, First floor, Administrative Block, to discuss the grievances received from students regarding availability of north Indian food inside university premises. The following members of the SGRC attended the meeting.

Sl.No.	Name of the Member	Designation	Role of the SGRC
1	Dr.S.AsathBahadur	Director - Student Affairs	Convener
2	Dr.P.Venkumar	Professor, Mechanical, Nodal Officer	Member
3	Mr.Jeyakumar	Estate Officer	Member
4	Dr. S. Balasubramanian	Warden, Hostel	Member
5	Tadiboina Chandra Sekhar (9918028029)	I Year B. Tech / AGRI	Student Representative
6	Rasik Ranvir Ramana V (9918001037)	I Year B. Tech / BIO	Student Representative
7	Shaik Astubaigari Sohel Basha (9917005158)	II Year B. Tech / ECE	Student Representative

Initially the convener welcomed all the members. Afterwards the nature of the grievance received from students was briefed by the chair to the committee members of the SGRC.

Nature of the Grievance: Students requested to provide north Indian food menu in our university mess. Grievance mail received from students dated: 4.1.2019.

The chair put forth the grievance raised by students before SGRC members for open discussion.

- Warden briefed about the day by day North Indian food menu in our university mess and the issue of food to the North Indian inmates.
- Student requested to revise the menu of the North Indian food.
- The chair informed to the hostel wardens and student members to form a mess committee in all hostels and conduct a meeting with group members and come out with

the new North Indian food menu. The food menu must accommodate the food items represented and agreed by the majority of members in the group.

- The dead line for the submission of the revised menu is two weeks from the date of this meeting.
- Hostel warden consented to be the in-charge for conducting meeting and prepare the new North Indian food menu in details.
- Other members of the committee also accepted for the proposed to implement the north Indian food menu in our university hostel.

Resolution:

From the open discussion in the SGRC meeting it is resolved that to provide the North Indian menu food for our hostel students those who are adopted north Indian menu. Breakfast, lunch and dinner menu and timing also be displayed on every hostel mess. The Chair informed the student members that they have to take responsibility on individual hostels and proper mess timing must be followed.

Finally the meeting ended with vote of thanks.



29.01.2017
Dr.S.AsathBahadur
Convener - SGRC

Fig 10.1.4.5 Sample Minutes on Grievance Redressal Committee

10.1.5 Delegation of financial powers (5)

(Institution should explicitly mention financial powers delegated to the Principal, Heads of Departments and relevant in-charges. Demonstrate the utilization of financial powers for each of the assessment years.)

Response:

The Board of Management of Kalasalingam Academy of Research and Education is empowered to delegate any of its powers to the Vice-Chancellor, Registrar, Directors and Controller of Examination, Deans of Schools and Faculty Members.

The Finance Committee of the Institution had approved the delegation of financial powers in its meeting held on 23.12.2016 and the same was ratified by the Board of Management.

The exercise of these powers shall be subject to observance of the prevailing rules and regulations and general or special, conditions prescribed or which may be issued by the Competent Authority.

1. No expenditure on a 'New Item' can be sanctioned without prior approval of the competent authority
2. All purchases exceeding Rs.25000 shall be made through Registrar.
3. All purchase proposals would be processed as per the procedure prescribed in the Purchase Procedures.
4. The Deans of Schools and Heads of Departments will submit the proposals to the Vice-Chancellor/Registrar for administrative approval.

Table 10.1.5.1 General Powers of Authorities

SNo	Authority	Extent of Power
1	Vice Chancellor	Upto Rs.5,00,000
2	Registrar	Upto Rs.2,00,000
3	Directors of Various offices	Upto Rs.50,000
4	Deans of Various Schools	Upto Rs.25,000
5	Head of the Departments	Upto Rs 10,000

10.1.6 Transparency and availability of correct/unambiguous information in public domain (5)

(Information on policies, rules, processes and dissemination of this information to stakeholders is to be made available on the web site)

Response:

The effective governance, leadership and management are evident from its long history of disturbance-free performance in imparting quality technical education. It is mainly because of the highly responsive compact management which gets constant inputs and feedback from the

administrative and academic heads, external experts, alumni, faculty, students, and supporting staff.

The Institution has its own website, URL is: www.kalasalingam.ac.in. The Institution ensures to publish their Vision, Mission and various Quality policy rules, achievements, Mandatory Disclosure as per AICTE etc., in the website.

The Student details such as intake and admitted details and details of Teaching and Non Teaching also published in the website.

The Below table gives the information about various policies published in the website.

Table 10.1.6. Policies and its website links

No.	Policy	Link
1.	Admission policy	http://admissions.kalasalingam.ac.in/
2.	Reservation policy	http://kalasalingam.ac.in/site/reservation-policy/
3.	Cancellation of admission and refund policy	http://kalasalingam.ac.in/site/wp-content/uploads/2020/08/REFUND_UGC-NOTI.pdf
4.	Document retention policy	http://kalasalingam.ac.in/site/wp-content/uploads/2018/03/DOCUMENT-RETENTION-POLICY.pdf
5.	Quality policy	http://kalasalingam.ac.in/site/quality-policy/
6.	Energy Policy	http://kalasalingam.ac.in/site/wp-content/uploads/2019/01/Energy-Policy.pdf
7.	Sustainability Policy	http://kalasalingam.ac.in/site/wp-content/uploads/2019/01/Sustainability-Policy.pdf
8.	Water Conservation Policy	http://kalasalingam.ac.in/site/wp-content/uploads/2019/01/Water-Conservation-Policy.pdf
9.	Recycle Policy	http://kalasalingam.ac.in/site/wp-content/uploads/2019/01/Recycle-Policy.pdf
10.	Transportation Policy	http://kalasalingam.ac.in/site/wp-content/uploads/2019/01/Transportation-Policy.pdf
11.	IPR Policy	http://kalasalingam.ac.in/site/wp-content/uploads/2019/01/IPR-Policy.pdf
12.	Research policy	http://kalasalingam.ac.in/site/wp-content/uploads/2019/06/KARE_Research-Policy.pdf
13.	Consultancy Policy	http://kalasalingam.ac.in/site/wp-content/uploads/2019/01/ConsultancyPolicy.pdf
14.	IT Policy	http://kalasalingam.ac.in/site/wp-content/uploads/2020/02/KARE_IT_POLICY.pdf
15.	Rules and regulations – hostels	http://kalasalingam.ac.in/site/photo-gallery/hostels/
16.	E-Waste Policy	http://kalasalingam.ac.in/site/wp-content/uploads/2019/05/e-waste_policy.pdf
17.	Maintenance Policy	http://kalasalingam.ac.in/site/wp-content/uploads/2019/12/Maintenance-Policy.pdf

10.2 Budget Allocation, Utilization, and Public Accounting at Institute level (15)

Summary of current financial year's budget and actual expenditure incurred (for the institution exclusively) in the three previous financial years. Total Income at Institute level: For CFY, CFYm1, CFYm2 & CFYm3 CFY: Current Financial Year – CFYm1 (Current Financial Year minus 1), CFYm2 (Current Financial Year minus 2), CFYm3 (Current Financial Year minus 3)

Total Income at Institute level: For CFY, CFYm1, CFYm2 & CFYm3

CFY : (Current Financial Year),
 CFYm1 : (Current Financial Year minus 1),
 CFYm2 : (Current Financial Year minus 2)
 CFYm3 : (Current Financial Year minus 3)

Table 1 CFY 2021-22

Total Income: 651438820				Actual Expenditure (Till): 795852268			Total no of Students:6465
Fee:	Govt:	Grants	Other Sources:	Recurring including Salaries:	Non Recurring	Special Projects/Any other, specify	Expenditure per student:
702738015	Nil	Nil	98073102	643710072	229136877	Nil	135011

Table 2 CFYm1 2020-21

Total Income: 651438820				Actual Expenditure (Till): 795852268			Total no of Students:6465
Fee:	Govt:	Grants	Other Sources:	Recurring including Salaries:	Non Recurring	Special Projects/Any other, specify	Expenditure per student:
643354128	Nil	Nil	8084692	600676890	195175378	Nil	123101

Table 3 – CFYm2 2019-20

Total Income: 611724816				Actual Expenditure (Till): 723928400.5			Total no of Students: 6639
Fee:	Govt:	Grants	Other Sources:	Recurring including Salaries:	Non Recurring	Special Projects/Any other, specify	Expenditure per student:
592238539	Nil	Nil	19486277	587390685	136537715.5	Nil	109042

Table 4 – CFYm3 2018-19

Total Income: 643735112				Actual Expenditure (Till): 737877584.75			Total no of Students: 6500
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Fee:	Govt:	Grants	Other Sources:	Recurring including Salaries:	Non Recurring	Special Projects/Any other, specify	Expenditure per student: 6670
635508341	Nil	Nil	8226771	589827337	148050247.8	Nil	113519

Items	Budget ed in 2021-22	Actual Expenses in 2021-22 till	Budget ed in 2020-21	Actual Expenses in 2020-21 till	Budget ed in 2019-20	Actual Expenses in 2019-20 till	Budget ed in 2018-19	Actual Expenses in 2018-19 till	Budget ed in 2017-18	Actual Expenses in 2017-18 till
Infrastructure Built-Up	10250000	101923755	8600000	85877166	8900000	88749515	1000000	94752159	9750000	101108072
Library	8150000	80943822	7900000	79585227	7300000	79632124	7500000	77477146	7900000	81243501
Laboratory equipment	7000000	70519270	6000000	58552613	3750000	34134429	4500000	44415074	5500000	58979708
Laboratory consumables	6500000	6401895	6000000	5742530	4500000	4594024	7000000	6125365	3500000	3309760
Teaching and non-teaching staff salary	4400000	451821066	4000000	397292358	3700000	366901144	3390000	331658742	3650000	363318972
Maintenance and spares	1750000	18290547	2700000	27345307	3000000	28439913	4950000	49718740	3750000	35581880
R&D	1300000	129904877	11925000	123357102	1095000	104245690	1125000	113633148	1343000	135405835
Training and Travel	1000000	10129863	1450000	14656797	1450000	14338171	1600000	15931301	1450000	13386122
Miscellaneous Expenses *	2000000	2911854	3250000	3443168	2000000	2893391	6000000	4165909	3700000	4171062
Others, specify	0	0	0	0	0	0	0	0	0	0
Total	86000000	872846949	7950000	795852268	7300000	723928401	7500000	737877585	7900000	796504913

10.2.1 Adequacy of budget allocation (5)

(The institution needs to justify that the budget allocated over the years was adequate)

Year	Budget	Sanctioned	Utilized
CFY 2020-2021	795000000	795000000	795852268
CFYm1 2019-2020	730000000	730000000	723928399
CFYm2 2018-2019	750000000	750000000	737877585
CFYm3 2017-2018	790000000	790000000	796504913

10.2.2 Utilization of allocated funds (5)

(The institution needs to state how the budget was utilized during the last three years)

The overall budget for the Institution is approved by the Finance Committee and Ratified by Board of Management at the end of each financial year. The budget includes the recurring and non-recurring expenses of various section and departments for the whole year. Finance office takes care of Preparation of purchase orders for purchase of laboratory equipments, teaching aids, furniture, payment of bills and maintaining the various section/ department budget allocation and expenditure etc.,

10.2.3 Availability of the audited statements on the institute's website (5)

(The institution needs to make audited statements available on its website)

The Institution conducts internal and external audits regularly. KARE has qualified Auditors to supervise the Internal Audit Functions and they ensure that all the functions and procedures decided in the Finance Committee/ Board of Management are strictly adhered.

KARE also has qualified external auditors to audit in terms of, transaction audit and compliance audit and submit their reports annually. The reports of both internal and external Auditors are discussed at length in the Finance Committee meeting and recommendations submitted to the perusal of the Board of Management for ratification.

A Compliance report will be prepared based on the Objections and Comments given by the External Auditors. This report will be ratified in the Board of Management every year.

The Audited Statements are displayed on the institution website.

10.3 Program Specific Budget Allocation, Utilization (30)

Total Budget at program level: For CFY, CFYm1, CFYm2 & CFYm3 CFY: Current Financial Year – CFYm1 (Current Financial Year minus 1) CFYm2 (Current Financial Year minus 2) CFYm3 (Current Financial Year minus 3)

Total Income at Institute level: For CFY, CFYm1, CFYm2 & CFYm3 CFY: (Current Financial Year), CFYm1 : (Current Financial Year minus 1), CFYm2 : (Current Financial Year minus 2) and CFYm3 : (Current Financial Year minus 3)

Table 1: CFY 2021-22

Total Budget		Actual Expenditure		Total no of Students: 867	
Non Recurring:	Recurring	Non Recurring:	Recurring	Non Recurring:	Recurring
13030000	54552000	13029700	54338600	15028.48904	62674.27912

Table 2: CFYm1 2020-21

Total Budget		Actual Expenditure		Total no of Students:613	
Non Recurring:	Recurring	Non Recurring:	Recurring	Non Recurring:	Recurring
9207000	40027000	9206988.8	39714356.8	15019.55759	64786.879

Table 3: CFYm2 2019-20

Total Budget		Actual Expenditure		Total no of Students:537	
Non Recurring:	Recurring	Non Recurring:	Recurring	Non Recurring:	Recurring
8295000	33259000	8288079	33197510.8	15434.03911	61820.3181

Table 4: CFYm3 2018-19

Total Budget		Actual Expenditure		Total no of Students:575	
Non Recurring:	Recurring	Non Recurring:	Recurring	Non Recurring:	Recurring
10424800	35677900	10388293.98	35612373.98	18066.598	61934.563

Table 5: Budget Allocation and Actual Expenditure

Items	Budgeted in 2021-22	Actual Expenses in 2021-22	Budget ed in 2020-21	Actual Expenses in 2020-21	Budgeted in 2019-20	Actual Expenses in 2019-20	Budgeted in 2018-19	Actual Expenses in 2018-19
Laboratory equipment	25000	24700	12000	11988.8	240000	233079	1799800	1763293.98
Software	1550000	1522000	1367000	1366556.82	1310000	1310000	1251000	1250762.24
Laboratory consumable	-	-	-	-	73000	72785.8	81000	92181.51
Maintenance and spares	5000	4600	3000	2800	310000	309725	55900	73680
R & D	2012000	1827000	1839000	1530000	1811000	1770000	2425000	2370000
Training and Travel	3200000	3200000	3000000	3000000	120000	100000	120000	100000
Miscellaneous Expenses	100000	100000	100000	100000	100000	100000	120000	100000
Total	6892000	6678300	6321000	6011345.62	3964000	3895589.8	5852700	5749917.73

10.3.1 Adequacy of budget allocation

(Institution needs to justify that the budget allocated over the assessment years was adequate for the program)

In every year, department of ECE allocates conspicuous amount towards laboratory equipment, software, laboratory consumable, maintenance and spares, research and development activities and other professional activities etc.,

The department head will instruct the concerned lab in-charges to prepare a budget plan for the respective labs to give the budget proposal. The head of the department after verification will be forwarded to the institution. The institution monitors the need of the requirement received from each department and hence the budget will be allotted before the commencement of each academic year. The lab incharges provides the non recurring and recurring budget in terms of enhancement of lab feature, laboratory equipment purchase and software for the lab. To meet academic requirement the labs will be established with new equipment and purchase of software license/upgradation of software. Existing labs were upgraded with facilities and ambience were improved. The laboratory also periodically maintained and calibration will be done on regular basis and procurement of laboratory systems with accessories.

The budget allocation towards the research and development in every year has been allotted to meet the following requirements:

Professional development allowances encourages the experienced faculty to encourage their research and development activities such as patent publication, publication of papers in scopus indexed journals and involvement in writing project proposals. As a incentive, they will receive professional development allowances in addition to their monthly salary.

The recruitment process of Full-time Researchers will occur on both even and odd semester of an academic year. The interview process will have both technical test and personal interview. The full time research scholars admitted under university research fellowship scheme will be paid a stipend of Rs. 10,000/- per month. This amount will be incremented up to Rs.18,000/- per month based on the performance of the full time research scholar.

The faculty members are motivated to develop their industrial exposure by attending industry sponsored faculty development program, workshops and industrial lectures. The travelling expenses and registration fee towards conferences will be reimbursed to the faculty. In addition to that students are also given advanced industrial training through Nanochip Solutions Pvt. Ltd., and Tessolve Semiconductors Pvt. Ltd., A large sum of amount is allocated and being used for the same. Various department level activities like value-added course, one credit course, workshops, industrial lectures will be planned for each academic year and activities plan will be submitted to student affairs for the approval process.

In the year 2021-2022, ECE department has signed the MoU with Nanochip Solutions Pvt. Ltd., to provide industry-based teaching continuously for the students. Also, Rs. 15,22,000 was proposed for the TCAD software and Matlab software and licensing

In the year 2020-2021, ECE department has signed the MoU with Nanochip Solutions Pvt. Ltd., to provide industry-based teaching continuously for the students. Also, Rs. 13,66,556 was proposed for the Matlab software and licensing.

In the year 2019-2020, the expenditure of Rs.13,10,000 planned in the purchase of software purchase, Rs. 2,33,079 major equipment purchase and Rs.3,09,025 periodic laboratory equipment maintenance and purchase of accessories.

In the year 2018-2019, the laboratory component purchase has been proposed based on the academic requirements for the students to perform lab experiments and also Rs. 12,50,762 was proposed for the synopsys software purchase for academic and research.

10.3.2 Utilization of allocated funds (20)

(Institution needs to state how the budget was utilized during the last three assessment years)

All the allocated funds have been utilized effectively,

In the year 2021-2022, an amount of Rs. 15,22,000 was spend for the purchase of the following software and licensing

1. TCAD Software license
2. MathWorks-Matlab Online Suite
3. Matlab Grader

The above mentioned was effectively used during the pandemic which helps the faculty, students and research scholars. Matlab online suite helps the faculty and students to perform laboratory experiments/project which in turn enhances the teaching and learning environment with ease and also it helps full time research scholars and faculty to continue their research work and greatly helpful in research and development activities by publishing paper in reputed scopus journals.

To train the students with industry standards to to adopt with the current trends, Rs. 32,00,000 has spend on the industry-based training offered by Nanochip Solutions Pvt. Ltd., Bangalore. They also trained the faculty by conducting faculty development programs. The faculty of ECE utilized the opportunity and helps in improving the teaching and learning process. The students are encouraged to identify their streams at the basic level based on their interests and trained them accordingly. The following streams has been identified and are as follows:

- Embedded System Design and IoT
- Artificial Intelligence for Cyber Security
- RTL Design using System Verilog
- SoC, ASIC and Physical Design

In the year 2019-2020, Rs. 2,33,079 was spend in purchasing the major equipment for the lab ARM development board and its interface as per the academic requirement and Rs. 13,10,000 has been utilized for the purchase of Matlab tool and its toolbox

- Matlab Simulink
- Matlab Bioinformatics Toolbox
- Matlab Control System Toolbox

- Matlab Curve Fitting Toolbox
- Matlab Data Acquisition Toolbox
- Matlab DSP System Toolbox
- Matlab Image Processing Toolbox
- Matlab Instrument Control Toolbox
- Matlab Optimization Toolbox
- Matlab Parallel Computing Toolbox
- Matlab Signal Processing Toolbox
- Matlab Simscape Multibody
- Matlab Simulink Control Design
- Matlab Stateflow
- Matlab Statistics and Machine Learning Toolbox
- Matlab Communications Toolbox
- Matlab Deep Learning Toolbox
- Matlab Embedded Coder
- Matlab HDL Coder
- Matlab HDL Verifier

The faculty were trained in Matlab tool with the help of hands-on training and workshops conducted by the Department of ECE. The students were also benefited with the free online courses offered by them. Also as per the academic requirement Rs. 3,09,025 has been spent in the purchase of spares and maintenance of lab equipment's. An amount of Rs. 17,70,000 was spent on the research and development which includes research awards, PDA and stipend for full time research scholars.

In 2018-2019, Rs. 1763293.98 was spent in procuring the laboratory equipment as per the academic requirement and trainer kit such as

- Zigbee trainer kit
- GPS and Bluetooth trainer kit
- Wi-Fi Trainer kit
- Antenna trainer kit
- ARM trainer kit
- Beagle bone board
- Intel Galileo board
- Spectrum analyser
- Digital storage oscilloscope

Asia Pac advanced TCAD Software was purchased for an amount of Rs. 12,50,762.24 for research and academic activities. An amount of Rs. 2,37,0000 was spent on the research and development which includes research awards, PDA and stipend for full time research scholars.

In 2017-2018, an amount of Rs. 4,48,380 was spent for the purchase of laboratory equipment such as Microwave antenna trainer setup

- Microwave power meter
- Fiber optics LED and PIN photo diode setup.
- Digital storage oscilloscope

- Arduino Boards

An amount of Rs. 5,78,860 was spent for the software purchase of CST studio suite and it was utilized by the faculty, students and research scholars for academic and research. In addition to that Rs. 26,10,000 was spent on the research and development which includes research awards, PDA and stipend for full time research scholars.

10.4 Library and Internet (20)

10.4.1 Quality of learning resources (hard/soft) (10)

- Relevance of available learning resources including e-resources
- Accessibility to students
- Support to students for self-learning activities

RESPONSE:

The Central Library is a two storied building with a built-up area of more than one lakh square feet and fully air-conditioned with a seating capacity for 1000 users. It functions between 9.00 a.m. to 9.00 p.m. A well-equipped stacking of books in various domains to meet the institution's objective of providing high quality education is available. Library services have been automated using the Open-Source Integrated Library Management Software *Koha*. The library is providing an evolving technology environment with effective tools and services for the discovery and delivery of information to our users and comfortable space for individual study and learning, equipped with appropriate infrastructure. Also, CCTV security system and a fire alarm system for protection against fire are available.

The library provides 37800 sq. ft space for reading area, 3150 sq. ft. space for E-Library and Media Resource Centre, 2800 sq. ft. for Video conferencing Hall, 560 sq. ft for printing and reprography, 360 sq. ft. for Discussion room and the remaining space for stack of reading materials and other sections for the effective functioning of the library.

The faculty members can borrow 10 books (5 books for 14 days with 2 renewals and 5 books for 180 days without renewal), UG students can borrow 4 books for 14 days with one renewal, PG students, Research scholars are allowed to borrow 5 books for 14 days with one renewal and non-teaching staff are allowed to borrow 4 books with one renewal.

Facilities and Services

Print resources

- Stacking more than 99000 volumes of books in engineering, management, advanced sciences, agriculture, architecture, arts, humanities and general.
- 282 national and international print journals and magazines are subscribed.
- For reference of research scholars, 255 Ph.D. theses, 3900 bound volumes of periodicals and 5708 Project Reports are available.
- Newspapers in English and Tamil languages to keep our users abreast with the news and current affairs of national and international importance are subscribed.

- Resource cell for competitive examinations.

E-Resources

- E-resources comprising of 4700+ e-journals from IEEE, Science Direct, DLINE, SAGE etc and 71000+ e-books from ProQuest, Springer and ScienceDirect are subscribed.
- Access to Scopus, India Business Insight database (IBID), RAXter Research Assistant (Literature review and analysis tool) and DELNET discovery portal is facilitated.
- Access to the free resources provided through National Digital Library of India.
- Video and web courses developed by IITs under NPTEL have been procured and access to the contents is provided over the campus network.
- 32 DTH Channels under Swayam Prabha for MOOC Courses.
- E-Library and Media Resource Centre for accessing online resources.

Access to E-Resources

- IP based unrestricted access is given to the e-resources through intranet so that the content can be accessed by the users from anywhere in the campus.
- Remote access facility is provided to the e-resources through *Shibboleth* authentication to access them outside the campus.

Digital Library

- The library has 67 computers to support the users to search and read documents.
- Institutional Digital Repository – has been created using Open-Source Software ‘DSpace’ for disseminating the scholarly contents created at our institution and access is given through intranet.
- The digital versions of the Ph.D. theses submitted to the institution are uploaded in the INFLIBNET *Shodhganga* repository, a reservoir of Indian theses, to provide seamless access to the research community.
- Bulk registration of faculties and students as members of National Digital Library of India.
- Universal Digital Library (UDL) Project - Our institution is one of the partners of the UDL project led by Carnegie-Mellon University (CMU), USA. Under this project, we digitised more than 4000 rare-books and palm leaves ([click here for list](#)) which are now available online for free in the UDL website (<http://ulib.isri.cmu.edu/ULIBAboutUs.htm#partnersBkMark>).

Institutional Memberships

- DELNET membership for resource sharing under Inter Library Loan and access to the free e-resources available at its portal.

- Shodhganga membership for uploading theses submitted by the research scholars in the Shodhganga thesis repository for supporting open access initiative.
- eShodhSindhu membership for subscribing e-resources in the prices negotiated by the consortium.
- National Digital Library of India (NDLI) membership for having access to the free resources available at NDLI.

Automation

- Library services have been automated using Koha ILMS.
- The books have been barcoded due to its speed, accuracy and reliability in the circulation system.
- WebOPAC (Online Public Access Catalogue) facility for accessing the availability of the books, renewing books online and submitting purchase suggestions through ILMS.
- Alert services for new arrivals of books and journal issues.
- Online Renewal
- Koha OPAC provides other details such as links to e-resources, memberships, details of borrowing facility, borrowing rules, etc.

Plagiarism Detection System

- Plagiarism detection systems such as URKUND and iThenticate are made available for promoting authentic, genuine and quality research works.

Reprography facilities

- Printing, reprography and document scanning.

Other facilities

- Discussion room
- Own book reading
- Video conferencing cum virtual learning hall

10.4.2 Internet (10)

- Name of the Internet provider: JIO and BSNL
- Available bandwidth: 2GBPS
- Wi Fi availability: Whole Campus is enabled with Wi-Fi including Hostel and Library.
- Internet access is available in labs, classrooms, library and offices of all Departments
- Security arrangements:

Firewall:

1. The campus network of KARE is protected by the state of the art SOPHOS firmware system to protect our network traffic.
2. Every user of network is provided with username and password so as to have privacy and security while accessing data.
3. Content filtering is enabled through firewall to protect students from accessing illegal and malicious contents thereby securing the system.
4. Students and employees who are doing projects which needs a bypass from firewall are given access through proper channel.
5. Dynamic Host Configuration (DHCP) is enabled inside KARE for addressing majority of internet users. Sensitive users are given with Static IP addresses. Backup of rules and policies in firewall is automatically taken on daily basis thereby providing disaster recovery.
6. The network traffic and bandwidth inside the sensitive centers inside KARE is managed through firewall. Dedicated personnel are available to maintain Firewall firmware.

Security through Software Usage

1. Pirated Softwares bring the risk of data insecurity. So KARE encourages to go for Standard proven Open source technologies and Freeware.
2. In cases where there is a need to purchase proprietary softwares, licensed software purchase is encouraged for all department specific softwares.
3. SOPHOS antivirus software is available in KARE to protect the standalone systems.
4. Piracy in operating system is prohibited in KARE, so that every system has an updated version of state of the art OS, thereby secures the data and reduces the risk of failure.
5. KARE provides official email to all students and employees. KARE email uses Google email server GMAIL, which is very much secured and proven email server, thereby email communication and recovery of email content is made easy and secure.
6. KARE encourages extensive use of proven software products from Google such as forms, classroom, and drives for storing sensitive information and sharing information. Information sharing through whatsapp is also encouraged inside campus since it comes with highly secured encryption technology.

Disaster Prevention and Recovery

1. Servers, Firewall firmware, network switches and other IT hardware of KARE are periodically serviced.
2. RAID backup and needed cloud back up is enabled in servers so that recovery is made easy in case of any disasters. Firewall rules and policies are also backed up periodically.

Power Backup for IT Infrastructure

1. Entire academic area of KARE campus is supported by total 7 Diesel Generators with capacity (380kVA – 1no, 250kVA – 2nos, 180kVA – 3nos and 125kVA – 1no)
2. All IT infrastructure of campus comes under dedicated power backup supported by Diesel generators and Battery Powered Uninterrupted Power Supply Systems (UPS).
3. Estate personnel of campus maintain the power backup infrastructure of the campus.