

SELF ASSESSMENT REPORT (SAR)

For Accreditation of Undergraduate Engineering Program

(TIER-I)

Submitted by



INFORMATION TECHNOLOGY

KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION

(DEEMED TO BE UNIVERSITY)

Anand nagar, Krishnankoil - 626 126

SAR Contents

Criteria No.	Criteria	Mark/Weightage	Page number
Program Level Criteria			
1	Vision, Mission and Program Educational Objectives	50	9
2	Program Curriculum and Teaching –Learning Processes	100	23
3	Course Outcomes and Program Outcomes	175	153
4	Students’ Performance	100	199
5	Faculty Information and Contributions	200	249
6	Facilities and Technical Support	80	329
7	Continuous Improvement	75	358
Institute Level Criteria			
8	First Year Academics	50	398
9	Student Support Systems	50	444
10	Governance, Institutional Support and Financial Resources	120	489
	Total	1000	

PART B: Criteria Summary

Criteria No.	Criteria	Total Marks	Institute Marks
1	Vision, Mission and Program Educational Objectives	50	50
2	Program Curriculum and Teaching –Learning Processes	100	100
3	Course Outcomes and Program Outcomes	175	175
4	Students' Performance	100	80.01
5	Faculty Information and Contributions	200	194.44
6	Facilities and Technical Support	80	80
7	Continuous Improvement	75	75
8	First Year Academics	50	46.86
9	Student Support Systems	50	50.00
10	Governance, Institutional Support and Financial Resources	120	120
	Total	1000	971.31

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)	2022	2025	No	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)	--	--	No	4
B.Tech. Automobile Engineering	UG	2011	2011	60	Yes	30	Not accredited (specify visit dates, year)	--	--	No	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)	--	--	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. 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)	--	--	No	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	--	--	Yes	4
B.Tech. Mechanical Engineering	UG	2007	2007	180	Yes	120	Granted accreditation for 6 years for the period (specify period)	2017	2023	No	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	--	--	Yes	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
M.Tech. Industrial Safety & Engineering	PG	2011	2011	12	No	12	Applying first time	--	--	Yes	2
M.Tech. Manufacturing Engineering	PG	2014	2014	12	No	12	Not accredited (specify visit dates, year)	--	--	No	2
M.Tech. Renewable Energy Technologies	PG	2015	2015	12	No	12	Not accredited (specify visit dates, year)	--	--	No	2
M.Tech. Structural Engineering	PG	2015	2015	12	No	12	Applying first time	--	--	Yes	2
M.Tech. VLSI Design	PG	2007	2007	12	No	12	Eligible but not applied	--	--	No	2
M.Tech. Automotive Systems Engineering	PG	2009	2009	12	No	12	Not accredited (specify visit dates, year)	--	--	No	2
MCA. Computer Applications	PG	2007	2007	30	No	30	Not accredited (specify visit dates, year)	--	--	No	2
MBA. Business Administration	PG	2007	2007	120	No	120	Not accredited (specify visit dates, year)	--	--	No	2
MBA. Insurance and Risk Management	PG	2007	2007	18	No	18	Not accredited (specify visit dates, year)	--	--	No	2
B.Tech. Civil Engineering	UG	2007	2007	60	Yes	60	Granted accreditation for 3 years for the period (specify period)	2020	2023	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)	2022	2025	No	4
B.Tech. Electronics and Communication Engineering	UG	2007	2007	300	Yes	240	Granted accreditation for 6 years for the period (specify period)	2022	2028	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	--	--	Yes	4

8 Programs to be considered for Accreditation vide this application:

S No	Level	Discipline	Program
1	Under Graduate	Engineering & Technology	Foodtechnology
2	Under Graduate	Engineering & Technology	Information Technology
3	Post Graduate	Engineering & Technology	Biotechnology
4	Post Graduate	Engineering & Technology	Industrial Safety and Engineering
5	Post Graduate	Engineering & Technology	Structural Engineering

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

CRITERION 1	VISION, MISSION AND PROGRAM EDUCATIONAL OBJECTIVES	50
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1.1 State the Vision and Mission of the Department and Institute (5)

Vision of the INSTITUTION

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

Mission of the INSTITUTION

- 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.

Vision of the DEPARTMENT

- To be a department of repute offering programmes in frontier areas of IT through quality education, research and imbibing societal values.

Mission of the DEPARTMENT

- To provide quality education through effective curriculum and innovative teaching.
- To facilitate conducive learning environment for students and faculty to investigate, apply and transfer knowledge.
- To instill the ethical behavior and social responsibilities to provide sustainable information technology solutions.

(B): Appropriateness/Relevance of the Statements

Information Technology department is moving forward to reach the Vision and Mission of Institute (KARE) in all intellectual way to meet the desire expectation of the emerging society needs bounded to the thrust area.

Table: 1.1. Comparison of Key components in Vision and Mission statement of university and department

<div style="text-align: center;"> Institute Department </div>			University's Vision & Mission Key Components				
			Vision		Mission		
			University of Excellence	Education and Research	Scholarly teaching-learning ambience	Promote research and create knowledge	Innovators and leaders
Key Components	Vision	Quality Education	✓	✓			
		Research and imbibing societal values	✓	✓			
	Mission	Quality education			✓		
		Innovative teaching			✓		✓
		Conducive learning facilities			✓	✓	
		Ethical behavior			✓		✓
		Social responsibilities				✓	

The mapping of key components appeared in the vision and a mission statement of institute and department is presented in Table 1.1. From Table 1.1 the degree of appropriateness/relevance between the vision and mission statement of institute and department was found to be significantly relevant.

In a similar manner Vision and Mission statements of Information Technology department are qualified based on the statement of institute Vision and Mission. Table 1.2 shows the consistency of the department vision and mission with the institute statement.

Table: 1.2. Consistency of the Department statements with the Institute statements

<div style="display: flex; align-items: center; justify-content: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Institute</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Department</div> </div>	<u>University Vision</u>	<u>University Mission</u>
	<p>To be a University of Excellence of International Repute in Education and Research.</p>	<p>To provide a scholarly teaching-learning ambience which results in creating graduates equipped with skills and acumen to solve real-life problems.</p> <p>To promote research and create knowledge for human welfare, rural and societal development.</p> <p>To nurture entrepreneurial ambition, industrial and societal connect by creating an environment through which innovators and leaders emerge.</p>
<u>Department Vision</u>	Substantial	-----
<u>Department Mission</u>	-----	Substantial

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

The Information Technology department has established the benchmark in higher education and advancement of research to the benefits of Information Technology students through outcome based quality education. Based on the outcome of brain storming sessions, the following Program Educational Objectives (PEO's) are formulated to fulfil the desired vision and mission statements of the Information technology department.

PEO-1:

- The graduates will be successful IT professionals in their chosen area and / or pursue higher studies.

PEO-2:

- The graduates will comprehend, analyze, design and create novel products and technologies that provide sustainable solutions.

PEO-3:

- The graduates will demonstrate multidisciplinary knowledge, personal and interpersonal skills and work as an effective team member with ethical standards.

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

Stakeholders: Table B.1.3a shows the list of stakeholders and their relevance

Stack holders and their relevance		
S. No	Name of Stake holder	Relevance
1	Students	<ul style="list-style-type: none"> • Directly involved • Their placement will indicate the success of programme. • Their feedback will help in improving the programme.
2	Faculty Members	<ul style="list-style-type: none"> • They are responsible for quality delivery of programme • They are involved in designing the curriculum and establishment of program outcomes • They define the course outcomes and ensure their assessment.
3	Parents	<ul style="list-style-type: none"> • They have aspirations of good higher education and good placement for their wards.
4	Employer	<ul style="list-style-type: none"> • They provide industrial training and placement to the students and thus they are main users of the talent of the graduates • Their feedback helps in improving the contents of programme. • Their feedback fills the gap between expectation of industry and institutional curricula.
5	Alumni	<ul style="list-style-type: none"> • They are the ambassadors of the programme. • Their feedback helps in re-designing and improving the curricula and infrastructure in the institute • They are helpful in providing guidance and placement to their juniors

Publication and dissemination of vision, mission and PEOs are shown in Table B.1.3b

Table B.1.3b Publication and dissemination of vision, mission and PEOs

Publication and dissemination of vision, mission and PEOs			
S.No.	Media type	Publishing Vision Mission	Stakeholders
1	Electronic Media	University Website Online Departmental Magazine Class Committee meeting	Government Regulatory Bodies Students Faculty/staff
			Industry/ employers Public Alumni Parents
2	Display Media	HOD's office, Departmental Library	Students Faculty/Staff Industry/ employers Parents
		Department Notice Boards, Class committee meeting	Students Faculty/staff
		Activity (conference, FDP, Seminar etc.)	Students Faculty/staff Industry Experts Public
		All the Classrooms/Labs	Students Faculty/staff
3	Print Media	Department Information Brochure	Students Faculty/staff Parents
		Placement Brochure, IAB, AAB	Industry Experts
		Departmental meetings, Faculty Course File/ Board of Studies (BOS) meeting, Academic Council Meeting	Faculty/ staff
		Laboratories /Lab manuals	Students Faculty/staff

Some of the photographic evidence of the aforementioned category appended below.

1. Class Rooms:



2. Laboratories



3. HoD Chamber



Evidence**1. University Website:**

<https://kalasalingam.ac.in/site/academics-2/departments-z/department-information-technology/>

The Vision, Mission and PEO's of the Information Technology program have been disseminated to various stakeholders in the following ways:

- 1. Parents-** Call Letter and Parents Teachers Association meeting invitations.
- 2. Alumni-** During Alumni Advisory Board meeting and Alumni day celebrations.
- 3. Industry-** Industrial expert's lectures and Industrial Partners when they visit our university.
- 4. Faculty-** Department meetings, Class committee meeting
- 5. Professional Bodies-** Conducting events in association with industries.
- 6. Society-** Vision, Mission and PEO's are printed in the admission brochure and in admission information centers.

The significance of awareness about the vision, mission and PEO was evaluated based on feedback rating by Internal and External Stakeholders.

Table: 1.4 Indicators Feedbacks with descriptive element of stakeholder's response

S.No	Indicators Feedbacks	Average feedback Indicators of Stakeholders	Descriptive element of stakeholder's response	
			Aware	Much Aware
1	Parents	85%	✓	
2	Alumni's	95%		✓
3	Industrial Experts	80%	✓	
4	Employer	90%		✓
5	Professional Society	85%	✓	
6	Faculties	100%		✓

1.4 State the process for defining the Vision and Mission of the Department, and PEO's of the program (15)

Process of defining Vision and Mission of the Department:

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.

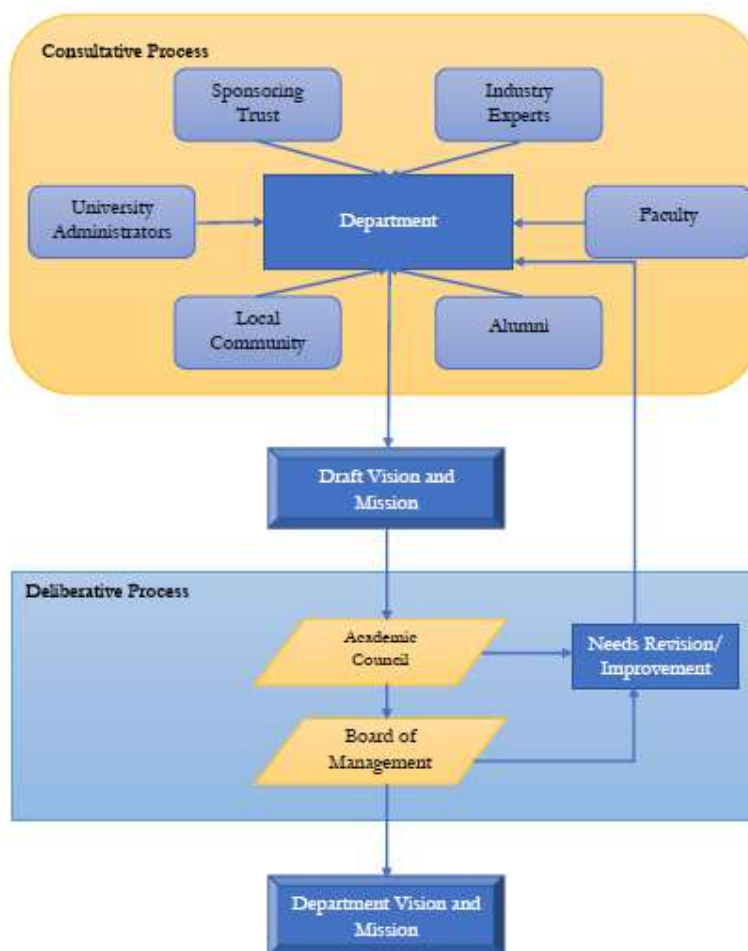


Fig. 1.1.4.1 Process of defining the Vision and Mission of the Department

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.

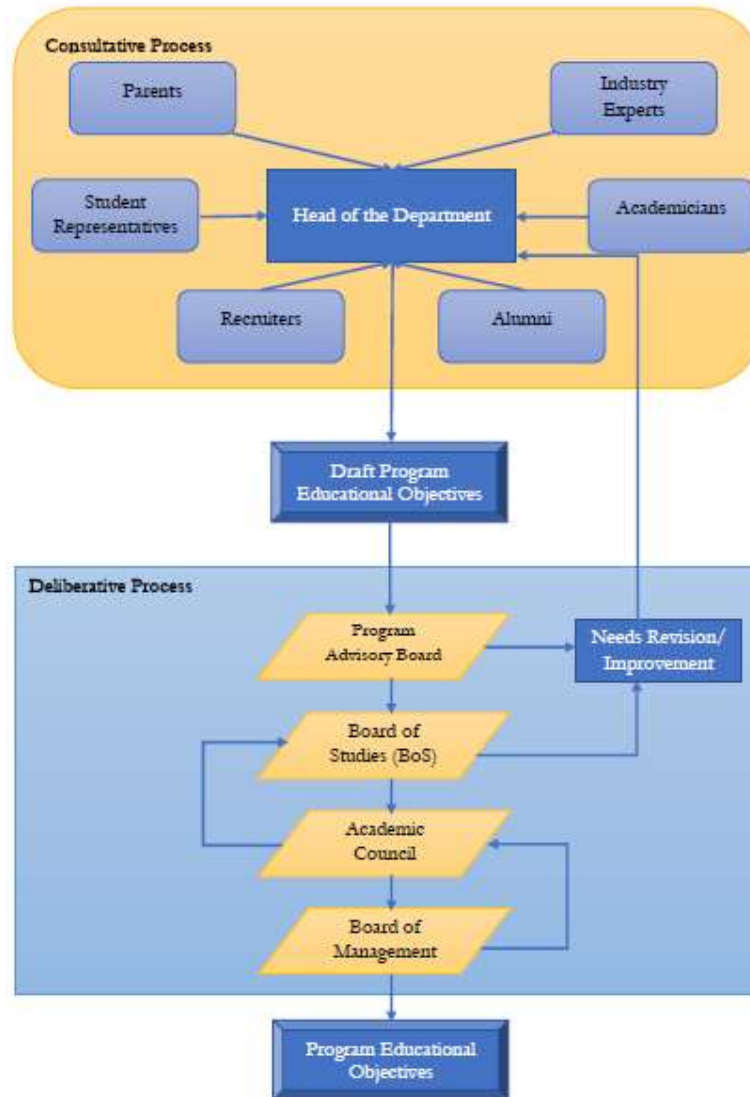


Fig. 1.1.4.2 Process of defining the Program Educational Objectives (PEOs) of the Program

1.5 Establish consistency of PEO's with Mission of the Department (10)

Table 1.5 Shows the consistency of PEO with the elements of mission statements. Accordingly, the mapping of PEO and mission elements was done in terms of level of correlation. Generally, the level of correlations is described as Substantial (3), Moderate (2) and Low (3) to indicate the degree of appropriateness.

Table 1.5 Degree of consistency between PEO and elements of mission statement

PEO Statements	M1	M2	M3
PEO-1: The graduates will be successful IT professional in their chosen area and / or pursue higher studies.	2	3	1
PEO-2: The graduates will comprehend, analyze, design and create novel products and technologies that provide sustainable solutions.	3	3	2
PEO-3: The graduates will demonstrate multidisciplinary knowledge, personal and interpersonal skills and work as an effective team member with ethical standards	3	2	3

Note: M₁, M₂, M_n are distinct elements of Mission statement. Enter correlation levels 1, 2 or 3 as defined below:

1: Slight (Low), 2: Moderate (Medium), 3: Substantial (High), If there is no correlation, put “-”

The PEO elements are mapped with elements of Mission statements. The correlations exist between these elements and their justifications are shown in Table 1.6

Table 1.6 Correlations between the PEO and Mission Statements

Key Components in Department Mission	PEO1	PEO2	PEO3	Justification
Quality Education through effective curriculum	3	2	-	To make students competent for professional career in IT & higher studies.
Innovative Teaching	1	-	3	To build strong fundamental knowledge through new teaching methods.
Conducive learning	1	3	2	To provide creativity and problem

environment				solving skills for sustainable development.
Ethical behavior and Social responsibilities	1	-	3	To nurture students to be sensitive to ethical, societal & environmental issues while carrying out their professional work.

Table 1.7.: Justification for PEO Mapping with Mission

PEOs	Consistency with Institution Mission Key elements	JUSTIFICATION
PEO-1	KE1: Quality Education KE2: Needs of industry and Higher education	Graduates will learn technical knowledge, find solution for potential problems and they become expertise in the specific domain.
PEO-2	KE1: Quality Education KE2: Research KE4: Innovative Skills KE5: Communication Skills	Graduates will enhance their creativity and problem-solving skills for sustainable development. Graduates will enhance their professional development towards social commitments through proper communication skills and life-long learning attitude.
PEO-3	KE3 Multidisciplinary knowledge, Ethical Practices KE5: Interpersonal Skills	Graduates will enrich their knowledge, through proper communication skills and social commitment to addresses the social and national scientific needs with the international community

2. PROGRAM CURRICULUM AND TEACHING – LEARNING PROCESS (100)

2.1 Program Curriculum (30)

2.1.1. State the process for designing the program curriculum

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 is depicted in fig. 2.1.1.1.

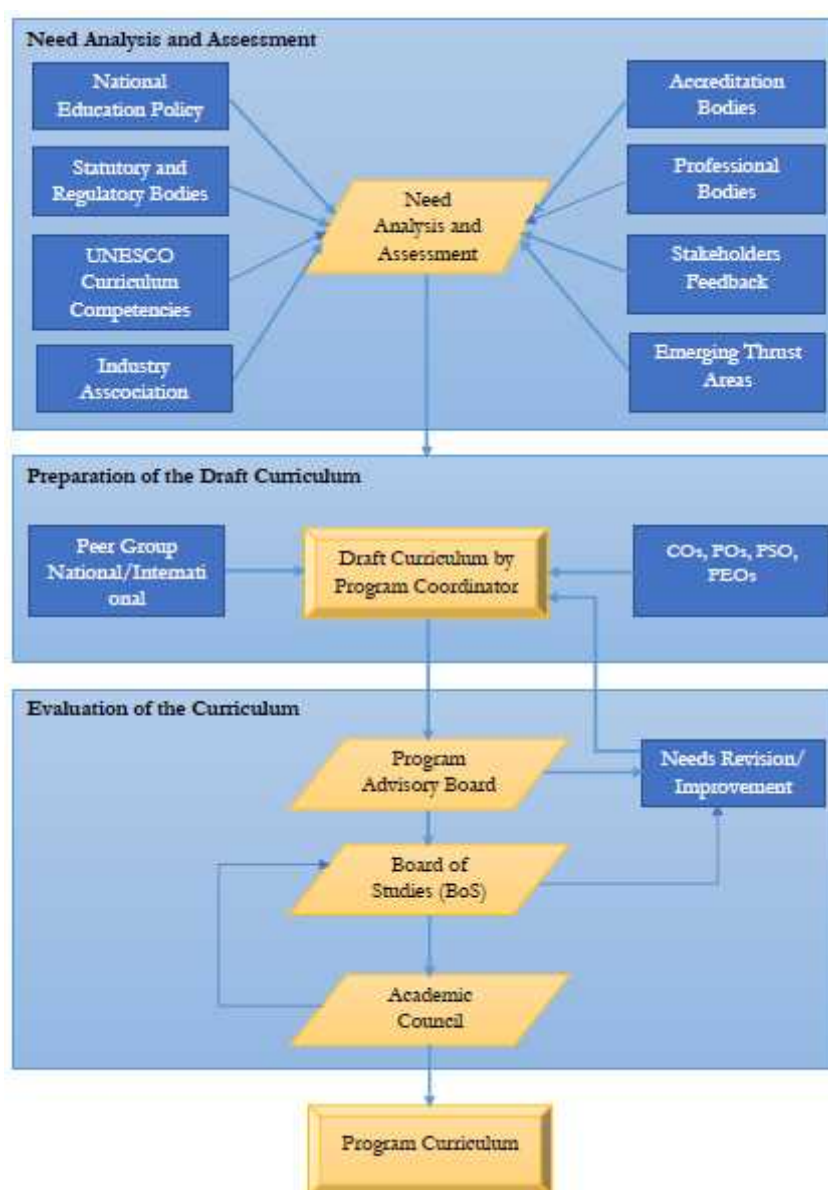


Fig. 2.1.1.1 Process of Designing the Program Curriculum

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 fig. 2.1.1.2.

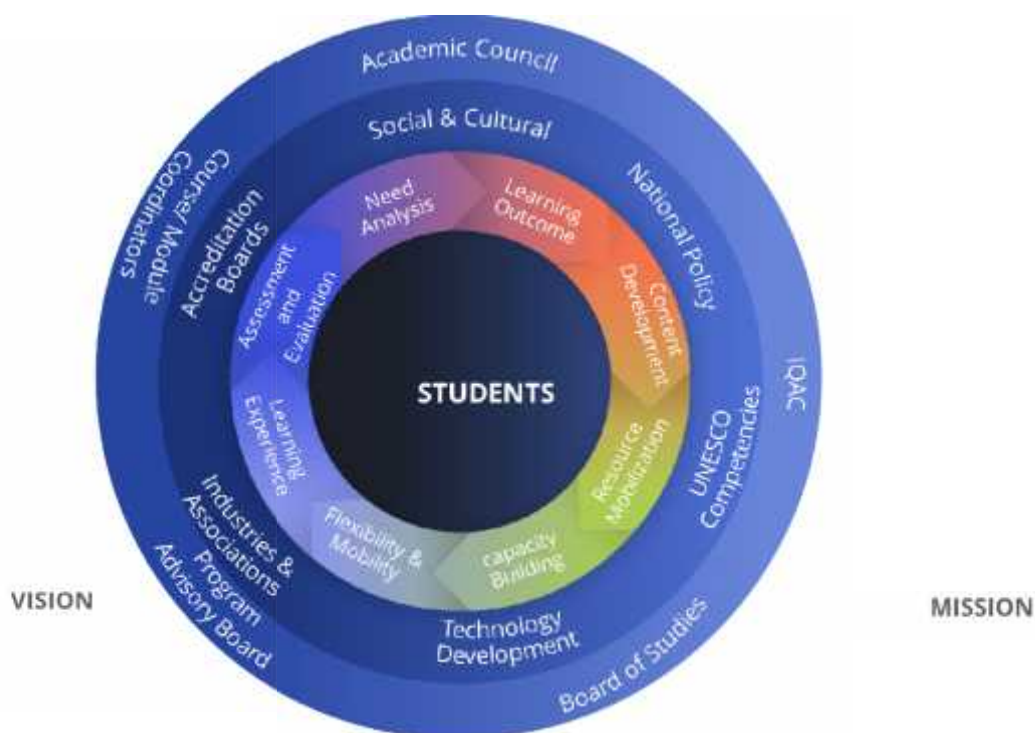


Fig. 2.1.1.2 Illustration for design and development of student-centred curriculum

- (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

The Department of Information Technology follows the guidelines as elaborated in section 2.1.1. Table 2.1.2.1 shows the curriculum structure of BTech IT 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.

Table 2.1.2.1 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		160

Table 2.1.2.1 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 2.1.2.1 Curriculum Structure - 2018 regulation – (c) 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

I. Basic Sciences and Mathematics

S.No.	Course Code	Course Name	Total No. of Contact Hours				Credits
			L	T	P	H	
1.	PHY18R174	Physics –Semi conductor physics	3	1	2	5	5
2.	CHY18R171	Chemistry	3	1	2	5	5
3.	MAT18R101	Calculus and Linear Algebra	3	1	0	4	4
4.	MAT18R102	Multiple Integration, Ordinary Differential Equations and Complex Variables	3	1	0	4	4
5.	MAT18R202	Probability and Statistics	3	1	0	4	4
6.	BIT18R101	Biology for Engineers	3	0	0	3	3
Total							25

II. Humanities and Social Science

S.No.	Course Code	Course Name	Total No. of Contact Hours				Credits
			L	T	P	H	
1.	HSS18R151	English for Technical Communication	2	0	2	4	3
2.	HSS18R101	Soft Skills – I	1	0	0	2	1
3.	HSS18R102	Soft Skills – II	1	0	0	2	1
4.	HSS18R201	Soft Skills – III	1	0	0	2	1
5.	HSS18R0XX	Humanities Elective – I	3	0	0	3	3
6.	HSS18R0XX	Humanities Elective – II	3	0	0	3	3
Total							12

A. Humanities Electives

S.No.	Course Code	Course Name	Total No. of Contact Hours	Credits
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			L	T	P	H	
1.	HSS18R001	Management Concepts and Techniques	3	0	0	3	3
2.	HSS18R002	Marketing Management	3	0	0	3	3
3.	HSS18R003	Organizational Psychology	3	0	0	3	3
4.	HSS18R004	Project Management	3	0	0	3	3
5.	HSS18R005	Stress Management and Coping Strategies	3	0	0	3	3
6.	HSS18R006	Economics for engineers	3	0	0	3	3
7.	HSS18R007	Human Resource Management and Labour Law	3	0	0	3	3
8.	HSS18R008	Entrepreneurship Development	3	0	0	3	3
9.	HSS18R009	Cost Analysis and Control	3	0	0	3	3
10.	HSS18R010	Product Design and Development	3	0	0	3	3
11.	HSS18R011	Business Process Reengineering	3	0	0	3	3
12.	HSS18R012	Political Economy	3	0	0	3	3
13.	HSS18R013	Professional Ethics	3	0	0	3	3
14.	HSS18R014	Operations Research	3	0	0	3	3
15.	HSS18R015	Total Quality Management	3	0	0	3	3
16.	HSS18R016	Advanced Softskills	3	0	0	3	3

III. Basic Engineering

S.No.	Course Code	Course Name	Total No. of Contact Hours				Credits
			L	T	P	H	
1.	EEE18R172	Basic Electrical Engineering	3	1	2	5	5
2.	MEC18R151	Engineering Graphics and Design	3	0	2	5	3
3.	CSE18R171	Programming for Problem Solving	3	1	2	5	5
4.	MEC18R152	Engineering Practice	3	0	2	5	3
5.	ECE18R220	Principles of Signals and Systems	3	0	0	3	3
6.	INT18R171	Digital Principles and System Design	3	1	2	5	5

S.No.	Course Code	Course Name	Total No. of Contact Hours				Credits
			L	T	P	H	
Total							24

IV. Program Core

A. Core Courses

Sl.	Course Code	Course Name	Total No. of Contact Hours				Credits
			L	T	P	H	
1.	CSE18R174	Computer Architecture and Organization	3	0	2	5	4
2.	CSE18R273	Operating Systems	3	0	2	5	4
3.	INT18R201	Web Technology	3	1	0	4	4
4.	INT18R271	Data Structures and Algorithms	3	1	2	5	5
5.	INT18R272	Analog and Digital Communication	3	0	2	5	4
6.	INT18R273	Object Oriented Programming	3	0	2	5	4
7.	INT18R274	Principles of Digital Signal Processing	3	0	2	5	4
8.	INT18R251	Microcontrollers & Embedded Systems	3	0	1	4	3.5
9.	CSE18R371	Computer Networks	3	1	2	5	5
10.	INT18R311	Artificial Intelligence	3	0	0	3	3
11.	INT18R371	Database Management Systems	3	0	2	5	4
12.	INT18R359	Software Engineering	3	0	1	4	3.5
Total							48

B. Community Service Project

S.	Course Code	Course Name	Credits
1.	INT18R399	Community Service Project	3

C. Project Work

S.	Course Code	Course Name	Credits
1.	INT18R499	Project Work	10

V. Elective Courses**A. Professional Electives (Minimum 5 Courses)**

(3.5 Credits * 4) + (3 Credits * 1) **or** (4 Credits * 2) + (3.5 Credits * 2) + (3 Credits * 1) **or**

(4 Credits * 3) + (3 Credits * 2)

Course Code	Course Name	Type	Pre-requisite/ Co-requisite	L	T	P	C
PROFESSIONAL ELECTIVES - COMPUTER PROGRAMMING STREAM							
INT18R351	System Software	TP	CSE18R174	3	0	1	3.5
INT18R301	Object Oriented Analysis and Design	T	Nil	3	0	0	3
INT18R352	Design and Analysis of Algorithms	TP	INT18R271	3	0	1	3.5
INT18R360	Data Analysis Using Python	TP	CSE18R171	3	0	1	3.5
INT18R361	Data Science Using R Programming	TP	INT18R371	3	0	1	3.5
INT18R451	Component Based Technology	TP	INT18R273	3	0	1	3.5
INT18R401	Principles of Compiler Design	T	CSE18R171	3	1	0	4
INT18R402	Game Programming	T	CSE18R171	3	1	0	4
INT18R452	Programming with Open Source Software	TP	CSE18R171	3	0	1	3.5

INT18R453	Multimedia and Computer Graphics	TP	INT18R271	3	0	1	3.5
INT18R454	C# and .NET Programming	TP	INT18R273	3	0	1	3.5
PROFESSIONAL ELECTIVES - SOFTWARE MANAGEMENT STREAM							
INT18R353	Data Warehousing and Mining	TP	INT18R371	3	0	1	3.5
INT18R354	Advanced DBMS	TP	INT18R371	3	0	1	3.5
INT18R302	Information Storage Management	T	INT18R371	3	1	0	4
INT18R355	Data Analytics	TP	INT18R371	3	0	1	3.5
INT18R303	Software Quality Assurance	T	INT18R359	3	0	0	3
INT18R304	Mobile Application Development	T	INT18R273	3	1	0	4
INT18R403	Enterprise Resource Planning	T	Nil	3	0	0	3
INT18R404	Service Oriented Architecture	T	CSE18R174	3	0	0	3
PROFESSIONAL ELECTIVES - EMBEDDED AND SIGNAL PROCESSING STREAM							
INT18R305	Mobile Communication and Computing	T	INT18R272	3	1	0	4
INT18R306	Information Coding Techniques	T	INT18R272	3	1	0	4
INT18R307	Bluetooth Technology	T	CSE18R371	3	1	0	4
INT18R405	Wireless Sensor Networks	T	CSE18R371	3	1	0	4
ECE18R330	Digital Image Processing	T	INT18R274	3	0	0	3
INT18R406	Real Time Systems	T	CSE18R273	3	0	0	3
INT18R407	Internet of Things	T	CSE18R371	3	1	0	4
PROFESSIONAL ELECTIVES - NETWORK MANAGEMENT STREAM							

INT18R356	Network Design Security and Management	TP	CSE18R371	3	0	1	3.5
INT18R308	Information Security	T	Nil	3	1	0	4
INT18R357	Mobile Networks	TP	CSE18R371	3	0	1	3.5
INT18R309	Wireless Application Protocol	T	CSE18R371	3	0	0	3
INT18R408	High Performance Networks	T	CSE18R371	3	1	0	4
INT18R455	Cryptography and Network Security	TP	CSE18R371	3	0	1	3.5
PROFESSIONAL ELECTIVES - COMPUTING TECHNIQUES STREAM							
INT18R358	Distributed Systems	TP	CSE18R174	3	0	1	3.5
INT18R456	Formal Language and Automata	TP	CSE18R171	3	0	1	3.5
INT18R409	Computer Forensics	T	CSE18R371	3	0	0	3
INT18R410	Cloud Computing	T	CSE18R371	3	1	0	4
INT18R411	Green Computing	T	CSE18R371	3	0	0	3
INT18R412	Social Network Analysis	T	INT18R271	3	0	0	3
INT18R413	Information Retrieval Techniques	T	INT18R371	3	0	0	3
INT18R414	Parallel and Distributed Computing	T	INT18R358	3	0	0	3
INT18R415	Graph Theory	T	INT18R271	3	1	0	4
PROFESSIONAL ELECTIVES - ARTIFICIAL INTELLIGENCE STREAM							
INT18R310	Bio Informatics	T	Nil	3	0	0	3
INT18R312	Neural Networks and Fuzzy Logic	T	Nil	3	1	0	4
INT18R313	Machine Learning	T	INT18R271	3	1	0	4
INT18R314	Soft Computing	T	Nil	3	1	0	4

INT18R416	Speech and Natural Language Processing	T	CSE18R171	3	0	0	3
INT18R417	Deep Learning	T	Nil	3	1	0	4

B. Open Elective for Other Departments (18 credits) (6 courses)

S.	Course Code	Course Name	Type	L	T	P	Credits
1.	INT18R315	Web Programming	T	3	0	0	3
2.	INT18R316	Big Data Analytics	T	3	0	0	3
3.	INT18R317	Information Theory & Coding	T	3	0	0	3
4.	INT18R318	Introduction To Information Security	T	3	0	0	3
5.	INT18R319	Cyber Forensics	T	3	0	0	3
6.	INT18R320	Essentials Of Information Technology	T	3	0	0	3
7.	INT18R321	Internet And Java	T	3	0	0	3
8.	INT18R322	R Programming	T	3	0	0	3
9.	INT18R418	Programming With C++ And Java	T	3	0	0	3
10.	INT18R419	Network Protocols	T	3	0	0	3
11.	INT18R420	High Speed Networks	T	3	0	0	3
12.	INT18R421	Introduction To Storage Management	T	3	0	0	3

VI. Industrial Training / Internship

S.	Course Code	Course Name	Credits
1.	INT18R397	Industrial Training	Nil
2.	INT18R398	Internship Training	Nil

VII. Honours Courses

Course Code	Course Name	Course	Pre	L	T	P	C
INT18R422	Advanced Networks	T	CSE18R371	3	1	0	4
INT18R423	Agent Based Intelligent Systems	T	INT18R311	3	1	0	4
INT18R424	Computational Linguistics	T	CSE18R171	3	1	0	4

INT18R425	E Learning Techniques	T	Nil	3	1	0	4
INT18R426	Heterogeneous Computing	T	CSE17R174	3	1	0	4
INT18R427	Pattern Recognition	T	INT18R353	3	1	0	4
INT18R428	Visualization Techniques	T	INT18R311	3	1	0	4

VIII. Mandatory Courses

1. Environmental Sciences
2. Indian Constitution
3. Essence of Indian Traditional Knowledge

Table 2.2: Components of the curriculum

Course component	Curriculum Content (% of total number of credits of the program)	Total number of contact hours	Total number of Credits
Basic Science	15.63%	405	25
Engineering Science	15%	465	24
Humanities and Social	7.5%	285	12
Program Core	30%	870	48
Program Electives	11.25%	330	18
Open Elective	11.25%	270	18
Project(s)	8.12%	195	13
Internships / Seminars	1.33%	150	2
Any other (please specify)	0	15	0
	100		160

2.1.4. State the process used to identify extent of compliance of the curriculum for attaining the program outcomes and program specific, outcome as mentioned in Annexure I

(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. 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.

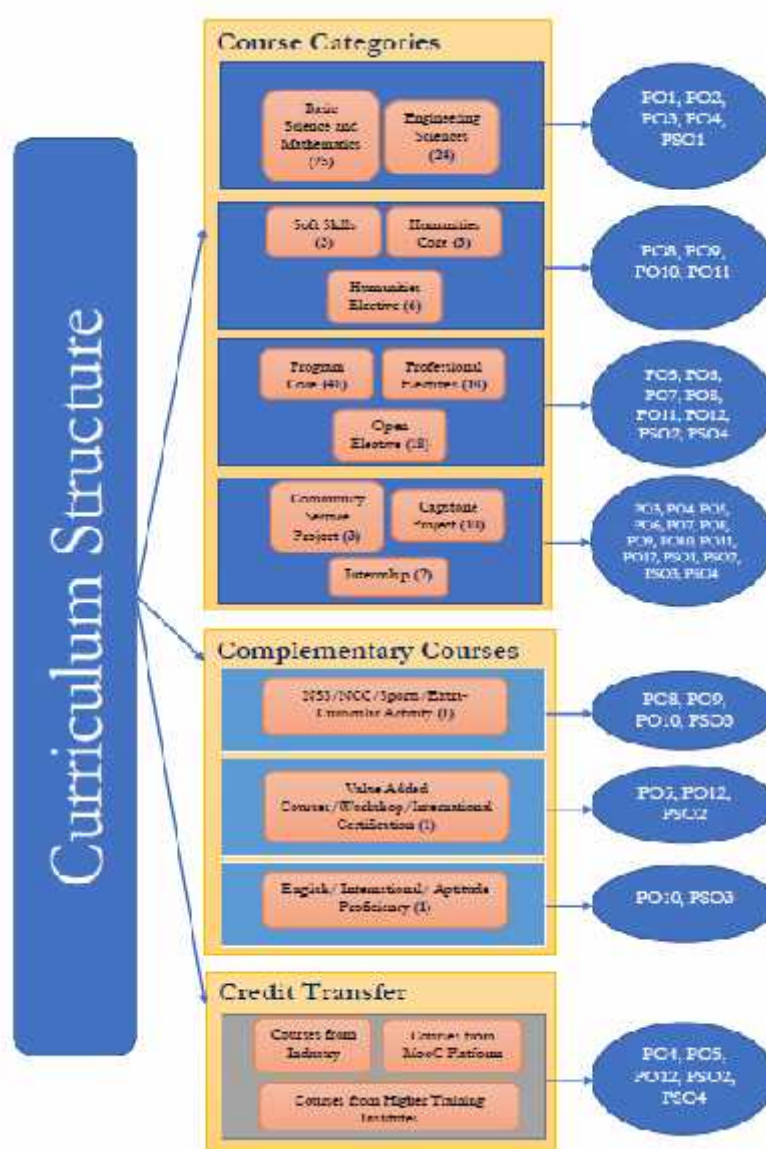


Fig. 2.1.4.1. Compliance of KARE Curriculum Structure with POs and PSOs

- 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), Successful Career and Entrepreneurship (PSO4)
- 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), Successful Career and Entrepreneurship (PSO4)

(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 course contribute significantly towards the attainment of POs and PSOs. The courses in various course components of KARE is 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 fig. 2.1.4.2.

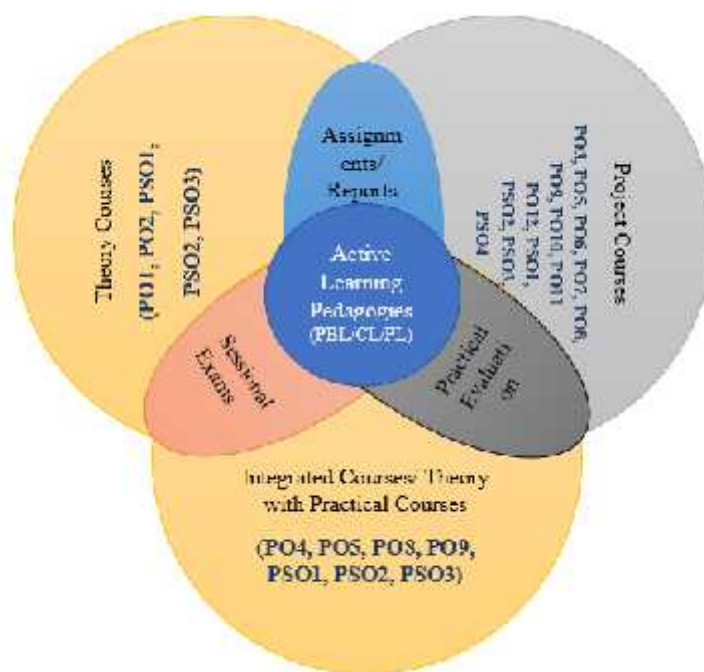


Fig. 2.1.4.2 Correlation of Delivery and Assessment Methods with POs and PSOs

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), Successful Career and Entrepreneurship (PSO4). Project courses are evaluated through practical implementations, problem assignments, 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. Table 2.1.4.1 shows the mapping between course components present in the curriculum verses PO and 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 2015-2019 passed out batch, which was taken as reference to obtain the significance of compliance in accordance with the percentage of contribution for each course component in curriculum. T

Table 2.1.4.1 Percentage of Program outcomes and Program Specific outcomes in compliance with curriculum

S. No	Course Component	Curriculum Content (% of total number of credits of the program)	PROGRAMME OUTCOME PERCENTAGE												PSOs %		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3

1	Basic Science and Mathematics	13.58%	74.22	60	49.83	67.22	55.94	32.5	45	33.33	40.83	43.33	13.33	50	39.33	25	10
2	Humanities and Social Sciences	8.70%	27.2	49.42	88.31	60.53	69.79	54.98	32.75	43.86	21.64	43.86	21.64	66.09	37.2	54.98	32.75
3	Engineering Sciences	7.62%	27.78	50	88.89	61.11	70.37	55.56	33.33	44.44	22.22	44.44	22.22	66.67	37.78	55.56	33.33
4	Program Core Courses	51.09%	73.28	68.58	70.94	51.89	40.06	25.33	17	18.83	11.67	33.33	23.33	43.17	75.14	52.06	14.58
5	Professional Elective Courses	8.15%	68.85	58.86	53.28	53.75	51.34	29.33	20.87	16.42	17.41	24.4	20.34	38.01	12.8	9.29	9.17
6	Open Elective Courses	4.89%	22.67	20.49	10.33	15.11	20.36	55.24	32.89	61.56	46.78	62.64	58.44	59.4	10	8.67	5.33
7	Project Work, Seminar, Internship in Industry	5.97%	28.46	50.68	89.57	61.79	71.05	56.24	34.01	45.12	22.9	45.12	22.9	67.35	38.46	56.24	34.01

2.2. Teaching-Learning Process (70)

2.2.1. Describe processes followed to improve quality of teaching & learning

For every academic year, the department of Information Technology follows the academic schedule proposed by the Director/Academic office in related to academic and examination activities. On the other hand, the department also has separate academic activity plan which includes academic, examination and co-curricular activities.

Regarding the process of teaching and learning process, the following methodology (shown in Figure 2.3) has been employed for each batch of students as per our academic calendar (both university and department level).

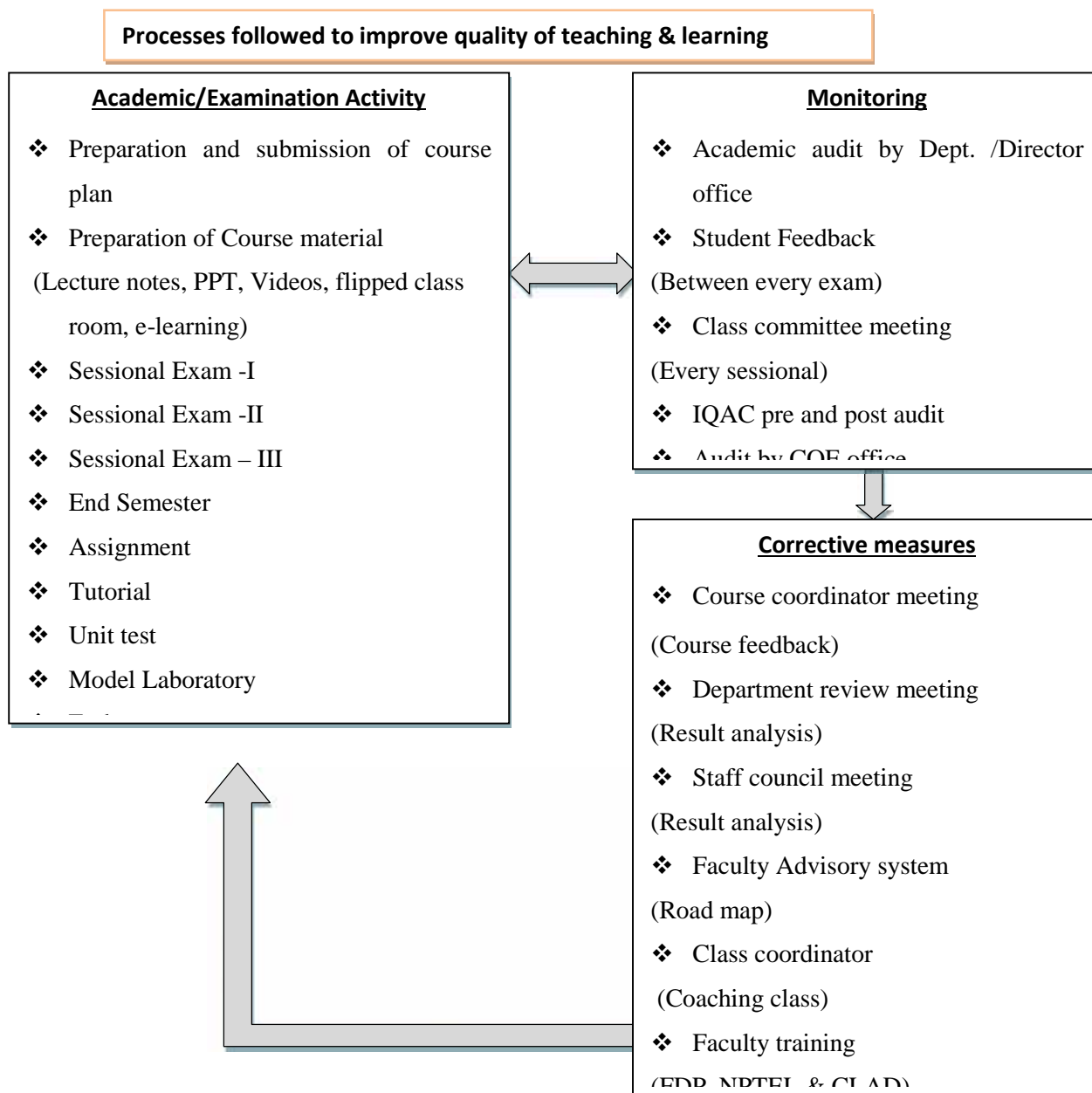


Figure 2.3 Processes followed to improve quality of teaching & learning

2.2.1(A) Adherence to Academic Calendar

Academic calendar is prepared and distributed to all the students and faculty in the first day of every semester. A sample of academic calendar is shown in Table 2. 7 and 2. 8. The following academic activities are strictly adhered as per the schedules.

- The first day of the semester University Academic calendar (Figure.2.4) is given to all the students
- From the University calendar of events, a department calendar of events is derived which is specific to the department.
- Lesson plan with course objectives and course outcomes are prepared by the course handling faculty before the commencement of the semester and is respectively approved by the program coordinator, Head of the department and made available to the students. According to the lesson plan, the work done has been inculcated in the academic file to ensure coverage of syllabus daily monitored by program coordinator and Head of the department.

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
	24 th	I Class Committee Meeting for Arts and Science Programs
Sep 2020	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
	22 nd	I class committee meeting for UG -2020-Batch
	26 th	Faculty advisor counseling to the students-UG-Batch-2020
October 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
	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
November 2020	5 th	II class committee meeting for 2020 Batch
	10 th	Last date for paying exam fees
	25 th	Compilation of attendance
	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
December 2020	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
	30 th	End semester examination ends
	31 st	Make up examination ends
January 2021	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

LIST OF HOLIDAYS

S. No	Date	Day	Observances
1.	22.08.2020	SATURDAY	GANESH CHATURTHI
2.	02.10.2020	FRIDAY	GANDHI JAYANTHI
3.	25.10.2020	SUNDAY	AYUTHA POOJA
4.	26.10.2020	MONDAY	VJAYA DASHAMI
5.	30.10.2020	FRIDAY	MAULED NABI
6.	14.11.2020	SATURDAY	DEEPAVALI
7.	25.12.2020	FRIDAY	CHRISTMAS
8.	01.01.2021	FRIDAY	NEW YEAR
9.	14.01.2021	THURSDAY	PONGAL
10.	15.01.2021	FRIDAY	THIRUVALLUVAR DAY
11.	26.01.2021	TUESDAY	REPUBLIC DAY

Figure 2.4 Academic Calendar

In addition to this, the department calendar will also prepare including all the major events conducted by the department apart from the centralized plan. Table 2. 3 shows the Academic calendar of Information Technology department for the odd semester of 2020-2021.

Table 2. 3 Department of Information Technology Academic Calendar Odd Semester 2020 - 2021

Month and year	Date	List of Activities
Aug 2020	14 th	Course Registration for senior classes
	17 th	Reopening day except I year UG & PG
	18 th	Distribution of course plan and lab manuals to the students
	19 th	I class committee meeting
	20 th	Faculty advisor counseling to the students
	29 th	Guest Lecture
Sep 2020	7 th	Workshop
	14 th	Guest Lecture
Oct 2020	5 th – 9 th	Sessional Examination I
	10 th	Last date for paying Tuition fees.
	14 th	II class committee meeting
	17 th	Faculty advisor counseling to the students
	23 rd	Guest Lecture
	28 th	Last date for paying arrear exam fees.
Nov 2020	10 th	Last date for paying exam fees.
	25 th	Compilation of attendance
	26 th	Submission of Non CGPA results to CoE office
	26 th – 3 rd	Sessional Examination II
Dec 2020	4 th – 10 th	End semester practical examination
	11 th	End semester theory exam and make up exam starts
	15 th – 17 th	Viva voce for UG project Phase 1
	30 th	End semester exam ends
	31 st	Make up exam ends

Jan 2021	2 nd	Arrear exam starts
	7 th	Final class committee meeting
	11 th	Grade approval committee meeting
	20 th	Arrear exam ends
	23 rd	Result passing meeting for CGPA and non CGPA courses
	27 th	Paper distribution to the students and declaration of students
	27 th	Even semester Begins

(B)Pedagogical initiatives

Quality enhancement in teaching and learning process is done on a continuous basis through the departmental and centralized Academic/IQAC office by providing quality metrics. The department is keen on introducing new pedagogical initiatives in each semester based on the nature of course. Some of the pedagogical techniques which were followed in our department are listed below.

Learning Management System (LMS)

The course materials are uploaded in the website. Students can retrieve the course material using their username and password provided to them.

(<http://kalasalingam.ac.in/elearn>). A snapshot of the LMS is shown in Figure 2.5.

User name: Register number

Password: Register number

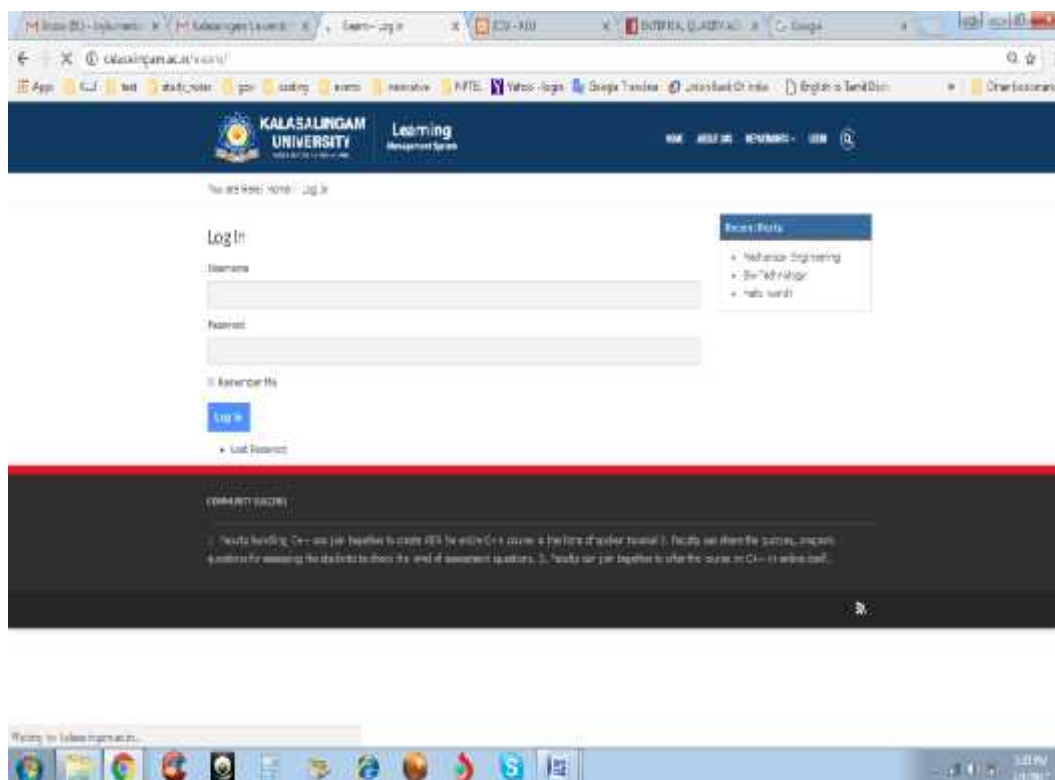


Figure 2.5. Learning management system(LMS) students login

- Faculty and students are encouraged to appear for the NPTEL courses offered by various IIT's.
- Online courses can be registered by the students in place of self-study course during the time of project period.
- Every semester our faculty have undergone NPTEL course and secured marks through online exam. A model copy of NPTEL certificate is shown in Figure 2.5.

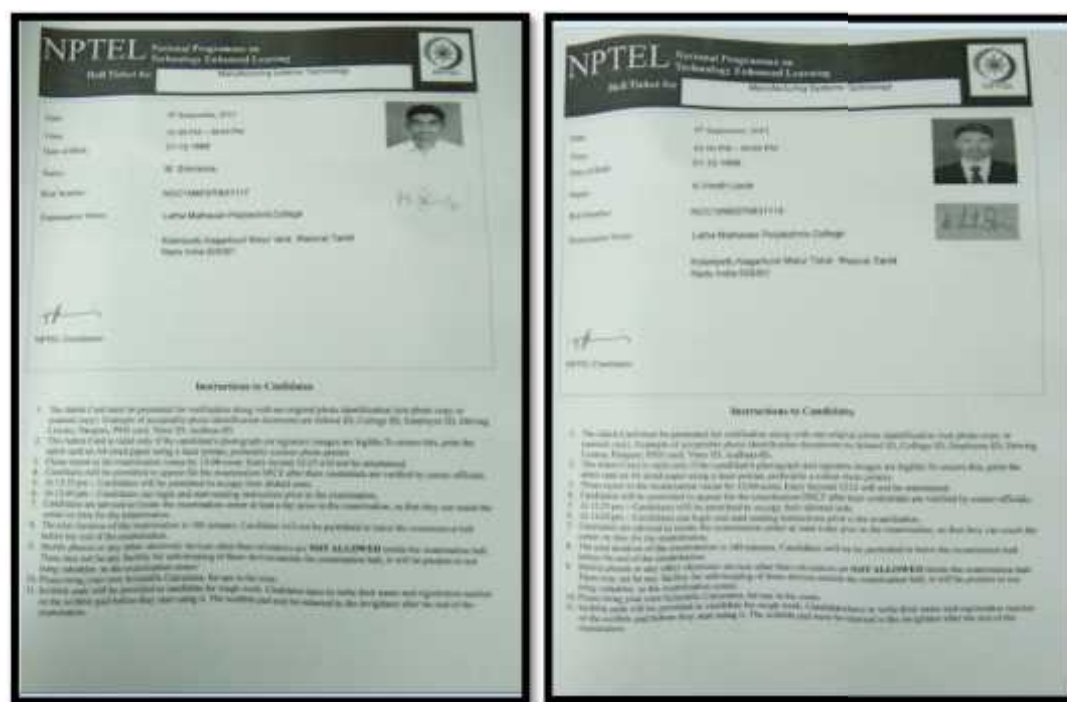


Figure 2.5 Example copy of NPTEL course certificates obtained by students

Innovative teaching methods and **ICT tools used in teaching**

To enhance the learning capability of students, different teaching methods are followed:

1. Interactive smart board class room
2. Flipped class room
3. Virtual laboratory
4. Model based teaching
5. Field visit (industrial visit)
6. LCD projector

Flipped class room:

Laboratory and theory course handling faculties were urged to convert lecture into video format and the same was provided to the student for references. They can refer the video lecture before coming to the class and discuss with the related doubts. Some of the photographs of flipped class room teaching are shown in Figure 2.6.

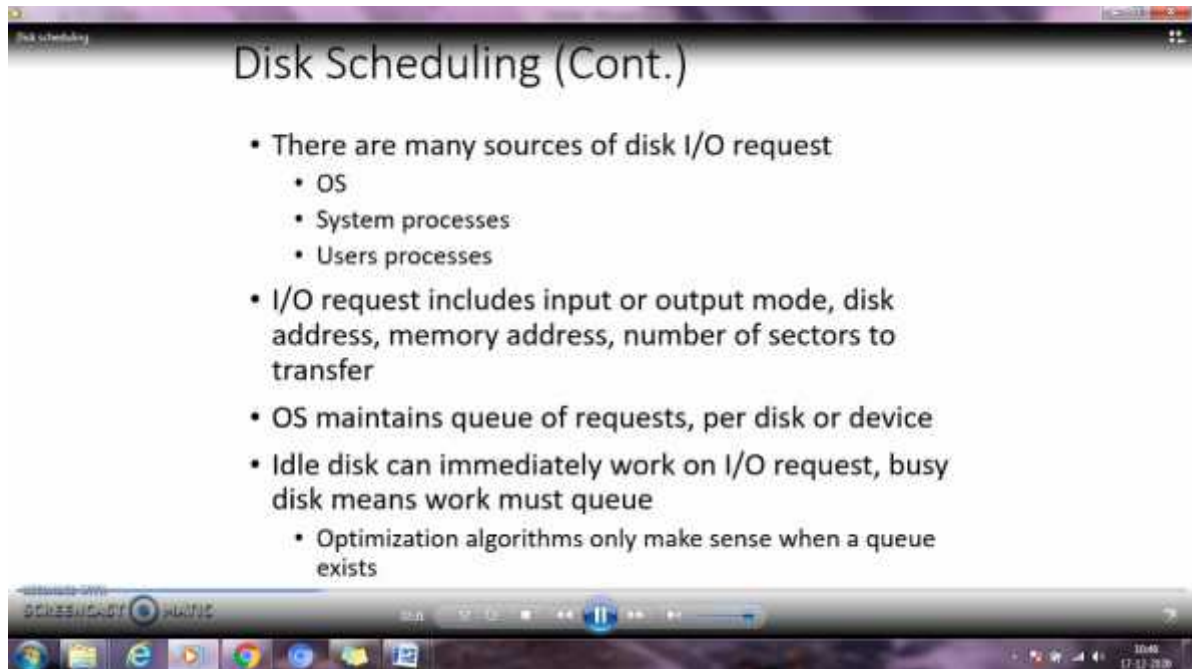


Figure 2.6(a): Flipped class Video clipping of CSE18R273 – Operating Systems

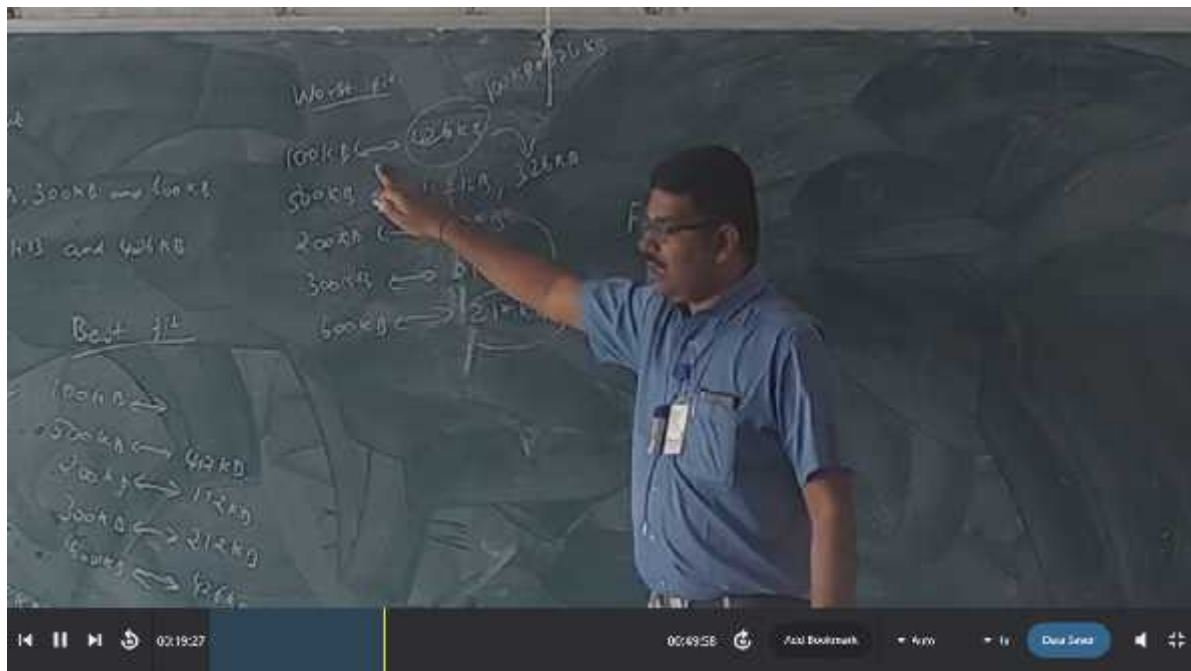


Figure 2.6(b): Impartus Lecture Capture Solutions

The screenshot displays the KARE-IT Virtual Laboratory interface. At the top, there is a navigation bar with links for Home, Exam Module, Course Module, and CSE18R174CSEB. Below this is a table listing various programs:

Sl.No.	Date Created	Last Run Date	Program Name	Description	Language	Click to continue
1	29-08-2020 13:45	29-08-2020 14:06	Binarynumb		c	Click here for report
2	31-08-2020 13:45	31-08-2020 14:32	Binarymult		c	Click here for report
3	07-09-2020 13:45	07-09-2020 13:48	1complimen		c	Click here for report
4	07-09-2020 13:55	07-09-2020 14:22	2complimen		c	Click here for report
5	14-09-2020 13:42	14-09-2020 14:08	Sequential	Sequential multiplication of binary numbers	c	Click here for report
6	28-09-2020 13:45	17-10-2020 14:01	Booth	Booth algorithm	c	Click here for report
7	12-10-2020 13:45	12-10-2020 13:45	Addition	Implementation of carry save addition of summands	c	Click here for report
8	21-10-2020 14:17	21-10-2020 15:01	Non	Non restoring division algorithm	c	Click here for report

Below the table, a detailed report for the program 'Binarynumb' is shown. The report includes the following information:

- Report for 9919064004 / AASHRITHA REDDY SANKALAMADDI**
- Date Created:** 29-08-2020
- Program Description:**
- Language:** c
- Program Link:** Binarynumb_9919064004.c
- Aim and Algorithm:**
 1. Take two binary numbers as input.
 2. Add each bits from the two binary numbers separately starting from LSB.
 3. The operations may be as follows:
 - a) (0+0)=0,
 - b) (1+0)=1,
 - c) (1+1)=0 and 1 will be remainder.
- Program:**

```

#include <stdio.h>

int main()
{
    long binary1, binary2;
    int i = 0, remainder = 0, sum[20];

    printf("Enter the first binary number: ");
    scanf("%ld", &binary1);
    printf("Enter the second binary number: ");
    scanf("%ld", &binary2);
    while (binary1 != 0 || binary2 != 0)
    {
        sum[i++] = (binary1 % 10 + binary2 % 10 + remainder) % 2;
        remainder = (binary1 % 10 + binary2 % 10 + remainder) / 2;
        binary1 = binary1 / 10;
        binary2 = binary2 / 10;
    }
    if (remainder != 0)
        sum[i++] = remainder;
    --i;
}

```

Figure 2.6(C): Virtual Laboratory for the course CSE18R174/ Computer Architecture and Organization

(C) Methodologies to support weak students and encourage bright students

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. Prior the conduction of

sessional exams, the faculty advisor used to conduct meeting with their wards and motivate them to perform well in exams.

For an example, how the faculty advisor system is effectively implemented to improve the students' performance is shown in Figure 2.7. And also the strategy which has been adopted for improving the performance of slow learner is given in Figure 2.8.

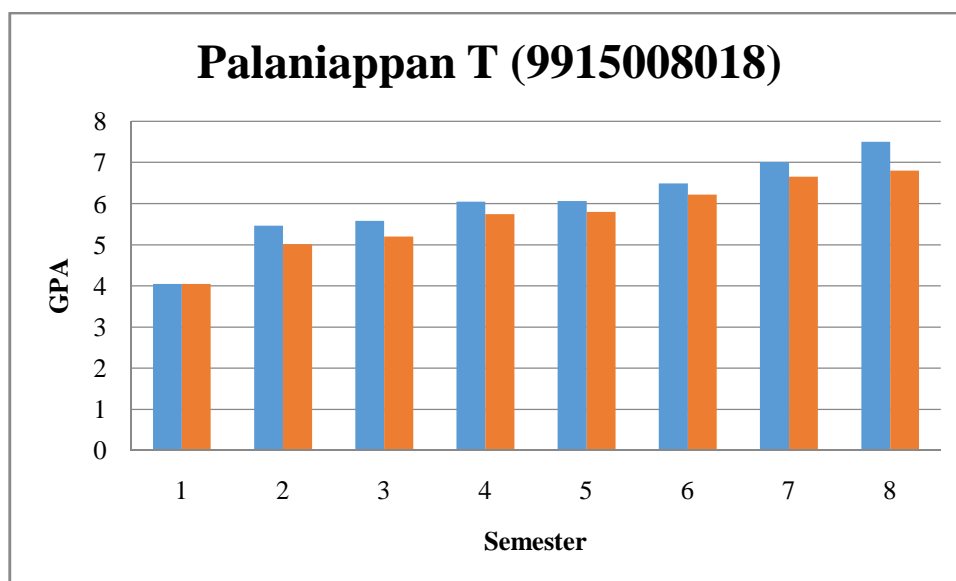


Figure 2.7 Continuous improvement of student performance with the support of FA

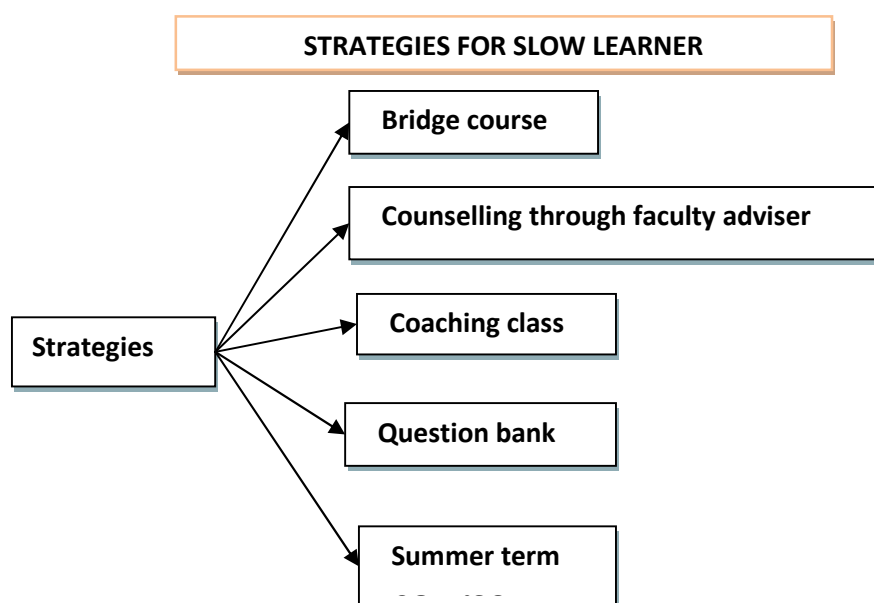


Figure 2.8 Strategy adopted for slow learner

Apart from that the faculty advisor system is closely monitoring the students' progress by varieties of methods. Varieties of approaches have been adapted to improve their performance. Slow learners are found out by means of using their +2 marks for the first years. Later they have been identified based on the semester wise performance.

The slow learners are becoming medium/fast learners after crossing the various stages. The different stages of process are given below. Detailed methodology for support slow learner is given in Figure 2.9. FAS is not only applicable for the slow learners, it can also effectively apply for fast learner (shown in Figure 2.10). Further identification of slow learners/fast learners and action taken is also given in Table 2.4 and 2.5.

1. Conduction of bridge courses especially for mathematics, English and etc.
2. Flipped class room i.e., offline video lectures are given to students. The lecture is given by KARE faculty. If any student is absent for a particular day, the offline video/flipped class room could be useful to study.
3. Lectures are taught via prototype models.

4. If it is required, counselling expert is called upon from the outside. In regular basis, counselling experts are used to visit our campus to interact the students.
5. To reach a higher CGPA, road map is prepared by the faculty advisor based upon the students' marks. The flow chart is given below.

Table 2.4. Identification of slow learners and Action taken

Identification Criteria	Actions undertaken
For first year - HSC marks and Tamil medium students For other years – Average/below average CGPA, lesser than 40% of marks, number of arrears and CO attainments.	Faculty advisor follows their progress regularly and advise students about attending regular classes, arranging make up for the classes, continuous monitoring Intimating parents to counsel their wards. Conduction of special/remedial classes Conduction of coaching classes Mentor mentee system between senior and Junior students
Diploma students who entered with average basics of mathematics	Conduction of extra classes. Bridge course in Mathematics

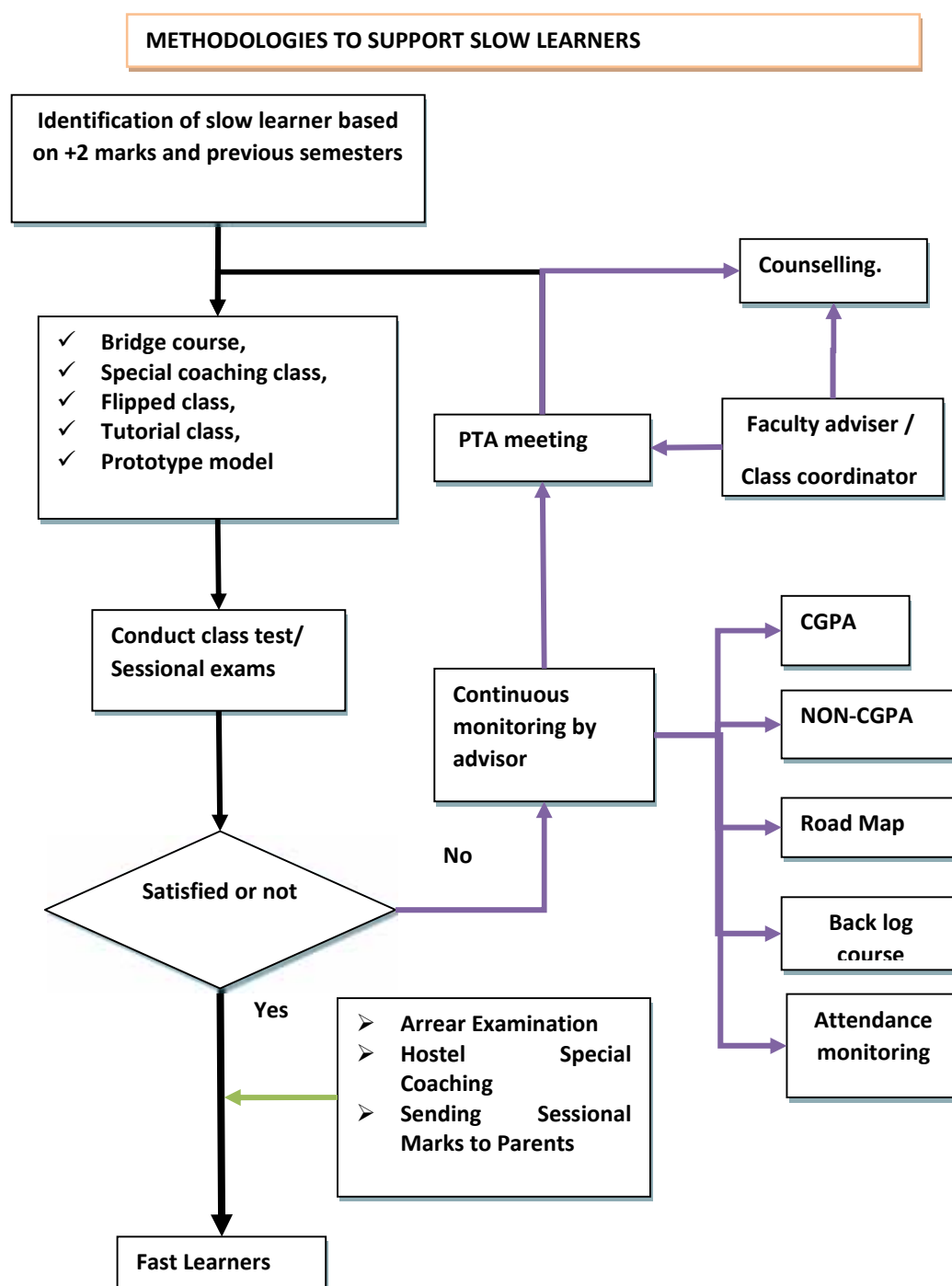


Figure 2.9 Methodologies to Support Slow Learners

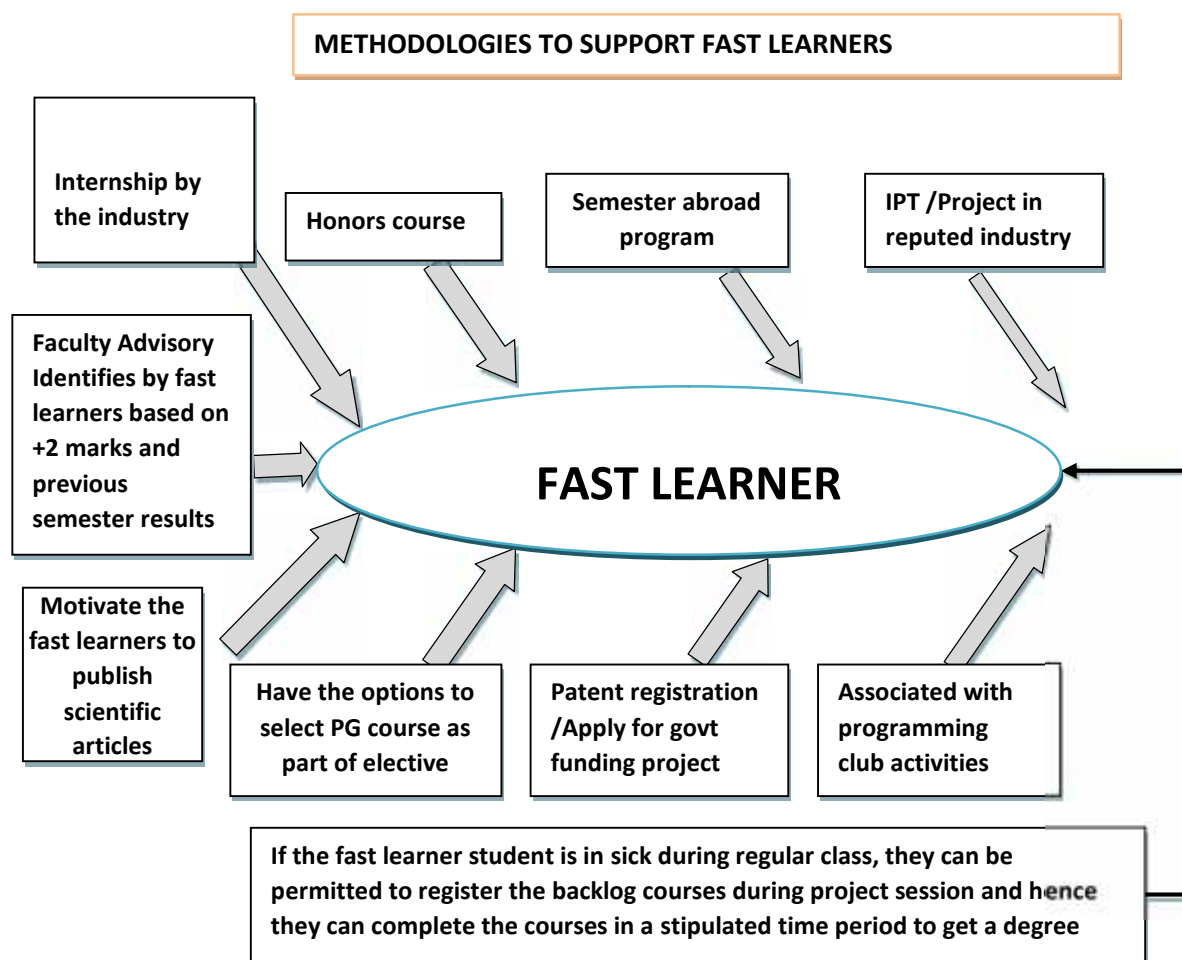


Figure 2.4 Methodologies to Support Fast Learners

Table 2.5. Identification of fast learners and Action taken

Identification Criteria	Actions taken
Students with 6.5 CGPA, awarded with First Class in their Semester exams. Students with 7.5 CGPA, awarded with First Class with Distinction in their Semester exams. Students with 8.25 CGPA, awarded with First Class with Honors in their Semester exams Students securing ranks	PTA meetings will be conducted to felicitate them by providing the prizes and certificates for motivating them to move forward. Distribution of medals/Certificates to the toppers on department inauguration function
Providing fee concession for meritorious students as per the following details 9.0 or above CGPA - 50% of fees concession 8.5 or above CGPA - 25% of fees concession	

7.5 or above CGPA - 10% of fees concession
--

- **Honors:** The fast learners are encouraged to get First class with Honors degree by continuous monitoring during four years of study. For obtaining the 'Honors', they are supposed to get at least 8.25 CGPA and should have completed 4 courses as extra courses offered during their III year and IV year.
- **Semester Abroad Program:** The fast learners are encouraged to undergo semester abroad program in the selected universities to get the international exposure.
- **Project in reputed Industry:** The fast learners are encouraged to carryout real time projects, especially in industries. The following are some of the projects undergone by our students is given in table 2.6.

Table 2.6 sample copy of Industry collaborated project (external project)

S.No	Academic Year	Reg.No	Name	Guide	Name Of The Industry	Title
1	2017-18	9815008001	BHARATH R	Dr. S. Suprakash	7 th Sense Technology, Madurai	LCD Vision Chart
		9914008003	GANESH KUMAR K			
2	2018-19	9915008050	VIJAYAN S	Mr. D. Prem Raja	National Informatic centre, Andaman & Nicobar UT center	IoT Based Room Temperature, Humidity & Gas Monitoring System
3		9915008026	SIVASANKARAN S	Dr. M. Maragatharajan	Infostech, Madurai	Online Shopping Cart
		9915008030	SYAM OSCAR K			
4		9915008038	THIRUMALAISELVI M	Dr. V. Baby Shalini	Swifterz creative services	Smart Forklift System
5		9915008009	KAYALVIZHI K	Mrs. M. Jansi Rani	Farshore Software development ltd	Kaduzee Application

S.No	Academic Year	Reg.No	Name	Guide	Name Of The Industry	Title
6	2019-20	9916008029	MANOJ KUMAR P	Dr. M. Venkatesulu	Cloud Uno Consulting India Pvt ltd,	Software-defined Networking (SDN), Cisco ACI multisite deployment.

National/International Conferences and works published in journals: Our students are encouraged to undergo project during their final year of study. After completion of their projects, the students are encouraged to present their work in any conferences either National or International and Journals.

Patent registration: Our students are encouraged to register their innovative models as patents under the guidance of our faculties. Sample of patent registered by our students are given in Table 2.7.

Table 2.7 sample list of provisional registered and complete registration

Sl. No	Name of the Student	Title of the Project	Date
1	S.Alagumeenal(9915008004) Ms.T.Shanmugalakshmi(9915008025) Ms.V.Jayashri(9915008039)	Voice Interaction System for Self Driving Vehicle	29/04/2019
2	P.Mahavishnu(9915008011) D.DhivyaDharshini(9915008045) Keerthana.M(9915008040)	RUINA NE VEHICULUM	29/04/2019
3	A.Martine(9915008013), T.Palaniappan(9915008018),	Electrical Appliances Power Consumption Monitoring with	29/04/2019

	S.Singaraj(9915008041)	On-Off Control Based on IOT	
--	------------------------	-----------------------------	--

In house Project Development: The fast learners are encouraged to carryout in-house projects for the benefits of Institution. The following are some of the projects undergone by our students is given in table 2.8.

S No	Title of the Project	Purpose	Faculty Involved	Students involved
1	Online Admissions	Web Interface for receiving online applications, online payments and Hall ticket Generations	Dr. S. Suprakash	Mr. Ganesh Kumar (9914008003) Mr. R. Bharath (9815008001)
2	Online Bus Booking System	Online Bus booking and Payment for University Transport	Dr. S. Suprakash Dr. M. Maragatharajan	Mr. Abishek (9914008016) Mr. Joel Abraham (9914008017)
3	KARE-CRM	Customer relationship management software to manage admission enquiry	Dr. S. Suprakash Mr. S. Kailasam	Mr. G. Jagadeeshwaran (9916008022)
4	KARE – EEE	Online Engineering Entrance Examination for a new admission to the university.	Dr. SP. Balakannan Dr. S. Suprakash	Mr. VR. Sugumar (9915008036) Mr. A. Sundar (9915008043)
5	KARE-Service Book	Maintaining Service Records of Employees	Dr. S. Suprakash Dr. M. Maragatharajan	Ms. NS. Aarthiy (9915008001) Ms. S. Alagumeenal (9915008004)
6	Online Hostel Booking system	Online Hostel Room booking and Payment for Hostels	Dr. SP. Balakannan Dr. S. Suprakash	Ms. K. Kayalvizhi (9915008009) Mr. P.

				Mahavishnu(9915008011)
7	Purchase office Automation	Automation of Purchase office, PO generation to stock entry	Dr. K. Suthendran Dr. S. Suprakash	Ms. R. Jeyashree (9916008020)

Table 2.8: Details of In-house Project Development**(D) Quality of classroom teaching (observation in a class)**

In order to enhance the quality of class room teaching the following methodologies/ tools have been proposed (shown in Figure 2.11) for betterment of the student community.

1. According to the faculty specialization and research area, courses were allocated to the faculty to handle for each semester.
2. Faculty development programs were organized by the department and CLT to enhance the faculty skill to conduct the classes. The experts are called upon from other universities/colleges.
3. The entire course file comprises of course plan, hand written notes, tutorials, and various university question papers and so on.
4. Research based course contents also will be delivered in the class room teaching by the expertise faculties.
5. Faculty mentor-mentee is also used to enhance the quality of teaching. Junior level faculties are advised to get the assistance from the senior faculties. It improves the sharing of knowledge in terms of handling the classes.
6. Faculties are involved to learn online courses such as conducted by NPTEL, MOORA and so on. The knowledge is being shared to the students to increase the level of understanding.
7. Apart from teaching by the academicians, some of the courses are taught by the Industrial experts to the student to bridge the gap between the industry and theory courses.

8. Faculties are involved themselves to use the smart board and ICT facilities to handle the classes for the betterment of students.

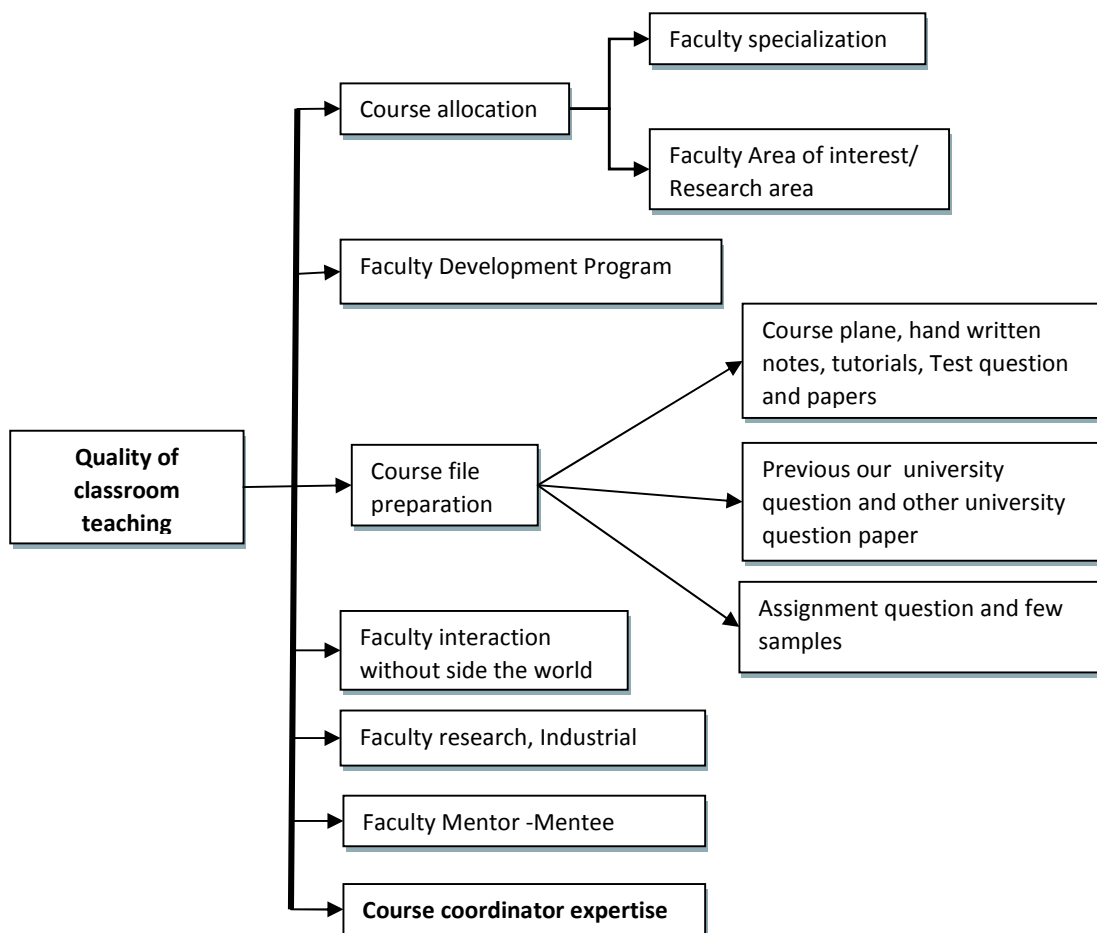


Figure 2.11 Enhancing the quality of class room teaching

(E) Conduct of experiments (observation in laboratory)

The laboratory experiments are carried out by the students as per the curriculum. For carrying out the experiments, students are grouped into 4 and 5. Experiments were conducted in the laboratory by the faculty in-charge with the help of technician. Further the students are asked to conduct the experiment in front of the faculty in-charge/technician.

Flipped classroom method is also adopted for laboratory courses. If the students failed to attend the laboratory, the kind of flipped class room video is helpful to understand for carrying out the experiments.

Inclusion of Laboratory courses with project: Outcome of the laboratory courses; the students need to complete one project (Laboratory courses are specified in table 2.1). For completing one project, each group has 5 students each. Apart from the laboratory manual, the students need to submit project report at the time of end semester examination. The quality of project work as well as the reports is verified by the course in-charge. Marks are given to the students as given by the rubrics.

(F)Continuous assessment in the laboratory

The assessment of laboratory courses is a continuous process. The marks are assigned to each experiments based on the following rubrics through testing the students' knowledge by asking questions.

1. For every week, 3 hours are allotted for the students for carrying out the experiments. In total, each student has undergone 36 hours per semester to complete their experiments.
2. In every session, the students are asked to complete at least one experiment.
3. Apart from the laboratory manual, each student is supposed to write observation note book for doing experimental calculations. The observation note book and laboratory manuals are checked by the course teacher in the lab session itself.
4. Once students have completed all the experiments, they need to submit record notebook. If any errors are found out in observation note books, it will be resolved immediately.
5. After completion of each experiment, viva questions are asked to the student to test the understanding of the particular experiments.

6. Before attending the end semester examination, model exam is also conducted. Based upon that internal marks are evaluated.
7. In internal marks, the marks are evaluated based upon the performance of completed experiments. The experimental marks are given in their observation and record note books. Apart from that, model examination is also conducted to finalize the internal marks.
8. Marks allocation for the laboratory courses are 50% (Internal) and 50% (External). Accordingly, marks are allotted for each student.

(G) Students feedback of teaching learning process and action taken

For every semester student are asked to give the feedback for each course teacher. They were asked to give the ratings for list of questions which is used for enhancing teaching - learning process. The same thing is evaluated based on IQAC rubrics.

1. Teacher's commitment to quality teaching

2. The teacher should come to class on time.
3. During his/her absence, the classes should be arranged with an alternate faculty.
4. The course teacher should cover the entire syllabus and each and every unit of the course.
5. Medium of instructions given by the course teacher should be only in English.
6. The course teacher's handwriting should be legible on the black board and his/her lecture should be clear and audible.
7. The course teacher must be fully prepared for the class.
8. For theory with practical component course, the course teacher should give adequate coverage to practical component.
9. The course teacher should have adopted flipped classroom mode for at least one topic.

10. The flipped classroom mode should be effective.

1. Clearing of basic components

The following were the questions put forward to the student as a feedback to the course teacher.

1. Was the fundamental component behind each topic was made clear in the classroom?
2. Do you feel confident to solve any similar problem in the topic?
3. Are the assignments properly designed to help you understand the topic?
4. Did the teacher gave appropriate feedback in your assignments on improvement points?
5. Does the teacher conduct regular class tests/quizzes?
6. Does the question asked in the class tests/quizzes increase the comprehension of the course taught?
7. Was GATE questions related to the topic discussed in the class?
8. Does the teacher gave enough time to clear doubts in regular and coaching classes?
9. Have the teacher discussed the real time problems related to the course being taught?
10. Did the teacher use and/or encouraged using appropriate web resources, power point presentations etc to enhance better learning of the topic being discussed.

2. Dealing with students and general behavior

1. Was the approach of teacher friendly and cordial with students?
2. Is the teacher partial towards any students?
3. Does the teacher use uncontrolled speech/language inside or outside class room?
4. Is the class under full control by the teacher when he/she is inside?
5. Is the teacher eager to spend time outside regular class hours to clear doubts?

5. Learning and Curriculum feed back

Based on students feedback rearrange the course matrices implementing new methods and innovative practices

1. Industry institute interaction framed for well being of students. Lecture by industrial expert in the core area of Information Technology is delivered in the mode of one credit course,
2. Based on the students feedback guest lectures were arranged for the topic/course. In addition to IV semester, field visit is also arranged based on the students' request.
3. Theory with practical components incorporated in our curriculum to enrich the students' knowledge with following course material science and unconventional machining process

Feedback given by the students is a tool for enhancing the teaching methodology as well as changing the method of delivery based on the level of requirement. At the beginning (After sessional examination) and at the end of the semester, all the students are required to enter online feedback-form.

Actions taken:

- Mentor-Mentee system is adopted to enhance the teaching ability of the faculty. Junior faculties are directed to handle classes as per the senior faculties' advice in such a way that the junior faculties gain improvement in terms of handling classes.
- Based on the low feedback obtained by the faculty, he/she is asked to attend faculty development programme organized by CLT.
- The faculty members are advised to register online courses such as NPTEL, Short term training programme. If the faculty gets elite certificate from the online courses, the concern faculties are encouraged by the university (providing certificates).

- The faculty are advised to make field visit related to their respective course if applicable.
- The faculty members are asked to attend the conference, workshop, and seminar related to the courses.
- The faculty members are asked to attend the academic audit and given suggestion to improve the quality of teaching.

S.no	Question	Excellent	Good	Average	Very Good	Average	Not able to comment
1	Is the teacher gives the course plan for experiments as prescribed by the University?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	Are the students provided with proper equipment?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	Lab Experiments are conducted as per the syllabus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	Teacher uses only English as language of Communication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	Lab Technician use knowledge about experiments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. Working Condition of Lab equipments	<input type="radio"/> Excellent <input type="radio"/> Good <input type="radio"/> Below Average	<input type="radio"/> Very Good <input type="radio"/> Average <input type="radio"/> Not able to comment
7. Flipped mode of conducting lab experiments is adopted	<input type="radio"/> Excellent <input type="radio"/> Good <input type="radio"/> Below Average	<input type="radio"/> Very Good <input type="radio"/> Average <input type="radio"/> Not able to comment
8. Teacher gives constructive comments on readings/calculations	<input type="radio"/> Excellent <input type="radio"/> Good <input type="radio"/> Below Average	<input type="radio"/> Very Good <input type="radio"/> Average <input type="radio"/> Not able to comment
<input type="button" value="Submit"/>		

Example: Students feedback from model (collected before appearing end semester examination).

Course Feedback for Current Semester

Nov 17, 2016

S.No	Question	Yes	No
1	Teacher's commitment to quality teaching:		
1.1	The teacher comes to class on time	<input type="radio"/> Yes	<input type="radio"/> No
1.2	During the absence, the classroom was appropriately managed with alternative faculty	<input type="radio"/> Yes	<input type="radio"/> No
1.3	The Course Teacher covered the entire syllabus in every unit of the course	<input type="radio"/> Yes	<input type="radio"/> No
1.4	Medium of instructions given by the course teacher only in English	<input type="radio"/> Yes	<input type="radio"/> No
1.5	The Course Teacher's hand writing is legible in black board and slides/ power point slides	<input type="radio"/> Yes	<input type="radio"/> No
1.6	The Course Teacher is fully prepared for the class	<input type="radio"/> Yes	<input type="radio"/> No
1.7	For theory with practical component course, the course teacher gave adequate coverage to practical component	<input type="radio"/> Yes	<input type="radio"/> No
1.8	Has the course teacher adopted flipped classroom mode for atleast one topic	<input type="radio"/> Yes	<input type="radio"/> No
1.9	The flipped class room mode was effective	<input type="radio"/> Yes	<input type="radio"/> No

2	Clearing of Basic Concepts	
2.1	Was the fundamental concept behind each topic made clear in the class?	<input type="radio"/> Yes <input type="radio"/> No
2.2	Do you feel confident to solve any similar problem in the topic?	<input type="radio"/> Yes <input type="radio"/> No
2.3	Are the assignments properly designed to help you understand the topic?	<input type="radio"/> Yes <input type="radio"/> No
2.4	Did the teacher give appropriate feedback in your assignments on how to improve?	<input type="radio"/> Yes <input type="radio"/> No
2.5	Does the teacher conduct regularly class tests / quizzes?	<input type="radio"/> Yes <input type="radio"/> No
2.6	Does the question asked in class tests / quizzes increase the comprehension of the subject taught?	<input type="radio"/> Yes <input type="radio"/> No
2.7	Was GATE questions related to the topic discussed in the class?	<input type="radio"/> Yes <input type="radio"/> No
2.8	Does the teacher give enough time to clear doubts in regular and coaching classes?	<input type="radio"/> Yes <input type="radio"/> No
2.9	Did the teacher discuss real world problems related to the subject being taught?	<input type="radio"/> Yes <input type="radio"/> No
2.10	Did the teacher use and/or encouraged using appropriate web resources, power point presentations etc. to enhance better learning of the topic being discussed?	<input type="radio"/> Yes <input type="radio"/> No
3	Dealing with students and general behavior	
3.1	Was the dealing of teacher friendly and cordial with students?	<input type="radio"/> Yes <input type="radio"/> No
3.2	Is the teacher partial towards some students?	<input type="radio"/> Yes <input type="radio"/> No
3.3	Does the teacher use uncontrolled speech / language inside or outside class room?	<input type="radio"/> Yes <input type="radio"/> No
3.4	Is the class under full control by the teacher when he/she is inside?	<input type="radio"/> Yes <input type="radio"/> No
3.5	Is the teacher eager to spend time outside regular class hours to clear doubts?	<input type="radio"/> Yes <input type="radio"/> No
4	Do you feel satisfied with the teaching – learning experience?	
4.1	Please give your suggestions	
	<input type="text"/>	
4.2	Please give your specific suggestions to improve teaching – learning experience	
	<input type="text"/>	

2.2.2. Quality of end semester examination, internal semester question papers, assignments 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 faculty members will be nominated for the setting all the questions by the course coordinators in cyclic manner.
- ❖ Before the internal examinations, the hand written questions papers with answer key are set by the nominated faculty member. This question paper and answer key is verified by the course coordinator, module coordinator and programme coordinator / HOD as per the format given by the COE. Then the handwritten questions are typed in central computing facility of the university.

- ❖ 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.

The following figure 2.12 illustrates the process of internal question paper setting.

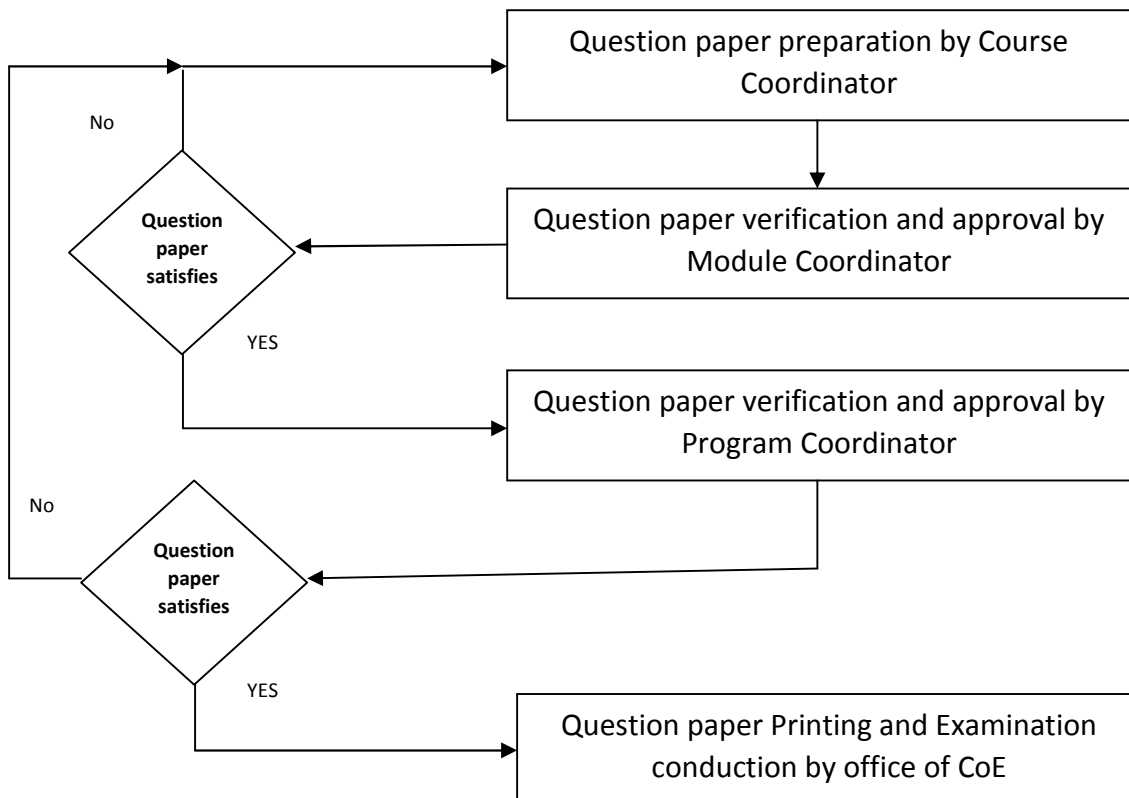


Figure 2.12: Process of Internal Question paper setting

- ❖ COE will bring (external) question papers from outside the campus also for sessional exams. For examining purpose, experts will be called upon from the reputed institutes and colleges.
- ❖ After completion of sessional exams, end semester will be conducted. 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 corrected by the external faculties called upon from the various universities/engineering colleges.

- ❖ The evaluated answers are given 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 questions 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 are 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 and typed 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 by the Course 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 by External Experts from reputed institutions conducted by controller of examinations office.
- ❖ In department level, question paper for all examinations such as Sessional Exam – I, II, III and End are prepared by the faculty who is nominated by the course coordinator. Then the course coordinator will check the level of question paper as mentioned by the IQAC. Further is checked by the Module coordinator. Finally, from the department level, it is forwarded to Program 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 (mentioned in Figure 2.23). 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.

Rubrics for internal / semester questions paper setting prepared by IQAC-KARE

For setting question paper and evaluation of answer sheets for sessional and end semester examinations, the faculties are needed to follow rubrics. The rubric contains 5 criteria according to the nature of activity. The activities are question framing, error free, related to GATE, repetition and etc. The rubrics are shown in Figure 2.21.

Rubrics for Question Paper Setting and Evaluation						
Criteria	Nature of Activity Quality of Question Papers	Excellent (4)	Very Good (3)	Good (2)	Average (1)	Not Satisfactory (0)
1	Question framed based on Blooms Taxonomy / OBE	All the questions are framed based on Revised Blooms Taxonomy Verbs/OBE and mapping of pattern is fully correct.	Question based on Blooms Taxonomy and mapping is more than 90% correct.	Question based on Blooms Taxonomy and mapping is more than 80% correct.	Question based on Blooms Taxonomy and mapping is less than 80% correct.	Either not based on Blooms Taxonomy or incorrect mapping.
2	Question Paper is free from grammatical and technical mistakes / error.	100% free from grammatical & technical error.	100% free from technical error and > 90% free from grammatical / typological error.	100% free from technical error and > 80% free from grammatical / typological error.	100% free from technical error and 80% free from grammatical / typological error.	Less than 100% free from technical error and < 80% free from grammatical / typological error.
3	Question paper tests the preparedness of students for competitive exams like GATE	At least 50 % Questions is of GATE standard or tests / challenges students' technical aptitude.	At least 40% Questions is of GATE standard or tests / challenges students' technical aptitude.	At least 30% Questions is of GATE standard or tests / challenges students' technical aptitude.	Less than 30% Questions is of GATE standard or tests / challenges students' technical aptitude.	Question paper lacks any challenge.
4	There is no repetition / similarities of questions in the past three years in the course	Absolutely no repetition of questions in past three years.	10% repetition of questions from the Question paper given three years before.	10% repetition of questions from the Question papers given two years before or earlier.	10% repetition of questions from the Question paper given in the last one year.	> 10% repetition.
5	Question Papers can be solved by students in stipulated time.	Question Papers can be solved exactly by students in stipulated time.	Question Papers can be solved in 95% of stipulated time.	Question Papers can be solved in 90% of stipulated time.	Question Papers can be solved in 80 % of stipulated time.	Question Papers can be solved less than 80% of stipulated time.



Figure 2.13 Rubrics for Question paper setting and Evaluation

(C) Evidence of CO's coverage in class test / mid-term tests

Sessional exams are conducted thrice per semester excluding end semester examination. In every sessional exam, specified course outcomes are covered (maximum 2 outcomes). However, at the end of the semester, all the course outcomes are covered. A model copy of question paper along with course outcomes is shown in Figure 2.22.

KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION (Deemed to be University) Anand Nagar, Krishnankoil - 626 126.							
SESSIONAL EXAMINATION - I - FEBRUARY 2020							
Course Code	INT18R452	Duration	90 Minutes				
Course Name	Programming with open source software	Max. Marks	50				
Degree	B.Tech.	Date & Session	12-02-2020 / FN				
PART - A (10 Marks) Answer All Questions		Pattern	Mapping COs				
1	Give some characteristics of Linux.	Understand	CO1				
2	What are the ways to remove a directory from Linux based systems?	Apply	CO1				
3	Define a variable and write down the rules for naming a variable.	Understand	CO2				
4	Write the common methods available in creating python Menus?	Understand	CO2				
5	What are the various options available in Tkinter for geometry management?	Understand	CO2				
PART - B (40 Marks) Answer All Questions		Pattern	Mapping COs				
6	Write the detailed history of Linux system and the different distributions available in Linux.	Remember	CO1				
7	Explain about the vi editor with the various commands in the editor.	Understand	CO1				
8	List and explain Linux package management with examples.	Apply	CO1				
9	Explain conditional alternative and chained conditional in python.	Understand	CO2				
10	Explain tkinter standard dialog boxes with examples.	Understand	CO2				
Assessment Pattern as per Bloom's Taxonomy:							
COs	Remember	Understand	Apply	Analyze	Evaluate	Create	Total
CO1	8	10	10	0	0	0	28
CO2	0	22	0	0	0	0	22
Total	8	32	10	0	0	0	50

Figure. 2.14 Model copy of Question paper

CO attainment for a subject of INT210 (Assignment)

Course Outcome	Direct attainment		In-Direct Attainment (CES) (Weightage 20%)	Total attainment (80% of DA + 20% of IDA)
	% of actual attainment	80% of Direct attainment		
CO1	95.74	76.59	20.00	80.59
CO2	89.36	71.48	20.00	75.48
CO3	89.36	71.48	20.00	75.48
CO4	89.36	71.48	20.00	75.48
CO5	89.36	71.48	19.00	75.28

(D)Quality of Assignment and relevance to Cos

- ❖ The assignments are prepared based on the COE office. The quality of the assignments is checked by IQAC (Figure 2.15)
- ❖ The students assignments are given based on the following components
 - Seminar (Fast learner)
 - Theory based project
 - Models preparations
 - Solving problems using modern recent tools (Particular subject)
 - Web searching source for related topic
 - Hand written (Theory)
- ❖ The faculties monitor the performance of the students based on the class student's skills, the assignment will be given to the fast learner and slow learner students and topic will be varied.

- ❖ The number of assignments given to students is minimum three to maximum of five for all courses in each semester
- ❖ The assignment questions cover all five units of each subject.
- ❖ The student's assignments questions are based on self learning, Projects and competitive examinations like GATE and IES.
- ❖ The assignment questions may vary from section to section.
- ❖ The assignment papers are evaluated by concern faculty members and enter the marks (based on course outcome of each unit) in centralized university EASY software.
- ❖ The specific constructive comments are given on assignment for the help of students to improve their knowledge and the way of communications.

Quality of Assignments						
8	Assignments are given on each unit	On 5 units	On 4 units	On 3 units	Up to 2 units	< 2 Units
9	Specific constructive comments are given on assignment	Detailed comments are given to help students improve their knowledge and way of communication.	Detailed comments are given only in technical content but not in way of presentation communication.	Comments / Suggestions are least or very generic which are not helpful to students.	Suggestions are very few and not fully helpful.	No constructive suggestions.
10	Self learning is ensured through assignment	Each assignment carries one or more questions on self learning (OR) One full assignment is based on self learning.	Three Questions in the total assignments check students' self learning.	Two Questions in the total assignments check students' self learning.	One Question in the total assignments check students' self learning.	No self Learning.
11	Quality of Questions in assignments	Questions are designed based on real time problems / situations or regular Textbook and unsolved sections of which require application of principles learnt/ case studies and for students to think and solve questions are of GATE standard and no repetition in past three years.	Questions are not based on regular Textbook and unsolved sections of which require application of principles learnt/ case studies and for students to think and solve and no repetition in past three years.	Questions are from regular Textbook and unsolved sections of which require application of principles learnt/ case studies and for students to think and solve and no repetition in past three years.	Questions are similar to what is discussed in class and/or no process from students and lack any challenge and repetition of questions in past two years.	Questions do not require any thought or process from students and lack any challenge and repetition.

Figure. 2.15 Rubrics for assignment questions prepared by IQAC-KARE

2.2.3. Quality of student projects

(A) Identification of projects and allocation methodology to faculty member

- ❖ According to our Curriculum, final year students in a group of three members should carry out one year final year project by applying the knowledge gained in three years of Graduation studies.
- ❖ The Circular will be issued at the end of the sixth semester for every batch of students by intimating the process of project registration.
- ❖ During this process, the sixth semester students are informed to form a group with maximum of three members by their own based on their interest.
- ❖ The team may consist of both fast and slow learners.
- ❖ The project team is expected to submit one page write-up before the beginning of project semester.
- ❖ At the starting of seventh semester, the list of faculty members and their specialization will be displayed in notice board.
- ❖ Students are informed to select their project guides based on their area of interest and specialization faculty.
- ❖ Finally, the list of project team and name of the project guide will be displayed in the department notice board with the approval of Project coordinator and the Program Coordinator.

2.2.3 (B) Types and relevance of the projects and their contribution towards POs and PSOs

The Figure 2.24 shows the correlation between COs and Pos/PSOs. And from this Figure 2.16 CO1 is mainly contributed PO10. CO2 is contributed towards PO1, PO2, PO3, and PO9. CO3 is contributed towards PO8. The CO4 is contributed towards PO9. The CO5 is contributed towards PO10.

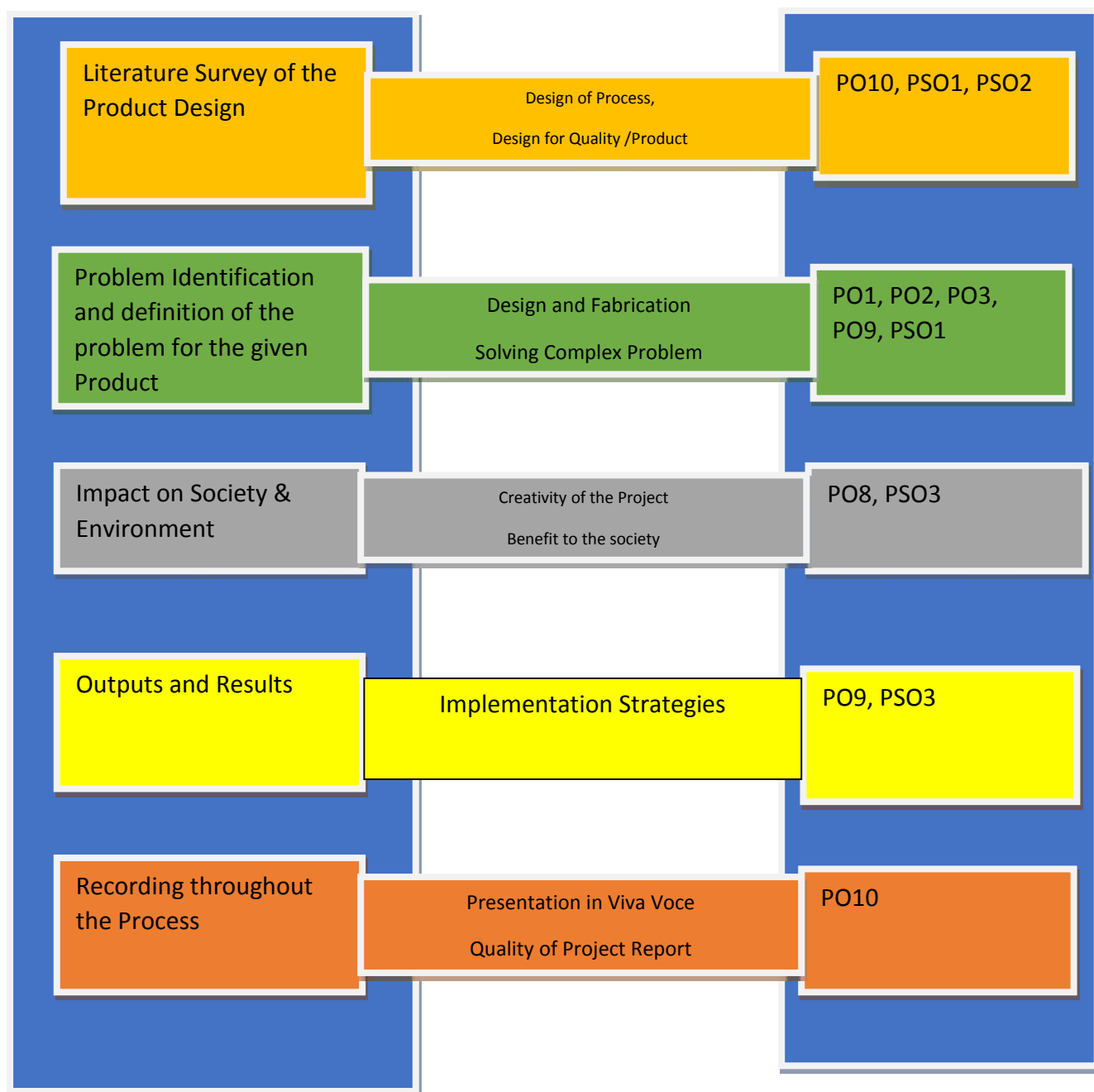


Figure2.16 Projects and their contribution towards CO, PO and PSO

Summary of Project Classification

Projects are classified according to the field of specialization. The Table 2.9 shows the number of projects carried out by the students from 2017 – 18 to 2019-20.

Table 2.9- Project Relevance and their Classification Contribution

	2017-18	2018-19	2019-20	2020-21	2021-22
Product	1	6	8	2	2
Research	3	5	3	5	7
Application	3	5	1	2	2
Others	Nil	Nil	Nil	Nil	Nil

Figure 2.17 gives the factors considered to carry out the project in our department. Further the Table 2.10 gives a detailed summary of projects carried out by the students and mapping of projects with PO's and PSO's.

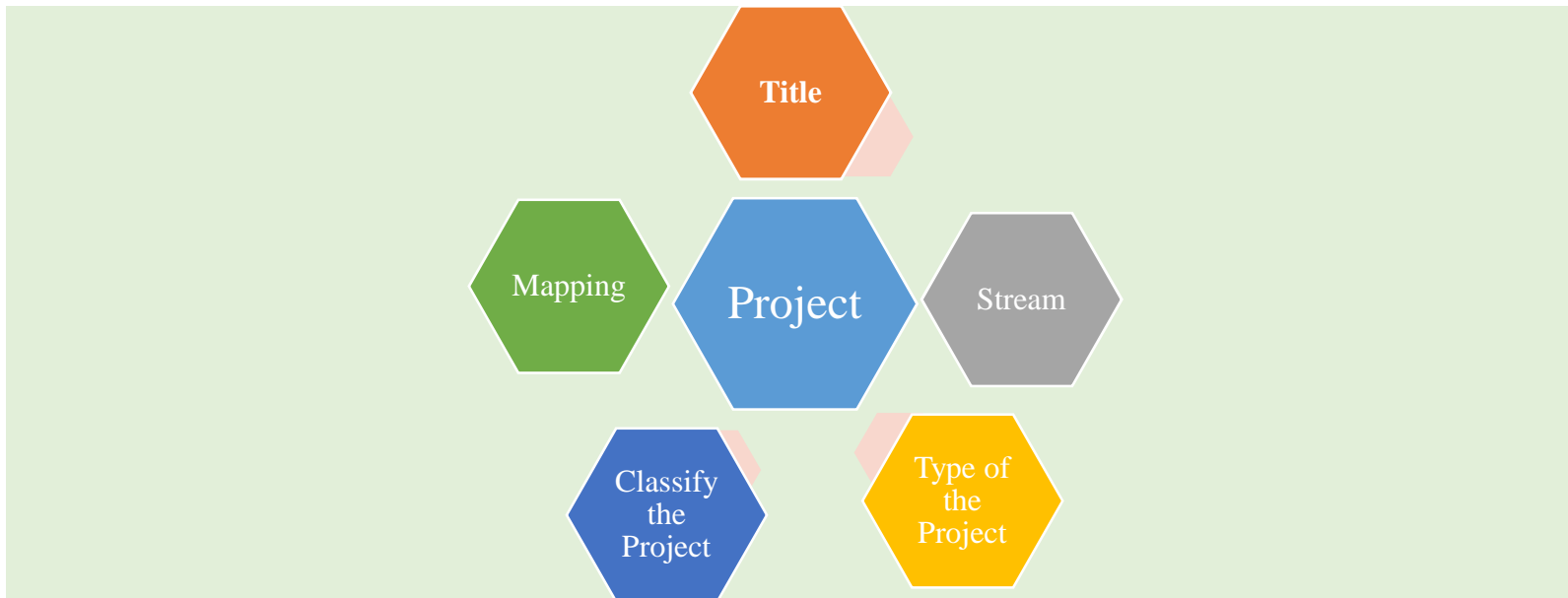


Figure 2.17 Process carried out in Projects

Table 2.10 Correlation between title of the project with POs and PSOs**Batch 2017-18**

Title of the Project	Stream	Types	Project Classification	Mapping with POs and PSOs
LCD VISION CHART	IoT	Industry Project	Application	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
DIGITAL LIBRARY SYSTEM	Programming	In-House project	Application	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10,PO11,PO12,PSO1, PSO2, PSO3
OBSTACLE DETECTOR	IoT	In-House project	Product	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
ATTRIBUTE BASED PRIVATE MATCHING OVER OUTSOURSED ENCRYPTED DATASET	Security	In-House project	Research	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3

Title of the Project	Stream	Types	Project Classification	Mapping with POs and PSOs
ENHANCING COOPERATION IN USING NEIGHBORHOOD COMPRESSIVE SENSING MODEL	Networking	Industrial project	Research	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
ONLINE VOTING SYSTEM	Programming	In-House project	Application	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
ENABLING PUBLIC VERIFIABILITY AND STORAGE SECURITY	Security	In-House project	Research	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3

BATCH 2018-19

Title of the Project	Stream	Types	Project Classification	Mapping with POs and PSOs
AUTONOMOUS ENERGY CONSUMPTION SYSTEM IN HIGHWAYS	IoT	In-House project	Application	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
A NOVEL APPROACH TO PROJECT CUSTOMER FEELINGS VIA REVIEWS	Machine Learning	In-House project	Research	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10,PO11,PO12,PSO 1, PSO2, PSO3
VOICE INTERACTION SYSTEM FOR SELF DRIVING VEHICLES	IoT	In-House project	Research	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
SMART MULTIPLE WATER TANK MONITORING SYSTEM USING IOT	IoT	In-House project	Product	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3

Title of the Project	Stream	Types	Project Classification	Mapping with POs and PSOs
ACCIDENT AVOIDANCE SYSTEM IN AUTONOMOUS VEHICLE	IoT	In-House project	Product	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
SWACH CAMPUS	Programming	In-House project	Application	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
ENCRYPTION ALGORITHM OF SUB BLOCKS OF DATA BLOCKS	Security	In-House project	Research	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
LOCATION IDENTIFICATION OF AN INDIVIDUAL BASED GEO TAGGING	Networking	In-House project	Research	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3

Title of the Project	Stream	Types	Project Classification	Mapping with POs and PSOs
DESIGN AND DEVELOPMENT OF VLAN USING SUBNETTING AND SECURING NAT & ACL	Networking	In-House project	Research	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
ELECTRICAL APPLIANCES POWER CONSUMPTION MONITORING WITH ON-OFF CONTROL BASED ON IOT	IoT	In-House project	Product	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
BIOMETRIC STUDENTS ATTENDANCE SYSTEM	Programming	In-House project	Product	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
IOT BASED ROOM TEMPERATURE, HUMIDITY & GAS MONITORING SYSTEM	IoT	Industry Project	Product	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3

Title of the Project	Stream	Types	Project Classification	Mapping with POs and PSOs
ONLINE SHOPPING CART	Programming	Industry Project	Application	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
SMART FORKLIFT SYSTEM	Programming	Industry Project	Application	PO1,PO2,PO3,PO4,PO5,PO8,PO9,PO 10, PO11,PO12,PSO1, PSO2, PSO3
KADUZEE APPLICATION	Programming	Industry Project	Application	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3

BATCH 2019-20

Title of the Project	Stream	Types	Project Classification	Mapping with POs and PSOs
PATIENT HEALTHCARE MONITORING AND MAINTENANCE THROUGH CENTRALIZED PRIVACY SERVER	Databases	In-House project	Research	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
COMBINED HYDROPONICS AUTOMATION SYSTEM	AI	In-House project	Research	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10,PO11,PO12,PSO 1, PSO2, PSO3
SMART FLASK WITH HEATING AND COOLING	IoT	In-House project	Product	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
WOMEN SAFETY BAND	IoT	In-House project	Product	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3

Title of the Project	Stream	Types	Project Classification	Mapping with POs and PSOs
SOFTWARE-DEFINED NETWORKING (SDN), CISCO ACI MULTISITE DEPLOYMENT	Networking	Industry Project	Application	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
LOCATION BASED OPTIMISED FOOD DELIVERY	Networking	In-House project	Research	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
TRAFFIC VIOLATION DETECTION	IoT	In-House project	Product	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
ENTRY MONITORING SYSTEM	IoT	In-House project	Product	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3

Title of the Project	Stream	Types	Project Classification	Mapping with POs and PSOs
AUTOMATION CAR PARKING SYSTEM	IoT	In-House project	Product	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
AUTOMATIC AC FILTER CLEANING	IoT	In-House project	Product	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
AUTOMATIC SPEED BREAKER SYSTEM USING IOT	IoT	In-House project	Product	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
SMART SURVEILLANCE SYSTEM	IoT	Industry Project	Product	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3

BATCH 2020-21

Title of the Project	Stream	Types	Project Classification	Mapping with POs and PSOs
REVAMP OF SENTIMENT ANALYSIS USING MACHINE LEARNING	Machine Learning	In-House project	Application	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
IOT BASED HEIST DETECTOR	IoT	In-House project	Research	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10,PO11,PO12,PSO 1, PSO2, PSO3
DATA VAULT USING DATA SCIENCE	Data Science	In-House project	Research	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
ACCESSIBILITY FOR THE HEARING IMPAIRED	IoT	In-House project	Product	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3

Title of the Project	Stream	Types	Project Classification	Mapping with POs and PSOs
E COMMERCE USING DJANGO	Programming	In-House project	Product	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
CROWD MANAGEMENT SYSTEM DURING PANDEMIC	Programming	In-House project	Application	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
WIRELESS SECURITY FOR BIKE IGNITION USING ANDRIOD VIA GPS AND GSM	Security	In-House project	Research	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
SMART WORKSHOP MANAGEMENT SYSTEM	Programming	In-House project	Research	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3

Title of the Project	Stream	Types	Project Classification	Mapping with POs and PSOs
AN EFFECTIVE AND EFFICIENT PRIVACY MODEL OF HEALTH BIG DATA IN CLOUD COMPUTING	Cloud Computing	In-House project	Research	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3

BATCH 2021-22

Title of the Project	Stream	Types	Project Classification	Mapping with POs and PSOs
ALCOHOL DETECTION AND EMERGENCY ALERT SYSTEM	IoT	In-House project	Application	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
EFFICIENT AD PLACEMENT USING DATA MINING AND OPTIMIZATION	Data Mining	In-House project	Research	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10,PO11,PO12,PSO 1, PSO2, PSO3

Title of the Project	Stream	Types	Project Classification	Mapping with POs and PSOs
FAST FUELS: A COST EFFECTIVE AUTOMATED REAL TIME EMBEDDED SYSTEM	IoT	In-House project	Research	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
ANEMIA ESTIMATION FOR PATIENTS USING A MACHINE LEARNING MODEL	Machine Learning	In-House project	Product	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
NEWS APPLICATION USING ARTIFICIAL INTELLIGENCE	AI	In-House project	Product	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
PRISONER MONITORING SYSTEM USING IOT	Programming	In-House project	Application	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3

Title of the Project	Stream	Types	Project Classification	Mapping with POs and PSOs
VERMI-COMPOSTING USING AI IN IOT	IoT	In-House project	Research	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
CARDIOVASULAR DISEASE PREDICTION USING MACHINE LEARNING BASED ON CYTOKINES	Machine Learning	In-House project	Research	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
RURAL HEALTH HELPER USING NLP AND IOT SYSTEM	IoT	In-House project	Research	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3
A NOVEL APPROACH TO IDENTIFY THE DEPRESSED PEOPLE IN ONLINE	IoT	In-House project	Research	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3

Title of the Project	Stream	Types	Project Classification	Mapping with POs and PSOs
INTELLIGENT AGENT SYSTEM FOR EFFECTIVELY PREDICT THE STOCK MARKET USING MACHINE LEARNING TECHNIQUE	Machine Learning	In-House project	Research	PO1,PO2,PO3,PO4, PO5,PO8,PO9,PO10, PO11,PO12,PSO1, PSO2, PSO3

Community Service Project (CSP):

Community service projects are the new experience for students to interpret their academic knowledge with real-time problems. This project gives them the exposure of how to find new problems from the needs of a community. They can obtain more knowledge on deriving and designing new projects based on a real circumstance. The students will be able to interact with real-time customers for the requirements. Based on it they can make a detailed analysis with the support of an expert. Community service projects are the pathway for a real time product development out of the need of a community.

List of Community Service Projects

S.No.	Academic Year	Count
1	2019-2020	43
2	2020-2021	29
3	2021-2022	34

2019-2020

No	Reg. No.	Name	Project Title
1	9916008031	Mohan K	Air Purity Detection System
	9916008041	Rajapandian T	
	9916008050	Somnath Yadav J	
2	9916008033	Nagarajan A	Android Based Home Control
	9916008058	Vikram Kishore V	
	9916008018	Harish G	
3	9916008035	Nijantha D	Automatic Fire Detection and Alarm
	9916008011	Devadharshini S	
	9916008037	Padmavathi P	
	9916008062	KarthigaSundari	
4	9916008036	Nithesh Kumar S	Street Light Control System
	9916008030	Mariselvam K	
	9916008025	Kathiravan M	
5	9916008038	Priyadharshini RM	Accident Alert for Driver by using Face Recognition
	9916008004	Anitha Devi K	
	9916008024	Karthiga M	
6	9916008043	RokhidSanjei R	Website for Schools
	9916008040	Rajamurugaperumal R	
	9916008012	Dhanush M	
7	9916008047	Shanmuganathan M	Smart Gas Booking System
	9916008056	Vignesh S	
	9916008009	Balasubramanian S	
8	9916008059	Logeshwaran	Lemon Sanitizer
	9916008015	Hari Ram R	

No	Reg. No.	Name	Project Title
	9916008006	ArunKumar J	
9	9916008061	SwathiRavishankar	Application for Organic Farming and Fertilizers
	9916008014	Durgalakshmi S	
10	9916008023	Jayaswathi V	
11	9916008027	Lavanya G	Water Redeem System for Panchayat Water Tanks
	9916008026	Preethi G	
	9916008016	Harini Devi V	
12	9916008019	Janani Nivetha AP	Rain Detection and Alarm System
	9916008048	Sreenithi S	
	9916008042	Rajapriyavathini K	
13	9916008020	Jayashree R	Women Safety Security System Device
	9916008008	Ayshwaria KT	
	9916008017	Harini JG	
14	9916008029	Manoj Kumar P	Door Lock System using IoT
	9916008054	VajithRaghuram M	
15	9916008022	Jagadeeshwaran G	Obstacle Detector for Visually Challenged
	9916008044	Sarath A	
	9916008003	Aniruth K	
	9916008001	Akash R	

2020-2021

S.No	Reg. No.	Name	Project Title
1	9917008005	DHILIP KUMAR M	TOOLS FOR RESEARCH DATA OF HIGHER INSTITUTE EDUCATION
	9917008022	SHABARISH R M	
	9917008024	STAINES S	
2	9917008023	SIVA KUMAR M	DIGITAL VILLAGE WELFARE SERVICE
	9917008029	RAMASUBRAMANIAN P S	
	9917008013	MANISH WINS PRADEEP G	
3	9917008003	CHANDRAMOULI A	CORPORATION WATER MONITORING SYSTEM
	9917008010	KAMAL RAJ P	
	9917008014	MUGESH K	
4	9917008030	RAJA SEKARAN P	WEATHER BASED ROOM AUTOMATION SYSTEM
	9917008017	NAVEEN KUMAR N	
	9917008021	SELVA KUMAR S	
	9917008006	DHILIP KUMAR S	
5	9818008002	HARI BABU N T	GAS LEVEL NOTIFIER
	9917008007	GAYAM VISHNU VARDHAN REDDY	
	9917008018	PINNIKA NAVEEN	
6	9917008009	JEYA SHRUTHY P	INSTRUCTION DETECTION
	9917008027	THARANI S	
7	9917008001	ABINAYA R	FOOD DISTRIBUTION SYSTEM
	9818008001	G KAUSALYA	

8	9917008008	ISWARYA M	SMART IRRIGATION SYSTEM FOR HOME GARDENING
	9917008019	RAMYA SRI S	
	9917008028	ANU KEERTHIKA M S	
9	9917008032	ILLAKKIYA R	RAISE YOUR HANDS FOR FARMERS
	9917008033	RAMA R	
	9917008004	CHRISPA DANIEL	
10	9917008015	MUTHU BALAJI S	VEHICLE TRACKING USING RFID
	9917008025	SYED AHAMED JAVEED ASHIQ J	
	9917008031	ARUNACHALAM A S	

2021-2022

Team no	Register Number	Team Members	Project Title
1	9918008012	Mathesh. S	KissanHaat
	9918008039	Hari Prasad. S	
	9918008008	Gopalakrishna. D	
2	9918008003	Ajithmadhan K	
	9918008005	Aravinthkanna S	
3	9918008015	Mahammad sohil.S	Smart Soil Testing
	9918008006	Sri harsha .CH	
	9918008016	RAMANA SRIKANTH. U	
4	9918008026	G.BARKAVI	smart plant watering system
	9918008034	K.KEERTHANA	
	9918008002	S.AISHWARYA	
5	9918008025	Iswarya S	Smart Stick For Blind Person
	9918008014	Pooja shree A	
	9918008017	Usha RM	
6	9819008002	Priyadharshini.R	Android Shopping Assistant

	9918008027	Prakashraj.R	forvisually challenged peoples
	9918008022	Vishalkrishna.S	
7	9918008010	JESHIMA J	HOME LAYOUT AUTOMATION
	9519008401	UMA MAHESWARI A	
	9918008011	MARIMUTHU C	
8	9918008031	N.S.Vijayaragunathan	MEDAND
	9918008021	K.Vinith	
	9918008029	S.Venkateshaperumal	
9	9519008301	s.swetha	Sensing and monitoring incubator baby using IoT
	9918008001	s.saranya	
	9918008038	v.j.logavarshini	
10	9918008001	S.Abishek Raja	E FARM MANAGEMENT
	9918008040	VeluPrabakaran	
	9918008028	Vishal adith	
11	9918008024	E.YUGANDHAR	E-Ration
	9918008037	V.BALAJI	
	9918008009	D.JAIGANESH	
12	9918008020	VIKRAMAN.M	Hospital management system
	9918008018	VIJAY SHANKAR.G	
	9519008302	ARUN KUMAR.B	

2.2.3 (C) Project related to industry

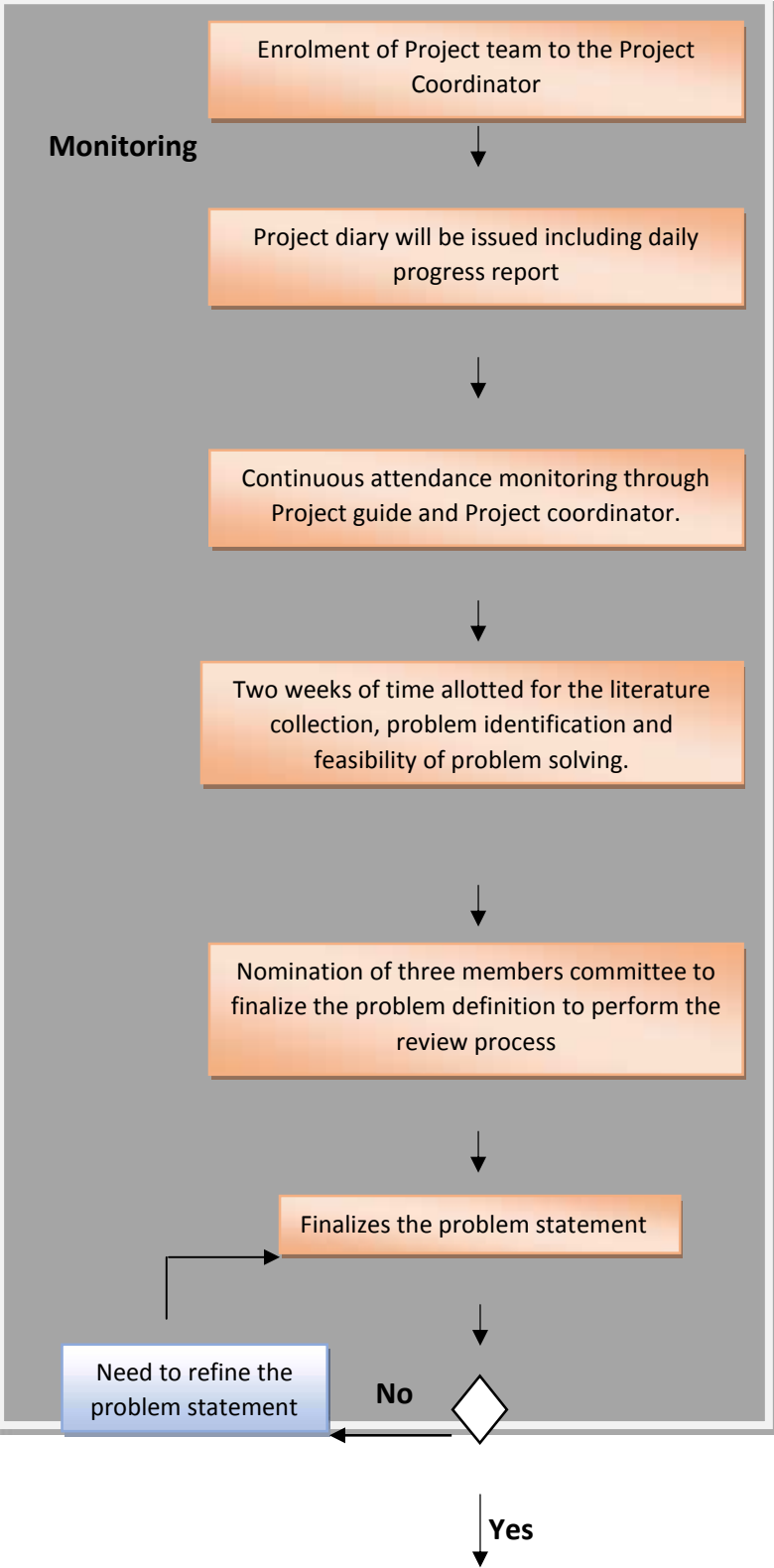
Students are encouraged to carry out their project outside the campus (i.e.) preferably in Industries. If the students do their project in industries, they could get exposure of real time problems faced by the industries. Also the students can utilize the opportunity to undergo such kind of real time projects. Further the relationship between the companies to university is enhanced. It could be chance of getting placement in the same companies after completing their degrees. Table 2.11 shows the list of students undergone to industries to carry out their projects.

Table 2.11 List of companies underwent to project

2016-2017

S.No	Academic Year	Reg.No	Name	Guide	Name Of The Industry	Title
1	2017-18	9815008001	BHARATH R	Dr. S. Suprakash	7 th Sense Technology, Madurai	LCD VISION CHART
		9914008003	GANESH KUMAR K			
2	2018-19	9915008050	VIJAYAN S	Mr. D. Prem Raja	National Informatic centre, Andaman & Nicobar UT center	IOT BASED ROOM TEMPERATURE, HUMIDITY & GAS MONITORING SYSTEM
3		9915008026	SIVASANKARAN S	Dr. M.	Infostech, Madurai	ONLINE SHOPPING

S.No	Academic Year	Reg.No	Name	Guide	Name Of The Industry	Title
		9915008030	SYAM OSCAR K	Maragatharajan		CART
4		9915008038	THIRUMALAISELVI M	Dr. V. Baby Shalini	Swifterz creative services	SMART FORKLIFT SYSTEM
5		9915008009	KAYALVIZHI K	Mrs. M. Jansi Rani	Farshore Software development ltd	KADUZEE APPLICATION
6	2019-20	9916008029	Manoj Kumar P	Dr. M. Venkatesulu	Cloud Uno Consulting India Pvt ltd,	Software-defined Networking (SDN), Cisco ACI multisite deployment.



Evaluation			
Nature of work	Evaluation of	Assessm	Participa

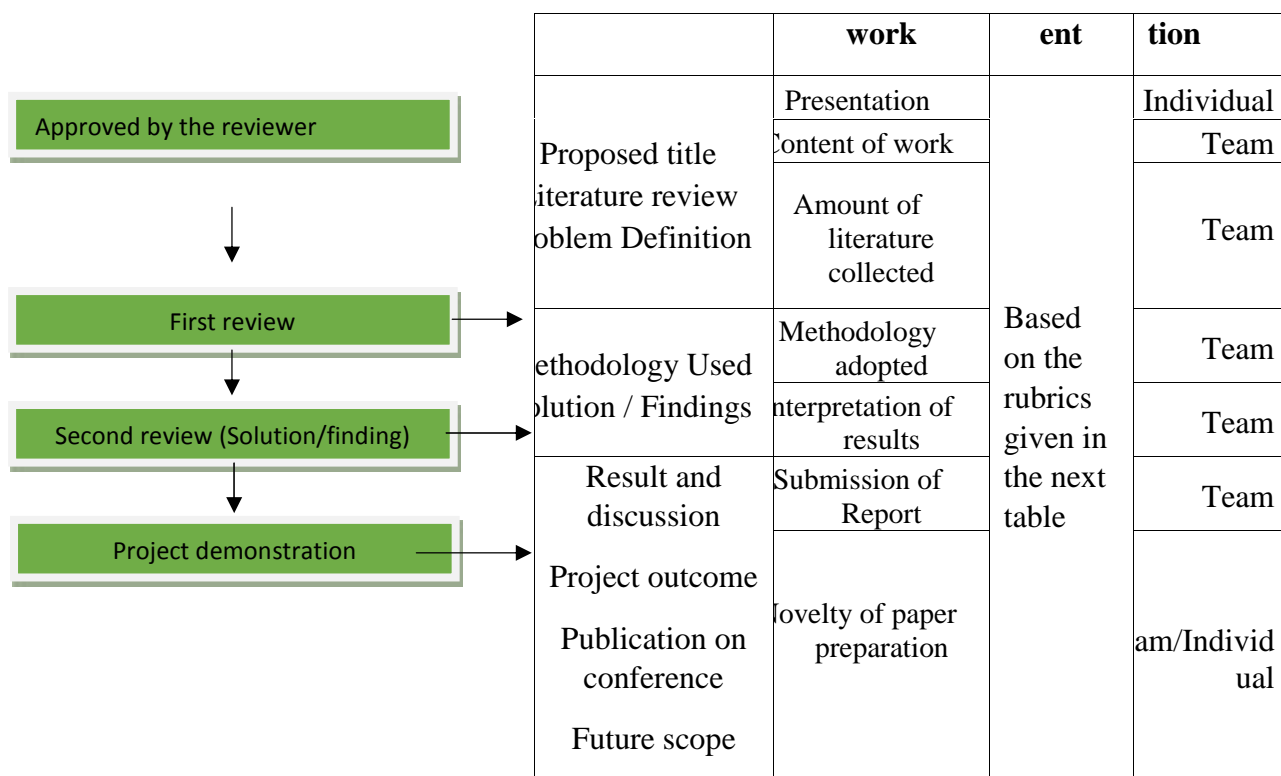


Figure 2.18 Stages in the process of monitoring and evaluation

2.2.3 (D) Process for Monitoring and Evaluation

A detailed step-by-step procedure is given below (Figure 2.18) about the process of monitoring and evaluation of project by those who undertake projects in our department.

2.2.3 (E) Process to Assess Individual and Team Performance

Our university has framed rubrics to evaluate the students' project. The project is evaluated based on some selected factors. The factors are collection of literature reviews, Problem definition, Methodology proposed, and etc. A complete rubrics description also the mark split is given in Table 2.12. Based on this Table, the projects are evaluated.

Table 2.12 – Evaluation methodology of projects

Rubrics						
Review I and Review II						
Description	Score					
	5	4	3	2	1	0
Literature Review(5) (For review-I)	<ul style="list-style-type: none"> Strong collection of more number of quality journal papers (25 nos) and gathering information Information gathered from field survey. Gathered information from multiple sources. Well explained the current development and innovation work. Able to explain the important of study. 	<ul style="list-style-type: none"> Collection of quality journal papers (20 nos) and gathering information Gathered information from multiple sources. The information is related to innovation idea. 	<ul style="list-style-type: none"> Collection of quality journal papers (15 nos) alone. Collected information from limited number of source. Summarization of literature with relevant project work. 	<ul style="list-style-type: none"> Collection of quality journal papers (10 nos) alone. Gathered information from single source. Summary of the literature is not relevant to the project title. 	<ul style="list-style-type: none"> Collection of journal papers is not relevant 	<ul style="list-style-type: none"> There is no collection of journal paper
Problem Definition(5)	<ul style="list-style-type: none"> The problem definition and scope of work is well defined and explained. Able to clearly present the objective and important of the study. 	<ul style="list-style-type: none"> The problem definition and scope of work is well explained clearly But the objective is cleared. 	<ul style="list-style-type: none"> The problem is defined with existing one. Not properly explained the problem definition. 	<ul style="list-style-type: none"> Problem is identified but no scope on work. 	<ul style="list-style-type: none"> Problem is not clearly identified. 	<ul style="list-style-type: none"> Unable to present the problem statement

Methodology Proposed(5)	<ul style="list-style-type: none"> • Work is related to community service. • Work is related to research oriented. • Adopted any new techniques in existing one. • Novelty of work. 	<ul style="list-style-type: none"> • The methodology and objective of the current development work is explained clearly. • Suitable methodology is selected for current work. 	<ul style="list-style-type: none"> • Selected methodology is suitable with current work. • Not properly explained the proposed work. 	<ul style="list-style-type: none"> • The selected methods are not relevant to current work. 	<ul style="list-style-type: none"> • No scope for community service. • Old techniques usage • There is no technical content. 	<ul style="list-style-type: none"> • Failed to explain and identify the methods.
Presentation(5)	<ul style="list-style-type: none"> • The slides are presented with team able to clearly explain. • Clearly explained with research oriented. • Clearly explained with community service oriented. • The presented slides are designed in logical order with uniform format. 	<ul style="list-style-type: none"> • Present the current Work with computer aided design and assembly modelling. • Present the current Work with animation. • Present the current Work with experiments results. 	<ul style="list-style-type: none"> • The presented slides are not in logical order with un uniform format. • Present the work with Auto CAD drawing modelling. 	<ul style="list-style-type: none"> • Slides are presented with lack of communication • Present the work without modeling, animation and experiments results. • Failed to demonstration of work. 	<ul style="list-style-type: none"> • Presentation is not clear • Present the slides with technical error. • Some mistaken happen in slides 	<ul style="list-style-type: none"> • Failed to present the current development work

Solution / findings (5) (Review-II only)	<ul style="list-style-type: none"> The obtained solution is highly satisfied. Obtained expected results. Obtained accrued results. Findings excellent work. 	<ul style="list-style-type: none"> The obtained solution is satisfied. The solution is done with existing one. 	<ul style="list-style-type: none"> The product outcome with some technical error. Obtained solutions are not relevant. The obtained solutions are not satisfied. 	<ul style="list-style-type: none"> The obtained solution is not clear. Failed to run the product. 	<ul style="list-style-type: none"> There is no possible product outcome There is no fabrication and analysis of work. 	<ul style="list-style-type: none"> Unable to obtain the solutions.
Report(5)	<ul style="list-style-type: none"> The report is strictly followed the table, figure, spacing, reference and typesetting as per the format. The most the references are cited in appropriate place. Report Printing is high quality. Submit the report in proper time 	<ul style="list-style-type: none"> The report is strictly followed the table, figure, spacing, reference and typesetting as per the format. Submit the report in proper time The few references not cited in appropriate place. 	<ul style="list-style-type: none"> The report is partially followed the table, figure, spacing, reference and typesetting format. Printing quality is poor. The most the references are not cited in appropriate place. 	<ul style="list-style-type: none"> The report is not followed as per the format. Delay in report submissions. The technical content of work is not satisfied. 	<ul style="list-style-type: none"> English language is very poor. There is no technical content. The report is not followed as per the format. 	<ul style="list-style-type: none"> Failed to submit the report.

2.2.3 (F) Quality of Completed Project

Quality projects are disseminated and published to the science and technology domains in the following aspects:

- Publishing papers in reputed National / International Conference proceedings.
- Filling patterns for novel technical idea.
- Forwarding the best project to the science competition
- Sending the students projects proposal to the IEDC, TNSSTC etc.

The following table shows the number of projects carried out vs. project presented in the conferences and patents.

S No	Academic Year	Total Number of Batches	Conference Presentations	Patent registration
1	2017-18	7	1	
2	2018-19	16	5	3
3	2019-20	12	10	-
4	2020-21	12	20	1
5	2021-22	18	25	1

Figure 2.13 Conference detail

The Table 2.13 shows the students participation in the conference held at various institutions for various batch.

Table 2.14 List of student's participation in conference

S.No	Name of The Student	Reg.No	Project Title	Name of the Conference
1.	C.Ganesh Ram	9915008006	CAM CATCH(AntiTheft Security)	National Conference on Science, Engineering, Technology and Management
	R.Pandi Kishore	9915008019		
2.	M.HemaMalini	9915008037	Orphange Helpline	National Conference on Science, Engineering, Technology and Management
	M.ThirumalaiSelvi	9915008038		
3.	C.Anitha	9915008048	Backing Up Your Things	National Conference on Science, Engineering, Technology and Management
	S.Ponkeerthana	9915008020		
4.	M.Kirthana	9915008040	Fire Alarm With Sensors	National Conference on Science, Engineering, Technology and Management
	T.Shanmuga Lakshmi	9915008025		
5.	M.Muthu Kumar	9915008017		National Conference on Science, Engineering, Technology and Management
	G.SaiPrasath	9915008023		
6.	Hari babu N T	9818008002	Comparison of the Algorithm for the Hearing Impaired	2nd International Conference on Electronics and Sustainable Communication Systems (ICESC 2021)
7.	Chrispa Daniel	9917008004		
8.	Abinaya R	9917008001	IOT based heist detector	Kaarunya University
9.	Tharani S	9917008027		
10.	Arunachalam A S	9917008031		
11.	M Dhilip Kumar	9917008005	Data Vault using Data Science	Jan wysykowshi University
12.	Rm Shabarish	9917008022		
13.	S Staines	9917008024		
14.	Iswarya M	9917008008	Review Analysis using Ensemble Algorithm	5th international conference on intelligent data communication technologies and internet of things
15.	Ramya Sri	9917008019		
16.	Anukeerthika M S	9917008028		
17.	JeyaShruthy P	9917008009	Head Count	Indian Institute of technology,

S.No	Name of The Student	Reg.No	Project Title	Name of the Conference
18.	Raja Sekaran P	9917008030	Tracking System to Maintain Social distance during Pandemic	Kharagpur
19.	P Kamal Raj	9917008010	AN EFFECTIVE AND EFFICIENT PRIVACY MODEL OF HEALTH BIG DATA IN CLOUD COMPUTING	International Conference on Intelligence and Safety for Robotics-(ICISR-21)
20.	S MuthuBalaji	9917008015		
21.	S Selva Kumar	9917008021		
22.	G Manish Wins Pradeep	9917008013	Smart Worship Management System	Jan Wyzykowski University, Poland & Panipat Institute Of Engineering And Technology
23.	M Sivakumar	9917008023		
24.	PS Ramasubramanian	9917008029		
25.	J Syed Ahmed Javeed Ashiq	9917008025	Bike ignition using android via gps and gsm	Global research organization
26.	R Rama	9917008033		
27.	Illakkiya R	9917008032		

Table 2.15 List of student's registered for Patents

Sl. No	Name of the Student	Title of the Project	Date
1	S.Alagumeenal(9915008004) Ms.T.Shanmugalakshmi(9915008025) Ms.V.Jayashri(9915008039)	Voice Interaction System for Self Driving Vehicle	29/04/2019
2	P.Mahavishnu(9915008011) D.DhivyaDharshini(9915008045)	RUINA NE VEHICULUM	29/04/2019

	Keerthana.M(9915008040)		
3	A.Martine(9915008013), T.Palaniappan(9915008018), S.Singaraj(9915008041)	Electrical Appliances Power Consumption Monitoring with On-Off Control Based on IOT	29/04/2019

List of projects with “Best project award” by IQAC-KLU.

In our university, quality check of the projects is closely watched by a cell termed as IQAC. The cell measures the quality in varying aspects such as Teaching, learning and evaluation, co-curricular activities, research, consultancy extension activities and soon. For each aspect the cell has framed rubrics with mark split-up. For full filling the criteria, the following students received best project award. The details are given below in Table 2.16.

Table 2.16: List of students awarded for Best Project

S.No	Name of the Student	Reg No.	Guide Name	Title
1	MAHAVISHNU P	9915008011	Mr. D. Prem Raja	Accident Avoidance System in Autonomous vehicle
	DHIVYA DHARSHINI	9915008045		
	KIRTHANA	9915008040		
2	KAYALVIZHI K	9915008009	Mrs. M. Jansi Rani	KADUZEE Application
3	PREQUIET L	9913008010	Dr. M. Maragatharajan	Deduplication on Encrypted Cloud
	ARUL MUGARAM KANNAN	9913008002		
	SIVA N	9913008013		

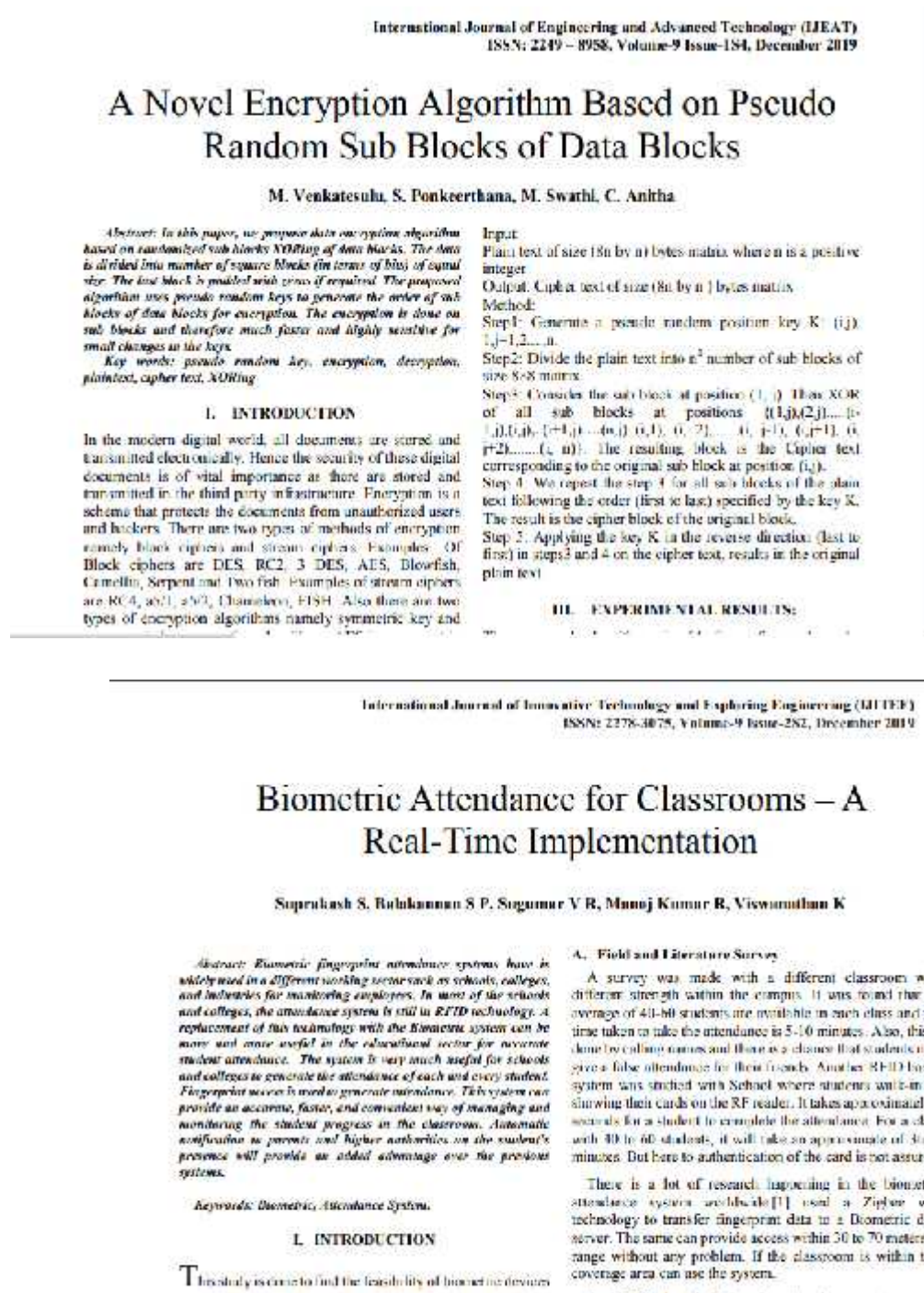
Students are encouraged to publish their project work in Journals. The students have published their project work in many journals. Table 2.17 shows list of students published their project work in Journals.

Table 2.17 List of students published their project work in Journals

NAME OF THE STUDENT	TITLE	JOURNAL NAME
Sugumar VR, Manoj Kumar R, Viswanathan K, Suprakash S	Biometric Attendance for Classrooms – A Real-Time Implementation	International Journal of Innovative Technology and Exploring Engineering
S. Dhakchanamoorthy, C. Ganesh Ram, S. SriramBabu, R. Sundarrajan	Multiple Water Level Recognizing System using IoT	International Journal of Engineering and Advanced Technology
S. Ponkeerthana, M. Swathi, C. Anitha, M. Venkatesulu	A Novel Encryption Algorithm Based on Pseudo Random Sub Blocks of Data Blocks	International Journal of Engineering and Advanced Technology
N. S. Aarthy, K. Mahalakshmi, M. Muthukumar, C. Balasubramanian, M. Maragatharajan	A Novel to Project Customer Feelings via reviews	International Journal of Engineering and Advanced Technology

2.2.3 (G) Evidence of paper published

The Sample certificate of paper presentation done by the student as an outcome of their project work is shown in Figure 2.19.



2.2.4 Initiatives related to industry interaction

2.2.4 (A) Industry supported laboratories

1. Cyber Forensics Research Laboratory
2. IBM Centre of Excellence Laboratory
3. CISCO Laboratory
4. Pearson Testing Center
5. Technology Innovation Centre (National Instruments Laboratory)

2.2.4 (B) Industry involvement in the program design and curriculum

Program and curriculum is designed with the help of Industrial experts. The following are the point describes the relationship with Industry to department for active participation in framing curriculum.

- A board of studies member is from industry who actively involves in the process of curriculum design.
- During the expert's visits to our campus for the purposes like workshop, guest lecture and conferences, the feedback about the program curriculum is obtained and the same is incorporated later in the curriculum design.
- In addition, the suggestions from the industry experts present in the alumni advisory board is also considered for the curriculum design.
- Industrial advisory board member is also taking part in the program and curriculum design.

- Figure 2.30 presents the various mode of the interaction happened with the industrial expert in line with program and curriculum design. The comments given by them, all are incorporated in the final copy of curriculum and syllabus.

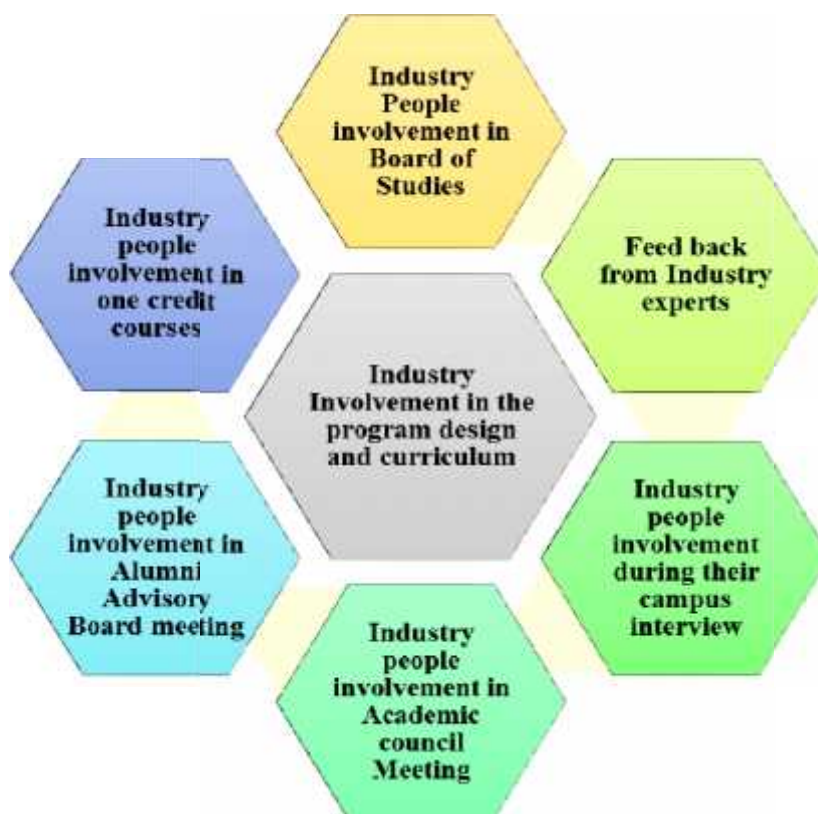


Figure 2.20 Involvement of Industries in Program design and curriculum

The details of persons actively involved in designing the curriculum as industrial advisory board are given in Table 2.18.

Table 2.18.Details of Industry Advisory Board

No	Name of the Industry	Name of the Industry expert
1.	Mr. C. ThiruvengadaRajan	Wipro Technologies, Chennai
2.	Mr. M. Prathap	HCL Technologies, Chennai
3.	Mr. C. S. Raghuvaran	Cognizant Technologies, Chennai
4.	Mr. Gopi Krishna	Collar solutions, Chennai
5.	Mr. Satish Viswanathan	Nxtgen Cloud Technologies, Bangalore

An industry people are also taken part in Board of studies and the details of such members are.

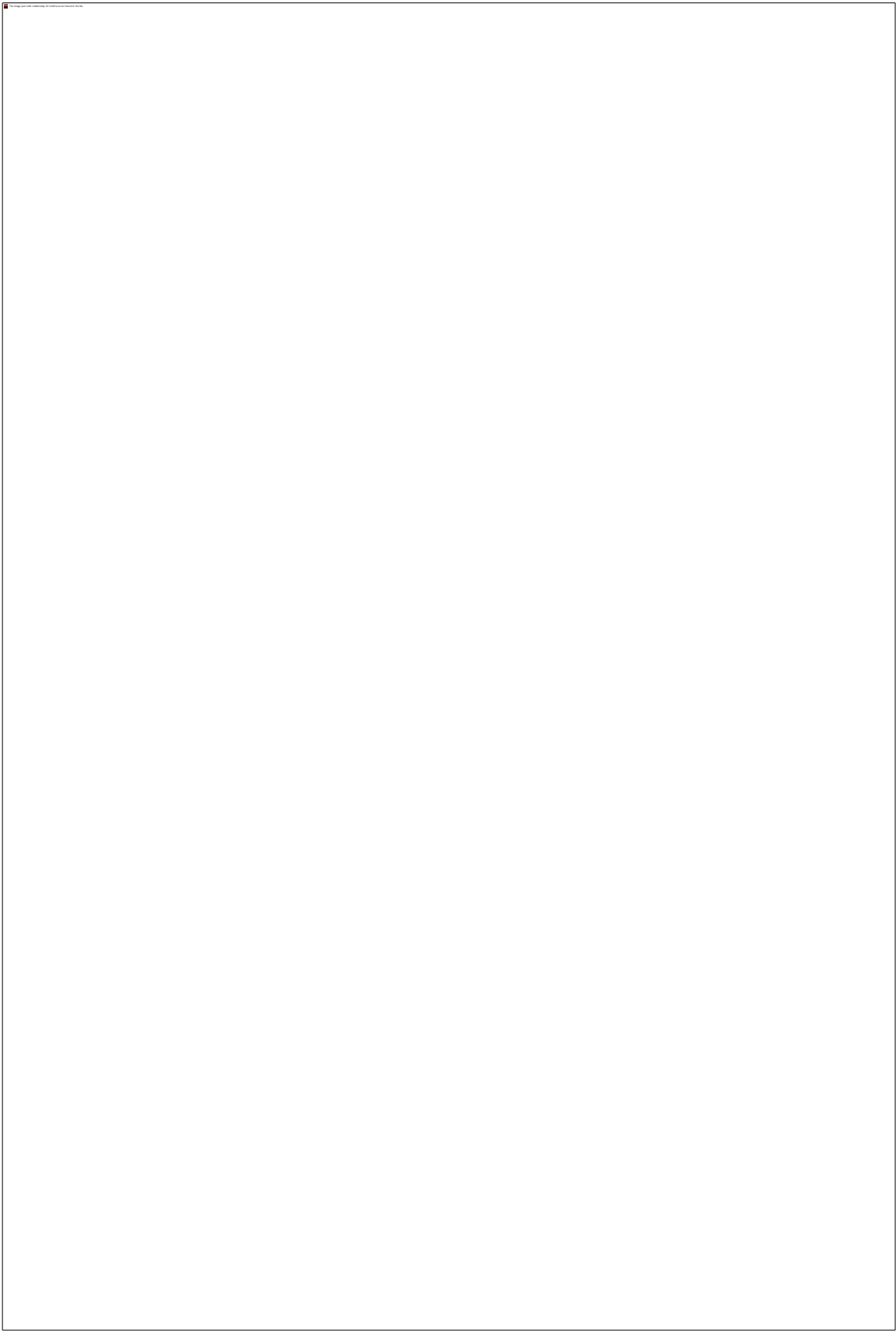
-
1. Mr.S.Gopikrishna,
Chief Executive Officer,
Collar solutions Pvt. Ltd.,
Chennai
-
2. Mr. Satish Viswanathan
Vice President
Nxtgen data centre and Cloud
Technologies, Bangalore.
-

During the academic council meeting, the industrial experts are called upon to check the content of syllabus and also to improve the quality of curriculum. The sample details of Academic council members are shown below.

1. Mr. K. S. Mani
Deputy Director,
Reliability and Quality Assurance (RQA),
Area at IISU, ISRO,
Thiruvananthapuram
2. Dr.B. Venkatraman,
Director, Health Safety &EnvironmentGroup, IGCAR,
Chennai
3. Mr. P. Raguraman,
General Manager, BHEL,
HPBP Unit-II,
Trichy.
4. Mr. Anand Pillai
Education Lead – India & SAARC, at Autodesk
India

The experts from industries shown in Table 2.19 were handled the one credit courses to enhance the knowledge of students so as to reduce the gap between theories and practical. During their visit, our department is used to get the feedback from the experts about the curriculum which also incorporated during curriculum refinement. Some of the feedback forms are attachedherewith. The sample feedback form obtained from the expert is shown in

Figure 2.21.



2. Mention the topics, which should be deleted from the UG curriculum

Topic 1 Hybrid controller & Embedded systems

Topic 2

Topic 3

Topic 4

Topic 5

3. Mention the topics, which should be revised / updated in the UG curriculum

Topic 1 Hybrid controller & Embedded systems

Topic 2

Topic 3

4. Mention the topics, which should be condensed in the UG curriculum and suggest how

Topic 1

Topic 2

Topic 3

Johnny Alex C
Signature of the Expert

Details about the expert:

Name : JOHNY ALEX C

Designation : TECHNICAL SERVICE SPECIALIST

Name of the Industry/College: IBM

Working Experience : 5 years

Phone Number : 8903711366

E-mail ID : johnnyalex097@gmail.com

Figure 2.21 Sample feedback form obtained from the experts

2.2.4 (C) Industry involvement in partial delivery of any regular courses for students

- Experts from various industries and research laboratories have delivered guest lecture, key note address, conferences, seminars and one credit course on different thrust areas of Information Technology.
- Students also visit industry as a part of their academic activities which enable them in gaining knowledge and exposure. This results in improving their performance in studies and also increases the probability in getting job in the core field.
- The experts from the following industries have visited our campus for delivering lecture in a conferences/seminars/one credit courses etc.
- The following are the details of industry people involved in partial delivery of the courses for the students. The courses are taken during the conduction of Workshops, Seminars, Conferences (National/International), Guest lectures, Symposium and others.
- The details of the industry expert who act as a resource person in different modes such as workshop, conference, guest lecture etc. for different academic years are as shown in table 2.20;

S No	Title of the event	Details of the resource Person	Date
Guest Lectures			
1	Preparing for IT industry	Mr.V.T.Madhan Kumar, SAP Senior Consultant, NTT data Bangalore	22-10-2018
2	Bigdata and marketing analysis	Mr. G. Tamilselvam, Vice President, The Nielson Company, Florida, USA	05-07-2018
3	Privacy and Security in Online Social Media	Dr. PonnuranganKumaraguru, IIIT Delhi	28-07-2018
4	Microsoft Business Intelligence	Mr. A. Dinesh, IT Analyst,	06-09-2019

		TCS, Kolkatta	
Webinars			
1	Artificial Intelligence and Machine Learning in Real World	Mr.RamprasadRenganathan, Principal Data Scientist, OmnictracsInc.Australia	30.04.2020
2	World of Opportunities	Mr.M.P.Shankar Kumar, ERP Specialist, HCL	02.05.2020
3	Expectations from IT Professionals	Mr.Ayyapparaja, Senior Consultant-ERP, Acopa GmbH, Wuppertal,Germany	04.05.2020
4	Ask Me Anything	Mr.Arun, Senior Associate - Product Management + Program Management, Bengaluru,Karnataka	07.05.2020
5	Edge Computing	Mr.L.Ganesh Kumar, Consulting Partner & 5G Solution Head, Wipro Ltd.,Chennai	09.05.2020
6	Know Your Customer	Mrs.Muthulakshmi Quality Management, Honeywell	12.05.2020
7	Conventional ECM and cloud based ECM infrastructure	Mr.VasanthRamabhadran, Tennessee, US	12.05.2020
8	First Step towards Solutions	Mrs.Boomadevi, Wuppertal, Germany	16.05.2020
9	Evolution of Cloud Computing	Mr.S.Murugesan, Project Manager, L&T Infotech	22.05.2020
10	Azure Cloud Computing	Mr.Dinesh, Azure Partner Lead, Microsoft.	26.05.2020
11	Enterprise Management & New Trends in Enterprise IT	Mr.K.Karthik, Functional Delivery Manager, Accenture Technology,US	04.06.2020
12	Amazon Cloud Web Services (AWS)	Mr.S.Murugesan, Project Manager, L&T Infotech	08.06.2020
Workshops			
1	Cyber Security	Sai Sathish,	8/10/2018 -

		Ceo, Indian Servers, Hyderabad	8/11/2018
2	Data Analytics with R	S. Shanmugavel Manager, IT Educationnal Technology ICTACT, Chennai	9/26/2018 - 9/27/2018
3	Python Programming and its Applications	Mr.SibidharanNandakumar Chief Executive Officer, After tutor Medias, Pvt Ltd, Chennai	02/04.2018- 03/04/2018
4	Hands on Session in Smart Devices using IoT	Karumukilan S, Project Manager, Examdaily, Madurai	26-08-2019

Table 2.20: Details of events organized by Industry persons

Also we have arranged many placement oriented activities with the help of industry peoples.

Some of the events have listed in the table 2.21.

S No	Name of the Training	Date
1	WIPRO Specific Training Programme	22 nd Aug – 24 th Aug, 2017
2	Java Training for WIPRO eligible students	28 th Aug – 30 th Aug, 2017
3	Verbal & Group Discussion for M/S.WIPRO Camps Drive	15 th Sep, 2017
4	JAVA Training Programme for Pre-Final Year Students	13, 14 , 15, 28 & 29 Oct, 2017
5	WIPRO Ltd Company Specific Training	24 Jan 2018 To 30 Jan 2018
6	Industry Specific Training for Second Year B.Tech Students	10 th April – 14 th April, 2018
7	Company Specific Training for ZOHO Corp eligible students Program by M/s. Top Freshers, Chennai	24 th -26 th July, 2018
8	Company Specific Technical Training for ZOHO Corp eligible students Program by M/s. Top Freshers, Chennai	01 st Aug – 07 th Aug, 2018
9	TCS Ninja Specific training program by Mr.MeyappanNatrajan/ Managing Director- Top Freshers	3 rd Oct, 2018
10	WIPRO Specific Training Program for WIPRO eligible students by Top Freshers	29 th Sep – 4 th Oct, 2018
11	Hexaware Company Specific Training Program for Hexaware eligible students by M/s Top Freshers	13 th & 14 th Oct, 2018
12	IBM Company Specific Training Program for IBM eligible students by Mission Ignite	22 nd & 23 rd Oct, 2018

13	Soft Skills conducted for all the Final Year soft skills arrear students from by M/s Smart Learning Resources	19 th Nov, 2018
14	Training cum AMCAT test conducted based on Aptitude , C programming for all WIPRO eligible students by M/s Aspiring Minds	19 th Nov, 2018
15	Company Specific Training program by ABC Group	3 rd – 13 th Jan, 2019
16	JAVA Training Program by Campus Connection	3 rd , 4 th , 5 th , 11 th & 12 th Jan, 2019
17	Cognizant Specific Training program by FACE	26 th & 27 th Jan, 2019
18	Cognizant Specific Training program by Mission Ignite	2 nd & 3 rd Feb, 2019
19	TCS NINJA Company Specific Training	29.07.2019 to 03.08.2019
20	ASPIRE Systems Company Specific Training	19.08.2019 to 20.08.2019
21	MPHASIS Company Specific Training	03.09.2019 to 09.09.2019
22	MPHASIS Company Specific Training (Refreshing)	18.09.2019 to 19.09.2019
23	C++ & JAVA Training	24.09.2019 to 27.09.2019
24	IBM Company Specific Training	06.10.2019 to 09.10.2019
25	WIPRO Company Specific Training	15.10.2019 to 18.10.2019
26	HEXWARE Company Specific Training	07.11.2019
27	CTS Company Specific Training	22.01.2020 to 26.01.2020
28	Industry Specific Training Program	24.02.2020 to 27.02.2020
29	Mock Assessment	23rd March to 7th April, 2020
30	Placement Season Mock Test for various Companies (13 tests - Infosys, L&T infotech, IBM, Delloite, Hexaware, CTS and a few more tier 1 companies pattern assessment.	3rd April to 8th April, 2020
31	WEBINAR on C & Data Structures (28 days webinar) by Innovative Services for	3rd April to 30th April, 2020
32	TCS Ninja Assessment	4th and 5th May, 2020
33	WEBINAR on Short Cuts for TCS Ninja by Connect Training	6th and 7th May, 2020
34	A Bootcamp on Machine and Deep learning using Python by AICL	9th May to 13th May, 2020

35	Capgemini, Aspire, IBM	7-08-2020 To 16-08-2020
36	Automata Fix Training	27-08-2020 To 5-09-2020
37	CTS Specific Training	5-09-2020 To 14-09-2020
38	Aptitude and Technical (Programming) Training	4-01-2021 To 13-01-2021
39	Aspire Specific Training	26-02-2021 To 28-02-2021
40	Accenture Specific Training	05-05-2021 To 06-05-2021
41	Wipro Specific Training	11-05-2021 To 14-05-2021
42	Capgemini Specific Training	24-05-2021 To 25-05-2021
43	Employability skill Training	31-05-2021 To 05-06-2021
44	DXC and HCL Specific Training	07-06-2021 To 11-06-2021
45	C Specific Training	18-06-2021 To 21-06-2021
46	Analytical & Verbal Training	24-06-2021 To 25-06-2021
47	AWS Cloud Foundation	17-11-2021 To 24-11-2021

Table 2.22 Details of Training programs organized

In addition to this regular academic activity, experts from the industries also handle the classes for our students in the mode of “One credit course”, where our students get an additional exposure beyond their syllabus. The details of the industry experts who have handled one credit courses in our campus are presented in Table 2.19.

S No	Name and Address of the Resource Person	Name of the Course	Date of Conduction of the Course	Number of students attended
1	Mr.L.Sivanandan, Digital Technology Manager, Greenpeace India,	INTX001 / HTML-5	15.08.2015 - 16.08.2015 & 19.09.2015 –	30

	Bangalore.		20.09.2015	
2	Mr. Rajendran Subramanian, Founder & CEO, Silicon Software Services, Tamilnadu, India.	INTX002 / Programming in PYTHON	26.09.2015 – 27.09.2015 & 10.10.2015- 11.10.2015	37
3	Mr.A. Parthasarathy, Technical Lead, ELPIS IT Solutions pvt ltd, Bangalore.	INTX003 / Software Testing – Agile Methodology & Load Runner	17.09.2016 – 18.09.2016 & 22.10.2016 – 23.10.2016	38
4	Mr. C. JothiVignesh, Test Automation Lead, TCS, Chennai	INTX005/ Software Testing and Automation tools	23.09.2017 – 24.09.2017 & 21.10.2017 – 22.10.2017	44
5	Mr A. Dinesh, IBM Application Developer, IBM, Banagalore	INTX006/ Microsoft Business Intelligence	03.03.2018 04.03.2018 & 17.03.2018 – 18.03.2018	41
6	Mr. C. Johnny Alex, IBM TSM EMC Networker & Backup Administrator, IBM India pvtlat, Bangalaore	INTX007/ Infrastructure Management	18.08.2018 – 19.08.2018 & 15.09.2018 – 16.09.2018	59
7	Mr. Karunamurthy Test Automation Lead, Tata consultancy services,	INTX008/ Automation and Testing using Selenium	06.04.2019- 07.04.2019	22

	Chennai			
8	Mr. C. Johnny Alex, IBM TSM EMC Networker & Backup Administrator, IBM India pvtlat, Bangalore	INTX007/ Infrastructure Management	11.10.2020 & 22.11.2020	30
Total number of students				301

2.2.4 (D) Impact analysis of industry institute interaction and actions taken thereof

- While the industry expert visits our campus, the feedback is obtained from them regarding the curriculum and the interaction by the students during lecture and student's ability or skills in problem solving.
- The feedback is obtained from the students about the lectures delivered by the experts and its usage in the academic activities. Based on their comments, the lectures/seminars are arranged in the thrust area or courses in which they need additional lectures.
- The comments about the student's performance in the placement activities and students skills are obtained from the industry recruiters.
- Based on the knowledge gained from the lectures, seminars, one credit course, students are able to perform well in the course and henceforth improve themselves in attaining the program objectives.
- Better understanding about the courses is obtained by the students which help them in improving their knowledge and increase the chances for placement activities.

Curriculum refinement:

- The faculties visit the industry and have interaction with the industry people and the industry experts also visit our campus for delivering lectures. From the interaction, comments and suggestions on the curriculum are obtained.

Training:

- Through our interaction with the leading industries, our students got benefitted such as,
 - Aailed permission for Industrial Training/Industrial visit
 - One Year Project work in the industry.
- The same process is used to follow to enrich the quality of teaching learning process and academic industry interaction.

2.2.5 Initiatives related to industry internship/summer training

2.2.5 (A) Industrial training/tours for students

Pre-requisites/Eligibility Conditions: Completion of 3rd Semester course work. Industrial training should be taken up only during vacations. Prior permission from a company is essential. The HoD/HoD's nominee should approve the company where students go for Industrial Training. Bonafide certificates for having undergone the training will be issued by the Training and Placement officer.

Duration of the course, total number of hours and minimum attendance requirement:

Minimum duration for Industrial Training: 2 weeks. Minimum attendance is 80%. If student does not have minimum of 80% attendance, he/she will be given no credits. The attendance report should be submitted to the HoD concerned within one week of the completion of Industrial Training.

Assessment Procedure – Tests, Examination: After completion of Industrial Training, students have to submit the Industrial training report within seven working days of the commencement of the subsequent semester.

- ✓ Industrial Training (NCC2001)
- ✓ Advanced Industrial Training (NCG3001)
- ✓ Industrial Training (INT18R397)
- ✓ Internship Training (INT18R398)
- Students visit industries as a part of their academic activities, in order to obtain practical exposure about the industries, improving their skills.
- In-plant training, industrial visit enables them in improving their knowledge in terms of better understanding about the courses.
- In addition, industry experts visit our department and have an interaction with the students which in turn helps the students to improve their knowledge.

A sample of list is given below (Table 2.23) those who undergone the Industrial training only in the academic year 2016-17.

Table 2.23 Details of the Industrial training

Academic Year	Total number of students undergone
2021-22	6
2020-21	24
2019-20	15
2018-19	29
2017-18	36

2.2.5 (B) Industrial/internship/summer training of more than two weeks and post training assessment

- Our students visit industry for in-plant training and internship program during the semester holidays as a part of their academic activities. The procedures being followed are;

Initiatives

Faculties motivate the students to visit an industry for improving their knowledge in industrial training or internship program mode. In this activity, students are asked to apply to the industries for getting permission for the industrial training/internship program through office of training and placement.

Implementation:

In order to get credits in the Non-CGPA courses for in-plan training program, students are in need to visit industry 2 times, each of 14 days(or 28 days in total) during their semester holidays. After their visit, they need to submit their report in a prescribed format which will be reviewed and approved for further processing. Students have undergone in-plant training during the semester holidays to various industries such as

PhonixSofttech, Madurai
Ascox Techno soft tech, Madurai
INDIAN INFOTECH, CHENNAI
DLK Technologies
GOE code Technologies
SLN Technologies
NBAYS IT Solusenz
LITZ Tech
Century Minds
Farshore software development private limited
Falcon square technology
Kaashiv InfoTech
SmartX Connected Products Pvt. Ltd.
NandhaInfotech
Techknocorp Software Solutions
Shiash info solutions Private Limited
SmartWeb Technologies
Techknocorp software solutions
Web walk Infosys
Alphatac Technologies
nineteen hour IT pvt ltd,
Digital factory's
Shape AI
Web walk Infosys
smart x connected products private limited
Techknocorp Software Solutions
NandhaInfotech

Appin technology
conzura soft solutions(opc)private limited
Appin technology
Shiash Info Solutions Private Limited
Vu2Vu India
Government of NCT Delhi
Emglitz technologies
Techvolt software pvt ltd

The following Table 2.24 shows the details of students (selected) who have undergone in-plant training in the different industries with their duration of visit.

Table 2.24 Details of In-plant training

Sl. No	Reg. No	Name	Name of the company	Duration	
				From	To
1	99160 08001	Aakash R	PhonixSofttech, Madurai	15.05. 2019	29.05. 2019
2	99160 08031	Mohan K	PhonixSofttech, Madurai	15.05. 2019	29.05. 2019
3	99160 08025	Kathiravan M	PhonixSofttech, Madurai	15.05. 2019	29.05. 2019
4	99160 08003	Aniruth K	PhonixSofttech, Madurai	15.05. 2019	29.05. 2019
5	99160 08041	Raja Pandian T	PhonixSofttech, Madurai	15.05. 2019	29.05. 2019
6	99160 08050	SomnathYadhav J	PhonixSofttech, Madurai	15.05. 2019	29.05. 2019
7	99160 08012	Dhanush M	PhonixSofttech, Madurai	01.07. 2018	15.07. 2018
8	99160 08015	Hariram R	PhonixSofttech, Madurai	01.07. 2018	15.07. 2018
9	99160 08058	Vikram Kishore V	PhonixSofttech, Madurai	01.07. 2018	15.07. 2018
10	99160 08023	Jeyaswathi V	Ascox Techno soft tech, Madurai	22.06. 2018	07.07. 2018
11	99170	JEYA SHRUTHY P	PhonixSofttech,	22.05.	08.06.

	08009		Madurai	2019	2019
12	99170 08017	NAVEEN KUMAR N	INDIAN INFOTECH, CHENNAI	29.05. 2019	12.06. 2019
13	99170 08030	RAJA SEKARAN P	INDIAN INFOTECH, CHENNAI	29.05. 2019	12.06. 2019
14	99170 08028	ANU KEERTHIKA M S	INDIAN INFOTECH, CHENNAI	29.05. 2019	12.06. 2019
15	99170 08003	CHANDRAMOULI A	INDIAN INFOTECH, CHENNAI	29.05. 2019	12.06. 2019
16	99170 08006	DHILIP KUMAR S	INDIAN INFOTECH, CHENNAI	29.05. 2019	12.06. 2019
17	99170 08022	Shabarish RM	DLK Technologies	04.12. 2018	18.12. 2018
18	99170 08013	Manish Wins Pradeep G	DLK Technologies	04.12. 2018	18.12. 2018
19	99170 08005	Dhilip Kumar M	DLK Technologies	04.12. 2018	18.12. 2018
20	99160 08029	Manoj Kumar P	GOE code Technologies	15.06. 2018	30.06. 2018
21	99160 08022	Jegadeeswaran G	GOE code Technologies	15.06. 2018	30.06. 2018
22	99160 08027	Lavanya G	SLN Technologies	02.07. 2018	16.07. 2018
23	99160 08016	Harini Devi G	SLN Technologies	02.07. 2018	16.07. 2018
24	99160 08038	Priyadharshini RM	SLN Technologies	02.07. 2018	16.07. 2018
25	99160 08024	Karthiga M	PhonixSofttech	01.07. 2018	15.07. 2018
26	99160 08004	Anitha Devi K	PhonixSofttech	01.07. 2018	15.07. 2018
27	99160 08017	Harini G	PhonixSofttech	01.07. 2018	15.07. 2018
28	99160 08009	Balasubramanian S	SLN Technologies	02.07. 2018	16.07. 2018

29	99160 08056	Vignesh S	SLN Technologies	02.07. 2018	16.07. 2018
30	99160 08059	Logeshwaran M	SLN Technologies	02.07. 2018	16.07. 2018
31	99160 08036	Nitheesh Kumar S	NBAYS IT Solusenz	12.12. 2018	26.12. 2018
32	99160 08047	Shanmuganathan M	NBAYS IT Solusenz	12.12. 2018	26.12. 2018
33	99160 08030	Mari Selvam K	NBAYS IT Solusenz	12.12. 2018	26.12. 2018
34	99160 08019	Janani Nivetha AP	PhonixSofttech	12.12. 2018	26.12. 2018
35	99160 08035	Nijantha D	PhonixSofttech	12.12. 2018	26.12. 2018
36	99160 08042	Rajapriyavarthini K	PhonixSofttech	12.12. 2018	26.12. 2018
37	99160 08008	Ayshwarya KT	LITZ Tech	13.12. 2018	27.12. 2018
38	99160 08020	Jayashree R	LITZ Tech	13.12. 2018	27.12. 2018
39	99160 08062	KarthigaSundari E	LITZ Tech	13.12. 2018	27.12. 2018
40	99160 08061	SwathyRavisankar	PhonixSofttech	01.07. 2018	15.07. 2018
41	99160 08018	Harish G	Ascox Techno soft tech, Madurai	01.07. 2018	15.07. 2018
42	99160 08033	Nagarajan A	Ascox Techno soft tech, Madurai	01.07. 2018	15.07. 2018
43	99190 08025	MALAY SHRAVAN KUMAR	Shape AI	01- 06- 2021	15- 08- 2021
44	99190 08005	ASVIKA D	Web walk Infosys	11- 06- 2021	28- 06- 2021
45	99190 08067	SHANKAR DAYAN S	smart x connected products private	14- 06-	30- 06-

			limited	2021	2021
46	99190 08034	PRINCETON PRAKASH A	SmartX Connected Products Pvt.Ltd	14- 06- 2021	30- 06- 2021
47	99190 08041	SELVAKUMAR B	Techknocrop software solution.	14- 06- 2021	30- 06- 2021
48	99190 08036	RAJESH R R	Techknocorp Software Solutions	14- 06- 2021	30- 06- 2021
49	99190 08033	PREM NARAYANAN N	LITZ Tech India Pvt Ltd	14- 06- 2021	01- 07- 2021
50	99190 08003	ARAVIND S	NandhaInfotech	14- 06- 2021	30- 06- 2021
51	99190 08011	DHARINI R	NandhaInfotech	14- 06- 2021	30- 06- 2021
52	99190 08002	KEERTHANA S	NandhaInfotech	14- 06- 2021	30- 06- 2021
53	98200 08003	PAVITHRA K	LITZ tech indiapvt ltd	20- 06- 2021	10- 07- 2021
54	99190 08043	SRINIVASAN V N	LITZ Tech india Pvt ltd	15- 06- 2021	02- 07- 2021
55	99190 08015	GOKUL RAJ K V	LITZ Tech India Pvt Ltd	21- 06- 2021	07- 07- 2021
56	99190 08044	SRUTHI MEERA P	LITZ TECH India pvt Ltd	21- 06- 2021	07- 07- 2021
57	99190 08068	HARI KRISHNAN V	Appin technology	15- 06- 2021	30- 06- 2021
58	99190	PALLE PUNIL KUMAR REDDY	conzura soft	20-	20-

	08063		solutions(opc)private limited	06-2021	07-2021
59	99190 08059	YERRAM SUCHITRA REDDY	conzura soft solutions(opc)private limited	20-06-2021	20-07-2021
60	99190 08016	JAVANGULA VARUN PRASAD	Conzura soft solutions(OPC)private limited	20-06-2021	20-07-2021
61	99190 08054	LEKKALA SATISH	Kaashivininfotech	23-06-2021	07-07-2021
62	99190 08060	BODDAPATI NIKHIL	kaashivininfotech	23-06-2021	07-07-2021
63	99190 08057	SHENBAGAPRIYA S	Shiash Info Solutions Private Limited	24-06-2021	10-07-2021
64	99190 08037	RAMPRASANNA P	Appin technology	28-06-2021	20-07-2021
65	99190 08066	THANUJ M P	Shiash Info Solutions Private Limited	28-06-2021	10-07-2021
66	99190 08055	SURISSETTY CHAITANYA	Vu2Vu India	07-07-2021	21-07-2021
67	99200 08023	VASUNDHARA B	Government of NCT Delhi	09-06-2022	30-06-2022
68	99200 08045	MUKESH PANDIAN M	LITZ Tech India Pvt Ltd	13-06-2022	29-06-2022
69	99200 08036	VIGNESH C	Emglitz technologies	02-07-2022	16-07-2022
70	99200 08012	KISHOR B	Emglitz technologies	02-07-2022	16-07-2022

71	99200 08050	THOTA VENKATA JAYANTH	Techvolt software pvt ltd	01- 07- 2022	15- 07- 2022
72	99200 08031	KHADARBAD BRAMHAMUNI CHITAMBARA SAI LOKESH	Techvolt Software Pvt Ltd	22- 06- 2022	09- 07- 2022

Industrial Certifications

- Students are given Training for SAP and certifications of successful completion of the same is made mandatory, this certification helps for the students to get placed in top MNC's

S.No.	Academic Year	Count
1	2021-2022	33
2	2020-2021	29
3	2019-2020	27

2019-2020

S.No	Register No	Student Name	Completed/Fail
1.	9916008004	ANITHADEVI K	Completed
2.	9916008008	AYSHWARIA K T	Completed
3.	9916008009	BALASUBRAMANIAN S	Completed
4.	9916008011	DEVADHARSHINI S	Completed
5.	9916008012	DHANUSH M	Completed
6.	9916008014	DURGA LAKSHMI S	Completed
7.	9916008016	HARINIDEVI V	Completed
8.	9916008018	HARISH G	Completed
9.	9916008019	JANANI NIVETHA A P	Completed
10.	9916008020	JAYASHREE R	Completed

S.No	Register No	Student Name	Completed/Fail
11.	9916008022	JEGADEESHWARAN G	Completed
12.	9916008025	KATHIRAVAN M	Completed
13.	9916008026	PREETHI G	Completed
14.	9916008027	LAVANYA G	Completed
15.	9916008029	MANOJKUMAR P	Completed
16.	9916008031	MOHAN K	Completed
17.	9916008033	NAGARAJAN A	Completed
18.	9916008035	NIJANTHA D	Completed
19.	9916008036	NITHEESHKUMAR S	Completed
20.	9916008037	PADMAVATHI P	Completed
21.	9916008038	PRIYADARSHINI R M	Completed
22.	9916008041	RAJA PANDIAN T	Completed
23.	9916008042	RAJAPRIYAVARTHINI K	Completed
24.	9916008044	SARATH A	Completed
25.	9916008056	VIGNESH S	Completed
26.	9916008059	LOGESHWARAN M	Completed
27.	9916008064	ROBIN SAMUEL R	Completed

2020-2021

S.No	Register No	Student Name	Completed/Fail
1.	9818008001	G KAUSALYA	Completed
2.	9818008002	HARI BABU N T	Completed
3.	9917008001	ABINAYA R	Completed
4.	9917008003	CHANDRAMOULI A	Completed

S.No	Register No	Student Name	Completed/Fail
5.	9917008004	CHRISPA DANIEL	Completed
6.	9917008005	DHILIP KUMAR M	Completed
7.	9917008006	DHILIP KUMAR S	Completed
8.	9917008007	GAYAM VISHNU VARDHAN REDDY	Completed
9.	9917008008	ISWARYA M	Completed
10.	9917008009	JEYA SHRUTHY P	Completed
11.	9917008010	KAMAL RAJ P	Completed
12.	9917008013	MANISH WINS PRADEEP G	Completed
13.	9917008014	MUGESH K	Completed
14.	9917008015	MUTHU BALAJI S	Completed
15.	9917008017	NAVEEN KUMAR N	Completed
16.	9917008018	PINNIKA NAVEEN	Completed
17.	9917008019	RAMYA SRI S	Completed
18.	9917008021	SELVA KUMAR S	Completed
19.	9917008022	SHABARISH R M	Completed
20.	9917008023	SIVA KUMAR M	Completed
21.	9917008024	STAINES S	Completed
22.	9917008025	SYED AHAMED JAVEED ASHIQ J	Completed
23.	9917008027	THARANI S	Completed
24.	9917008028	ANU KEERTHIKA M S	Completed
25.	9917008029	RAMASUBRAMANIAN P S	Completed
26.	9917008030	RAJA SEKARAN P	Completed
27.	9917008031	ARUNACHALAM A S	Completed

S.No	Register No	Student Name	Completed/Fail
28.	9917008032	ILLAKKIYA R	Completed
29.	9917008033	RAMA R	Completed

2021-2022

S.No	Register No	Student Name	Completed/Fail
1.	9519008301	SWETHA S	Completed
2.	9519008302	ARUNKUMAR B	Completed
3.	9519008401	UMA MAHESWARI A	Completed
4.	9819008001	SARANYA S	Completed
5.	9819008002	PRIYADHARSHINI R	Completed
6.	9918008001	ABISHEK RAJA S	Completed
7.	9918008002	AISHWARYA S	Completed
8.	9918008003	AJITHMADHAN K	Completed
9.	9918008005	ARAVINTH KANNA S	Completed
10.	9918008006	CHENNAMSETTY SRI HARSHA	Completed
11.	9918008008	GOPALAKRISHNA D	Completed
12.	9918008009	JAIGANESH D	Completed
13.	9918008010	JESHIMA J	Completed
14.	9918008011	MARIMUTHU C	Completed
15.	9918008012	MATHESH S	Completed
16.	9918008014	POOJA SHREE A	Completed
17.	9918008015	SHAIK MAHAMMAD SOHIL	Completed
18.	9918008016	URIMI RAMANA SRIKANTH	Completed

S.No	Register No	Student Name	Completed/Fail
19.	9918008018	VIJAYSHANKAR G	Completed
20.	9918008020	VIKRAMAN M	Completed
21.	9918008021	VINITH K	Completed
22.	9918008022	VISHAL KRISHNA S	Completed
23.	9918008024	YUGANDHAR E	Completed
24.	9918008025	ISWARYA S	Completed
25.	9918008026	BARKAVI G	Completed
26.	9918008027	PRAKASH RAJ R	Completed
27.	9918008029	VENKATESHA PERUMAL S	Completed
28.	9918008031	VIJAYARAGUNATHAN N S	Completed
29.	9918008034	KAKARLA KEERTHANA	Completed
30.	9918008037	BALAJI V	Completed
31.	9918008038	LOGA VARSHINI V J	Completed
32.	9918008039	HARIPRASAD S	Completed
33.	9918008040	VELU PRABHA KARAN S	Completed

Value Added Courses

The Value Added Course helps the students to enhance the skills in the current trend of the industry. The students are trained on the topics of Animation, Android Programming and Java

S.No.	Academic Year	Count
1	2021-2022	100
2	2020-2021	100
3	2019-2020	100

2019-2020

Animation

Sl. No	Register No.	Name of the enrolled Students
1	9918008021	VINITH K
2	9918008027	PRAKASH RAJ R
3	9918008006	CHENNAMSETTY SRI HARSHA
4	9918008002	AISHWARYA S
5	9918008028	VISHAL ADITH T G
6	9918008024	YUGANDHAR E
7	9918008040	VELU PRABHA KARAN S
8	9918008026	BARKAVI G
9	9918008034	KAKARLA KEERTHANA
10	9918008037	BALAJI V
11	9918008038	LOGA VARSHINI V J
12	9918008039	HARIPRASAD S
13	9819008001	SARANYA S
14	9519008302	ARUNKUMAR B
15	9819008002	PRIYADHARSHINI R
16	9519008301	SWETHA S
17	9918008019	VIJILKUMAR K
18	9918008004	AMARSHANTH
19	9918008028	VISHAL ADITH T G
20	9918008024	YUGANDHAR E
21	9918008040	VELU PRABHA KARAN S
22	9918008026	BARKAVI G
23	9918008034	KAKARLA KEERTHANA
24	9918008037	BALAJI V
25	9918008038	LOGA VARSHINI V J

26	9918008039	HARIPRASAD S
27	9819008001	SARANYA S
28	9519008302	ARUNKUMAR B
29	9819008002	PRIYADHARSHINI R
30	9519008301	SWETHA S
31	9519008401	UMA MAHESWARI A
32	9918008028	VISHAL ADITH T G
33	9918008024	YUGANDHAR E

Android Programming

Sl. No	Register No.	Name of the enrolled Students
1	9818008001	G KAUSALYA
2	9818008002	HARI BABU N T
3	9917008001	ABINAYA R
4	9917008003	CHANDRAMOULI A
5	9917008004	CHRISPA DANIEL
6	9917008005	DHILIP KUMAR M
7	9917008006	DHILIP KUMAR S
8	9917008007	GAYAM VISHNU VARDHAN REDDY
9	9917008008	ISWARYA M
10	9917008009	JEYA SHRUTHY P
11	9917008010	KAMAL RAJ P
12	9917008013	MANISH WINS PRADEEP G
13	9917008014	MUGESH K
14	9917008015	MUTHU BALAJI S
15	9917008017	NAVEEN KUMAR N
16	9917008022	SHABARISH RM
17	9917008005	DHILIP KUMAR M
18	9917008029	RAMASUBRAMANIAN P

		S
19	9917008003	CHANDRAMOULI A
20	9917008008	ISWARYA M
21	9917008028	ANU KEERTHIKA M S
22	9917008015	MUTHU BALAJI S
23	9917008019	RAMYA SRI S
24	9917008017	NAVEEN KUMAR N
25	9917008001	ABINAYA R
26	9917008014	MUGESH K
27	9917008013	MANISH WINS PRADEEP G
28	9917008018	PINNIKA NAVEEN
29	9917008010	KAMAL RAJ P
30	9917008007	GAYAM VISHNU VARDHAN REDDY

Java Company Specific Training

Sl. No	Register No.	Name of the enrolled Students
1	9916008030	MARI SELVAM K
2	9916008031	MOHAN K
3	9916008033	NAGARAJAN A
4	9916008035	NIJANTHA D
5	9916008036	NITHEESHKUMAR S
6	9916008037	PADMAVATHI P
7	9916008038	PRIYADARSHINI R M
8	9916008040	RAJAMURUGAPPERUMAL R
9	9916008041	RAJA PANDIAN T
10	9916008042	RAJAPRIYAVARTHINI K
11	9916008044	SARATH A
12	9916008047	SHANMUGHANATHAN M

13	9916008048	SHREENITHI S
14	9916008050	SOMNATH YADAV J
15	9916008052	SURYA B
16	9916008054	VAJITHRAGUMAN M
17	9916008056	VIGNESH S
18	9916008058	VIKRAMKISHORE V
19	9916008059	LOGESHWARAN M
20	9916008061	SWATHY RAVISANKAR
21	9916008062	KARTHIGA SUNDARI E
22	9916008064	ROBIN SAMUEL R
23	9916008001	AAKASH R
24	9916008003	ANIRUTH K
25	9916008004	ANITHADEVI K
26	9916008008	AYSHWARIA K T
27	9916008009	BALASUBRAMANIAN S
28	9916008011	DEVADHARSHINI S
29	9916008012	DHANUSH M
30	9916008014	DURGA LAKSHMI S
31	9916008015	HARIRAM R
32	9916008016	HARINIDEVI V
33	9916008017	HARINI J G
34	9916008018	HARISH G
35	9916008019	JANANI NIVETHA A P
36	9916008020	JAYASHREE R
37	9916008022	JEGADEESHWARAN G
38	9916008023	JEYA SWATHI V

2020- 2021

Animation

Sl. No	Register No.	Name of the enrolled Students
1	9920008048	JAGGARAPU JYOTHI SAI TEJA
2	9920008049	KUDUMULA VAMSHI REDDY
3	9920008050	THOTA VENKATA JAYANTH
4	9920008051	NIHMATHULLAH I
5	9920008052	GUNTI PAVAN KUMAR
6	9920008053	SHAKTHI G
7	9920008054	MOHAMED FAIZAL P M
8	9920008055	MANDALAPU PRAKASH
9	9920008056	GUTTIKONDA REVANTH REDDY
10	9920008057	KOTHURI SRAVANI
11	9920008058	JULLAKALAVA KRISHNA TEJA
12	9920008059	REMYA R
13	9920008060	SHARA FATHIMAA S
14	9920008061	VIGNESH S
15	9920008062	ANTOASWANTH J
16	9920008063	MULAKA VAMSI KRISHNA REDDY
17	9920008064	DASARI GANGAIAH
18	9920008065	PEDDA REDDY BHARATH KUMAR REDDY
19	9920008046	VISHNU PRAKASH D
20	9920008001	AGNES PRISMITHA S J
21	9920008002	ASHWINRAM S M
22	9920008003	AVINASH K
23	9920008004	BALA NIVASH B

24	9920008005	BEFRIN MOOFINA T
25	9920008006	DEVIBALA R
26	9920008008	JEBA CAROLIN J
27	9920008009	JEYAPRIYA J
28	9920008010	KAMALESHJEYANTHAN K
29	9920008011	KARNA SAGAR P
30	9920008012	KISHOR B
31	9920008013	MARUDHU PANDI SELVAM A
32	9920008014	MOHANBABU K S
33	9920008015	NAMBIVELNATHAN S

Android Programming

Sl. No	Register No.	Name of the enrolled Students
1	9919008053	DHEENADHAYALLAN S G
2	9919008054	LEKKALA SATISH
3	9919008055	SURISSETTY CHAITANYA
4	9919008056	NARNE SAI DHEERAJ
5	9919008057	SHENBAGAPRIYA S
6	9919008058	POGAKU DAWOOD
7	9919008059	YERRAM SUCHITRA REDDY
8	9919008061	DULIPALLA YASWANTH NAGA SAI
9	9919008060	BODDAPATI NIKHIL
10	9919008063	PALLE PUNIL KUMAR REDDY
11	9919008064	KATURI THARUN SAI
12	9919008002	KEERTHANA S
13	9919008065	KETHIREDDY SAI PRATAP REDDY
14	9919008066	THANUJ M P
15	9919008031	BACHU SAKETH

16	9919008067	SHANKAR DAYAN S
17	9919008068	HARI KRISHNAN V
18	9919008069	KILARU VIJAYKUMAR
19	9919008070	MOHAMED MUJAHITH J
20	9919008071	PAPPY ANTO V
21	9820008001	HARINE M
22	9820008002	YADAV BHARATHI VENKATACHALAPERUMAL
23	9820008003	PAVITHRA K
24	9919008005	ASVIKA D
25	9919008007	BHAVADHARANI DEETCHANYA S
26	9919008040	SELVABARKAVI M
27	9919008030	PATLOLLA SATISH REDDY
28	9919008050	VINNAKOTI VARUN KUMAR
29	9919008026	MANCHA HIMABINDU
30	9919008016	JAVANGULA VARUN PRASAD
31	9919008013	GANDE RAKESH
32	9919008051	EAMANI DEEPAK
33	9919008019	KOUSIGAN A
34	9919008006	BESTA SRIKRISHNA
35	9919008025	MALAY SHRAVAN KUMAR
36	9919008046	TAMILELAN M
37	9919008049	VIJAYA KUMAR G
38	9919008052	KARTHIK M

Java Programming

Sl. No	Register No.	Name of the enrolled Students
1	9918008012	MATHESH S

2	9918008005	ARAVINTH KANNA S
3	9918008003	AJITHMADHAN K
4	9918008001	ABISHEK RAJA S
5	9918008016	URIMI RAMANA SRIKANTH
6	9918008036	SUVETHA S
7	9918008014	POOJA SHREE A
8	9918008018	VIJAYSHANKAR G
9	9918008025	ISWARYA S
10	9918008020	VIKRAMAN M
11	9918008015	SHAIK MAHAMMAD SOHIL
12	9918008029	VENKATESHA PERUMAL S
13	9918008031	VIJAYARAGUNATHAN N S
14	9918008009	JAIGANESH D
15	9918008014	POOJA SHREE A
16	9918008018	VIJAYSHANKAR G
17	9918008025	ISWARYA S
18	9918008020	VIKRAMAN M
19	9918008015	SHAIK MAHAMMAD SOHIL
20	9918008029	VENKATESHA PERUMAL S
21	9918008031	VIJAYARAGUNATHAN N S
22	9918008009	JAIGANESH D
23	9918008008	GOPALAKRISHNA D
24	9918008022	VISHAL KRISHNA S
25	9918008010	JESHIMA J
26	9918008017	USHA R M
27	9918008011	MARIMUTHU C
28	9918008021	VINITH K
29	9918008027	PRAKASH RAJ R

30	9918008006	CHENNAMSETTY SRI HARSHA
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2021-2022

Animation

Sl. No	Register No.	Name of the enrolled Students
1	9920008046	VISHNU PRAKASH D
2	9920008001	AGNES PRISMITHA S J
3	9920008002	ASHWINRAM S M
4	9920008003	AVINASH K
5	9920008004	BALA NIVASH B
6	9920008005	BEFRIN MOOFINA T
7	9920008006	DEVIBALA R
8	9920008008	JEBA CAROLIN J
9	9920008009	JEYAPRIYA J
10	9920008010	KAMALESHJEYANTHAN K
11	9920008011	KARNA SAGAR P
12	9920008012	KISHOR B
13	9920008013	MARUDHU PANDI SELVAM A
14	9920008014	MOHANBABU K S
15	9920008015	NAMBIVELNATHAN S
16	9920008016	PAULSUDHAN R
17	9920008017	PRADEEPKUMAR V
18	9920008018	RAM KUMAR S
19	9920008019	SHABAREESH KUMAR K
20	9920008020	SOWMYA S
21	9920008021	SRIDHARAN M
22	9920008022	VARUN C KHANKE

23	9920008023	VASUNDHARA B
24	9920008024	VEERASEKAR G
25	9920008025	VELAYUTHA SIVANANTHAM P
26	9920008026	VENKAT BHARATHI S
27	9920008027	VIJAYALAGAR R
28	9920008028	BACKIALAKSHMI T
29	9920008030	IBSAR HUSSAIN
30	9920008031	KHADARBAD BRAMHAMUNI CHITAMBARA SAI LOKESH
31	9920008032	KOTA JITENDRA
32	9920008033	SUNDARA RAJAN R
33	9920008034	GOPI G R

Android Programming

Sl. No	Register No.	Name of the enrolled Students
1	9919008009	CHRISTOPHER DAVASEKARAN K
2	9919008037	RAMPRASANNA P
3	9919008041	SELVAKUMAR B
4	9919008042	SHEELAMBIGAI P
5	9919008048	VIGNESHWARAN K
6	9919008039	SANKARANARAYANAN M
7	9919008018	JOEL ABRAHAM A
8	9919008011	DHARINI R
9	9919008043	SRINIVASAN V N
10	9919008003	ARAVIND S
11	9919008036	RAJESH R R
12	9919008023	LOURDU ARUL RUBAN P
13	9919008033	PREM NARAYANAN N

14	9919008038	SAKTHI PRAVEEN V
15	9919008032	PRAVEENRAJA D
16	9919008044	SRUTHI MEERA P
17	9919008047	VALARMATHI K
18	9919008015	GOKUL RAJ K V
19	9919008014	GANESH KUMAR P
20	9919008045	SUBASH P
21	9919008010	DEEPIKA M
22	9919008017	JERWIN J D
23	9919008035	PRIYADHARSHINI J
24	9919008028	MURUGESH P
25	9919008021	LAKSHMI SHREE M
26	9919008029	NATARAJAN N K
27	9919008012	DIRISALA MEHERISWAR REDDY
28	9919008027	MANOJ KUMAR G
29	9919008022	LAVANYA M
30	9919008004	ARICHANDRAN K

Java Company Specific Training

Sl. No	Register No.	Name of the enrolled Students
1	9918008021	VINITH K
2	9918008027	PRAKASH RAJ R
3	9918008006	CHENNAMSETTY SRI HARSHA
4	9918008002	AISHWARYA S
5	9918008028	VISHAL ADITH T G
6	9918008024	YUGANDHAR E
7	9918008040	VELU PRABHA KARAN S
8	9918008026	BARKAVI G

9	9918008034	KAKARLA KEERTHANA
10	9918008037	BALAJI V
11	9918008038	LOGA VARSHINI V J
12	9918008039	HARIPRASAD S
13	9819008001	SARANYA S
14	9519008302	ARUNKUMAR B
15	9819008002	PRIYADHARSHINI R
16	9519008301	SWETHA S
17	9918008019	VIJILKUMAR K
18	9918008004	AMARSHANTH
19	9918008028	VISHAL ADITH T G
20	9918008024	YUGANDHAR E
21	9918008040	VELU PRABHA KARAN S
22	9918008026	BARKAVI G
23	9918008034	KAKARLA KEERTHANA
24	9918008037	BALAJI V
25	9918008038	LOGA VARSHINI V J
26	9918008039	HARIPRASAD S
27	9819008001	SARANYA S
28	9519008302	ARUNKUMAR B
29	9819008002	PRIYADHARSHINI R
30	9519008301	SWETHA S
31	9519008401	UMA MAHESWARI A
32	9918008028	VISHAL ADITH T G
33	9918008024	YUGANDHAR E

2.2.5 (C) Impact analysis of industrial training

- Students are able to perform well in their theory courses which are related to their industrial training program.
- As an example, students who visit industry related to Networking area, do score more in their academic courses related to Computer Networks (CSE18R371).

2.2.5 (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 sample feedback form to be obtained from the student is herewith attached.

Kalasalingam Academy of Research and Education

Anand Nagar, Krishnan koil – 626 126

Department of Information Technology

Student's feedback form

Name of the student:

Reg. No:

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 domain				
2.	Could you rate the participative learning?				
3.	Content and usefulness of handouts				
4.	Advancement of technology in the content delivery				
5.	Convenience of program and time				
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

Thank you. We appreciate your feedback!

CRITERION 3	COURSE OUTCOMES AND PROGRAM OUTCOMES	175
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Define the Program Specific outcomes**Program Specific Outcomes (PSOs) of Department of Information Technology**

1. Ability to identify, design and develop processes and systems for enterprises
2. Ability to identify, deploy and maintain the IT infrastructure based on the needs of the businesses
3. Practice and promote information technologies for societal needs

3.1. Establish the correlation between the courses and the Program Outcomes (POs) & Program Specific Outcomes (PSOs)

Course Articulation Matrix

<i>Course Outcome (CO)</i>		<i>Program Outcome</i>												<i>PSO</i>		
<i>Course Code / CO No</i>	<i>Statement</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>	<i>1</i>	<i>2</i>	<i>3</i>
INT18R271/Data Structures and Algorithms																
INT18R271.1	Examine and implement different data structures such as: array, linked list, stacks, queues, both array and pointer representation.	3	3	3	3								2	3		
INT18R271.2	Examine and implement general tree data structures, including binary tree, both array and linked list representation.	3	3	3	3								2	3		
INT18R271.3	Demonstrate understanding of various operations of hashing techniques and sorting algorithms, including bubble sort, insertion sort, selection sort, heap sort, merge and quick sort.	3	3	3	3								2	3		
INT18R271.4	Identify, model, solve and develop code for real life problems like shortest path, network flow, and minimum spanning using graphs	3	3	3	3								2	3		
INT18R271.5	Design and implement the various algorithm design techniques.	3	3	3	3								2	3		

INT18R271.6	Create efficient algorithms for real time problem statements by applying suitable data structures through working as a team and communicate effectively with technical community in both the written and oral forms	3	3	3	2	1	1	1	2	3	3	1	1	2	3	3
INT18R271.7	Implement the problem statements in programming languages and analyze its efficiency through working as a team and communicate effectively with technical community in both the written and oral forms	3	3	3	2	2	1	1	2	3	3	1	1	1	3	3
INT18R271	Average	3	3	3	3	2	1	1	2	3	3	1	2	3	3	3

<i>Course Outcome (CO)</i>		<i>Program Outcome</i>												<i>PSO</i>		
<i>Course Code / CO No</i>	<i>Statement</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>	<i>1</i>	<i>2</i>	<i>3</i>
CSE18R174 Computer Architecture and Organization																
CSE18R174.1	Examine functional units of computer, bus structure and the different addressing modes	3												3		
CSE18R174.2	Apply the knowledge of algorithms to solve arithmetic unit problems	3			3	3								3		
CSE18R174.3	Demonstrate single bus, multiple bus organization and pipelining concepts	3	3		3	2						2		3	2	
CSE18R174.4	Analyze the different types of memory like RAM,ROM, Cache memory and virtual memory concepts	3	3		3	2								3	2	
CSE18R174.5	Evaluate the various I/O interfaces like USB, PCI and SCSI	3	3	2	3	1	2	1				2	2	3	2	
CSE18R174.6	Create efficient algorithms for implementing the different arithmetic and logic operations by applying appropriate design strategies through working as a team and communicate effectively with technical community in both the written and oral forms	3	3	2	3	1	1	1	2	3	3	1	3	3	3	3

CSE18R174.7	Implement the different architecture and analyze its performance using logic circuit design through working as a team and communicate effectively with technical community in both the written and oral forms	3	3	2	3	2	1	1	2	3	3	1	3	3	3	3
CSE18R174	Average	3	3	2	3	2	1	1	2	3	3	2	3	3	2	3

<i>Course Outcome (CO)</i>		<i>Program Outcome</i>												<i>PSO</i>		
<i>Course Code / CO No</i>	<i>Statement</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>	<i>1</i>	<i>2</i>	<i>3</i>
CSE18R371 Computer Networks																
CSE18R371.1	Inspect the basics of data communication and various categories of networks and its securities	3												3	2	
CSE18R371.2	Identify the technologies for error free secure transmission of data in data link layer	3												3	2	
CSE18R371.3	Apply various routing protocols to select optimal path and relate addressing entities in Network layer	3	3	3	3	3	2	1				3	2	3	2	
CSE18R371.4	Analyze the various security protocols at different layers of OSI architecture	3	3	3	3	3	2	1	3			3	2	3	2	
CSE18R371.5	Analyze the various protocols in application layer	3	3	3	3	3	2	1				3	2	3	2	
CSE18R371.6	Understand and apply different network commands through working as a team and communicate effectively with technical community in both the written and oral forms	3	3	3	3	3	1	1	2	3	3	3	2	3	3	3
CSE18R371.7	Analyze and apply the different networking concepts for implementing network solution through working as a team and communicate effectively with technical community in both the written and oral forms	3	3	3	3	3	1	1	2	3	3	3	2	3	3	3
CSE18R371	Average	3	3	3	3	3	2	1	2	3	3	3	2	3	2	3

<i>Course Outcome (CO)</i>		<i>Program Outcome</i>												<i>PSO</i>		
<i>Course Code / CO No</i>	<i>Statement</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>	<i>1</i>	<i>2</i>	<i>3</i>
INT18R201 Web Technology																
INT18R201.1	Understand the theoretical and practical concepts (internet basics) to design, implement and maintain a typical web page, to understand different protocols used over the internet, to obtain good knowledge in web programming in JavaScript	3	2	3		3							1	3	3	
INT18R201.2	Develop and incorporate dynamic capabilities in Web pages using DHTML and JavaScript.	3	2	3	1	3								3	3	
INT18R201.3	Understand the basic concepts of client-server architecture, features, web applications, web servers to deploy web site, to include multimedia contents	3	3	1										3	3	
INT18R201.4	Understand database basics related to develop dynamic web applications and Apply XML for designing web pages.	3	3	3		3							3	3	3	
INT18R201.5	Apply advanced web development programming to design and implement server- side software that interacts with a database for the purposes of querying the database, test and debug the software, deploy the software, to design and implement interactive web pages		3	3	1	3							3	3	3	2
INT18R201	Average	3	3	3	1	3							2	3	3	2

<i>Course Outcome (CO)</i>		<i>Program Outcome</i>												<i>PSO</i>		
<i>Course Code / CO No</i>	<i>Statement</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>	<i>1</i>	<i>2</i>	<i>3</i>
INT18R371 Database Management Systems																
CSE18R371.1	Understand the features of database management systems and create conceptual models of a database using ER modeling	3	3	3	3	3								3	3	
CSE18R371.2	Create and populate a RDBMS with keys, constraints, queries using SQL	3	3	3	3	3								3	3	
CSE18R371.3	Analyze the existing design of a database schema and apply concepts of normalization to design an optimal database	3	3	3	3	3			1	1	2			3	2	
CSE18R371.4	Analyze various data storage and retrieval of information from database and the identify issues in query processing	3	3	3	3	2				1	2			3	3	
CSE18R371.5	Apply various security mechanisms to protect the data in database in real life applications	3	3	3		3	2			1	2			3	2	
CSE18R371.6	Apply the database concepts to develop database for a real-life application through working as a team and communicate effectively with technical community in both the written and oral forms	3	3	3		3	3	1	2	3	3	3	3	3	3	3
CSE18R371.7	Implement the problem statements more effectively by applying database programming through working as a team and communicate effectively with technical community in both the written and oral forms	3	3	3		3	3	2	2	3	3	3	3	3	3	3
CSE18R371	Average	3	3	3	3	3	3	2	2	2	2	3	1	3	3	2

<i>Course Outcome (CO)</i>		<i>Program Outcome</i>												<i>PSO</i>		
<i>Course Code / CO No</i>	<i>Statement</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>	<i>1</i>	<i>2</i>	<i>3</i>
INT18R499 Project Phase- II																
CSE18R499.1	Identify real world problems and analyze the need for computing solutions	3											3	3		
CSE18R499.2	Use modern tools/ theoretical concepts to apply engineering solutions to complex problems	3	3	3			3	3	3				2		3	3
CSE18R499.3	Acquire collaborative skills through working in a team to achieve common goals	3	3	3				3		3		3	3		3	
CSE18R499.4	Communicate to specific audience effectively in both the written and oral forms			3	3	3		3			3				2	3
CSE18R499	Average	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

Program Articulation Matrix:

<i>S. No</i>	<i>Course Code</i>	<i>Course Name</i>	<i>PO 1</i>	<i>PO 2</i>	<i>PO 3</i>	<i>PO 4</i>	<i>PO 5</i>	<i>PO 6</i>	<i>PO 7</i>	<i>PO 8</i>	<i>PO 9</i>	<i>PO 10</i>	<i>PO 11</i>	<i>PO 12</i>	<i>PSO 1</i>	<i>PSO 2</i>	<i>PSO 3</i>
1	CHY17R171	Chemistry	3	3	1	1	1	1	2	-	-	-	-	1	3	1	-

2	EEE17R151	Basic Electrical and Electronics Engineering	3	3	-	-	-	-	-	-	2	3	-	-	-	-	-
3	HSS17R151	English for Technical Communication - I	-	-	-	-	-	1	-	1	3	3	-	1	-	-	2
4	MAT17R102	Linear Algebra, Partial Differential Equations and Complex Variable	3	3	-	-	3	-	-	-	-	-	-	-	2	-	-
5	MEC17R101	Engineering Drawing	3	3	-	-	-	-	-	-	2	3	-	-	-	-	-
6	MEC17R181	Engineering Practice Laboratory	3	3	-	-	-	-	-	-	2	3	-	-	-	-	-
7	PHY17R151	Materials Physics - I	3	3	2	2	3	1	1	1	1	1	1	1	3	1	1
8	CHY17R101	Environmental Science	2	2	-	-	-	-	3	-	-	-	-	-	-	-	-
9	CIV17R101	Basic Civil Engineering	3	3	-	-	-	-	-	-	2	2	-	1	-	-	-
10	CSE17R171	Programming Language	3	3	3	3	3	3	2	3	2	2	3	3	3	3	3
11	HSS17R152	English for Technical Communication II	-	-	-	-	-	-	-	1	3	3	0	2	-	-	2
12	INT17R101	Introduction to Information Technology	3	2	1		3	2	3						3	2	3
13	MAT17R101	Calculus and Differential Equations	3	3	-	-	3	-	-	-	-	-	-	-	2	-	-

14	MEC17R105	Basic Mechanical Engineering	3	3	-	-	-	-	-	-	2	2	-	1	-	-	-
15	PHY17R171	Engineering Physics	3	3	-	-	3	-	-	-	2	2	-	-	-	-	-
16	CSE18R174	Computer Architecture and Organization	3	3	2	3	2	1	1	2	3	3	2	3	3	2	3
17	INT18R171	Digital Principles and System Design	3	3	2	3	-	2	-	3	-	2	3	-	2	2	2
18	INT18R271	Data Structures and Algorithms	2	2	3	2	3		3					1	3	2	2
19	INT18R272	Analog and Digital Communication	1	3	3				1			3	2	1	3	3	1
20	MAT18R202	Probability and Statistics	3	3	-	2	3	-	-	-	-	-	-	-	2	2	1
21	CSE18R273	Operating Systems	3	2	2	2	3	2	2	2	2	2	2	2	3	2	1
22	ECE18R220	Principles of Signals and Systems	2	3	2	-	-	-	1	2				2	2	3	-
23	INT18R201	Web Technology	-	3	3	1	3							2	3	3	2
24	INT18R251	Microcontrollers and Embedded Systems	3	2	2	3	3	3	-	-	-	-	3	-	3	2	3
25	INT18R273	Object Oriented Programming	3	2	2	3	-	2				2		3	3	2	2
26	BIT18R101	Biology for Engineers	3	3	-	3	2	-	1	-	-	-	-	-	-	-	-

27	HSS18R002	Marketing Management	3	3	2	3	2	2	1	2	3	1	2	3	3	2	-
28	INT18R311	Artificial Intelligence	1	3	2	-	2	-	3	-	3	-	3	1	3	3	-
29	INT18R371	Database Management Systems	3	3	3	3	3	3	2	2	2	2	3	1	3	3	2
30	CSE18R371	Computer Networks	3	3	3	3	3	2	1	2	3	3	3	2	3	2	3
31	INT18R359	Software Engineering	3	3	-	3	3	-	3	3	3	3	3	3	3	2	3
32	INT18R399	Community Service Project	3	3	3	3	3	3	3	2	2	3	2	3	3	3	3
33	HSS18R015	Total Quality Management	3	3	3	3	3	3	2	2	2	2	3	1	3	3	2
34	INT18R498	Project Work-I	3	3	3	3	3	-	3	-	3	2	3	2	3	3	3
35	INT18R274	Principles of Digital Signal Processing	2	2	2	-	-	-	1	2				2	2	3	-
36	INT18R499	Project Work-II	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

3.2. Attainment of Course Outcomes (75)

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.

A1. List of assessment tools used for CO attainment

A2. Mark Allotment for CO assessment

A3. Assessment Procedure for CO Attainment with sample calculations

A1. List of assessment tools used for CO attainment

Table 3.4 shows the different assessment tools used for the CO attainment process.

Table 3.4 Assessment Tools

<i>Assessment Tool</i>		<i>Description</i>
Direct Assessment (Theory Courses)	Sessional Examinations	The assessment tool is initiated during the sessional examination which is held twice in a semester. Each and every sessional examination will focus on 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 in order 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.

	<i>Assignments</i>	<p>Assignment An assignment is a qualitative performance assessment tool designed to assess the student's knowledge on engineering practices. It is a metric used to assess student's analytical and problem-solving abilities. Assignments should cover higher order Blooms Taxonomy cognition levels. Every student is assigned with course related tasks & assessment will be done based on their performance. An analytic rubric is developed to assess student's knowledge with respect to the learning outcomes.</p> <p>Assignments can be given as Quiz, Seminar, Open Book Test, Case Studies, Industry expert-based evaluation, Research Article based evaluation etc. The course coordinator will fix any of the above corresponding to the course outcomes.</p> <p>Quiz Quizzes will be conducted during regular class hours. Quiz should be designed to test the basic fundamentals in a topic. At least 25 questions should be there in each quiz. Preferably, and where applicable, GATE and/or other competitive exam standard has to be maintained. 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 are well planned as per the course outcomes of the concern course and the presentation should contain all the technical components and specific conclusions</p> <p>Open Book Test Questions framed should not be directly from one or more published text books – either as solved or unsolved examples. The faculty must design the question himself as per course outcome of the concern course and preferably based on real time case studies.</p> <p>Industry Expert Evaluation Industry persons can be invited to offer a real time industry problem related to the course outcome of the concerned course and evaluate the students' performance.</p> <p>Research Article Based Evaluation 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 IEEE/Elsevier/Springer/Wiley etc. The objectives should be clearly defined on what the intended outcome of the research articles study is.</p> <p>Experiment based Evaluation For some theory courses we are permitted to conduct experiment-based evaluation. Individual student should be evaluated for his/her ability to design and conduct experiment and report the findings. More weightage should be given for the analysis of the result.</p>
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Direct (Laboratory Courses)	Internal	The internal marks for laboratory courses are awarded based on rubrics framed by the course coordinator for the corresponding lab course consisting of experimentation, interpretation and result analysis. The assessment is done for regular lab exercises as well as internal practical exams
	Mini Project	Mini projects provide an opportunity to students to demonstrate independence and originality, to plan and organize a project over a given period, and to put into practice the techniques that have been taught. Students must identify a problem related to the laboratory course and carry out a mini project on the problem defined. Two reviews are conducted during lab hours. Marks are awarded based on the rubrics defined by the course coordinator.
	External	The external examinations for laboratory courses are conducted at the end of the semester for 3 hours. It is evaluated based on rubrics framed by the course coordinator for the corresponding lab course.
Indirect Assessment	Course end Survey	At the end of every semester, every student is asked to give their opinion about the knowledge level attained for every course outcome of the corresponding course they have studied with assigned rubrics. The course end survey is assessed based on rubrics designed by the course coordinator.

A2. Mark Allotment for CO assessment

Table 3.5 shows the marks allotment for each COs in the internal and external assessment. The allocation may vary depending on the course type.

Table 3.5. Marks allotment indicatively for CO assessment for Theory Courses

COs	Internal Assessment				External Assessment
	SE-I	SE-II	Unit Test	Assignment	End Semester Exam
CO1	30			10	20
CO2	20			10	20
CO3		30		10	20
CO4		20		10	20
CO5			20	10	20
Total	50	50	20	50	100

Table 3.6. Weightage for CO Attainment - Theory Courses

COs	Internal Attainment (50%)				External Attainment (50%)
	SE-I	SE-II	Unit Test	Assignment	End Semester Exam
CO1	35%			15%	50%
CO2	35%			15%	50%
CO3		35%		15%	50%
CO4		35%		15%	50%

CO5			35%	15%	50%
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Table 3.7. Marks allotment indicatively for CO assessment for Integrated Courses

COs	Internal Assessment					External Assessment	
	SE-I	SE-II	Unit Test	Assign.	Lab Internal Assessment	End Sem Theory	End Sem Lab
CO1	30	-	-	10	-	20	
CO2	20	-	-	10	-	20	
CO3	-	30	-	10	-	20	
CO4	-	20	-	10	-	20	
CO5	-	-	20	10	-	20	
CO6	-	-	-	-	35	-	70
CO7	-	-	-	-	15	-	30
Total	50	50	20	50	50	100	100

Table 3.8. Weightage for CO Attainment - Integrated Courses

COs	Internal Attainment (50%)					External Attainment (50%)		Total
	SE-I	SE-II	Unit Test	Assign.	Lab Internal Assessment	End Sem Theory	End Sem Lab	Direct Attainment (Internal 50% & External 50%)
CO1	35%			15%		50%		100%
CO2	35%			15%		50%		100%
CO3		35%		15%		50%		100%
CO4		35%		15%		50%		100%
CO5			35%	15%		50%		100%
CO6					50%		50%	100%
CO7					50%		50%	100%

Table 3.5 shows the indicative marks allotment for theory courses. Every sessional exam is planned to cover a minimum of two COs of that particular course. For example, in Sessional Examination - I the split-up for 50 marks is 30 marks for CO1 and 20 marks for CO2 approximately. For Sessional Examination II, questions are planned to cover 30 marks for CO3 and remaining 20 marks for CO4. In Unit Test, 20 mark for CO5. In the end semester examination, the question paper covers the entire COs with equal weightage. Assignments topics are also framed to cover all the COs with equal weightage.

Table 3.6 shows the weightage of CO attainment in theory course. The weightage has fixed as 35% from internal exam, 15% from assignment and 50% from end semester examination.

Table 3.7 shows the indicative marks allotment for Integrated (Theory + Lab) courses. All the Integrated course consists of 5 COs for Theory and 2 COs for Laboratory.

Table 3.8 shows the weightage of CO attainment in Integrated course. The weightage has fixed for theory (CO1 – CO5) as 35% from internal exam, 15% from assignment and 50% from end semester examination. The weightage fixed for laboratory (CO6 & CO7) as 50% from internal lab assessment and 50% from end semester practical exam.

A 3. Assessment Procedure for CO Attainment

The assessment procedure for CO attainment is based on direct and indirect assessment. The direct Assessment is completely based on the students' performance on various descriptive examinations, assignment components and laboratory examinations. Indirect assessment is based on the survey / report taken for a particular course. While calculating the final attainment, direct assessment is given a weightage of 80% and indirect attainment with 20%. Sample CO attainment calculation performed for the course CSE18R371 – Computer Networks is explained in detail in Table 3.9.

Table 3.9 Sample CO Attainment Calculation for the course INT18R271 – Data Structures and Algorithms

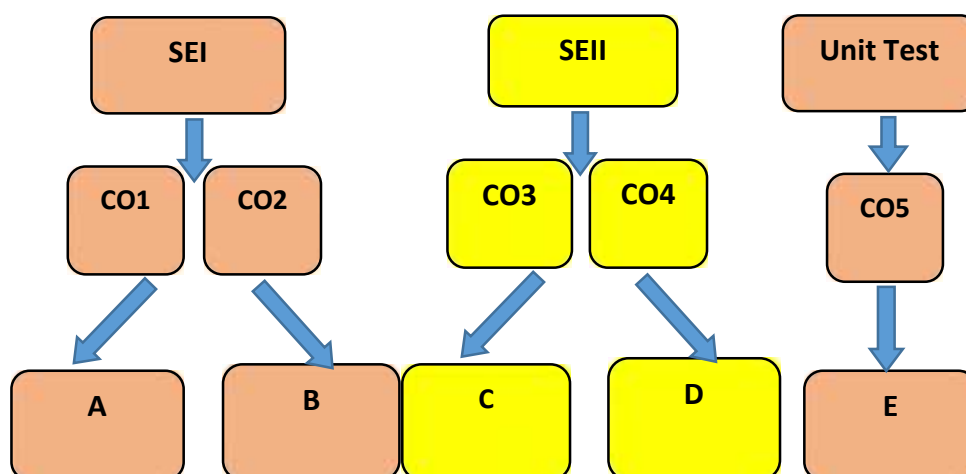
Course Title		Data Structures and Algorithms																									
Course Code		INT18R271																									
Month and Year of Exam		Nov/Dec 2018																									
Batch		2017-2021																									
Bench Mark Score		45																									
S.No.	COs	Internal Assessment												Cumulative Internal Assessment (35% from SE and 15% from Assignment)													
		SE I		SE II		Unit Test	Assignments					Internal Lab Ass.															
		CO1	CO2	CO3	CO4	CO5	CO1	CO2	CO3	CO4	CO5	CO6	CO7	CO1	Att.	CO2	Att.	CO3	Att.	CO4	Att.	CO5	Att.	CO6	Att.	CO7	Att.
	Reg.No.	30	20	30	20	20	10	10	10	10	10	30	20	50		50		50		50		50		50		50	
1	9818008001	2	5	5	0	6	10	9	9.5	9.5	8	18	12	17.3	N	22.3	N	20.1	N	14.3	N	22.5	Y	30.0	Y	30.0	Y
2	9818008002	16.5	13	23	13	7	9	9.5	9	9.5	8	30	8	32.8	Y	37.0	Y	40.3	Y	37.0	Y	24.3	Y	50.0	Y	20.0	N
3	9917008001	23	17	24	12.5	8	10	9.5	9.5	9.5	8	18	8	41.8	Y	44.0	Y	42.3	Y	36.1	Y	26.0	Y	30.0	Y	20.0	N
4	9917008003	13	0	18	4	15	9	9	9	9.5	9.5	15	15	28.7	Y	13.5	N	34.5	Y	21.3	N	40.5	Y	25.0	Y	38.0	Y
5	9917008004	22.5	15.5	20	16	7	10	9.5	10	9.5	10	24	10	41.3	Y	41.4	Y	38.3	Y	42.3	Y	27.3	Y	40.0	Y	24.0	Y
6	9917008005	14.5	13	22	14	11	10	9.5	9	9.5	9.5	24	16	31.9	Y	37.0	Y	39.2	Y	38.8	Y	33.5	Y	40.0	Y	40.0	Y
7	9917008006	10	11	14	9	17	9	9.5	9	9.5	9.5	15	16	25.2	Y	33.5	Y	29.8	Y	30.0	Y	44.0	Y	25.0	Y	40.0	Y
8	9917008007	17	7	23	14	15	10	9.5	9.5	9.5	8	15	16	34.8	Y	26.5	Y	41.1	Y	38.8	Y	38.3	Y	25.0	Y	40.0	Y
9	9917008008	11.5	9.5	18	14.5	9	10	9.5	9.5	9.5	8	22	10	28.4	Y	30.9	Y	35.3	Y	39.6	Y	27.8	Y	36.0	Y	26.0	Y
10	9917008009	17	16	26	14	8	10	8	9.5	9.5	9.5	18	16	34.8	Y	40.0	Y	44.6	Y	38.8	Y	28.3	Y	30.0	Y	40.0	Y
11	9917008010	10	10	14	8	17	9	9.5	9.5	9.5	9.5	17	16	25.2	Y	31.8	Y	30.6	Y	28.3	Y	44.0	Y	28.0	Y	40.0	Y
12	9917008013	3	8	19	2	17	9	9.5	9.5	9.5	9.5	20	12	17.0	N	28.3	Y	36.4	Y	17.8	N	44.0	Y	34.0	Y	30.0	Y
13	9917008014	15	5	17	16.5	14	9.5	9.5	9.5	9.5	9.5	20	14	31.8	Y	23.0	Y	34.1	Y	43.1	Y	38.8	Y	34.0	Y	36.0	Y
14	9917008015	0	0	12	2	7	0	0	0	0	0	16	0	0.0	N	0.0	N	14.0	N	3.5	N	12.3	N	26.0	Y	0.0	N
15	9917008017	11	15	25	14	11	10	9.5	9.5	9.5	8	24	20	27.8	Y	40.5	Y	43.4	Y	38.8	Y	31.3	Y	40.0	Y	50.0	Y
16	9917008018	21	3	10	1	13	9.5	9.5	9.5	9.5	9.5	16	14	38.8	Y	19.5	N	25.9	Y	16.0	N	37.0	Y	26.0	Y	36.0	Y
17	9917008019	15.5	4.5	14	13	13	10	8	9.5	9.5	9.5	23	18	33.1	Y	19.9	N	30.6	Y	37.0	Y	37.0	Y	38.0	Y	44.0	Y
18	9917008021	12.5	9	13	10	16	9	9.5	9.5	9.5	9.5	16	14	28.1	Y	30.0	Y	29.4	Y	31.8	Y	42.3	Y	26.0	Y	36.0	Y
19	9917008022	15	19.5	18	15	18	10	8.5	9.5	9.5	9.5	14	16	32.5	Y	46.9	Y	35.3	Y	40.5	Y	45.8	Y	24.0	Y	40.0	Y
20	9917008023	18.5	3.5	20	5	11	9.5	9	9.5	9.5	9.5	19	16	35.8	Y	19.6	N	37.6	Y	23.0	Y	33.5	Y	32.0	Y	40.0	Y

[illegible]

S.No.	COs	External Assessment														Direct Attainment (35% from SE, 15% from Assignment and 50% from ESE)													
		End Semester Theory Exam										End Semester Lab Exam																	
		Reg.No.	CO1 20	Att.	CO2 20	Att.	CO3 20	Att.	CO4 20	Att.	CO5 20	Att.	CO6 60	Att.	CO7 40	Att.	CO1	Att.	CO2	Att.	CO3	Att.	CO4	Att.	CO5	Att.	CO6	Att.	CO7
1	9818003001	7	N	8	N	11	Y	11	Y	10	Y	36	Y	25	Y	34.8	N	42.3	N	47.6	Y	41.8	N	47.5	Y	60.0	Y	61.0	Y
2	9818003002	14	Y	13	Y	14	Y	14	Y	7	N	60	Y	38	Y	67.8	Y	69.5	Y	75.3	Y	72.0	Y	41.8	N	100.0	Y	67.0	Y
3	9917008001	3	N	14	Y	12	Y	12	Y	8	N	42	Y	34	Y	49.3	Y	79.0	Y	72.3	Y	66.1	Y	46.0	Y	65.0	Y	63.0	Y
4	9917008003	8	N	10	Y	2	N	2	N	0	N	42	Y	27	Y	48.7	Y	38.5	N	39.5	N	26.3	N	40.5	N	60.0	Y	72.0	Y
5	9917008004	16	Y	16	Y	15	Y	15	Y	13	Y	54	Y	34	Y	81.3	Y	81.4	Y	75.8	Y	79.8	Y	59.8	Y	85.0	Y	66.0	Y
6	9917008005	16	Y	11	Y	16	Y	16	Y	9	Y	54	Y	35	Y	71.9	Y	64.5	Y	79.2	Y	78.8	Y	56.0	Y	85.0	Y	84.0	Y
7	9917008006	16	Y	11	Y	14	Y	14	Y	6	N	42	Y	25	Y	65.2	Y	61.0	Y	64.8	Y	65.0	Y	59.0	Y	60.0	Y	71.0	Y
8	9917008007	12	Y	14	Y	15	Y	15	Y	12	Y	42	Y	28	Y	64.8	Y	61.5	Y	78.6	Y	76.3	Y	68.3	Y	60.0	Y	75.0	Y
9	9917008008	3	N	16	Y	17	Y	17	Y	15	Y	42	Y	25	Y	35.9	N	70.9	Y	77.8	Y	82.1	Y	65.3	Y	71.0	Y	57.0	Y
10	9917008009	13	Y	12	Y	12	Y	12	Y	9	Y	48	Y	30	Y	67.3	Y	70.0	Y	74.6	Y	68.8	Y	50.8	Y	70.0	Y	77.0	Y
11	9917008010	17	Y	0	N	17	Y	17	Y	15	Y	48	Y	28	Y	67.7	Y	31.8	N	73.1	Y	70.8	Y	81.5	Y	68.0	Y	75.0	Y
12	9917008013	12	Y	12	Y	16	Y	16	Y	11	Y	42	Y	22	Y	47.0	Y	58.3	Y	76.4	Y	57.8	Y	71.5	Y	69.0	Y	57.0	Y
13	9917008014	1	N	17	Y	12	Y	12	Y	14	Y	42	Y	29	Y	34.3	N	65.5	Y	64.1	Y	73.1	Y	73.8	Y	69.0	Y	72.0	Y
14	9917008015	17	Y	15	Y	15	Y	15	Y	14	Y	0	N	0	N	42.5	N	37.5	N	51.5	Y	41.0	N	47.3	Y	26.0	N	0.0	N
15	9917008017	10	Y	7	N	8	N	8	N	0	N	42	Y	29	Y	52.8	Y	58.0	Y	63.4	Y	58.8	Y	31.3	N	75.0	Y	86.0	Y
16	9917008018	14	Y	16	Y	15	Y	15	Y	16	Y	48	Y	27	Y	73.8	Y	59.5	Y	63.4	Y	53.5	Y	77.0	Y	66.0	Y	70.0	Y
17	9917008019	12	Y	15	Y	15	Y	15	Y	16	Y	48	Y	31	Y	63.1	Y	57.4	Y	68.1	Y	74.5	Y	77.0	Y	78.0	Y	83.0	Y
18	9917008021	2	N	8	N	14	Y	14	Y	0	N	36	Y	25	Y	33.1	N	50.0	Y	64.4	Y	66.8	Y	42.3	N	56.0	Y	67.0	Y
19	9917008022	11	Y	13	Y	13	Y	13	Y	3	N	36	Y	30	Y	60.0	Y	79.4	Y	67.8	Y	73.0	Y	53.3	Y	54.0	Y	77.0	Y
20	9917008023	12	Y	10	Y	17	Y	17	Y	15	Y	36	Y	28	Y	65.8	Y	44.6	N	80.1	Y	65.5	Y	71.0	Y	62.0	Y	75.0	Y

21	9917008024	12	Y	16	Y	16	Y	16	Y	15	Y	48	Y	26	Y	54.0	Y	75.6	Y	76.4	Y	73.5	Y	78.0	Y	80.0	Y	72.0	Y
22	9917008025	8	N	8	N	7	N	7	N	12	Y	50	Y	30	Y	59.9	Y	51.8	Y	59.8	Y	51.0	Y	59.3	Y	78.0	Y	82.0	Y
23	9917008027	8	N	14	Y	11	Y	11	Y	13	Y	34	Y	21	Y	52.9	Y	65.1	Y	56.3	Y	63.8	Y	74.8	Y	66.0	Y	50.0	Y
24	9917008028	13	Y	14	Y	16	Y	16	Y	15	Y	42	Y	30	Y	73.6	Y	65.8	Y	79.9	Y	80.5	Y	64.0	Y	67.0	Y	77.0	Y
25	9917008029	9	Y	8	N	17	Y	17	Y	12	Y	36	Y	22	Y	54.4	Y	43.4	N	75.4	Y	67.3	Y	75.8	Y	66.7	Y	63.0	Y
26	9917008030	13	Y	14	Y	15	Y	13	Y	14	Y	36	Y	22	Y	63.8	Y	62.6	Y	79.6	Y	77.3	Y	62.8	Y	60.0	Y	78.0	Y
27	9917008031	9	Y	13	Y	16	Y	14	Y	15	Y	36	Y	23	Y	54.4	Y	57.4	Y	74.1	Y	75.5	Y	80.8	Y	55.0	Y	63.8	Y
28	9917008032	12	Y	14	Y	15	Y	15	Y	15	Y	36	Y	22	Y	61.3	Y	62.6	Y	80.2	Y	77.0	Y	65.8	Y	60.0	Y	77.5	Y
29	9917008033	12	Y	10	Y	8	N	12	Y	11	Y	36	Y	25	Y	56.0	Y	56.0	Y	51.5	Y	76.8	Y	60.5	Y	63.3	Y	68.8	Y
		CO1	28	CO2	28	CO3	28	CO4	28	CO5	28	CO6	28	CO7	28	CO1	22	CO2	21	CO3	25	CO4	24	CO5	21	CO6	25	CO7	25
			7		5		3		3		6		1		1		4		5		1		2		3		1		1
			29		29		29		29		29		29		29		29		29		29		29		29		29		29
			96.6		96.6		96.6		96.6		96.6		97		97		75.9		72.4		86.2		82.8		75.9		86.2		86.2

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A.3.1 Course Outcome Attainment Through Cumulative Internal Examination (CIE):**i. Sessional Examination and Unit Test****Fig 3.3. Contribution of COs in sessional and Unit Test examination**

Let us consider,

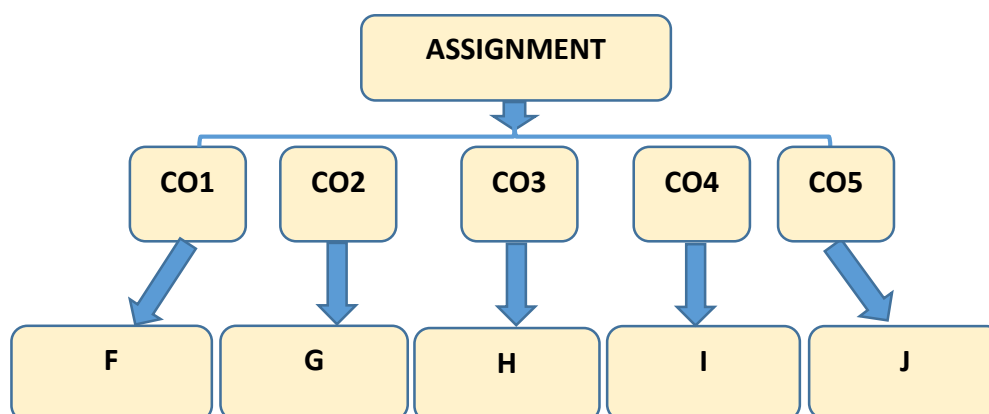
A - Contribution of CO1 in sessional examination I

B - Contribution of CO2 in sessional examination I

C - Contribution of CO3 in sessional examination II

D - Contribution of CO4 in sessional examination II

E - Contribution of CO5 in unit test

ii) Assignment**Fig 3.4. Contribution of COs in assignment**

Let us consider,

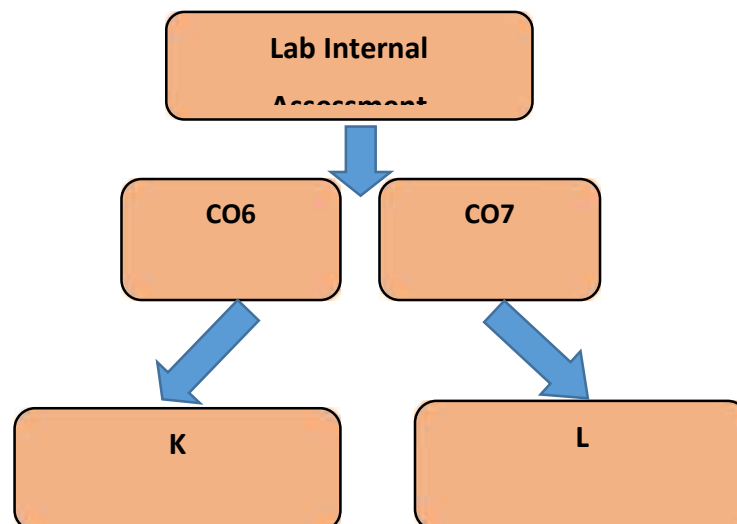
F - Contribution of CO1 in Assignment.

G - Contribution of CO2 in Assignment.

H - Contribution of CO3 in Assignment.

I - Contribution of CO4 in Assignment.

J - Contribution of CO5 in Assignment.

iii. Laboratory Internal Assessment:**Fig 3.5. Contribution of COs in Lab internal Assessment**

K - Contribution of CO6 in Lab internal assessment

L - Contribution of CO7 in Lab internal assessment

The course INT18R271 / Data Structures and Algorithms (Integrated course) offered during odd semester of Second year of study for the batch 2017-21 is selected for CO attainment calculations. Fig 3.3, Fig 3.4 and Fig 3.5 shows the contribution of COs in sessional examinations, assignments and Lab internal assessment respectively. The benchmark score for a particular course is usually selected by course coordinator based upon previous year's results for this course and approved in the Program Advisory Board (PAB). To understand the calculations shown in Table 3.9, '**Y**' indicates **CO attained** when the score of the individual is greater than the benchmark score and '**N**' indicates **Not Attained**. Considering Table 3.9, the student shown in **Serial No:17 with** registration number 9917008017 scored 15.5 marks out of 30 marks for CO1 (A=15.5) from sessional exam - 1 and scored 10 marks out of 10 marks for CO1 (F=10) from the assignment. So, the cumulative internal attainment is calculated as per the assessment weightage Table 3.8 (35% from sessional exam and 15% from assignment). For CO1, A=15.5/30 and H=10/10 (35% of A + 15% of H) is 33.1 out of 50. It indicates that the score is greater than the benchmark score fixed ($33.1 > 50 \times (45/100)$). So, his attainment is marked as '**Y**' for **CO1** in case of internal assessment. To calculate the total number of students attained, we count the number of **Y** and **N** for each COs. The total number of Y and N is 26 and 3 respectively for CO1 out of 29 students. Therefore, the percent of students attained CO1 from cumulative internal examination results 89.7% (i.e. $26 / 29 = 89.7\%$) considering the bench mark. Similarly, we find all the COs attainment for this particular course through all the cumulative internal assessment. The calculated values are as follows.

Attainment of CO1 = 89.7%

Attainment of CO2 = 79.3%

Attainment of CO3 = 93.1%

Attainment of CO4 = 88.6%

Attainment of CO5	= 96.%
Attainment of CO6	= 100%
Attainment of CO7	= 89.7%

A.3.2. Course Outcome Attainment Through Semester End Examination (SEE)

i. End Semester Examination - Theory

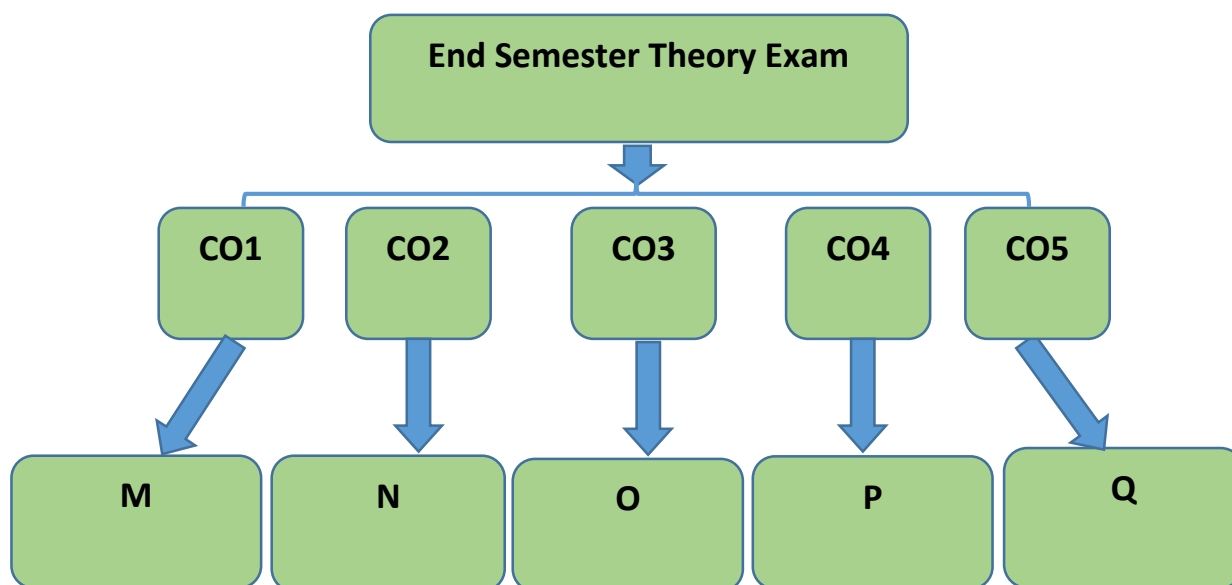


Fig 3.6. Assessment process of CO attainment for End semester theory exam

Let us consider,

M - Contribution of CO1 in End semester theory examination

N - Contribution of CO2 in End semester theory examination

O - Contribution of CO3 in End semester theory examination

P - Contribution of CO4 in End semester theory examination

Q - Contribution of CO5 in End semester theory examination

i. End Semester Examination - Practical

Let us consider,

R - Contribution of CO6 in End semester practical examination

S - Contribution of CO7 in End semester practical examination

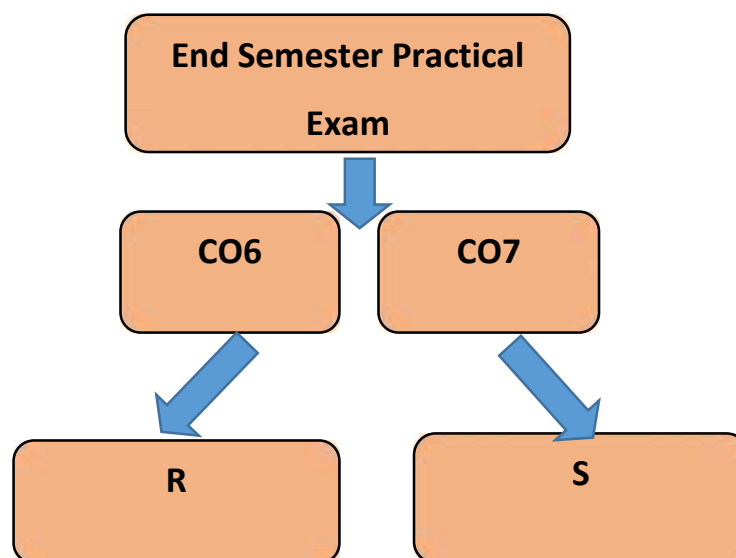


Fig 3.7. Assessment process of CO attainment for End semester practical exam

Fig 3.6 and Fig 3.7 shows the assessment process for end semester theory and practical examinations respectively for the same course, INT18R271/Data Structures and Algorithms. The same student with registration number 9917008019 (Serial No.17) scored 12 out of 20 in CO1, that is 60%. This is also above the benchmark score and therefore the student attained in CO1. The total number of students appeared and number of attainments for CO1 is 72.4%.

The calculated values are as follows,

Attainment of CO1 in End semester	= 72.4%
Attainment of CO2 in End semester	= 79.3%
Attainment of CO3 in End semester	= 93.1%
Attainment of CO4 in End semester	= 89.7%
Attainment of CO5 in End semester	= 75.9%
Attainment of CO6 in End semester	= 82.8%
Attainment of CO7 in End semester	= 96.6%

The direct CO attainment for the course INT18R271 Data Structures and Algorithms is calculated in Table 3.10. It is calculated based on the weightage given below.

Table 3.10. Direct Attainment for INT18R271 – Data Structures and Algorithms

<i>Course Outcome (CO)</i>	<i>Attainment Contribution (50% of Internal + 50% of External)</i>	<i>No of Students Attained</i>	<i>Percentage of CO Attainment (%)</i>
CO1	35% of A + 15% of F + 50% of M	29	72.4
CO2	35% of B + 15% of G + 50% of N	29	79.3
CO3	35% of C + 15% of H + 50% of O	29	93.1

CO4	35% of D + 15% of I + 50% of P	29	89.7
CO5	35% of E + 15% of J + 50% of Q	29	75.9
CO6	50% of K + 50% of R	29	82.8
CO7	50% of L + 50% of S	29	96.6

In-Direct CO attainment

Course exit survey:

At the end of every semester, for every course offered to the students during that semester, a course end survey is conducted to assess the CO attainment from student point of view. Figure 3.8 is the scanned copies of Course exit survey form. The survey form includes questionnaires for all the COs with a provision to mark whether the course has supported to build the knowledge or skill as mentioned in every CO of that course. Students will tick on the appropriate option on a five-point scale. Considerations on surveys are made as the marks calculated based on normalized value.

Again, the course INT18R271 – Data Structures and Algorithms, for CO1, 23 students chose the points 3 and above out of 29 students (80%). Similarly, 79%, 83.1%, 76.2%, 77.8%, 85% and 83% is attained for CO2, CO3, CO4, CO5, CO6 and CO7 respectively based on the students' answers. The indirect CO attainment for INT18R271 – Data Structures and Algorithms course is calculated in Table 3.9.

Table 3.11 Indirect CO attainment for INT18R271 – Data Structures and Algorithms

<i>COs</i>	<i>Percentage of Indirect Attainment</i>
CO1	80.0
CO2	79.0
CO3	83.1
CO4	76.2
CO5	77.8
CO6	85.0
CO7	83.0

Overall CO attainment

The overall CO attainment is calculated from direct and indirect attainment for every individual course. As already conveyed, the weightage given for direct attainment is 80% and 20% for indirect attainment.

For the course INT18R271 – Data Structures and Algorithms, the overall CO attainment is calculated in Table 3.12.

Table 3.12 Indirect CO attainment for INT18R271 – Data Structures and Algorithms

COs	Direct Attainment	Indirect Attainment	Overall Attainment
CO1	72.4	80.0	73.9
CO2	79.3	79.0	79.2
CO3	96.6	83.1	93.9
CO4	89.7	76.2	87.0
CO5	86.2	77.8	84.5
CO6	86.2	85.0	86.0
CO7	96.6	83.0	93.8

A.3.3 Attainment level

The attainment level is calculated by referring the Fig 3.8, which clearly states that if the attainment value is less than 60%, then the attainment level is 0, if the attainment value is less than 70% and greater than 60% then the attainment level is 1, if attainment value is less than 80% and greater than 70% then the attainment level is 2. Finally, if attainment value is greater than 80% then the attainment level is 3.

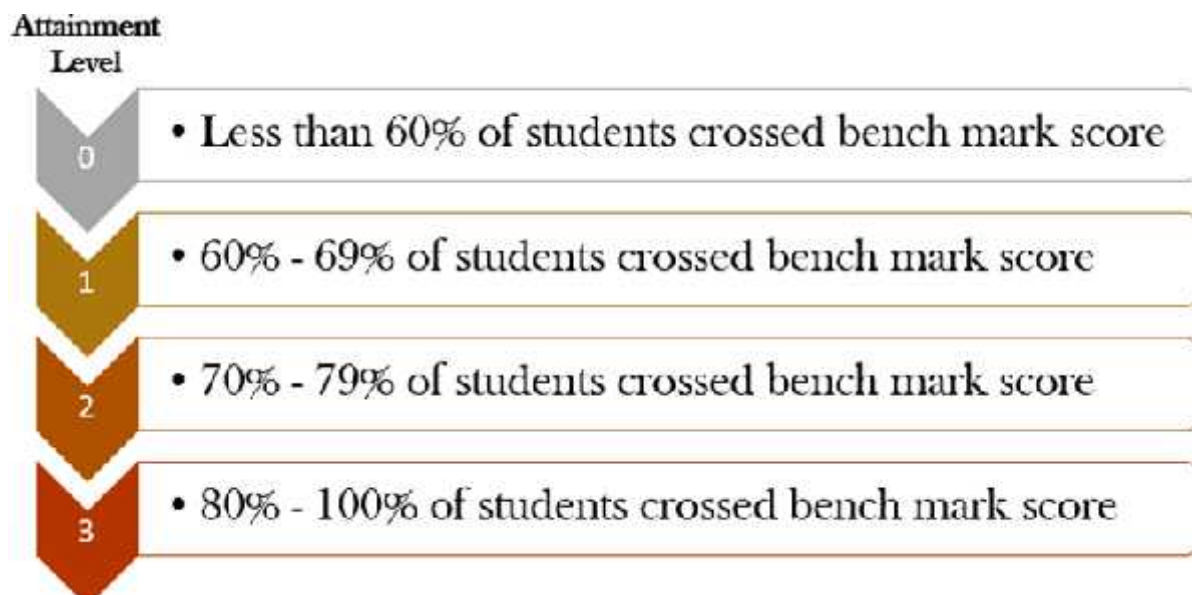


Fig 3.8. Attainment level indicators

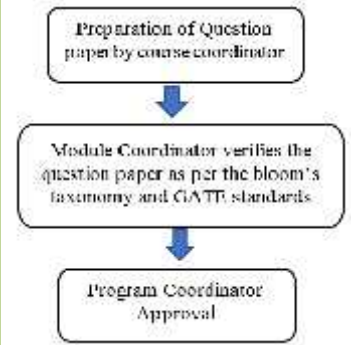
Table 3.13 shows the overall CO attainment with attainment level for the course INT18R271 – Data Structures and Algorithms.

Table 3.13 Overall CO attainment with attainment level for the course INT18R271 – Data Structures and Algorithms

COs	Direct Attainment	Indirect Attainment	Overall Attainment	Attainment Level
CO1	72.4	80.0	73.9	2
CO2	79.3	79.0	79.2	2
CO3	96.6	83.1	93.9	3
CO4	89.7	76.2	87.0	3
CO5	86.2	77.8	84.5	3
CO6	86.2	85.0	86.0	3
CO7	96.6	83.0	93.8	3
Average Attainment Level				2.4

B. The quality /relevance of assessment processes & tools used

Table 3.14Quality of assessment tools

Assessment Tool		Description
<i>Direct Assessment Tools</i>	<i>Sessional Examinations</i>	<p>Three sessional exams are conducted for every course SE-I evaluates CO1 and CO2 SE-II evaluates CO3 and CO4 Unit Test evaluate CO5 The question papers are strictly prepared by using bloom's taxonomy. The quality of question papers is ensured 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>

	End Semester Examination	<p>Two sets of question papers for each course are prepared in accordance with blooms taxonomy by internal experts.</p> <p>Another set of question papers for each course is prepared in accordance with blooms taxonomy by external experts from reputed institutions like (NIT and Renowned institutions).</p> <p>The End semester examination evaluates CO1, CO2, CO3, CO4 and CO5</p> <p>Valuation are done by external experts</p> <p>The controller of examination allocates internal and external experts to audit the question paper before examination to maintain the curriculum content and to avoid conflict on examinations. and also, to ensure the quality of valuation.</p> <p>Controller of examination allocates external experts for post auditing the corrected papers.</p>
Direct Assessment Tools	Assignment	<p>Five assignments are given for every course corresponding to the COs. The assignments are given based on the knowledge level to be attained for every COs.</p> <p>The course teacher will choose any one of the following tools for the assessment of the assignment.</p> <p>Online / Offline Quiz</p> <p>Mind Mapping</p> <p>Online Coding Contest (Hacker rank, Mercer Mettl, Coder byte etc)</p> <p>Practical Assignment</p> <p>Seminar</p> <p>Assignments using innovative ICT tools – Hot potatoes, Puzzles, Placards, etc.</p>
	Observation (Laboratory Sessions, Practical Examination)	<p>To evaluate student's practical knowledge with their programming level capabilities, evaluation is done for every lab session. Two lab internal assessments are done for the lab courses per semester.</p> <p>The strength of the students in using their skills and tools in the laboratory is also evaluated in external laboratory examinations.</p>
	Project and Community service projects	<p>1. Main Project</p> <p>Ten credits are allocated for project work</p> <p>Project Review Committee constituted by project coordinator evaluates the continuous internal assessment based on the rubrics assigned by project coordinator</p> <p>External experts evaluate the projects based on the rubrics assigned by the project coordinator during the viva voce exam.</p> <p>2. Community service project (CSP):</p> <p>CSP is carried out in two phases in the third year with a total credit of three.</p> <p>The CSP projects are evaluated by internal experts and CSP coordinator based on the rubrics assigned by CSP coordinator.</p>
Indirect Assessment Tools	Course end Survey	<p>Survey has been taken for all the courses at the end of every semester</p> <p>The course teachers collect a variety of feedback through this survey about the attainment course outcomes from the students after learning entire courses.</p> <p>The questionnaires are framed by the course coordinator to ensure the knowledge levels of all the course outcomes of the corresponding course.</p> <p>The survey is evaluated based on a 5 point scale correlation level against all the course outcomes of the corresponding course.</p>

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 the course coordinator after approval by Program Advisory Board at the beginning of the semester. Table 3.15 shows the CO attainment for the batch 2017 – 2021.

Table 3.15 Coursewise CO Attainment for the batch 2017-2021

S. No	Course Code	Course Name	CO Attainment
1	CHY17R171	Chemistry	1.6
2	EEE17R151	Basic Electrical and Electronics Engineering	2.4
3	HSS17R151	English for Technical Communication - I	1.8
4	MAT17R102	Linear Algebra, Partial Differential Equations and Complex Variable	2.0
5	MEC17R101	Engineering Drawing	2.2
6	MEC17R181	Engineering Practice Laboratory	2.0
7	PHY17R151	Materials Physics - I	2.2
8	CHY17R101	Environmental Science	1.6
9	CIV17R101	Basic Civil Engineering	2.2
10	CSE17R171	Programming Language	2.2
11	HSS17R152	English for Technical Communication II	2.4
12	INT17R101	Introduction to Information Technology	1.4
13	MAT17R101	Calculus and Differential Equations	2.2
14	MEC17R105	Basic Mechanical Engineering	1.8
15	PHY17R171	Engineering Physics	2.0
16	CSE18R174	Computer Architecture and Organization	1.8
17	INT18R171	Digital Principles and System Design	2.0
18	INT18R271	Data Structures and Algorithms	2.4

19	INT18R272	Analog and Digital Communication	1.6
20	MAT18R202	Probability and Statistics	1.8
21	CSE18R273	Operating Systems	2.0
22	ECE18R220	Principles of Signals and Systems	1.8
23	INT18R201	Web Technology	1.8
24	INT18R251	Microcontrollers and Embedded Systems	1.2
25	INT18R273	Object Oriented Programming	1.2
26	BIT18R101	Biology for Engineers	2.2
27	HSS18R002	Marketing Management	3.0
28	INT18R311	Artificial Intelligence	1.8
29	INT18R371	Database Management Systems	1.8
30	CSE18R371	Computer Networks	2.4
31	INT18R359	Software Engineering	3.0
32	INT18R399	Community Service Project	3.0
33	HSS18R015	Total Quality Management	3.0
34	INT18R498	Project Work-I	3.0
35	INT18R274	Principles of Digital Signal Processing	3.0
36	INT18R499	Project Work-II	3.0

3.3. Attainment of Program Outcomes and Program Specific Outcomes (75)

3.3.1. Describe assessment tools and processes used for measuring the attainment of each Program Outcome and Program Specific Outcomes (10)

As explained in 3.2, Course outcomes are measured through Continuous Internal Evaluation (CIE) and Semester End Examination (SEE). The analysis is done to find the level of attainments of each course COs. The direct attainment of POs and PSOs are being calculated based on the COs attainment of all the courses a student studied. For indirect assessments, different kinds of survey questionnaires are circulated to students of all years, graduating students, alumni and employers and assessed and evaluated to determine the strength of attainment level of POs/PSOs.

Table 3.16 describes the list of assessment tools used to calculate the POs and PSOs directly. The assessment tools used to attain POs and PSOs are also mapped and tabulated as follows:

Table 3.16 Assessment tools for POs and PSOs

Direct Assessment																		
Assessment Tools	Frequency (per course)	Responsible Person to conduct the Assessment	Program Outcomes (PO)												PSO			
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
Assignment	Five in a semester	Course Teacher	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sessional Examinations	Three in a semester	COE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
End Semester	Once in a semester	COE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Project (Review)	Thrice in a semester	Project Review Committee	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Laboratory Sessions	Twelve - Fifteen Sessions in a semester	Course Teacher	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Laboratory / Practical Examination (Model and End Semester)	Once in a Semester	Course Teacher	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Indirect Assessment																		
Course survey Exit	Every Semester	Course Teacher	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Graduate Survey	Yearly	Program Coordinator	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Alumni survey	Yearly	Program Coordinator	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Employer survey	Yearly	Program Coordinator	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

The process of direct attainment assessment tool attainment is explained in table 3.17. It describes processes involved in theory courses and practical / laboratory courses under the category of direct

assessment. Indirect assessments are completely based on surveys at the end of the semester as well as the program. Weightage is 80% for direct assessment (theory courses and practical / laboratory courses), 20% for indirect assessment.

Table 3.17 List of Direct Assessment Tool for PO /PSO attainment

S. No	Assessment Tool	Method / Processes
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 are set by the course coordinator. 3. Questions are based on standard level by following Bloom's Taxonomy for evaluation. 4. Valuations are made through sharing / exchanging the answer papers within the department by the course experts. 5. Sessional examination question papers and answer scripts are audited regularly.
2	<i>Assignment</i>	<ol style="list-style-type: none"> 1. An assignment is a qualitative performance assessment tool designed to assess the student's knowledge on engineering practices. 2. Assignments should cover higher order Bloom's Taxonomy cognitive levels. Every student is assigned with course related tasks & assessment will be done based on their performance. An analytic rubric is developed to assess student's knowledge with respect to the learning outcomes. 3. Assignments can be given as Quiz, Seminar, Open Book Test, Case Studies, Industry expert-based evaluation, Research Article based evaluation etc. The course coordinator will fix any of the above corresponding to the course outcomes.
3	<i>End semester examinations</i>	<ol style="list-style-type: none"> 1. End semester examination questions set by internal / external experts. 2. Valuation is made by different external experts and answer scripts are distributed to the students to maintain transparency in evaluation.
4	<i>Laboratory (Internal Assessment and End semester Practical Examination)</i>	<ol style="list-style-type: none"> 1. The internal marks for laboratory courses are awarded based on rubrics framed by the course coordinator for the corresponding lab course consisting of experimentation, interpretation and result analysis. The assessment is done for regular lab exercises as well as internal practical exams. 2. Practical examination is focused on assessing the practical knowledge, skill, and attitude of the students. 3. The external examinations for laboratory courses are conducted at the end of the semester for three hours. It is evaluated based on rubrics framed by the course coordinator for the corresponding lab course.
5	<i>Project</i>	<ol style="list-style-type: none"> 1. Students are assigned either internal or external projects. 2. The project review committee is formed internally to approve and evaluate the research in four stages as (i) Zeroth Review; (ii) First Review and (iii) Second Review and (iv) Third Review. 3. Students need to volunteer to present their project in reputed conferences / symposium organized by leading academic

S. No	Assessment Tool	Method / Processes
		institutes. 4. External Examiners are invited to evaluate the project through the viva voce examination.

The table 3.18 shows the process of indirect attainment tools for PO/PSO attainment.

Table 3.18 List of Indirect Assessment Tool / Processes for PO attainment

S. No	Assessment Tool	Method Description / Processes
1.	Alumni survey	1. Survey is made with a set of Questionnaires which was prepared based on POs. 2. This survey is taken from graduated students.
2.	Graduate Survey	1. Survey made with a set of Questionnaires which was prepared based on POs. 2. This survey is taken from the students completing the graduation at the end of that academic year after their final semester.
3.	Employer Survey	1. Survey made with a set of Questionnaires which was prepared based on POs. 2. These surveys have been taken with the employer of the passed-out students.
4.	Co-Curricular and Extra Curricular activities (Non-CGPA)	At the end of every academic year, the Non-CGPA coordinator will review the statistics of students who have participated in professional bodies/student chapters/ workshops/seminars/ conferences/ paper presentations /internships /industry visitsetc and gained the pass certificate in the concerned co-curricular / extra-curricular course.

Direct Assessment

The POs and PSOs are quantitatively measured by assigning weights with respect to 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 = 0.67 for medium correlation and

w3 = 1/3 = 0.33 for low correlation.

$$PO = \frac{\sum_{i=1}^3 W_i \times CO \text{ attainment}}{\text{No of Subjects}}$$

Table 3.19 Model calculation for PO1 attainment for 2017 – 2021 batch

Sub Code	PO1 Correlation	Correlation level	CO Attainment	Model Calculation [Wi X CO Attained]
1	CHY17R171	3	1.60	1.60
2	EEE17R151	3	2.40	2.40

<i>Sub Code</i>	<i>PO1 Correlation</i>	<i>Correlati on level</i>	<i>CO Attainment</i>	<i>Model Calculation [Wi X CO Attained]</i>
3	MAT17R102	3	2.00	2.00
4	MEC17R101	3	2.20	2.20
5	MEC17R181	3	2.00	2.00
6	PHY17R151	3	2.20	2.20
7	CHY17R101	2	1.07	1.07
8	CIV17R101	3	2.20	2.20
9	CSE17R171	3	2.20	2.20
10	INT17R101	3	1.40	1.40
11	MAT17R101	3	2.20	2.20
12	MEC17R105	3	1.80	1.80
13	PHY17R171	3	2.00	2.00
14	CSE18R174	3	1.80	1.80
15	INT18R171	3	2.00	2.00
16	INT18R271	2	1.61	1.61
17	INT18R272	1	0.53	0.53
18	MAT18R202	3	1.80	1.80
19	CSE18R273	3	2.00	2.00
20	ECE18R220	2	1.21	1.21
21	INT18R251	3	1.20	1.20
22	INT18R273	3	1.20	1.20
23	BIT18R101	3	2.20	2.20
24	HSS18R002	3	3.00	3.00
25	INT18R311	1	0.59	0.59
26	INT18R371	3	1.80	1.80

<i>Sub Code</i>	<i>PO1 Correlation</i>	<i>Correlation level</i>	<i>CO Attainment</i>	<i>Model Calculation [Wi X CO Attained]</i>
27	CSE18R371	3	2.40	2.40
28	INT18R359	3	3.00	3.00
29	INT18R399	3	3.00	3.00
30	HSS18R015	3	3.00	3.00
31	INT18R498	3	3.00	3.00
32	INT18R274	2	2.01	2.01
33	INT18R499	3	3.00	3.00
Total Value				65.62
PO1 Attainment = 65.62/33				1.98

Model calculation for PO attainment for first program outcome PO1 is given in Table 3.19. A Similar procedure has been followed to calculate remaining PO / PSO attainment for the concerned batch. Table 3.20 shows the PO attainment through direct measures for the 2017-2021 batch.

Table 3.20 shows the Direct PO attainment for the Batch 2017-2021

<i>PO Attainment</i>	<i>PO1</i>	<i>PO2</i>	<i>PO3</i>	<i>PO4</i>	<i>PO5</i>	<i>PO6</i>	<i>PO7</i>	<i>PO8</i>	<i>PO9</i>	<i>PO1 0</i>	<i>PO1 1</i>	<i>PO1 2</i>	<i>PSO 1</i>	<i>PSO 2</i>	<i>PSO 3</i>
<i>Direct Attainment</i>	1.9 8	2.0 1	1.7 5	1.9 4	2.0 3	1.5 4	1.5 3	1.6 8	1.8 7	1.8 0	1.9 8	1.8 0	1.9 9	0.9 1	1.4 2

Indirect Assessment



The various indirect attainment tools are,

1. Graduate Survey
2. Employer Survey
3. Alumni Survey
4. Co-Curricular and Extra Curricular Activities (Non-CGPA)

Graduate Survey

Graduate Feedback survey is conducted to determine the strength of attainment level of POs/PSOs at the end of every academic year from the current graduates of the programme. The survey form includes questionnaires for all the POs and PSOs with a provision to mark whether the programme has supported to build the knowledge and skills. For every question, students can tick on the appropriate

column given as five-point scales. Considerations on surveys are made as the marks calculated based on normalized value.


KALASALINGAM
 ACADEMY OF RESEARCH & EDUCATION
 (DEEMED TO BE UNIVERSITY)
Under Act. 3 of 1956 Act 1956. Accredited by NAAC with 'B' Grade


SCHOOL OF COMPUTING
DEPARTEMENT OF INFORMATION TECHNOLOGY
GRADUATE FEEDBACK SURVEY ON PROGRAMME

Name of the Graduate	V. Harish Dhan
Reg.No.	20209316 or 9-16
Year of Passing	2020

Please indicate how well do you achieved these objectives for this programme B.Tech (Information Technology). Please use a scale of 1 to 5 to rate how strongly you feel you have achieved these objectives.
 * (1 indicating NOT and 5 indicating STRONGLY achieved them)

Objectives	5	4	3	2	1
PO1: Engineering knowledge: I have gained an in-depth knowledge of mathematics, computer science and engineering as it applies to computer hardware and software.	✓				
PO2: Problem analysis: I have an ability to identify, formulate, and solve hardware and software computing problems, accounting for the interaction between hardware and software.	✓				
PO3: Design/development of solutions: I am able to apply my engineering knowledge to design hardware and software systems, components, or processes to meet desired needs within realistic constraints.	✓				
PO4: Conduct investigations of complex problems: I am able to design and conduct experiments, as well as to organize, analyze and interpret data.	✓				
PO5: Modern tool usage: I have had the opportunity to use the techniques, skills, and modern engineering tools necessary for computer engineering practice.	✓				
PO6: The engineer and society: Able to show the understanding of impact of engineering solutions in a global on the society, economic, environmental.	✓				
PO7: Environment and sustainability: I am able to understand the impact of the computer based solutions in societal and environmental context.	✓				
PO8: Ethics: I have had the opportunity to learn professional, legal, and ethical issues and responsibilities.	✓				
PO9: Individual and team work: I have the training necessary to work individually or as a member with responsibility to function on multi-disciplinary teams.	✓				
PO10: Communication: I am able to communicate effectively in speech and in writing, including documentation of hardware and software systems.	✓				
PO11: Project management and finance: I have had the opportunity to learn	✓				

Fig 3.9. A sample copy of the Graduate Feedback survey form

Alumni feedback survey is conducted to determine the strength of attainment level of POs/PSOs at the end of every academic year from the alumni **upto three years after the graduation from the programme**. The survey form includes questionnaires for all the POs with a provision to mark whether the programme has supported to build the knowledge and skill. Students can tick on the appropriate column in five-point scales. Considerations on surveys are made as the marks calculated based on normalized value.



KALASALINGAM
ACADEMY OF RESEARCH & EDUCATION
(DEEMED TO BE UNIVERSITY)
Graded 'A' by UGC Act 1956, Accredited by NAAC with 'B' Grade



SCHOOL OF COMPUTING
DEPARTMENT OF INFORMATION TECHNOLOGY
ALUMNI SURVEY ON PROGRAMME

Name of the Graduate	V. Jaganathan
Year of Passing	2020
Current Employer	TCS
Position & Job Function	Software Developer

Please indicate how well do you achieved these objectives for this programme B.Tech (Information Technology). Please use a scale of 1 to 5 to rate how strongly you feel you have achieved these objectives.

* (1 indicating NOT and 5 indicating STRONGLY achieved them)

Objectives	5	4	3	2	1
How far did the VISION and MISSION of the department accomplish your professional career?	/				
How do you rate the engineering knowledge obtained during course period? (PO1)	/				
How do you find the programme related to problem analysis? (PO2)			/		
Were able to design solutions for complex engineering problems? (PO3)			/		
Did you use research-based knowledge for interpreting your data during project work? (PO4)			/		
How this programme helped in applying modern tool usage for your problems? (PO5)			/		
How do you rate your understanding of impact of engineering solutions in a global on the society, economic, environmental aspects? (PO6)			/		
Did you understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development. (PO7)			/		
Were you able to apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice? (PO8)			/		
Did you have opportunity to function as an individual or in a team? (PO9)	/				
How do you rate your skill of communicating effectively in speech and in	/				

writing, including documentation of hardware and software systems? (PO10)					
Were you able to manage project and finance aspects effectively in your work environment? (PO11)					
How far this programme helped you to acquire new knowledge in the computing discipline and to engage in life-long learning? (PO12)					
Whether this programme cultivated the skills to design, develop, implement computer programs and use knowledge in various domains to identify research gaps and hence to provide solution to new ideas and innovations? (PSO1)					
Were you able to apply modern tools and strategies in software project development using modern programming environments to deliver a quality product for business accomplishment? (PSO2)					
Were you able to work with and communicate effectively with professionals in various fields with professional behaviours and ethics? (PSO3)					

Please offer any other additional comments.
To be able to make more industrial relations
course

V. H. H. H.
Signature

Fig 3.10. A sample copy of the Alumni survey

Employer Survey:

Employer Feedback is conducted every academic year to determine the strength of the attainment level of POs/PSOs from the employer. The survey form includes questionnaires for all the POs/PSOs with a provision to mark whether the programme has supported to build the knowledge as per levels 1, 2 & 3 (i.e. Somewhat Satisfied, Satisfied and Extremely Satisfied). Considerations on surveys, The marks are calculated based on normalized values.



KALASALINGAM
ACADEMY OF RESEARCH & EDUCATION
(DEEMED TO BE UNIVERSITY)
Under sec. 3 of UGC Act 1956. Accredited by NAAC with "A" Grade



SCHOOL OF COMPUTING
DEPARTEMENT OF COMPUTER SCIENCE AND ENGINEERING

Employer Feedback Survey

The faculty and students of KARE are dedicated to the continuous improvement of engineering programmes. The information that you provide through this survey will be very helpful in this process. We appreciate your help in filling out this survey. Thank you for your cooperation and support.

Name of the Employer : A. Dinesh Kumar
Designation : Senior Software Engineer
Name of the Company/Organization : Wipro
Address : Bangalore

Please Indicate how well do you agree with each Program Outcomes POs and PSOs as a predicted accomplishment for this programme B.Tech (Information Technology).

Programme Outcomes (POs)	Extremely Satisfied	Satisfied	Somewhat Satisfied
What is your impression about the overall skills of the KARE graduates?			
PO1: Engineering knowledge: How satisfied were you with the information provided by the department about the skills and knowledge of the student for campus recruitment?	✓		
PO2: Problem analysis: How do you rate our students' ability to identify, formulate, and solve hardware and software computing problems?	✓		
PO3: Design/development of solutions: How did u find our student, with respect to design and development of new products or solutions?	✓		
PO4: Conduct investigations of complex problems: Your view on our students, regarding investigating new problems in the industry and interpretation of data.	✓		
PO5: Modern tool usage: How fit is our graduate in applying modern tools for solving problems?		✓	
PO6: The engineer and society: How responsible are our graduates in contextual knowledge to assess societal, health, safety, legal and cultural issues?		✓	
PO7: Environment and sustainability: You're rating on our student in handling environmental contexts?	✓		
PO8: Ethics: Your opinion about our graduates with respect to their ethical and moral values?		✓	

PO9: Individual and team work: How do our students present themselves individually and in team work?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PO10: Communication: Our student's skill in communicatingeffectively in speech and in writing, including documentation of software systems.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PO11: Project management and finance: How do you find our students performance in understanding project management and financial principles of the company?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PO12: Life-long learning: Rating of our students with respect toattitude and willingness for lifelong learning?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Program Specific Outcomes(PSOs)	Extremely Satisfied	Satisfied	Somewhat Satisfied
PSO1 : Ability to identify, design and develop processes and systems for enterprises	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PSO2: Ability to identify, deploy and maintain the IT infrastructure based on the needs of the businesses	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PSO3: Practice and promote information technologies for societal needs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Your detailed comments on our graduate employees: (Optional).

Thank you for taking the time to answer our questions. Your feedback is tremendously valuable to us.

A. P. Ramesh
Signature

Fig 3.11. A sample copy of the Employer survey

Co-Curricular and Extra Curricular Activities:

Our university offers the following co-curricular and extra-curricular activities under the category Non-CGPA courses. All the courses under this category have been designed for the overall development of the students passing out of the Institution. As per our university regulation the student must complete six courses and a minimum of one course in all four groups of this category. The table 3.21 shows the list of Non-CGPA courses.

Table 3.21 – List of Non-CGPA Courses for 2017-2021 Batch

<i>Sl. No.</i>	<i>Group</i>	<i>Course Code</i>	<i>Course Name</i>
1	I	NCG2001	INDUSTRIAL TRAINING
2		NCG3001	ADVANCED INDUSTRIAL TRAINING
3		NCG2002	INDUSTRIAL LECTURES
4	II	NCG1006	VALUE ADDED COURSE
5		NCG2003	INTERNATIONAL CERTIFICATION
6		NCG2004	CO-CURRICULAR ACTIVITIES
7	III	NCG1002	SPORTS
8		NCG1003	NCC
9		NCG1004	NSS
10		NCG1005	EXTRA CURRICULAR ACTIVITIES
11	IV	NCG3002	ENGLISH CERTIFICATION (BEC)
12		NCG3003	TECHNICAL PROFICIENCY
13		NCG2005	FOREIGN LANGUAGE

The details for NCG1006 -VALUE ADDED COURSE is presented in table 3.20.

Table 3.22 - Details NCG1006 Value Added Courses

S. No	Conditions / attributes	Fulfilling requirement(s)
1.	Pre-requisites / Eligibility conditions	A bonafide student of the Kalasalingam Academy of Research and Education
2.	Detailed course content / syllabus	As prescribed by the course teacher / Course coordinator in consultation with the Director -Academic
3.	Duration of the course, total number of hours and minimum attendance requirement	40 Hours duration Minimum attendance: 80 %.
4.	Number of contact hours and practice hours per week	As laid down by the course teacher / Coordinator
5.	Assessment Procedure – Tests, Examination	Assessment will be done by the teacher at the end of the course
6.	Criteria for allocation of credits and conditions for repeating the training, in case of failure.	The students should score a minimum of 60% marks.
7.	Any rules to be adhered to, specific to the individual courses	Nil
8.	List of value added courses offered and its content	The value added courses and its content will be specified by the course coordinator after getting approval from respective BoS.

The department level Non-CGPA coordinator will review and collect the status of completion of Non-CGPA courses by the students. At the end of every academic year, the Non-CGPA coordinator will prepare the statistics of students who have participated in professional bodies / student chapters / workshops / seminars/ conferences / paper presentations / internships /industry visits etc. This statement is considered to indirectly assess the POs.

The indirect attainment for PO and PSOs are listed in Table 3.23.

Table 3.23 shows the Indirect PO attainment for the Batch 2017-2021

PO Attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
Graduate Survey	3	3	3	3	3	2	2	2	3	3	3	3	3	3	3	2
Employer Survey	3	3	3	3	2	2	2	3	2	2	2	3	2	2	2	2
Alumni Survey	3	3	3	3	2	2	2	2	3	3	3	3	3	3	3	2
Non CGPA	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	2.50	2.25	2.25	2.50	2.75	2.75	2.75	3	2.75	2.75	2.75	2.25

Final PO Attainment level is considered as 80% from direct assessment and 20% from indirect assessment.

For Example: PO1 attainment is 1.98 from direct assessment and 3 from indirect assessment.

Hence, final PO attainment is calculated as follows

$$[\text{PO1 Direct} \times 80\%] + [\text{PO1 Indirect} \times 20\%]$$

$$1.99 \times 0.8 + 3 \times 0.2$$

$$2.18$$

The Program Advisory Board (PAB) of Information Technology program will fix the target value for POs and PSOs attainment based on the observations learned from previous batch POs and PSOs attainment. For the 2017-2021 batch, the PAB has a fixed target attainment value as 1.8 for all POs and PSOs. We have observed that PO1 attainment value was 2.18. It's greater than our target attainment (1.8). Therefore, PO1 has been attained. Similarly the attainments are calculated for all the POs and PSOs and the same are tabulated in the table 3.24.

Table 3.24 shows the Overall PO Attainment for the Batch 2016-2020

PO Attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Direct Attainment	1.99	2.01	1.75	1.97	2.03	1.54	1.53	1.67	1.86	1.80	1.98	1.45	1.99	1.75	1.63

<i>nme nt</i>															
<i>Indi rect Attai nme nt</i>	3	3	3	3	2.5	2.5	2.5	2.5	3	3	2.75	3	3	3	3
<i>Over all Attai nme nt</i>	2.19	2.21	2.00	2.18	2.13	1.73	1.72	1.84	2.09	2.04	2.13	1.76	2.20	2.00	1.91

3.3.2. Provide results of evaluation of each PO & PSO (65)**Results and level of attainment of each PO/PSO****Direct Attainment:**

S.No.	Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	CHY17R171	1.6	1.6	0.528	0.528	0.528	0.528	1.056					0.528	1.6	0.528	
2	EEE17R151	2.4	2.4							1.584	2.4					
3	HSS17R151						0.594		0.594	1.8	1.8		0.594			1.188
4	MAT17R102	2	2			2								1.32		
5	MEC17R101	2.2	2.2							1.452	2.2					
6	MEC17R181	2	2							1.32	2					
7	PHY17R151	2.2	2.2	1.452	1.452	2.2	0.726	0.726	0.726	0.726	0.726	0.726	0.726	2.2	0.726	0.726
8	CHY17R101	1.056	1.056					1.6								
9	CIV17R101	2.2	2.2							1.452	1.452		0.726			
10	CSE17R171	2.2	2.2	2.2	2.2	2.2	2.2	1.452	2.2	1.452	1.452	2.2	2.2	2.2	2.2	2.2
11	HSS17R152								0.792	2.4	2.4		1.584			1.584
12	INT17R101	1.4	0.924	0.462		1.4	0.924	1.4						1.4	0.924	1.4
13	MAT17R101	2.2	2.2			2.2								1.452		
14	MEC17R105	1.8	1.8							1.188	1.188		0.594			

15	PHY17R171	2	2			2				1.32	1.32					
16	CSE18R174	1.8	1.8	1.188	1.8	1.188	0.594	0.594	1.188	1.8	1.8	1.188	1.8	1.8	1.188	1.8
17	INT18R171	2	2	1.32	2		1.32		2		1.32	2		1.32	1.32	1.32
18	INT18R271	1.584	1.584	2.4	1.584	2.4		2.4					0.792	2.4	1.584	1.584
19	INT18R272	0.528	1.6	1.6				0.528			1.6	1.056	0.528	1.6	1.6	0.528
20	MAT18R202	1.8	1.8		1.188	1.8								1.188	1.188	0.594
21	CSE18R273	2	1.32	1.32	1.32	2	1.32	1.32	1.32	1.32	1.32	1.32	1.32	2	1.32	0.66
22	ECE18R220	1.188	1.8	1.188				0.594	1.188				1.188	1.188	1.8	
23	INT18R201		1.8	1.8	0.594	1.8							1.188	1.8	1.8	0.594
24	INT18R251	1.2	0.792	0.792	1.2	1.2	1.2					1.2		1.2	0.792	1.2
25	INT18R273	1.2	0.792	0.792	1.2		0.792				0.792		1.2	1.2	0.792	0.792
26	BIT18R101	2.2	2.2		2.2	1.452		0.726								
27	HSS18R002	3	3	1.98	3	1.98	1.98	0.99	1.98	3	0.99	1.98	3	3	1.98	
28	INT18R311	0.594	1.8	1.188		1.188		1.8		1.8		1.8	0.594	1.8	1.8	
29	INT18R371	1.8	1.8	1.8	1.8	1.8	1.8	1.188	1.188	1.188	1.188	1.8	0.594	1.8	1.8	1.188
30	CSE18R371	2.4	2.4	2.4	2.4	2.4	1.584	0.792	1.584	2.4	2.4	2.4	1.584	2.4	1.584	2.4

31	INT18R359	3	3		3	3		3	3	3	3	3	3	3	1.98	0.99
32	INT18R399	3	3	3	3	3	3	3	1.98	1.98	3	1.98	3	3	3	1.98
33	HSS18R015	3	3	3	3	3	3	1.98	1.98	1.98	1.98	3	0.99	3	3	1.98
34	INT18R498	3	3	3	3	3		3		3	1.98	3	1.98	3	3	1.98
35	INT18R274	1.98	1.98	1.98				0.99	1.98				1.98	1.98	3	
36	INT18R499	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Average		1.99	2.01	1.75	1.97	2.03	1.54	1.53	1.67	1.86	1.80	1.98	1.45	1.99	1.75	1.63

Indirect Attainment:

<i>PO Attainment</i>	<i>PO1</i>	<i>PO2</i>	<i>PO3</i>	<i>PO4</i>	<i>PO5</i>	<i>PO6</i>	<i>PO7</i>	<i>PO8</i>	<i>PO9</i>	<i>PO10</i>	<i>PO11</i>	<i>PO12</i>	<i>PS01</i>	<i>PS02</i>	<i>PS03</i>
<i>Graduate Survey</i>	3	3	3	3	3	2	2	2	3	3	3	3	3	3	3
<i>Employer Survey</i>	3	3	3	3	2	2	2	3	2	2	2	3	2	2	2
<i>Alumni Survey</i>	3	3	3	3	2	2	2	2	3	3	3	3	3	3	3
<i>Non CGPA</i>	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
<i>Average</i>	3	3.00	3.00	3.00	2.50	2.25	2.25	2.50	2.75	2.75	2.75	3.00	2.75	2.75	2.75

Overall Attainment:

<i>PO Attainment</i>	<i>PO1</i>	<i>PO2</i>	<i>PO3</i>	<i>PO4</i>	<i>PO5</i>	<i>PO6</i>	<i>PO7</i>	<i>PO8</i>	<i>PO9</i>	<i>PO10</i>	<i>PO11</i>	<i>PO12</i>	<i>PSO1</i>	<i>PSO2</i>	<i>PSO3</i>
<i>Direct Attainment</i>	1.99	2.01	1.75	1.97	2.03	1.54	1.53	1.67	1.86	1.80	1.98	1.45	1.99	1.75	1.63
<i>Indirect Attainment</i>	3.00	3.00	3.00	3.00	2.50	2.25	2.25	2.50	2.75	2.75	2.75	3.00	2.75	2.75	2.75
<i>Overall Attainment</i>	2.19	2.21	2.00	2.18	2.13	1.73	1.72	1.84	2.09	2.04	2.13	1.76	2.20	2.00	1.91

CRITERION 4	STUDENTS' PERFORMANCE	100
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4.1 Enrollment Ratio (20)**Table 4.1**

Item (Informed to be provide cumulatively for all the shifts with explicit headings, wherever applicable)	2021-22 (CAY)	2020-21 (CAYm1)	2019-20 (CAYm2)	2018-19 (CAYm3)	2017-18 (CAYm4)	2016-17 (CAYm5)	2015-16 (CAYm6)
Sanctioned intake of the program(N)	60	60	60	60	60	60	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)	60	59	60	29	27	43	42
Number of students admitted in 2 nd year in the same batch via lateral entry (N2)	0	1	3	2	2	0	0
Separate division students, If applicable (N3)	0	0	0	3	0	0	0
Total number of students admitted in the Program (N1+N2+N3)	60	60	63	34	29	43	42

Table 4.2

Year of entry	Total No of students admitted in the program (N1 + N2 + N3)	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
2021-22 (CAY)	60 (60+0+0)				
2020-21 (CAYm1)	59 (59+0+0)	55+0+0			
2019-20 (CAYm2)	63 (60+3+0)	56+0+0	54+3+0		
2018-19 (CAYm3)	34 (29+2+3)	17+0+0	16+1+1	16+0+1	
2017-18 (LYG)	29 (27+2+0)	10+0+0	10+1+0	9+1+0	9+1+0
2016-17 (LYGm1)	43 (43+0+0)	11+0+0	10+0+0	10+0+0	10+0+0
2015-16 (LYGm2)	42 (42+0+0)	18+0+0	15+0+0	15+0+0	15+0+0

Table 4.3

Year of entry	Total No of students admitted in the program (N1 + N2 + N3)	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
2021-22 (CAY)	60 (60+0+0)				
2020-21 (CAYm1)	59 (59+0+0)	59			
2019-20 (CAYm2)	63 (60+3+0)	60	63		
2018-19 (CAYm3)	34 (29+2+3)	29	34	34	
2017-18 (LYG)	29 (27+2+0)	27	29	29	27
2016-17 (LYGm1)	43 (43+0+0)	43	43	43	36
2015-16 (LYGm2)	42 (42+0+0)	42	42	42	34

	N (From Table 4.1)	N1 (From Table 4.1)	Enrollment Ratio [(N1/N)*100]
2021-22 (CAY)	60	60	100
2020-21 (CAYm1)	60	59	98.33
2019-20 (CAYm2)	60	60	100

Average [(ER1 + ER2 + ER3) /3] : 99.44

Assessment : 20

(>= 90% students enrolled at the First Year Level on average basis during the previous three academic years starting from current academic year)

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 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	Latest Year of Graduation, LYG (2017-18)	Latest Year of Graduation minus 1, LYGm1 (2016-17)	Latest Year of Graduation minus 2, LYGm2 (2015-16)
X: Number of students admitted in the corresponding First year + admitted in 2nd year via lateral entry and separated division, if applicable	29	43	42
Y: Number of students who have graduated without backlogs in the stipulated period	10	10	15
Success Index (SI = Y/X)	0.35	0.23	0.36

Average SI [(SI1+SI2+SI3)/3] : 0.31

Assessment [$15 \times \text{Average SI}$] : 4.65

4.2.2. Success rate in stipulated period (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 = $5 \times \text{Average SI}$

Note: If 100% students clear without any backlog then also total marks scored will be 20 as both 4.2.1 & 4.2.2 will be applicable simultaneously.

Item	Latest Year of Graduation, LYG (2017-18)	Latest Year of Graduation minus 1, LYGm1	Latest Year of Graduation minus 2, LYGm2 (2015-16)
X: Number of students admitted in the corresponding First year + admitted in 2nd year via lateral entry and separated division, if applicable	29	43	42
Y: Number of students who have graduated in the stipulated period	27	36	34
Success Index(SI = Y/X)	0.93	0.84	0.81

Average SI [(SI1 + SI2 + SI3) / 3] : 0.86

Assessment [5*Average SI] : 4.3

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)
Mean of CGPA or mean percentage of all successful students (X)	7.54	6.95	6.11
Total number of successful students (Y)	63	34	29
Total number of students appeared in the examination (Z)	63	34	29
API=X*(Y/Z)	7.54	6.95	6.11

AverageAPI=(AP1+AP2+AP3)/3 : 6.87

Assessment [1.5 * AverageAPI] : 10.305

4.4. Placement, Higher Studies and Entrepreneurship (30)

Assessment Points = 30 x average placement

ITEM	LYG (2017-18)	LYGm1 (2016-17)	LYGm2 (2015-16)
Total No. of Final Year Students(N)	29	43	42
No. of students placed in companies or Government Sector(X)	25	36	33
No. of students admitted to higher studies with valid qualifying scores (GATE or equivalent State or National Level Tests, GRE, GMAT etc.) (Y)	2	-	-
No. of students turned entrepreneur in Engineering/technology (Z)	2	-	1
X+Y+Z =	29	36	34
Placement Index:(X+Y+Z)/N	1	0.84	0.81

Average placement= (P1+P2+P3)/3 : 0.88

Assessment Points= 30*average placement : 26.4

Program Name: Information Technology**Assessment Year: 2020-21 (CAYm1)**

S.No	Student Name	Enrollment No	Employee Name	Appointment No
1	KAUSALYA G	9818008001		
2	HARI BABU N T	9818008002		
3	ABINAYA R	9917008001		
4	CHANDRAMOULI A	9917008003		
5	CHRISPA DANIEL	9917008004		
6	DHILIP KUMAR M	9917008005		
7	DHILIP KUMAR S	9917008006		
8	GAYAM VISHNU	9917008007		

S.No	Student Name	Enrollment No	Employee Name	Appointment No
	VARDHAN REDDY			
9	ISWARYA M	9917008008		
10	JEYA SHRUTHY P	9917008009	MBA, PSNA College of Engineering and Technology	21MBA038
11	KAMAL RAJ P	9917008010		
12	MANISH WINS PRADEEP G	9917008013		
13	MUGESH K	9917008014		
14	MUTHU BALAJI S	9917008015		
15	NAVEEN KUMAR N	9917008017		
16	PINNIKA NAVEEN	9917008018		
17	RAMYA SRI S	9917008019		
18	SELVA KUMAR S	9917008021		
19	SHABARISH RM	9917008022		
20	SIVA KUMAR M	9917008023		
21	STAINES S	9917008024		
22	SYED AHAMED JAVEED ASHIQ J	9917008025		
23	THARANI S	9917008027		
24	ANU KEERTHIKA M S	9917008028		
25	RAMASUBRAMANIAN P S	9917008029	PGDM, Thiagarajar School of Management (Autonomous)	2113079
26	RAJA SEKARAN P	9917008030		

S.No	Student Name	Enrollment No	Employee Name	Appointment No
27	ARUNACHALAM A S	9917008031		
28	ILLAKKIYA R	9917008032		
29	RAMA R	9917008033		

Assessment Year: 2019-20 (CAYm2)

S.No	Student Name	Enrollment No	Employee Name	Appointment No
1	AAKASH R	9916008001	CAPGEMINI TECHNOLOGY SERVICES INDIA LIMITED	46072405
2	ANITHADEVI	9916008004	TCS	TCSL/CT20192733518/ Chennai
3	AYSHWARIA KT	9916008008	TCS	TCSL/CT20192778044/ Chennai
4	BALASUBRAMANIAN S	9916008009	KOTAK	KOTBAL10022020
5	DEVADHARSHINI	9916008011	WIPRO LIMITED	WIPDEV24112021
6	S.DURGA LAKSHMI	9916008014	COGNIZANT	14000875
7	HARIRAM R	9916008015	IGENIUS	IGE HAR16122019
8	V HARINIDEVI	9916008016	COGNIZANT	14000934
9	HARISH G	9916008018	IGENIUS	IGEGHA16122019
10	JANANI NIVETHA AP	9916008019	TCS	TCSL/CT20192808772/ Chennai
11	R.JAYASHREE	9916008020	COGNIZANT	14341001
12	JEGADEESHWARAN GANESAN	9916008022	COGNIZANT	14110116
13	V. JEYA SWATHI	9916008023	COGNIZANT	14000851

S.No	Student Name	Enrollment No	Employee Name	Appointment No
14	KARTHIGA M	9916008024	COGNIZANT	14000913
15	KATHIRAVAN M	9916008025	LEADPRO	LEAKAT01022020
16	PREETHI G	9916008026	LEADPRO	LEAPRE01022020
17	LAVANYA G	9916008027	ATOS SYNTEL	140212/2021
18	MANOJKUMAR P	9916008029	COGNIZANT	14000897
19	MARI SELVAM K	9916008030	LEADPRO	LEAMAR01022020
20	MOHAN K	9916008031	IGENIUS	IGEMOH16122019
21	NAGARAJAN A	9916008033	AMAZON DEVELOPMENT CENTRE (INDIA) PRIVATE LIMITED	AMANAG30062021
22	NIJANTHA D	9916008035	LEADPRO	LEANIJ01022020
23	NITHEESHKUMAR S	9916008036	LEADPRO	LEANIT01022020
24	PADMAVATHI P	9916008037	IGENIUS	IGEPAD16122019
25	PRIYADARSHINI R M	9916008038	LEADPRO	LEAPRI01022020
26	RAJAMURUGAPPERU MAL R	9916008040	IGENIUS	IGERAJ16122019
27	RAJA PANDIAN T	9916008041	SBL KNOWLEDGE SERVICES	SBL/MDR/EMP/19- 20/5889
28	RAJAPRIYAVARTHINI K	9916008042	LEADPRO	LEARAJ01022020
29	SHANMUGHANATHA N M	9916008047	LEADPRO	LEASHA01022020
30	SHREENITHI S	9916008048	LEADPRO	LEASHR01022020
31	J SOMNATH YADAV	9916008050	COGNIZANT	14000891
32	VAJITHRAGUMAN M	9916008054	IGENIUS	IGEVAJ16122019

S.No	Student Name	Enrollment No	Employee Name	Appointment No
33	VIGNESH S	9916008056	KOTAK	KOTVIG10022020
34	LOGESHWARAN M	9916008059	AMAZON DEVELOPMENT CENTRE (INDIA) PRIVATE LIMITED	AMALOG30062021
35	SWATHY RAVISANKAR	9916008061	ZENOPSYS	ZENSWA11112019
36	KARTHIGA SUNDARI E	9916008062	IGENIUS	IGEKAR16122019

Assessment Year: 2018-19 (CAYm3)

S.No	Student Name	Enrollment No	Employee Name	Appointment No
1	AARTHY N S	9915008001	HGS	HGSL/ HGSL18038/Bangalore
2	AJAY GANESH J	9915008002	DELIVERYAN	DELIVERYAN8004
3	ALAGUMEENAL S	9915008004	HGS	HGSL/ HGSL18040/Bangalore
4	GANESHRAM C	9915008006	HGS	HGSL/ HGSL18041/Bangalore
5	KAYALVIZHI K	9915008009	VYAPI SOFT	VYAKAY10062019
6	MAHALAKSHMI K	9915008010	HCL	HCLMAH21012019
7	MAHAVISHNU P	9915008011	Wipro Limited	WIPMAH30042019
8	MANOJ KUMAR R	9915008012	NEEYAMO	NEEMAN05062019
9	MARTINE A	9915008013	HGS	HGSL/ HGSL18043/Bangalore
10	MUTHUKUMAR M	9915008017	HGS	HGSL/ HGSL18044/Bangalore

S.No	Student Name	Enrollment No	Employee Name	Appointment No
11	PALANIAPPAN T	9915008018	GLOBAL HEALTH CARE	GLOPAL02032019
12	PANDI KISHORE R	9915008019	EDUVIRTUOSO	EDUPAN18022019
13	PON KEERTHANA S	9915008020	IGENIUS	IGEPON02032019
14	RAM GURU CHANDAR M	9915008022	HGS	HGSL/ HGSL18047/Bangalore
15	SIVASANKARAN S	9915008026	HCL	HCLSIV21012019
16	SUBRAMANIAN S	9915008028	HGS	HGSL/ HGSL18050/Bangalore
17	SWATHI M	9915008029	HGS	HGSL/ HGSL18051/Bangalore
18	SYAM OSCAR K	9915008030	HCL	HCLSYA21012019
19	VIJAY K	9915008034	HGS	HGSL/ HGSL18052/Bangalore
20	V R SUGUMAR	9915008036	CITIUS	CITVRS18062019
21	HEMAMALINI M	9915008037	HGS	HGSL/ HGSL18053/Bangalore
22	THIRUMALAI SELVI M	9915008038	SWIFTERZ	SWITHI01112018
23	JAYASHRI V	9915008039	HGS	HGSL/ HGSL18054/Bangalore
24	KIRTHANA M	9915008040	HGS	HGSL/ HGSL18055/Bangalore
25	SINGARAJ S	9915008041	HGS	HGSL/ HGSL18056/Bangalore
26	SUNDAR A	9915008043	NEEYAMO	NEESUN05062019
27	VISHAL RAJ A V K	9915008044	TCS	TCSL/DT20184658210/Chennai
28	SAKENA FATHIMA H	9915008046	HGS	HGSL/ HGSL18058/Bangalore
29	ANITHA C	9915008048	IGENIUS	IGEANI02032019

S.No	Student Name	Enrollment No	Employee Name	Appointment No
30	VISWANATHAN K	9915008049	THINKSYNQ	THIVIS21012019
31	S VIJAYAN	9915008050	HGS	HGSL/ HGSL18060/Bangalore
32	ADHIPAN ALAGAPPA S	9915008052	KOTAK	KOTADH24012019
33	M.RAMADASS	9915008053	MAGUS	MAGRAM01042019
34	SANTHIYA M	9915008054	IGENIUS	IGESAN02032019

Assessment Year: 2017-18 (CAYm4)

S.No	Student Name	Enrollment No	Employee Name	Appointment No
1	BHARATH R.	9815008001	4i APPS SOLUTIONS (P) LTD	4IABHA08072019
2	VENKATESH R	9815008003	BOARD INFINITY	BOAVEN07052018
3	GANESH KUMAR.K	9914008003	QANTLER TECHNOLOGIES	18041
4	HARIRAM K.	9914008004	LEAD PRO	LEAHAR27112017
5	ISWARYA M	9914008005	SARDAR VALLABHBHAI PATEL INTERNATIONAL SCHOOL OF TEXTILE AND MANAGEMENT SARDAR VALLABHBHAI PATEL INTERNATIONAL SCHOOL OF TEXTILE AND MANAGEMENT	18TM01
6	PETCHIMUTHU S	9914008008	LUMINA	LUMPET26022018
7	M VIJAY	9914008009	BEREZIA	BERVIJ20122017
8	VINITHKUMAR M	9914008010	LEAD PRO	LEAVIN27112017

S.No	Student Name	Enrollment No	Employee Name	Appointment No
9	SUBHALAKSHMI B	9914008012	AETINS	AETSUB01082018
10	ABISHEIK S	9914008015	JANSONS SCHOOL OF BUSINESS	MB20B01
11	JOEL ABRAHAM S.	9914008017	LEAD PRO	LEAJOE27112017

4.5 Professional Activities (20)

4.5.1. Professional societies / chapters and organising engineering events (5)

(The Department shall provide relevant details)

The following professional societies/chapters are organized in the University

1. ACM (Association for Computing Machinery)
2. IEDC (Innovation and Entrepreneurship Development Centre)
3. Information Technology Department Association
4. ISTE(Indian Society for Technical Education)
5. IEEE Student Branch (34451)
6. ACM-W International Student Chapter (Chapter Group ID: 180857)
7. CSI Student Chapter

1. ACM (Association for computing Machinery)

Table 4.5.1.1 Summary of ACM Chapter Events

S.No.	Date	Event Title	Name of the expert
1	28.07.2018	Guest lecture by ACM India distinguished speaker on Privacy and Security in Online Social Media	Dr. Ponnuram Kumaraguru
2	08.08.2018 to 14.08.2018	Disfrutar2K18	Amarender Katkam, CTO– SmartBridge.
3	10.08.2019 to 14.08.2019	Disfrutar2K19	S.Karthi, Training Manager, Experts Hub – Industry Skill Development Centre.

4	23.01.2020	Guest lecture on methods and techniques of Algorithmic thinking, Problem modelling, choosing the appropriate algorithm design techniques, developing and analyzing algorithms	Prof.S.R.Subramanya
5	24.02.2020	Guest lecture on how to get ability To establish, measure, validate and report on Integrity and Trust	Mr.Kaarthik sivakumar
6	27.04.2020	Webinar on how Innovation relies on how entrepreneur positions themselves, gets funding and manages venture to become successful(Online)	Mr.S.Kirubakaran (Founder & CEO-Experts Hub)
7	25.05.2020	Webinar on Industry Examples- Application on ML in Real Problem Statements(Online)	Mr.Krishnakumar (Technology leader at Honeywell) and G.LokSundar
8	05.01.2020 to 18.01.2020	Full Stack Development(Online)	Mr.HarshSharma (Associative Deep learning Engineer) and Mr.Kirubakaran(Founder& CEO-Experts Hub)
9	05.01.2020 to 18.01.2020	Pywarriors –three phase level competition	Industrial Expert
10	05.01.2020 to 24.01.2020	R For data Analytics(Online)	Dr.S.Sampath
11	08.07.2020 to 25.07.2020	Predictive Modelling (Online)	Dr.S.Sampathkumar

12	23.07.2020	A Novel Way to teach Operating Systems	Dr.Abhijat M.Vichare-ACM Eminent Speaker Consultant At Persistant Systems Ltd
13	25.07.2020	Machine Learning Taxonomy	Dr.P.Kayal-ACM Distinguished Speaker
14	27.07.2020	How to Write Good Research Paper	Dr.R.Venkateswaran
15	29.07.2020	Uncle Sam Boulevard: Road to USA	Mr.Pratheep Kumar Reddy
16	31.07.2020	Choosing you next step and shaping your career in IT	Mr.Harinath Gandhi

2. IEDC (Innovation and Entrepreneurship Development Centre)

IEDC in KLU is functioning with an aim to develop institutional mechanism to create Entrepreneurial culture in academic institutions to foster growth of innovation and Entrepreneurship among the faculty and students

Table 4.5.1.2 Events organized in last three academic years

S.No.	Date	Event Title	Name of the expert
1	04.08.2017 to 06.08.2017	Entrepreneurship Awareness Camp	Dr.R.Chandrasekhar, Dean-MBA/KLU Mr.Sivakumar, Corporate Trainer, Chennai. Mr.I.Ramachandran, Rtd-Director, Indian overseas Bank, Virudhunagar
2	31.08.2017	Entrepreneurship Orientation Camp	K.R.Ganasambandhan, CEO, Athma Academy
3	08.03.2019	Women Entrepreneurship	Dr.Dhanalakshmi, CED Madurai
4	08.01.2019	India First Leadership Talk 1st Episode	Shri. Anand Mahindra, Chairman, Mahindra Group
5	24.01.2019	2nd Episode of India First Leadership Talk	Dr. Anand Deshpande, Founder, Chairman & Managing Director Persistent Systems Ltd
6	19.03.2019	3rd Episode of India First	Dr. AjitDoval, NSA, Govt. of India

		Leadership Talk	
7	10.05.2019	Episode 04 of India First Leadership Talk	Prof. Anil D. Sahasrabudhe, Chairman, AICTE
8	10.01.2019	Workshop on IPR for Students and Faculty Members	Ms. Shwetasree, Principal, Fidus Law Chamber Dr.J.Deny, President, KARE-IIC
9	14.06.2019	Proof of Concept Exhibition	Mr.RagupathiMuthu, Director, MinniyalPvt.Ltd
10	05/08/2019	Dr.N.Seshagiri memorial Lecture 2019	Shri Narayana Murthy, Founder
11	09/11/2019	Demo Day	Dr.J.Deny, President-IIC, KARE, Mr.RagupathiMuthu, Director, MinniyalPvt.Ltd
12	15/10/2019	Innovation Day Campaign	Mr.RagupathiMuthu, Director, MinniyalPvt.Ltd Mr.Pothirasan, Director, Raj Bioelectronics and Intelligent Pvt.Ltd
13	24/01/2019	MSME Demo Day	Mr.Thirupatthi& Mr. Govindaraj Assistant Directors, MSME
14	08/02/2020	Internal Smart India Hackathon 2020	Mr.Ragupathi Muthu, Director, MinniyalPvt.Ltd Dr.J.Deny, President-IIC, KARE,
15	28/02/2020	Science Day	Dr.J.Deny, President-IIC, KARE, DrB.Peruaml

			Convener-IIC, KARE,
16	29/02/2020	IIC-ISTE Innovation Contest	Mr.Prabhu Swaminathan Founder Director Lafors Talent Solutions India Pvt.Ltd Chennai

3. Information Technology Department Association

Department Association supports students by conducting various events like conferences, workshops, symposiums, and Guest lecturers to upgrade student's profile. Some of the events conducted in last three years are listed as follows:

Events Organized:

Table 4.5.1.3a Summary of Training Programs

S.No	Title	Resource Person	Date
1	Ultimate Forensics Bundle tool Training Program	Mr. Ashok Kumar Mohan Research Associate, TIFAC CORE - Cyber Security, Amrita Vishwa Vidyapeetham University, Coimbatore.	13.08.2016
2	Data Science and Big Data Analytics	Mrs.M.Jansi Rani, AP/IT Mr.Prabhukanna, AP/IT Mr.M.Maragatharajan, AP/IT Mr.Premraja, AP/IT Dr.Vidhyasaraswathi, HOD/B.Sc(CS & IT) Mrs.Manaranjithem, AP/B.Sc. Ms.Bhuvaneshwari, MCA Ms.BackiaAmuthapriya, MCA	06.02.2017 to 12.03.2017
3	Data Science and Big Data Analytics	Mrs.M.Jansi Rani, Mr.M.Maragatharajan Mr.G.PrabuKanna, Mr.D.Prem Raja	19/03/2018 to 19/04/2018
4	SAP Training	Mr.Madhan, ABAP Trainer	15-09-2021 to 18-09-2021

Table 4.5.1.3b Summary of Value Added Courses

S.No	Title	Resource Person	Date
1	Technical Skills	Prof. D. B. Phatak, Department of CSE, IIT Bombay Prof. VaradrajBapat, Shailesh J Mehta School of Management, IIT Bombay Prof. S.V.D. Nageswara Rao, Shailesh J Mehta School of Management, IIT Bombay MsRupali Chimote MrPranay Dugar MrAmol Hatwar	23/02/2018 to 18/03/2018
2	Spirulina Production Technology Training Certificate	Mr.K.Ratnarajasingam, Program Co-Ordinator Mrs.Vasanthakumari, Of ERR, NRCS	14/06/2018 to 17/06/2018
3	Value added course on Workplace Communication	Prof. Deepak B. Phatak	30/07/2018 to 14/09/2018
4	Value added course on Financial Literacy	Prof. Virendra Sethi, Centre for Environmental Science and Engineering, IIT Bombay Prof. D. Parthasarathy, Department of Humanities and Social Sciences, IIT Bombay Dr. LeenaJha, Visiting Faculty, Shailesh J Mehta School of Management, IIT Bombay Prof. VaradrajBapat, Shailesh J Mehta School of Management, IIT Bombay Prof. S.V.D. Nageswara Rao, Shailesh J Mehta School of Management, IIT	4/3/2019 to 15/04/2019

S.No	Title	Resource Person	Date
		Bombay Prof. (Retired) Deepak. B. Phatak, Department of Computer Science and Engineering, IIT Bombay Prof. U.N. Gaitonde, Department of Mechanical Engineering, IIT Bombay	
5	College to Corporate Program	Dr. Kalpana Kannan	15/07/2020 to 15/11/2020

Table 4.5.1.3c Summary of Workshop, Guest Lecture and Inaugural function

S.No	Title	Resource Person	Date
1	Guest Lecture on “Recent trends in Development and Testing”	Mr.V.Vinod Kumar, Cognizant Technologies, Coimbatore	26.07.2019
2	One day Workshop on Smart Devices using IoT	Karumukilan S, Project Manager, Examdaily, Madurai	26.08.2019
3	Guest Lecture on “Business Intelligent tools and techniques”	Mr.A.Dinesh, IT analyst, TCS, Kolkatta	06-09-2019
4	INFOSPARKS2019 - Association Inauguration	Mr. G. Arivazhagan, Manager-HR & Administration, MAVEL Technologies Pvt. Ltd., Madurai	03-08-2019
5	Two days Workshop on Cyber Security	SaiSathish, Ceo, Indian Servers, Hyderabad	10th & 11th August 2018

S.No	Title	Resource Person	Date
6	INFOSPARKS 2018 - Association Inauguration	Shahul Hameed, Head, Business Development, HCL Technologies, Madurai	21-08-2018
7	DIG-FOR-ART'17 training cum Capture The Flag contest	Mr.Ashok Kumar Mohan and Ms.Indumathi, TIFAC-CORE in Cyber Security, Amrita Viswa Vidyapeetham University, Coimbatore, Tamilnadu	27 th and 28 th September 2017
8	International Conference on Data Security	Dr. RajkumarBuyya Director(CLOUDS),The Melbourne university, Australia Dr. VeniMadhavanIISc, Bangalore Dr. Avadhani P.S Principal, AUCE Dr. SrinivasPyda, Sr Director, Oracle , USA Dr. Somasundaram. K , GRI, TN Dr.PallavkumarBaruah, SSSHIL, AP	11/12/2017 to 13/12/2017
9	Two days' workshop on Software Defined Network	Mr. TR. Sridhar, DEL EMC, Bangalore	28.12.2017 and 29.12.2017
10	One day National Level Hands-on Workshop on System Hardware (WAREATHON'18)	Dr.J.Balamurugan,Assistant Engineer,TANGEDCO,TNEB,Chennai	10.04.2018
11	One day Workshop on Microsoft Business Intelligence	Mr. A. Dinesh, System Analyst, IBM India Pvt Ltd, Bangalore	28.07.2017
12	Tech-Talk: Artificial Intelligence and Machine Learning in Real World	Mr.RamprasadRenganathan, Principal Data Scientist, Omnitracs Inc. Australia	30.04.2020

S.No	Title	Resource Person	Date
13	Tech-Talk: World of Opportunities	Mr.M.P.Shankar Kumar, ERP Specialist, HCL	02.05.2020
14	Tech-Talk: Expectations from IT Professionals	Mr.Ayyapparaja, Senior Consultant-ERP, Acopa GmbH, Wuppertal, Germany	04.05.2020
15	Tech-Talk: Ask Me Anything	Mr.Arun, Senior Associate - Product Management + Program Management, Bengaluru, Karnataka	07.05.2020
16	Tech-Talk: Edge Computing	Mr.L.Ganesh Kumar, Consulting Partner & 5G Solution Head, Wipro Ltd., Chennai	09.05.2020
17	Tech-Talk: Conventional ECM and cloud based ECM infrastructure	Mr.VasanthRamabhadran, Tennessee, US	12.05.2020
18	Tech-Talk: Know Your Customer	Mrs.Muthulakshmi	12.05.2020
19	Tech-Talk: First Step towards Solutions	Mrs.Boomadevi, Wuppertal, Germany	16.05.2020
20	Tech-Talk: Evolution of Cloud Computing	Mr.S.Murugesan, Project Manager, L&T Infotech	22.05.2020

S.No	Title	Resource Person	Date
21	Tech-Talk: Azure Cloud Computing	Mr.Dinesh, Azure Partner Lead, Microsoft.	26.05.2020
22	Tech-Talk: Enterprise Management & New Trends in Enterprise IT	Mr.K.Karthik, Functional Delivery Manager, Accenture Technology, US	04.06.2020
23	Tech-Talk: Amazon Cloud Web Services (AWS)	Mr.S.Murugesan, Project Manager, L&T Infotech	08.06.2020
24	Senior Students Tutoring/Mentoring System: Web Designing	Mr. K. AjithMadhan, III Year IT, KARE	25-07- 2020
25	Senior Students Tutoring/Mentoring System: Introduction to SQL	Mr. M.Dhilip Kumar, IV Year IT, KARE	27-07- 2020 to 29-07- 2020
26	Senior Students Tutoring/Mentoring System: Natural Language Processing (NLP) using Python	Mr. S. Hari Prasad, III Year IT, KARE	30-07- 2020 to 31-07- 2020
27	Senior Students Tutoring/Mentoring System: Importance of English Communication in an Interview and Basics of Communication Skills	Ms. S. Shreenithi, Alumni 2016-2020 B.Tech IT	03-08- 2020
28	Industrial Lecture on Introduction to Industry Grade Robotics Process Automation.	Mr. Prequiet Loyala (Alumni B.Tech IT 2013-17) Technical product Engineer, UiPath, Bangalore.	14-02-2022

S.No	Title	Resource Person	Date
29	Recent Trends in Cloud computing and AWS		12-11-2021
30	A National Level Technical Symposium INFOSPARKS 2022	Mr.M.S.Suresh Babu B.E, Solution Architect, Mphasis, Bengaluru	29-04-2022
31	Cybernauts Club		07-05-2022
32	Techextravaganza	Dr.Deny, IEDC, KARE	11-03-2022

4. ISTE – Indian Society for Technical Education

The ISTE in KLU 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. Food Technology students participated in different events organized by the ISTE and it is shown in the Table

Table 4.5.1.4 List of events organized by the ISTE

S.No	Name of the Guest Lecture	Date/Duration	Name of the Resource person
1	ISO Auditing- Practice	15/10/2016	Mr. S.Swaminathan Managing Director Aries NDT Ltd, Chennai.
2	ISO Practice: Current scenario in Industries	03/03/2018	Mr.S.Swaminathan Dynamic Tech, Chennai.
3	Import and Export Activities: Challenges and Opportunities	14/9/2018	Dr.G.Rajamurthy Director Global Institute of Foreign Trade, Madurai.
4	National education policy	22/04/2021	B. Venkat Director, Faculty Development Cell, AICTE.
5	The Indian Space odyssey	17/09/2021	Dr.P. Venkitakrishnan

			Prof Saishshawan, scientist Indian Space Research Organization, Bangalore.
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5. IEEE Student Branch (34451)

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.

Table 4.5.1.5a IEEE Office bearers

S.No	Name	Designation
1	Dr. D. Devaraj, Professor, EEE	Senior Faculty Advisor
2	Dr. P. Aruna Jeyanthi, Professor, EEE	Faculty Counsellor
3	Mr. M. Dhilip Kumar, IT	Student Member

Table 4.5.1.5b Summary of events during Academic Year 2020-2021

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, Emeritus Professor, 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	Indian Institute of Space Science and Technology,	Deep Learning and its Applications was

	Learning networks and Applications	<p>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>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	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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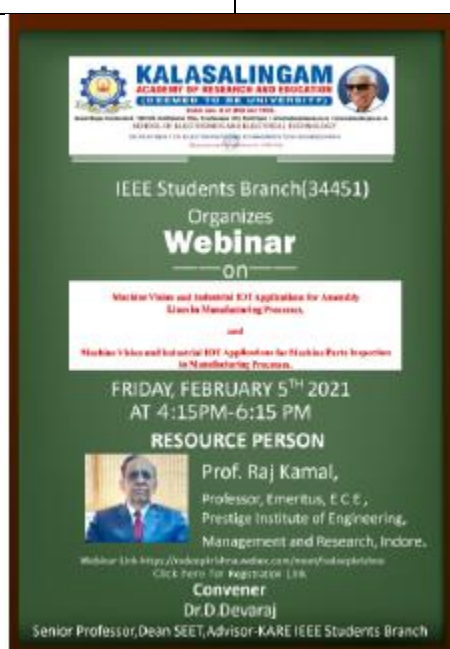


Fig 4.5.1.5a Webinar on Machine Vision and Industrial IoT Applications for Assembly lines in Manufacturing processes Brochure

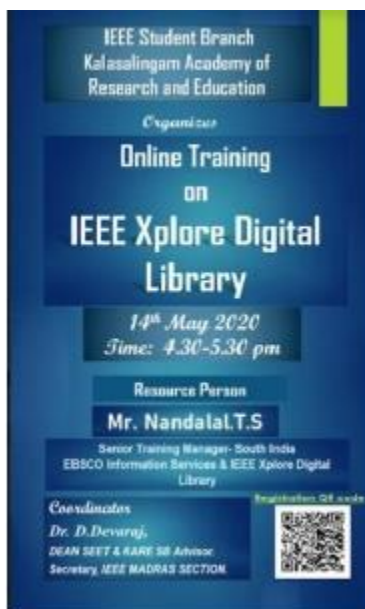
Table 4.5.1.5c Summary of events during Academic Year 2019-2020

Date	Event	Resource Person	Event Description
01/02/2020	One day Workshop on Image Processing	Dr. D. Devaraj, Dean, SEET, KARE handled the technical Sessions on “Introduction about	A detailed idea about Image Processing using Neural networks and their applications were explained for the students

	Using Neural Network	Artificial Neural Network and its application in Image Processing”. Dr. A. Muthukumar, Associate Prof. ECE, handled the technical session on “Introduction to Image Processing and its applications”. Dr. P. Ganesh Kumar, Associate Professor, Anna University, Coimbatore handled the session “Hands-on Training of NN Toolbox using MATLAB for Image Processing Applications”.	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	Mrs. M. Benisha, Assistant Prof, Jeppiar	Enhancing Your Career by Networking with Technical Experts.

	and Membership benefits	Institute of Technology, Chennai	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, Associate Professor, 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 2020	
<p align="center">About the Workshop :</p>		
<p>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 own functions of adaptive learning, predictive generalization, knowledge accumulation and knowledge discovery. Applications of ANN can cover various combinations of Science, Engineering, Transportation and Analytics.</p>		
<p>This Workshop is intended to enhance the participation in the fieldwork of Artificial Neural Networks and its applications to Image Processing to give hands-on training using MATLAB Neural Network Toolbox. The workshop includes presentation on Fundamentals of Neural processing, Development of Neural Network models for Image processing.</p>		
<p>Topics to be covered:</p> <ul style="list-style-type: none"> • Introduction to Image Processing • Learning on Neural Networks • Feed-forward Neural Networks • Self Organizing Maps • Introduction to MATLAB • MATLAB on Neural Networks Toolboxes • Application on ANN for Image Processing 		
<p>Resource persons:</p> <ul style="list-style-type: none"> • Faculty members from premier institutions and the experienced faculty members from KASRS will conduct the session. 		
<p>Target audience:</p> <ul style="list-style-type: none"> • Research Scholars, P.G. Students, final year students and final year UG students. 		
<p align="center">REGISTRATION FEE</p>		
<p>For Students : Rs. 100/- For Faculty : Rs. 2000/- (One-time fee)</p>		
<p>Programme : Dr. V. Sankar Kumar, M.Sc., M.Tech., Ph.D., Assistant Professor, Department of Computer Science & Information Technology, Kalasalingam University, Ramabai Nagar, Tiruchirappalli - 620 022</p>		
<p>Registration Fee : Dr. V. Sankar Kumar, Assistant Prof. Department of Computer Science & Information Technology, Kalasalingam University, Ramabai Nagar, Tiruchirappalli - 620 022</p>		
<p>Participants : Dr. A. Ramesh Babu, Asst. Prof., Department of Computer Science & Information Technology, Kalasalingam University, Ramabai Nagar, Tiruchirappalli - 620 022</p>		
<p>Lecturers : Dr. V. Sankar Kumar, M.Sc., M.Tech., Ph.D., Assistant Professor, Department of Computer Science & Information Technology, Kalasalingam University, Ramabai Nagar, Tiruchirappalli - 620 022</p>		
<p>Workshop Fee : For Students : Rs. 100/- For Faculty : Rs. 2000/- (One-time fee) For Non Academic Staff : Rs. 1000/-</p>		
<p>Local Area Accommodation : None</p>		
<p>Referee AC recommendations : Dr. V. Sankar Kumar, M.Sc., M.Tech., Ph.D., Assistant Professor, Department of Computer Science & Information Technology, Kalasalingam University, Ramabai Nagar, Tiruchirappalli - 620 022</p>		
<p>Feedback : The participants are requested to fill up the feedback form at the end of the workshop.</p>		

Fig 4.5.1.5b Brochure - One day Workshop on Image Processing Using Neural Network**Fig 4.5.1.5c Brochure - Online Training on IEEE Xplore Digital Library****Fig 4.5.1.5d Brochure - Webinar on Design Thinking and its innovation**

6. ACM-W International Student Chapter (Chapter Group ID: 180857)

The School of computing in Kalasalingam Academy of Research and Education, Krishnankoil organized the inaugural session of KARE ACM Women's International student chapter with ID: 180857 and Women Empowerment workshop on 8th March'19, International Women's day. It was

inaugurated by Dr S.Jeyabharathi, Dept. of Mathematics, Thiagarajar college of Engineering, Madurai. ACM-W encourages its members to celebrate the work of prominent women by nominating them for award such as the Athena Award & Lecture as well as ACM Advanced Grade Membership. She advised to supports, celebrates, and advocates internationally for the full engagement of women in all aspects of the computing field. She made brief details about ACM summer school offered in IITs and NITs at free of cost and encourage students to participate by giving the benefits of taking part in that. Vice Chancellor Dr. Nagaraj presided over the inaugural session. Dean, Dr P.Deepalakshmi, offered felicitations.

Table 4.5.1.6 Summary of ACM-Women Chapter events

S.No	Title	Resource Person	Date
1	Women Empowerment	Dr. S. Jeyabharathi, Department of Mathematics from Thiagarajar college of Engineering	08-03-2019

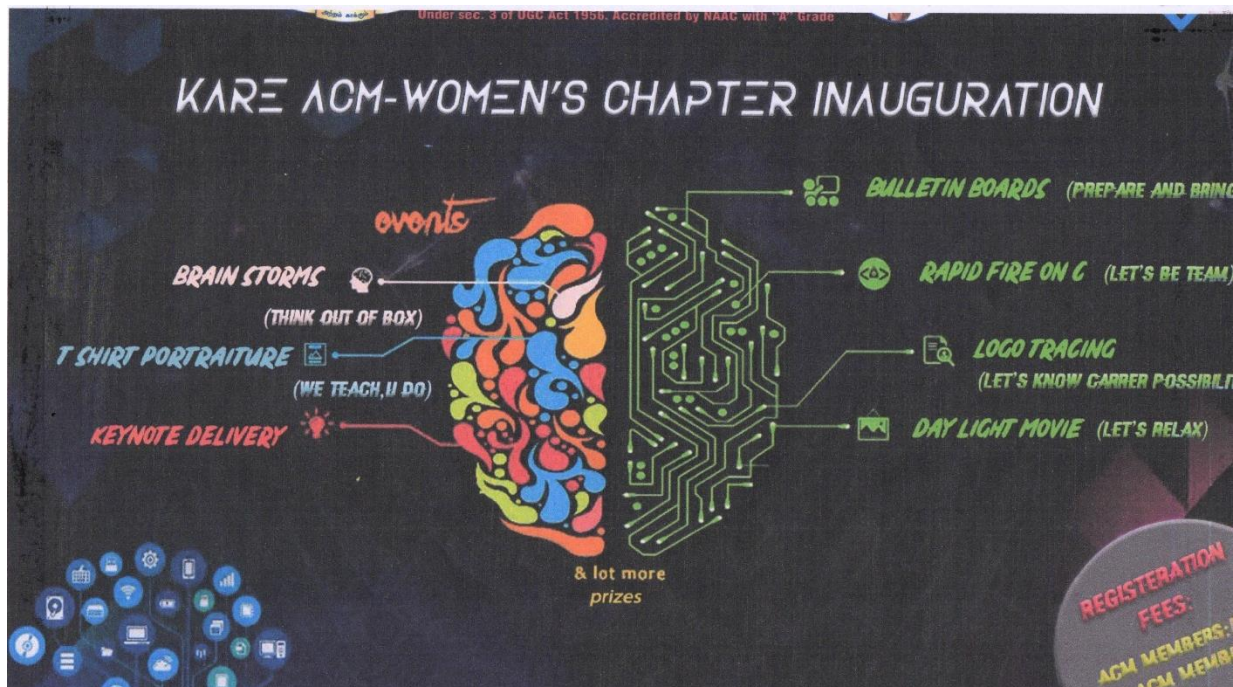


Fig 4.5.1.6a KARE ACM Women's Chapter Inauguration poster

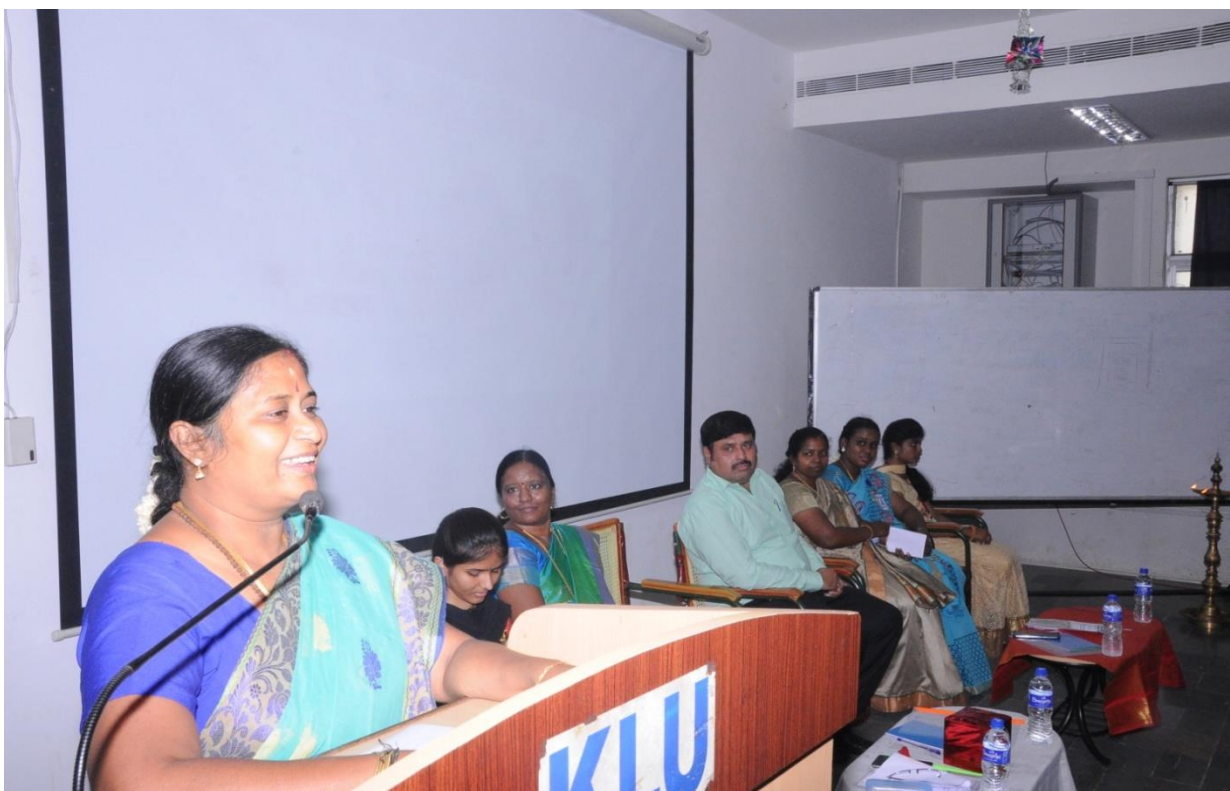


Fig 4.5.1.6b Dr S. Jeyabharathi, Dept. of Mathematics, Thiagarajar college of Engineering, Madurai inaugurates the ACM-Women Chapter (Chapter Group ID: 180857)

7. CSI Student Chapter

Table 4.5.1.7a Summary of events during 2021 – 2022 (Odd semester)

S.No	Event Name	Duration	Faculty Coordinators	Event title	Participants	Date & Time
1.	Value added course	5 days	Mr.S.Kailasam	RPA design and development	82	Oct 10,17, 24, 31 nov 72021 9 am to 6 pm
2.	Value added course	5 days (40hours)	Mr.Muthuvel	RPA design and development	72	Dec 202 9 am to 6 pm

Table 4.5.1.7b Summary of events during 2020-2021 (Odd semester)

S.No	Event Name	No of days	Date
1	Mini-project competition	1	Review - Weekly once (2020-21 Odd Semester)

2	Machine Learning and its applications	1	22.11.2020 28.11.2020 29.11.2020 9.00 am to 4.00 pm
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Table 4.5.1.7c Summary of events during 2020-2021 (Even Semester)

S.No	Name of the Event	Duration	Faculty Coordinators	Event title	Date & Time
1.	Guest Lecture Jointly with IT department	1 day	Dr.S.Dhanasekaran	Virtual Reality (CSI Sponsored)	20.02.2021

Table 4.5.1.7d Summary of events during 2019-2020 (Odd Semester)

S.No	Event	Duration	Event title	Date
1	CSE-Association and CSI students chapter inauguration	1 day	Inaguration	17.08.2019
2	Guest Lecture	1 day	Augmented Reality	21.09.2019

Table 4.5.1.7e Summary of events during 2019-2020 (Even Semester)

S.No	Event Name	Duration	Event title	Date
1	Workshop	2 day	Python Programming	09.01.20 and 10.1.20 8401 Lab
2	National Seminar	1 day	Emerging IT technologies	01.02.2020 8501

4.5.2 Publication of technical magazines, newsletters, etc. (5)

(The Department shall list the publications mentioned earlier along with the names of the editors, publishers, etc.)

The Department of Information Technology publishes one departmental Magazine and one Newsletter on every year.

The purpose of the magazine is to provide a platform to the students and faculty members to give their technical views. The magazine acts as synchronization between academic learning and recent trends and developments, and also 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.

Table 4.5.2.1 Summary of News Letter Magazines

Year	News Letter		Magazines	
	No. of publications	Date of publication	No. of publications	Date of publication
2016-17	1	21 st April 2017	1	10 th September 2017
2017-18	1	6 th April 2018	1	3 rd September 2018
2018-19	1	29 th March 2019	1	12 th October 2019
2019-20	1	15 th May 2020	1	5 th October 2020
2020-21	1		1	
2021-22	1		1	29 th April 2021

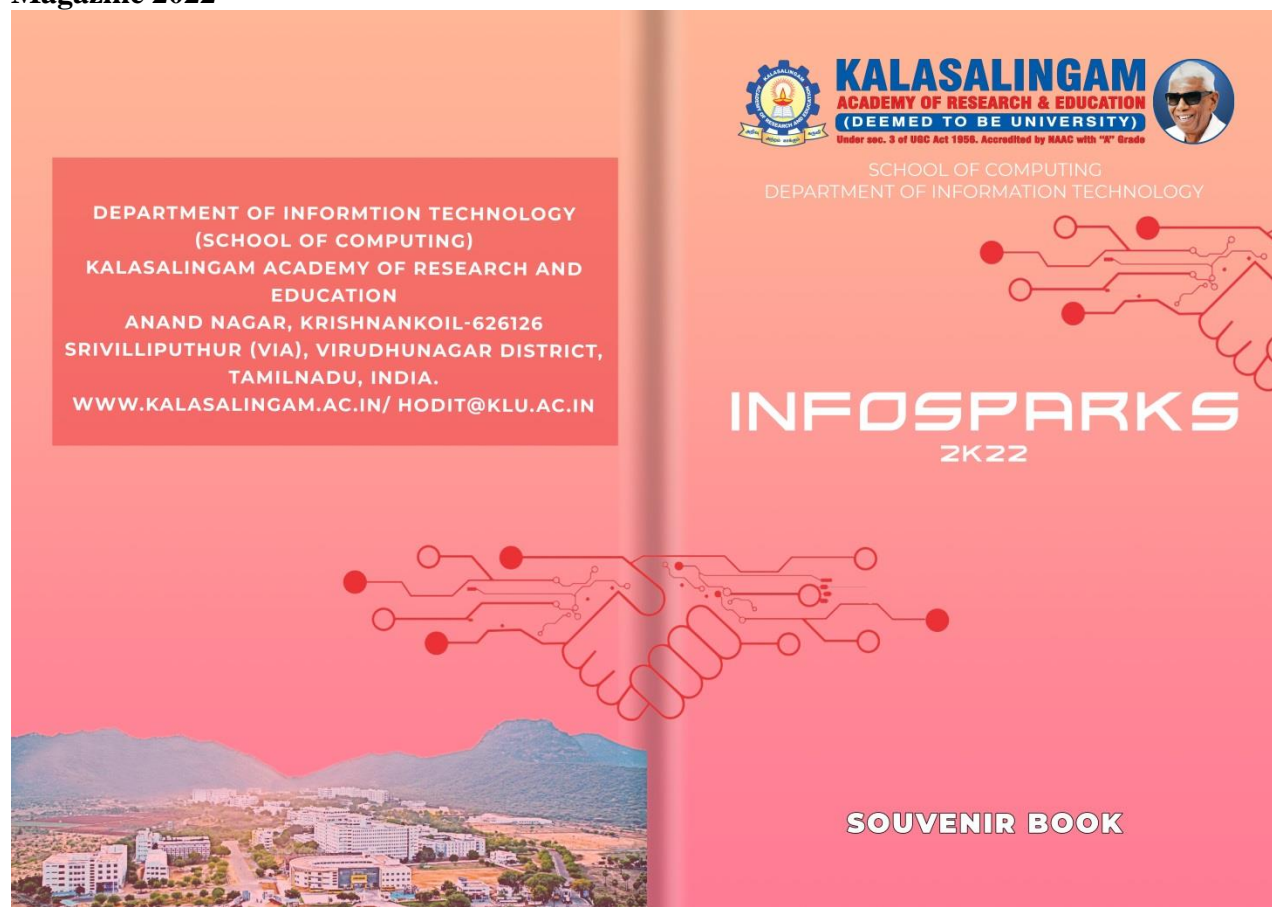
(a) Department of Information Technology – Magazine

Table 4.5.2.2 shows the general content available in each year magazine)

S.No	Contents
1	Message(s)
2	Prizes/Awards received in paper presentation
3	List of students presented in International/National conferences in other institutions a) Events within state b) Events outside the state

4	List of students presented papers in Symposium /Seminar
5	List of students attended Guest lecturers / Workshops
6	Students participation in Extra-curricular activities a) Sports b) NCC c) NSS d) Cultural events
7	Students participation in professional bodies a) ACM b) ISTE c) Department Association d) IEDC e) IEEE

Magazine 2022



Magazine 2019

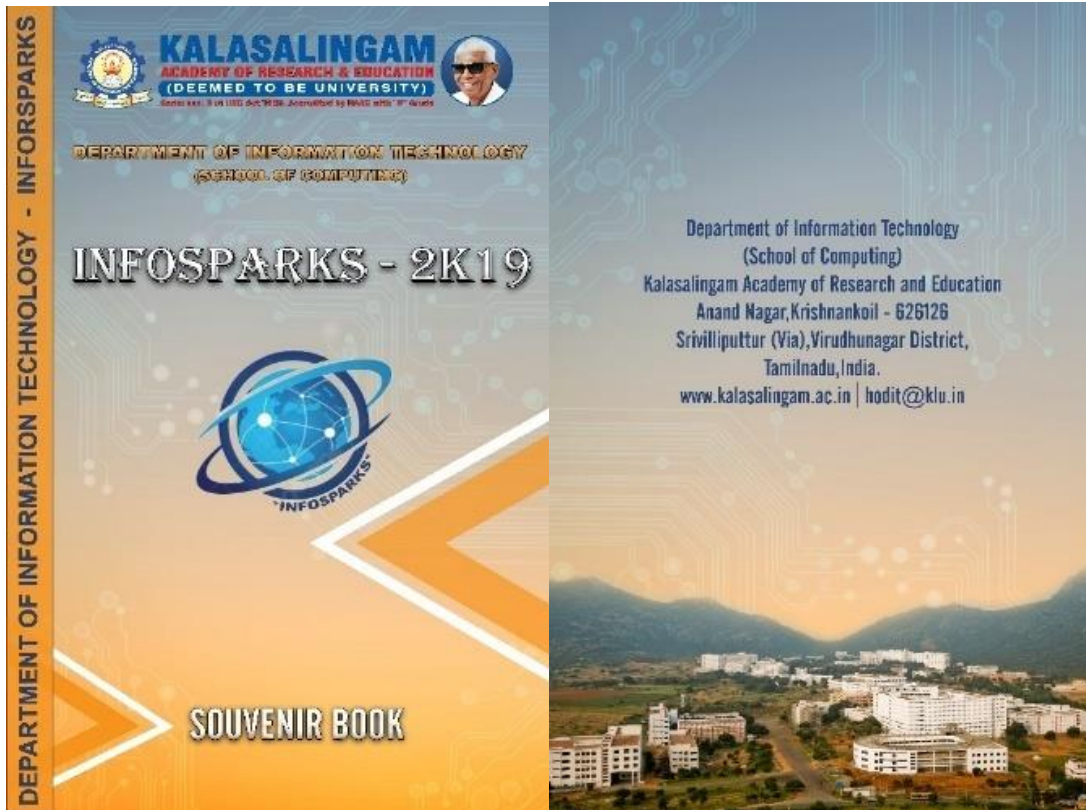


Fig 4.5.2.1 Department of Information Technology Infosparks-2k19 Magazine

Magazine 2018

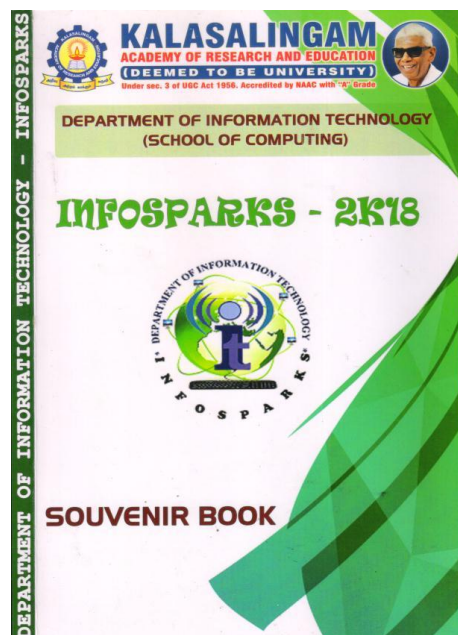


Fig 4.5.2.2 Department of Information Technology Infosparks-2k18 Magazine

(b) Department of Information Technology – Newsletter

Table 4.5.2.3 shows the general content available in each year Newsletter)

S.No	Contents
1	Message(s)
2	List of teaching faculty
3	List of Ph.D awarded
4	Guest lecturers / Workshops organized
5	List of Faculties visited Industries
6	Honors / Recognition to the faculties
7	Conference / Workshop / Symposium
8	List of articles published in the journal of International Repute

(c) Team involved in Magazine preparation:

Table 4.5.2.4 shows the editors and co-editors of the Department Magazine

S.No.	Academic year	Editor	Co-editor
1	2016-17	Dr.R.Sundarrajan Mr.D.Premraja	Mr.R.Kanoj (IV Year ICT) Mr.S.Prequiet (IV Year IT) Mr.Bharath (III Year IT)
2	2017-18	Mr.S.Kailasam	Mr.Sivasankaran, (III Year IT) Mr.Syam Oscar (III Year IT)
3	2018-19	Mr.S.Kailasam	Ms.S.Devadharshini (III Year IT) Ms.M.Karthiga (III Year IT)
4	2019-20	Mr.S.Kailasam	Mr.M.Dhilipkumar, III Year IT Mr.S.Staines, III Year IT Mr.RM.Shabarish, III Year IT Mr.P.S.Ramasubramanian, III Year IT
5	2020-21	Mr.S.Kailasam	
6	2021-22	Mr.S.Kailasam	Mr. Satish Reddy, III Year IT Mr. Sai Dheeraj, III Year IT

			Mr. Karthick, III Year IT Mr. Yeshwanth, III Year IT Mr. Dheenadayalan, III Year IT Mr. Aravind, III Year IT
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(d) Team involved in Newsletter preparation:

Table 4.5.2.5 shows the editors and co-editors of the Department News Letter

S.No.	Academic year	Editor	Co-editor
1	2016-17	Mr.D.Premraja	Mr.Siva (IV Year IT) Ms.Nagapreethi (IV Year ICT)
2	2017-18	Dr.V.BabyShalini	Mr.Ganesh Kumar (IV Year IT) Mr.Vishalraj (III Year IT)
3	2018-19	Dr.V.BabyShalini	Mr.Vijayan (IV Year IT) Mr.Jegadeeswaran (III Year IT)
4	2019-20	Dr.V.BabyShalini	Mr.Nagarajan (IV Year IT) Mr.Rajasekaran (III Year IT)
5	2020-21	Dr.V.BabyShalini	
6	2021-22	Dr.V.BabyShalini	

4.5.3. Participation in inter-institute events by students of the program of study (10)

(The Department shall provide a table indicating those publications, which received awards in the events/conferences organized by other institutes)

Students are appreciated to participate in various inter-institute events conducted at reputed institutes such as International conference, National conference, Workshops, Seminars and Symposiums, related to the Program. Third year students are motivated to perform their Community Service Projects in inter-institute events. Final year students are annoyed to carry out their Projects in Conferences and publish their work in Journals.

A. Events within the state:

Table 4.5.3.1 List of students presented in the International/national conferences

Sl.No	Authors	Title	Conference	Venue	Date
1	Ilaiyathan S, Prabukanna	An Improved Way for Securing Cloud Data Storage	International Conference on “Innovations & Discoveries in Science, Engineering and Technology”- ICIDSET-18	KCG College of Technology	17th and 18th April 2018
2	P.Sheerasahariprasanna, M.Maragatharajan	Trust-Based Hierarchical Trust Algorithm for Wireless Sensor Network,	International Conference on “Innovations & Discoveries in Science, Engineering and Technology”- ICIDSET-18	KCG College of Technology	17th and 18th April 2018
3	C.Ganesh Ram, R.Pandi Kishore	CAM CATCH(Anti Theft Security)	National Conference on Science, Engineering, Technology and Management	Annapoorna Engineering College, Salem	25 th January 2018
4	M.HemaMalini, M.ThirumalaiSelvi	Orphange Helpline	National Conference on Science, Engineering,	Annapoorna Engineering College, Salem	25 th January 2018

			Technology and Management		
5	C.Anitha, S.Ponkeerthana	Backing Up Your Things	National Conference on Science, Engineering, Technology and Management	Annapoorna Engineering College, Salem	25 th January 2018
6	M.Kirthana, T.Shanmuga Lakshmi	Fire Alarm With Sensors	National Conference on Science, Engineering, Technology and Management	Annapoorna Engineering College, Salem	25 th January 2018
7	M.Muthu Kumar, G.SaiPrasath	Rain Prediction	National Conference on Science, Engineering, Technology and Management	Annapoorna Engineering College, Salem	25 th January 2018
8	Kailasam Selvaraj, Saravanan Alagarsamy, Dhilipkumar M	RASPBERRY PI BASED AUTOMATIC DOOR CONTROL SYSTEM	International Conference on Signal Processing and Communication (ICSPC 2021)	Karunya Institute of Technology and Sciences	MAY 13 – 14, 2021
9	Kailasam Selvaraj,	Arduino based	2021 6th	RVS Technical	20-22 Jan.

	Iswarya M, Ramyasri S, Anu Keerthika M S	Smart Irrigation System for Home Gardening	International Conference on Inventive Computation Technologies (ICICT)	Campus, Coimbatore	2021
10	V.Baby Shalini, M.Iswarya, S.RamyaSri, M.S.Anu Keerthika	Review Analysis using Ensemble Algorithm	International Conference on Intelligent Data Communication Technologies and Internet of Things	JCT College of Engineering and Technology	27-28 August 2021
11	MUTHU BALAJI S, SELVA KUMAR S, KAMAL RAJ P	An Effective and Efficient Privacy Model of Health Big Data in Cloud Computing	International Conference on Intelligence and Safety for Robotics	Society of Education, Madurai	30-05-2021
12	Durga Lakshmi.S, Preethi.G, Hariram.R, Madhumathi.S.M, Mr.D.Prem Raja, Dr.R.SundarRajan	COMBINED HYDROPONICS AUTOMATION SYSTEM USING IOT	National Conference on Innovative Technologies in Computer Science (NITCOM'20)	HINDUSTHAN INSTITUTE OF TECHNOLOGY	10th MARCH 2020
13	Abinaya R, Tharani S, Arunachalam A.S, Suthendran K	HEIST DETECTOR: A Secured IOT based Real Time System	Fourth International Conference on Big data and Cloud Computing (ICBDCC21)	Karunya Institute of Technology and Sciences	20 & 21 August 2021
14	Joel Abraham S	Haptic Technology	International Conference on Recent Developmen	A.P.C Mahalaxmi College for Women,	14-15 December 2017

			ts in Information Technology, Science and Engineering	Thoothuku di	
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ii) List of Students Attended/Presented Workshops/Seminars:

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.

Table 4.5.3.2 Summary of Value Added Courses attended outside by the students

S.No	Student Name	Course Name	Organization	Date of event
1	PREETHIG	Android Mobile App Development Workshop	Coimbatore Institute of Technology, Coimbatore	8 th and 9 th September 2017
2	Dhilip Kumar S	Financial Literacy	IIT Bombayx	19 Feb 2019 to 18 Mar 2019
3	Iswarya M	Workplace Communication	IIT Bombayx	4 th October to 12 th November 2018
4	Naveen Kumar N	Workplace Communication	IIT Bombayx	4 th October to 12 th November 2018
5	Ramyasri S	Workplace Communication	IIT Bombayx	4 th October to 12 th November 2018
6	AnuKeerthika M S	Workplace Communication	IIT Bombayx	4 th October to 12 th November 2018
7	Illakkiya R	Workplace Communication	IIT Bombayx	4 th October to 12 th November 2018
8	Rajasekaran P	Workplace Communication	IIT Bombayx	4 th October to 12 th November 2018

Table 4.5.3.3 Summary of Workshops attended outside by the students

S.No	Student Name	Course Name	Organization	Date of event
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1	Chrispa Daniel	Workshop on warehouse robots	Top Engineers.	18-08-2019
2	Haribabu N T	Workshop on warehouse robots	Top Engineers.	18-08-2019
3	Abinaya R	Workshop on warehouse robots	Top Engineers.	18-08-2019
4	Illakkiya R	Workshop on warehouse robots	Top Engineers.	18-08-2019
5	Sivakumar M	2 days national level workshop on IoT Development with WebApp on Flask Framework	Department of CA, University College of Engineering, BIT Campus, Anna University Trichy Campus	24 th and 25 th September 2019
6	Kausalya G	2 days hands on workshop on recent development in databases	MEPCO SchlenkEngineering College	06-07 September 2019
7	Abinaya R	2 days hands on workshop on recent development in databases	MEPCO SchlenkEngineering College	06-07 September 2019
8	Chandramouli A	2 days hands on workshop on recent development in databases	MEPCO SchlenkEngineering College	06-07 September 2019
9	Staines S	2 days hands on workshop on recent development in databases	MEPCO SchlenkEngineering College	06-07 September 2019
10	Kamalraj P	2 days hands on workshop on recent	MEPCO SchlenkEngineering	06-07 September

		development in databases	College	2019
11	Muthubalaji S	2 days hands on workshop on recent development in databases	MEPCO SchlenkEngineering College	06-07 September 2019
12	Syed AhamedJaveedAashiq J	2 days hands on workshop on recent development in databases	MEPCO SchlenkEngineering College	06-07 September 2019
13	Ramasubramanian P S	2 days hands on workshop on recent development in databases	MEPCO SchlenkEngineering College	06-07 September 2019
14	Chrispa Daniel	Google Android Development	IIT Bombay	29 th -31 st December 2017
15	Dhilipkumar M	Workshop on App Development, VORTEX 18	NIT Trichy	2 nd -4 th February 2018
16	Shabarish RM	Workshop on App Development, VORTEX 18	NIT Trichy	2 nd -4 th February 2018
17	Ajay Ganesh	Workshop on App Development, VORTEX 18	NIT Trichy	2 nd -4 th February 2018
18	Alagumeenal S	Workshop on App Development, VORTEX 18	NIT Trichy	2 nd -4 th February 2018
19	Anitha	Workshop on App Development,	NIT Trichy	2 nd -4 th February

		VORTEX 18		2018
20	Divyadharshini	Workshop on App Development, VORTEX 18	NIT Trichy	2 nd -4 th February 2018
21	Dhakchanamoorthy	Workshop on App Development, VORTEX 18	NIT Trichy	2 nd -4 th February 2018
22	Kirthana	Workshop on App Development, VORTEX 18	NIT Trichy	2 nd -4 th February 2018
23	Palaniappan	Workshop on Web Development, VORTEX 18	NIT Trichy	2 nd -4 th February 2018
24	PonKeerthana	Workshop on App Development, VORTEX 18	NIT Trichy	2 nd -4 th February 2018
25	SakenaFathima H	Workshop on App Development, VORTEX 18	NIT Trichy	2 nd -4 th February 2018
26	Santhiya M	Workshop on App Development, VORTEX 18	NIT Trichy	2 nd -4 th February 2018
27	ThirumalaiSelvi	Workshop on App Development, VORTEX 18	NIT Trichy	2 nd -4 th February 2018
28	Hemamalini	Workshop on App Development, VORTEX 18	NIT Trichy	2 nd -4 th February 2018
29	Swathi	Workshop on App Development, VORTEX 18	NIT Trichy	2 nd -4 th February 2018

30	Dhilipkumar M	Workshop on Artificial Intelligence and Deep Learning	Coimbatore Institute of Technology	28 th September 2018
31	Manish Wins Pradeep G	Workshop on Artificial Intelligence and Deep Learning	Coimbatore Institute of Technology	28 th September 2018
32	Shabarish RM	Workshop on Artificial Intelligence and Deep Learning	Coimbatore Institute of Technology	28 th September 2018
33	Sivakumar M	Workshop on Artificial Intelligence and Deep Learning	Coimbatore Institute of Technology	28 th September 2018
34	Ramasubramanian P S	Workshop on Artificial Intelligence and Deep Learning	Coimbatore Institute of Technology	28 th September 2018
35	Dhilipkumar M	Workshop on IoT	DLK Career Development	19-12-2018
36	Jeshima J	2 days' workshop on Data Analytics with R	Bharathiar University	26 th to 27 th September 2018
37	Sivasankaran S	Paper presentation at JEONTUZ 2K18	National Engineering College	02-03-2018
38	Ram guru chandar M	Paper presentation at JEONTUZ 2K18	National Engineering College	02-03-2018
39	Sivasankaran S	Workshop on Internet of Things at JEONTUZ 2K18	National Engineering College	01-03-2018

40	Ram guru chandar M	Workshop on Internet of Things at JEONTUZ 2K18	National Engineering College	01-03-2018
41	Durga Lakshmi S	7 days workshop on Software Testing	SLN Technologies	December 2017
42	Kayalvizhi K	Workshop on Internet of Things at JEONTUZ 2K18	National Engineering College	01-03-2018
43	Lavanya G	7 days workshop on Software Testing	SLN Technologies	December 2017
44	Mahalakshmi K	Workshop on Internet of Things at JEONTUZ 2K18	National Engineering College	01-03-2018
45	Durga Lakshmi S	7 days workshop on Software Testing	SLN Technologies	December 2017
46	Vignesh S	7 days workshop on Software Testing	SLN Technologies	December 2017

Table 4.5.3.4 Summary of Symposium attended outside by the students

Student Name	Course Name	Organization	Date of event
Manish Wins Pradeep G	VORTEX 18, The National Level Technical Symposium	NIT Trichy	2 nd -4 th February 2018

Table 4.5.3.5 Summary of Student Participation in KARE Campus

S. No.	NAME	EVENT	VENUE	DATE
1	AYSHWARIA K T, BALASUBRAMANIAN S	Hands on session in Smart device using IoT	Department of IT, Kalasalingam Academy of Research and Education	26-08-2019

2	PON KEERTHANA S, RAM GURU CHANDAR M	Two days workshop on Cyber Security	Department of IT, Kalasalingam Academy of Research and Education	8 th august 2018
3	MAHAVISHNU P, MUTHUKUMAR M	DIG-FOR-ART'17 training cum Capture The Flag	Department of IT, Kalasalingam Academy of Research and Education	27.09.2017 and 28.09.2017
4	KAYALVIZHI K, S VIJAYAN, SANTHIYA M	One day Workshop on Software Defined Network	Department of IT, Kalasalingam Academy of Research and Education	28.12.2017 and 29.12.2019
5	JOEL ABRAHAM S, PANDI KISHORE R	Two days workshop on Python Programming and its applications	School of Computing, Kalasalingam Academy of Research and Education	2 nd and 3 rd April 2018

B. Events outside the state:

Highly appreciated project work batches which comprises of fast, average and slow learners are regularly esteemed to participate in International and National conferences conducted at IITs and NITs of outside the state.

Table 4.5.3.5 Summary of events attended by the students outside the state

Sl.No	Authors	Title	Conference	Venue	Date
1	Kailasam Selvaraj, P JeyaShruthy, P Raja Sekaran	Head Count Tracking System to Maintain Social Distance during	THE 12th INTERNATIONAL CONFERENCE ON COMPUTING, COMMUNICATION AND NETWORKING TECHNOLOGIES (ICCCNT)	IIT Kharagpur / (Online Conference)	July 6 - 8, 2021

		Pandemic			
2	Sivakumar M	Smart Worship Management System	International Conference on Data Analytics & Management An Indo-European Conference (ICDAM-2021)	Panipat Institute of Engineering and Technology, India & IIS	26th June 2021
3	M. Dhilip Kumar, R M Shabarish, S Staines, S. Suprakash	Data Vault using Data Science	International Conference on Data Analytics and Management (ICDAM-2021)	Jointly by Jan Wyzykowski University Poland and Panipat Institute of Engineering and Technology, India and IIS Deemed to be University India	26th June 2021

C. Prizes/awards received in such 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 4.5.3.6 Summary of prizes/awards/recognitions received by the students in the other institutes

Y	Name of the	Name of the event	Title of the paper	Date	Organized	Secu
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e a r	student				by	re
1	P Mahavishnu	A national level technical symposium	ICONTUZ 2K18	02-03- 2018	National Engineering College, Kovilpatti	I Prize
2	AravinthKanna S AjithMadhan K	Software Challenge of 24 hours Design Thinking Hackathon I ³ - HACK	Hackathon	12, 13 March 2020	SNS College of Engineering	I Prize
3	N.T.Haribabu	Quiz-O-Holic	CRYPTERA'18	19 September 2018	Coimbatore Institute of Technology	I Place
4	N.T.Haribabu	SEEKER	CRYPTERA'18	19 September 2018	Coimbatore Institute of Technology	II Place
5	AJITH MADHAN K	Completed two months Internship in Digital Factory's, Pune	2 month Internship	10-09- 2020 to 10-11- 2020	Digital Factory's, Pune	Rs.6 000/ Earn ed from this Inter nship
6	HARIPRASAD S	Completed two months Internship in Digital Factory's, Pune	2 month Internship	10-09- 2020 to 10-11- 2020	Digital Factory's, Pune	Rs.6 000/ Earn ed from this

						Inter nship
7	SHABARIS H RM	Completed four months Internship in Lumina Datamatics	4 month internship	14-12- 2020 to 14-04- 2021	Lumina Datamatics	Rs.4 0000 / Earn ed from this Inter nship
8	RAJA SEKARAN P	Completed four months Internship in Lumina Datamatics	4 month internship	14-12- 2020 to 14-04- 2021	Lumina Datamatics	Rs.4 0000 / Earn ed from this Inter nship
9	AJITH MADHAN K	Ideathon, KPR Institute of Engineering and Technology	Ideathon	23-06- 2020	KPR Institute of Engineering and Technology	I Prize
1 0	AJITH MADHAN K	Webpage Designing, Technical Symposium Cryptera 2021 by Dept of CSE, Coimbatore Institute of Technology	Design contest	25-03- 2021	Coimbatore Institute of Technology	I Prize

1 1	SWATH YRAVIS HANKA R	ELECTEZ2020 A STATELEVELT ECHNICALSY MPOSIUM	PAPERPRESE NTATION	28-02- 2020	Sri VidyaColl ege ofEnginee ringandTe chnology, virudhunaga r	IPri ze
1 2	MYV IZHIP RIYA T	KUMARASA MY TROPHY'17	VOLLEYBALL TOURNAMENT (WOMEN)	17 th and18 th Februa ry2017	M.Kumara samy Collegeof Engineering	IIP rize
1 3	MYV IZHIP RIYA T	SAVEETHATR OPHY2017	STATE LEVELINTERE NGINEERING COLLEGETOU RNAMENT FORWOMEN	22 nd and23 rd Februa ry2017	Saveetha Engineeri ngCollege	IIP rize
1 4	PARVEEN AR	KUMARASA MY TROPHY'17	VOLLEYBALL TOURNAMENT (WOMEN)	17 th and18 th Februa ry2017	M.Kumara samy Collegeof Engineering	IIP rize
1 5	LEKKALA SATISH	AWS CLOUD VIRTUAL INTERNSHIP	Supported by AWS Academy	10 weeks during Oct – Dec 2021	AICTE VIRTUAL INTERNS HIP	Rec ogn ized by AIC TE

CRITERION 5	Faculty Information and Contributions	200
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Academic Year: 2021 - 2022

S.No	Name of the Faculty Member	Qualification			PAN DATA	Designation	Date on which Designated as Professor/Associate Professor	Date of Joining the Institution	Department	Specialization	Academic Research			Currently Associated (Y/N)	Nature of association (Regular/Contract)
		Degree (highest degree)	University	Year of attaining highest qualification							Research Paper Publications	Ph.D. Guidance	Faculty Receiving Ph.D. during the Assessment Years		
1.	Dr. S. Dhanasekaran	Ph.D	KARE	2017	AQTPD6286E	Associate Professor	01.08.2017	13/08/2008	Information Technology	Big Data Analytics , Cloud Computing, AIML	45	6	01	Y	Regular
2.	Dr.S.Balamurali	Ph.D	Bharathiar University	1997	AONPB9723N	Professor	01.01.2009	6.7.2007	Information Technology	Data Mining	172	21	06	Y	Regular
3.	Dr. K. Suthendran	Ph.D	KARE	2015	BOFPS1382R	Professor	01.07.2016	31.12.2009	Information Technology	Wireless Communication, Cyber Security & Forensics	80	11	02	Y	Regular
4.	Dr. S. P. Balakannan	Ph.D	Chonbuk National University	2010	AXLBP1560E	Associate Professor	01.07.2017	02.07.2012	Information Technology	Network Security	37	10	01	Y	Regular
5.	Dr. R. Sundarrajan	Ph.D	KARE	2017	BTYP54253H	Associate Professor	01.08.2017	17.12.2007	Information Technology	Cloud Computing	12	05		Y	Regular
6.	Dr. V. Baby Shalini	Ph.D.	KARE	2019	ASOPB2314A	Associate Professor	26.09.2022	20.06.2008	Information Technology	Image Processing	09	05	-	Y	Regular

7.	Dr. S. Suprakash	Ph.D	KARE	2020	CEHPS9285N	Associate Professor	26.09.2022	20.06.2008	Information Technology	Green Computing	11	-	-	Y	Regular
8.	Mr. A. Pranab	M.E.	KARE	2009	BAPPP9832D	Assistant Professor		22.12.2008	Information Technology	Cloud Computing	-	-	-	Y	Regular
9.	Mr. S. Kailasam	M.E	KARE	2009	BNWPK6359J	Assistant Professor	-	01.06.2008	Information Technology	Image Processing	09	-	-	Y	Regular
10.	Mr. D. Prem Raja	M.Tech	KARE	2013	AMIPD0527F	Assistant Professor	-	13.03.2014	Information Technology	Big Data	05	-	-	Y	Regular
11.	Mr. P. Gopala Krishnan	M.E	SIT	2013	BWCPG4773M	Assistant Professor	-	01.07.2016	Information Technology	Cloud Computing	-	-	-	Y	Regular
12	Mr.S.Ganapathi Sundaram	M.E		2017	BEZPG7690L	Assistant Professor	-	01.07.2017	Information Technology	Data Security	-	-	-	Y	Regular
13	Mr. P. Ramachandran	M.Tech	KARE	2013	AEIPJ8894D	Assistant Professor	-	01.12.2017	Information Technology	Cloud Computing	-	-	-	Y	Regular
14	Mr.S.Shargunam	M.E	PSG Tech	2020	GHDPS3740B	Assistant Professor	-	16.06.2021	Information Technology	Cloud Computing	02			Y	Regular

Academic Year: 2020 - 2021

S.No	Name of the Faculty Member	Qualification			PAN DATA	Designation	Date on which Designated as Professor/Associate Professor	Date of Joining the Institution	Department	Specialization	Academic Research			Currently Associated (Y/N)	Nature of association (Regular/Contract)
		Degree (highest degree)	University	Year of attaining highest qualification							Research Paper Publications	Ph.D. Guidance	Faculty Receiving Ph.D. during the Assessment Years		
1.	Dr. M. Venkatesulu	Ph.D	IIT Kanpur	1980	ADDPM2866L	Professor	05.04.2004	05.04.2004	Information Technology	Block Chain Cryptography Big Data	80	12	03	Y	Regular
2.	Dr.S.Balamurali	Ph.D	Bharathiar University	1997	AONPB9723N	Professor	01.01.2009	6.7.2007	Information Technology	Data Mining	172	21	06	Y	Regular
3.	Dr. K. Suthendran	Ph.D	KARE	2015	BOFPS1382R	Professor	01.07.2016	31.12.2009	Information Technology	Wireless Communication, Cyber Security & Forensics	62	11	04	Y	Regular
4.	Dr. S. P. Balakannan	Ph.D	Chonbuk National University	2010	AXLBP1560E	Associate Professor	01.07.2017	02.07.2012	Information Technology	Network Security	37	10	05	Y	Regular
5.	Dr. R. Sundarajan	Ph.D	KARE	2017	BTYP54253H	Associate Professor	01.08.2017	17.12.2007	Information Technology	Cloud Computing	12	05		Y	Regular
6.	Dr. V. Baby Shalini	Ph.D.	KARE	2019	ASOPB2314A	Assistant Professor	-	20.06.2008	Information Technology	Image Processing	09	05	-	Y	Regular

7.	Dr M. Maragatharajan	Ph.D	KARE	2019	BCMPPM3930N	Assistant Professor	-	31.12.2009	Information Technology	Cryptography	09	03	-	Y	Regular
8.	Dr. S. Suprakash	Ph.D	KARE	2020	CEHPS9285N	Assistant Professor	-	20.06.2008	Information Technology	Green Computing	11	-	-	Y	Regular
9.	Mr. A. Pranab	M.E.	KARE	2009	BAPPP9832D	Assistant Professor		22.12.2008	Information Technology	Cloud Computing	-	-	-	Y	Regular
10.	Mr. S. Kailasam	M.E	KARE	2009	BNWPK6359J	Assistant Professor	-	01.06.2008	Information Technology	Image Processing	09	-	-	Y	Regular
11.	Mr. D. Prem Raja	M.Tech	KARE	2013	AMIPD0527F	Assistant Professor	-	13.03.2014	Information Technology	Big Data	05	-	-	Y	Regular
12.	Mr. P. Gopala Krishnan	M.E	SIT	2013	BWCPG4773M	Assistant Professor	-	01.07.2016	Information Technology	Cloud Computing	-	-	-	Y	Regular
13	Mr.S.Ganapathi Sundaram	M.E		2017	BEZPG7690L	Assistant Professor	-	01.07.2017	Information Technology	Data Security	-	-	-	Y	Regular
14	Mr. P. Ramachandran	M.Tech	KARE	2013	AEIPJ8894D	Assistant Professor		01.12.2017	Information Technology	Cloud Computing	-	-	-	Y	Regular

Academic Year: 2019 – 2020

S.No	Name of the Faculty Member	Qualification			PAN DATA	Designation	Date on which Designated as Professor/Associate Professor	Date of Joining the Institution	Department	Specialization	Academic Research			Currently Associated (Y/N)	Nature of association (Regular/Contract)
		Degree (highest degree)	University	Year of attaining highest qualification							Research Paper Publications	Ph.D. Guidance	Faculty Receiving Ph.D. during the Assessment Years		
1.	Dr. M. Venkatesulu	Ph.D	IIT Kanpur	1980	ADDPM2866L	Professor	05.04.2004	05.04.2004	Information Technology	Block Chain Cryptography Big Data	76	11	-	Y	Regular
2.	Dr.S.Balamurali	Ph.D	Bharathiar University	1997	AONPB9723N	Professor	01.01.2009	6.7.2007	Information Technology	Data Mining	162	06		Y	Regular
3.	Dr. K. Suthendran	Ph.D	KARE	2015	BOFPS1382R	Professor	01.07.2016	31.12.2009	Information Technology	Wireless Communication, Cyber Security & Forensics	54	04		Y	Regular
4.	Dr. S. P. Balakannan	Ph.D	Chonbuk National University	2010	AXLBP1560E	Associate Professor	01.07.2017	02.07.2012	Information Technology	Network Security	33	04	01	Y	Regular
5.	Dr. R. Sundarrajan	Ph.D	KARE	2017	BTYPS4253H	Associate Professor	01.08.2017	17.12.2007	Information Technology	Cloud Computing	7			Y	Regular

6.	Dr. V. Baby Shalini	Ph.D.	KARE	2019	ASOPB2314A	Assistant Professor	-	20.06.2008	Information Technology	Image Processing	3	-	-	Y	Regular
7.	Dr M. Maragatharajan	Ph.D	KARE	2019	BCMPPM3930N	Assistant Professor	-	31.12.2009	Information Technology	Cryptography	07	-	-	Y	Regular
8.	Dr. S. Suprakash	Ph.D	KARE	2020	CEHPS9285N	Assistant Professor	-	20.06.2008	Information Technology	Green Computing	08	-	-	Y	Regular
9.	Mr. A. Pranab	M.E.	KARE	2009	BAPPP9832D	Assistant Professor		22.12.2008	Information Technology	Cloud Computing	-	-	-	Y	Regular
10.	Mr. S. Kailasam	M.E	KARE	2009	BNWPK6359J	Assistant Professor	-	01.06.2008	Information Technology	Image Processing	05	-	-	Y	Regular
11.	Mr. D. Prem Raja	M.Tech	KARE	2013	AMIPD0527F	Assistant Professor	-	13.03.2014	Information Technology	Big Data	02	-	-	Y	Regular
12.	Mr. P. Gopala Krishnan	M.E	SIT	2013	BWCPG4773M	Assistant Professor	-	01.07.2016	Information Technology	Cloud Computing	-	-	-	Y	Regular
13	Mr.S.Ganapathi Sundaram	M.E		2017	BEZPG7690L	Assistant Professor	-	01.07.2017	Information Technology	Data Security	-	-	-	Y	Regular
14	Mr. P. Ramachandran	M.Tech	KARE	2013	AEIPJ8894D	Assistant Professor		01.12.2017	Information Technology	Cloud Computing	-	-	-	Y	Regular

5.1 Student - Faculty Ratio (SFR)(20)*(To be calculated at Department Level)*

No. of UG Programs in the Department (n): 01

No. of Students in UG 2nd Year = **180+9=189**No. of Students in UG3rd Year = **180+10=190**No. of Students in UG 4th Year = **180+07=187****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 +.. +UGn + PG1 + ...PGm**F**=Total Number of Faculty Members in the Department (excluding first year faculty)**Student Teacher Ratio (STR) = S / F**

Year	CAY (2021-2022)	CAYm1 (2020-2021)	CAYm2 (2019-2020)
u1.1(No. of Students in UG 2 nd Year)	61	63	65
u1.2(No. of Students in UG 3 rd Year)	63	65	62
u1.3(No. of Students in UG 4 th Year)	65	62	60
UG1(u1.1+u1.2+u1.3)	189	190	187
No. of Faculty in the Department (F)	14	14	14
Student Faculty Ratio (SFR) (SFR=S/F)	13.5	13.57	13.36
Average SFR SFR=(SFR1+SFR2+SFR3)/3	13.48		

Table B.5.1

Note: Marks to be given proportionally from a maximum of 20 to a minimum of 10 for average SFR between 15:1 to 20:1, and zero for average SFR higher than 25:1. Marks distribution is given as below:

<=15 - 20marks

<=17 - 18marks

≤ 19	-	16marks
≤ 21	-	14marks
≤ 23	-	12marks
≤ 25	-	10marks
> 25.0	-	0marks

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 (2021 -2022)	14	-
CAYm1 (2020 - 2021)	14	-
CAYm2 (2019 - 2020)	14	-

Table 5.1.1

Note:

All the faculty whether regular or contractual (except Part-Time), will be considered. The contractual faculty (doing away with the terminology of visiting/adjunct faculty, whatsoever) who have taught for 2 consecutive semesters in the corresponding academic year on full time basis shall be considered for the purpose of calculation in the Faculty Student Ratio. However, following will be ensured in case of contractual faculty:

1. Shall have the AICTE prescribed qualifications and experience.
2. Shall be appointed on a full time basis and worked for consecutive two semesters during the particular academic year under consideration.
3. Should have gone through an appropriate process of selection and the records of the same shall be made available to the visiting team during NBA visit

5.2 Faculty Cadre Proportion(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

Cadre Ratio Marks = $[(AF1/RF1) + (AF2 \times 0.6/RF2) + (AF3 \times 0.4/RF3)] \times 10$

Example: Intake = 60 (i.e. total no. of students = 180); Required number of Faculty: 9; RF1= 1, RF2=2 and RF3=6

Case 1: $AF1/RF1 = 1$; $AF2/RF2 = 1$; $AF3/RF3 = 1$; Cadre proportion marks = $(1+0.6+0.4) \times 10 = 20$

Case 2: $AF1/RF1 = 1$; $AF2/RF2 = 3/2$; $AF3/RF3 = 5/6$; Cadre proportion marks = $(1+0.9+0.3) \times 10 =$ limited to 20

Case 3: $AF1/RF1=0$; $AF2/RF2=1/2$; $AF3/RF3=8/6$; Cadre proportion marks = $(0+0.3+0.53) \times 10 = 8.3$

The reference Faculty cadre proportion is 1(F1):2(F2):6(F3)

Year	Professors		Associate Professors		Assistant Professors	
	Required F1	Available	Required F1	Available	Required F1	Available
CAY 2021-2022	1	2	2	5	6	7
CAY_{m1} 2020 - 2021	1	3	2	2	6	9
CAY_{m2} 2019 - 2020	1	3	2	2	6	9
Average Numbers (m1,m2,m3)	RF1= 1	AF1= 2.66	RF2= 2	AF2=3	RF3=6	AF3=9

Table B.5.2

Cadre Ratio Marks = $((AF1/RF1) + (AF2 \times 0.6/RF2) + (AF3 \times 0.4/RF3)) \times 12.5$

$$= ((2.66) + (0.9) + (0.6)) \times 12.5$$

$$= 52$$

If AF1 = AF2= 0 then zeromarks

Maximum marks to be limited if it exceeds 25

5.3 Faculty Qualification(20)

$FQ = 2.5 \times [(10X + 4Y)/F]$ 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)

YEARS	X	Y	F	$FQ = 2.5 \times [(10X + 4Y)/F]$
CAY (2021 - 2022)	7	7	10	24.5
CAY_{m1} (2020 - 2021)	8	6	10	26
CAY_{m2} (2019 - 2020)	8	6	10	26
Average Assessment				(m1,m2,m3) = 25.5

Table B.5.3

5.4 Faculty Retention(10/10)

Total number of faculty retained (2021-2022)/ Total number of faculty= 12/14=86%

No. of regular faculty members in CAY=2021-2022

S.No	Name of the faculty	Date of Joining
1	Dr.S.Dhanasekaran	13.08.2008
2	Dr.S.Balamurali	6.7.2007

3	Dr. K. Suthendran	31.12.2009
4	Dr. S. P. Balakannan	02.07.2012
5	Dr. R. Sundarrajan	17.12.2007
6	Dr. V. Baby Shalini	20.06.2008
7	Dr. S. Suprakash	20.06.2008
8	Mr. A. Pranab	22.12.2008
9	Mr. S. Kailasam	01.06.2008
10	Mr. D. Prem Raja	13.03.2014
11	Mr. P. Gopala Krishnan	01.07.2016
12	Mr.S.Ganapathi Sundaram	01.07.2017
13	Mr. P. Ramachandran	01.12.2017
14	Mr.S.Sargunam	16.06.2021

CAYm1 =2020-2021

Total number of faculty retained (2020-2021)/ Total number of faculty= 14/14=100%

S.No	Name of the faculty	Date of Joining
1	Dr.M.Venkatesulu	05.04.2004
2	Dr.S.Balamurali	6.7.2007
3	Dr. K. Suthendran	31.12.2009
4	Dr. S. P. Balakannan	02.07.2012
5	Dr. R. Sundarrajan	17.12.2007
6	Dr. V. Baby Shalini	20.06.2008
7	Dr M. Maragatharajan	31.12.2009
8	Dr. S. Suprakash	20.06.2008
9	Mr. A. Pranab	22.12.2008
10	Mr. S. Kailasam	01.06.2008
11	Mr. D. Prem Raja	13.03.2014
12	Mr. P. Gopala Krishnan	01.07.2016

13	Mr.S.Ganapathi Sundaram	01.07.2017
14	Mr. P. Ramachandran	01.12.2017

CAY =2019-2020

Total number of faculty retained (2019-2020)/ Total number of faculty= 14/14=100%

S.No	Name of the faculty	Date of Joining
1	Dr.M.Venkatesulu	05.04.2004
2	Dr.S.Balamurali	6.7.2007
3	Dr. K. Suthendran	31.12.2009
4	Dr. S. P. Balakannan	02.07.2012
5	Dr. R. Sundarrajan	17.12.2007
6	Dr. V. Baby Shalini	20.06.2008
7	Dr M. Maragatharajan	31.12.2009
8	Dr. S. Suprakash	20.06.2008
9	Mr. A. Pranab	22.12.2008
10	Mr. S. Kailasam	01.06.2008
11	Mr. D. Prem Raja	13.03.2014
12	Mr. P. Gopala Krishnan	01.07.2016
13	Mr.S.Ganapathi Sundaram	01.07.2017
14	Mr. P. Ramachandran	01.12.2017

Average % of faculty retained = 95 %

5.5. Faculty competencies in correlation to Program-Specific Criteria (10/10)

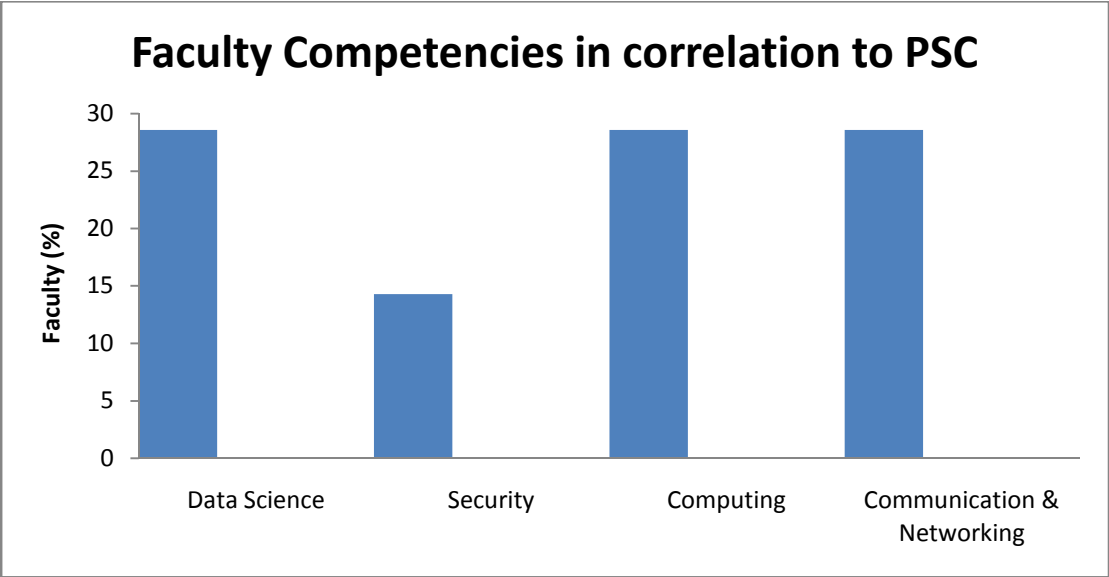
Faculty competency is measured based on their excellence in the area (Program Specific) referred by the AICTE and other Information Technology Associations/Societies. The following are the PSC,

Data Science
Security
Computing
Communication and Networking

To measure the competency of the faculty members, following factors were considered,

<ul style="list-style-type: none">• Specialization• Research Publications• Research grant received in the thrust area• Products developed• Course developed	<ul style="list-style-type: none">• Laboratory established• Training and other programs attended• International Collaboration
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Table 5.4 Factors Considered for Faculty Competency

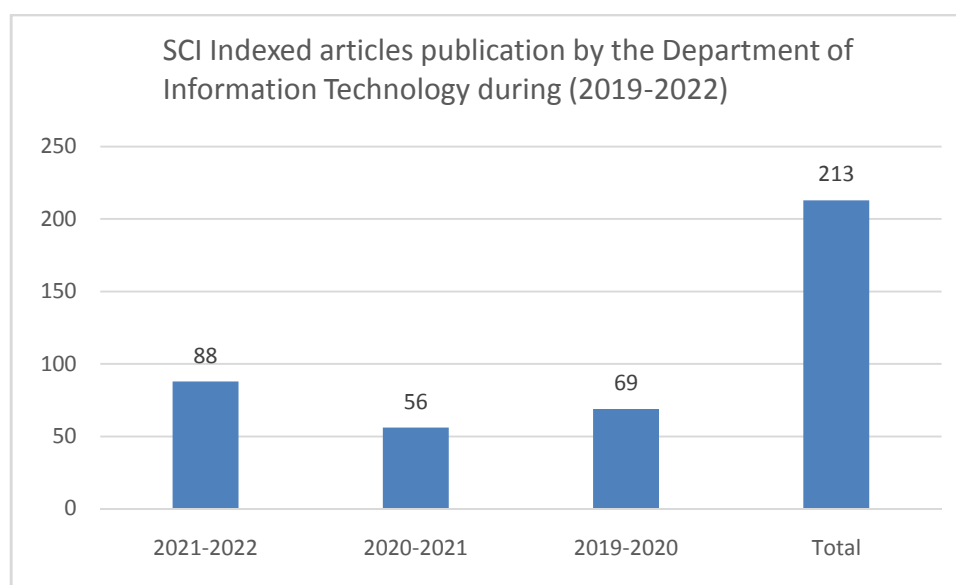


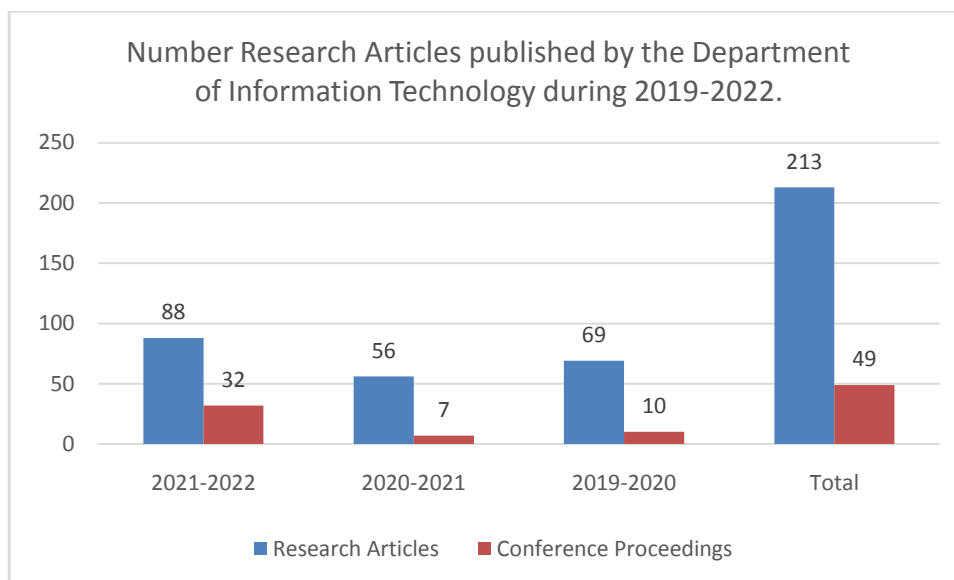
(a)

Our faculty members have demonstrated excellent competence in research publications during the Assessment years by publishing their research findings in over 100 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.

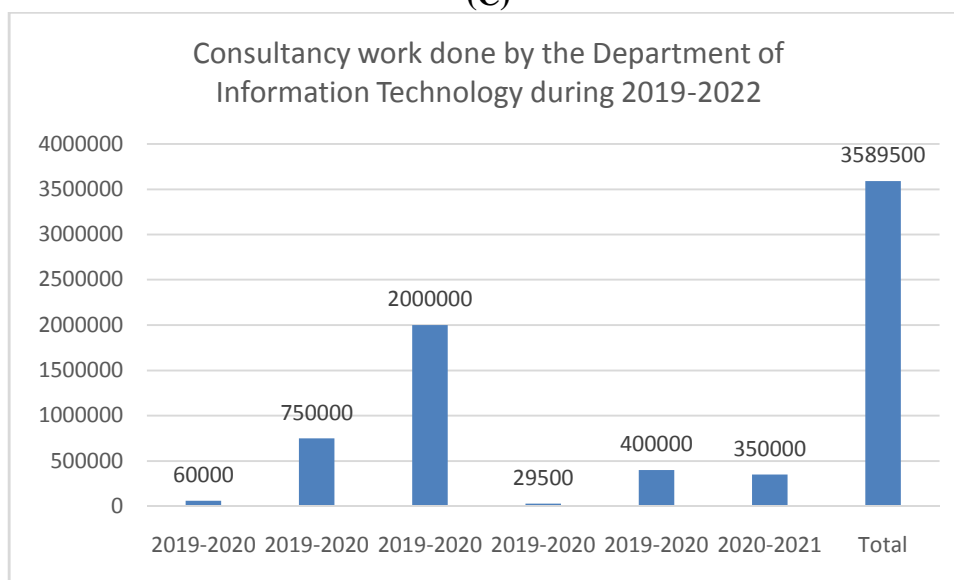
Table 5.5. Details of sponsored projects received during assessment years

Year	Research Publications	Research grant received (INR)	Products developed	Laboratory established	International Collaboration	Patent
2021-2022	88	2275000	5	1	0	9
2020-2021	56	1844000	13	1	1	1
2019-2020	69	3500000	20	0	2	2
Total	213	7619000	38	2	4	12

**(b)**



(C)



(d)

Figure. 5.5.1 Faculty Competencies in correlation to PSC (a) Specialization wise statistics (b) Research contribution in SCI-indexed Journals (c) Research Articles published during NBA assessment years by the department (e) Consultancy services by the Information Technology faculty Members

Table 5.6. List for Google Scholar citation (Sample)

A. Specialization

Table 5.7. Faculty specialization

Thrust Area	No of Faculty			No of Publications		
	CAY (2020-2021)	CAYm1 (2019-2020)	CAYm2 (2018-2019)	CAY (2020-2021)	CAYm1 (2019-2020)	CAYm2 (2018-2019)
Data Science	4	4	4	16	11	11
Security	2	2	2	18	36	17
Computing	4	4	4	6	9	3
Communication & Networking	4	4	4	26	21	17

B. Research Publications

Table 5.8. Faculty research publications

Sl. No	Year	Publication in Journals (Impact and SCI Journals)	Publication in Proceeding (Conference Proceedings)
1.	CAY (2021-2022)	26	32
1.	CAYm1 (2020-2021)	20	7
2.	CAYm2 (20219-2020)	17	10
Total		63	49

C. Course Developments*Table 5.9. Faculty competency in course development*

SI No	COURSE	DEVELOPED BY	THRUST AREA
1	Social Network Analysis	Dr.M.Venkatesulu	Security
2	Probability and Statistics	Dr.S.Balamurali	Data Science
3	Analog and Digital Communication	Dr. K. Suthendran	Communication and Networking
4	Cryptography and Network Security	Dr. S. P. Balakannan	Security
5	Data Structures and Algorithms	Dr. R. Sundarrajan	Computing
6	Computer Architecture and Organization	Dr. V. Baby Shalini	Communication and Networking
7	Computer Networks	Dr M. Maragatharajan	Communication and Networking
8	Web Programming	Dr. S. Suprakash	Computing
9	Cloud Services	Mr. A. Pranab	Cloud Computing
10	Microcontroller and Embedded Systems	Mr. S. Kailasam	Communication and Networking & Image Processing
11	Digital Marketing	Mr. D. Prem Raja	Big Data Analytics
12	Managing the cloud	Mr. P. Gopala Krishnan	Cloud Computing
13	Data Science and Data Visualization	Mr.S.Ganapathi Sundaram	Data Science

14	Big Data Analytics	Mr. P. Ramachandran	Big Data Analytics
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C. Books/Book Chapters Published by Faculty Members

Table 5.10. List of books and book chapter published by faculty members

Sl. No	Book/Chapter Title	Authors	ISBN/Publisher
1	Intelligent Sustainable Systems	V.Baby Shalini	978-981-16-2421-6
2	Inventive Computation and Information Technologies	V.Baby Shalini	978-981-16-6722-0
3	RASPBERRY PI BASED AUTOMATIC DOOR CONTROL SYSTEM	Kailasam Selvaraj, Saravanan Alagarsamy, Dhilipkumar M	978-1-6654-2864-4
4	Accident Alert System for Driver Using Face Recognition	S. Kailasam, M. Karthiga, R.M. Priyadarshini, K. Kartheeban, K. Anithadevi	978-1-5386-9543-2/19
5	Arduino based Smart Irrigation System for Home Gardening	Kailasam Selvaraj;Iswarya M;Ramyasri S;Anu Keerthika M S	978-1-7281-8501-9/21
6	Evaluating the AdaBoost Algorithm for Biometric-Based Face Recognition	B. Thilagavathi K. Suthendran K. Srujanraju	978-981-16-0080-7
7	GFDM-Based Device to Device Systems in 5G Cellular Networks	K. Anish Pon Yamini J. Assis Nevatha K. Suthendran K. Srujan Raju	978-981-16-0080-7

8	Analysis of Channel Estimation in GFDM System	K. Anish Pon Yamini S. V. Akhila K. Suthendran K. Srujan Raju	978-981-16-0080-7
9	Analysis of Channel Estimation in GFDM System	K. Anish Pon Yamini K. Suthendran K. Srujan Raju	978-981-16-0080-7
10	Threat Detection on UDP Protocols Using Packet Rates in IoT	T. Subburaj K. Suthendran	978-981-33-4892-9
11	Statistical Approach to Trace the Source of Attack Based on the Variability in Data Flows	T. Subburaj K. Suthendran S. Arumugam	978-3-319-64418-9
12	Mixed Noise Elimination and Data Hiding for Secure Data Transmission	P. Mohanakrishnan, K. Suthendran, S. Arumugam, T. Panneerselvam	978-3-319-64418-9
13	A Novel Reversible Data Hiding Method in Teleradiology to Maximize Data Capacity in Medical Images	K.Suthendran S.Arumugam Fepslin Athish Mon	978-3-319-64418-9
14	An Analysis on Time Complexity for the MapReduce Models	K.Rajakumar and S.Arumugam S.Rajeswari,K.Suthendran	978-3-319-64418-9

D. Conferences Organized by the Faculty Members in the Thrust Areas

Table 5.11. Sum of National/International events organized by the faculty members

Academic	Lectures	Workshops	Conferences	Symposium	Others	Total
CAY	4	1	1	1	1	8
CAYm1	15	1	2	1	2	21
CAYm2	5	1	1	1	1	9
Total	24	3	4	3	4	38

E. Conferences Organized by the Faculty Members in the Thrust Areas*Table 5.12. Details of National/International Conferences organized by the faculty members*

Sl. No.	Conference Title	Organizer	Thrust Area	Funding
1.	International Conference on Data Security (INCODS-2017)	IT,KARE	Security	Internal
2	International virtual conference on distributed computing , Intelligence and its applications (IVCDCIA-2020)	IT,KARE	Multidisciplinary	Internal
3	IEEE winter school on Cyber Physical Systems	IT,KARE	Security	IEEE
4	Kalasalingam Global Conference (KGC-2019)	IT,KARE	Multidisciplinary	AICTE
5	International workshop on Cyber Physical System	IT,KARE	Security	IEEE

Table 5.13. Photographic details of various events organized from the department

	
International Conference on Data Security (INCODS-2017)-Inauguration	
	
IEEE winter school on Cyber Physical System Inauguration	

Table 5.14. Details of Various events organized from the department

S.No	Title	Resource Person	Date	Funding Agency

1	Ultimate Forensics Bundle tool Training Program	Mr. Ashok Kumar Mohan Research Associate, TIFAC CORE - Cyber Security, Amrita VishwaVidyapeetham University, Coimbatore.	13.08.2016	Internal
2	Data Science and Big Data Analytics	Mrs.M.Jansi Rani, AP/IT Mr.Prabhukanna, AP/IT Mr.M.Maragatharajan, AP/IT Mr.Premraja, AP/IT Dr.Vidhyasaraswathi, HOD/B.Sc(CS & IT) Mrs.Manaranjithem, AP/B.Sc. Ms.Bhuvaneshwari, MCA Ms.BackiaAmuthapriya, MCA	06.02.2017 to 12.03.2017	Internal
3	Data Science and Big Data Analytics	Mrs.M.Jansi Rani, Mr.M.MaragatharajanMr.G.P rabuKannaMr.D.Prem Raja	19/03/2018 to 19/04/2018	Internal

4	Technical Skills	<p>Prof. D. B. Phatak, Department of CSE, IIT Bombay</p> <p>Prof. VaradrajBapat, Shailesh J Mehta School of Management, IIT Bombay</p> <p>Prof. S.V.D. Nageswara Rao, Shailesh J Mehta School of Management, IIT Bombay</p> <p>MsRupaliChimote</p> <p>MrPranayDugar</p> <p>MrAmolHatwar</p>	<p>23/02/2018 to 18/03/2018</p>	Internal
5	Spirulina Production Technology Training Certificate	<p>Mr.K.Ratnarajasingam, Program Co- OrdinatorMrs.Vasanthakuma ri, OfERR, NRCSD</p>	<p>14/06/2018 to 17/06/2018</p>	Internal
6	Value added course on Workplace Communication	Prof. Deepak B. Phatak	<p>30/07/2018 to 14/09/2018</p>	Internal

	Value added course on Financial Literacy	<p>Prof. VirendraSethi, Centre for Environmental Science and Engineering, IIT Bombay</p> <p>Prof. D. Parthasarathy, Department of Humanities and Social Sciences, IIT Bombay</p> <p>Dr. LeenaJha, Visiting Faculty, Shailesh J Mehta School of Management, IIT Bombay</p> <p>Prof. VaradrajBapat, Shailesh J Mehta School of Management, IIT Bombay</p> <p>Prof. S.V.D. Nageswara Rao, Shailesh J Mehta School of Management, IIT Bombay</p> <p>Prof. (Retired) Deepak. B. Phatak, Department of Computer Science and Engineering, IIT Bombay</p> <p>Prof. U.N. Gaitonde, Department of Mechanical Engineering, IIT Bombay</p>	4/3/2019 to 15/04/2019	Internal
8	College to Corporate Program	Dr. KalpanaKannan	15/07/2020 to 15/11/2020	Internal

9	Guest Lecture on “Recent trends in Development and Testing”	Mr.V.Vinod Kumar, Cognizant Technologies, Coimbatore	26.07.2019	Internal
10	One day Workshop on Smart Devices using IoT	Karumukilan S, Project Manager, Examdaily, Madurai	26.08.2019	Internal
11	Guest Lecture on “Business Intelligent tools and techniques”	Mr.A.Dinesh, IT analyst, TCS, Kolkatta	06-09-2019	Internal
12	INFOSPARKS2019 - Association Inauguration	Mr. G. Arivazhagan, Manager-HR & Administration, MAVEL Technologies Pvt. Ltd., Madurai	03-08-2019	Internal
13	Two days Workshop on Cyber Security	SaiSathish, Ceo, Indian Servers, Hyderabad	10th & 11th August 2018	Internal
14	INFOSPARKS 2018 - Association Inauguration	Shahul Hameed, Head, Business Development, HCL Technologies, Madurai	21-08-2018	Internal

15	DIG-FOR-ART'17 training cum Capture The Flag contest	Mr.Ashok Kumar Mohan and Ms.Indumathi, TIFAC-CORE in Cyber Security, Amrita ViswaVidyapeetham University, Coimbatore, Tamilnadu	27 th and 28 th September 2017	Internal
16	International Conference on Data Security	Dr. RajkumarBuyya Director(CLOUDS),The Melbourne university, Australia Dr. VeniMadhavanIISc, Bangalore Dr. Avadhani P.S Principal, AUCE Dr. SrinivasPyda, Sr Director, Oracle , USA Dr. Somasundaram. K , GRI, TN Dr.PallavkumarBaruah, SSSHIL, AP	11/12/2017 to 13/12/2017	Internal
17	Two days' workshop on Software Defined Network	Mr. TR. Sridhar, DEL EMC, Bangalore	28.12.2017 and 29.12.2017	Internal
18	One day National Level Hands-on Workshop on System Hardware (WAREATHON'18)	Dr.J.Balamurugan,Assistant Engineer,TANGEDCO,TNE B,Chennai	10.04.2018	Internal

19	One day Workshop on Microsoft Business Intelligence	Mr. A. Dinesh, System Analyst, IBM India Pvt Ltd, Bangalore	28.07.2017	Internal
20	Guest Lecture on “Recent trends in Development and Testing”	Mr.V.Vinod Kumar, Cognizant Technologies, Coimbatore	26.07.2019	Internal
21	One day Workshop on Smart Devices using IoT	Karumukilan S, Project Manager, Examdaily, Madurai	26.08.2019	Internal

E. International Collaboration

Table 5.15. Details of international collaborators associated with faculty members

Sl. No.	Collaborator	Collaboration	Collaboration Outcome		
			Publications	Proposals	Events
1	Jun Li	Research	1		
2	Vinayakumar	Research	1		
3	Dr.Rajkumar Buyya	Research			1
4	NA Mohamed Elhoseny	Research	1		

F. Editorial Services:

Table 5.16. Details of faculty members as Guest editors to National/International journals

Sl. No	Name of the faculty	Journals
1.	Dr.M.Venaktesulu	Guest Editor for a Special Issue in Journal of Cyber security and Mobility
2.	Dr.K.Suthendran	Guest Editor for a Special Issue in Journal of Cyber security and Mobility
3.	Dr.R.Sundarrajan	International Journal of Advanced Computer Science Technology

Journal Reviewer:

Table 5.17. Details of faculty members acted as potential reviewers to various peer reviewed SCI journals

S.No	Name of the faculty	Journals
1	Dr.M.Venkatesulu	Chaos, Solitons & Fractals, Elsevier
		Journal of Information Security and Applications, Elsevier
		Transactions on Emerging Telecommunications Technologies, Wiley

Dr.S.Balamurali

International Journal of Quality and Reliability
Management
Journal of Applied Statistics
Communications in Statistics-Theory and
Methods
Communications in Statistics-Simulation and
Computation
Metron
European Journal of Operational Research
Applied Mathematical Modelling
Journal of Testing and Evaluation
Pakistan Journal of Statistics
Industrial Engineering and Management
Systems
International Journal of Quality, Statistics, and
Reliability
Journal of Quality and Reliability Engineering
Applied Stochastic Models in Business and
Industry
Transactions of the Institute of Measurement
and Control
Advances in Statistics
Journal of Industrial Mathematics
Economic Quality Control
Journal of Industrial and Production Engineering
Journal of Applied Probability and Statistics
Asia Pacific Journal of Operations Research
Annals of Operations Research
Cyber Psychology, Behavior and Social
Networking
Quality Engineering
Sri Lankan Journal of Applied Statistics
International Journal of Advanced
Manufacturing Technology
Quality Technology and Quantitative

3	Dr.K.Suthendran	F1000Research The Imaging Science Journal Computers and Electronics in Agriculture-Elsevier IETE Journal of Research Transactions on Engineering Management IGI global publishers CRC Press Book Review Journal of Cyber Security and Mobility
2	Dr.S.P.Balakannan	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
3	Dr.R.Sundarrajan	Multimedia Tools and Applications
		Future Generation Computer Systems
		Cognitive Systems Research.
		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
4	Dr.V.Babyshalini	Contrast Media & Molecular Imaging
		Computational Intelligence and Neuroscience
		Arabian Journal of Geosciences
		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.M.Maragatharajan	Hindawi Scientific Programming
6	Dr.S.Suprakash	IEEE ACCESS
7	Mr.S.Kailasam	International Journal of Intelligent Systems
8	Mr.D.Premraja	Multimedia Tools and Applications

Doctoral Committee Member:

Table 5.18. 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.S.Balamurali	Bharathiyar University	1
2	Dr.K.Suthendran	Anna University, Chennai	8
3	Dr.S.P.Balakannan	Anna University, Chennai	3
4	Dr.R.Sundarrajan	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)

The department's Vision and Missions are clearly geared toward the development of advanced learning among its student members, with the goal of producing technocrats as a result. Newer technologies, such as cloud-based study resources, model questions, lecture and accompanying videos, as well as ppt notes, are being used to meet the educational needs of the students. Each and every course instructor has developed his or her own inventive approach to incorporating these modern technology into the classroom in order to enhance and assure the quality of students' learning. In order to improve student learning, the department seeks to motivate students to pay full attention during class hours by using cutting-edge and novel teaching methods and methods of assessment. Such implementations lead to an improvement in knowledge of the notion, which is accompanied with a rise in merit. Slow learners should be encouraged to engage more actively in the classroom environment. Furthermore, the development of openness in examination and assessment between teachers and pupils, the digitalization of activity monitoring and evaluation, as well as the resultant of outcomes, have all been implemented on the other hand. Furthermore, the instructor may be able to save time by avoiding repetitive work environments and being involved in collaborative work with colleagues.

Use of appropriate methods Everything, from the very beginning, such as student enrolment in a specific course, is done digitally using KALVI portal (klu student portal). (See Fig. 5.6).

Furthermore, all course materials and essential technological supports, such as ppt presentations, videos, question banks, sample questions, and previous question papers, have been uploaded and distributed to students through the LMS system, which is accessible via the internet and intranet. (See Figs. 5.1 and 5.2.) Kalvi SIS (Fig. 5.5 & 5.6) keeps track of students' attendance and other associated information, as well as 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 "power-point presentation" "animation/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 innovation in the teaching and learning are most explicitly customized and after the consent of the respective course and program coordinator the content and the innovation in the teaching by faculty is approved for the LMS.
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 common access for all the faculty, and endeavour the correction and error rectification by critique is possible and can be made to its enrichment.
3. EASY login and SIS login are the individual portal system from which the data assigned with the marks of the student and complete relevance about the student data can be retrieved by the concerned staff members, assigned with the role of class coordinators and faculty advisors.
4. The Easy login portal of each staff contains the complete access of his ward assigned to him under faculty advisory system and can be monitored by the concerned faculty advisor.
5. Many faculty members handled their class hours through "Google Class Room" in order to adopt the flipped classroom and virtual learning.

6. The course plan includes the curriculum subjects as Theory with Practical and Lab with project that envisaged inclusion of performance in practical exposure of the content.

7. These lead to the innovation of new ideological systems and even development of the few secluded projects with enhanced techniques.

8. All the faculty members are urged to undergo courses with the online learning portals like NPTEL, COURSERA, etc., to enhance and stick with the technological development in their respective domains and the best outcomes with the courses were rewarded at the entities.

9. Uses of PPT, interactive classes and Google classroom have eventually elevated the stances of learning in and along the student and the instructor.

10. After the completion of each sessional examination the analysis of the result is predominantly checked and the respective coordinators in the hierarchy of Course – Module and program coordinator were emphasized to analysis the feedback and the course outcomes by the students and regular check of the instructor and his course materials were rendered for correction by the course coordinators.

11. The innovation by the faculties members were encouraged by indulging them to participate in the workshop and faculty development programmes and were envisaged to make the best out of the nut.

12. The usage of research portals like Research Gate is actively used by the faculties to share and critique the work of the colleagues.

13. The use of virtual prototype also play role in mitigating the technological flaw of student in understanding the basic working principle of any engineering systems.

14. The department also provides an opportunity for professors to visit institutions of national and international renown, not only to further their own knowledge but also to broaden the understanding of students via the department's programme.

15. In this sense, our faculty members routinely accompany students on field trips to various sectors, where they are able to put their theory into practise. The purpose of these field trips is to motivate students to work hard on their projects and produce excellent results.

5.7 Faculty as Participants in Faculty

Development/Training Activities/STTPs(15)

- A Faculty Scores Maximum Five Points For Participation
- Participation In 2 To 5 Days Faculty Development Program: 3 Points
- Participation > 5 Days Faculty Development Program: 5 Points

Table 5.7: List Of Faculty Members Participated In FDP / STTP Etc.

S.No	Name Of The Faculty	Max 5 Per Faculty		
		Cay (2021 – 2022)	Cay M1 (2020 – 2021)	Cay M2 (2019 – 2020)
1.	Dr. M. Venkatesulu	5	5	5
2	Dr.S.Balamurali	5	5	5
3.	Dr. K. Suthendran	5	5	5
4	Dr. S. P. Balakannan	5	5	5
5	Dr. R. Sundarajan	5	5	5
6.	Dr. V. Baby Shalini	5	5	5
7.	Dr M. Maragatharajan	5	5	5
8.	Dr. S. Suprakash	5	5	5
9.	Mr. A. Pranab	5	5	5
10	Mr. S. Kailasam	5	5	5
11.	Mr. D. Prem Raja	5	5	5
12	Mr. P. Gopala Krishnan	5	5	5
13	Mr.S.Ganapathi Sundaram	5	5	5
14.	Mr. P. Ramachandran	5	5	5

	Sum	70	70	70
RF= Number of Faculty required to comply with 20:1 Student-Faculty ratio as per 5.1		9	9	9
Assessment = $3 \times (\text{Sum}/0.5 \text{ RF})$ (Marks limited to 15)		46.67	46.67	46.67
Average assessment over last three years (Marks limited to 15)				

5.8 Research and Development(75)

5.8.1 Academic Research(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.

Year	Journal	Conference	Book	Book Chapter
2021-22	88	32	3	11
2020-21	56	9	1	9
2019-20	69	25	1	1

S.No	Department of IT Faculty Publication in referred Journal	Impact Factor
1	Dhanasekaran.S et al., "Deep Learning based Intelligent and Sustainable Smart Healthcare Application in Cloud-Centric IoT", Computers, Materials & Continua (CMC) , 66 (2), 2021, pp.1987-2003	Scopus
2	Dhanasekaran.S et al., " Optimal Extreme Learning Machine with Deep Residual Network Based Multi-Class COVID-19 Diagnosis Model", Health Informatics Journal (Accepted) (Article in press),	2.932
3	Dhanasekaran.S et al., " Fine grained access control using H-KCABE in cloud storage" Materials Today: Proceedings – Elsevier , (2021) , (37), Part 2, pp. 2735-2737	Scopus
4	Dhanasekaran.S et.al., “An energy efficient multi secret sharing for encrypted images using homomorphic encryption algorithms” , Journal of Green Engineering , 2021, 11(2), pp. 1575–1586.	Scopus
5	Dhanasekaran.S et.al., “ Attribute-based encryption for cipher text in advanced encryption standard” , Materials Today: Proceedings, 2020, 37(Part 2), pp. 3442–3445.	Scopus
6	Dhanasekaran.S et.al., “Enhancing Blockchain security in cloud computing with IoT environment using ECIES and cryptography hash algorithm” , Materials Today: Proceedings, 2020 , 37 (Part 2) , 2021, pp. 2653-2659.	Scopus
7	Dhanasekaran.S et al., " An Intelligent Deep Learning Based Xception Model for Hyperspectral Image Analysis and Classification ” , Computers, Materials & Continua (CMC) , 67 (2), 2021, pp. 2393-2407	Scopus
8	Dhanasekaran.S et al., “Evaluation of risk analysis process in medical big data using Machine Learning” IEEE 2021 International Conference on Computer Communication and Informatics (ICCCI - 2021), Jan. 27 – 29, 2021, Coimbatore, INDIA, pp. 1-4 (2021), IEEE Xplore Digital Library	Scopus Indexed
9	Dhanasekaran.S et.al., “An intelligent and secured heart rate monitoring system using IOT” , Materials Today: Proceedings, 2020 (Article in Press)	Scopus
10	Dhanasekaran.S et.al., “Threshold secret sharing and multi-authority based data access control in cloud computing” , Materials Today: Proceedings, 2020 (Article in Press)	Scopus
11	S.Dhanasekaran et al., “A Smart Digital Attendance Monitoring System for Academic Institution Using Machine Learning Techniques” , Webology, 19 (1), pp 3109-3118 (2021).	Scopus
12	S.Dhanasekaran et al., “Light Weight Cryptography based Medical Data and Image Encryption Scheme.” , Webology, 18 (2), 88-104 (2021).	Scopus
13	Dhanasekaran.S et al., “Enhancing the performance of low power wide area network using narrow band Internet of Things” , Turkish Journal of Physiotherapy and Rehabilitation, 32(3), pp. 38124 –	Scopus

	38131 , 2021 (Scopus)	
14	Dhanasekaran.S et al., “Semantic Based Data Fusion Technique For Internet Of Things” , Turkish Journal of Computer and Mathematics Education, 12 (10), (2021), pp. 23-30	Scopus
15	Dhanasekaran.S et al., “Modified Relevance Vector Machine based anomaly behaviour detection System for Internet of Things” , Turkish Journal of Physiotherapy and Rehabilitation , 32(3), (2021), pp. 30662 - 30670	Scopus
16	Dhanasekaran.S et al., “Secured and Reliable Data Communication in Internet of Things” , Turkish Online Journal of Qualitative Inquiry (TOJQI) , 12 (10) , 2021 , pp: 2045-2058.	Scopus
17	Dhanasekaran.S et al., “Tribrid Secure Encryption Technique to Protect the data in the Cloud” , Design Engineering (Toronto), 2021(8), Pages: 7423-7433 (Scopus)	Scopus
18	Dhanasekaran.S et al., “The Cloud based Edge Computing with IoT Infrastructure and Security Issues Investigation” 2021 International Conference on Computational Performance Evaluation (ComPE) North-Eastern Hill University, Shillong, Meghalaya, India. Dec 1-3, 2021 , IEEE Xplore Digital Library (Scopus Indexed)	Scopus
19	Dhanasekaran.S et al., “Enhancing Security Service of Data Protection Level using Machine Learning” 2nd Global Conference for Advancement in Technology (GCAT) – 2021 , 1-10-2021 to 3-10-2021 , IEEE Xplore Digital Library (Scopus Indexed)	Scopus
20	Dhanasekaran.S et al., “Applications of Machine Learning Algorithms for HDFS Big Data Security” Proceedings of 2022 International Conference on Computer Communication and Informatics (ICCCI), Jan. 25 – 27, 2022, Coimbatore, India. IEEE Xplore Digital Library (Scopus Indexed)	Scopus
21	Dhanasekaran.S et al., “Intelligent System to Analyse Plant Diseases using Machine Learning Techniques” Proceedings of the International Conference on Applied Artificial Intelligence and Computing ICAAIC 2022. IEEE Xplore Digital Library (Scopus Indexed)	Scopus
22	S.Dhanasekaran et al., “Optimal dense convolutional network model for image classification in unmanned aerial vehicles based ad hoc networks”, International Journal of Ad Hoc and Ubiquitous Computing 39 (1-2), 46-57 (2022), Impact factor : 0.654	SCI
23	S.Dhanasekaran et al., “Bird Swarm Algorithm with Fuzzy Min-Max Neural Network for Financial Crisis Prediction”, Computers, Materials & Continua (CMC), 73 (1) 2022 , pp: 1542-1555. IF - 4.072	SCI
24	S.Dhanasekaran et al., “Cat and Mouse Optimizer with Artificial Intelligence Enabled Biomedical Data Classification”, Computer Systems Science and Engineering, 44 (3) 2022.	Scopus
25	S.Dhanasekaran et al., “ An effective parameter tuned deep belief network for detecting anomalous behavior in sensor-based cyber-	SCI

	physical systems”, Theoretical Computer Science, 931 , (2022). pp: 142-151 , IF - 0.827	
26	Sornalakshmi, M., Balamurali, S., Venkatesulu, M. and Navaneetha Krishnan, M. (2021), "An Efficient Apriori Algorithm for Frequent Pattern Mining Using Mapreduce in Healthcare Data”, Bulletin of Electrical Engineering and Informatics, Vol.10, No.1, pp.390-403.	Scopus
27	Aslam, M., Jeyadurga, P., Balamurali, S. and Azam, M. (2021),”Economic Determination of Modified Multiple Dependent State Sampling plan under Some Life-time Distributions”, Journal of Mathematics, Vol. 2021, Article ID 7470196, 13 pages.	Scopus
28	Arun, M., Balamurali, S., Al-Turjman, F. and Lakshmana Kumar, R. (2021),” A Lightweight Authentication and Secure Data Access Between Fog and IoT user”, International Journal of Electronic Business, Vol.16, No.1, pp. 77- 87.	Scopus
29	Aslam, M., Balamurali, S., Jeyadurga, P. and Khan, N. (2021),” Designing of an Attribute Control Chart Based on Modified Multiple Dependent State Sampling Using Accelerated Life Test under Weibull Distribution”, Communications in Statistics-Simulation and Computation, Vol.50, No.3, pp.902-916.	SCI
30	Kannan, G., Jeyadurga, P. and Balamurali, S. (2021),”Economic Design of Repetitive Group Sampling Plan Based on Truncated Life Test Under Exponentiated Half Logistic Distribution”, Quality Engineering, Vol.33, No.2, pp.902-916.	SCI
31	Mohana Prabha, K., Vidhya Saraswathi, P. and Balamurali, S. (2021),”Tversky Anonymous Key Authentication Based Blum Goldwasser Cryptography for Cloud Data Access Security”, Turkish Online Journal of Qualitative Inquiry, Vol.12, No.5, pp.1257-1271.	SCI
32	Revathy, R., Murali, P., Venkatasubramanian, V., Puthira Prathap and Balamurali, S. (2021),” An Appraisal of Indian Jaggery and Confectionery Exports in the Global Market: Markov Chain Model Approach”, Sugar Tech., Vol.23, No.1, pp. 118-129.	SCI
33	Murugeswari, N., Jeyadurga, P. and Balamurali, S. (2021),”Optimal Design of a Skip-Lot Sampling Reinspection Plan with a Double Sampling Plan as a Reference Plan", Sequential Analysis, Vol.40, No.3, pp.370-380.	SCI
34	Jeyadurga, P. and Balamurali, S. (2021),”Multiple Deferred State Sampling Plan for Exponentiated New Weibull Pareto Distributed Mean Life Assurance”, <i>Journal of Testing and Evaluation</i> , Vol.49, No.6, pp.4426-4436.	SCI
35	Balamurali, S., Aslam, M. and Jun, C.-H.(2021),”Determination and Economic Design of a Generalized Multiple Dependent State Sampling Plan”, <i>Communications in Statistics-Simulation and</i>	SCI

	<i>Computation</i> , Vol.50, No.11, pp.3465-3482.	
36	Aslam, M., Jeyadurga, P., Balamurali, S., Sherwani, R.A.H., Albassam, M., and Jun, C.-H. (2021), "A New Variable-Censoring Control Chart using Lifetime- Performance Index under Exponential and Weibull Distributions", <i>Computational Intelligence and Neuroscience</i> , Vol. 2021, Article ID 1350169, 8 pages (doi.org/10.1155/2021/1350169).	
37	Kannan, G., Jeyadurga, P. and Balamurali, S. (2022), "Determination of Multiple Deferred State Repetitive Group Sampling Plan for Life-Time Assurance under Birnbaum-Saunders Distribution", <i>Journal of Statistical Computation and Simulation</i> , Vol.92, No.1, pp.145-158.	SCI
38	Usha, M. and Balamurali, S. (2022), "Economic Design of Quick Switching Sampling System for Resubmitted Lots Under Gamma-Poisson Distribution", <i>American Journal of Mathematical and Management Sciences</i> , Vol. 41, No. 1, pp. 24-37.	SCI
39	Murugeswari, N., Jeyadurga, P. and Balamurali, S. (2022), "Optimal Designing of Two Level Skip-Lot Sampling Reinspection Plan" <i>Journal of Applied Statistics</i> , Vol.49, No. 5, pp.1086-1104.	SCI
40	Sivapragasam, C., Saravanan, P. and Balamurali, S. (2022), "Estimation of Climate Change impact on the Flood of Kickapoo River at La Farge", <i>AIP Proceedings</i> 2463, pp. 020026-1-10.	SCI
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242	Devibala, K., Balamurali, S., Ayyasamy, A. and Archana, M. (2018), "Neighbor Constraint Traffic Centric Distributed Sinkhole Detection and Mitigation Approach for Quality of Service Improvement in Wireless Sensor Networks", Lecture Notes in Networks and Systems, Vol.11, pp.357-366.	Other
243	Balamurali, S. and Jeyadurga, P. (2019), "An Attribute np Control Chart for Monitoring Mean Life using Multiple Deferred State Sampling Based on Truncated Life Test", International Journal of	Other

	Reliability, Quality and Safety Engineering, Vol.26, No.1, pp.1950004 (18 Pages).	
244	Balamurali, S., and Baranitharan, B. (2019), "An Improved System of Skip-Lot Acceptance Sampling Plans for Highway Construction and Materials", Journal of the Institution of Engineers-Series A, Vol.100, No.1, pp. 9-19.	Other
245	Revathy, R., Balamurali, S. and Lawrance, R. (2019), "Classifying Agricultural Crop Pest Data using Hadoop MapReduce based C5.0 Algorithm", Journal of Cyber Security and Mobility, Vol.8, No.3, pp.393-408.	Other
246	Balamurali, S., Aslam, M. and Jun, C.H. (2019), "Variable Batch-size Attribute Control Chart", Journal of Statistics and Management Systems, Vol.22, No.6, pp.1037-1048.	Other
247	Pradeep Kandhasamy, J., Balamurali, S. and Mariappan. (2019), "Diabetic Maculopathy Detection Using Image Processing", International Journal of Engineering and Advanced Technology, Vol.9, No. 1S4, pp.115-119.	Other
248	Arun, M., Balamurali, S. and Maheswari, K. (2019), "Attribute-Semantic Based Access Control Policy Model for IoT", International Journal of Engineering and Advanced Technology, Vol.9, No. 1S4, pp.560-564.	Other
249	Jeyadurga, P. and Balamurali, S. (2019), "Economic Designing of Modified Chain Sampling Plan Under Weibull Distribution using Bayesian Method", International Journal of Engineering and Advanced Technology, Vol.9, No. 1S4, pp.700-705.	Other
250	Jeyadurga, P. and Balamurali, S. (2019), "Designing of Chain Sampling Plan Under Gamma-Poisson Distribution", International Journal of Engineering and Advanced Technology, Vol.9, No. 1S4, pp.711-714.	Other
251	Kannan, G. and Balamurali, S. (2019), "Designing of Repetitive Group Sampling Plan Under the Inverse Gaussian Distribution", International Journal of Engineering and Advanced Technology, Vol.9, No. 1S4, pp .987-991	Other
252	Srividya, V. and Balamurali, S. (2019), "A Comparative Study of Two-Stage Heuristic Hybrid Evolutionary Algorithm for Virtual Machine Migration and Placement in Cloud Bursting", International Journal of Recent Technology and Engineering, Vol.8, No.4S2, pp.430-435.	Other
253	Revathy, R. and Balamurali, S. (2019), "Examination of Sugarcane Yield by Simulating AquaCrop to Overcome the Irrigation Deficiency", International Journal of Recent Technology and Engineering, Vol.8, No.4S2, pp.546-550.	Other
254	Pradeep Kandhasamy, J., Balamurali, S., Arun, M. and GokulNath, S. (2019), "Automated Recognition of Diabetic Retinopathy using Machine Learning Techniques", International Journal of Recent Technology and Engineering, Vol.8, No.4S2, pp.602-606.	Other

255	Revathy, R. and Balamurali, S. (2019),“An Improved Frequent Pattern Mining in Sustainable Learning Practice using Generalized Association Rules”, International Journal of Innovative Technology and Exploring Engineering, Vol.9, No. 2S2, pp. 776-780.	Other
256	Sornalakshmi, M., Balamurali, S. and Venkatesulu, M. (2019), “A Combined Horizontal Parallel Apriori Algorithm and Adaptive Frequent Pattern Growth Algorithm for Big Data Mining”, International Journal of Innovative Technology and Exploring Engineering, Vol.9, No. 2S2, pp. 859-863.	Other
257	Revathy, R., Fathima, A. J., Balamurali, S. and Murugaboopathi, G. (2020), “Developing of a Hybrid Model for Improving the Prediction of Dengue-Human Protein Interaction for Anti-Viral Drug Discovery”, International Journal of Intelligent Information and Database Systems, Vol.13, No.2/3/4, pp.479-490.	Other
258	Sivapragasam, C., Malathy, A., Ishwarya, D., Saravanan, P. and Balamurali, S. (2020),”Modelling the Elements of Flash Flood Hydrograph using Genetic Programming”, Indian Journal of Geo Marine Sciences, Vol. 49, No. 06, pp. 1031-1038.	Other
259	Revathy, R., Murali, P. and Balamurali, S. (2020),”Hadoop Big Data Mining: An Effective MapReduce Tool for Classifying Sugarcane Yield Data”, Plan Archives, Vol.20, No.2, pp.4245-4250.	Other
260	Hussain, J., Balamurali, S. and Aslam, M. (2020),”Design of SkSP-R Plan for Popular Statistical Distributions”, Journal of Modern Applied Statistical Methods, Vol.19, No.1, pp.1-23.	Other
261	Sornalakshmi, M., Balamurali, S., Venkatesulu, M. and Navaneetha Krishnan, M. (2021), "An Efficient Apriori Algorithm for Frequent Pattern Mining Using Mapreduce in Healthcare Data”, Bulletin of Electrical Engineering and Informatics, Vol.10, No.1, pp.390-403.	Other
262	Arun, M., Balamurali, S., Al-Turjman, F. and Lakshmana Kumar, R. (2021),” A lightweight authentication and secure data access between fog and IoT user”, International Journal of Electronic Business, Vol.16, No.1, pp. 77- 87.	Other
263	Mohana Prabha, K., Vidhya Saraswathi, P. and Balamurali, S. (2021), “Tversky Anonymous Key Authentication Based Blum Goldwasser Cryptography for Cloud Data Access Security”, Turkish Online Journal of Qualitative Inquiry, Vol.12, No.5, pp.1257-1271.	Other
264	Revathy, R. Balamurali, S. and Murali, P. (2021) “A Framework of Automated Office Farming with Advanced Sensing Technology for Smart Cities”, Artificial Intelligence Applications for Smart Societies- Recent Advances (Eds.Mohamed Elhoseny, K. Shankar, Mohamed Abdel-Basset), Springer, pp.161-178.	Scopus
265	Kamboj., RathaJeyalakshmi, T., Arasu, P. T., Balamurali, S. and Murugan, A. (2021),”Smart Applications of IoT”, The Smart Cyber Ecosystem for Sustainable Development, (Eds. Pardeep Kumar, Vishal Jain and Vasaki Ponnusamy), Wiley-Scrivener Publishing LLC, pp. 131-151.	Other

266	Jeyadurga, P. and Balamurali, S. (2021),”A New Attribute Sampling Plan for ssuring Weibull Distributed Lifetime Using Neutrosophic Statistical Interval Method”, Decision Making with Neutrosophic Set- Theory and Applications in Knowledge Management, (Eds.Harish Garg), Nova Science Publishers Inc., pp. 91-110.	Other
267	Siva V., Ravikumar, C. P., Arasu, P. T., Yadav, N. N., Murugan, M., Yadav, H. S., Bahadur, S. A. and Balamurali, S. (2021),” Cancer Nanotechnology for Drug Targeting and Delivery Approaches”, Cancer Nanotheranostics- Nanotechnology in the Life Sciences, (Eds. Saravanan M., Barabadi H.), Springer, Cham, pp.53-91, https://doi.org/10.1007/978-3-030-74330-7_3	Other

5.8.2. Sponsored Research (20/20)

S. No	Assessment Year	Number of Projects	Total fund received
1	CAY	1	2275000
1	CAYm1	1	1844000
2	CAYm2	1	3500000
Total		3	7619000

CAY

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)	Duratio n of the project
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1	Demonstration and Popularization of Science and Technology Through Science Exhibition And E-Demonstrations In Madurai, Theni, Tenkasi Districts Of Tamilnadu	Dr.S.Suprakash	DST	Government	2021-22	2275000	9 Months
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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	Determination of Special Purpose Sampling Plans Based on Taguchi Process Capability Index	Dr.S.Balamurali	SERB	Government	2021-23	1844000	3 years

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	Career Perception of SC/ST Students In Institutions of Higher Learning Planning	Dr.S.P.Balakanan	AICTE	Government	2019-20	15 Lakhs	3 years
2	Economic design of quick switching sampling system for resubmitted lots	Dr.S.Balamurali	S A Anandan Spinning Mills and Research Foundation	Non Government	2019-20	Rs. 7.5 lakhs	2 years
3	Enhancement of energy efficiency using a transition state mac protocol for MANET - - Rs. 12,50,000 (Suthendran)	Dr.K.Suthendran	Silamboli Education and Research Trust	Non Government	2019-20	12.5 Lakhs	2 years

1	Design of Electronic lockers with multiple keys using VCS scheme	Dr.K.Suthendran	DST	Government	2018-19	100000	1 year
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5.8.3. Development activities (15/15)**Product developed:**

No	Name of the Product
1	Kissan Haat
2	Smart Soil Testing
3	smart plant watering system
4	Smart Stick For Blind Person
5	Android Shopping Assistant for visually challenged peoples
6	Home Layout Automation
7	Medand
8	Sensing and monitoring incubator baby using IoT
9	E Farm Management
10	E-Ration
11	Hospital management system
12	Jammer
13	Online Admission System
14	Online Entrance Examination System
15	Hostel Booking System

16	Bus Booking System
17	Purchase Automation
18	Online Service Book
19	Air Purity Detection System
20	Android Based Home Control
21	Automatic Fire Detection and Alarm
22	Street Light Control System
23	Accident Alert for Driver by using Face Recognition
24	Website for Schools
25	Smart Gas Booking System
26	Lemon Sanitizer
27	Application for Organic Farming and Fertilizers
28	Water Redeem System for Panchayat Water Tanks
29	Rain Detection and Alarm System
30	Women Safety Security System Device
31	Door Lock System using IoT
32	Obstacle Detector for Visually Challenged
33	Tools For Research Data Of Higher Institute Education

34	Digital Village Welfare Service
35	Corporation Water Monitoring System
36	Weather Based Room Automation System
37	Gas Level Notifier
38	Instruction Detection
39	Food Distribution System
40	Smart Irrigation System For Home Gardening
41	Raise Your Hands For Farmers
42	Vehicle Tracking Using Rfid

Book Publications:

S.No	Name of the Author	Name of the Book	Publisher	ISBN
1	P.Anish Pon yamini and K.Suthendran	VLSI Design	The Charulatha Publishers	978-93-5437-358-9
2	P.Anish Pon yamini and K.Suthendran	Communication Networks	The Charulatha Publishers	978-93-5408-987-9
3	S. P. Balakannan, I. Nagaraju, P. Dileep,	Cloud Computing	Notion Press, Edition: 1, 2022.	9798887834306
4	Dr.S.Dhanasekaran	“Information Security – A Practical Approach”	Sponsored by ISTE (Indian Society for Technical	978-81-89731-24-3

			Education) -WPLP (Working Professional Learning Projects) Bangalore.	
5	Dr.S.Dhanasekaran	Principles of Cloud Computing	Notion Press publisher , Singapore	979- 8885553681.

Ph.D Awarded details:

Name of the PhD Scholar	Name of the Department	Name of the Guide/s	Title of the Thesis	Year of registration of the Scholar	Year of Award of PhD
Mr. D.Franklin Vinod	Information Technology	Dr.V.Vasudevan	A privacy based deep learning algorithm for big data analytics	2015	2018
Mrs. V.Baby Shalini	Information Technology	Dr. V.Vasudevan	On Energy Efficient Wireless Sensor Networks	2013	2019
Mr. G. Prabu Kanna	Information Technology	Dr.V.Vasudevan	Enrichment of Security and Privacy in Cloud over Outsourced Data	2014	2019
M.Margatha Rajan	Information Technology	Dr.S.P.Balakannan	Network Survivability Enhancement	2013	2019

			using Multicast Routing Protocol for Mobile Adhoc Networ		
Mr.Abinash	Information Technology	Dr.V.Vasudevan	Gene Data For Cancer Classification Uisng Hadoop Framework	2016	2020
Mr.S.Suprakash	Information Technology	Dr.S.P.Balakannan	Energy Efficient Resource Utilization in Cloud for Green Environment	2013	2020
Mr. S. Hariharasitaraman	Information Technology	Dr.S.P.Balakannan	Analysis of Data Integrity Schemes in Cloud	2013	2020
Mr.C.Bala Subramanian	Information Technology	Dr.S.P.Balakannan	Effective Localization In Wireless Sensor Network Using Trajectory Planning Of Mobile Anchors	2013	2020
Mr.Sreeram balasubramaniam	Information Technology	Dr.Seshadri Srineevasan	Design and Verification of Time constraints in Cyber Physical Systems	2014	2021

Ph.D Guidance details:

S.No	Name of the faculty	Ph.D Guidance in progress
1	Dr.S.Dhanasekaran	6
2	Dr.M.Venkatesulu	4
3	Dr.S.Balamurali	8
4	Dr.K.Suthendran	7
5	Dr.S.P.Balakannan	5
6	Dr.R.Sundarrajan	5
7	Dr.V.Babyshalini	5

Industrial Design Details:

S.No	Name of the Author	Patent Title	Patent Number	Status
1	P.Jayakumar and K.Suthendran	Foldable Shelter for Concealed Urination	296854	Granted
2	K.Suthendran and P.Jayakumar	Lizard Trapper and Killer	320088-001	Granted
3	K.Suthendran and P.Jayakumar	Rear Side Light Activated Signaling Device for Vehicle	316793-001	Granted
4	P.Jayakumar and K.Suthendran	Portable Shelter for Car	325311-001	Granted

Project Laboratory (20):

Name of the Laboratory	Equipment Available	Quantity	Utilization
Capstone Design Center	Lenovo Intel Core 2 Duo 2.4Ghz Processor, 160GB Hard Disk, 3GB RAM, 19" TFT Color Monitor) HCL, Intel Core 2 Duo 2.93Ghz Processor, 250GB Hard Disk, 3GB RAM, 18.5" LCD Monitor	36	35 Hours / Week

	Raspberry Pi	10	
	Aurdino	10	
	Sensors	10	

Capstone Design Center laboratory is used for Major Project, Mini Projects, and Community Service projects by the students. The laboratory is available throughout the day for doing the projects. During the project period the laboratory is exclusively assigned for the project students. The laboratory hours are extended beyond working hours with prior intimation to the laboratory in charge.

Cyber Security Laboratory

This Laboratory focuses on building Science and Engineering foundations for Cyber Security and Forensics. Today, Research and Development explore to make systems more secure. The Cyber Defender Programme creates a pipeline of qualified candidates in Cyber Security and Forensics to address homeland security needs. This Laboratory enables and mentors students to acquire practical experience in computer systems, network operations and information protection to encounter cyber threats.

Some of the major software used for the laboratory is

Ultimate forensic Bundle, Paraben corporation

Encase forensic Edition Version 7 software

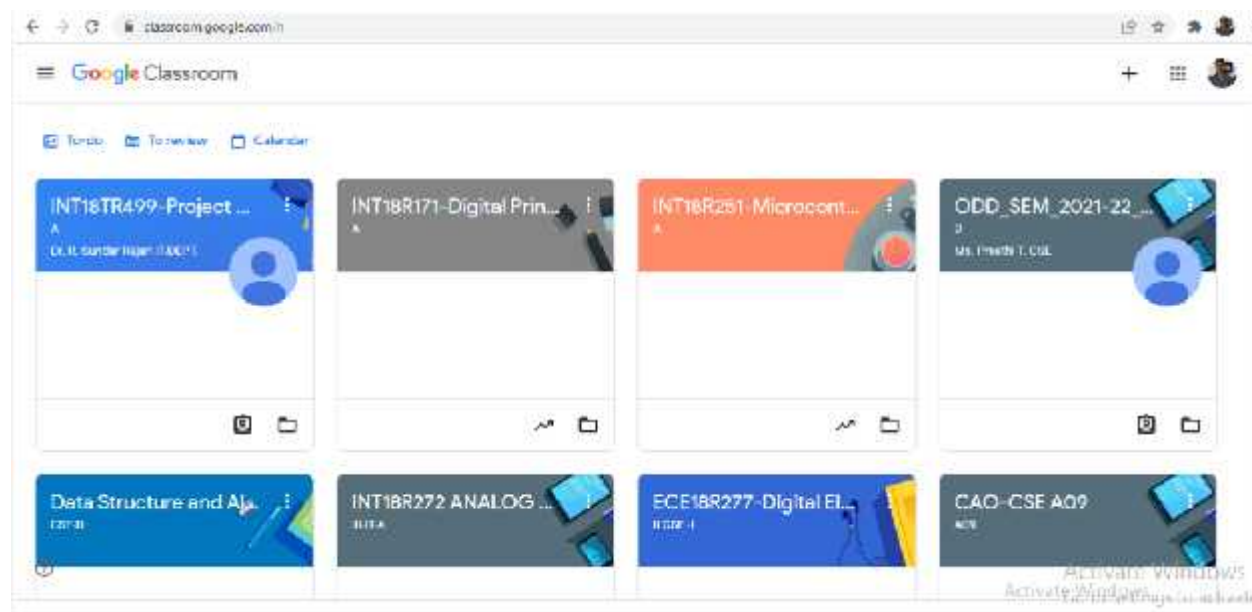
Encase Portable Computer Forensic Software.

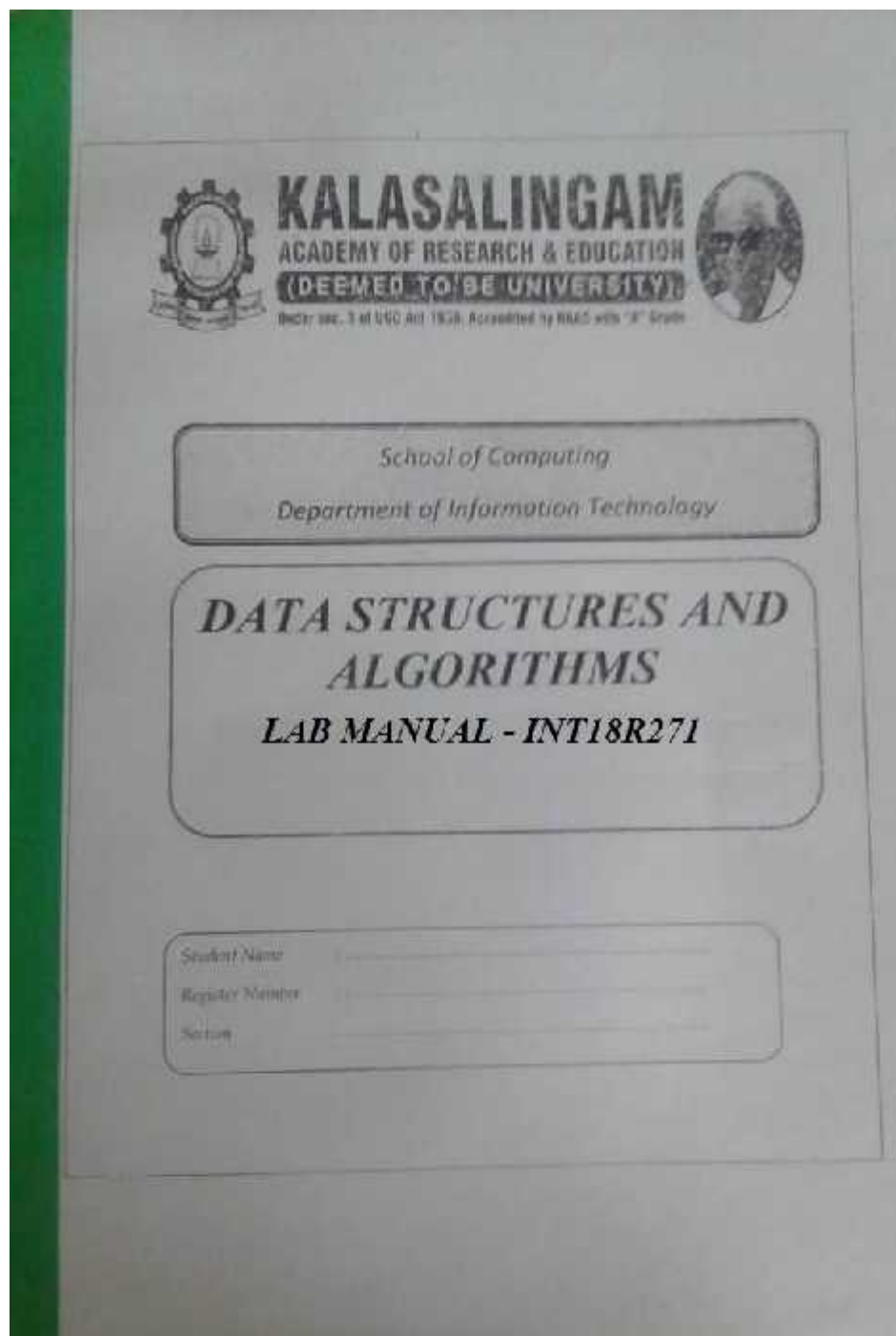
Win Hex Software

S . N	Name of the Research Lab	No of Students per - batch	Name of the Important Equipment	Weekly Utilization Status	Name of the technical staff	Designation	Qualification	Overall Ambience
1	Cyber security and Forensics Lab (Shared with CSE)	30 / Batch	Intel Core i7-9700KF, 8 x 3.6 GHz DDR-4, 2 x 8 GB 500 GB GeForce RTX 2080, 8 GB	14 Hours	Mr. C.Chidambara m	Laboratory Technician	Diploma	Good


Instructional Materials:

S.No	Teaching Methodology	Instructional Materials
1	Class Room and Chalk Board	Course Notes
		Online Videos
		Power Point presentations
		Assignments
		Tutorials
		Question Bank
		Model Question paper
		Working Models
2	Flipped Class Room	Course Notes
		Video lectures by faculty
		Lecture Presentations
3	Google Classroom	Assignments
		Quiz
		Online Comments

Instructional Materials: (Classroom)

Laboratory Manual:

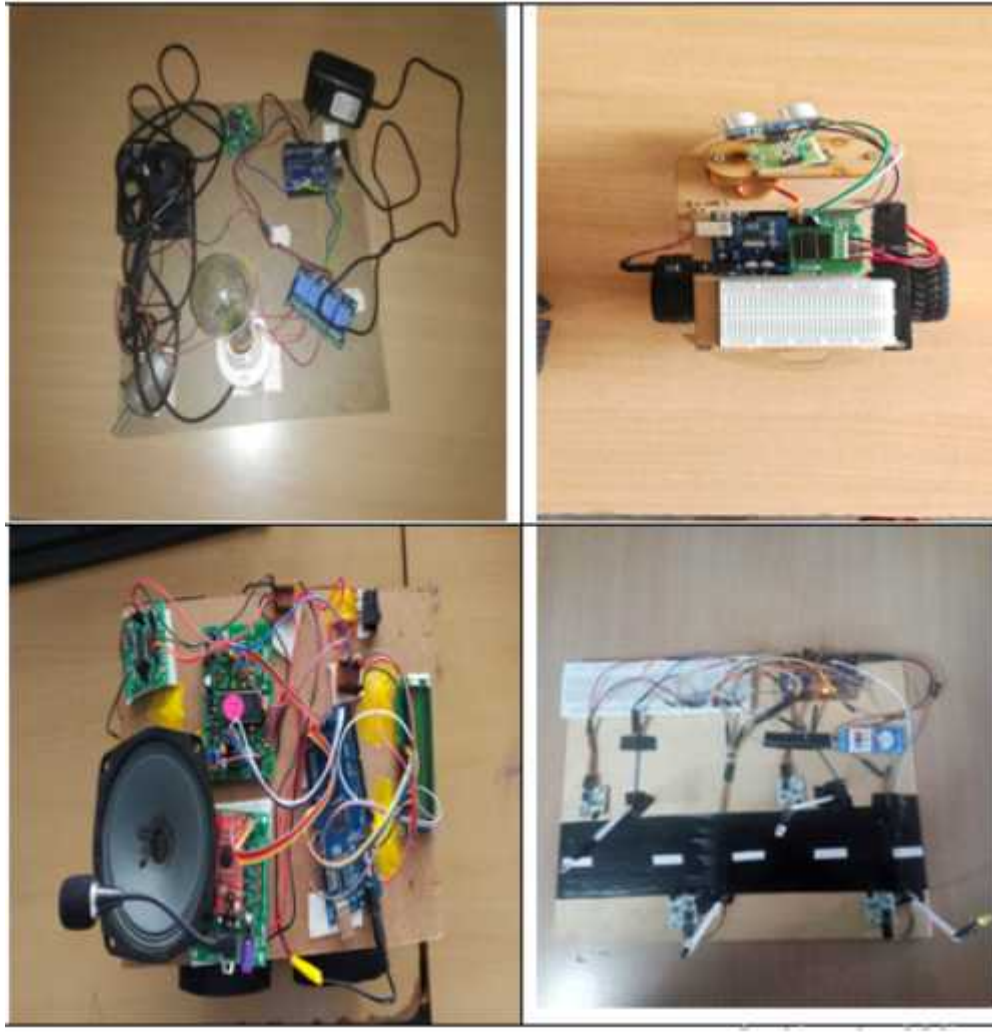
The image shows the front cover of a laboratory manual. At the top left is the Kalasalingam University logo, a gear with a lamp inside. To its right is the text "KALASALINGAM ACADEMY OF RESEARCH & EDUCATION (DEEMED TO BE UNIVERSITY)" and a smaller line "Under sec. 3 of UGC Act 1956. Accredited by NAAC with 'B' Grade". To the right of this text is a circular portrait of a man. Below this header section, there are two rounded rectangular boxes. The first box contains the text "School of Computing" and "Department of Information Technology". The second box contains the title "DATA STRUCTURES AND ALGORITHMS" in large, bold, italicized letters, followed by "LAB MANUAL - INT18R271" in smaller, bold, italicized letters. At the bottom, there is a third rounded rectangular box containing three lines for student information: "Student Name", "Register Number", and "Section", each followed by a horizontal line for writing.

 **KALASALINGAM**
ACADEMY OF RESEARCH & EDUCATION
(DEEMED TO BE UNIVERSITY)
Under sec. 3 of UGC Act 1956. Accredited by NAAC with 'B' Grade

School of Computing
Department of Information Technology

***DATA STRUCTURES AND
ALGORITHMS***
LAB MANUAL - INT18R271

Student Name _____
Register Number _____
Section _____

Working Models developed by students of Information Technology:

5.8.4. Consultancy (from Industry) (20/20)

Sl.No	Name of the consultant	Name of consultancy project	Consulting/Sponsoring agency	Year	Revenue generated (INR in Lakhs)
1	D. PREM RAJA	Group insurance Scheme Automation Software	Ministry of Textiles, Government of India	2019	60000 purely on honorary basis
2	Dr.S.P.Balakannan and Mr.S.Suprakash	CCTV servicing and Monitoring	Cooperative Bank- Virudhunagr	2016	12000
3	Maragatharajan M	Website design and hosting maintenance	Champs & Stars technical services, Dubai	2017	15000
4	Mrs.V.Babyshalini	Website design	Jayasri Polymers	2018	5000
5	Mr. D. Prem Raja	Assistive technology for health care management professionals	Anand Techverce	2017-2018	750000
6	Mr. D. Prem Raja	Image processing and identification of crimes in ATM vestibules	Karur Vysya Bank	2017-2018	400000
7	Dr. S. P. Balakannan	Enhancement of security in payment gateways	Anand Vendors	2017-2018	160000
8	Mr. S. Suprakash	Benefits of mechanisation of a small scale health care manufacturing organisation	Modern Surgicals	2017-2018	150000

9	Dr. S. P. Balakannan	Development for payment gateway - application and mobile development	Anand Vendors	2019-2020	2000000
10	Mr. D. Prem Raja	Development of an integrated management system for healthcare service providers	Anand Techverce	2019-2020	750000
11	Mr. S. Suprakash	Mechanisation of the business processes of a traditional family run organisation	Modern Surgicals	2020-2021	350000
12	Dr. S. P. Balakannan	An improved system of skip-lot acceptance sampling plans for highway construction and materials	Elite Construction and Service	2018-2019	300000
13	Dr. K. Suthendran	Automating CRM	Choza Homes, Chennai	2018-2019	35000
14	Dr. K. Suthendran	Reviews and Ratings (Ecommerce)	CK Fortunes, IT Ventures, Chennai	2019 - 2020	29500
15	Dr.K.Suthendran	Machine learning based soft biometrics for enhanced keystroke recognition system	Alkyl Amines Chemicals Ltd.	2019 - 2020	400000
Total					5416500

(Provide a list with Project Title, Funding Agency, Amount and Duration)

Funding Amount (Cumulative during CAYm1, CAYm2 and CAYm3):

Amount >10 Lacs – 20 Marks, Amount <10 and > 8 Lakh – 15 Marks,

Amount < 8 and > 6 Lakh – 10 Marks,

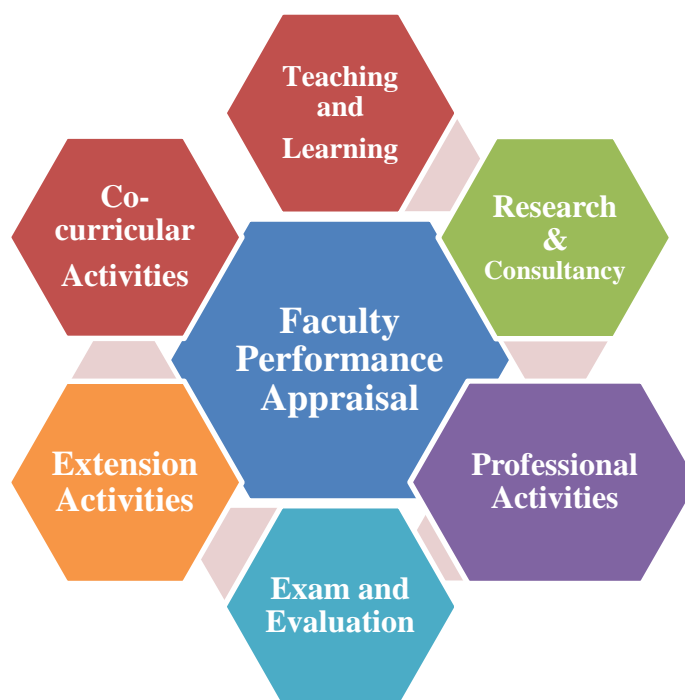
Amount < 6 and > 4 Lakh – 5 Marks,

Amount < 4 and > 2 Lakh – 2 Marks, Amount < 2 Lakh – 0 Mark

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 related activities, Research and consultancy related contributions.



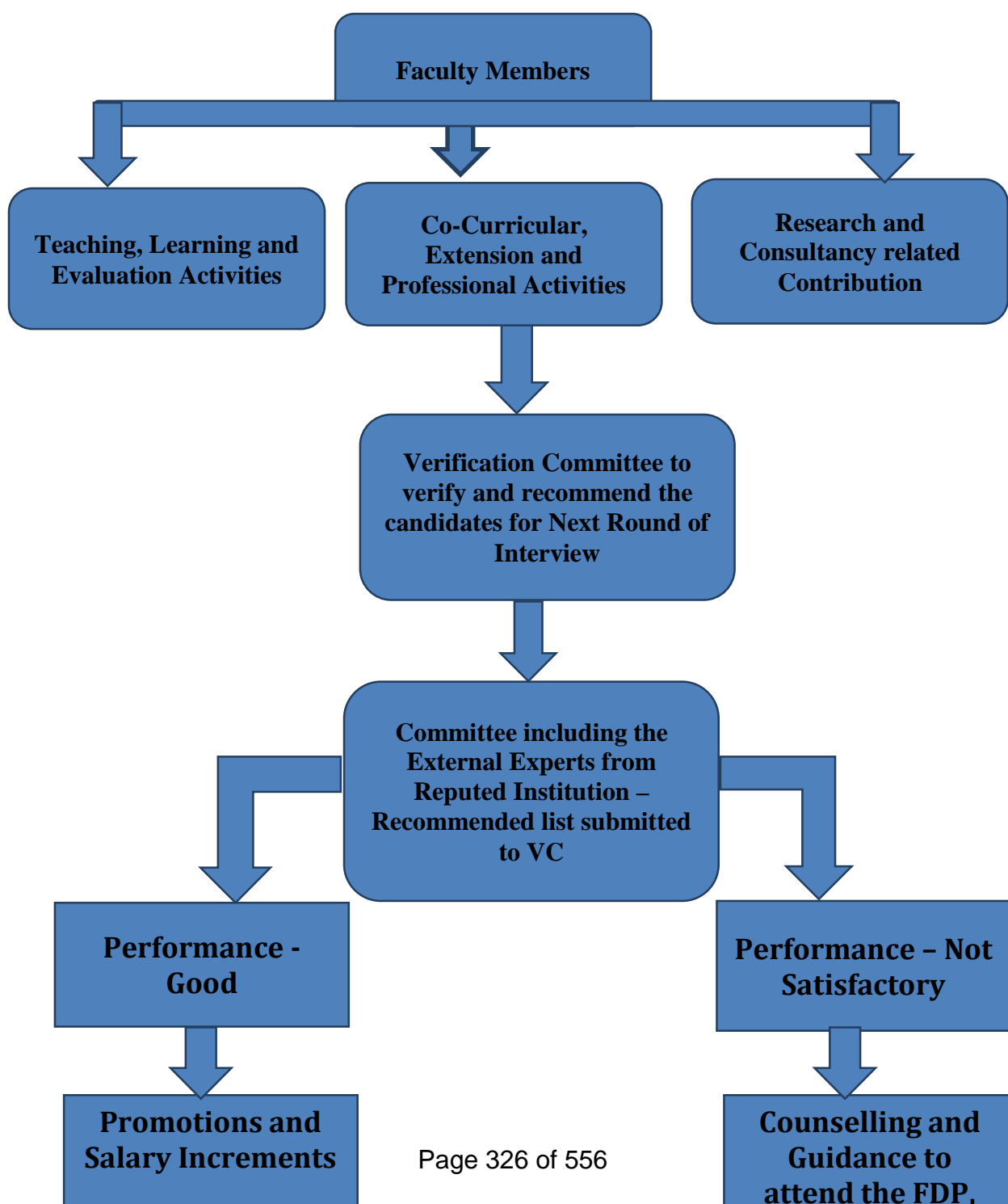
Faculty Performance Appraisal

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 emphasizes on Innovative teaching learning methodologies and assessments that can be used by the faculty in imparting knowledge/Skillsto 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 ProfessionalActivities:

- Faculty's interaction with outside world can be measured by looking into parameters like Orientation Course /Refresher Courses/ Research Methodology/Workshops/ Syllabus Up-gradation 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.



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.

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
1	Mr.L.Sivanandan	B.E.,	Project Guidance
2	Mr. Rajendran Subramanian	B.E.,	Community service Project Guidance
3	Mr.A. Parthasarathy	B.E.,	Course Delivery
4	Mr. C. Jothi Vignesh	B.Tech	Project Guidance
5	Mr A. Dinesh,	M.Tech.,	Community service Project Guidance
6	Mr. C. Johnny Alex	B.tech.,	Course Delivery
7	Mr.Kumar	Ph.D	Research Interaction
8	Mr.Sridhar	M.Tech	Course Delivery

CRITERION 6	FACILITIES AND TECHNICAL SUPPORT	80
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6.1. Adequate and well equipped laboratories, and Technical Man power

(A). Adequate and well equipped laboratories (25 Marks)

Department of Information Technology has well established laboratories with all necessary hardware and software catering the needs of the students. To enrich practical knowledge among students, the course curriculum is mapped to laboratories with creative programs / exercises. All the computers in the laboratory is connected with high speed internet with a total bandwidth of 2Gbps. Department has sufficient computers with a computer to student ratio of 1:2. Apart from Microsoft, Matlab software licenses, open source software are highly encouraged in the laboratories. The department is equipped with six physical laboratories namely,

S.No	Name of the laboratory
1	Multimedia & Computer Graphics Laboratory
2	Operating Systems Laboratory
3	Network Laboratory
4	Communication Systems Laboratory
5	Microprocessors & Microcontrollers Laboratory
6	Database Systems Laboratory
7	Open source Technology Laboratory
8	Capstone Design Centre
9	Programming Language Lab – I (Shared with CSE)
10	Cyber security and Forensics Lab (Shared with CSE)

Also, the department owns a virtual laboratory for programming courses like C, C++, Python and Java which allows the students an anywhere, any device access to the laboratory environment.

S.No	Name of the laboratory
11	Virtual Laboratory for Programming languages

Sl. No	Name of the Laboratory	No of Students per batch	Name of the Important Equipment	Weekly Utilization Status	Technical Manpower Support			Overall Ambience
					Name of the technical staff	Designation	Qualification	
1	Multimedia & Computer Graphics Laboratory	30 / Batch	HP Proliant Server ML10-GFN9, Intel Xeon Processor, 32GB Memory, HP, Intel Core i5-9400 CPU 2.90GHz Processor, 1 TB HDD, 16GB RAM, 19.5" Monitor HCL, Intel Core 2 Duo 2.93Ghz Processor, 250GB Hard Disk, 3GB RAM, 18.5" LCD Monitor	14 hours	Ms. A.Mahalakshmi	Laboratory Technician	MCA	Good
2	Operating Systems Laboratory	30 / Batch	HP, Intel Core i5-9400 CPU 2.90GHz Processor, 1 TB HDD, 16GB RAM, 19.5" Monitor HCL, Intel Core 2 Duo 2.93Ghz Processor, 250GB Hard Disk, 3GB RAM, 18.5" LCD Monitor	14 hours	Ms. A.Mahalakshmi	Laboratory Technician	MCA	Good
3	Network Laboratory	30 / Batch	HP Proliant Server ML10-GFN9, Intel Xeon Processor, 8 GB Memory, Lenovo Intel Core 2 Duo 2.4Ghz Processor, 160GB Hard Disk, 3GB RAM, 19" TFT Color Monitor	14 hours	Ms. M. Muneeswari	Laboratory Technician	B.E.	Good
4.	Communication Systems Laboratory	30 / Batch	25MHZ Digital Storage Oscilloscope 30MHZ Dual Channel Oscilloscope Linear IC Trainer Kit -002 Dual DC Power Supply 10 MHZ Function Pulse Generator	14 Hours / Week / alternate semesters	Ms. S.Rajeshshree	Laboratory Technician	B.E.	Good

			Amplitude Modulation Transmitter & Amplitude Demodulation Receiver Kit (With mic and head phone) Frequency Modulation Transmitter & Frequency Demodulation Receiver Kit (With mic and head phone) Digital Trainer kit					
5	Microprocessors & Microcontrollers Laboratory	30 / Batch	8085 Micro Processor Trainer kit 8051 Micro Controller Trainer kit 8255 Interface board 8251/8253 Interface Board 8279 Keyboard /Display Interface Board 8086 Micro Processor Trainer kit Embedded Trainer kit Stepper Motor Controller Traffic Light Controller Raspberry Pi Kit Arduino Kit	14 Hours / Week / alternate semesters	Ms. S.Rajeshshree	Laboratory Technician	B.E.	Good
6	Database Systems Laboratory	30 / Batch	Lenovo, Intel Core i5-9400 CPU 2.90GHz Processor, 1 TB HDD, 16GB RAM, 19.5" Monitor	14 Hours	Mrs.S.Hemalatha	Laboratory Technician	DECE	Good
7	Open source Technology Laboratory	30 / Batch	Lenovo, Intel Core i5-9400 CPU 2.90GHz Processor, 1 TB HDD, 16GB RAM, 19.5" Monitor	14 Hours	Ms. Akhila	Laboratory Technician	B.Tech	Good
8	Capstone Design Centre	30 / Batch	Intel Core i5 (4590s), 8GB Memory, 1TB HDD	14 Hours	Mr. M Ashok Kumar	Laboratory Technician	M.Sc. Computer Science	Good
9	Programming Language Lab – I (Shared with CSE)	30 / Batch	Acer-Veriton M200-H81 (i5), Intel Core i54570 4th Generation processor, 8gb DDR3 RAM, 1TB Sata Hard disk, 21.5" LCD HD monitor	14 Hours	Mr. R. Sudhakar	Laboratory Technician	BCA	Good

10	Cyber security and Forensics Lab (Shared with CSE)	30 / Batch	Intel Core i7-9700KF, 8 x 3.6 GHz DDR-4, 2 x 8 GB 500 GB GeForce RTX 2080, 8 GB	14 Hours	Mr. C.Chidambaram	Laboratory Technician	Diploma	Good
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(B). Availability of adequate and qualified technical supporting staff (15 marks)

S. No	Name of Technical Staff	Designation	Exclusive / Shared work	Qualification	Responsibility
1	Ms. A.Mahalakshmi	Laboratory Technician	Exclusive	MCA	Multimedia & Computer Graphics Laboratory
2	Ms. A.Mahalakshmi	Laboratory Technician	Shared	MCA	Operating Systems Laboratory
3	Ms. M. Muneeswari	Laboratory Technician	Exclusive	B.E.	Network Laboratory
4	Ms. S.Rajeshshree	Laboratory Technician	Exclusive	B.E.	Communication Systems Laboratory
5	Ms. S.Rajeshshree	Laboratory Technician	Shared	B.E.	Microprocessors & Microcontrollers Laboratory
6	Mrs.S.Hemalatha	Laboratory Technician	Exclusive	DECE	Database Systems Laboratory
7	Ms. Akhila	Laboratory Technician	Exclusive	B.Tech	Open source Technology Laboratory
8	Mr. M Ashok Kumar	Laboratory Technician	Exclusive	B.Tech.	Capstone Design Centre
9	Mr. R. Sudhakar	Laboratory Technician	Exclusive	BCA	Programming Language Lab – I (Shared with CSE)

10	Mr. C.Chidambaram	Laboratory Technician	Exclusive	Diploma	Cyber security and Forensics Lab (Shared with CSE)
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Teaching faculty in charge for the laboratory:

S.No	Name of the faculty	Designation	Qualification	Name of the Laboratory
1	Dr.S P Balakannan	Assistant Professor	Ph.D.	Multimedia & Computer Graphics Laboratory
2	Mr.D. Premraja	Associate Professor	Ph.D.	Operating Systems Laboratory
3	Dr. S. Suprakash	Assistant Professor	Ph.D.	Network Laboratory
4	Dr. V. Baby Shalini	Assistant Professor	M.Tech	Communication Systems Laboratory
5	Mr.S.Kailasam	Assistant Professor	Ph.D.	Microprocessors & Microcontrollers Laboratory
6	Mr. Ganapathy Sundaram	Assistant Professor	M.E.	Database Systems Laboratory
7	Dr. K Suthendran	Professor	PhD	Open source Technology Laboratory
8	Dr. R Sundarrajan	Assistant Professor	M.E.	Capstone Design Centre

Physical details of the Laboratory

Lab Description	Exclusive use / Shared	Space (Sq.m.)	No of students per Experiment (Batch size)	Number of Equipment	Quality of Instruments	Laboratory Manuals
Multimedia & Computer Graphics Laboratory	Exclusive use	66 m²	30 / Batch	30	Good	Available
Operating Systems Laboratory	Exclusive use	66 m²	30 / Batch	30	Good	Available
Network Laboratory	Exclusive use	133 m²	30 / Batch	40	Good	Available
Communication Systems Laboratory	Exclusive use	66 m²	30 / Batch	10/ Major Kit	Good	Available

Microprocessors & Microcontrollers Laboratory	Exclusive use	66 m²	30 / Batch	10/ Major Kit	Good	Available
Database Systems Laboratory	Exclusive use	66 m²	30 / Batch	30	Good	Available
Open source Technology Laboratory	Exclusive use	66 m²	30 / Batch	30	Good	Available
Capstone Design Centre	Exclusive use	66 m²	30 / Batch	30	Good	Available

Laboratory Details

Multimedia & Computer Graphics Laboratory

This laboratory is equipped with computers, accommodating 30 students per batch. Different academic laboratory like Computer Architecture, Database, and Web Design are carried out in this laboratory.

The Computers are installed with Microsoft Windows. As an open source initiate the laboratory is using the following list of software for laboratory practice.

- Icarus Verilog
- Orwell Dev-C++
- Oracle MySQL
- Visual Studio Community Edition (Free) for windows and web development

Operating Systems Laboratory

Operating Systems Laboratory is equipped with computers, accommodating 30 students per batch. Academic laboratory like operating systems, software engineering are carried out here.

The laboratory is installed with Microsoft Windows and Visual Studio.NET Community Edition. The following open source software are installed for the laboratory practice.

- Orwell Dev-C++
- Open source Virtual Box is used for virtualization environments

Network Laboratory

Laboratory is equipped with computers that can accommodate 30 students per batch. Network Simulations and Digital Signal Processing Simulations are carried out in this laboratory.

All the Systems are Linux installed with following software

- NS2
- Matlab
- Inbuilt gcc for c/c++ programming

Programming Languages Laboratory

Laboratory is equipped with computers accommodating 30 students per batch. Programming Languages are practiced here.

Different language compilers are used as per the requirements.

Communication Systems Laboratory

This laboratory is fully equipped with major equipment like Spectrum Analyser, Phase Locked Loop, Frequency Synthesizer Kit, Pulse Code Modulation kit, Pulse Code De-modulation kit, Line- Code Encoding kit, Line –code Decoding kit, Cathode Ray Oscilloscope, Function Generator, Digital Communication trainer kit for doing academic experiments.

Microprocessors & Microcontrollers Laboratory

This Laboratory is completely sophisticated by all basic and latest equipment for doing all experiments which will meet the Syllabus requirement, project and research activity. Also Micro Processor and Micro Controllers 8085, 8086, 8051 and other controllers are available.

Cyber Security Laboratory

This Laboratory focuses on building Science and Engineering foundations for Cyber Security and Forensics. Today, Research and Development explore to make systems more secure. The Cyber Defender Programme creates a pipeline of qualified candidates in Cyber Security and Forensics to address homeland security needs. This Laboratory enables and mentors students to acquire practical experience in computer systems, network operations and information protection to encounter cyber threats.

Some of the major software used for the laboratory are

- Ultimate forensic Bundle, Paraben corporation
- Encase forensic Edition Version 7 software
- Encase Portable Computer Forensic Software.
- Win Hex Software

About ITVLAB

Virtual Laboratory for core programming subjects was started to provide easy and anywhere access to C, C++, Java, Python and SQL based academic courses. The lack of hardware support and physical distancing has made students struggle in learning hands-on laboratory courses. Keeping this in mind, the provision is made to take this learning objective online. Since the least compactable device that the students can use is a Smart Mobile phone with internet, the learning platform is designed for device portability. The same platform can be accessed from Mobile, Tablet or Personal Computers/Laptops. C, C++, Java and Python compilers are linked with this platform where students can do laboratory exercises for the courses which requires these compilers. The server is provided with enough space to accommodate all the programs done by the students. They have the access to view their history of programs and the outcome. The platform not only facilitate compilation, but also the same can be used

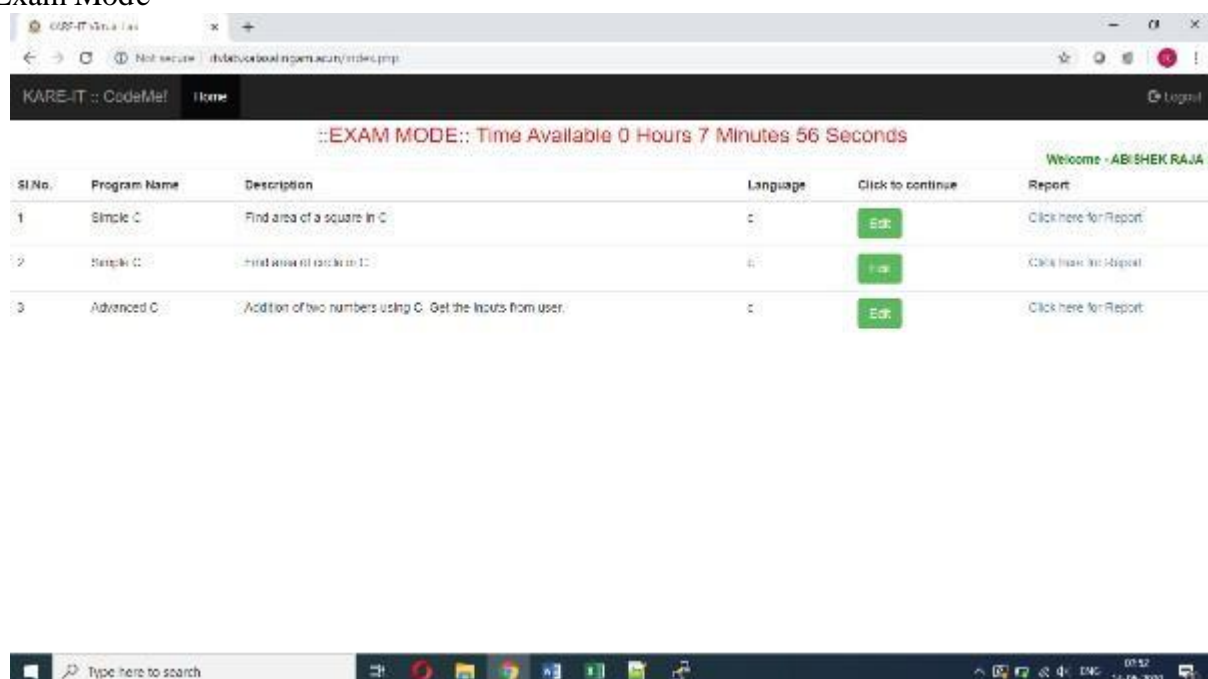
for conducting academic examinations. Two modes of operation is available in this platform. The first, the students normal practice mode where students will do their exercises. This mode is not restricted to any time limit or not locked for copy/paste. The second mode is examination mode where students will be assigned random questions uploaded by the instructors. The exam time can be configured, where students have to login on the particular time and the session will automatically close once the exam time exceed. During the examination, students are not allowed to copy/paste any content to the platform to ensure the genuineness of examination. The individual reports can be downloaded by the instructors. Link of the platform: <http://itvlab.kalasalingam.ac.in>

Virtual Laboratory – C, C++, Java, Python, SQL

Screenshots of the Virtual Laboratory:
Course Window

Sl.No.	Program Name	Description	Language	Click to continue	Report
1	test	test Py	py	Edit	Click here for Report
2	test2	Test prog	py	Edit	Click here for Report
3	code	addition	c	Edit	Click here for Report

Exam Mode

**.List of laboratory courses that can be run on ITVLAB**

CSE18R171	Programming for Problem Solving
CSE18R174	Computer Architecture and Organization
CSE18R273	Operating Systems
INT18R271	Data Structures and Algorithms
INT18R273	Object Oriented Programming
INT18R351	System Software
INT18R352	Design and Analysis of Algorithms
INT18R360	Data Analysis Using Python
INT18R371	Database Management Systems

Laboratory Course mapping

The laboratories are mapped with the following courses in different semester. Since some of the courses follow prerequisite to do the course and also the choice to select is course is left with the students, the courses are not assigned with any particular semester.

Laboratory	Multimedia & Computer Graphics Laboratory		
1	CSE18R174	Computer Architecture and Organization	3 Hours / Batch (30 Students)
2	INT18R399	Community Service Project	3 Hours / Batch (30 Students)
Laboratory	Operating Systems Laboratory		
1	CSE18R273	Operating Systems	3 Hours / Batch (30 Students)

2	INT18R359	Software Engineering	3 Hours / Batch (30 Students)
Laboratory	Network Laboratory		
1	CSE18R371	Computer Networks	3 Hours / Batch (30 Students)
2	INT18R274	Principles of Digital Signal Processing	3 Hours / Batch (30 Students)
Laboratory	Open source Technology Laboratory		
1	INT18R271	Data Structures and Algorithms	3 Hours / Batch (30 Students)
2	INT18R273	Object Oriented Programming	3 Hours / Batch (30 Students)
Laboratory	Communication Systems Laboratory		
1	INT18R272	Analog and Digital Communication	3 Hours / Batch (30 Students)
2	INT18R171	Digital Principles and System Design	3 Hours / Batch (30 Students)
Laboratory	Microprocessors & Microcontrollers Laboratory		
1	INT18R251	Microcontrollers & Embedded Systems	3 Hours / Batch (30 Students)
Laboratory	Database Systems Laboratory		
1	INT18R371	Database Management Systems	3 Hours / Batch (30 Students)

Server Details:

Sl. No	System Details	Type	Purpose	Year of Purchase	Count
1	HP Proliant Server ML10- GFN9, Intel Xeon Processor	Server Intel Xeon Processor, 32GB	ITVLAB + Web Applications	2017	1
2	HP Proliant Server ML10- GFN9, Intel Xeon Processor	Server Intel Xeon Processor, 8 GB	SQL Server	2017	1
Total Systems					2

- **Availability of computing facilities in the department**

- Sufficient numbers of computers (136) with a system to student ratio of 1:2 is available in the laboratories.
- Laboratories can be utilized even after laboratory hours based on the requests from the students.
- Even though we motivate the student to go with a paperless green campus, Laser Printer facility is available for every 60 systems where students can take their printouts if necessary.
- All systems are connected with 100 Mbps LAN. 24/7 internet facility is available to all students.
- As a part of security policy maintained in the campus, each student is provided with login credentials to access internet.
- Also every student is provided with email account in their register number which can be accessed from anywhere.
- A total 2 Gbps internet connectivity is shared in the campus through LAN and WiFi hotspots placed in different places of the campus.
- UPS connected with all systems and Power Backup facility

- **Availability of laboratories with technical support during and beyond working hours.**

The laboratory facilities are open for the students and faculties during and beyond working hours. The laboratory timings are extended for four hours per week as mentioned in laboratory time table.

- **Open source Initiative**

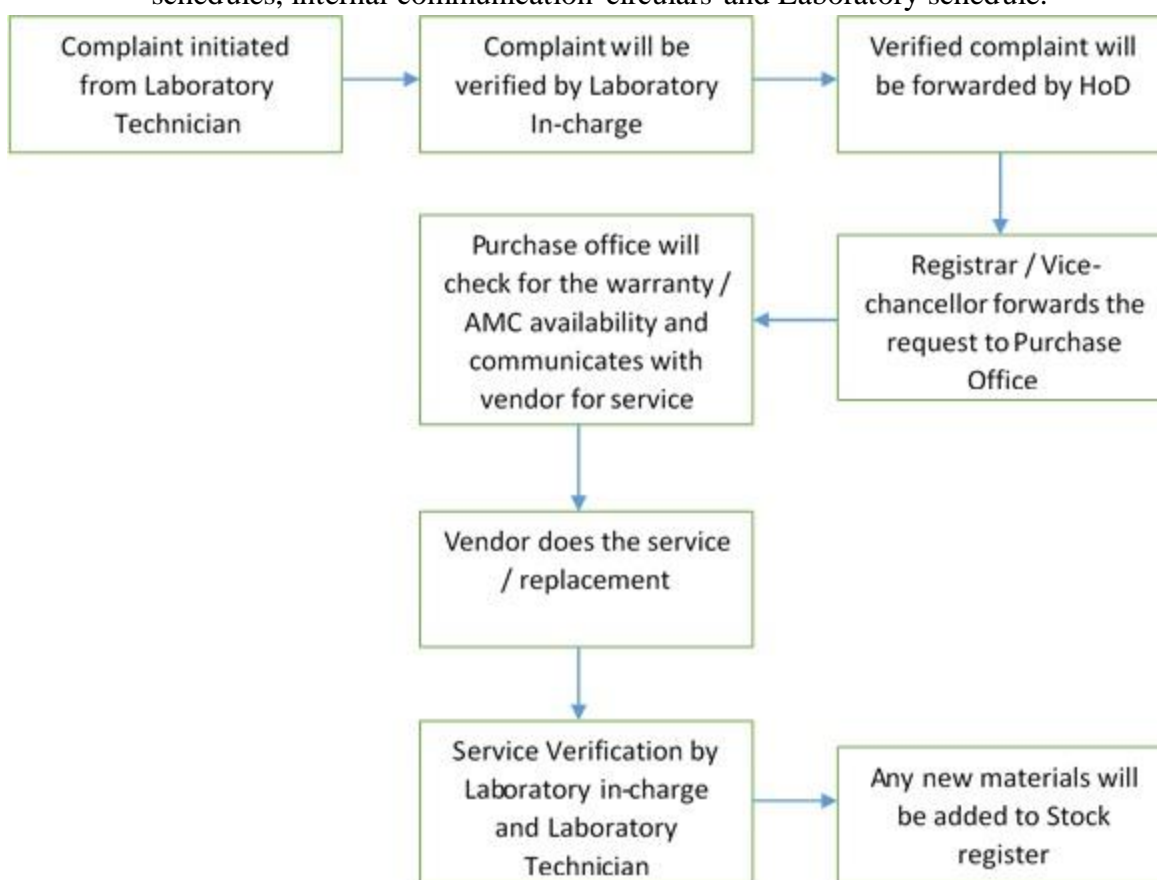
- Linux flavor operating systems are mostly used in the applicable laboratories
- Open source Virtual Box is used for virtualization environments
- MySql and oracle powered database laboratories
- Visual Studio Community Edition (Free) for windows and web development
- Ethereum and Hyperledger for Blockchain
- TensorFlow for AI and Machine Learning

6.2. Laboratories Maintenance and Overall ambiance (10)

All laboratories have dedicated and well trained technical supporting staff assisted with laboratory incharges. The department committee headed by the head of the department and the respective laboratory incharges oversees the maintenance and overall ambiance of laboratories. All the maintenance is done periodically. Minor issues are carried out by the laboratory technician / in house technical team and major issues are outsourced.

Maintenance of Laboratory Equipment

- Weekly checkup and maintenance is done by the laboratory technicians and the same is recorded in the weekly maintenance register. This is maintained for all the laboratories.
- Regular checkup of equipment is carried out at the end of every semester.
- Maintenance of computers is taken care of by technicians of the department. They are trained for the same.
- Major repairs are outsourced by following the procedure of the institute.
- Notice board for display of essential information regarding University exam schedules, internal communication circulars and Laboratory schedule.



Overall Ambience

All laboratories are equipped with state of art equipment to meet the requirements of the curriculum.

- All laboratories have sufficient natural light, good ventilation with tubes and fan arrangement and AC.
- Overall ambience of laboratories is good.
- All the necessary equipment / systems are available in the laboratories for conducting all the experiments listed in the curriculum.
- The respective lab technicians are taking utmost care for maintaining their lab equipment / systems.
- Each laboratory has at least one faculty to oversee that the laboratory equipment in that lab is properly supporting the course laboratory components served in such labs. The faculty in charge is responsible to provide the details for additional purchase/ replacement and/or 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 electrical maintenance section take care of operation and maintenance of power generators meant for each block to ensure availability of power supply at the time of power failure.
- Electrical system of the department is maintained by the electrical section.
- Firefighting equipment are kept/ placed at appropriate place to ensure safety of the stakeholders.
- Unnecessary movement of students to and from the department is monitored and approach towards department by any stranger / parent/ public is restricted by security of the department.
- Air Conditioner and Fans are provided for effective air circulations in all laboratories.
- Glass windows for natural lighting
- Adequate space for accommodating students, furniture and movement of the students
- Wide veranda for enabling smooth and fast movement of students.

Operating System and Software Packages:

Following licensed version of operating systems and application software is used in laboratories matching the curriculum requirement.

- Microsoft®Windows®ServerCAL
- Microsoft®WindowsServer
- Microsoft®VisualStudio
- Microsoft®SQLServer
- Microsoft®SQLCAL
- Microsoft®IntuneOpenFaculty

- Microsoft@MSImagineAcademy
- Microsoft@WINEDUperDVC
- Microsoft@O365ProPlusOpenf
- MATLAB

As an open source initiative, wherever possible open source operating systems and application packages are utilized in laboratories. The following the list of open source packages used in the laboratories.

- Linux flavor operating systems are mostly used in the applicable laboratories
- Open source Virtual Box is used for virtualization environments
- MySql and oracle powered database laboratories
- Visual Studio Community Edition (Free) for windows and web development
- Ethereum and Hyperledger for Blockchain
- TensorFlow for AI and Machine Learning
- Icarus Verilog
- Orwell Dev-C++
- NetBeans, Eclipse IDE

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.

Multimedia & Computer Graphics Laboratory**Operating Systems****Network Laboratory**



Communication Systems Laboratory



Microprocessors & Microcontrollers Laboratory



Capstone Design Centre**6.3. Safety Measures in the Laboratory (10)**

- **Do's and Don'ts of laboratory is displayed in individual laboratory**
- **Safety Measures are displayed in all laboratories**
- **All laboratories are equipped with Fire extinguishers**
- **First aid boxes are available in all laboratories**
- **Emergency Ambulance and Health Care Facility is available. Contact numbers are displayed in all Laboratories for emergency purpose.**

COMPUTER LAB RULES

- 1 GET PERMISSION TO ENTER LABS**
ASK A MEMBER OF STAFF BEFORE YOU GO IN.
- 2 KEEP THE ROOM TIDY**
USE RECYCLING BINS, PUT BAGS UNDER DESKS, TUCK YOUR DESK AND TUCK CHAIRS IN.
- 3 TURN SCREEN OFF WHEN ASKED**
DO IT IMMEDIATELY, THE FIRST TIME OF ASKING.
- 4 RESPECT THE COMPUTERS**
DO NOT MOVE/UNPLUG/TALK ANYTHING APART. HACKING IS ILLEGAL.
- 5 NO FOOD OR DRINK**
IT SMELLS AND CAN DAMAGE KIT.
- 6 SURF SAFELY**
GO ON 'RELATED' SITES, REPORT ANYTHING WEIRD.
- 1 ALWAYS USE YOUR OWN ACCOUNT**
KEEP YOUR PASSWORD PRIVATE.
- 8 LOG OUT**
MAKE SURE THE SYSTEM HAS LOGGED YOU OFF.
- 9 SAVE FILES OFTEN WITH SENSIBLE NAMES**
MANAGE YOUR FILES TO MAKE THEM EASY TO FIND.
- 10 ONLY PRINT WHEN NECESSARY**
SAVE RESOURCES, PRINT PREVIEW, USE SENSIBLE FONT SIZES.

FIRST AID

BLEEDING <ul style="list-style-type: none"> Wash the wound with clean water. Apply direct pressure with a clean cloth or bandage. If the bleeding does not stop, apply more pressure. Do not remove the cloth until the bleeding has stopped. 	CHOKING <p>Signs of choking</p> <ul style="list-style-type: none"> The person is unable to breathe, speak or cough. They have a universal choking sign (hands to throat). They are clutching their throat. <p>Heimlich manoeuvre</p> <ul style="list-style-type: none"> Stand behind the person. Wrap your arms around their waist. Place your hands in the middle of their abdomen, just above the navel. Grasp the person's arms with your hands. Perform the Heimlich manoeuvre.
BURNS <ul style="list-style-type: none"> Stop the burning process. Remove the person from the source of heat. Cool the burn. Hold the burned area under cool (not cold) running water for 10-15 minutes. Do not break blisters. Do not apply ointments, lotions or butter. Do not use ice. 	Clear the airway of class persons or pregnant women <ul style="list-style-type: none"> Place your hands on the person's forehead and tilt the head back. Pinch the nose shut. Give two breaths.
FRACTURES <ul style="list-style-type: none"> Do not move the person unless absolutely necessary. Do not try to straighten the limb. Do not try to remove the object if it is embedded. Do not try to remove the object if it is embedded. 	CPR <p>Check for life signs</p> <ul style="list-style-type: none"> Check for responsiveness. Check for breathing. Check for pulse. <p>Compressions - Repr compression</p> <ul style="list-style-type: none"> Place the heel of your hand on the center of the chest. Place the heel of your other hand on top of the first. Interlock your fingers. Press down hard and fast.
SPRAINS <ul style="list-style-type: none"> Rest the joint or injured area. Apply ice or cold packs. Do not move the joint. Do not use heat. 	Eye injuries <ul style="list-style-type: none"> Do not rub the eye. Do not use any liquid in the eye. Do not use any ointment in the eye. Do not use any powder in the eye.
SHOCK <ul style="list-style-type: none"> Keep the person lying down. Do not move the person. Do not give the person anything to eat or drink. Do not give the person anything to drink. 	First aid box

Printer Do's and Don'ts

Do's

- ✓ Check twice before printing
- ✓ Add paper and toner when empty
- ✓ Recycle unwanted copies
- ✓ Take only your printout



Don'ts

- ✗ Don't print unless you really need it!
- ✗ Don't leave coloured or special paper in the tray
- ✗ Don't use printer for personal use
- ✗ Don't be afraid to ask for help

AMBULANCE

9486009006



HEALTH CARE CENTRE

04563 - 293271



Fire Extinguisher



First aid box

6.4. Project Laboratory (20)

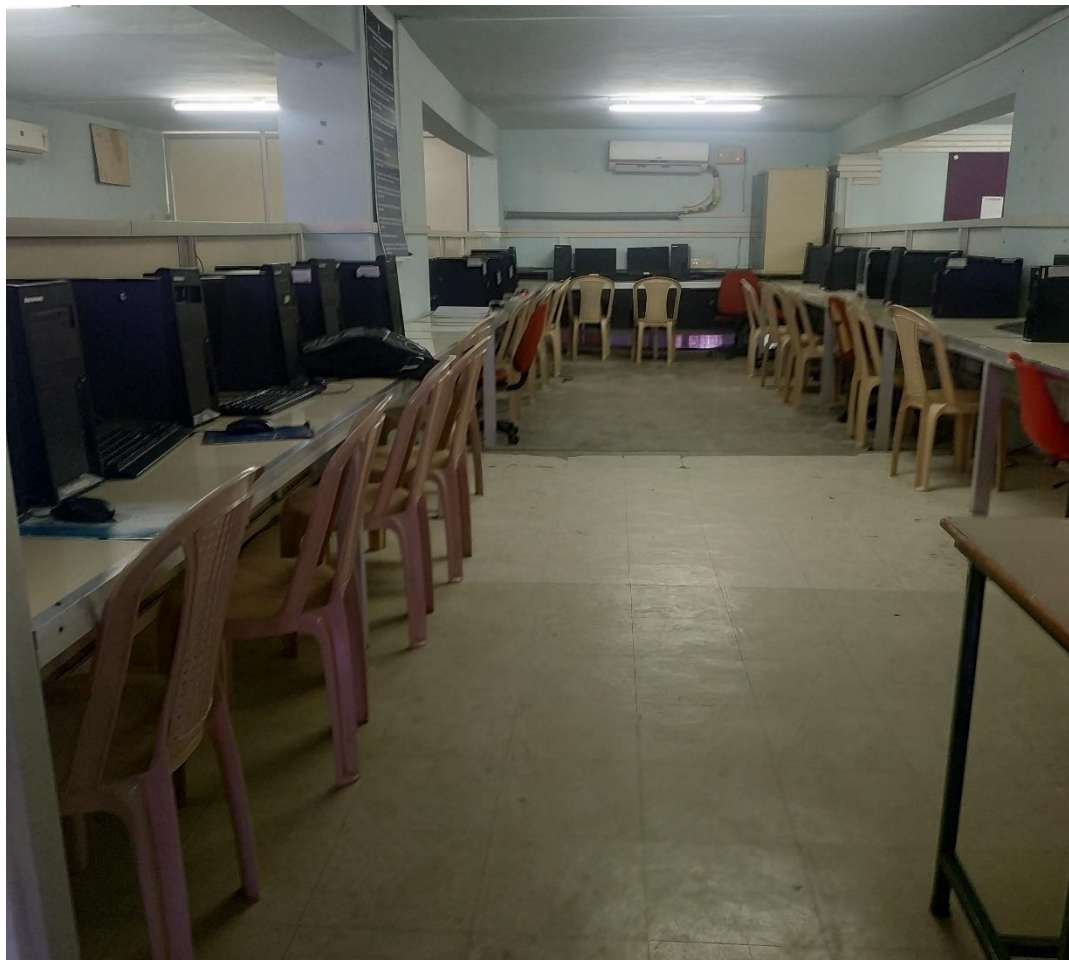
Name of the Laboratory	Equipment Available	Quantity	Utilization
Capstone Design Center	Lenovo Intel Core 2 Duo 2.4Ghz Processor, 160GB Hard Disk, 3GB RAM, 19" TFT Color Monitor)	36	35 Hours / Week
	HCL, Intel Core 2 Duo 2.93Ghz Processor, 250GB Hard Disk, 3GB RAM, 18.5" LCD Monitor		
	Raspberry Pi	10	
	Aurdino	10	
	Sensors	10	

Capstone Design Center laboratory is used for Major Project, Mini Projects, and Community Service projects by the students. The laboratory is available throughout the day for doing the projects. During the project period the laboratory is exclusively assigned for the project students. The laboratory hours are extended beyond working hours with prior intimation to the laboratory in charge.

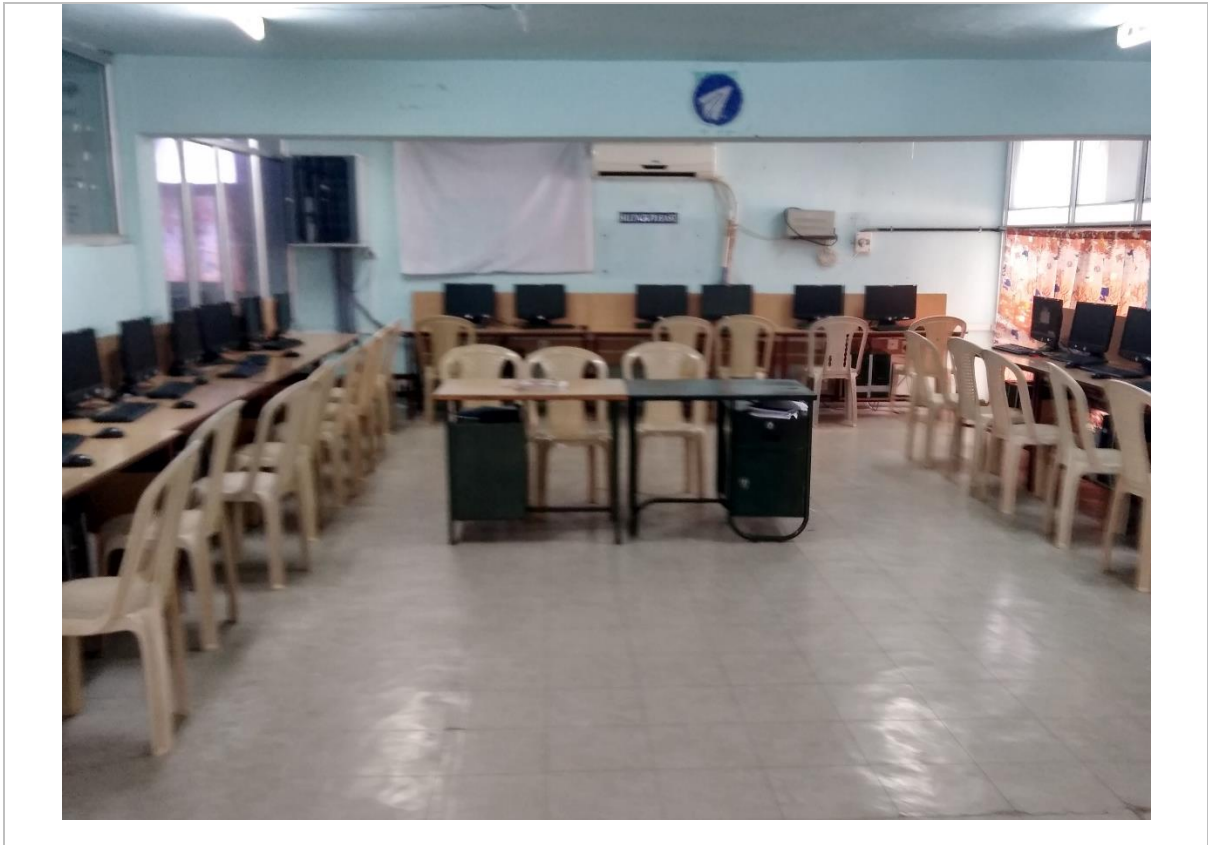
Capstone Design Centre



Database Systems Laboratory



Open source Technology Laboratory



CRITERION 7	CONTINUOUS IMPROVEMENT	75
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7.1 Actions taken based on the results of evaluation of evaluation of each of the COs, POs & PSOs (30)

Continuous Improvement in PO:

The department of IT 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 2017-2021

S.No.	Course Code	Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	CHVT17R171	Chemistry	3	3	1	1	1	1	2	0	0	0	0	1	3	1	0
2	EEE17R151	Basic Electrical and Electronics Engineering	3	3	0	0	0	0	0	0	2	3	0	0	0	0	0
3	EEE17R151	English for Technical Communication - I	0	0	0	0	0	1	0	1	3	3	0	1	0	0	0
4	MAT17R102	Linear Algebra, Partial Differential Equations and Complex Variable	3	3	0	0	3	0	0	0	0	0	0	0	2	0	0
5	MEC17R101	Engineering Drawing	3	3	0	0	0	0	0	0	2	3	0	0	0	0	0
6	MEC17R151	Engineering Practice Laboratory	3	3	0	0	0	0	0	0	2	3	0	0	0	0	0
7	PHY17R151	Materials Physics - I	3	3	2	2	3	1	1	1	1	1	1	1	3	1	3
8	CHVT17R101	Environmental Science	2	2	0	0	0	0	3	0	0	0	0	0	0	0	0
9	CHVT17R101	Basic Civil Engineering	3	3	0	0	0	0	0	0	2	2	0	1	0	0	0
10	CSE17R171	Programming Language	3	3	3	3	3	3	2	3	2	2	3	3	3	3	3
11	EEE17R152	English for Technical Communication - II	0	0	0	0	0	0	0	1	3	3	0	2	0	0	0
12	INT17R101	Introduction to Information Technology	3	2	1	0	3	2	3	0	0	0	0	0	3	2	3
13	MAT17R101	Calculus and Differential Equations	3	3	0	0	3	0	0	0	0	0	0	0	2	0	0
14	MEC17R105	Basic Mechanical Engineering	3	3	0	0	0	0	0	0	2	2	0	1	0	0	0
15	PHY17R171	Engineering Physics	3	3	0	0	3	0	0	0	2	2	0	0	0	0	0
16	CSE18R174	Computer Architecture and Organization	3	3	2	3	2	1	1	2	3	3	2	3	3	2	3
17	INT18R171	Digital Principles and System Design	3	3	2	3	0	2	0	3	0	2	3	0	2	2	2
18	INT18R271	Data Structures and Algorithms	2	2	3	2	3	0	3	0	0	0	0	1	3	2	2
19	INT18R272	Analog and Digital Communication	1	3	3	0	0	0	1	0	0	3	2	1	3	3	1
20	MAT18R202	Probability and Statistics	3	3	0	2	3	0	0	0	0	0	0	0	2	2	1
21	CSE18R273	Operating Systems	3	2	2	2	3	2	2	2	2	2	2	1	3	2	1
22	ECE18R220	Principles of Signals and Systems	2	3	2	0	0	0	1	2	0	0	0	1	2	3	0
23	INT18R201	Web Technology	0	3	3	1	3	0	0	0	0	0	0	1	3	3	2
24	INT18R271	Microcontrollers and Embedded Systems	3	2	2	3	3	3	0	0	0	0	1	0	3	2	3
25	INT18R273	Object Oriented Programming	3	2	2	3	0	2	0	0	0	2	0	3	3	2	2
26	INT18R101	Rheology for Engineers	3	3	0	3	2	0	1	0	0	0	0	0	0	0	0
27	HSS18R002	Marketing Management	3	3	2	3	2	2	1	2	3	1	2	3	3	2	0
28	INT18R371	Artificial Intelligence	1	3	2	0	2	0	3	0	3	0	3	1	3	3	0
29	INT18R371	Database Management Systems	3	3	3	3	3	3	2	2	2	2	3	1	3	3	2
30	CSE18R371	Computer Networks	3	3	3	3	3	2	1	2	3	3	3	1	3	2	3
31	INT18R359	Software Engineering	3	3	0	3	3	0	3	3	3	3	3	3	3	2	3
32	INT18R359	Community Service Project	3	3	3	3	3	3	3	2	2	3	2	3	3	3	3
33	HSS18R015	Total Quality Management	3	3	3	3	3	3	2	2	2	2	3	1	3	3	2
34	INT18R408	Project Work-I	3	3	3	3	3	0	3	0	3	2	3	2	3	3	3
35	INT18R274	Principles of Digital Signal Processing	2	2	2	0	0	0	1	2	0	0	0	1	2	3	0
36	INT18R459	Project Work II	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

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 corrective 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.

PO	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	1.8	2.19	<p>The target is achieved.</p> <p>The following courses having scopes for further improvement.</p> <p>MAT18R202-Probability and Statistics</p> <p>CSE18R174-Computer Architecture and Organization</p>
<p>Action 1: More real-time problems and case studies on probability concepts were given for practice to the students.</p> <p>Action 2: More concepts on main, secondary, and virtual memory were taught for the students. Corporate lectures were arranged to meet the required expertise in the field of computer architecture.</p>			

PO	Target Level	Attainment Level	Observations
PO2: 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.			
PO2	1.8	2.21	<p>The target is achieved.</p> <p>The following courses having scopes for further improvement.</p> <p>INT18R171-Digital Principles and System Design</p> <p>CSE18R273-Operating Systems</p>
<p>Action 1: Industrial experts together with the department conducted academic workshops and hands-on sessions in some fundamental concepts of digital systems, students identified some complex engineering problems after attending the events and designed some digital systems.</p> <p>Action 2: Real-time examples and more practical sessions were given for the students to understand the operations in a computer system. Online videos also are given to the students as a reference for understanding the concepts.</p>			

PO	Target Level	Attainment Level	Observations
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	1.8	2	<p>The target is achieved.</p> <p>The following courses having scopes for further improvement.</p> <p>INT18R272-Analog and Digital Communication</p> <p>INT18R371-Database Management Systems</p>
<p>Action 1: More hands-on training was conducted to the students. Video tutorials, Industrial experts, academic seminars were also given to the students for enhancing their knowledge.</p> <p>Action 2: Tools are helpful to manage and monitor the database which in turn enhances the practical knowledge of students. Proper training from industry people was arranged for the benefit of students.</p>			

PO	Target Level	Attainment Level	Observations
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	1.8	2.18	<p>The target is achieved.</p> <p>The following courses having scopes for further improvement.</p> <p>INT18R171-Digital Principles and System Design</p>
<p>Action 1: Industrial experts together with the department conducted academic workshops, seminars, and hands-on sessions in some fundamental concepts of digital systems, students identified some complex engineering problems after attending the events and designed some digital systems.</p>			

PO	Target Level	Attainment Level	Observations
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.			
			<p>The target is achieved.</p> <p>The following courses having scopes for further improvement.</p> <p>INT18R371-Database Management Systems</p>
PO5	1.8	2.13	
<p>Action 1: Proper hands-on training from expert were also given to the students in database tools for fulfilling the requirements in engineering applications in the new industrial era.</p>			

PO	Target Level	Attainment Level	Observations
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	1.8	1.73	<p>The target is not achieved.</p> <p>The following course having scopes for further improvement.</p> <p>INT18R251-Microcontrollers and Embedded Systems</p>
<p>Action 1: Hands on training session from industrial experts was conducted to the students in-order to gain the knowledge about microcontroller.</p>			

PO	Target Level	Attainment Level	Observations
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	1.72	<p>The target is not achieved.</p> <p>The following course having scopes for further improvement.</p> <p>INT18R311-Artificial Intelligence</p>
<p>Action 1: Hands on training session from industrial experts was conducted to the students in-order to gain the knowledge</p>			

PO	Target Level	Attainment Level	Observations
PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.			
PO8	1.8	1.84	<p>The target is achieved.</p> <p>The following course having scopes for further improvement.</p> <p>INT18R399-Community Service Project</p>
<p>Action1: Students followed the ethical standards and selected real-time projects based on the need of the community. To select the appropriate real-time projects, students did some activities like</p> <p>1) a massive amount of survey papers were collected</p> <p>2) collected feedback from the public</p> <p>3) learned the concepts related to the project from online videos.</p>			

PO	Target Level	Attainment Level	Observations
PO9: Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.			
PO9	1.8	2.09	<p>The target is achieved.</p> <p>The following courses having scopes for further improvement.</p> <p>INT18R359-Software Engineering</p>

Action 1: To understand the safety concerns and security aspects, students visited the industry for expanding their practical knowledge with the effect of improved practices in engineering.

PO	Target Level	Attainment Level	Observations
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	1.8	2.04	<p>The target is achieved.</p> <p>The following course having scopes for further improvement.</p> <p>HSS17R151-English for Technical Communication-I</p>
<p>Action 1: Soft skill trainings were given to the students to enhance various aspects of communication skills which in turn the communication, presentation and report writing skills of the students was improved. Group discussions were conducted in some topics by the faculty, seminars were also given to individual students, more activity-based training is also conducted for enhancing their communication skills and knowledge of grammar in English.</p>			

PO	Target Level	Attainment Level	Observations
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	2.13	<p>The target is achieved.</p> <p>The following course having scopes for further improvement.</p> <p>INT18R371-Database Management Systems</p>
<p>Action 1: The faculty demonstrated how to formulate the problem and how to find the solutions for real-life situations in the subjects like computer science.</p>			

PO	Target Level	Attainment Level	Observations
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	1.8	1.76	<p>The target is achieved.</p> <p>The following courses having scopes for further improvement.</p> <p>INT18R273-Object Oriented Programming</p>
<p>Action 1: More practical examples were taught to the students to enhance the programming knowledge. Real time projects also done by the students and some students got internships on C Programming.</p>			

PSO	Target Level	Attainment Level	Observations
PSO1: Problem-Solving Skills: The ability to apply mathematics, science and computer engineering knowledge to analyze, design and develop cost effective computing solutions for complex problems with environmental considerations.			
PSO1	1.8	2.20	<p>The target is achieved.</p> <p>The following course having scopes for further improvement.</p> <p>INT203-Operating Systems</p>
<p>Action 1: Mathematical analysis of complex engineering problem is identified by the students by applying some fundamental concepts.</p>			

PSO	Target Level	Attainment Level	Observations
PSO2: Professional Skills: The ability to apply modern tools and strategies in software project development using modern programming environments to deliver a quality product for business accomplishment.			
PSO2	1.8	2	<p>The target is achieved.</p> <p>The following course having scopes for further improvement.</p> <p>INT18R311-Artificial Intelligence</p>

Action 1: Simulation software were taught to the students by experts from industry.

PSO	Target Level	Attainment Level	Observations
PSO3: Communication and Team Skill: The ability to exhibit proficiency in oral and written communication as individual or as part of a team to work effectively with professional behaviors and ethics.			
PSO3	1.8	1.91	<p>The target is achieved.</p> <p>The following course having scopes for further improvement.</p> <p>INT18R499-Project Work</p>
<p>Action 1: Awareness is created among the students regarding the Principles of management and a demo is also given to students about how to manage the projects and team members.</p>			

7.2 Academic Audit and Actions taken during the Period of Assessment (15)

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.

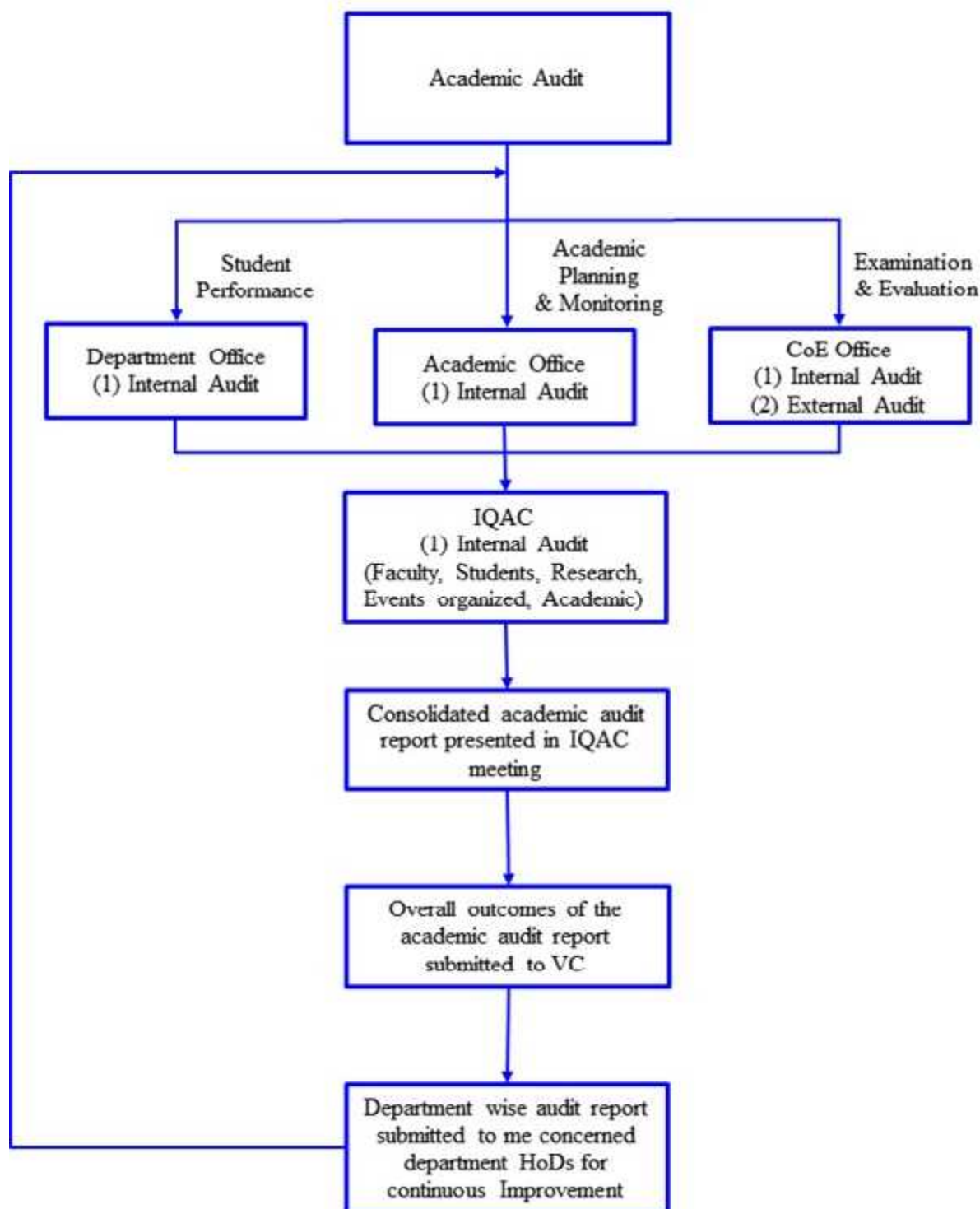
KARE-IQAC has performed this academic audit process with the following objectives:

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



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 7.2.1 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 7.2.1: Different key indicators and evaluation criteria used for the various levels of academic audit

Sl. 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 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
5.		Faculty performance			
6.		Research and			

		Consultancy			
7.		Events organized			
8.		Academic activities			

1. Department Office Academic Audit

The department level academic audit will be conducted by 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 performs the academic audit for ensuring the quality assurance in the upcoming semester.

a) Class Committee Meeting

Each class of the B.Tech. Programme will have a class committee meeting periodically comprising of faculty members and students. The constitution of the committee will be as follows.

- a) Senior faculty member who is not associated with teaching for the particular class nominated by the Head of the Department concerned, to act as the chairman of the class committee.
- b) The class handling faculty
- c) Five students (in the combination of two from the toppers, two from bottom and one student average) from the respective class are chosen.
- d) Faculty Advisors of the students of the respective class.

The basic responsibilities of the class committee meetings are

- a) To review periodically the progress of the class
- b) To discuss problems concerning curriculum, syllabi and conduct of the classes, for both CGPA and Non-CGPA courses.
- c) To resolve issues related to teaching/learning, addressing the slow learners in regular semesters, value-addition, and other grievances.

b) 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 audits the course registration of the student, attendance, academic performance and completion of credits and records the same in the corresponding Faculty advisor diary of the student.

c) 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.

KALASALINGAM
ACADEMY OF RESEARCH & EDUCATION
(DEEMED TO BE UNIVERSITY)

Under Sec. 3 of UGC Act 1956. Recognized by MGC with "W" Grade

Amud Nagar, Krishnagudi - 625104, Tiruvallur (TN), Vellore District (IN), Tamil Nadu | info@kalasalingam.ac.in | www.kalasalingam.ac.in

15.10.2020

Agenda

1. Seasonal Examination Result Analysis
2. Non-CGPA Course Registration
3. Payment of Tuition fees
4. Any other matter

1
4/20/20

Class Coordinator:

Baru

H₂O/T₂

7.2.2 Class Committee Meeting Circular



School of Computing

Department of Information Technology

Academic Year 2020 – 2021 ODD Semester

17.10.2020

Minutes of Second Class Committee Meeting

The second class committee meeting for third year IT students was held on 16.10.2020 through online (Google Meet) by 4.00 p.m. Dr. S.P. Balakannan, Associate Professor/IT chaired the meeting and the following matters were discussed.

1. Sessional I Examination Result Analysis

The Chairperson analyzed the pass percentage of the individual courses

S NO	Course Code	Course Name	No. students appeared	No. of Students Passed	Pass Percentage
1	INT18R371	Database Management Systems	35	32	91.43
2	INT18R272	Analog and Digital Communication	35	31	88.57
3	INT18R310	Bio Informatics	35	25	71.43
4	INT18R201	Web Technology	35	34	97.14
5	IES18R013	Professional Ethics	34	32	94.12
6	Open Electives	Other Department Courses	34	33	97.05

The chairperson analyzed that the overall pass percentage of the class is 57% only and most of the students have scored less than 40 marks in Bio Informatics. The chairperson instructed the students to give much concentration on that course and improve the pass percentage.

Also the chairperson asked the students that whether they have any issues on the online examination. The students replied that previous semester they have the option to review the question even they have answered. But now they can't review the examination questions. The chairperson instructed the students that he will discuss with COE in this regard.

The chairperson instructed the class coordinator to prepare a remedial class schedule which may commence from 19.10.2020, 4.00pm to 5.00pm. The students who

have scored less than 50% in sessional examination have to attend the remedial classes without fail.

2. Non-CGPA Course Registration

The Chairperson asked the students about the Non-CGPA courses registration. Then instructed the students to make use of course-cra to clear the group III.

3. Payment of Tuition Fees

The chairperson asked about the payment of tuition fees. The Faculty advisor stated that 16 students have pending in tuition fee payment. The chairperson replied that already the last date over so do the payment as early as possible.

4. Any other Matter

The chairperson informed the students that the hours in time table have reduced and it will be commence form 19.10.2020. Finally, the meeting ended with vote of thanks.

The following members have present in the meeting.

- Dr. K. Suthendran
- Dr. M. Venkatesulu
- Dr. R. Sundarajan
- Dr. S. Suprakash
- Mr. Prem Raja

Student Members

- Mr. Ajith Madhan
- Ms. Saranya
- Mr. Marimuthu
- Mr. Hariprasad



Class
Coordinator



Class
Committee
Chairperson



HoD/IT

7.2.3 Class Committee Meeting Minutes

Gap Analysis:

- Slow learners and Fast learners are identified based on the performance of the sessional examination.
- More number of failures are in the subject Bio Informatics, hence class pass percentage has decreased.
- Non-CGPA related activities need to be completed by the students.

Actions Taken:

For the slow learners, Remedial classes are framed.

Figure 7.2.4. shows the schedule for remedial classes and Figure 7.2.5. represents the attendance report.

**Schedule for Remedial Classes****III Year**

S No	Course Code	Course Name	No. of Students	Day	Faculty in Charge
1	INT18R310	Bio Informatics	18	Monday	Dr. M. Venkatesulu
2	INT18R272	Analog and Digital Communication	10	Tuesday	Dr. K. Suthendran
3	INT18R371	Database Management Systems	7	Wednesday	Dr. R. Sundarajan
4	INT18R310	Bio Informatics	18	Monday	Dr. M. Venkatesulu
5	HSS18R013	Professional Ethics	4	Friday	Mr. D. Prem Raja

HoD/ IT

7.2.4. Schedule for Remedial Classes



Remedial Coaching Classes for 2020-21 (ODD SEMESTER)

ATTENDANCE SHEET

1. Name of the Department: Information Technology

2. Name of the Program: Information Technology

3. Year/Semester: III/ V

4. Course Name: Bioinformatics

5. Course Code: INT18R310

Date: 16.11.2020

6. Name of the Faculty: Dr. M. Venkatesulu

Time: 4.00 p.m. to 5.00 p.m.

Sl. No.	Register Number	Name of the student	Present/Absent
1	9919008002	PRIYADHARSINI	P
2	9918008020	VIKRAMAN M	P
3	9918008029	VENKATESHA PERUMAL S	P
4	9918008011	MARIMUTHU C	P
5	9918008037	BALAJI V	P
6	9918008009	JAGANESHI D	P
7	9919008002	ARUN KUMAR H	P
8	9918008015	SHAIK MAHAMMAD SOHIL	P
9	9918008031	VIDYARAGUNATHAN	P
Total Number of Students to be Attended			9
Number of Absentees			
Signature of the Faculty			

Signature of the Time table PC

HoD/IT

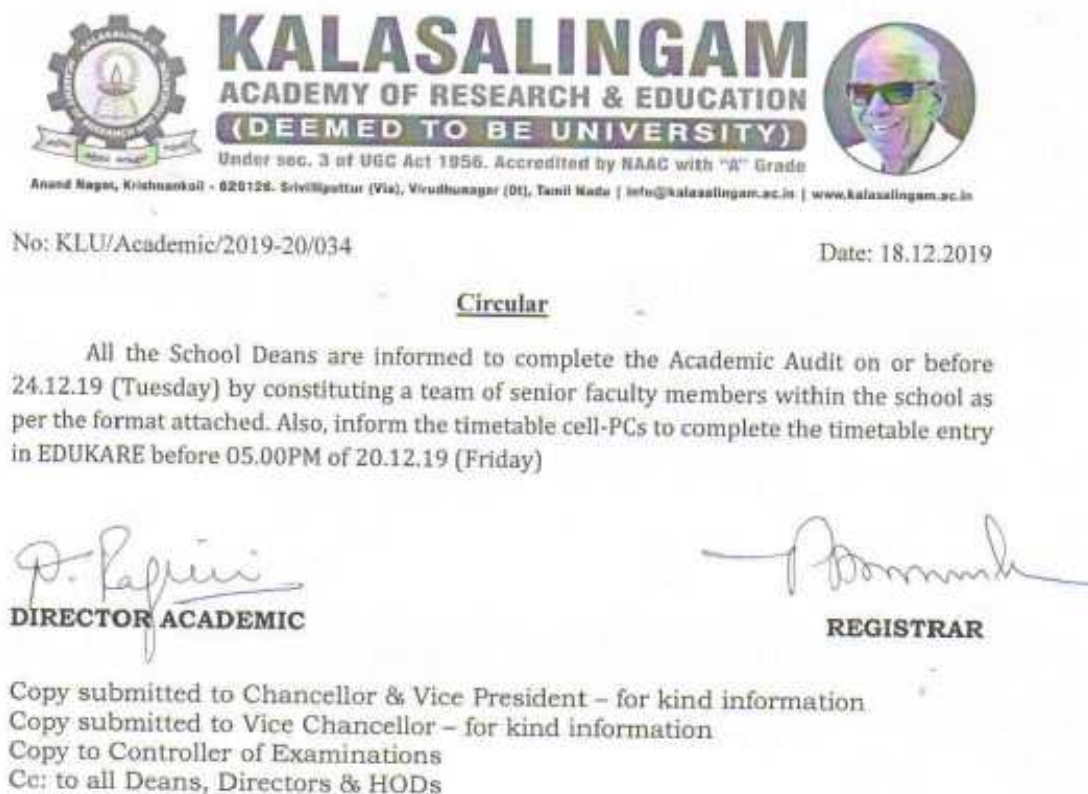
7.2.5. Attendance Report for the Course Bio Informatics

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 members 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 7.2.6 shows the circular released by director academic for conducting the academic audit.



7.2.6 Circular for conducting Academic Audit

Figure 7.2.7 indicates academic audit report sample for course material verification.

Name of the Course Faculty: Mr. S. Sureshbabu Name of the Course Coordinator: Mr. S. Sureshbabu Name of the Evaluator: Dr. R. Sundarajan

S.No.	Course Code/Name	Verified by Evaluator	INSTRUCTIONAL MATERIALS TO BE VERIFIED								Remarks of Meeting Outcome (YES/NO)	
			Course Material P-OEE (Class+Lab)	Question Bank	Lecture Notes/Hand Copy	Self Learning (PPT/VTMP)	Physical Sample Class Room	Tutorial Problems	Assignments	Use of Package Tools	Lab Manual (Lab)	
1.	INT18R201/ Web Technology	Yes/NO	Yes	Yes	Yes	Yes						
		Quality of Content (%)	100%	100%	100%	100%						
		Observations										
	CSE18R112/ Data Structures and Algorithms	Yes/NO	Yes	Yes	Yes	Yes		Yes	Yes			
		Quality of Content (%)	100%	100%	100%	100%		100%	100%			
		Observations										
	CSE18R111/ Programming for Problem Solving	Yes/NO	Yes	Yes	Yes	Yes		Yes	Yes		Yes	
		Quality of Content (%)	100%	100%	100%	100%		100%	100%			
		Observations										



Signature of the Evaluator

Figure 7.2.7 Sample Copy of Academic Audit format

After the commencement of each sessional examination, the Dean (Academic) office will conduct the academic audit to verify the syllabus covered by the faculty members. In case of deviation, the concern faculty has to give written explanations, based on his/her request the additional hours may be allotted. The syllabus coverage in the academic audits were discussed by auditing members the sample copies of the audit for syllabus coverage is shown in Fig.7.2.8.

School of Computing
Department of Information Technology

A. Theory courses

Course Code	Course Name	Name of the course coordinator	L	T	P	C	No. Of Hours Conducted	% of syllabus completed	Remarks from course coordinator
INT18R012	Social Network Analysis	Dr. M. <u>Mangalakaran</u>	3	0	0	3	30	99	As per course plan
HSS18R015	Total Quality management	Mr. D. PremRaja	3	0	0	3	36	99	
INT18R320	Essentials of Information Technology	Mr. J. Thinnaraja	3	0	0	3			As per course plan
INT18R201	Web Technology	Dr. S. Suprakash	3	1	0	4	65	100	
INT18R521	R Programming	Dr. M. <u>Mangalakaran</u>	3	0	0	3	47	99	
HSS18R013	Professional Ethics	Mr. D. PremRaja	3	0	0	3	51	99	
INT18R310	Bioinformatics	Dr. M. Venkatesulu	3	0	0	3	56	100%	Activate V Go to Setting

Laboratory courses

Course Code	Course Name	Name of the course coordinator	L	T	P	C	No. Of Hours Conducted	% of syllabus completed	Remarks from course coordinator
INT18R398	Project Work Phase I	Dr. M. <u>Mangalakaran</u>	0	0	3	2	60	100	

Integrated courses

Course Code	Course Name	Name of the course coordinator	L	T	P	C	No. Of Hours Conducted	% of syllabus completed	Remarks from course coordinator
INT18R271	Principles of Digital signal processing	Dr. V Baby Stalin	3	0	2	4	78	95%	
INT18R272	Analog and Digital communication	Dr. K. Subhendra	3	0	2	4	79	95%	
INT18R371	Database Management systems	Dr. R. Sundarajan	3	0	2	4	76	100%	
CSE18R174	Computer Architecture and Organization	Dr. K. Subhendra	3	0	2	4	79	95%	
INT18R271	Data Structures and Algorithms	Dr. R. Sundarajan	3	1	2	5	93	100%	

Theory with practice

Course Code	Course Name	Name of the course coordinator	L	T	P	C	No. Of Hours Conducted	% of syllabus completed	Remarks from course coordinator
INT18R455	Cryptography and Network Security	Mr. S. Kalasani	3	0	1	3.5	66	99%	As per course plan
MAT18R202	Probability and Statistics	Dr. M. Venkatesan	3	0	2	4	71	100%	

Activate
Go to Set

Fig.7.2.8 Sample Copy of Academic Audit – Syllabus Coverage

3. COE Office Level Academic Audit

External and Internal Audit of Question Papers

The audit and scrutiny of 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.

Figure 7.2.9 showing the circular for Internal Question Paper Auditing.



OFFICE OF THE CONTROLLER OF EXAMINATIONS

Ref: KARE/COE/ODD 2019-20/101/097

05-10-2019

CIRCULAR

All the Head of the departments are requested to nominate three senior faculty members along with Program Coordinator from their department to audit the external question papers of End Semester – NOV / DEC 2019 in the following schedule.

INTERNAL QUESTION PAPER AUDITING – NOV / DEC 2019	
Date	Time
	12.00pm to 02.00pm & 03.00pm to 05.00pm
15.10.2019	1. VISCOM 2. BCA 3. MCA 4. CS&IT 5. CAT
16.10.2019	1. BBA 2. COMMERCE 3. CHEMISTRY
17.10.2019	1. MBA 2. PHYSICS 3. ENGLISH
18.10.2019	1. BIO MEDICAL 2. FOOD 3. AGRI/HORTI
19.10.2019	1. CSE 2. IT 3. CIVIL
21.10.2019	1. ARCH 2. BIOTECH 3. MATHS
22.10.2019	1. AUTO 2. CHEMICAL 3. MECHANICAL
23.10.2019	1. ECE 2. EEE 3. EIE

Note:

1. This name list of senior faculty members and Program coordinator may be sent to coe@klu.ac.in before 14-10-2019 (04.00pm)
2. Please strictly follow the above schedule.


 Controller of Examinations

Copy submitted to Chancellor and Vice President – for favour of information

Copy to Vice Chancellor

Copy to Registrar

Cc: to all Deans and Directors and to all Heads of the Department

7.2.9 Circular for Internal Question Paper Auditing

Answer Booklet Audit

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.

External Audit

The academic audit from the COE office will also be conducted for the faculty members by COE Office through external experts from reputed institution. They will be verifying the following documents and give their suggestions to improve their performance in coming semesters.

- 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 7.2.10 indicates the circular for academic audit by external expert and 7.2.11 shows the report of academic audit by external expert.



OFFICE OF THE CONTROLLER OF EXAMINATIONS

Ref: KARE/COE/EVEN 2017-18/101/083

10-04-2018

CIRCULAR

The Heads of the Department of the **Information Technology** is requested to depute the following faculty member for the External academic audit to be held at office of the Controller of Examinations on **20.04.2018**. The external experts will be evaluating the staff members based on the evaluation sheet enclosed herewith. Heads of the departments are requested to instruct the faculty members to be present at the office of the Controller of Examinations with all the corresponding documents/files (as per the enclosed format) at **2.00 pm** without fail.

S.No	Name of the Staff
I.	Ms. V. Baby Shalini


Controller of Examinations


VICE CHANCELLOR

Cc to : HODs – IT with a request to bring it to the notice of the concerned

7.2.10 Circular for academic audit by external expert

(Kalasalingam Academy of Research and Education)

OFFICE OF THE CONTROLLER OF EXAMINATIONS

EXTERNAL AUDIT REPORT ON ACADEMIC PROCESS

Department: IT program: _____ Sem: _____

Course Name with Code: _____ Credit: _____

Theory / Practical _____

Name of the Staff Member: MS. BABY SHALINI Designation: AP II

Rating and Quality of Academic Procedure: (Rating:-1 - 10)

S.No	Activities	Rating	Suggestion for improvement
1.	Course Plan	8	
2.	Maintenance of Log Book	6	Avoid overwriting
3.	Additional Topics covered	6	More additional topics to be covered.
4.	Course Material File	8	
5.	Quality of Assignment Questions	8	
6.	Conduct of Tutorials / Quizzes/Seminars	7	
7.	Quality of SE I questions	8	
8.	Valuation of Sessional I Answer books	8	
9.	Number of Text Books/Reference Books used	9	
10.	Effectiveness of the Class Committee Meetings I	8	
11.	Effectiveness of the Class Committee Meetings II	8	
12.	Effectiveness of the Class Committee Meetings III	to be submitted	
13.	Quality of SE II questions	8	
14.	Valuation of Sessional II Answer books	8	
15.	Follow up of Preventive and Corrective measures	8	
16.	Special Efforts taken on Slow learners	7	
17.	Exposure to practical environments, experiments etc	7	
18.	Conduct of Class seminars	6	Maintain complete details.

General Observation / Comments:
Provide more exposure on applications;
Maintain complete details.

Name and Designation: Dr. B. RAMMOSS
Professor in CA
Institution: N.I.T. CHY
TIRUVCHI

Signature(s) of the Expert(s) with date: *B. Rammooss*

Major Observation / Deficiency:
—

Minor Observation : Additional topics and Seminars
Should be conducted.

Noted by:
V.S.L. Course Teacher
V.S.L. Course Co-ordinator
[Signature] Head of the Department

Action Plan:
1.
2.
3.
4.
5.

Implementation of Action Plan:

7.2.11 Academic Audit Report by External Expert

4.IQAC Audit Report**Name of the Department: Information Technology**

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 from government and non government organization- satisfactory
3	Quality of PG Projects	PG programme is not there
4	Quality of UG Projects	The outcome of the UG projects are converted as paper.
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	good
9	Faculty Awards and recognition	More faculty can apply for awards
10	FDPs and STTP attended by faculties	Almost all faculty attended FDP conducted by

		ATAL AICTE
11	Seminars, Workshop attended by faculties	Almost all faculties participation noticed
12	Extension Activities	Satisfactory
13	Value Added Courses	It is 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

Prepared by IQAC

7.3 Improvement in Placement, Higher Studies and Entrepreneurship (10)

Table 7.3.1 shows the placements details for last three batches.

Table 7.3.1 Number of students placed in Reputed Company

ITEM	LYG (2017- 2018)	LYGm1(2016- 2017)	LYGm2(2015- 2016)
Total Number of Final Year Students	29	43	42
Total Number of Students placed in a Reputed Company	29	36	34

In figure 7.3.1, the total number of final year students during the LYG 2017-2018 is 29. All 29 students got placement in reputed company. The total number of final year students during LYGm1 2016-2017 is 43. Among 43 students, 36 students got placement in reputed company. The total number of final year students during LYGm2 2015-2016 is 42. Among 42 students, 34 students got placement in reputed company. Therefore, 100% students got placement during the LYG 2017-2018, 83.72% students got placement during the LYGm1 2016-2017 and 80.95% students got placement during LYGm2 2015-2016.

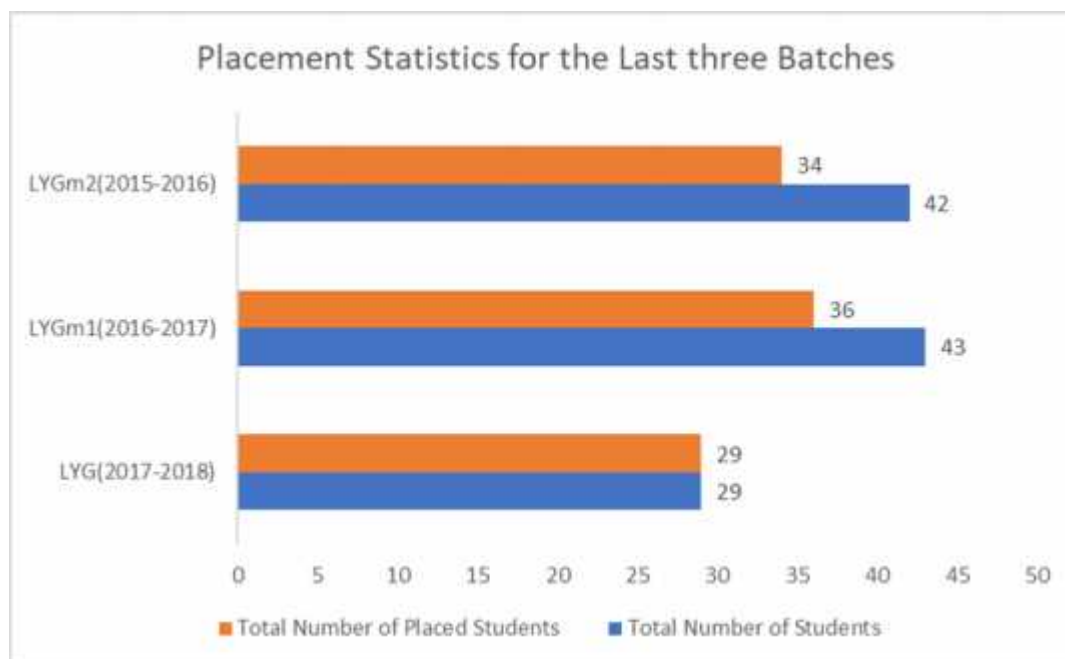


Fig.7.3.1 Placements Record for the Past Three Batches

- Department of Information Technology is moving towards cent percentage result in both quality and quantitative aspects.
- The primary moto of the department relies on equipping the potent of the student to face the competency of the global scenario.
- To assimilate the moto, department offers seminars/workshops, one credit courses, Value Added Courses, placement training which will be helpful to the students for placement using various internal or external agencies. In addition, management offered SAP training to enhance the placement activities.

Improvement in Higher Studies

- The department of information technology motivated the students to pursue higher studies by conducting various subject related training programs, academic workshops and seminars for the benefits of the students.

- Table 7.3.2 shows the total number of students admitted in premier institutions.

Table 7.3.2-Students admitted in Premier Institutions

Sl. NO	Batch	Total Number of Students	Total Number of Students admitted in Premier Institutions
1	LYG (2017-2018)	29	2
2	LYG m1(2016-2017)	43	-
3	LYG m2(2015-2016)	42	-

In figure 7.3.3, the total number of final year students in LYG m2(2015-2016),LYGm1(2016-2017),LYG (2017-2018) is 42,43 and 29 respectively. 2 students got admitted in premier institution in LYG (2017-2018).

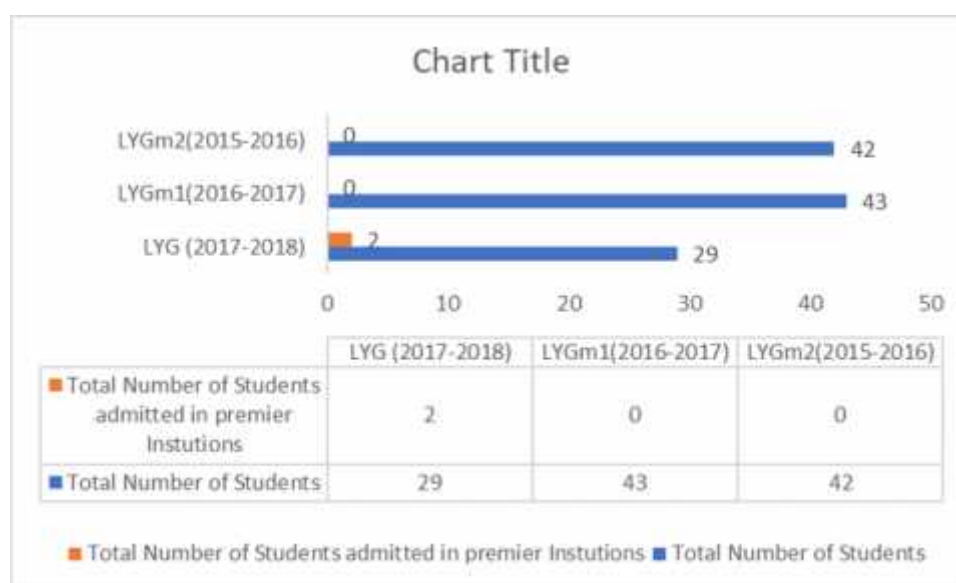


Figure 7.3.3 Students admitted in Premier Institution

Entrepreneurs Details

Sl. NO	Batch	Total Number of Students	Total Number of Students turned entrepreneur in Engineering/Technology
1	LYG (2017-2018)	29	2
2	LYG m1(2016-2017)	43	-
3	LYG m2(2015-2016)	42	1

7.4 Improvement in the quality of students admitted to the program (20)

Item		2021-2022	2020-2021	2019-2020
National Level Entrance Examination	No of Students admitted	0	0	0
	Opening Score/Rank	0	0	0
	Closing Score/Rank	0	0	0
State/University/Level Entrance Examinations/Others	No of Students admitted	60	59	60
	Opening Score/Rank	62	62	56
	Closing Score/Rank	39	39	40
Name of the Entrance Examination for lateral entry or lateral entry details	No of Students admitted	0	1	3
	Opening Score/Rank	0	0	0
	Closing Score/Rank	0	0	0

CRITERIA 8		
FIRST YEAR ACADEMICS		50

8.1 First Year Student-Faculty Ratio (FYSFR) (5)

Name of the faculty member	PAN No.	Qualification	Date of Receiving Highest Degree	Area of Specialization	Designation	Date of joining	Teaching load (%)			Currently Associate (Yes/No)	Nature of Association (Regular/Contract)	Date Of leaving (In case Currently Associated is 'No')
							CAY 21-22	CAY m1 20-21	CAY m2 19-20			
ANISHA M	CJEP1703P	ME/ M. Tech and PhD	5/1/2018	Bioinformatics	Associate Professor	6/27/2018	100	100	100	Yes	Regular	
NIRMALA DEVI S	BSWP1263R	M.E/M.Tech	5/1/2018	Genetic Engineering	Assistant Professor	7/1/2019	100	100	0	Yes	Regular	
REKHA M	CDXP3025E	M.E/M.Tech	5/1/2013	Bioprocess Engineering	Assistant Professor	7/1/2017	100	100	100	No	Regular	5/30/2022
SUSHMITHA M	IVJPS6533J	M.E/M.Tech	6/1/2017	Microbiology	Assistant Professor	7/24/2017	100	100	100	No	Regular	5/30/2022
UPEKSHA T G U	ADOPU6302Q	M.E/M.Tech	5/1/2014	Microbial Technology	Assistant Professor	7/28/2017	100	100	100	Yes	Regular	
VIGNESHWARAN R	AJSPV6897R	M.E/M.Tech	5/1/2013	Molecular Biology	Assistant Professor	7/2/2018	0	100	100	No	Regular	5/28/2021
VIGNESHWARI N	AVXPV1981F	M.E/M.Tech	6/1/2017	Biochemistry	Assistant Professor	6/12/2017	100	100	100	No	Regular	5/30/2022
POORNIMA B	FMOPP1727E	M-E/M-Tech	7/10/2021	Biotechnology	Assistant Professor	7/15/2021	100	0	0	Yes	Regular	
LAKSHMANAN P	ANSPL7514R	M.Sc. and PhD	6/27/2007	Inorganic chemistry	Associate Professor	12/14/2016	0	100	100	No	Regular	5/20/2021
RAJAJEYAGANTHAN R	ALKPR9252N	M.Sc. and PhD	11/13/2012	Physical Chemistry	Assistant Professor	6/12/2017	0	100	100	No	Regular	5/20/2021
RAMESHKUMAR P	CDFPR3481Q	M.Sc. and PhD	9/22/2016	Inorganic chemistry	Assistant Professor	12/14/2016	0	100	100	No	Regular	5/20/2021
KALAIARASI T	EBGPK4165K	M.Sc. and PhD	4/1/2016	Pharmaceutical Chemistry	Assistant Professor	3/2/2020	0	100	0	No	Regular	5/21/2021
RAMALINGAM S	BEKPR9928B	M.Sc. and PhD	7/6/2015	Industrial Chemistry	Professor	9/1/2009	0	100	100	No	Regular	5/25/2021
VELAYUTHAM PILLAI	BIFPP3194Q	M.Sc. and PhD	2/26/2016	Organic Chemistry	Assistant Professor	8/18/2007	0	100	100	No	Regular	5/25/2021

ARUNACHALA M S	ARDPA53 18F	M.Sc. and PhD	3/12/2012	Physical Chemistry	Assistant Professor	7/8/2016	0	100	100	No	Regular	5/28/2021
GANGADHARA A	AMKPA3 080A	M.Sc. and PhD	3/8/2017	Organic Chemistry	Assistant Professor	6/30/2015	100	100	100	Yes	Regular	
GEETHA D	ASCPG27 88H	M.Sc. and PhD	8/9/2016	Industrial Chemistry	Associate Professor	6/12/2017	100	100	100	Yes	Regular	
LAKSHMINARA YANAN P	BIFPP319 4Q	M.Sc. and PhD	8/9/2016	Inorganic chemistry	Associate Professor	12/3/2008	100	100	100	Yes	Regular	
NAGARAJAN E R	AGLPN08 24E	M.Sc. and PhD	1/25/2001	Polymer Chemistry	Professor	9/1/2000	100	100	100	Yes	Regular	
RAMALINGAN C	BDTPR76 26A	M.Sc. and PhD	10/6/2002	Organic Chemistry	Professor	12/3/2002	100	100	100	Yes	Regular	
SELVAPALAM N	DLJPS556 7K	M.Sc. and PhD	5/26/1997	Organic Chemistry	Associate Professor	3/2/2000	100	100	100	Yes	Regular	
SIVARANJANA P	DDGPS65 21E	M.Sc. and PhD	1/4/2020	Material Chemistry	Assistant Professor	6/13/2008	100	100	100	Yes	Regular	
SUNDARAVEL B	CCQPS66 42Q	M.Sc. and PhD	11/5/2014	Organic Chemistry	Assistant Professor	12/12/2016	100	100	100	Yes	Regular	
SWAMINATHA N M	AGEPS51 49N	M.Sc. and PhD	5/17/1983	Organic Chemistry	Professor	7/6/2015	100	100	100	Yes	Regular	
SYED ALI FATHIMA S	GFBPS144 2N	M.Sc. and PhD	4/3/2021	Inorganic chemistry	Assistant Professor	7/15/2020	100	100	0	Yes	Regular	
DATTATRI K NAGESHA	AUSPN23 364	M- Sc-, Ph- D	1/8/2004	Nanomaterials	Professor	7/1/2021	100	0	0	No	Regular	6/30/2022
PRANEETH K K	FQAPK56 41G	M- Sc-, Ph- D	2/4/2008	Inorganic chemistry	Associate Professor	8/2/2021	100	0	0	Yes	Regular	
THIRUPPATHI M	ATCPT47 21E	M- Sc-, M- Phil-, PhD	4/3/2021	Material Chemistry	Assistant Professor	7/1/2021	100	0	0	Yes	Regular	
SIVARAMAKA RTHIKEYAN R	FCDPS978 0P	M- Sc-, Ph- D	9/15/2021	Organic Chemistry	Assistant Professor	7/1/2021	100	0	0	Yes	Regular	
AMUTHA	DURPA48 84L	M- Sc-, Ph- D	12/8/2006	Industrial Chemistry	Assistant Professor	8/2/2021	100	0	0	Yes	Regular	
STALIN DURAI	HENPS17 85C	M- Sc-, Ph- D	4/12/2018	Organic Chemistry	Assistant Professor	8/2/2021	100	0	0	Yes	Regular	
KUMERESAN M	HCFPM92 48Q	M- Sc-, Ph- D	11/11/2020	Material Chemistry	Assistant Professor	8/2/2021	100	0	0	Yes	Regular	
PANDIAN C	BUEPP24 87M	M.E/M.Tech	6/20/2010	Cloud Computing	Assistant Professor	7/2/2018	0	100	100	No	Regular	5/18/2021
VEERAPATHIRAN S	APIPV187 7K	M.E/M.Tech	8/6/2012	Cloud Computing	Assistant Professor	7/2/2018	0	100	100	No	Regular	5/18/2021
ELAVARASI G	ABQPE38 28D	M.E/M.Tech	1/4/2020	Wireless Sensor Networks	Assistant Professor	7/1/2019	0	100	100	No	Regular	5/20/2021
KATHIRVEL S	EFVPK35 42H	M.E/M.Tech	9/25/2014	Internet of Things	Assistant Professor	6/18/2014	0	100	100	No	Regular	5/22/2021

SUBBULAKSHMI	BUOPS4152C	M.E/M.Tech	8/21/2010	Data Mining	Assistant Professor	7/1/2010	0	100	100	No	Regular	5/22/2021
GURULAKSHMI K	AUFGP1391R	M.E/M.Tech	10/29/2018	Networks and Security	Assistant Professor	7/2/2018	0	100	100	No	Regular	6/30/2021
SAHILA T	CMUPS7244A	M.E/M.Tech	8/21/2013	Data Mining	Assistant Professor	6/19/2018	0	100	100	No	Regular	6/30/2021
GLORY A	DHMPG8498E	M.E/M.Tech	5/8/2020	Networks and Security	Assistant Professor	7/13/2020	100	100	0	Yes	Regular	
MANJUNATH T	BUYPM7523B	M.E/M.Tech	9/3/2011	Data Science	Assistant Professor	8/1/2020	100	100	0	Yes	Regular	
PARVATHA DEVI R	AVMPP9361L	M.E/M.Tech	8/21/2010	Cloud Computing	Assistant Professor	6/19/2018	100	100	100	Yes	Regular	
PONSURESH M	BEJPP2423Q	M.E/M.Tech	4/18/2009	Networks and Security	Assistant Professor	6/19/2018	100	100	100	Yes	Regular	
SUMATHI G	EGSPS2254E	M.E/M.Tech	9/3/2011	Cloud Computing	Assistant Professor	7/2/2018	100	100	100	Yes	Regular	
SMRITHY G S	FQAPS2652P	ME/M- Tech and PhD	4/22/2021	Data Science	Associate Professor	7/20/2021	100	0	0	No	Regular	6/27/2022
BALAJI C	BFSPB4768J	ME/M- Tech and PhD	6/30/2019	Networks & Security	Associate Professor	7/20/2021	100	0	0	No	Regular	6/27/2022
MOHD- USAMA	ACYPU5228N	ME/M- Tech and PhD	6/28/2020	Deep Learning	Associate Professor	7/20/2021	100	0	0	No	Regular	5/30/2022
MUTHULAKSHMI M	DSVPM7592F	M-E/M-Tech	4/30/2016	Image Processing	Assistant Professor	7/30/2021	100	0	0	Yes	Regular	
SURESH KUMAR S	DLAPS4033M	M-E/M-Tech	6/30/2014	Cloud Computing	Assistant Professor	7/30/2021	100	0	0	Yes	Regular	
MALATHI V	COJPM1368A	M-E/M-Tech	5/31/2016	Artificial Intelligence	Assistant Professor	7/6/2021	100	0	0	No	Regular	5/29/2022
VETRI SELVI V S	CEUPV4213G	M-E/M-Tech	5/31/2021	Machine Learning	Assistant Professor	7/6/2021	100	0	0	Yes	Regular	
KIRTHIGA N	BOFPK8117L	M-E/M-Tech	6/30/2014	Machine Learning	Assistant Professor	7/6/2021	100	0	0	Yes	Regular	
BAVANI K	DAZPB2825Q	M-E/M-Tech	4/30/2020	Deep Learning	Assistant Professor	7/6/2021	100	0	0	Yes	Regular	
RADHIKA NAMBIAR	BJGPN3489Q	M-E/M-Tech	5/22/2021	Machine Learning	Assistant Professor	8/13/2021	100	0	0	No	Regular	5/30/2022
RAJIB DEBNATH	CFIPD0547J	M-E/M-Tech	6/30/2013	Image Processing	Associate Professor	8/13/2021	100	0	0	No	Regular	5/30/2022
MOHANDAS R	AMFPR4996K	M-E/M-Tech	12/15/2020	IoT	Associate Professor	6/15/2021	100	0	0	No	Regular	6/27/2022
MARIA SHANTHI J	CGVPM6683A	M-E/M-Tech	4/26/2012	Networks & Security	Assistant Professor	6/15/2021	100	0	0	Yes	Regular	
SYED ALI FATHIMA R	BSIPS0707D	M-E/M-Tech	6/30/2016	Machine Learning	Assistant Professor	6/15/2021	100	0	0	Yes	Regular	

SURENDIRAN MUTHUKUMAR D	DOEPS4095L	M-E/M-Tech	6/30/2015	Networks & Security	Assistant Professor	7/1/2021	100	0	0	Yes	Regular	
PRASANTH S	DVXPP4250C	M-E/M-Tech	5/31/2021	Machine Learning	Assistant Professor	7/1/2021	100	0	0	No	Regular	5/30/2022
KALAIARASI P	BDYPK3797E	M-E/M-Tech	5/12/2011	Data Science	Assistant Professor	7/30/2021	100	0	0	Yes	Regular	
KARUPPASAMY PANDIAN M	DHOPK8636L	M.E/M.Tech	6/5/2014	Power System	Assistant Professor	6/22/2015	100	100	100	Yes	Regular	
PRIYA P	AXEPP2874L	M.E/M.Tech	5/30/2010	Power Electronics and Drives	Assistant Professor	6/22/2016	100	100	100	Yes	Regular	
RAJENDRAN S	BCGPR5179G	M.E/M.Tech	6/10/2011	Power Electronics and Drives	Assistant Professor	7/1/2011	100	100	100	Yes	Regular	
RAJESH K	AORPR0656Q	ME/M. Tech and PhD	3/1/2018	Power System	Associate Professor	7/27/2011	100	100	100	Yes	Regular	
SHILAJA C	BQVPS2054Q	ME/M. Tech and PhD	4/5/2018	Power System	Assistant Professor	7/9/2018	100	100	100	Yes	Regular	
VIJAYAKUMAR K	ANGPV8484Q	ME/M. Tech and PhD	12/11/2021	Power Electronics and Drives	Associate Professor	7/1/2011	100	100	100	Yes	Regular	
VINOTH KUMAR V	AMIPV6813E	ME/M-TECH	20-07-2013	Power Electronics and Drives	Assistant Professor	7/1/2021	100	0	0	Yes	Regular	
GURUSAMY K	AKZPG1047L	M.A and Ph.D	8/18/2017	English Language Teaching	Assistant Professor	10/7/1997	100	100	100	Yes	Regular	
HARIHARASUDAN A	AEHPH0160B	M.A and Ph.D	3/5/2018	English Language and Literature	Assistant Professor	1/2/2010	100	100	100	Yes	Regular	
HEPSIBA S	AWNPH6935J	M.Phil	3/19/2016	Common Wealth Literature	Assistant Professor	6/1/2016	100	100	100	Yes	Regular	
JOTHI C	BJSPJ0464K	M.A and Ph.D	10/23/2013	Latin American Literature	Assistant Professor	6/1/2016	100	100	100	Yes	Regular	
KANNAN R	BGWPK8723R	M.A and Ph.D	8/12/2009	English Language Teaching	Assistant Professor	7/1/2004	0	100	100	No	Regular	5/6/2021
MOHAN S	AXGPM2867C	M.A and Ph.D	6/13/2013	African American Literature	Assistant Professor	7/8/2015	100	100	100	Yes	Regular	
PANDIA RAJAMMAL P	CCLPP3080Q	M.A and Ph.D	7/14/2017	Comparative Literature	Assistant Professor	6/12/2017	100	100	100	Yes	Regular	

RAMKUMAR E V	BXLPR8008J	M.A and Ph.D	4/14/2014	English Language Teaching	Assistant Professor	6/1/2016	100	100	100	Yes	Regular	
REMA DEVI S	AJVPD3399K	M.A and Ph.D	1/11/2016	India Writing	Assistant Professor	6/12/2017	100	100	100	Yes	Regular	
Aravindan B R	AXZPA9295R	M-A	7/17/2014	English Language Teaching	Assistant Professor	7/1/2021	100	0	0	Yes	Regular	
NAGARAJAN K	AAWPN0715D	M.Sc. and PhD	5/1/2010	Graph Theory	Assistant Professor	6/12/2017	0	100	100	No	Regular	5/6/2021
AMMAKKANN U G	AOVPA8259A	M.Phil	4/1/2008	Algebra	Assistant Professor	7/1/2002	0	100	100	No	Regular	5/25/2021
ANITHA M	BTNPA4382A	M.Phil	6/25/2015	Graph Theory	Assistant Professor	7/17/2020	0	100	0	No	Regular	5/25/2021
HEMALATHA S V	ACPPH5737G	M.Sc. and PhD	10/1/2017	Fluid Dynamics	Assistant Professor	6/12/2017	0	100	100	No	Regular	5/25/2021
KARUNAKARA N P	EFDPK3188H	M.Phil	4/1/2013	Topology	Assistant Professor	6/29/2013	0	100	100	No	Regular	5/25/2021
NIRMALA K	AMTPN5584H	M.Sc. and PhD	5/17/2017	Differential Equations	Assistant Professor	6/3/2019	0	100	100	No	Regular	5/25/2021
PRABHU C	CZSPP1923Q	M.Phil	7/1/2019	Fuzzy Topology	Assistant Professor	12/29/2010	0	100	100	No	Regular	5/25/2021
PRAKASH B	CYFPP7043B	M.Sc. and PhD	4/18/2018	Topology	Assistant Professor	6/29/2015	0	100	100	No	Regular	5/25/2021
RAJAKUMAR S	AFOPR8593L	M.Sc. and PhD	11/1/2015	Topology	Assistant Professor	6/25/2017	0	100	100	No	Regular	5/25/2021
SANKARA NARAYANAN P	GLZPS0006N	M.Phil	5/1/2015	Algebraic Graph Theory	Assistant Professor	6/29/2015	0	100	0	No	Regular	5/25/2021
SARAVANAKU MAR S	HDTPS3739D	M.Sc. and PhD	7/28/2017	Graph Theory	Assistant Professor	5/4/2011	0	100	100	No	Regular	5/25/2021
SARAVANAN M	GXDPS4198R	M.Sc. and PhD	12/8/2017	Graph Theory	Assistant Professor	6/29/2015	0	100	100	No	Regular	5/25/2021
SUTHERSAN P	DCUPS6588E	M.Phil	10/1/2016	Statistics	Assistant Professor	6/29/2015	0	100	100	No	Regular	5/25/2021
MERLIN S	BSLPM4085R	M.Phil	4/1/2000	Graph Theory	Assistant Professor	6/18/2000	0	100	100	No	Regular	6/4/2021
AHILA A	BBSPA8104R	M.Phil	12/1/2007	Graph Theory	Assistant Professor	9/8/2014	100	100	100	Yes	Regular	
INDIRA K	AENPI3699N	M.Sc. and PhD	3/2/2015	Differential Equations	Assistant Professor	7/10/2020	100	100	0	Yes	Regular	
KAMESWARI M	AINPK7170L	M.Sc. and PhD	11/19/2012	Fuzzy Topology	Assistant Professor	8/10/2020	100	100	0	Yes	Regular	
MATHESWARA N M	AWWPM4526B	M.Phil	5/9/2009	Topology	Assistant Professor	6/27/2018	100	100	100	Yes	Regular	

MUTHUSUBRA MANIAN L	BHRPM34 35Q	M.Phil	6/15/2018	Graph Theory	Assistant Professor	12/2/2019	0	100	0	No	Regular	6/30/2021
RADHA S	DUTPK99 09J	M.Sc	8/21/2010	Queuing Theory	Assistant Professor	6/23/2018	100	100	100	Yes	Regular	
SHUNMUGA PRIYA B	CPAPS948 4M	M.Phil	4/25/2007	Statistical Quality Control	Assistant Professor	11/26/201 9	100	100	0	Yes	Regular	
YEGNANARAY ANAN V	AANPY23 56A	ME/M. Tech and PhD	3/6/1997	Graph Theory	Professor	2/22/2021	100	100	0	Yes	Regular	
DEVIKA V	HDBPD34 24E	M-Sc-, M-Phil-, Ph-D	12/22/202 1	Statistical Quality Control	Assistant Professor	7/1/2021	100	0	0	Yes	Regular	
HYDER ABBAS RIZVI	BVRPR86 58A	M-Sc-, M-Phil-, Ph-D	4/8/2017	Variational Inequalities	Assistant Professor	8/2/2021	100	0	0	Yes	Regular	
KARTHICK P	BRUPK85 81N	M-Sc-, M-Phil-, Ph-D	4/30/2018	Fuzzy Graph Theory	Assistant Professor	8/3/2021	100	0	0	Yes	Regular	
MUTHUKANI VAIRAVEL T	AXLPM34 77F	M-Sc-, M-Phil-, Ph-D	7/6/2021	Graph Theory	Assistant Professor	8/3/2021	100	0	0	Yes	Regular	
SRIDEVI S	BLXPS64 33G	M-Sc-, M-Phil-, Ph-D	2/28/2017	Queuing Theory	Assistant Professor	8/3/2021	100	0	0	Yes	Regular	
RAJESHKUMAR MOHAPATRA	CGGPM80 80A	M-Sc-, M-Phil-, Ph-D	7/19/2021	Fuzzy Set Theory	Assistant Professor	8/3/2021	100	0	0	Yes	Regular	
ASHA N	EHUPA32 50P	M-Phil	4/30/2019	Graph Theory	Assistant Professor	8/3/2021	100	0	0	Yes	Regular	
CHITRA G	BGNPC93 37E	M-Sc-, M- Phil-, Ph-D	7/28/2021	Graph Theory	Assistant Professor	8/4/2021	100	0	0	Yes	Regular	
ANUSHRAJ B	CBTPB07 71R	M.E/M.Tech	11/14/201 4	Energy engineering	Assistant Professor	5/10/2018	0	0	100	No	Regular	5/26/2020
GOWTHAM RAJAN A	VJWPV00 86Q	M.E/M.Tech	10/8/2016	Automobile Engineering	Assistant Professor	5/23/2016	100	100	100	No	Regular	5/16/2022
GOWTHAMAN S	BCPPG72 51K	ME/M. Tech and PhD	1/17/2017	Internal Combustion Engineering	Associate Professor	6/12/2017	100	100	0	Yes	Regular	
JESSY MICHA L R	AVTPJ247 9A	M.E/M.Tech	1/5/2013	CAD	Assistant Professor	5/1/2018	0	0	100	No	Regular	5/26/2020
KARTHIK K	BMAPK71 07H	ME/M. Tech and PhD	7/27/2021	CFD	Associate Professor	7/2/2018	100	100	100	No	Regular	5/6/2022
KARTHIKEYAN S	BDFPK53 92C	ME/M. Tech and PhD	5/16/2017	Production Engineering	Associate Professor	6/1/2009	100	100	100	Yes	Regular	
KOPPIAHRAJ K	EPJPK642 8G	M.E/M.Tech	11/27/201 6	CAD CAM	Assistant Professor	5/16/2018	0	100	100	No	Regular	5/25/2021
SANKAR J	GICPS049 0A	M.E/M.Tech	9/9/2015	Nano Science and Nano Technology	Assistant Professor	5/16/2018	0	0	100	No	Regular	5/26/2020

SARATHKUMAR SEBASTIN J	AZNPJ1008K	M.E/M.Tech	5/5/2017	Solid Propulsion	Assistant Professor	6/12/2017	100	100	0	Yes	Regular	
SENTHILMUTHU KUMAR T	CVBPS1817D	ME/M. Tech and PhD	10/28/2018	Automotive Engineering	Associate Professor	1/2/2010	100	100	100	Yes	Regular	
SHYAMLAL C	DIWPS3034K	M.E/M.Tech	6/10/2011	Production Engineering	Assistant Professor	5/1/2018	0	100	100	No	Regular	5/25/2021
SIVASUBRAMANIAN M	AXOPS8894F	ME/M. Tech and PhD	10/16/2016	Production Engineering	Associate Professor	6/5/2008	100	100	100	Yes	Regular	
VELMURUGAN K	BJFPV3765C	M.E/M.Tech	8/31/2017	Manufacturing Engineering	Assistant Professor	5/12/2017	0	100	100	No	Regular	5/27/2021
Dr.G. Kalusuraman	AZZPK9807F	ME/M- Tech and PhD	5/9/2017	Manufacturing Engg	Associate Professor	6/4/2009	100	0	0	Yes	Regular	
Mr. M. ManojPrabhakar	AXRPM3548F	M-E/M-Tech	6/8/2011	CAD/CAM	Assistant Professor	1/12/2012	100	0	0	Yes	Regular	
Mr. G. Poomarimuthumar	ATZPP6870D	M-E/M-Tech	6/7/2005	Manufacturing Engg	Assistant Professor	5/2/2016	100	0	0	Yes	Regular	
ARIVARASAN A	BYPPA4607P	M.Sc. and PhD	10/20/2014	Nanotechnology	Associate Professor	7/4/2016	100	100	100	Yes	Regular	
ASATH BAHADUR S	AENPA1181R	M.Sc. and PhD	12/8/1994	Crystal Growth	Professor	3/2/1998	100	100	100	Yes	Regular	
DEVENDRAN P	ANYPD2662C	M.Sc. and PhD	4/4/2016	Nanomaterials	Assistant Professor	6/12/2017	100	100	100	Yes	Regular	
JEYA VIJAYAN S	BAYPJ8153J	M.Sc. and PhD	7/20/2014	Spectroscopy	Assistant Professor	6/20/2006	100	100	100	Yes	Regular	
KRISHNA KUMAR M	AXOPK2479A	M.Sc. and PhD	3/26/2015	Nonlinear Optics	Assistant Professor	7/2/2015	100	100	100	Yes	Regular	
MUTHU VINAYAGAM M	ASQPM9491F	M.Sc. and PhD	6/26/2015	Polymer Electrolytes	Associate Professor	10/4/2002	0	100	100	No	Regular	5/25/2021
NAIDU DHANPAL JAYRAM	AHEPN8689H	M.Sc. and PhD	12/3/2015	Plasmonics	Assistant Professor	7/2/2018	100	100	100	Yes	Regular	
NALLAMUTHU N	AOVPN9174P	M.Sc. and PhD	10/17/2012	Electrochemical Energy Storage Devices	Associate Professor	7/1/2011	100	100	100	Yes	Regular	
REVATHY M S	ARLPR4734J	M.Sc. and PhD	12/9/2016	Thin Film	Assistant Professor	6/5/2017	100	100	100	Yes	Regular	
SARAVANAKUMAR S	FDMPS1972M	M.Sc. and PhD	8/27/2015	Optoelectronic Materials	Assistant Professor	9/19/2009	100	100	100	Yes	Regular	
SASIKUMAR S	HVFPS1260H	M.Sc. and PhD	12/14/2018	Ceramic Materials	Assistant Professor	6/20/2020	100	100	0	Yes	Regular	
SELVA RENGAN P	CVHPS2083R	M.Sc. and PhD	6/17/2005	Spectroscopy	Associate Professor	10/30/2006	100	100	100	Yes	Regular	

SRIKUMAR S R	BTMPS8537G	M.Sc. and PhD	1/22/1998	Solar Cell and Thin Films	Professor	7/1/1984	100	100	100	Yes	Regular	
THANGARASUS	AILPT3807H	M.Sc. and PhD	4/11/2017	Spectroscopy	Assistant Professor	7/14/2007	100	100	100	Yes	Regular	
THEIVA SANTHI T	AHEPT8110F	M.Sc. and PhD	12/14/2014	Nanomaterials	Associate Professor	11/1/2001	100	100	100	Yes	Regular	
VANITHA D	AGUPV6818M	M.Sc. and PhD	12/5/2016	Polymer Electrolytes	Assistant Professor	8/8/2007	100	100	100	Yes	Regular	
VISWANATHAN K	ABNPV6689C	M.Sc. and PhD	11/29/1989	Spectroscopy	Professor	8/17/2017	0	100	100	No	Regular	5/25/2021
INDIRA DEVI M P	AFOPI3777H	M-Sc-, M-Phil-, Ph-D	6/28/2019	Polymer Composites	Assistant Professor	7/1/2021	100	0	0	No	Regular	5/30/2022
SANDEEP AASHISH	BDTPA4390N	<u>M-Sc-, Ph-D</u>	7/17/2020	Cosmology	Assistant Professor	7/1/2021	100	0	0	No	Regular	6/10/2022
Dr. S. MARAGATHA SUNDARI	AUXPS6060P	M-Sc-, M-Phil-, Ph-D	8/16/2016	Queuing Theory	Assistant Professor	6/1/2016	100	0	0	Yes	Regular	
PRIYA NAIR	ANZPN9807E	M-Sc-, M-Phil-, Ph-D	4/16/2021	Stochastic Differential Equations	Assistant Professor	7/1/2021	100	0	0	No	Regular	5/30/2022
MANIVANNAN M	GTRPM3998B	M-Sc-, M-Phil-, Ph-D	10/8/2021	Complex Analysis	Assistant Professor	7/1/2021	100	0	0	No	Regular	5/30/2022
SRIRAMAN R	FYNPS7271D	M-Sc-, M-Phil-, Ph-D	1/6/2020	Stability Analysis	Assistant Professor	8/3/2021	100	0	0	No	Regular	5/30/2022
AMRITHA V C	BPIPA4644E	M-Sc-, M-Phil-, Ph-D	3/18/2021	Algebraic Graph Theory	Assistant Professor	8/3/2021	100	0	0	No	Regular	5/30/2022
TAMILVANAN K	AWJPT1536F	M-Sc-, M-Phil-, Ph-D	9/30/2021	Functional Equations	Assistant Professor	8/3/2021	100	0	0	No	Regular	5/30/2022

8.1 First Year Student-Faculty Ratio (FYSFR) (5)

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

8.2 Qualification of Faculty Teaching First Year Common Courses (5)

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

Details of the Ph.D. Faculty for the First Year Courses**Academic Year: 2021-2022**

S.No	Name of the faculty member	PAN No.	Qualification	Date of Receiving Highest Degree	Area of Specialization	Designation	Date of joining
1.	ANISHA M	CJEP A1703P	ME/M- Tech and PhD	01-05-2018	Bioinformatics	Associate Professor	27-06-2018
2.	GANGADHARA A	AMKPA3080A	M-Sc- and PhD	08-03-2017	Organic Chemistry	Assistant Professor	30-06-2015
3.	GEETHA D	ASCPG2788H	M-Sc- and PhD	09-08-2016	Industrial Chemistry	Associate Professor	12-06-2017
4.	LAKSHMINARAYANAN P	BIFPP3194Q	M-Sc- and PhD	09-08-2016	Inorganic chemistry	Associate Professor	03-12-2008
5.	NAGARAJAN E R	AGLPN0824E	M-Sc- and PhD	25-01-2001	Polymer Chemistry	Professor	01-09-2000
6.	RAMALINGAN C	BDTPR7626A	M-Sc- and PhD	06-10-2002	Organic Chemistry	Professor	03-12-2002
7.	SELVAPALAM N	DLJPS5567K	M-Sc- and PhD	26-05-1997	Organic Chemistry	Associate Professor	02-03-2000
8.	SIVARANJANA P	DDGPS6521E	M-Sc- and PhD	04-01-2020	Material Chemistry	Assistant Professor	13-06-2008
9.	SUNDARAVEL B	CCQPS6642Q	M-Sc- and PhD	05-11-2014	Organic Chemistry	Assistant Professor	12-12-2016
10.	SWAMINATHAN M	AGEPS5149N	M-Sc- and PhD	17-05-1983	Organic Chemistry	Professor	06-07-2015
11.	SYED ALI FATHIMA S	GFBPS1442N	M-Sc- and PhD	03-04-2021	Inorganic chemistry	Assistant Professor	15-07-2020
12.	DATTATRI K NAGESHA	AUSPN23364	M- Sc-, Ph- D	08-01-2004	Nanomaterials	Professor	01-07-2021

S.No	Name of the faculty member	PAN No.	Qualification	Date of Receiving Highest Degree	Area of Specialization	Designation	Date of joining
13.	PRANEETH K K	FQAPK5641G	M- Sc-, Ph- D-	04-02-2008	Inorganic chemistry	Associate Professor	02-08-2021
14.	THIRUPPATHI M	ATCPT4721E	M- Sc-, M- Phil-,PhD	03-04-2021	Material Chemistry	Assistant Professor	01-07-2021
15.	SIVARAMAKARTHIKEYAN R	FCDPS9780P	M- Sc-, Ph- D-	15-09-2021	Organic Chemistry	Assistant Professor	01-07-2021
16.	AMUTHA	DURPA4884L	M- Sc-, Ph- D-	08-12-2006	Industrial Chemistry	Assistant Professor	02-08-2021
17.	STALIN DURAI	HENPS1785C	M- Sc-, Ph- D-	12-04-2018	Organic Chemistry	Assistant Professor	02-08-2021
18.	KUMERESAN M	HCFPM9248Q	M- Sc-, Ph- D-	11-11-2020	Material Chemistry	Assistant Professor	02-08-2021
19.	SMRITHY G S	FQAPS2652P	ME/M- Tech and PhD	22-04-2021	Data Science	Associate Professor	20-07-2021
20.	BALAJI C	BFSPB4768J	ME/M- Tech and PhD	30-06-2019	Networks & Security	Associate Professor	20-07-2021
21.	MOHD- USAMA	ACYPU5228N	ME/M- Tech and PhD	28-06-2020	Deep Learning	Associate Professor	20-07-2021
22.	RAJESH K	AORPR0656Q	ME/M- Tech and PhD	01-03-2018	Power System	Associate Professor	27-07-2011
23.	SHILAJA C	BQVPS2054Q	ME/M- Tech and PhD	05-04-2018	Power System	Assistant Professor	09-07-2018
24.	VIJAYAKUMAR K	ANGPV8484Q	ME/M- Tech and PhD	11-12-2021	Power Electronics and Drives	Associate Professor	01-07-2011
25.	GURUSAMY K	AKZPG1047L	M-A and Ph-D	18-08-2017	English Language Teaching	Assistant Professor	07-10-1997
26.	HARIHARASUDAN A	AEHPH0160B	M-A and Ph-D	05-03-2018	English Language and Literature	Assistant Professor	02-01-2010
27.	JOTHI C	BJSPJ0464K	M-A and Ph-D	23-10-2013	Latin American Literature	Assistant Professor	01-06-2016
28.	MOHAN S	AXGPM2867C	M-A and Ph-D	13-06-2013	African American Literature	Assistant Professor	08-07-2015

S.No	Name of the faculty member	PAN No.	Qualification	Date of Receiving Highest Degree	Area of Specialization	Designation	Date of joining
29.	PANDIA RAJAMMAL P	CCLPP3080Q	M-A and Ph-D	14-07-2017	Comparative Literature	Assistant Professor	12-06-2017
30.	RAMKUMAR E V	BXLPR8008J	M-A and Ph-D	14-04-2014	English Language Teaching	Assistant Professor	01-06-2016
31.	REMA DEVI S	AJVPD3399K	M-A and Ph-D	11-01-2016	India Writing	Assistant Professor	12-06-2017
32.	PRIYA NAIR	ANZPN9807E	<u>M-Sc-, M-Phil-,Ph-D</u>	16-04-2021	Stochastic Differential Equations	Assistant Professor	01-07-2021
33.	MANIVANNAN M	GTRPM3998B	<u>M-Sc-, M-Phil-,Ph-D</u>	08-10-2021	Complex Analysis	Assistant Professor	01-07-2021
34.	SRIRAMAN R	FYNPS7271D	<u>M-Sc-, M-Phil-,Ph-D</u>	06-01-2020	Stability Analysis	Assistant Professor	03-08-2021
35.	AMRITHA V C	BPIPA4644E	<u>M-Sc-, M-Phil-,Ph-D</u>	18-03-2021	Algebraic Graph Theory	Assistant Professor	03-08-2021
36.	TAMILVANAN K	AWJPT1536F	<u>M-Sc-, M-Phil-,Ph-D</u>	30-09-2021	Functional Equations	Assistant Professor	03-08-2021
37.	INDIRA K	AENPI3699N	M-Sc- and PhD	02-03-2015	Differential Equations	Assistant Professor	10-07-2020
38.	KAMESWARI M	AINPK7170L	M-Sc- and PhD	19-11-2012	Fuzzy Topology	Assistant Professor	10-08-2020
39.	YEGNANARAYANAN V	AANPY2356A	ME/M- Tech and PhD	06-03-1997	Graph Theory	Professor	22-02-2021
40.	DEVIKA V	HDBPD3424E	<u>M-Sc-, M-Phil-,Ph-D</u>	22-12-2021	Statistical Quality Control	Assistant Professor	01-07-2021
41.	HYDER ABBAS RIZVI	BVRPR8658A	<u>M-Sc-, M-Phil-,Ph-D</u>	08-04-2017	Variational Inequalities	Assistant Professor	02-08-2021
42.	KARTHICK P	BRUPK8581N	<u>M-Sc-, M-Phil-,Ph-D</u>	30-04-2018	Fuzzy Graph Theory	Assistant Professor	03-08-2021
43.	MUTHUKANI VAIRAVEL T	AXLPM3477F	<u>M-Sc-, M-Phil-,Ph-D</u>	06-07-2021	Graph Theory	Assistant Professor	03-08-2021
44.	SRIDEVI S	BLXPS6433G	<u>M-Sc-, M-Phil-,Ph-D</u>	28-02-2017	Queuing Theory	Assistant Professor	03-08-2021
45.	RAJESHKUMAR MOHAPATRA	CGGPM8080A	<u>M-Sc-, M-Phil-, Ph-D</u>	19-07-2021	Fuzzy Set Theory	Assistant Professor	03-08-2021

S.No	Name of the faculty member	PAN No.	Qualification	Date of Receiving Highest Degree	Area of Specialization	Designation	Date of joining
46.	CHITRA G	BGNPC9337E	M-Sc-, M-Phil-, Ph-D	28-07-2021	Graph Theory	Assistant Professor	04-08-2021
47.	GOWTHAMAN S	BCPPG7251K	ME/M- Tech and PhD	17-01-2017	Internal Combusion Engineering	Associate Professor	12-06-2017
48.	KARTHIK K	BMAPK7107H	ME/M- Tech and PhD	27-07-2021	CFD	Associate Professor	02-07-2018
49.	KARTHIKEYAN S	BDFPK5392C	ME/M- Tech and PhD	16-05-2017	Production Engineering	Associate Professor	01-06-2009
50.	SENTHILMUTHU KUMAR T	CVBPS1817D	ME/M- Tech and PhD	28-10-2018	Automotive Engineering	Associate Professor	02-01-2010
51.	SIVASUBRAMANIAN M	AXOPS8894F	ME/M- Tech and PhD	16-10-2016	Production Engineering	Associate Professor	05-06-2008
52.	Dr.G. Kalusuraman	AZZPK9807F	ME/M- Tech and PhD	09-05-2017	Manufacturing Engg	Associate Professor	04-06-2009
53.	ARIVARASAN A	BYPPA4607P	M-Sc- and PhD	20-10-2014	Nanotechnology	Associate Professor	04-07-2016
54.	ASATH BAHADUR S	AENPA1181R	M-Sc- and PhD	08-12-1994	Crystal Growth	Professor	02-03-1998
55.	DEVENDRAN P	ANYPD2662C	M-Sc- and PhD	04-04-2016	Nanomaterials	Assistant Professor	12-06-2017
56.	JEYA VIJAYAN S	BAYPJ8153J	M-Sc- and PhD	20-07-2014	Spectroscopy	Assistant Professor	20-06-2006
57.	KRISHNA KUMAR M	AXOPK2479A	M-Sc- and PhD	26-03-2015	Nonlinear Optics	Assistant Professor	02-07-2015
58.	NAIDU DHANPAL JAYRAM	AHEPN8689H	M-Sc- and PhD	03-12-2015	Plasmonic	Assistant Professor	02-07-2018
59.	NALLAMUTHU N	AOVPN9174P	M-Sc-, M-Phil-, Ph-D	17-10-2012	Electrochemical Energy Storage Devices	Associate Professor	01-07-2011
60.	REVATHY M S	ARLPR4734J	M-Sc- and PhD	09-12-2016	Thin Film	Assistant Professor	05-06-2017
61.	SARAVANAKUMAR S	FDMPS1972M	M-Sc- and PhD	27-08-2015	Optoelectronic Materials	Assistant Professor	19-09-2009
62.	SASIKUMAR S	HVFPS1260H	M-Sc- and PhD	14-12-2018	Ceramic Materials	Assistant Professor	20-06-2020
63.	SELVA RENGAN P	CVHPS2083R	M-Sc- and PhD	17-06-2005	Spectroscopy	Associate Professor	30-10-2006

S.No	Name of the faculty member	PAN No.	Qualification	Date of Receiving Highest Degree	Area of Specialization	Designation	Date of joining
64.	SRIKUMAR S R	BTMPS8537G	M-Sc- and PhD	22-01-1998	Solar Cell and Thin Films	Professor	01-07-1984
65.	THANGARASU S	AILPT3807H	M-Sc- and PhD	11-04-2017	Spectroscopy	Assistant Professor	14-07-2007
66.	THEIVA SANTHI T	AHEPT8110F	M-Sc- and PhD	14-12-2014	Nanomaterials	Associate Professor	01-11-2001
67.	VANITHA D	AGUPV6818M	M-Sc- and PhD	05-12-2016	Polymer Electrolytes	Assistant Professor	08-08-2007
68.	INDIRA DEVI M P	AFOPI3777H	<u>M-Sc-</u> <u>M-Phil-,Ph-D</u>	28-06-2019	Polymer Composites	Assistant Professor	01-07-2021
69.	SANDEEP AASHISH	BDTPA4390N	<u>M-Sc-, Ph-D</u>	17-07-2020	Cosmology	Assistant Professor	01-07-2021
70.	Dr. S. MARAGATHA SUNDARI	AUXPS6060P	<u>M-Sc-</u> <u>M-Phil-,Ph-D</u>	16-08-2016	Queuing Theory	Assistant Professor	01-06-2016

8.3 First Year Academic Performance (10)

Academic Performance	2020-21	2019-20	2018-19
Mean of CGPA (X)	7.8	7.46	6.81
Total No. of Successful Students (Y)	1228	1160	752
Total No. of students appeared in the examination (Z)	1228	1160	752
API [X*(Y/Z)]	7.8	7.46	6.81
Assessment - Average	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> <p>Similar strategy has been adopted for all the COs such as CO1, CO2, CO3, CO4 and CO5.</p>

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.

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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	A																																									
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 <div>CO Nos</div> <table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr><tr><td>1</td><td>2</td><td>2</td><td></td><td>2</td></tr><tr><td>2</td><td>3</td><td>2</td><td></td><td>3</td></tr><tr><td>3</td><td>3</td><td>2</td><td></td><td>3</td></tr><tr><td>4</td><td>3</td><td>2</td><td></td><td>3</td></tr><tr><td>5</td><td>3</td><td>2</td><td></td><td>2</td></tr></table> <div>Arr. Mat.</div> <div>(Arr. Mat.)</div> <table><tr><td>2.8</td><td>2</td><td></td><td></td><td>2.6</td></tr><tr><td>3</td><td>2</td><td></td><td></td><td>3</td></tr></table>								1	2	3	4	5	1	2	2		2	2	3	2		3	3	3	2		3	4	3	2		3	5	3	2		2	2.8	2			2.6	3	2			3
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CO3	35	15	0	50	50	0	50	100																																																																		
CO4	35	15	0	50	50	0	50	100																																																																		
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Attainment Levels fixed for the class																CO ATTAINMENT																																																										

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																																																																																																																												
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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.

The screenshot displays an Excel spreadsheet used for calculating cumulative internal marks. The formula bar at the top shows a complex IF formula: $\text{IF}(C43="A",0,(C43/SCS41*SCS10))+\text{IF}(G43="A",0,(G43/SGS41*SDS10))+\text{IF}(L43="A",0,(L43/SLS41*SES10))$.

The spreadsheet is divided into several sections:

- Methodology:** A table with columns for SE, ASS, IPE, TOT, ESE, EPE, and TOT, with rows for CO1 through CO5.
- Threshold value:** A table with columns for I, M, and % students reached the threshold value, with rows for S Level, S Level, G Level, and E Level.
- Attainment Levels fixed for the class:** A table with columns for I, M, and % students reached the threshold value, with rows for S Level, S Level, G Level, and E Level.
- CO ATTAINMENT:** A table with columns for DIRECT, CIE, EXT, TOT, CUM, and INDIRECT TOT, with rows for CO Nos 1 through 5.
- PO ATTAINMENT:** A table with columns for Direct Att and Indirect Att, with rows for PO 1 through 12.
- CONSOLIDATION OF CO ATTAINMENT:** A table with columns for CONDITION, Sessional, Assignment, Practical Examination, End semester, End Practical, Internal, External, and Total, with rows for CO1 through CO5.
- MACRO ANALYSIS:** A table with columns for Reg. No., Sessional, Assignment, Practical Examination, End semester, End Practical, Internal, External, and Total, with rows for Reg. No. 1 through 10.

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.

Fig. 5. Snapshot of calculation of cumulative External marks of the students appeared for the course

To calculate the CO attainment for a particular course outcome, the cumulative total mark has been calculated as follows.

For example, BIT18R101-Biology for Engineer is chosen.

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.

For example, BIT18R101-Biology for Engineer is chosen. Number of students reached the benchmark score is represented in the attained tab. In total cumulative marks for C01 out of 841, 631 students are crossed the benchmark score. Similarly, the values are calculated for all other COs.

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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.

$$\text{i.e., } \frac{\text{Total no of students attained the particular CO of the course}}{\text{Total no of students appeared for the course}} \text{ -----(1)}$$

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.

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Fig. 9. Snapshot of level of program for the COs shown in the attainment sheet

STEP 10. Calculation of Direct CO attainment by considering average attainment of all COs:

The direct CO attainment is calculated using the following formula.

$$\frac{((\text{Level of CO1}) + (\text{Level of CO2}) + (\text{Level of CO3}) + (\text{Level of CO4}) + (\text{Level of CO5}))}{5}$$

BIT18R101-Biology for Engineer is chosen, the average is calculated (from the below table) as follows,

$$((2 + 2 + 2 + 2 + 3)) / 5 = 2.2$$

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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											
		1	2	3	4	5	6	7	8	9	10	11	12
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.

			<p>1. The concept of the infection and immunity were not understood by the students because the students are mostly from the computer science background.</p> <p>2. Students were unable to present themselves in the examinations since it was quiz-based examination.</p>
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.
			<p>CHY18R171</p> <p>1. The students felt the concepts were tough for them as they deal with higher level of chemistry.</p> <p>2. Identification of the practical experiments were troubling because of lack of resources among the students.</p>
			<p>CSE18R171</p> <p>1. The students felt tough to deal with programming fundamentals.</p>
			<p>MAT18R102</p> <p>1. The students were unable to understand the applications of</p>

			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.			
PO8	2.1	2.78	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.
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.			

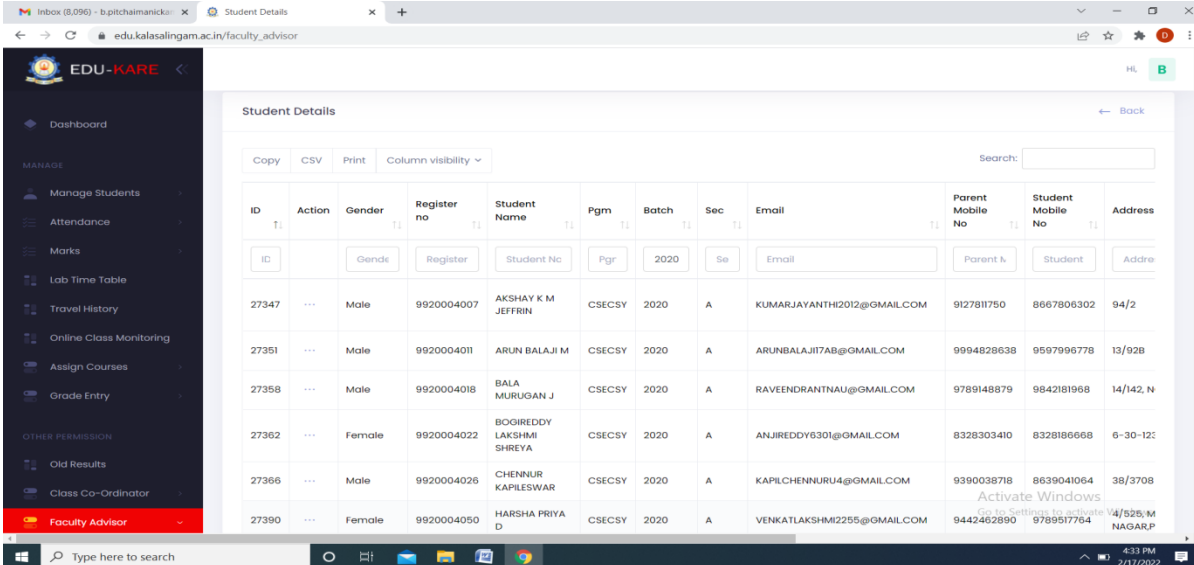
CRITERIA 9	
STUDENT SUPPORT SYSTEMS	50

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 Fig. 9.1.1.



The screenshot displays the EDU-KARE Faculty Advisor interface. On the left is a dark sidebar with navigation options: Dashboard, Manage Students, Attendance, Marks, Lab Time Table, Travel History, Online Class Monitoring, Assign Courses, Grade Entry, Other Permission, Old Results, and Class Co-Ordinator. The main area shows a 'Student Details' table with columns for ID, Action, Gender, Register no, Student Name, Pgm, Batch, Sec, Email, Parent Mobile No, Student Mobile No, and Address. The table contains 7 rows of student data. At the bottom, there is an 'Activate Windows' watermark.

ID	Action	Gender	Register no	Student Name	Pgm	Batch	Sec	Email	Parent Mobile No	Student Mobile No	Address
27347	...	Male	9920004007	AKSHAY K M JEFFRIN	CSECSY	2020	A	KUMARJAYANTH2012@GMAIL.COM	9127811750	8667806302	94/2
27351	...	Male	9920004011	ARUN BALAJI M	CSECSY	2020	A	ARUNBALAJI7AB@GMAIL.COM	9994828638	9597996778	13/928
27358	...	Male	9920004018	BALA MURUGAN J	CSECSY	2020	A	RAVEENDRANTHAU@GMAIL.COM	9789148879	9842181968	14/142, N
27362	...	Female	9920004022	BOGIREDDY LAKSHMI SHREYA	CSECSY	2020	A	ANJIREDDY6301@GMAIL.COM	8328303410	8328186668	6-30-12C
27366	...	Male	9920004026	CHENNUR KAPILSWAR	CSECSY	2020	A	KAPILCHENNURU4@GMAIL.COM	9390038718	8639041064	38/3708
27390	...	Female	9920004050	HARSHA PRIYA D	CSECSY	2020	A	VENKATLAKSHMI2255@GMAIL.COM	9442462890	9789517764	4/526, M NAGARP

Fig. 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.). The various responsibility of the Faculty Advisory System is explained in Fig. 9.1.2.

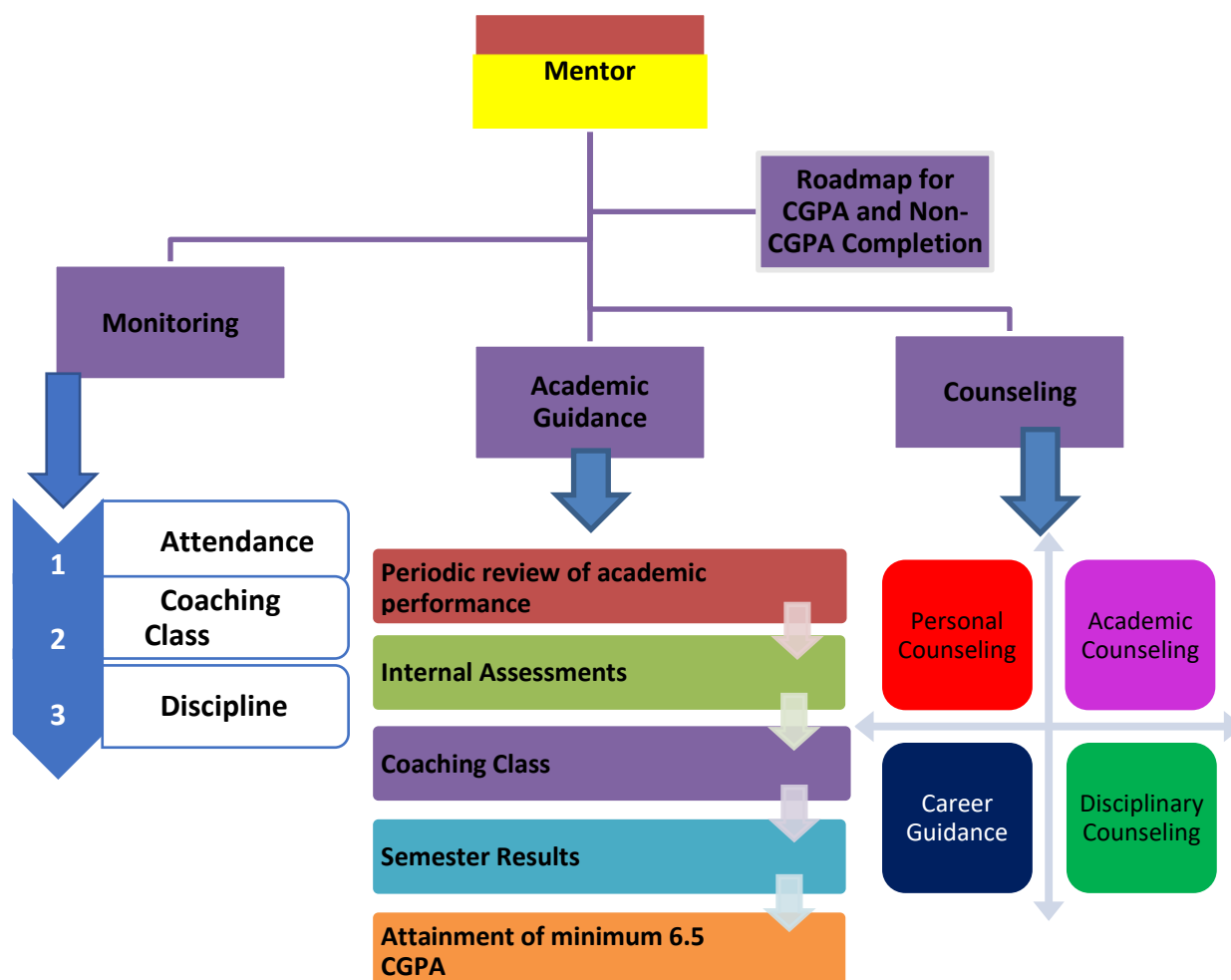


Fig. 9.1.2 Responsibility chart for the FAS

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.

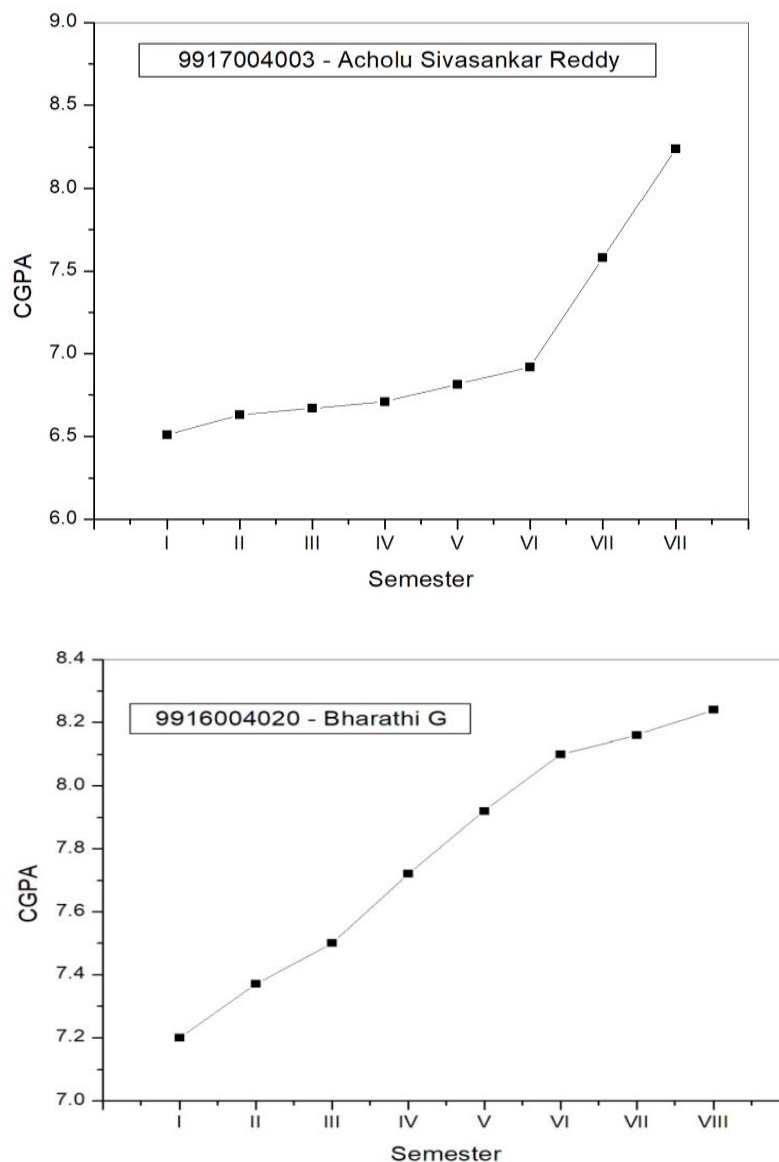


Fig. 9.1.3 Sample proof for student's improvement in CGPA through FAS

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 Fig. 9.1.4.

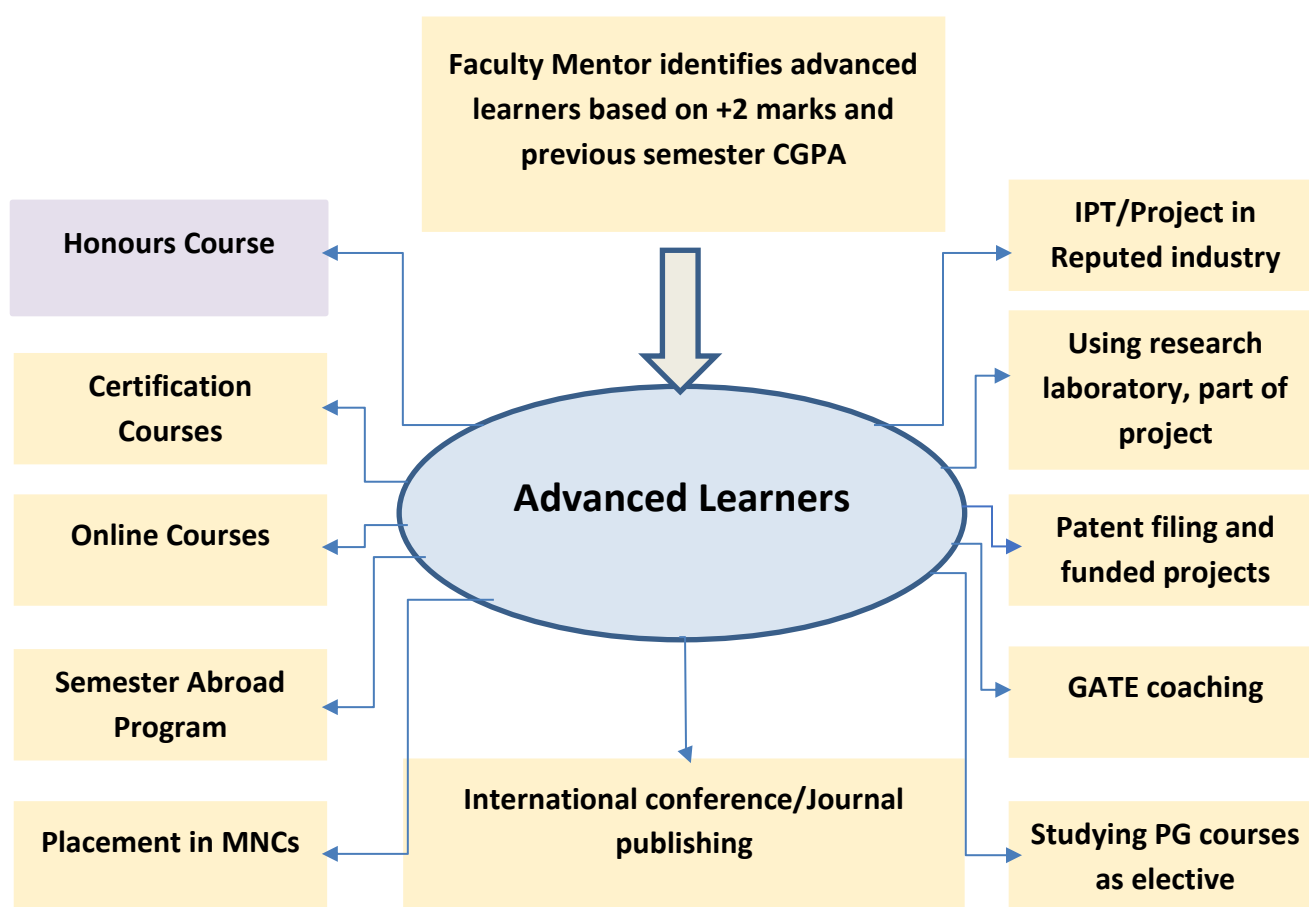


Fig.9.1.4 Methodologies followed by the FAS for advanced learners

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 'Introduction to Data Analytics' on 20.11.2019.



Fig.9.2.1. Group Photo – Trainer and Participants attended Faculty Development Program on 'Introduction to Data Analytics' on 20.11.2019.

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.



Fig.9.2.2. Dr. R. Ramalakshmi Receiving the Best Teacher award 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 (a-c).



Fig.9.2.3. (a) Dr. S.Dhanasekaran Receiving the award for Best Mentor for Project



Fig.9.2.3. (b)Ms. M. Sushmitha Receiving the award for Best Mentor Mini project



Fig.9.2.3.(c) Ms. Bala Hari Priya 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 on the basis of 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
	Individual	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

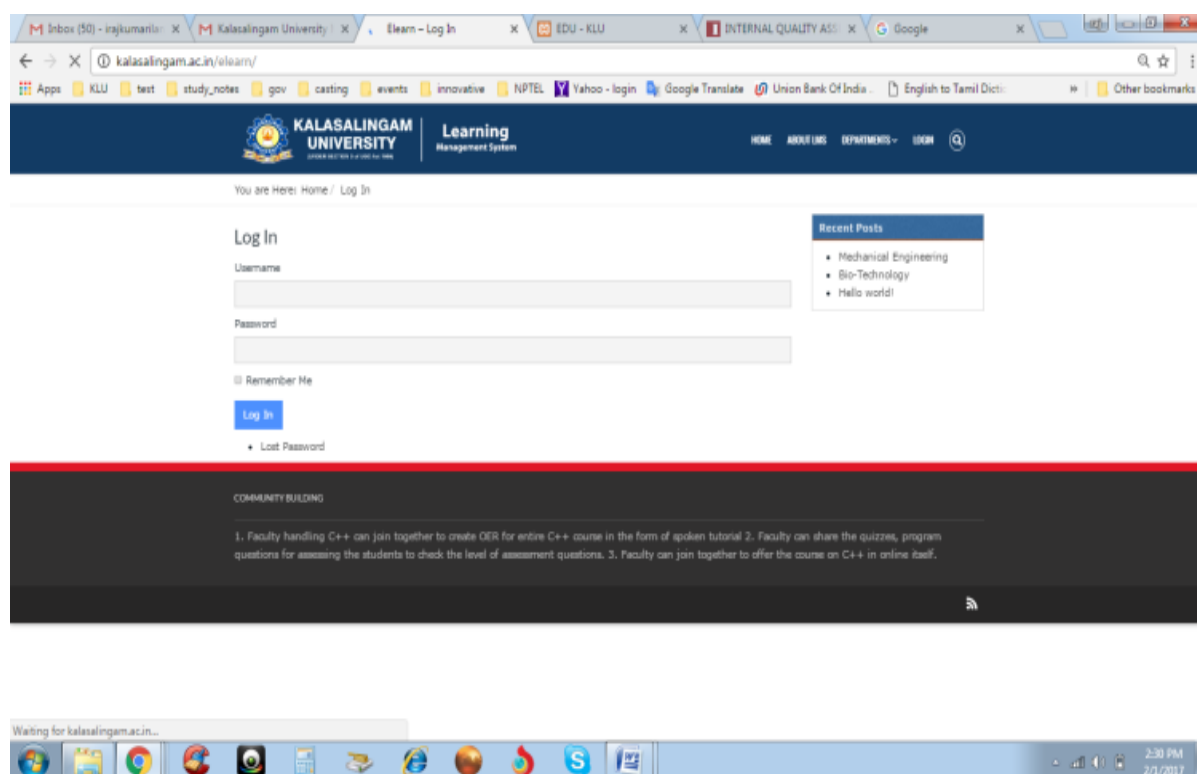


Fig.9.4.1. Learning Management System (LMS) - student's login

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 enhances the learning skills. Fig 9.4.2 shows the Learning Management System (LMS) of students' login.

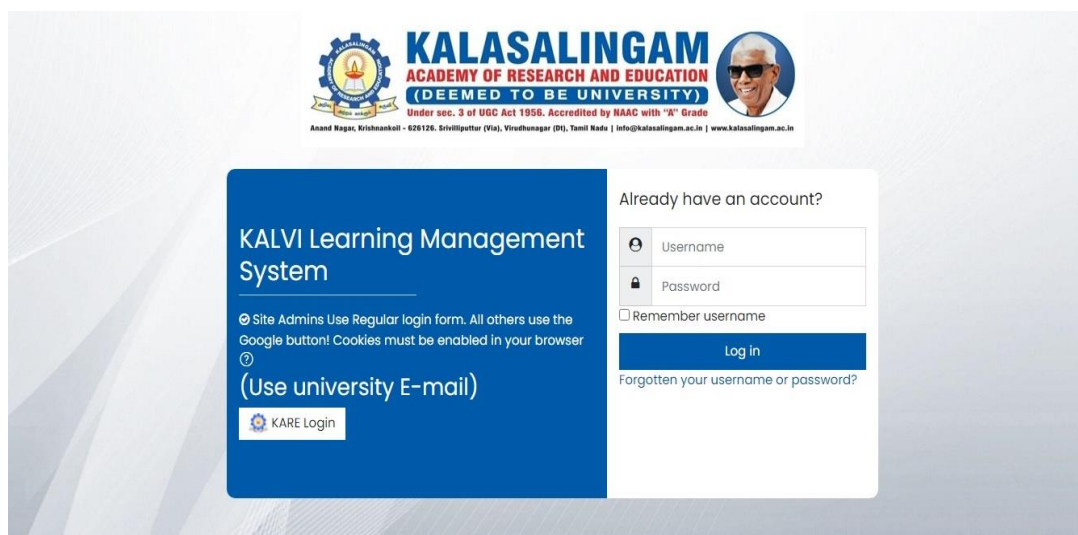


Fig.9.4.2. KALVI-Learning Management System (LMS) - student's login

- **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
2018-19	2015-19	19 th Nov, 2018	Soft skills by SMART Learning	186
		3 rd to 13 th Nov, 2018	Aptitude and Mock Interview Preparation by ABC Group	143
2019-20	2016-20	Jul – Nov, 2019	Soft skills by SMART Learning	112
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
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	67

Academic Year	Batch	Period	Training Name	No. of Students
			students Program by M/s. Top Freshers, Chennai	
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
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
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

Academic Year	Batch	Period	Training Name	No. of Students
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
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	Accenture Specific Training	639

Academic Year	Batch	Period	Training Name	No. of Students
		21 st Dec		
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
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

Academic Year	Batch	Period	Training Name	No. of Students
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
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 Soft Skills, 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.
- Incase 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 2019-20. KARE 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 student 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	Food	Mr. S. I. JeyanthAllwin	Ritujasree Anet B George Sreelakshmi

	For Carbonated Beverage Packaging			
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	RingarrBiocontrol 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 cervicalgia 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

Advanced 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
- Squat stand
- Weightlifting stand
- Weight plates
- Dumble bells
- Push- up stand
- Olympic weight bench
- Bar bell rod

- Roman chair
- Late rowing bar
- Belt vibrator
- Cheat press
- Karalakkatai
- Thigh press
- Weighing machine 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 activates 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 student’s 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). 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 students' 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 student's 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 student's club such as NSS, NCC, Sports, Nature club, Tamil Mandram, YRC, Fine Arts, Green Army, Photography and others by director of

student's affairs for every semester. This plan of activity will be disseminated to the student's 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	
24.	Swatch Bharath Awareness program	
25.	International Women Day	
26.	Anti-Terrorism Day	
27.	7 days NSS Camp	

S. No	Event Name	Club Name
28.	National Sports Day & Fit India Movement Celebration	Sports
29.	AnandamAmmal& 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	
51.	SamvidhanDiwas (Constitution Day)	
52.	NCC day	
53.	Swachh Pakhwada	
54.	Flag day	

S. No	Event Name	Club Name
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	
81.	Blood donation and Social Awareness Camp	
82.	YuReCa	
83.	Fantasy	Fine Arts
84.	Aarambh	

S. No	Event Name	Club Name
85.	Intra College Cultural Fest	
86.	Club Event	
87.	Net Zero Buildings	Green Army
88.	Strategies for energy conservation in Buildings	
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.	FOTOGRAPHIA 3.0	
102.	KAPTURED	
103.	ATTAIN 3.0	
104.	PHOTOPEDIA	
105.	Kaptured	
106.	Enfoque	
107.	Trekking	
108.	Kameria	
109.	Awareness Program on Anti-Ragging Law Ragging Menace – Awareness Campaign Anti-Ragging and Anti-Drugs	Anti-Ragging Committee

S. No	Event Name	Club Name
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.

2. 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 equipment's

8. Working Condition of Lab equipment's

- (a) All equipment's are in good condition
- (b) Some experiment setups are not working properly
- (c) Most of the equipment's 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

CRITERIA 10	
GOVERNANCE, INSTITUTIONAL SUPPORT AND FINANCIAL RESOURCES	120

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.

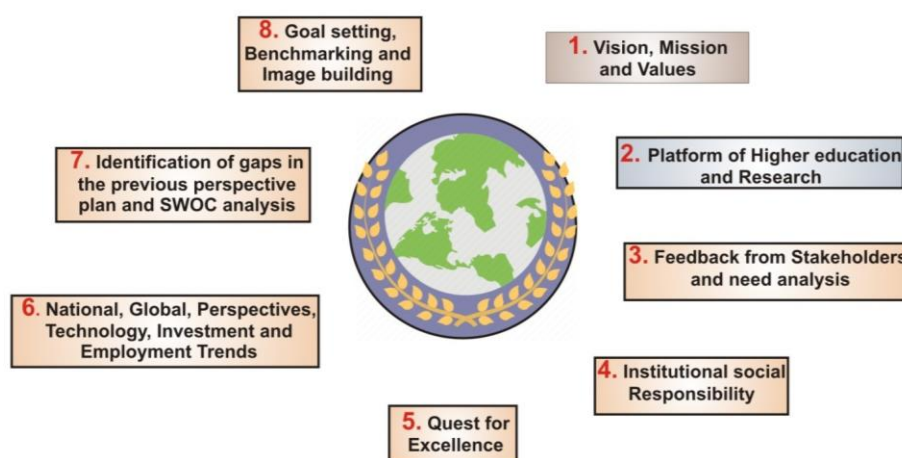


Figure 10.1.2.1 : Institutional Strategic Plan

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.

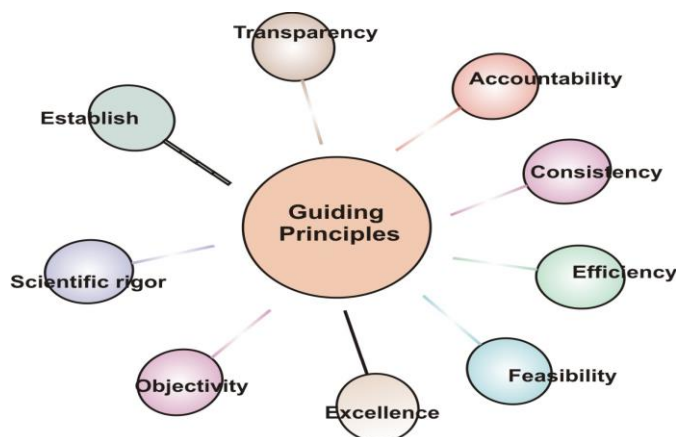


Figure 10.1.2.2: Guiding Principles

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.

Table 10.1.2.1: 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.

**Figure 10.1.2.3: Student Equity Support****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



Figure 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.



Figure 10.1.2.5: Extra Curricular Activity

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.

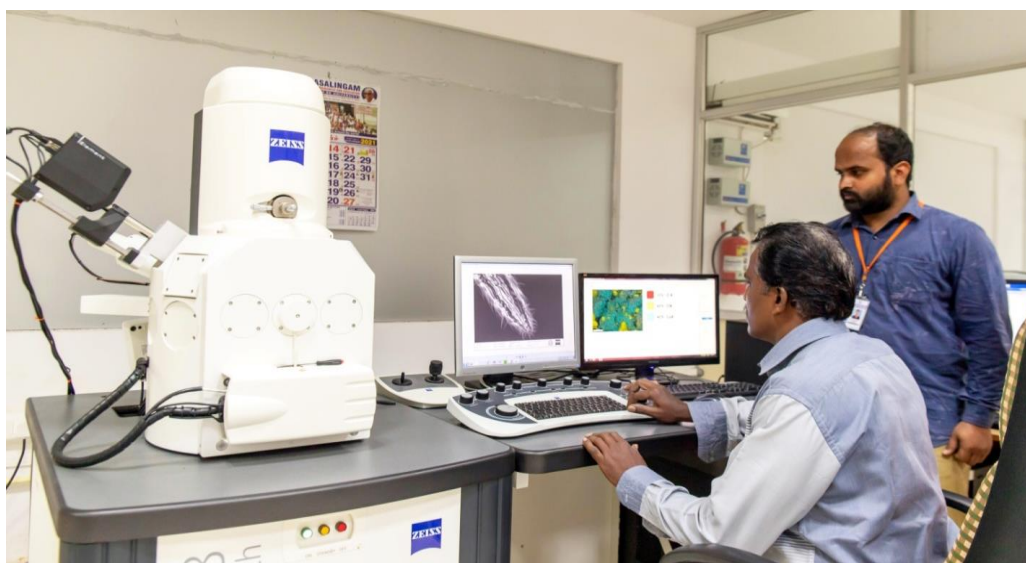


Figure 10.1.2.6 : Research Perspective

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 year wise. 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, 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.

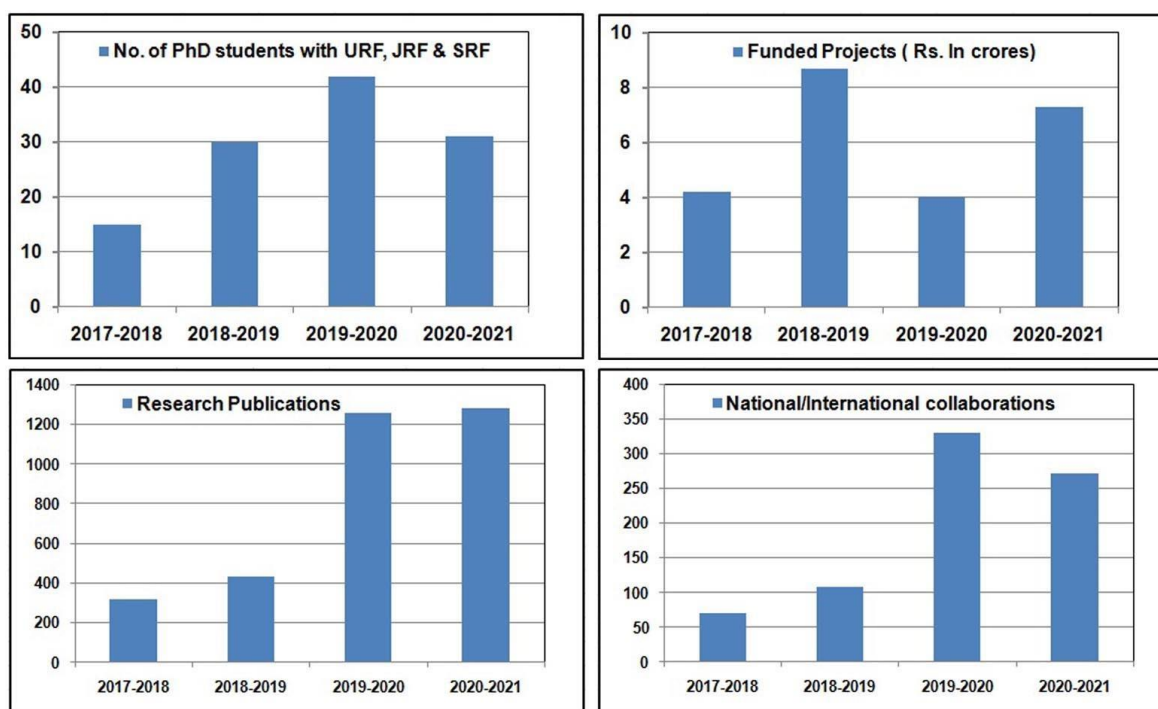


Figure 10.1.2.7 : Research Outcome

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

S. No	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	Grievances 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. BOM Members

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,	Vice Chancellor

	Kalasalingam Academy of Research and Education	
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,	Member

	Department of EIE, Kalasalingam Academy of Research and Education	
13	Dr. Aruna Janani Associate Professor, Department of Chemical Engineering 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. Academic Council Members

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.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 Engineering	Ex-officio
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 Interactions	Ex-officio
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

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
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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.

1. 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;
2. The Finance Committee shall meet at least, twice in every year. Three members of the Finance Committee shall form the quorum.
3. 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.
4. 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 10.1.3.5: 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,	-do-

	Kalasalingam University	
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-

1. The Planning Board shall be the principal planning body of the University and shall have the following powers and functions:

- to prepare and recommend short-term and long-term plans of the University;
- to conduct periodic impact assessment of the educational programmes offered by the University;
- to recommend new structures to be created in the Institution such as Schools / Centres;
- to frame structures, rules, norms and processes to facilitate smooth functioning and quality enhancement;
- 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;
- to develop financial models and recommend ideas for resource mobilization, funding initiatives and fund management;
- to recommend the principles and policy framework for financial and human resource planning and norms for allocation for various activities of the University;
- to develop and recommend modes, designs and strategies of instruction, and structures required for these;
- to plan and review the infrastructure development of the University;

- to plan and recommend the design framework of comprehensive information system covering all aspects of the functioning of the University;
- 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
AP III to Associate Professor	Any three of the below <ul style="list-style-type: none"> • 5 papers in SCIE indexed journals maintaining undisputed 	Any three of the below <ul style="list-style-type: none"> • 7 papers in SCIE indexed journals maintaining undisputed quality

(ACP)	quality and having impact factors <ul style="list-style-type: none"> • 2 Ph.D.s guiding • 1 research grant • 4 years of service as APIII 	and having impact factors <ul style="list-style-type: none"> • 1 Ph.D. produced • 1 research grant • 6 years of service as APIII
AP II to AP-III	Any three of the below <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 	Any four of the below <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
AP I to AP II	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

- When the authorities realize 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.
- 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 $\frac{1}{3}^{\text{rd}}$ 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 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 postdoctoral 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/neighborhood 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 month's 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 any time 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. Vikranth Volli
			Food Tech.	Dr. R. Rajam (i/c)
			Agri Engineering	Dr. D.Sivakumar
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	Dean – School of Computing (SoC)	Dr.P.Deepalakshmi	CSE	Dr. P. Deepalakshmi (i/c)
			Stream Coordinators	
			1	Dr. B. S. Murugan
			2	Dr. N. C. Brintha
			3	Mr. R.Rajasubramanian
			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. Ramalingam		

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

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 burt 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

Figure10.1.4.1 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.

Figure 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
Anand Nagar, Krishnankoil - 626126, Srivilliputtur (Via), Virudhunagar (Dt), Tamil Nadu | info@kalasalingam.ac.in | www.kalasalingam.ac.in

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.

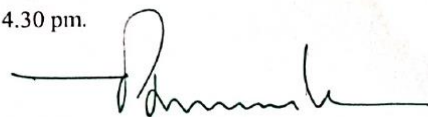
S.No	Name	Designation	
1	Dr. V. Vasudevan	Registrar	Convener
2	Dr. P. Sivakumar	Director (Student Affairs)	Member
3	Dr. C. Ramalingam	Dean / SAS	Member
4	Dr. S. P. Balakannan	Deputy Director (Student Affairs)	Member
5	Mrs. S. Kavitha	Deputy Director (Student Affairs)	Member
6	Dr. K. Suthendran	Deputy 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

Figure 10.1.4.3: Sample Minutes on Anti Ragging Committee(Action Taken Report):



KALASALINGAM
ACADEMY OF RESEARCH & EDUCATION
(DEEMED TO BE UNIVERSITY)



Under sec. 3 of UGC Act 1956. Accredited by NAAC with "A" Grade
Anand Nagar, Krishnankottai - 626126, Srivilliputtur (Via), Virudhunagar (Dt), Tamil Nadu | info@kalasalingam.ac.in | www.kalasalingam.ac.in

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

Figure 10.1.4. 4. Composition of Grievance Redressal Committee:

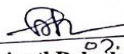


OFFICE OF THE STUDENT AFFAIRS
STUDENTS GRIEVANCES REDRESSAL COMMITTEE
Ref: KLU/SA/SGRC/2018-19/ Circular/004 Date: 7.1.2019

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


07.01.2019
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



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.


Dr.S.AsathBahadur
Convener - SGRC

Figure 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 .General Powers of Authorities:

S.No	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 Links

S.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)**CFY 2021-22**

Total Income:				Actual Expenditure (Till):			Total no of Students: 6465
Fee:	Govt:	Grant s	Other Sources:	Recurring including Salaries:	Non Recurring	Special Projects/An y other, specify	Expenditure per student:
70273801 5	Nil	Nil	98073102	643710072	229136877	Nil	135011

CFYm1 2020-21

Total Income:				Actual Expenditure (Till):			Total no of Students: 6465
Fee:	Govt :	Grant s	Other Sources:	Recurring including Salaries:	Non Recurring	Special Projects/An y other, specify	Expenditure per student:
64335412 8	Nil	Nil	8084692	60067689 0	195175378	Nil	123101

CFYm2 2019-20

Total Income:				Actual Expenditure (Till):			Total no of Students: 6639
Fee:	Govt :	Grant s	Other Sources:	Recurring including Salaries:	Non Recurring	Special Projects/An y other, specify	Expenditure per student:
592238539	Nil	Nil	19486277	587390685	136537715.5	Nil	109042

CFYm3 2018-19

Total Income:				Actual Expenditure (Till):			Total no of Students: 6500
Fee:	Govt :	Grants	Other Sources:	Recurring including Salaries:	Non Recurring	Special Projects/Any other, specify	Expenditure per student:
635508341	Nil	Nil	8226771	589827337	148050247.8	Nil	113519

CFYm4 2017-18

Total Income:				Actual Expenditure (Till):			Total no of Students: 6670
Fee:	Govt :	Grants	Other Sources:	Recurring including Salaries:	Non Recurring	Special Projects/Any other, specify	Expenditure per student:
621272213	Nil	Nil	9533547	627991460	168513452.5	Nil	119416

Items	Budgeted in 2021-22	Actual Expenses in 2021-22 till	Budgeted in 2020-21	Actual Expenses in 2020-21 till	Budgeted in 2019-20	Actual Expenses in 2019-20 till	Budgeted in 2018-19	Actual Expenses in 2018-19 till	Budgeted in 2017-18	Actual Expenses in 2017-18 till
Infrastructure Built-Up	102500000	101923755	86000000	85877166	89000000	88749515	100000000	94752159	97500000	101108072

Library	8150 0000	809 438 22	79000 000	79585 227	73000 000	79632 124	75000 000	77477 146	79000 000	81243 501
Laborator y equipment	7000 0000	705 192 70	60000 000	58552 613	37500 000	34134 429	45000 000	44415 074	55000 000	58979 708
Laborator y consumab les	6500 000	640 189 5	60000 00	57425 30	45000 00	45940 24	70000 00	61253 65	35000 00	33097 60
Teaching and non- teaching staff salary	4400 0000 0	451 821 066	40000 0000	39729 2358	37000 0000	36690 1144	33900 0000	33165 8742	36500 0000	36331 8972
Maintena nce and spares	1750 0000	182 905 47	27000 000	27345 307	30000 000	28439 913	49500 000	49718 740	37500 000	35581 880
R&D	1300 0000 0	129 904 877	11925 0000	12335 7102	10950 0000	10424 5690	11250 0000	11363 3148	13430 0000	13540 5835
Training and Travel	1000 0000	101 298 63	14500 000	14656 797	14500 000	14338 171	16000 000	15931 301	14500 000	13386 122
Miscellan eous Expenses *	2000 000	291 185 4	32500 00	34431 68	20000 00	28933 91	60000 00	41659 09	37000 00	41710 62
Others, specify	0	0	0	0	0	0	0	0	0	0
Total	8600 0000 0	872 846 949	79500 0000	79585 2268	73000 0000	72392 8401	75000 0000	73787 7585	79000 0000	79650 4912

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
2021-2022	860000000	860000000	872846949
2020-2021	795000000	795000000	795852268
2019-2020	730000000	730000000	723928401
2018-2019	750000000	750000000	737877585
2017-2018	790000000	790000000	796504912

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.

10.3 Program Specific Budget Allocation, Utilization (30)

Year	Budget		Actual		No. of students	Expenditure per student
	Recurring	Non - Recurring	Recurring	Non - Recurring		
2017-2018	4,86,000.00	18,09,000.00	4,54,410.00	17,86,050.00	27	82,980.00
2018-2019	4,64,000.00	19,43,000.00	4,36,740.00	19,12,550.00	29	81,010.00
2019-2020	10,80,000.00	41,40,000.00	10,13,400.00	40,77,000.00	60	84,840.00
2020-2021	11,80,000.00	41,30,000.00	11,19,230.00	40,75,720.00	59	88,050.00
2021-2022	12,00,000.00	42,00,000.00	11,38,200.00	41,44,800.00	60	88,050.00

B.Tech (Information Technology) Budget details

Items	Budgeted in 2020-21	Actual Expenses in 2020-21 till	Budgeted in 2020-21	Actual Expenses in 2020-21 till	Budgeted in 2019-20	Actual Expenses in 2019-20 till	Budgeted in 2018-19	Actual Expenses in 2018-19 till	Budgeted in 2017-18	Actual Expenses in 2017-18 till
Infrastructure Built-Up	9,00,000.00	8,55,000.00	8,85,000.00	8,40,750.00	9,00,000.00	8,55,000.00	4,35,000.00	4,13,250.00	4,05,000.00	3,84,750.00
Library	60,000.00	57,000.00	59,000.00	56,050.00	1,20,000.00	1,08,000.00	58,000.00	49,300.00	54,000.00	51,300.00
Laboratory equipment	2,40,000.00	2,32,800.00	2,36,000.00	2,28,920.00	1,20,000.00	1,14,000.00	-	-	-	-
Laboratory consumables	1,80,000.00	1,78,200.00	1,77,000.00	1,75,230.00	60,000.00	60,000.00	58,000.00	56,260.00	27,000.00	27,000.00
Teaching and non-teaching staff salary	30,00,000.00	30,00,000.00	29,50,000.00	29,50,000.00	30,00,000.00	30,00,000.00	14,50,000.00	14,50,000.00	13,50,000.00	13,50,000.00
Maintenance and spares	3,60,000.00	3,60,000.00	3,54,000.00	3,54,000.00	3,00,000.00	2,76,000.00	1,74,000.00	1,60,080.00	1,62,000.00	1,49,040.00
R&D	3,00,000.00	2,94,000.00	2,95,000.00	2,89,100.00	3,60,000.00	3,56,400.00	1,16,000.00	1,14,840.00	1,08,000.00	1,06,920.00
Training and Travel	2,40,000.00	1,92,000.00	2,36,000.00	1,88,800.00	3,00,000.00	2,73,000.00	1,16,000.00	1,05,560.00	1,35,000.00	1,22,850.00
Miscellaneous Expenses *	1,20,000.00	1,14,000.00	1,18,000.00	1,12,100.00	60,000.00	48,000.00	-	-	54,000.00	48,600.00
Others, specify	-	-	-	-	-	-	-	-	-	-
Total	54,00,000.00	52,83,000.00	53,10,000.00	51,94,950.00	52,20,000.00	50,90,400.00	24,07,000.00	23,49,290.00	22,95,000.00	22,40,460.00

Adequacy of budget allocation

Every year, a significant amount is planned and allocated to the IT department towards research and development in the following categories.

Research award: To encourage and motivate the faculty for publishing papers in reputed journals, this initiative is introduced. For the faculty who have more than 10 years of experience in the campus with consistent research contribution, a fixed sum, called professional development allowance (PDA) is given every month as part of the salary depending on the cadre. For others, based on the quality of publications, as per university norms, every year, research incentive is given yearly once.

Full time Scholar: To promote the research in the department, full time scholars are admitted under the university research fellowship. During the admission, an amount of Rs.10,000/- is offered as stipend and once confirmation meeting is done after completing the comprehensive viva, stipend is increased to Rs.14,000/-. Additionally, upon publishing a paper in either SCOPUS or SCI level, Rs.2000/- is incremented in the stipend. In this way, a research scholar can increase his stipend up to Rs.20, 000/- during this study period.

As part of the budget component, Training and Travel, to gain industry exposure, faculty members are motivated to attend Workshops, Certification courses, Faculty Development Programs (FDP) and Conferences. The institute reimburse the registration amount of these events to the faculty members after ensuring the participation and the quality of the events.

Similarly, towards software renewal, consumables, maintenance and spares, a consistent amount was planned. Also, **various department level activities like Coding Competition, Workshops,**

Guest Lecture, One credit course and value added courses were identified and the activity plan was submitted to student's affairs for further approval.

Utilization of allocated funds (20)

(Institution needs to state how the budget was utilized during the last three assessment years)

As per the academic requirement, all the allocated funds were efficiently utilized. For Microsoft license renewal, every year an amount of Rs.4,50,000/- was spent for the above expenses.

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 though 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.