Mar Ephraem

College of Engineering & Technology

(NAAC Accredited Institution)

Run by Catholic Diocese of Marthandam

Department of Computer Science and Engineering

SELF ASSESSMENT REPORT (TIER - II)

Submitted to

NATIONAL BOARD OF ACCREDITATION

Mar Ephraem

College of Engineering & Technology

(NAAC Accredited Institution)

Run by Catholic Diocese of Marthandam

Elavuvilai, Marthandam, Kanniyakumari District, Tamilnadu – 629 171
www.marephraem.edu.in , marephraem@gmail.com

Department of Computer Science Engineering

SELF ASSESSMENT REPORT (SAR)

(UNDERGRADUATE ENGINEERING TIER - II)

NATIONAL BOARD OF ACCREDITATION

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PART A
INSTITUTIONAL INFORMATION

1. Name and Address of the Institution

Mar Ephraem College of Engineering and Technology,
Malankara Hills,
Elavuvillai, Marthandam.- 629171
Tamil Nadu
E-mail: marephraem@gmail.com
Phone No:04651 - 273111,271111
Fax: 04651 – 272158
Website: www.marephraem.edu.in

2. Name and Address of Affiliating University

Anna University, Guindy,
Chennai – 600025
Tamil Nadu
Website: www.annauniv.edu

3. Year of establishment of the Institution : 2009

4. Type of the Institution:

University		Autonomous	
Deemed University		Affiliated	✓
Government Aided			

5. Ownership Status

Central Government		Trust	✓
State Government		Society	
Government Aided		Section 25 Company	
Self-financing		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
Malankara Catholic College	1998	30	Kaliakkavilai, Kanyakumari District, Tamil Nadu
Mar Chrysostom College of Education	2006	1	Kirathoor, Kanyakumari District, Tamil Nadu
Kanyakumari Community College	1997	3	Mariagiri, Kanyakumari District, Tamil Nadu

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.E Civil Engineering	UG	2009	2009	60	Yes	120	Applying first time	--	--	Yes	4
B.E Mechanical Engineering	UG	2009	2009	60	Yes	120	Applying first time	-	-	Yes	4
B.E Computer Science Engineering	UG	2009	2009	60	No	60	Applying first time	-	-	Yes	4
B.E Electronics & Communication Engineering	UG	2009	2009	60	Yes	120	Not Eligible	-	-	No	4
B.E Electrical & Electronics Engineering	UG	2012	2012	60	No	60	Not Eligible	-	-	No	4
M.E Computer Science and Engineering	PG	2013	2013	18	No	18	Eligible, but not applied	-	-	No	2
M.E Applied Electronics	PG	2013	2013	18	No	18	Eligible, but not applied	-	-	No	2
M.E Manufacturing Engineering	PG	2013	2013	18	No	18	Eligible, but not applied	-	-	No	2

Sanctioned Intake for Last Five Years for the B.E C Engineering	
Academic Year	**Sanctioned Intake**
2020-21	60
2019-20	60
2018-19	60
2017-18	60
2016-17	60
2015-16	60
2014-15	60

8. Programs to be considered for Accreditation vide this application:

S No	Level	Discipline	Program
1	Under Graduate	Engineering & Technology	Civil Engg.
2	Under Graduate	Engineering & Technology	Computer Science & Engg.
3	Under Graduate	Engineering & Technology	Mechanical Engg.

9. Total number of employees in the institution

A. Regular Employees (Faculty and Staff)

Items	2020-21		2019-20		2018-19	
	MIN	MAX	MIN	MAX	MIN	MAX
Faculty in Engineering (Male)	62	62	59	59	60	60
Faculty in Engineering (Female)	35	35	31	31	33	33
Faculty in Maths, Science & Humanities (Male)	2	2	6	6	5	5
Faculty in Maths, Science & Humanities (FeMale)	19	19	25	25	27	27
Non-teaching staff (Male)	27	27	27	27	28	28
Non-teaching staff (FeMale)	20	20	21	21	21	21

B. Contractual Employees (Faculty and Staff)

Items	2020-21		2019-20		2018-19	
	MIN	MAX	MIN	MAX	MIN	MAX
Faculty in Engineering (Male)	-	-	-	-	-	-
Faculty in Engineering (Female)	-	-	-	-	-	-
Faculty in Maths, Science & Humanities (Male)	-	-	-	-	-	-
Faculty in Maths, Science & Humanities (FeMale)	-	-	-	-	-	-
Non-teaching staff (Male)	-	-	-	-	-	-
Non-teaching staff (FeMale)	-	-	-	-	-	-

10. Total number of Engineering Students

Engineering and Technology- UG

Items	2020-21	2019-20	2018-19
Total no. of Boys	832	976	1094
Total no. of Girls	229	241	258
Total	**1061**	**1217**	**1352**

Engineering and Technology- PG

Items	2020-21	2019-20	2018-19
Total no. of Boys	21	26	32
Total no. of Girls	25	37	43
Total	**46**	**63**	**75**

11. Vision of the Institution

A world class Malankara institution of higher learning renowned for its excellence in science and technology, and for its commitment to the holistic development of the individuals and society.

12. Mission of the Institution

To provide quality and Value Based Education for the industrial and socio-economic development of the nation with its diverse cultures through relevant programs in teaching and learning, research, extension and community involvement.

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

i) Name : Dr.A Lenin Fred
Designation : Principal
Mobile No : 9443483072
Email id : leninfred.a@gmail.com

ii) NBA coordinator, if designated:
Name : Dr. Anand Rejilin
Designation : Professor / Head, Civil Engineering
Mobile No : 9944468703
Email id : rej.anand@gmail.com

PART B: Criteria Summary

Name of the program: B.E. Computer Science and Engineering

Criteria No.	Criteria	Mark/Weightage
Program Level Criteria		
1.	Vision, Mission and Program Educational Objectives	60
2.	Program Curriculum and Teaching – Learning Processes	120
3.	Course Outcomes and Program Outcomes	120
4.	Students' Performance	150
5.	Faculty Information and Contributions	200
6.	Facilities and Technical Support	80
7.	Continuous Improvement	50
Institute Level Criteria		
8.	First Year Academics	50
9.	Student Support Systems	50
10.	Governance, Institutional Support and Financial Resources	120
	Total	**1000**

CRITERION 1	VISION, MISSION AND PROGRAM EDUCATIONAL OBJECTIVES	60

1.1. State the Vision and Mission of the Department and Institute (5)

Vision of the institute	A world class Malankara institution of higher learning renowned for its excellence in Science and Technology and for its commitment to the holistic development of the individual and Society.
Mission of the institute	To provide quality and Value Based Education for the industrial and socio-economic development of the nation with its diverse cultures through relevant programs in teaching and learning, research, extension and community involvement.
Vision of the Department	To create world class Computer Engineers with professional excellence to work in multidisciplinary environment, upholding the moral values and societal commitments.
Mission of the Department	**Mission No.** / **Mission Statements** M1: Provide quality and Value Based Education in Computer Science through relevant programs in teaching and learning. M2: Provide technical and soft skill Computer Engineering that produces globally competitive engineers and innovative entrepreneurs, who understand their professional, social and ethical responsibilities. M3: Involve in Research on need-based area in Computer Engineering to promote social development.

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

PEO No.	Program Educational Objectives Statements
PEO1	Graduates will be able to work effectively in teams with their acquired professional skills and they will be ameliorated to adapt the emerging technological needs of the workplace.
PEO2	Graduates will be competent to apply the principles of computer science and engineering to solve real world problems and they will be capable to practice ethical conduct in the profession with social awareness to contribute the economic growth of the country.
PEO3	Graduates will be augmented to become effective collaborators, innovators, researchers and entrepreneurs to address multidisciplinary challenges in technical and business domains.

1.3. Indicate where the Vision, Mission and PEOs are published and disseminated among stakeholders (10)

Table 1.3 (a) Published details of Vision, Mission and PEOs

Internal Stake holders	Area where published
Management	Website, Program Invitations, College Magazine, News letter
Governing Board Members	Website, Program Invitations, College Magazine, News letter
Faculty	Website, Department Magazine, Newsletters and prominent locations of every block, Notice Boards reception area of the college, Course file
Supporting Staff	Website, Department Magazine, Newsletters, Prominent locations of Department and Department Notice Boards, Printed Stationeries
Students	Website, Department Magazine, Newsletters, Laboratory manuals, Records, Prominent locations of Department, Department Notice Boards, HoD Room and Intimation letter, Prospectus

Table 1.3 (b) Published areas of Vision, Mission and PEOs

External Stake holders	Area where published
Employers	Website, e-mail , News letter
Industry	Website, e-mail, News letter
Alumni	Website, e-mail, News letter
Funding Agencies	Website, e-mail
Parents	Website, e-mail, Prospectus, Program Invitations, College Magazine

Table 1.3 (c) Process for dissemination

Dissemination methods	Target Stakeholders	
	Internal Stakeholder	External Stakeholder
Department Induction Speech by HoD	Students and Staff	-
Alumni Meeting	Management, Faculty, supporting staff	Alumni
PTA Meeting	Management, Faculty, Supporting staff	Parents
Technical Events	Management, Faculty, Supporting staff, Students	Industry Experts

1.4. State the process for defining the Vision and Mission of the Department, and PEOs of the program (25)

1.4 a. Process for defining the Vision and Mission of the Department

The Department vision is framed by PAC, in consultation with external and internal stakeholders. The mission to achieve the vision is then framed by the Department PAC. The process is shown below

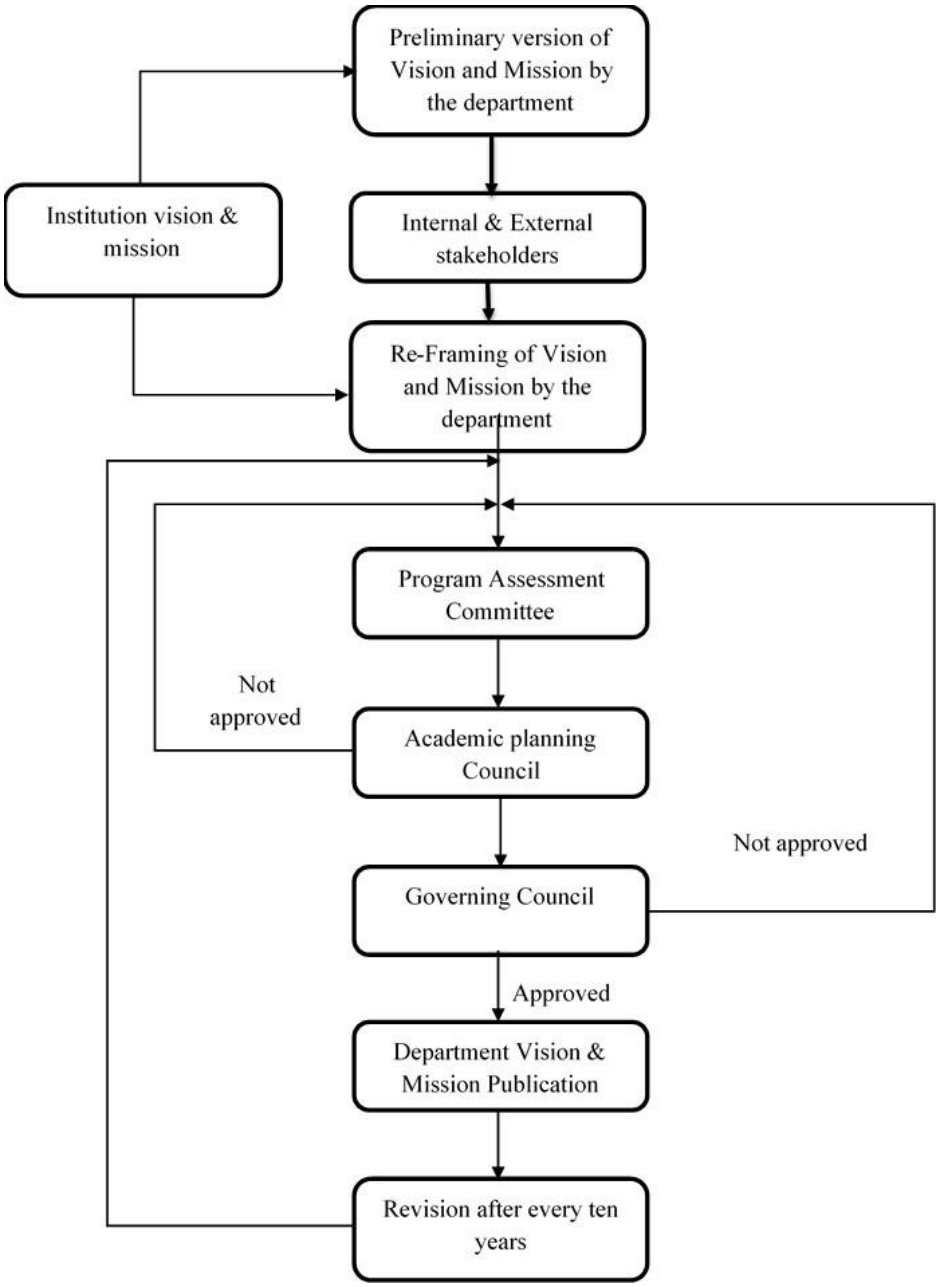


Figure 1.4 (a) Process for Establishing Vision and Mission

- The rural background of the students is considered in formulating the Department mission statement.
- Fundamentals to adapt new technologies, communication, managerial skills with ethical values and hands-on experience are taken into account while formulating the mission.

- The brainstorming session with faculty & students is held and a preliminary version of vision & mission statement is prepared.
- The preliminary version is communicated to the stakeholders and inputs/ suggestions for enhancement are obtained to formulate the next version of vision & mission statements.
- The formulated vision & mission is discussed in the Program Assessment Committee (PAC) consisting of internal and external stakeholders in which the department vision & mission is framed.
- Department specific vision and mission is framed in line with the vision and mission of the institute.
- The formulated Department Vision and Mission is forwarded to the Academic Planning Council for approval.
- If the framed Department Vision and Mission is found to be satisfied, the Academic Planning Council sends the same to the Governing Council for final approval. If not, it is returned to the Program Assessment Committee for reframing.
- If the framed Department Vision and Mission is found to be satisfied, the Governing Council approves the same. If not, it is returned to the Program Assessment Committee for reframing.
- The approved Department Vision and Mission are Published by the department.
- The Department Vision and Mission is revised once in every ten years by fulfilling the above-mentioned strategies.

1.4. b. Process for defining the PEOs

a. The Program Educational Objectives are established through the brainstorming process involving all the stakeholders.
b. The PEOs is established through the following process steps:

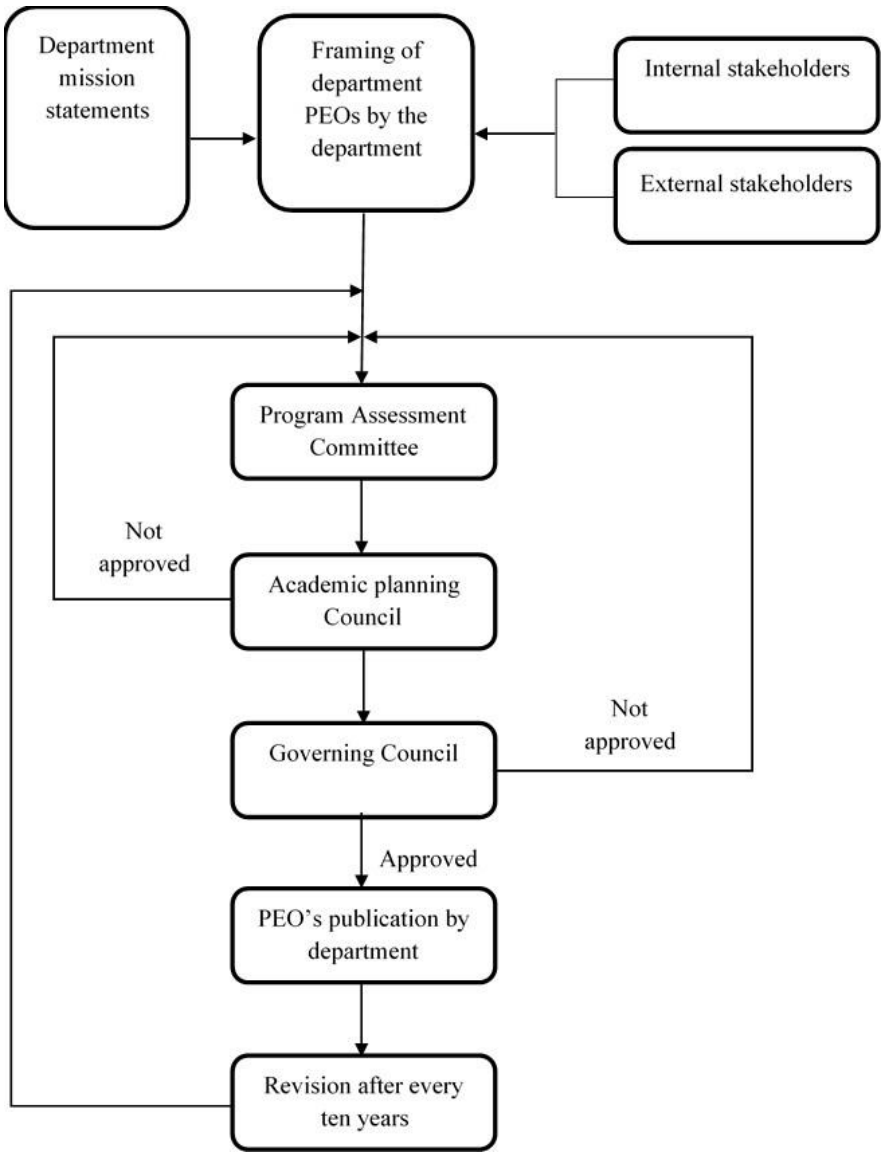


Figure 1.4 (b) Process for Establishing PEO's

- PEOs are framed in line with the Department mission statements.
- The brainstorming session with faculty & students is held and a preliminary version of PEOs statement is prepared.
- The preliminary version is communicated to the stakeholders and inputs/ suggestions for enhancement is obtained to formulate the next version of PEOs.
- The formulated PEOs are discussed in the Program Assessment Committee (PAC) consisting of internal and external stakeholders in which the department PEOs are framed. The framed PEOs are forwarded to the Academic Planning Council for approval.
- If the framed PEOs are found to be satisfied, the Academic Planning Council sends the same to the Governing Council for final approval. If not satisfied it is returned to the Program Assessment Committee for reframing.
- If the framed PEOs are found to be satisfied, the Governing Council approves the same. If not, it is returned to the Program Assessment Committee for reframing. The approved PEOs are published by the department.
- The PEOs are revised once in every ten years by fulfilling the above-mentioned strategies.

1.5. Establish consistency of PEOs with Mission of the Department (15)

Table 1.5 (a) Mapping of PEOs with the Department mission

PEO	M1 (Quality and Value Based Education)	M2 (Technical and soft skill in Computer Engineering, innovative entrepreneurs)	M3 (Research on need based areas and Social development)
PEO 1 - Graduates will be able to work effectively in teams with their acquired professional skills and they will be ameliorated to adapt the emerging technological needs of the workplace.	3	2	2
PEO 2 - Graduates will be competent to apply the principles of computer science and engineering to solve real world problems and they will be capable to practice ethical conduct in the profession with social awareness to contribute the economic growth of the country.	3	2	3
PEO 3 - Graduates will be augmented to become effective collaborators, innovators, researchers and entrepreneurs to address multidisciplinary challenges in technical and business domains.	2	3	3

Table 1.5 (b) Correlation of PEOs with mission statements

PEO	PEO Mission Matrix		Justification of the Department Mission Statement
PEO 1	**M1**	**3**	• Curriculum comprising of basic science, core, electives and projects • Industrial Visit • Internship • Exposure to Modern tools and techniques
	M2	**2**	• Soft skill training programs • Communication skill training programs • Workshop and hands on training on emerging technologies • Entrepreneurship training programs • Technical Expo
	M3	**2**	• Research projects on societal problems • Involvement in funded projects

PEO 2	**M1**	**3**	• Dedicated course on Environmental Science and Professional Ethics in Engineering • Value added Courses • Seminars on social awareness • Development of innovative products
	M2	**2**	• Entrepreneurship training programs • Addressing real world problems through projects
	M3	**3**	• Research projects to address societal problems • Developing real world applications
PEO3	**M1**	**2**	• Exposure to state of art Engineering facilities • Training in high end software
	M2	**3**	• Industry institute linkage for the development of technical skills • Support for innovative start ups
	M3	**3**	• Funded projects in multidisciplinary domain • MOU with International R&D Institutes • Consultancy

PEO Statements	**M1**	**M2**	**M3**
Graduates will be able to work effectively in teams with their acquired professional skills and they will be ameliorated to adapt the emerging technological needs of the workplace.	3	2	2
Graduates will be competent to apply the principles of computer science and engineering to solve real world problems and they will be capable to practice ethical conduct in the profession with social awareness to contribute the economic growth of the country.	3	2	3
Graduates will be augmented to become effective collaborators, innovators, researchers and entrepreneurs to address multidisciplinary challenges in technical and business domains.	2	3	3

CRITERION 2	PROGRAM CURRICULUM AND TEACHING – LEARNING PROCESSES	120

2.1. Program Curriculum (20)

2.1.1. State the process used to identify extent of compliance of the University curriculum for attaining the Program Outcomes(POs) & Program Specific Outcomes(PSOs), mention the identified curricular gaps, if any (10)

A. Process used to identify extent of compliance of the University Curriculum for attaining the POs and PSOs

This Institute is affiliated to Anna University, Chennai and hence Computer Science and Engineering department curriculum is framed by Anna University, Chennai. Curriculum includes Basic Science & Engineering, Humanities, Professional Courses, Core and Electives along with project works. The process to identify extent of compliance of the University curriculum is as follows:

- Before the start of every new regulation, the department conducts the PAC meeting to identify the curricular gaps.
- The University curriculum is passed to the Program Assessment Committee (PAC).
- Suggestions from alumni, Industrial Experts, Employers and Faculty Members are taken into account.
- The possibilities related to attainment of POs and PSOs are analysed by the committee members.
- The committee analyses and finalizes the curricular gaps.
- An action plan is formulated to fill the gaps.

Program Assessment Committee (PAC)Members

Table 2.1.1 (a) Mar Ephraem Members in PAC

S.No	Name	Designation	Department
1	Dr. D. Dhanya	Associate Professor & Head	CSE
2	Prof. Dr. A. Lenin Fred	Professor	CSE
3	Prof. Dr.L.C. Manikandan	Professor	CSE
4	Prof. Dr. V. Suresh	Professor	ECE
5	Dr.J. Jerusalin Carol	Associate Professor	CSE
6	Dr.R. Benschwartz	Associate Professor	CSE
7	Mr. Ashwin G Singerji	Assistant Professor	CSE
8	Ms. L.T. Herlin	Assistant Professor	CSE
9	Ms.L.R. Bindhu	Assistant Professor	S&H

Table 2.1.1 (b) Alumni members in PAC

S.No	Name	Batch	Current position
1	Mr.Arul Prince.A	2012-2016	Infosys, Trivandrum
2	Ms.Hitha.P.Toshib	2013-2017	Infosys, Trivandrum
3	Mr.Fredin.S.Givo	2014-2018	HCL, Bangalore

Table 2.1.1 (c) Industry Experts in PAC

S.No	Name	Designation	Company
1	Ms.Hannah Shiny Priya	Manager	Cognizant Technology Solutions, Bangalore
2	Ms.Dhanya.K	IT Analyst	Accenture, Bangalore
3	Mr.Jobin.J.J	Network Operations Analyst	Visionory RCM, Chennai

Table 2.1.1 (d) Employers in PAC

S.No	Name	Designation	Company
1	Mr.K.Stephen Inbaraj	Consultant	Tata Consultancy Services
2	Mr. Newin Durai	Associate Vice President	Infosys, Chennai

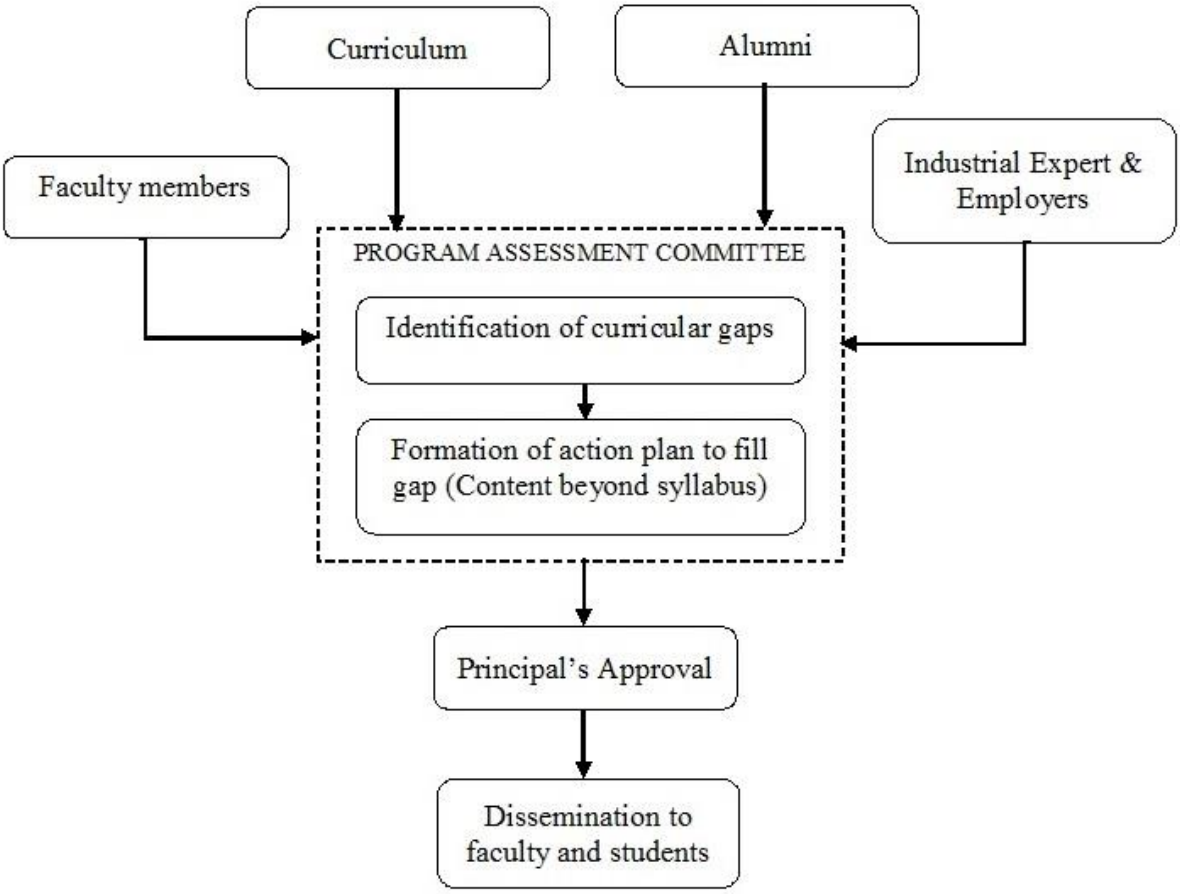


Figure 2.1.1 The process to identify extent of compliance of the University curriculum

B. List the curricular gaps for the attainment of defined POs & PSOs

Table 2.1.1 (e) List of curricular gaps

S.No	Course code	Name of the Course	Curricular gaps
1	CS6302	Database Management Systems	Big Data, NoSQL database, Database scalability, High Availability
2	CS6303	Computer Architecture	SPARC vs x86, An introduction to SSDs, NUMA
3	CS6403	Software Engineering	Agile Software Development Process, SCRUM
4	CS6501	Internet Programming	Collections Framework, JQuery, Connection Pooling and Custom tag, XML masking for security, Rest Web services and its comparisons with soap service.

5	CS6551	Computer Networks	Cloud computing
6	CS6601	Distributed systems	Distributed system design, Distributed applications
7	IT6601	Mobile Computing	5G Technology
8	CS6701	Cryptography and Network Security	Mobile security, Cluster security
9	CS6702	Grid and cloud computing	Virtual privacy LAN
10	CS6004	Cyber Forensics	Cloud Computing Forensics
11	CS6801	Multi – Core Architectures and Programming	Multicore Embedded Real Time systems
12	IT6011	Knowledge Management	Gamification and Digital badging

2.1.2 State the delivery details of the content beyond the syllabus for the attainment of POs & PSOs (10)

A. Steps taken to get identified gaps included in the curriculum (e.g letter to University / BOS)

The identified gaps are analyzed by the PAC. The gaps are intimated to the University and are fulfilled by providing content beyond syllabus.

B. Delivery details of content beyond syllabus

The content beyond syllabus is delivered as additional content through the following methods.

- Hands on Training
- NPTEL Video lectures
- Guest lectures
- Workshops
- Seminars

Table 2.1.2 (f) List of delivery details of content beyond syllabus

Sl. No	Course title	Curricular gaps	Delivery Method
1.	Database Management Systems	Big Data, NoSQL database, Database scalability, High Availability	Workshop
2.	Computer Architecture	SPARC vs x86, An introduction to SSDs, NUMA	Guest Lecture
3.	Software Engineering	Agile Software Development Process, SCRUM	Workshop
4.	Internet Programming	Collections Framework, JQuery, Connection Pooling and Custom tag, XML masking for security, Rest Web	Hands on training

		services and its comparisons with soap service.	
5.	Computer Networks	Cloud computing	Seminar
6.	Distributed systems	Distributed system design, Distributed applications	Seminar
7.	Mobile computing	5G Technology	Seminar
8.	Cryptography and Network Security	Mobile security, Cluster security	NPTEL video lecture and case study discussion
9.	Grid and cloud computing	Virtual privacy LAN	Guest Lecture
10.	Cyber Forensics	Cloud Computing Forensics	Seminar
11.	Multi – Core Architectures and Programming	Multicore Embedded Real Time systems	Guest Lecture
12.	Knowledge Management	Gamification and Digital badging	Guest Lecture

C. Mapping of content beyond syllabus with the POs & PSOs

2019-2020

S.No	Identified gap	Action taken	Date-month-year	Resource person with designation	% of students	Relevance to	
						POs	PSOs
1	Mobile security, Cluster security	NPTEL video lecture and case study discussion	22.08.2019	Dr.D.Dhanya, AP/CSE, Mar Ephraem College of Engineering and Technology	97	PO1, PO12	PSO2
2	Virtual privacy LAN	Guest Lecture	30.07.2019	Mr.Vijin, System Admin, Mar Ephraem College of Engineering and Technology	99	PO1, PO6, PO12	PSO2
3	Cloud Computing Forensics	Seminar	05.02.2020	Mr.Arul Prince, Technology Analyst, Infosys, Trivandrum	97	PO1, PO2, PO12	PSO2
4	Multicore Embedded Real Time	Guest Lecture	03.10.2019	Dr.Jerusalin Carol, AP/CSE, Mar Ephraem	96	PO1, PO12	PSO2

	systems			College of Engineering and Technology			
5	Gamification and Digital badging	Guest Lecture	06.03.2020	Mr.Jino Singh,AP/CSE, Mar Ephraem College of Engineering and Technology	98	PO2, PO5, PO12	PSO1

2018-2019

S. No	Identified gap	Action taken	Date-month-year	Resource person with designation	% of students	Relevance to	
						POs	PSOs
1	Collections Framework, JQuery, Connection Pooling and Custom tag, XML masking for security, Rest Web services and its comparisons with soap service.	Hands on training	20.07.2018	Mr. Arul Prince.A, Software Engineer, 3e IT Solutions, Trivandrum	98	PO3, PO5, PO12	PSO1
2	Cloud computing	Seminar	17.07.2018	Mr.Javan and Mr. Abel Jacob, Network Engineer, Phykon Solutions, Techno park	96	PO1, PO2, PO12	PSO2
3	Distributed system design, Distributed applications	Seminar	07.09.2018	Mr.Subash, Architect, Ericsson India Global Service Ltd	97	PO1, PO2, PO12	PSO2
4	5G Technology	Seminar	17.07.2018	Mr.Javan and Mr. Abel Jacob, Network Engineer, Phykon Solutions, Techno park	95	PO1, PO12	PSO2
5	Mobile security, Cluster security	NPTEL video lecture and case	18.07.2018	Ms.Shanmugapriya R.K, AP/S&H, Mar Ephraem College of	97	PO1,PO12	PSO2

		study discussion		Engineering and Technology			
6	Virtual privacy LAN	Guest Lecture	25.07.2018	Mr. Ram Kumar , IT Trainer, Infosys	98	PO1, PO6, PO12	PSO2
7	Cloud Computing Forensics	Seminar	30.01.2019	Mr.Abin.T.John, H & R Block, Trivandrum Ms.Sonya Thomas, UST Global, Trivandrum	98	PO1, PO2, PO12	PSO2
8	Multicore Embedded Real Time systems	Guest Lecture	04.09.2018	Ms. Reeba Rex.S, AP/ECE, Mar Ephraem College of Engineering and Technology	96	PO1, PO12	PSO2
9	Gamification and Digital badging	Guest Lecture	23.02.2019	Ahmed Kabir and Jose Vignesh, Cape Start, Nagercoil	97	PO2, PO5, PO12	PSO1

2017-2018

S. No	Identified gap	Action taken	Date-month-year	Resource person with designation	% of students	Relevance to	
						POs	PSOs
1	Big Data, NoSQL database, Database scalability, High Availability	Workshop	23.01.2018	Mr.Jagadeesan, Senior Technical Trainer, ICT Academy	97	PO5, PO9, PO12	PSO1
2	SPARC vs x86, An introduction to SSDs, NUMA	Guest Lecture	10.03.2018	Ms.Dhanya.D, AP/CSE, Mar Ephraem College of Engineering and Technology	96	PO1, PO12	PSO2
3	Agile Software Development Process, SCRUM	Workshop	07.02.2018	Mr.M. Kesava Prasad, Mar Ephraem Digital Solutions	98	PO2, PO3, PO5, PO9, PO11, PO12	PSO1
4	Collections Framework, JQuery,	Hands on training	28.08.2017	Mr. Arul Prince.A, Software Engineer	96	PO3, PO5, PO12	PSO1

	Connection Pooling and Custom tag, XML masking for security, Rest Web services and its comparisons with soap service.			Socius Global Group, Kerala			
5	Cloud computing	Seminar	10.07.2017	Mr.R.Babu, AP/CSE, Mar Ephraem College of Engg and Technology	95	PO1, PO2, PO12	PSO2
6	Distributed system design, Distributed applications	Seminar	28.08.2017	Mr.Subash, Architect, Ericsson India Global Service Ltd	94	PO1, PO2, PO12	PSO2
7	5G Technology	Seminar	12.02.2018	Ms.Janila.J, AP/CSE, Mar Ephraem College of Engg and Technology	98	PO1, PO12	PSO2
8	Mobile security, Cluster security	NPTEL video lecture and case study discussion	11.09.2017	Ms.Renu.D.S, AP/CSE, Mar Ephraem College of Engg and Technology	97	PO1, PO12	PSO2
9	Virtual privacy LAN	Guest Lecture	13.09.2017	Ms.L.T.Herlin, AP/CSE, Mar Ephraem College of Engg and Technology	93	PO1, PO6, PO12	PSO2
10	Cloud Computing Forensics	Seminar	10.07.2017	Mr.R.Babu, AP/CSE, Mar Ephraem College of Engg and Technology	97	PO1, PO2, PO12	PSO2
11	Multicore Embedded Real Time systems	Guest Lecture	01.03.2018	Ms.Jonisha Mariam.L.R, AP/ECE, Mar Ephraem College of Engineering and Technology	96	PO1, PO12	PSO2
12	Gamification and Digital badging	Guest Lecture	30.01.2018	Ms.Austy.B.Evangeline, AP/CSE, Mar Ephraem College of	98	PO2, PO5, PO12	PSO1

				Engineering and Technology			

2.2 Teaching Learning Processes (100)

2.2.1 Describe processes followed to improve quality of Teaching & Learning (25)

The Institution follows various practices for the attainment of Program outcomes and program specific outcomes in acquiescence with university curriculum:

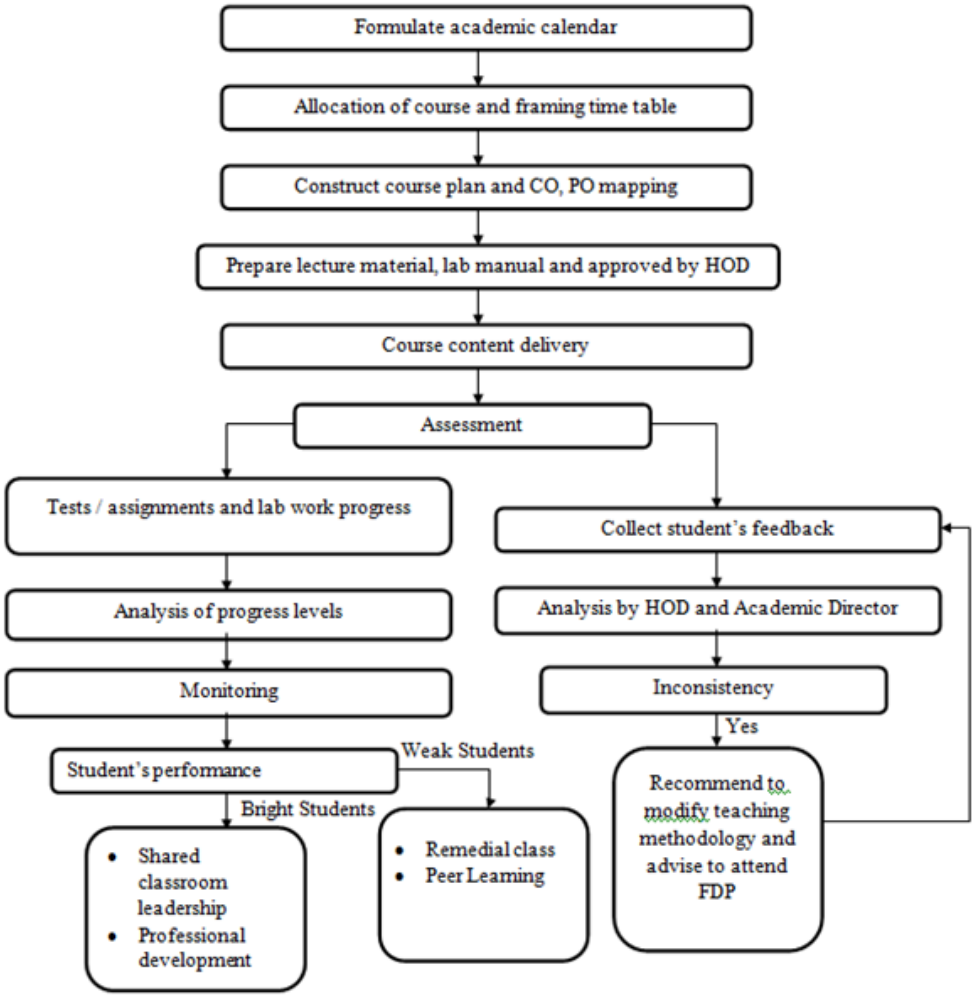


Figure 2.2.1 (a) Teaching Learning Processes

A. Adherence to Academic Calendar

Academic Calendar:

The department academic calendar is prepared and published every semester in advance by the department in accordance with university academic schedule and institute calendar. The activities include

1. Class committee meetings

2. Professional society activity

3. Internal assessment schedule

4. Industrial visit

5. Internship

6. Syllabus coverage schedule

7. Technical events

8. Project review schedule

9. Academic audit

B. Use of various Instructional Methods and Pedagogical Initiatives:

Table 2.2.1 (a) Instructional Methods and Pedagogical Initiatives

Sl. No	Instructional Methods and Pedagogical Initiatives	Description
1	Class Room Lectures	Real world examples, tutorials and assignments are given to students. To ensure effectiveness of teaching, the class rooms are equipped with projectors.
2	ICT	Enable teachers to increase the quality of teaching material and visuals.
3	Hands-on experience	Demonstrations by giving extra lab classes
4	Tutorials/ Quiz	To assess the performance of students, tutorials and quiz are being conducted.
5	PEER learning	Group learning system - Combining weak students with the bright students.
6	Adjunct/ visiting Faculty	Enrich the students in current trends and provide project guidance.
7	Mini Projects	To strengthen the learned concepts, mini projects are done by the students. Students exhibit their projects and working models in technical events.
8	Industrial Visit/Internship	Students are encouraged to undergo internship programs and industrial visits in reputed companies.
9	Flipped Classroom	To improve the presentation and communication skill, students are motivated to take classes on recent trends.

C. Methodologies to Support Weak Students and Encourage Bright Students:

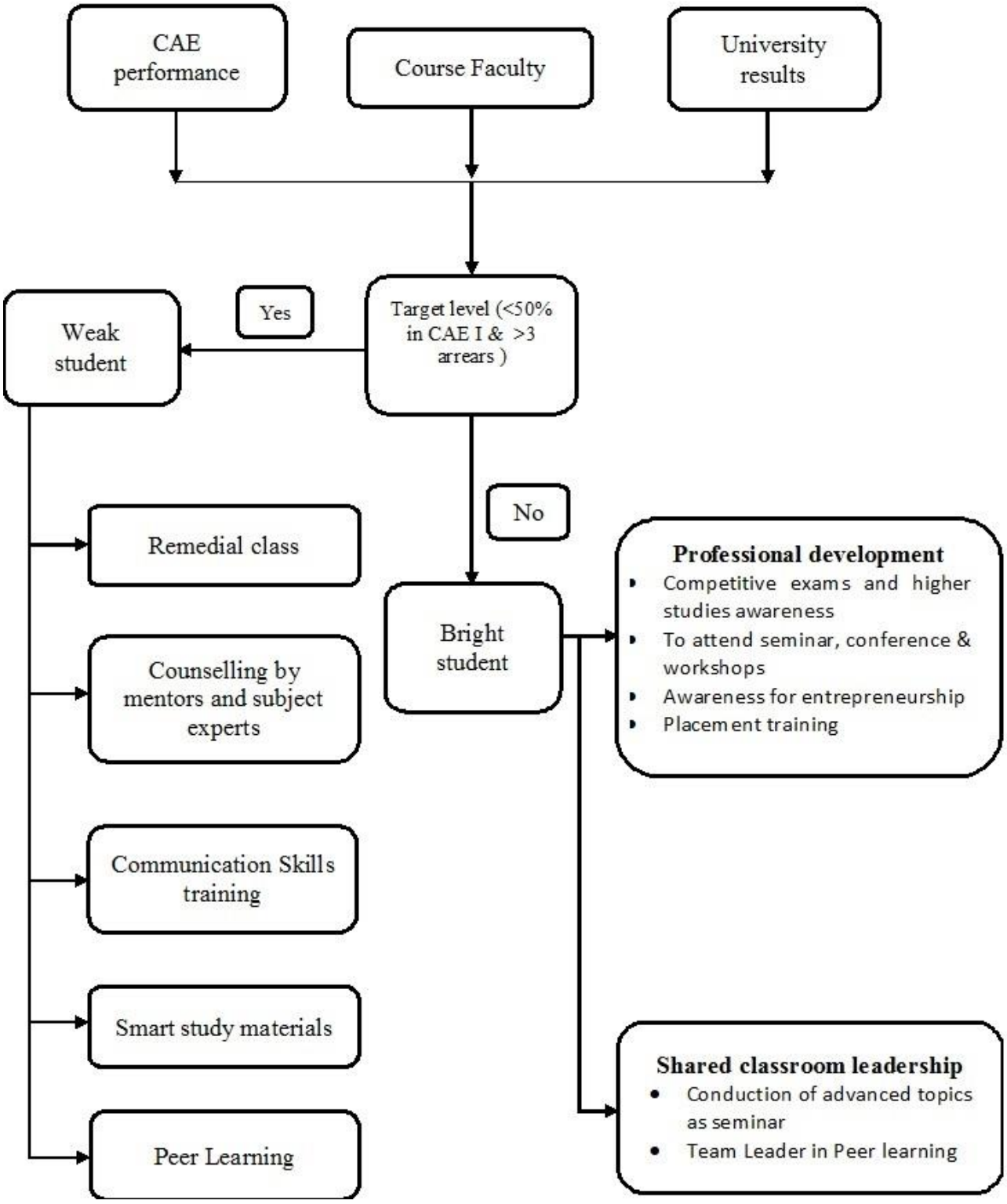


Figure 2.2.1 (b) Methodology to support Weak Students and Encourage Bright Students

Weak students are identified based on University results and internal marks.

Strategy to identify weak students

- University Exam GPA
- Continuous Assessment Exam Marks

- The students fall under weak students category are:
    - Students secured less than 50% of marks in CAE 1.
    - Students having more than 3 arrears in the University Exams.

Actions taken to support weak students

Peer Learning

- The department establishes peer group by forming groups of 4 to 6 students with one bright student as leader who support the weak students.
- The faculty members will be available as facilitator to the peer learning groups. The pairing of bright students and weak students results in better academic performance.

Remedial classes

- Special classes for weak students after regular classes using simple and smart study material.
- Proper Counseling is given to weak students by mentors and subject experts.
- For students with rural background, special communication skill classes are conducted.

Actions taken to encourage bright students

Shared classroom leadership

- Seminar sessions on advance topics are led by bright students which in turn enhance soft skills and improve subject knowledge.
- Team Leader in Peer learning - Bright students act as leaders in peer groups which will enhance their leadership skills.

Professional development

- Awareness of competitive exams, entrepreneurship and higher studies are given to the students
- Encouraged to attend conference, seminars, workshops & paper presentation.
- Motivation and company specific trainings are provided to the students by arranging interactive sessions with the alumni and delegates from various companies.
- Class toppers are honored in department symposium and annual day celebrations.

D. Quality of Class room teaching:

- The class starts with discussion of learning outcomes and relevant RBT.
- A recap of previous lecture and necessary prerequisite knowledge is discussed.
- Brief background information of the topic is also given.
- Faculty use traditional chalk and board method and also use other methodologies like power point presentations for better understanding of the course.
- Innovative methods like explaining with the help of models, animations, charts, real time analogies and brain storming are made which make the class room teaching more interactive and interesting.
- Tutorial classes are conducted for analytical courses, where a class of students is divided into number of peer learning groups.
- Industrial application of the topic is also explained.

- GATE questions are discussed in the classrooms.
- NPTEL materials and contents are also included in classroom teaching.
- Summary of the lecture is discussed by a read-through of topics covered.

E. Conduct of Laboratory Experiments:

- Faculty prepare laboratory manual well ahead of the semester which includes Do's and Don'ts of the laboratory, list of experiments, and the procedure on how the experiments are to be done.
- Faculty runs the experiments before starting of the semester and makes a record in laboratory manual which helps in offering constructive suggestions to the students.
- Groups are formed depending on the equipment/experiment for effectiveness.
- Separate lab attendance cum assessment record is maintained for every laboratory.
- The dates of the experiments, observation correction, record submission and evaluation are registered carefully in the assessment record.

F. Continuous Assessment in Laboratory:

- The students maintain an observation and record of all the experiments done in the laboratory.
- The observations and records are evaluated based on laboratory assessment rubrics on weekly basis and ensure the completion within the stipulated time.
- Model exams are conducted at the completion of laboratory course.
- Internal Marks will be awarded based on the assessment of all the experiments and model exam. The scheme of marks awarded is based on the following rubrics:

Table 2.2.1 (b) Laboratory Assessment rubrics

Parameters	Excellent (5)	Good (3-4)	Average (2)
Ability to write algorithms and programs	● Excellent knowledge on writing algorithms. ● No help needed from Faculty. ● Programs are accurate and precise. ● Excellent team player with leadership qualities.	● Good knowledge on writing algorithms. ● Minor help needed from Faculty. ● Programs are accurate. ● Good team player.	● Fair knowledge on writing algorithms. ● Major help needed from faculty. ● Programs are less accurate. ● Not a team player.
Implementation and debugging	● Can execute the programs and debug the errors based on the syntax of the specified programming language.	● Can execute the programs and debug the errors based on the syntax of the specified programming language with peer help.	● Can execute the programs and debug the errors based on the syntax of the specified programming language with the help of faculty.
Record Preparation	● Organized and excellent	● Organized and good presentation of	● Disorganized and poor presentation of

	presentation of experiments. ● All technical details are available.	experiments. ● Some technical details are available.	experiments. ● Technical details are not available.
Submission	● Submission of observation and record on time. ● Submission of observation and record in its entirety.	● Submission of observation and record with some delay. ● Submission of observation and record in its entirety.	● Late Submission of observation and record. ● Incomplete Submission of observation and record.

G. Students Feedback on teaching learning process and Action Taken:

1. **Centralized online student feedback System**:

The faculty members are evaluated through the online feedback system on their teaching and learning process twice (After CAE I & CAE II) in a semester. The consolidated feedback is generated by the head of the department and submitted to IQAC and consolidated department report is forwarded to academic director. The report is analysed by the academic director along with the HOD. Necessary suggestions are given to the faculty for improvement and the report is submitted to the Principal.

Course Feedback Report - CSE - IT6011 - Knowledge Management

Name of the Course Instructor	: Austy.B.Evangeline	Course Code/title	: IT6011 / Knowledge Management
Name of the Department	: CSE	Programme	: UG
Year	: Fourth Year	Academic Year	: 2018 - 2019
Semester	: Eighth Semester	Section	: A
Total Students	: 43	Total Students Participated	: 42
Students % (Participated)	: 97.67 %	Feedback	: Feedback - I

SINo	Parameters	Score 10 Max
1	Availability of faculty 2 minutes prior to the commencement of each class	9.19
2	Audibility of faculty's Voice and Teachers control over class	8.76
3	Capability of communicating in English	8.95
4	Initiatives taken for slow learners through remedial classes and advanced learners through training of competitive examination/ placement questions.	8.6
5	Coverage of syllabus and additional contents within given time.	8.88
6	Providing inspiration and positive energy to students.	8.45
7	Applicability/relevance to real life situations and integration of content with other courses.	8.9
8	Reference of other books, journals, magazines and NPTEL videos in class.	8.67
9	Clarifying doubts inside and outside classroom.	8.62
10	Ability to use digital technology devices in classroom.	8.57
11	Involving students during lecture through interactions.	8.88
12	Addition of relevant topics required for Incustries (Content Beyond Syllabus) and sharing current technologies and updates in class.	8.93
13	Ability to design quiz/test/mini project/assignments/self learning content /industrial visits to evaluate students understanding.	8.88
	Average Marks	8.79

Corrective action planned

1. Instructed to use more PPT's & other digital Technology
2.
3.

Approved By

Date 24/8/19 Proposed by : HOD Academic Director

Verification of Corrective action

1. Verified PPT usage in Classroom
2.
3.

Verified By

Date 5/9/19 HOD

Figure 2.2.1 (c) Sample of Students feedback

2. **Class committee meeting:**

- Every class shall have a class committee consisting of teachers of the class concerned, student representatives and a chairperson who is not teaching the class.
- The class committee is constituted by the Head of the Department.
- The Chairperson of the class committee may invite the Class advisor(s) and the Head of the Department to the class committee meeting.
- The Head of the Institution may participate in any class committee of the institution.
- The class committee shall be constituted within the first week of each semester. At least 4 student representatives shall be included in the class committee.
- The first class committee meeting is held within a week from the date of commencement of the semester. The students are informed about the University Curriculum, Academic calendar and weightage of assessments within the framework of the Regulations. Two subsequent meetings are held in a semester at suitable intervals.
- During these meetings the student members representing the entire class, shall interact and express the opinions and suggestions of the other students of the class in order to improve the effectiveness of the teaching-learning process.
- The functions of the class committee include
    - Solving problems experienced by students in the class room and in the laboratories.
    - Informing the student representatives about the academic schedule including the dates of assessments and the syllabus coverage for each assessment.
    - Analyzing the performance of the students of the class after each test and finding the ways and means of solving problems, if any.
    - Identifying the weak students, if any, and requesting the teachers concerned to provide some additional help/guidance to such weak students.
- The chairperson is required to prepare the minutes of every meeting, submit the same to Academic Director and Head of the Institution within two days from the execution of the meeting and circulate it among the students and teachers concerned. If there are some points in the minutes requiring action by the management, the same shall be brought to the notice of the Management by the Head of the Institution.

2.2.2 Quality of internal semester Question papers, Assignments and Evaluation (20)

A. Process for internal semester Question Paper Setting, Evaluation and effective process implementation (5)

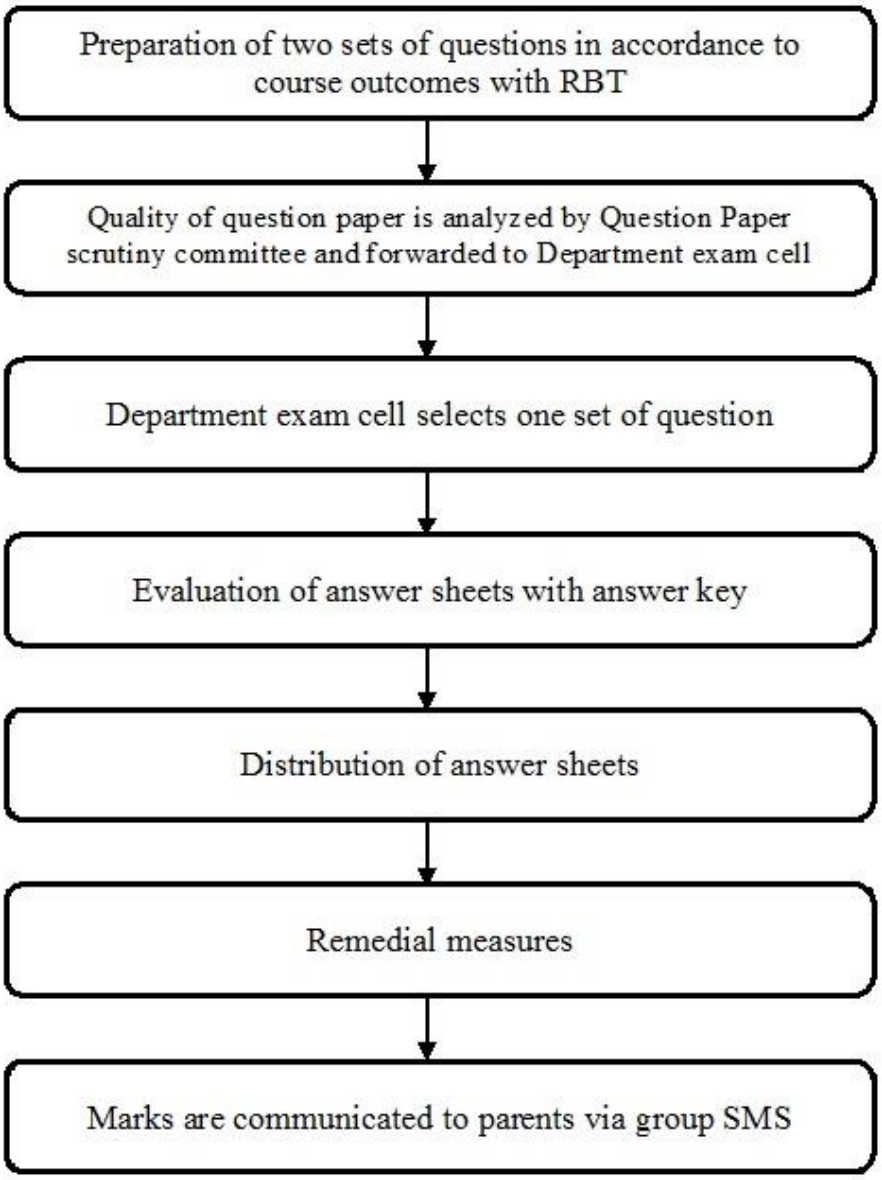


Figure 2.2.2 (a) Process for internal Assessment

B. Process to ensure questions from outcomes/learning levels perspective (5)

The Continuous Assessment Exams and Model exam are important tools for calculation of outcome attainment. The faculty members prepare the question papers considering outcome / learning levels perspective (Revised Bloom's Taxonomy). The HOD constitutes a Question Paper scrutiny committee to ensure questions from outcomes/learning levels perspective.

The Constituents of Question Paper scrutiny committee:

- Senior faculty - Chairman
- Faculty(3Nos) – Members

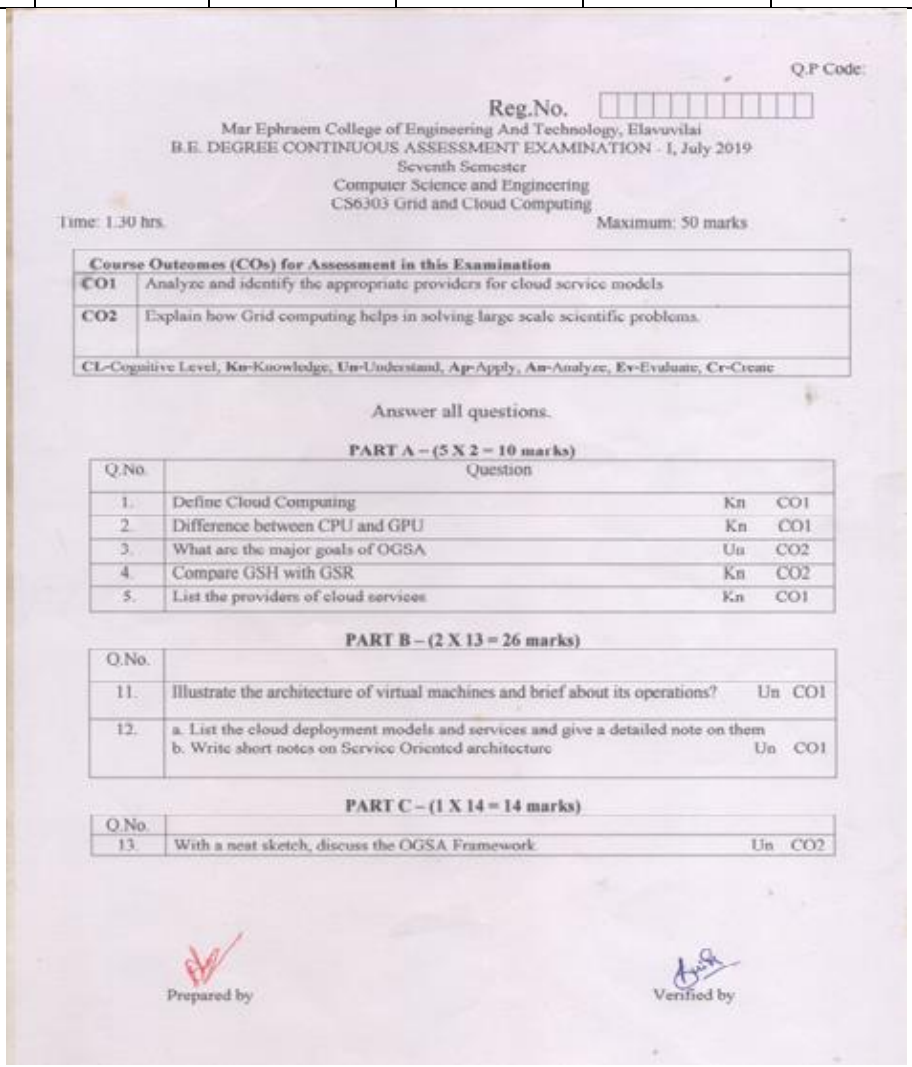
The role of Question Paper scrutiny committee is to ensure the quality of question papers and coverage of COs. The Question Paper scrutiny committee accepts/recommends for modification and resubmit / rejects and resubmit.

C. Evidence of COs coverage in class test/ mid-term tests **(5)**

- Course instructors set the questions considering different cognitive levels of learning and the coverage of course outcomes.
- Cognitive levels (RBT) of questions are marked in the question paper. COs coverage of each question is specified in the question paper.
- The CAE 1 covers the portions with CO1 and CO2, the CAE 2 covers the portions with CO3 and CO4, the Model Exam covers the entire syllabus with all COs. After preparation of question paper by individual faculty members, the QP scrutiny committee will check for the CO coverage and approve the question paper.

Table 2.2.2 (a) CO coverage pattern for class test/ mid-term tests

Internal exam/course outcome	CO1	CO2	CO3	CO4	CO5	CO6
CAE 1	✓	✓				
CAE 2			✓	✓		
Model Exam	✓	✓	✓	✓	✓	✓



Q.P Code:

Reg.No.

Mar Ephraem College of Engineering And Technology, Elavuvilai
B.E. DEGREE CONTINUOUS ASSESSMENT EXAMINATION - I, July 2019
Seventh Semester
Computer Science and Engineering
CS6303 Grid and Cloud Computing

Time: 1.30 hrs. Maximum: 50 marks

Course Outcomes (COs) for Assessment in this Examination	
CO1	Analyze and identify the appropriate providers for cloud service models
CO2	Explain how Grid computing helps in solving large scale scientific problems.

CL-Cognitive Level, Kn-Knowledge, Un-Understand, Ap-Apply, An-Analyze, Ev-Evaluate, Cr-Create

Answer all questions.

PART A – (5 X 2 = 10 marks)

Q.No.	Question		
1.	Define Cloud Computing	Kn	CO1
2.	Difference between CPU and GPU	Kn	CO1
3.	What are the major goals of OGSA	Un	CO2
4.	Compare GSH with GSR	Kn	CO2
5.	List the providers of cloud services	Kn	CO1

PART B – (2 X 13 = 26 marks)

Q.No.			
11.	Illustrate the architecture of virtual machines and brief about its operations?	Un	CO1
12.	a. List the cloud deployment models and services and give a detailed note on them b. Write short notes on Service Oriented architecture	Un	CO1

PART C – (1 X 14 = 14 marks)

Q.No.			
13.	With a neat sketch, discuss the OGSA Framework	Un	CO2

Prepared by

Verified by

Figure 2.2.2 (b) Question paper model

D. Quality of Assignment and its relevance to COs (5)

- Assignments play an important role in the course plan.
- Assignments are used to gather extra information beyond the content taught in the class and to improve reading, problem-solving and writing skills of the students.
- Assignments are used to kindle the creativity of students.
- Assignments are mapped with COs and POs.

Table 2.2.2 (b) Assignment Evaluation Rubrics

Parameter for Assessment	Excellent (16-20marks)	Good (11–15 marks)	Fair (06-10 marks)	Unsatisfactory (<=5 marks)
Application of Learned Concepts	Applied the learned concepts and analyse the outcomes.	Applied the learned concepts	Tried to apply the learned concepts	Not Applied any learned Concepts
Reference of Resources	Referred more than 2 resources	Referred up to 2 resources	Referred one resource	has not referred any resource
Uniqueness of Content	Uniqueness > 90%	Uniqueness > 70-90%	Uniqueness > 40-70%	Uniqueness > 0-40%
Timely Submission	Submitted on time	Late submission with justification	Late submission without justification	Submitted very late without any explanation
Neatness of the Report	Very neat with charts, table, references as per the given instructions	Report is in satisfactory minor deviations from given instructions	Report is in satisfactory major deviations from given instructions	Instructions not followed

Relevance to CO

The assignment topic is based on CO. The Assignment 1 covers the portions with CO1 and CO2, the Assignment 2 covers the portions with CO3 and CO4, the Assignment 3 covers the portions with CO5 and CO6. The sample assignment CO coverage is given below:

Table 2.2.2 (c) Relevance to CO

Assignment / course outcome	CO1	CO2	CO3	CO4	CO5	CO6
Assignment 1	✓	✓				
Assignment 2			✓	✓		
Assignment 3					✓	✓

Content Sources for Assignments

The content for assignments is taken from the following tools which help the students for getting ideas and writing the assignments.

- Reference Books, Lectures
- Online Sources, Data Bases
- NPTEL Videos
- Articles in journals, Newspaper, News letter
- Conference or seminar papers in published proceedings – Print / online
- Dictionary / Encyclopedia – Print / online

Feedback on Assignments

- The assignment is evaluated based on the rubrics and discussed with the student about the depth of the assignment topic and the criticisms were given about the approach to the topic.
- The number of references collected is viewed and the conclusion / inferences from the topic of assignment are verified.
- The improvement needed for the assignment is intimated to the student for uplifting the self-learning capability of the student for further assignment works.

2.2.3. Quality of student projects (25)

A. Identification of projects and allocation methodology to faculty members

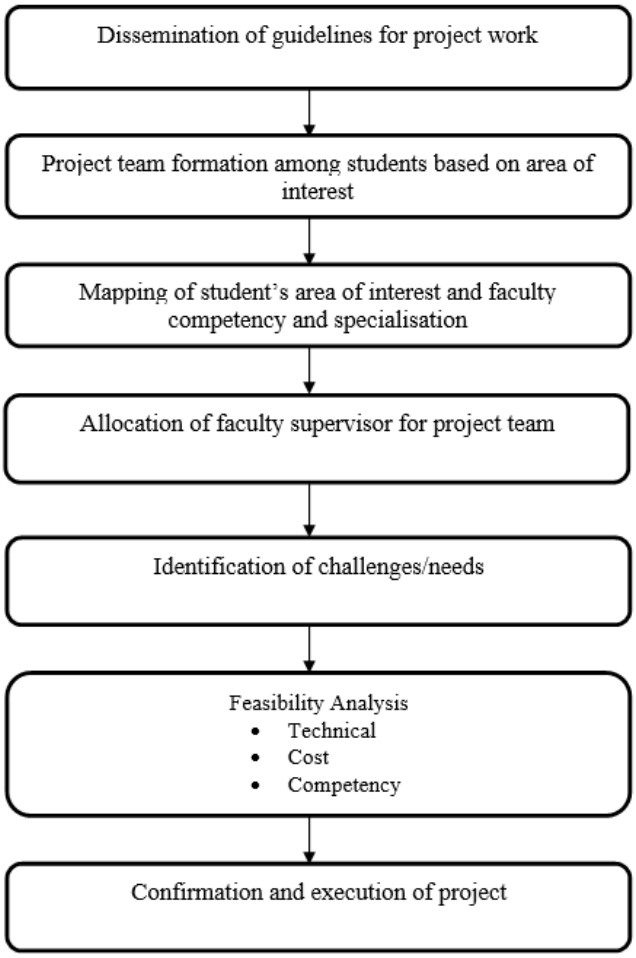


Figure 2.2.3 (a) Identification of projects and allocation methodology

- **Dissemination of guidelines:**

  At the beginning of the academic year project coordinator responsibility is assigned to one/two faculty in the department. The project coordinator will explain the guidelines of the University Project Works and general rules to be followed.

- **Project team formation:**

  The students are given the autonomy to choose their own team members based on the area of interest with a maximum of four students per batch.

- **Mapping of student's area of interest and the faculty competency:**

  The area of interest of faculty members is displayed in the department notice board and the students can opt to select their supervisor based on their area of interest and the faculty competency.

- **Allocation of faculty supervisor for project team:**

  Project supervisors are allocated by the project coordinator in consultation with HOD.

- **Identification of challenges/needs:**

  The student selects the challenges from their area of interest based on the need of the society.

- **Feasibility Analysis:**

  The student analyse the feasibility of the project to address the identified challenge in terms of cost, technology and competency.

- **Confirmation of project:**

  The students confirm the identified project with the project supervisors.

- **Project mark allocation:**

  The project report shall carry a maximum of 30 marks. The project report shall be submitted as per the approved format. Same mark shall be awarded to every student within the project group for the project report. The viva- voce examination shall carry 50 marks. Marks are awarded to each student of the project group based on the individual performance in the viva-voce examination.

Table 2.2.3 (a) Project Mark Allocation

Review I	Review II	Review III	End semester Examinations				
			Thesis Submission (30)		Viva-Voce (50)		
			Internal	External	Internal	External	Supervisor
5	7.5	7.5	15	15	15	20	15

B. Types of projects

Students with the guidance of the supervisors undertake projects in research, product development and applied engineering.

Table 2.2.3 (b) Number of projects implemented in research, Environment, product and application areas

Sl. No.	Year	Type	Number of Projects
1.	CAY 2019-2020	Research	11
		Product development	2
		Application	4
2.	CAY m1 2018-2019	Research	6
		Product development	2
		Application	4
3.	CAY m2 2017-2018	Research	4
		Product development	2
		Application	6

Contribution of project work towards attainment of POs

- Students apply the knowledge gained in the theoretical and practical courses in the implementation of the project; this contributes to the attainment of PO1.
- Students do literature survey in the area of their project to analyze their topic and identify new problems; this contributes to the attainment of PO2.
- Students with the help of supervisor plan and design solutions for the identified problems; this contributes to the attainment of PO3 and PO4.
- Students are motivated to do projects which are useful to the society; this contributes to the attainment of PO3 and PO6.
- Research methodologies are adopted by the students in their project; this contributes to the attainment of PO4.
- In the implementation of projects, students use modern tools/components and software for designing which are not learned in the curriculum; this contributes to the attainment of PO5.
- Socio-economic impact is given due weightage in the project evaluation rubrics which contributes to the attainment of PO7.
- Students apply ethical principles and avoid plagiarism in their projects; this contributes to the attainment of PO8.
- Maximum of four students are permitted in a project batch, working in a team allow them to learn and adjust with the team as an individual member and leader; this contributes to the attainment of PO9 and PO11.

- Three reviews make the students prepare presentation slides and orally present their progress in the project work; this contributes to the attainment of PO10.
- During reviews, students prepare and submit abstract of the presentation. Students prepare a report based on the guidelines provided by the university. These contribute to the attainment of PO10.
- Doing project work as a team and managing the finance related to the project work contribute to the attainment of PO11.
- The work knowledge and interest gained from the project work ignite the students to learn more; this contributes to the attainment of PO12.

Table 2.2.3 (c) A few projects and their relevance to POs and PSOs

CAY (2019-2020)

Sl. No.	Project Title	Project type	Relevance to POs	Relevance to PSOs
1	Efficient traceable authorization search system for secure cloud storage	Research	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
2	Energy Efficient workload allocation of IoT-Edge-Cloud system in Fire Fighting Robot	Research	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
3	Network based Task allocation system in Clouds	Research	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
4	Two Wheeler Black box Security	Product	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO2
5	Enabling Authorized Encrypted Search for Multi Authority Medical Databases	Research	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
6	Virtual Market Using Recommendation Algorithm	Application	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
7	Enhancing big data security using Elliptic curve cryptography	Research	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
8	Heterogeneous Data Storage Management with Deduplication in Cloud Computing	Research	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1

9	Extension Engineered An AOSP based custom ROM	Product	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO2
10	IoT based energy meter for customized consumption analysis	Application	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
11	g-RAT | A Novel Graphical Randomized Authentication Technique for Consumer Smart Devices	Research	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
12	Brain MRI image classification and tumour detection using deep learning	Research	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
13	Designing Image Encryption and Compression Using Random Permutation	Research	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
14	A Robust Digital Signature Scheme for Secure & Efficient Communication in IoT	Research	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
15	Software emulation of chip 8 system	Application	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
16	Efficient Management of resources in Software Defined Clouds using SDCon	Research	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
17	Three Factor Authentication using QR code and Fingerprint	Application	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1

CAY m1 (2018-2019)

Sl. No.	Project Title	Project type	Relevance to Pos	Relevance to PSOs
1	Frequent Itemset Data Mining Differential Privacy Over Large Scale Data	Research	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
2	Collision Avoidance	Application	PO1, PO2, PO3, PO4,	PSO1

	Mechanism In Hairpins		PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	
3	IoT Based Heart Monitoring System	Product development	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO2
4	Food Empowerment Project	Application	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
5	Voice Recognizing Notice Board Using Android	Product development	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO2
6	Secure And Sustainable Load Balancing Of Edge Data Centers In Fog Computing	Research	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
7	PIR Sensor Based Intruder Detection Security System	Research	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO2
8	Anonymous Data Sharing Scheme in public cloud and its application in E-Health Records	Research	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
9	Smart Responder for Bike Riders	Application	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
10	UPI payment interface for blind	Application	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
11	Cloud Log Assuring Soundness and Secrecy Scheme for Cloud Forensics	Research	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
12	Efficiency Traceable Authorization Search System for Secure Cloud Storage	Research	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1

CAYm2 (2017-2018)

Sl. No.	Project Title	Project type	Relevance to Pos	Relevance to PSOs
1	Car Parking System	Application	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
2	IOT Based Air, Sound Pollution detector	Product development	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO2
3	Garbage Alerting System	Application	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
4	Identity Based Data outsourcing with comprehensive Auditing in cloud	Research	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
5	Privacy protection based access control in cloud based service	Research	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
6	Robust alzheimer's disease classification based on multimodal Neuroimaging	Research	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
7	A cross tenent access control model for cloud computing environment	Research	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
8	Intelligent Surveillance system	Application	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
9	Securing Online Transaction using Facial Recognition	Application	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
10	Meals On Wheels	Application	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
11	WIFI Stewart	Application	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO2
12	IOT Based Heart attack detection and heart beat monitoring System	Product development	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO2

C. Process for Monitoring and Evaluation:

Process of Monitoring:

- At the beginning of the academic year, review schedule is prepared by the project coordinator and approved by the HOD. The schedule is displayed on the notice board for the reference of the students.
- In the time table, weekly 12 hours is allotted for project work.
- As per the schedule, review will be conducted with a team of senior faculty members, project supervisor, project coordinator and HOD.
- Project students meet their respective supervisor weekly once and discuss about the project progress.
- For industrial project, the corresponding supervisor will interact with the respective in charges in industry and collect details about their progress and attendance periodically.
- In-house project, students carry out the projects in the project laboratory during project hours under the guidance of their respective supervisors.
- The supervisor makes sure that every student in a team carries out an independent module in their project.

Review schedule for the project is given below.

Table 2.2.3 (d) Review schedule

S.No.	Review	Tentative Date	Assessment tool
1	First Review	After 3 weeks from allocation of project supervisor	Project evaluation Rubrics
2	Second Review	After 4 weeks from the first Review	
3	Third Review	After 4 weeks from the second Review	
4	Report Submission	After 1 weeks from the third Review	Project Report Evaluation Rubrics

The project is evaluated based on the rubrics mentioned below.

Table 2.2.3 (e) Project evaluation rubrics

Project Rubrics

	Parameters	Excellent(4)	Good(3)	Average(2)	Review
1.	Problem identification considering societal issues.	• Excellent explanation of the purpose and need for the project • Identification of problem statement based on literature review • Consideration of societal issues.	• Good explanation of the purpose and need for the project. • Identification of problem statement based on few literature reviews. • Few considerations of societal issues.	• Moderate explanation of the purpose and need for the project. • Identification of problem statement not based on literature review. • No consideration of societal issues.	1st
2.	Provide eco-friendly solution of the identified problem	• Excellent solution for the identified problems with suitable methods. • Environmental aspects considered	• Apt solution for the identified problems with suitable methods. • Few environmental aspects considered	• No proper solution for the identified problems. • No environmental aspects considered	1st
3.	Design and development of systems	• Optimized design and development of system. • Appropriate modern tools used	• Apt design and development of system. • Few modern tools used	• No proper design and development of system. • Modern tools not used	2nd
4.	Results & Discussion	• Excellent interpretation of Results • Suitable discussion on results available.	• Good interpretation of Results • Few discussions on results available.	• No interpretation of Results • Few discussion on results available.	3rd
5.	Conclusion	• Exceptional summarization of Project work and Conclusion. • Scope for future work included.	• Good summarization of Project work and Conclusion. • Scope for future work included.	• Moderate summarization of Project work and Conclusion. • No scope for future work included.	3rd
6.	Project Management	• Excellent work plan and scheduling available. • Systematic cost analysis and budget plan	• Good work plan and scheduling available. • Cost analysis and budget plan available.	• Average work plan and scheduling available. • No cost analysis and budget plan available.	All

		available.			

Table 2.2.3 (f) Project report evaluation rubrics

	Parameters	Excellent (3)	Good (2)	Average (1)
1.	Organization of Report as per guidelines	● Excellent arrangement of contents ● Adopted page dimension and binding specifications of university. ● Followed the specified preparation format ● Followed the specified typing instructions	● Good arrangement of contents ● Adopted page dimension and binding specifications of university. ● Followed the specified preparation format with few mismatches. ● Followed the specified typing instructions	● Poor arrangement of contents ● Adopted page dimension and binding specifications of university. ● Did not follow the specified preparation format. ● Followed the specified typing instructions
2.	Table of contents and indexing	● Indexing of table of content is perfect	● Some mismatch in Indexing of table of content	● Major mismatches in Indexing in table of content
3.	Quality of Content and Technical details	● Relevant, accurate and adequate contents and technical details available.	● Relevant and adequate contents and technical details available.	● Irrelevant and inadequate contents and technical details available.
4.	Elegance and overall Presentation	● Extremely neat and well presented	● Neat and well presented	● Disorderly presented
5.	On time Submission	● Submitted on date	● Late Submission with proper justification	● Late Submission

Process of Evaluation:

- Three reviews will be conducted as per the University regulation and each review carries 20 marks.
- The internal marks for project work will be based on the review sheet which is maintained by the project coordinator.

Mar Ephraem

College of Engineering and Technology

Department: Computer Science Engineering		Year: 2015-2019
Project Title	Initial	Frequent Itemset Data Mining Differential Privacy over large scale data
	Final (if modified)	Frequent Itemset Data Mining Differential Privacy over Large Scale Data

Details of the Supervisor(s)	Details of the students		
Name: Dr. D. Dhaoya	Sl.No.	Name	Reg. No.
Signature:	1	Manju C. O	961415104028
	2	Anu Rajan	961415104012
	3	Princy Wilson	961415104303
	4	Riya Varghese	961415104033

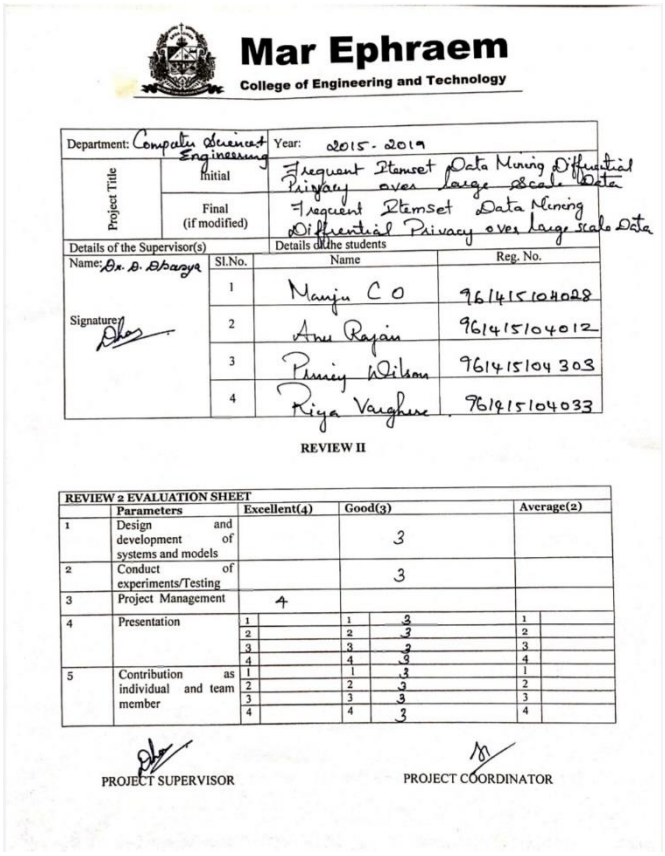
REVIEW I

REVIEW I EVALUATION SHEET

	Parameters	Excellent(4)	Good(3)	Average(2)
1	Problem identification considering societal, health, safety, legal and cultural issues.		3	
2	Provide eco-friendly solution of the identified problem		3	
3	Project Management	4		
4	Presentation	1	1 3	1
		2	2 3	2
		3	3 3	3
		4	4 3	4
5	Contribution as individual and team member	1	1 3	1
		2	2 3	2
		3	3 3	3
		4	4 3	4

PROJECT SUPERVISOR

PROJECT COORDINATOR



Mar Ephraem
College of Engineering and Technology

Department: Computer Science and Engineering		Year: 2015 - 2019
Project Title	Initial	Frequent Itemset Data Mining Differential Privacy over large scale Data
	Final (if modified)	Frequent Itemset Data Mining Differential Privacy over large scale Data

Details of the Supervisor(s)
Name: Dr. D. Dhanya
Signature:

Details of the students

Sl.No.	Name	Reg. No.
1	Manju C O	9614151040028
2	Anu Rajan	9614151040012
3	Princy Wilson	9614151043033
4	Riya Varghese	9614151040033

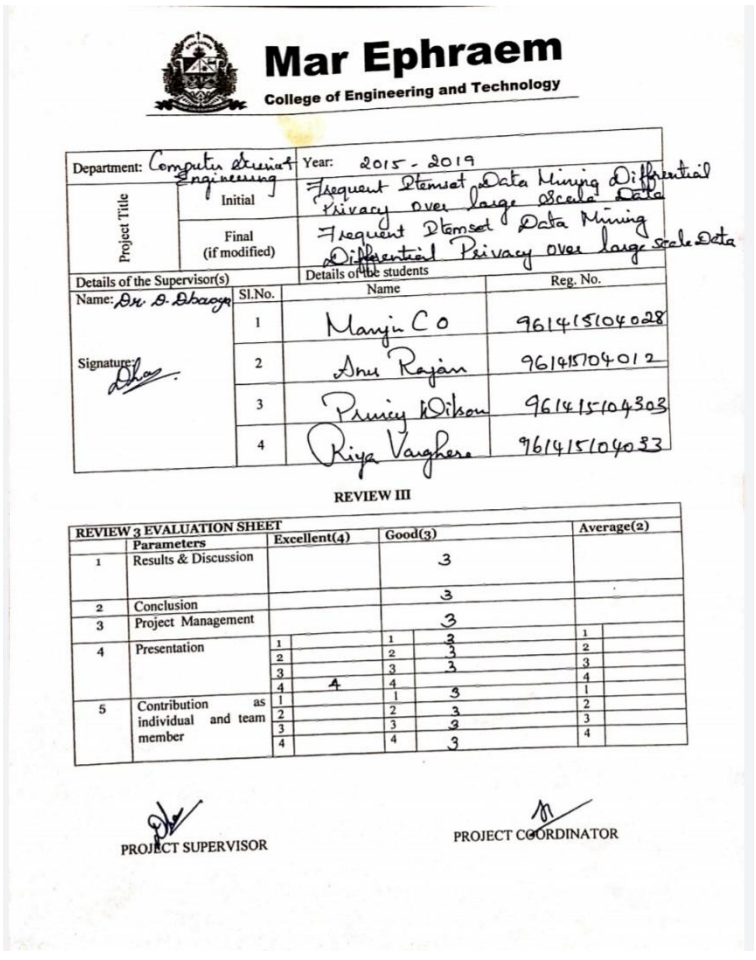
REVIEW II

REVIEW 2 EVALUATION SHEET

	Parameters	Excellent(4)	Good(3)	Average(2)
1	Design and development of systems and models		3	
2	Conduct of experiments/Testing		3	
3	Project Management	4		
4	Presentation	1	1 3	1
		2	2 3	2
		3	3 3	3
		4	4 3	4
5	Contribution as individual and team member	1	1 3	1
		2	2 3	2
		3	3 3	3
		4	4 3	4

PROJECT SUPERVISOR

PROJECT COORDINATOR



Mar Ephraem
College of Engineering and Technology

Department: Computer Science and Engineering		Year: 2015 - 2019
Project Title	Initial	Frequent Itemset Data Mining Differential Privacy over large scale Data
	Final (if modified)	Frequent Itemset Data Mining Differential Privacy over large scale Data

Details of the Supervisor(s)
Name: Dr. D. Dhanya
Signature:

Details of the students

Sl.No.	Name	Reg. No.
1	Manju C O	9614151040028
2	Anu Rajan	9614151040012
3	Princy Wilson	9614151043033
4	Riya Varghese	9614151040033

REVIEW III

REVIEW 3 EVALUATION SHEET

	Parameters	Excellent(4)	Good(3)	Average(2)
1	Results & Discussion		3	
2	Conclusion		3	
3	Project Management		3	
4	Presentation	1	1 3	1
		2	2 3	2
		3	3 3	3
		4	4	4
5	Contribution as individual and team member	1	1 3	1
		2	2 3	2
		3	3 3	3
		4	4 3	4

PROJECT SUPERVISOR

PROJECT COORDINATOR

Figure 2.2.3 (b) Sample review sheet

D. Process to assess individual and team performance:

Students are provided a forum to apply their technical and innovative knowledge by doing projects. Students are instructed to form teams based on their domain. Each team constitutes a maximum of four students guided by a faculty of the same area of interest. Reviews are conducted to assess the individual and team performance of the students as described in the rubrics.

Table 2.2.3 (g) Project Presentation rubrics

Project Rubrics					
	Parameters	**Excellent (4)**	**Good (3)**	**Average (2)**	**Review**
1	Presentation	• Clear and precise presentation with additional information. • Excellent delivery of contents with exceptional communication skills. • Answers all questions correctly during viva voice.	• Clear and precise presentation with adequate information. • Good delivery of contents with decent communication skills. • Answers few questions correctly during viva voice.	• Poor presentation with inadequate information. • Average delivery of contents with decent communication skills. • Answers very few questions correctly during viva voice.	All
2	Contribution as individual and team member	• Well defined roles and responsibilities among the team members. • Excellent contribution of all team members. • Exceptional coordination among the team members.	• Roles and responsibilities are assigned among the team members. • Good contribution of all team members. • Good coordination among the team members.	• Roles and responsibilities are not assigned among the team members. • Few contributions of all team members. • No coordination among the team members.	All

E. Quality of completed projects/working prototypes

- Final project reports/demo is evaluated by a team of their respective supervisor, a panel of senior faculty members.
- The projects are evaluated and are awarded internal assessment marks for maximum 100 and are graded according to the project contribution towards attainment of PO's and PSO's.
- The best projects are identified during university project viva-voce by the external and internal examiner based on their presentation and the demo/working model of the projects.

Table 2.2.3 (h) List of Best Projects sample

Academic Year	Project Title	Area of specialization	Project type
CAY 2019-2020	Energy Efficient workload allocation of IoT-Edge-Cloud system in Fire Fighting Robot	Cloud Computing	Research
	Brain MRI image classification and tumour detection using deep learning	Deep learning	Research
CAY m1 2018-2019	Frequent Itemset Data Mining Differential Privacy Over Large Scale Data	Data mining	Research
	Secure And Sustainable Load Balancing of Edge Data Centers in Fog Computing	Fog computing	Research
CAY m2 2017-2018	A cross tenent access control model for cloud computing environment	Cloud computing	Research
	Privacy protection-based access control in cloud-based service.	Cloud computing	Research

Table 2.2.3 (i) List of Working Prototypes sample

Academic Year	Project Title	Area of specialization
CAY 2019-2020	Two-Wheeler Black box Security	Internet of Things
	Extension Engineered an AOSP based custom ROM	Computer Architecture
CAY m1 2018-2019	Voice Recognizing Notice Board Using Android	Android application
	IoT Based Heart Monitoring System	Internet of things
CAY m2 2017-2018	Securing Online Transaction using Facial Recognition	Android application
	IOT Based Heart attack detection and heart beat monitoring System	Internet of things

F. Evidences of papers published /Awards received by projects etc

- Supervisor encourages the students to publish papers in reputed journals

Table 2.2.3 (j) A Few Publications in Symposium / Conference / Journal

Year	Author Name	Paper	Published in Symposium / Conference / Journal	Indexing / Level
CAY 2019-2020	Merin S John Jomi Elizabeth Joy Saranya K Sasi	Energy Efficient workload allocation of IoT-Edge-Cloud system in Fire Fighting Robot	Conference	National
	Nitha Mohan R Abinaya Christy Jaspin	Brain MRI image classification and tumour detection using deep learning	Conference	National
CAY m1 2018-2019	Manju C.O, Anu Rajan, Princy Wilson, Riya Varghese	Frequent Itemset Data Mining Differential Privacy Over Large Scale Data	Conference	National
	Brintha Rani K. R, Manju M.R, Ashiga J.P	Secure And Sustainable Load Balancing of Edge Data Centers in Fog Computing	Conference	National
CAY m2 2017-2018	Aparna Jose, Bincy Raj R P, Akhila R S, Ralfena Mol.N	A cross tenent access control model for cloud computing environment	Conference	National
	Bijila M David, Joby Joy, Rachal Harison	Privacy protection-based access control in cloud-based service.	Conference	National

Table 2.2.3 (k) Best project which received awards from international / National body

Year	Project title	Student Name	Award	Awarding Agency
CAY 2019-2020	Two-Wheeler Black box Security for Women	Antony Jojo Nivin ninan raju Karthik vasudevan Jestin john	Rs. 15000	IEDC

Table 2.2.3 (l) Number of presentations in Symposium / Conference:

Year	Presentation	
	Symposium	Conference
CAY 2019-2020	7	10
CAY m1 2018-2019	4	8
CAY m2 2017-2018	6	6

2.2.4 Initiative related to industry interaction (15)

Activities involved in the industry institute interaction are

- Industry Visits
- MoU with Industry
- Guest Lectures/ Seminars/ Workshops
- Internships
- Placement sessions
- Regular training program in industry / Institute
- Visits of faculty to industry for FDP

A. Industry Supported Laboratories:
Purpose and Scope:

1. To establish a collaborative interaction to improve the standard of students and faculty of Mar Ephraem to industrial standards through lab-based training programs, workshops and seminars.
2. The students will be exposed to emerging technological standards and practices of the industry.
3. Collaborative workshops and seminars on recent trends and industrial needs.
4. Collaborative research on thrust areas of computer science and engineering.
5. To carry out consultancy works for international universities and government organizations.
6. Platform for industrial experts to interact with students community on recent technologies.

Table 2.2.4 (a) Industry Supported Laboratories

Sl.No	Name of the Laboratory	Sponsored by
1.	E-yantra Robotics Lab	MHRD Gov. India
2.	Mar Ephraem Digital Solutions	Concept Solutions

B. Industry involvement in the program design and partial delivery of any regular courses for students:

The college is affiliated to Anna University, Chennai and the syllabus is framed by Anna University. With the help of industrial experts, the academic and industry gaps are identified and suitable topics will be suggested by them to fill the gap. The industry delegates are considered as industrial partners who help in providing suggestions to improve the industrial relationship.

Table 2.2.4 (b) Industrial Partners who helps in providing suggestions to improve the industrial relationship

Sl.No	Name	Designation	Company
1	Mr. Saravanan	Director	Concept Solutions
2	Mr. Jerry Rajamoney	Senior Programmer	VISA India
3	Ms. Hannah Shiny Priya	Manager	Cognizant Technology Solutions, Bangalore
4	Ms. Dhanya. K	IT Analyst	Accenture, Bangalore
5	Mr. Jobin. J. J	Network Operations Analyst	Visionary RCM, Chennai

- MoUs have been signed among several companies; through these MoUs several training and value-added courses have been conducted for the students to incorporate both technical as well as employability skills and employment.

Table 2.2.4 (c) MOUs and Training with reputed industries

Sl.No	Name of the Company/Industry	Training / placement	Academic year / Class	No. of students attended
1.	Mar Ephraem Digital Solutions	Training on software development	2019 – 2020 / IV CSE	45
2.	Concept Solutions	Training and Placement	2018 – 2019 / IV CSE	43
3.	MHDR	Training on Robotics	2018 – 2019 / III CSE & IV CSE	90
4.	Eureka Forbs	Training	2017 – 2018 / IV CSE	45

- The industrial experts will deliver lectures, presentations and hands on practice to the students during workshops/ seminars organized to fill the industry gaps and to attain the target COs and POs.

Table 2.2.4 (d) Industrial Experts delivery details

CAY (2019 – 2020)

Sl.No	Action taken	Date	Resource Person with designation
1.	Workshop on web designing using PHP	05/03/2020	Mr. Kesava Prasad, Mar Ephraem Digital Solutions.
2.	Best Practices for Drafting Manuscripts to peer Reviewed Journals	04/09/2019 & 05/09/2019	Dr. C. Seldev Christopher Professor, St.Xavier College of Engineering, Nagercoil.

CAYm1 (2018 – 2019)

Sl.No	Action taken	Date	Resource Person with designation
1.	Hands on training on MySQL performance tuning	23/02/2019	Mr. Ahmed Kabir, Mr. Jose Vignesh Cape Start, Nagercoil.
2.	Workshop- Hands on Training in Hadoop-MapReduce	10/09/2018	Mr. Subash, Architect, Ericsson India Global Service Ltd.
3.	Hands on Training in JavaScript	20/07/2018	Mr. Arul Prince, Software Engineer, 3e IT Solutions, Trivandrum
4.	Seminar on Cloud Computing Basics	17/07/2018	Mr. Abel Jacob, Network Engineer, Phykon Solutions, Techno park

CAYm2 (2017-2018)

Sl.No	Action taken	Date	Resource Person with designation
1.	Seminar on Hastily formed Network	15/02/2018	Mr. Jagadeesan, Senior Technical Trainer, ICT Academy.
2.	Workshop on Agile Software Development Process, SCRUM	06/02/2018	Mr. Kesava Prasad, Mar Ephraem Digital Solutions.
3.	Workshop on Python programming in Data Structures	07/09/2017	Mr. Hannah Shiny Priya Manager Cognizant Technology Solutions, Bangalore
4.	Hands on training on Angular Java Script	25/08/2017	Mr. Arul Prince, Software Engineer Socius Global Group, Kerala

C. Impact analysis of industry institute interaction and actions taken

Table 2.2.4 (e) Impact analysis of industry institute interaction

Activity	Date	Beneficiaries	Impact
Workshop on web designing using PHP	05/03/2020	Final year students of batch 2020	2 students of batch 2020 are working as Assistant System Engineer trainee. One student of 2020 batch as Programmer Analyst Trainee and one as Trainee Software Engineer and one as Software Trainee.
Workshop- Hands on Training in Hadoop-MapReduce	10/09/2018	Final year students of batch 2019	10 Students are working in various Multi-National Companies in the field of software.
Seminar on Cloud Computing Basics	17/07/2018	Final year students of batch 2019	11 Students are working as Software Engineers.
Hands on training on Angular Java Script	25/08/2017	Final year students of batch 2018	• 6 Students are working in Software and Engineering services. • 8 students are working as project trainee.

Action Taken:

The feedback is collected during the industry institute interaction program and invited lectures. Based on the feedback of the students, the department plans for future initiatives related to industry interaction by the industrial expert for the upcoming batches.

2.2.5 Initiatives related to industry internship / summer training (15)

Industrial visit/ internship is a part of the professional courses, during which students visit companies and get insight on how companies work and also gain useful information related to the practical aspects of the course which cannot be visualized in lectures. With an aim to go beyond academics, these visits are arranged to develop the insights of the students – attaining practical knowledge and their theoretical applications thereof.

A. Industrial visit for Student:

Table 2.2.5 (a) Industrial visit for Students

S. No	Name of the Industry	Date of visit	Type of industry	Planned / Unplanned	Total no. of Students	Year/ Sem	Relevant area of training
CAY (2019 – 2020)							
1	Kaynes Technology India Private Limited, Bangalore	12/01/2020 to 15/01/2020	Electronics System & Design Manufacturing	Planned	43	2nd/4th	Application Software Development
2	ACE components, Mysore	11/01/2020 to 15/01/2020	Electronics	Planned	46	3rd/6th	Manufacturing of resistors
CAYm1 (2018 – 2019)							
1	BSNL, Marthandam	11/07/2018	Electronics and Communication	Planned	44	2nd / 3rd	Basic Telecom Technologies
2	Hindustan Aeronautics Limited, Bangalore	09/08/2018 to 11/08/2018	Test facility	Planned	40	2nd / 3rd	Environment of an aeronautical centre.
3	Hindustan Aeronautics Limited, Bangalore	08/08/2018 to 12/08/2018	Test facility	Planned	41	3rd / 5th	Environment of an aeronautical centre.
4	ISRO, Mahendragiri, Tamil Nadu	23/01/2019	Space research organization	Planned	42	3rd / 6th	Propulsion system
CAYm2 (2017 – 2018)							
1	Bhoruka Power Corporation, Bangalore	09/08/2017 to 11/08/2017	Hydro-power station	Planned	41	2nd / 3rd	Working environment of Bhoruka Power Corporation
2	Kayes Technology, Mysore	08/08/2017 to 11/08/2017	Electronics System & Design Manufacturing	Planned	40	3rd / 5th	Application Software Development

3	BSNL, Marthandam	23/09/2017	Electronics and Communication	Planned	43	2nd /3rd	Basic Telecom Technologies
4	ISRO, Mahendragiri, Tamil Nadu	09/02/2018	Space research organization	Planned	43	3rd / 6th	Propulsion system

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

Table 2.2.5 (b) Industrial /internship /summer training of more than two weeks and post training Assessment

S. No	Name of the Industry	Date of visit	Type of industry	Planned / Unplanned	Total Number of Students	Year	Relevant area of training
CAY (2019-2020)							
1	Keltron Regional Education Centre, Kozhicode	16.12.2019 – 21.12.2019	Electronics Development	Planned	3	IV	HTML, Front end development, Introduction to DBMS(MySQL), Introduction to JAVA Programming
2	Primary Health Care Corporation, Doha, Qatar	8.12.2019 - 31.12.2019	Networking	Planned	1	III	Desktop Support Engineering
3	Cyan Technologyz, Adoor, Pathanamthitta	25.11.2019 – 5.12.2019	Software	Planned	9	III	Desktop support Engineer
4	Networkz systems, Trivandrum	25.11.2019 – 5.12.2019	Software	Planned	2	III	Web development
5	Pylon projects	24.11.2019 – 5.12.2019	Software	Planned	1	III	UI Design
6	IBS Software	24.11.2019 – 10.12.2019	Software	Planned	2	III	Web development
7	Accubits Digital Technologies	25.11.2019 – 5.12.2019	Software	Planned	1	III	Enterprise Software development

8	Cyan Technology, Adoor, Pathanamthitta	13.01.2020 - 18.01.2020	Software	Planned	2	III	Desktop support Engineer
9	Nyeste venture Technologies Pvt. Ltd.	26.11.2019-30.11.2019	Software	Planned	10	II	Web designing
10	RSGP Consulting Private Limited	09.09.2019 -13.09.2019	Software	Planned	6	II	Software development
11	Zewia Software Solution	28.11.2019 -04.12.2019	Software	Planned	1	II	Software development
12	Cyberia Software Private Limited	23.12.2019 - 31.12.2019	Software	Planned	20	II	Programming in JAVA and Android
13	G Tec Computer Education	06.07.2020 – 13.07.2020	Software	Planned	2	II	C programming
CAYm1 (2018-2019)							
1	Spiro Solutions Private Limited, Chennai	07.12.2018 -10.12.2018	Software	Planned	3	III	PHP & MySQL
2	Srishti Innovative Computer Systems Private Limited, Trivandrum	15.05.2019 -19.05.2019	Software	Planned	5	III	Android app development
3	Keltron, Trivandrum	20.05.2019 – 25.05.2019	Electronics Development	Planned	2	III	Power Electronics Group(PEG), Security and Surveillance Group(SSG), PHP, Enterprise Resource Planning(ERP)
4	IIT, Kanpur	10.06.2019 – 11.07.2019	Ministry of Electronics & IT	Planned	1	III	Artificial Intelligence
5	Networkz systems, Trivandrum	24.6.2019 - 29.6.2019	Software	Planned	4	II	Android Application Development
6	Shellsquare Software LLP, Trivandrum	5.6.2019 - 14.6.2019	Software	Planned	1	II	Javascript

7	Singularis Software technologies	27.5.2019 - 7.6.2019	Software	Planned	2	II	ASP.NET
8	Bharath Sanchar Nigam Limited, Nagercoil	26.11.2018-30.11.2018	Electronics & communication	Planned	3	II	Fundamentals of Telecom
9	Shellsquare Software LLP, Trivandrum	26.11.2018-17.12.2018	Software	Planned	1	II	Agile model software testing process
10	Keltron controls, Alappuzha	03.12.2018-07.12.2018	Electronics Development	Planned	2	II	Strategic Business Units
11	Nest Soft, Ravipuram, Cochin	03.12.2018-07.12.2018	Software	Planned	9	II	Digital marketing/SEO and Web development
12	Hitech Solution, Nagercoil	5.12.2018-15.12.2018	Software	Planned	7	II&III	Photoshop
13	Spectrum Softech Solutions pvt.ltd	11.12.2018-15.12.2018	Software	Planned	5	II	ASP.NET
14	Keltron REC, Thrissur	10.06.2019 – 16.06.2019	Electronics Development	Planned	7	I	Standalone system application, Development life cycle & design, Information retrieval system
15	Singularis Software technologies private limited, Kottayam	10.06.2019 – 17.06.2019	Software	Planned	2	I	HTML, SQL, Basics of JAVA
16	Meditree Solutions private limited, Kollam	19.06.2019 – 26.06.2019	Software	Planned	4	I	Web page creation using javascript
17	Nest Soft Technologies, Ravipuram, Cochin	13.06.2019 – 21.06.2019	Software	Planned	7	I	Android ios app delevlopment

CAYm2 (2017-2018)							
1	Aaba Soft, Infopark, Kochi	19.07.2017-24.07.2017	Software	Planned	1	III	JAVA Basics, Introduction to Android
2	Spectrum Softtech Solutions Private limited, Kochi	20.11.2017-25.11.2017	Software	Planned	3	III	Web designing
3	Suffix E Solutions, Trivandrum	8.12.2017-14.12.2017	Software	Planned	4	III	Mobile APP development using IONIC framework
4	Keltron Knowledge Centre, Kozhikode	11.12.2017-23.12.2017	IT Business Group	Planned	17	III	Android-Mobile Application development
5	Spectrum Softtech Solutions Private limited, Kochi	02.12.2017-07.12.2017	Software	Planned	6	II	ASP.NET
6	Al Majadief Integrated, Muscat	03.12.2017 – 28.12.2017	Software	Planned	1	II	Assistant Computer Programmer
7	Keltron, Trivandrum	04.12.2017 – 10.12.2017	Electronics Development	Planned	3	II	Power Electronics Group (PEG), Tool Room, Fabrication shop
8	Keltron, Thrissur	06.12.2017 – 12.12.2017	Electronics Development	Planned	4	II	HTML, Form creation, CSS, Style Formatting, Java Script
9	ATEES Industrial training, Thrissur	06.12.2017-09.12.2017	Software	Planned	1	II	PHP
10	NestSoft, Ravipuram, Kochin	13.12.2017-22.12.2017	Software	Planned	9	II	Digital marketing, Web development, ERP/CRM & Mobile App Development

11	CYBOSOL Nuevalgo Solutions.Pvt. Ltd, Techno Park, Trivandrum	14.12.2017-15.12.2017	Software	Planned	3	II	Organisational structure, HR policies, Web Technologies, Mobile Technologies, Quality Assurance, Database, Project Management
12	e- Vision Labs, Trivandrum	23.05.2018 – 28.05.2018	Software	Planned	2	II	Software testing
13	Cochin Shipyard Limited. Kochi	25.06.2018 – 29.06.2018	Ministry of shipping, Information System Department	Planned	3	II	Ship Repair, IAC Visit, Information System Departments
14	Gateway Technologies, Chennai	10.6.2018 - 30.6.2018	Software	Planned	4	I	ASP.Net with C#
15	Leotech Trivandrum	11.6.2018 - 22.6.2018	Electronics	Planned	2	I	PCB Designing, C programming, Embedded System
16	Bharath Sanchar Nigam Limited, Kottayam	19.6.2018 for 2 weeks	Electronics and communication	Planned	1	I	Basic Telecom Technologies

C. Impact Analysis of Industrial Training

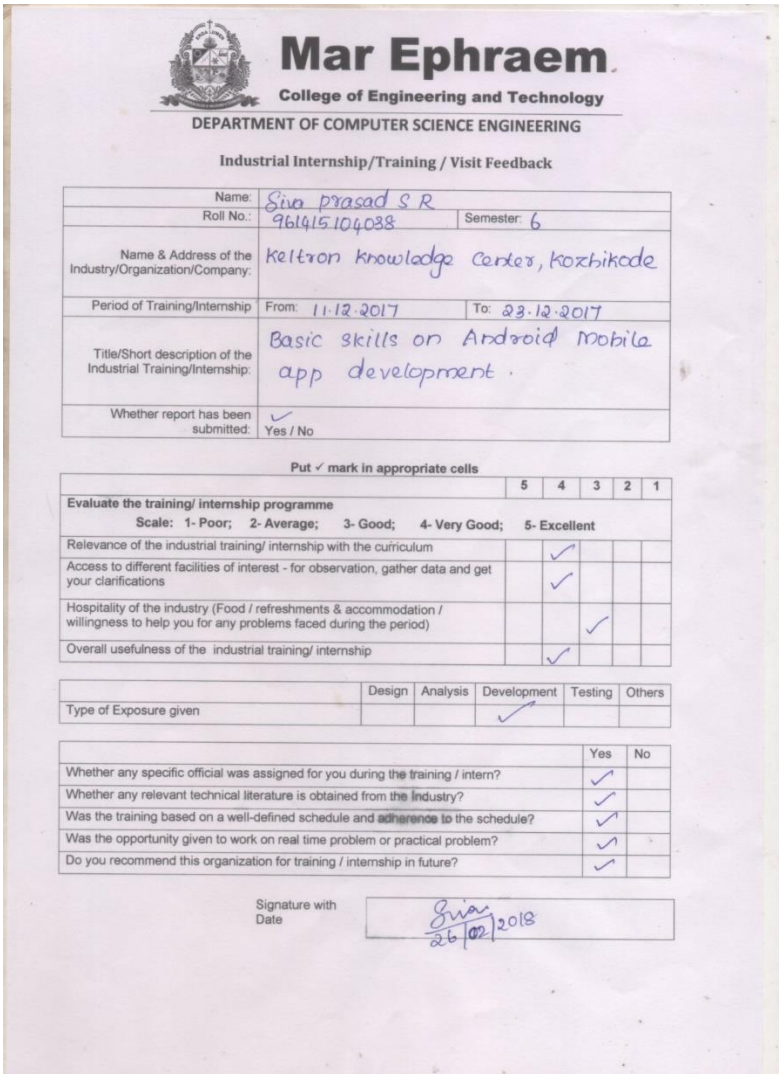
Table 2.2.5 (c) Impact Analysis of Industrial Training

Activity	Period	Beneficiaries	Impact
Industrial Visit (software and electronics companies)	2 visits per year	All students	• 2 students of batch 2020 are working as Assistant System Engineer trainee. One student of 2020 batch as Programmer Analyst Trainee and one as Trainee Software Engineer and one as Software Trainee. • 6 Students of batch 2019 are working as Software trainee • One student of 2018 batch works as Validation Engineer.

Internship (Software and electronics companies)	2 per year during Summer and Winter Vacation	All students	• 15 Students of batch 2020 are working as Software trainee. • 10 Students of batch 2019 are working as Software trainee. • 5 Students of batch 2018 are working as Software trainee.

D. Student Feedback on Initiative

After attending every training/ internship / visit, the students are asked to submit a feedback form which has details about the training, or activity conducted. The feedback is analysed by the department and necessary actions are taken during next year initiatives.



Mar Ephraem
College of Engineering and Technology
DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

Industrial Internship/Training / Visit Feedback

Name:	Siva prasad S R
Roll No.:	961415104038 Semester: 6
Name & Address of the Industry/Organization/Company:	Keltron knowledge Center, Kozhikode
Period of Training/Internship	From: 11.12.2017 To: 23.12.2017
Title/Short description of the Industrial Training/Internship:	Basic skills on Android Mobile app development.
Whether report has been submitted:	✓ Yes / No

Put ✓ mark in appropriate cells

Evaluate the training/ internship programme Scale: 1- Poor; 2- Average; 3- Good; 4- Very Good; 5- Excellent	5	4	3	2	1
Relevance of the industrial training/ internship with the curriculum		✓			
Access to different facilities of interest - for observation, gather data and get your clarifications		✓			
Hospitality of the industry (Food / refreshments & accommodation / willingness to help you for any problems faced during the period)			✓		
Overall usefulness of the industrial training/ internship		✓			

	Design	Analysis	Development	Testing	Others
Type of Exposure given			✓		

	Yes	No
Whether any specific official was assigned for you during the training / intern?	✓	
Whether any relevant technical literature is obtained from the Industry?	✓	
Was the training based on a well-defined schedule and adherence to the schedule?	✓	
Was the opportunity given to work on real time problem or practical problem?	✓	
Do you recommend this organization for training / internship in future?	✓	

Signature with Date: Siva 26/02/2018

Figure 2.2.5 Sample feedback on In-plant training / Internship

CRITERION 3	COURSE OUTCOMES AND PROGRAM OUTCOMES	120

Define the Program Specific outcomes

3.1 Establish the correlation between the courses and the Program Outcomes (POs) and Program Specific Outcomes (PSOs) (20)

PSO1	Apply engineering fundamentals to provide optimal solutions to the problems through software development.
PSO2	Develop professional skills for real-time operation and maintenance of computer hardware & networking

3.1.1 Course Outcomes (COs)(SAR should include course outcomes of one course from each semester of study, however, should be prepared for all courses and made available as evidence, if asked) (5)

Note: Number of Outcomes for a Course is expected to be around 6

Course Name:	**C204**	**Course Year:**	**2017-2018**
Items	**2020-21**		
C204.1	Explain the computer organization components and instructions		
C204.2	Explain the various addressing modes		
C204.3	Demonstrate arithmetic operations		
C204.4	Interpret the basic of MIPS implementation and pipelining		
C204.5	Outline the concept of parallelism and multi-core processor		
C204.6	Classify the memory technologies and I/O systems		

Course Name:	**C211**	**Course Year:**	**2017-2018**
Items	**2020-21**		
C211.1	Explain the basic concepts and functions of Operating Systems		
C211.2	Apply the principles of concurrency and design deadlock, prevention and avoidance algorithm		
C211.3	Compare and contrast various memory management schemes		
C211.4	Implement prototype file system		
C211.5	Perform administrative tasks on Linux Servers		

C211.6	Describe the basics of Linux system & Mobile OS like IOS & Android.

Course Name:	**C304**	**Course Year:**	**2018-2019**

Items	**2020-21**
C304.1	Design algorithms for any given problem
C304.2	Solve Computational problems using brute force and divide and conquer algorithm design technique
C304.3	Solve problems using Greedy and dynamic programming techniques
C304.4	Solve problems using iterative methods
C304.5	Solve problems using backtracking branch and bound techniques
C304.6	Analyse the different algorithm design techniques for a given problem

Course Name:	**C309**	**Course Year:**	**2018-2019**

Items	**2020-21**
C309.1	Discuss the various trends and examples in distributed systems
C309.2	Explain how communication takes place in distributed systems via IPC and indirect communication methods
C309.3	Describe the use of the peer-to-peer system and file system concepts that are intended to implement in distributed system
C309.4	Discuss how the time and global states and fault tolerant services are involved in distributed systems
C309.5	Discuss the management of process and resources in distributed systems
C309.6	Explain the role of remote method invocation process to implement communication in distributed systems

Course Name:	**C403**	**Course Year:**	**2019-2020**

Items	**2020-21**
C403.1	Analyze and identify the appropriate providers for cloud service models
C403.2	Explain how Grid computing helps in solving large scale scientific problems.
C403.3	Explain the data intensive grid service models and grid computing toolkits
C403.4	Apply the virtualization concepts for different applications in cloud computing environment
C403.5	Solve complex problems using Map Reduce concepts

C403.6	Explain the security issues in grid and cloud environment

Course Name:	**C410**	**Course Year:**	**2019-2020**
Items	**2020-21**		
C410.1	Compare SIMD and MIMD systems		
C410.2	Apply the synchronization techniques and deadlock algorithms in parallel programming		
C410.3	Write programs for shared memory model using OpenMP.		
C410.4	Write programs for distributed memory model using MPI.		
C410.5	Explain the concepts of n-body solver and tree search algorithms.		
C410.6	Compare various OpenMP and MPI implementations based on the performance measures.		

3.1.2 CO-PO matrices of courses selected in 3.1.1(Six matrices to be mentioned; one per semester from 3rd to 8th semester)

(5)

1. Course name: C204

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C204.1	2	1	-	-	-	-	-	-	-	-	-	-
C204.2	2	1	-	-	-	-	-	-	-	-	-	-
C204.3	2	1	-	-	-	-	-	-	-	-	-	-
C204.4	2	1	-	-	-	-	-	-	-	-	-	-
C204.5	2	1	-	-	-	-	-	-	-	-	-	-
C204.6	2	1	-	-	-	-	-	-	-	-	-	-
Average	**2.00**	**1.00**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

2. Course name: C211

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C211.1	2	1	-	-	-	-	-	-	-	-	-	1
C211.2	3	2	1	1	-	-	-	-	-	-	-	1
C211.3	2	1	-	-	-	-	-	-	-	-	-	1
C211.4	2	1	-	-	-	-	-	-	-	-	-	1
C211.5	3	2	1	1	-	-	-	-	-	-	-	1
C211.6	2	1	-	-	-	-	-	-	-	-	-	1
Average	**2.33**	**1.33**	**1.00**	**1.00**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1.00**

3. Course name: C304

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C304.1	3	3	3	3	-	-	-	-	-	-	-	-
C304.2	3	2	1	1	-	-	-	-	-	-	-	-
C304.3	3	2	1	1	-	-	-	-	-	-	-	-
C304.4	3	2	1	1	-	-	-	-	-	-	-	-
C304.5	3	2	1	1	-	-	-	-	-	-	-	-
C304.6	3	3	3	3	-	-	-	-	-	-	-	-
Average	**3.00**	**2.33**	**1.67**	**1.67**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

4. Course name: C309

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C309.1	2	2	2	2	1	-	-	-	-	-	-	-
C309.2	2	1	0	1	1	-	-	-	-	-	-	-
C309.3	2	1	2	1	1	-	-	-	-	-	-	-
C309.4	2	2	2	1	1	-	-	-	-	-	-	-
C309.5	2	2	1	1	1	-	-	-	-	2	-	2
C309.6	2	1	1	1	1	-	-	-	-	-	-	-
Average	**2.00**	**1.50**	**1.60**	**1.17**	**1.00**	**-**	**-**	**-**	**-**	**2.00**	**-**	**2.00**

5. Course name: C403

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C403.1	3	3	2	2	1	-	-	-	-	-	-	-
C403.2	2	1	-	-	-	-	-	-	-	-	-	-
C403.3	2	1	-	-	-	-	-	-	-	-	-	-
C403.4	3	2	1	1	1	-	-	-	-	-	-	-
C403.5	3	2	1	1	1	-	-	-	-	2	-	2
C403.6	2	1	-	-	-	-	-	-	-	-	-	-
Average	**2.50**	**1.66**	**1.33**	**1.33**	**1.00**	**-**	**-**	**-**	**-**	**2.00**	**-**	**2.00**

6. Course name: C 410

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C410.1	2	3	1	1	-	-	-	-	-	-	-	-
C410.2	2	2	2	2	-	-	-	-	-	-	-	-
C410.3	1	2	2	2	-	-	-	-	-	-	-	-
C410.4	1	2	2	2	-	-	-	-	-	-	-	-
C410.5	1	1	-	-	-	-	-	-	-		-	-
C410.6	3	3	2	2	-	-	-	-	-	-	-	-
Average	**1.67**	**2.17**	**1.50**	**1.50**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

1. **Course Name: C204**

CO	PSO 1	PSO 2
C204.1	-	1
C204.2	-	1
C204.3	-	1
C204.4	-	1
C204.5	-	1
C204.6	-	1
Average	-	**1.00**

2. **Course Name: C211**

CO	PSO 1	PSO 2
C211.1	2	-
C211.2	3	-
C211.3	2	-
C211.4	2	-
C211.5	3	-
C211.6	2	-
Average	**2.33**	-

3. **Course Name: C304**

CO	PSO 1	PSO 2
C304.1	3	3
C304.2	3	-
C304.3	3	-
C304.4	3	-
C304.5	3	-
C304.6	3	3
Average	**3.00**	**3.00**

4. **Course Name: C309**

CO	PSO 1	PSO 2
C309.1	2	1
C309.2	2	1
C309.3	2	1
C309.4	2	1
C309.5	2	1
C309.6	2	1
Average	**2.00**	**1.00**

5. **Course Name: C403**

CO	PSO 1	PSO 2
C403.1	2	2
C403.2	2	2
C403.3	2	2
C403.4	3	3
C403.5	3	2
C403.6	2	3
Average	**2.33**	**2.33**

6. **Course Name: C410**

CO	PSO 1	PSO 2
C410.1	2	1
C410.2	3	-
C410.3	1	2
C410.4	1	2
C410.5	3	-
C410.6	3	1
Average	**2.17**	**1.00**

3.1.3 A Program level Course-PO matrix of all courses INCLUDING first year courses (10)

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C101	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	3	PO11	1.67
C102	3	2	1	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C103	3	2.17	1.17	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C104	3	2	1	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C105	2.67	1.67	1	1	2.50	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C106	1.83	1	PO3	PO4	PO5	PO6	PO7	PO8	2	2	PO11	PO12
C107	2.50	2	1.33	1.33	1.17	0.83	1.33	PO8	1.50	0.83	PO11	PO12
C108	2	PO2	PO3	PO4	PO5	PO6	PO7	PO8	2	PO10	PO11	PO12
C109	3	2	PO3	PO4	1	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C110	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	3	PO11	PO12
C111	3	2	1	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C112	3	2.50	1.83	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C113	2.33	1.67	2.00	PO4	PO5	PO6	PO7	PO8	PO9	2	PO11	1.83
C114	2.83	1.83	1	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C115	2.83	2	1.2	1	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C116	2	PO2	PO3	PO4	2	PO6	PO7	PO8	PO9	PO10	PO11	PO12

C117	3	2	1	PO4	1.17	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C118	3	2	3	3	PO5	PO6	PO7	PO8	PO9	PO10	PO11	2
C201	2.83	1.83	1	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C202	2.83	2	1.40	1.40	1.33	PO6	PO7	PO8	PO9	1.83	PO11	PO12
C203	2.50	2.00	1.50	1.50	3.00	PO6	PO7	PO8	PO9	2	PO11	2
C204	2	1	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C205	1.83	1.67	1	1	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C206	PO1	PO2	PO3	PO4	PO5	PO6	3	3	3	3	PO11	3
C207	3	2.2	1.4	1.4	1.4	PO6	PO7	2	3	2	PO11	3
C208	2.80	2.00	1.50	1.00	3.00	2.00	PO7	PO8	PO9	PO10	PO11	1.60
C209	2.83	1.83	1.00	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C210	3	2.5	2.17	1.67	PO5	PO6	PO7	PO8	PO9	PO10	PO11	2.5
C211	2.33	1.66	2	2	PO5	PO6	PO7	PO8	PO9	2	PO11	PO12
C212	3.00	2.33	1.67	1.67	PO5	PO6	PO7	PO8	PO9	PO10	PO11	3
C213	2.83	2.17	1.33	1.33	PO5	PO6	PO7	PO8	PO9	2	PO11	2
C214	3.00	3.00	2.17	1.83	0.83	1.50	2.50	2.00	1.50	1.67	1.67	1.50
C215	3	3	3	1	2	PO6	PO7	2	3	2	PO11	3
C216	3.00	2.20	1.40	1.40	1.40	PO6	PO7	2.00	3.00	2.00	PO11	3.00
C217	3.00	3.00	2.60	2.25	1.00	1.50	1.00	1.50	PO9	PO10	1.25	1.60
C301	2.72	1.76	0.79	0.63	PO5	PO6	PO7	PO8	2	PO10	PO11	PO12
C302	3	3	2	2	3	PO6	PO7	2	2	2	PO11	2.5
C303	2.83	2.17	1.33	1.33	PO5	2	PO7	PO8	PO9	PO10	PO11	2
C304	3.00	2.33	1.67	1.67	PO5	PO6	PO7	PO8	PO9	PO10	PO11	3
C305	3.00	3.00	3.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00
C306	3	2.8	2.6	2.6	3	2	PO7	-	3	1.8	PO11	3
C307	3	3	3	2	3	PO6	PO7	2	PO9	1.2	PO11	2
C308	3	3	3	1.75	2	PO6	PO7	2	PO9	PO10	PO11	2
C309	2.00	1.50	1.60	1.17	1.00	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C310	3.00	2.83	2.33	2.33	1.17	1.00	0.67	1.00	1.00	0.67	1.00	1.00
C311	2.83	2	1.40	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C312	2.50	1.67	1.33	1.33	1.00	PO6	PO7	PO8	PO9	2	PO11	2
C313	3	2.67	2.33	2.33	PO5	PO6	PO7	PO8	PO9	2	PO11	3
C315	3	2.60	3	3	3	2.20	2	2	3	2.20	2.20	2.20
C316	3.00	2.60	2.00	2.00	2.40	PO6	PO7	1.00	3	2	PO11	2.00
C317	PO1	PO2	PO3	PO4	PO5	PO6	PO7	2	3	3	PO11	3

C401	3	2.83	2.33	PO4	3	1	1	PO8	PO9	PO10	PO11	PO12
C402	2.83	1.83	1	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C403	2.5	1.66	1.33	1.33	1	PO6	PO7	PO8	PO9	2	PO11	2
C404	2.67	1.83	0.83	0.83	PO5	PO6	PO7	PO8	PO9	2	PO11	2
C408	3	3	2.75	2.50	2.50	3	PO7	2.50	2.25	1.75	PO11	3
C409	3.00	3.00	3.00	3.00	3.00	2.20	2.00	2.00	3.00	1.80	2.40	2.40
C410	2.83	2.5	2.2	2.2	PO5	PO6	PO7	1.3	1.3	2	PO11	1.5
C414	3	2.83	2.33	2	2	2	2	2	2	2	2	2
C415	PO1	PO2	PO3	PO4	3.00	PO6	PO7	PO6	PO9	3.00	PO11	3.00
C416	2	PO2	PO3	PO4	2	PO6	PO7	2	PO9	3	PO11	PO12

3.1.3 - B Program level Course-PSO matrix of all courses INCLUDING first year courses

Course	PSO1	PSO2
C101	PSO1	PSO2
C102	1	PSO2
C103	PSO1	PSO2
C104	PSO1	PSO2
C105	2	PSO2
C106	PSO1	PSO2
C107	2.2	PSO2
C108	PSO1	PSO2
C109	PSO1	PSO2
C110	PSO1	PSO2
C111	0.84	0.93
C112	PSO1	PSO2
C113	PSO1	PSO2
C114	PSO1	PSO2
C115	3	PSO2
C116	PSO1	PSO2
C117	PSO1	PSO2
C118	3	PSO2
C201	PO1	PSO2
C202	2.83	1.67
C203	3	1.33
C204	PSO1	1
C205	2.33	0.67
C206	PSO1	0.33
C207	2.8	2.2
C208	2.60	1
C209	PSO1	PSO2

C210	1.33	3
C211	3	1
C212	3	3
C213	1.5	3
C214	3	2.5
C215	3	1.4
C216	2.20	2.6
C217	3	1.2
C301	2.73	PSO2
C302	1.5	2
C303	3	1.33
C304	3	3
C305	1.83	1.33
C306	2.8	2
C307	3	1.6
C308	3	2.6
C309	2	1
C310	3	2.67
C311	2.83	1.67
C312	2.33	2.33
C313	3	2.67
C315	3	3
C316	2.8	2
C317	3	1.2
C401	2.33	2.33
C402	PSO1	PSO2
C403	2.33	2.33
C404	2	1.2
C408	2.50	3
C409	3	3
C410	2.16	1.17
C414	2	1.44
C415	-	PSO2
C416	PSO1	PSO2

3.2 Attainment of Course Outcomes (50)

3.2.1 Describe the assessment processes used to gather the data upon which the evaluation of Course Outcome is based (10)

List of Assessment Tools

- **Direct Assessment Methods**

- Continuous Internal Assessment (CIA)
- Semester End Examination (SEE)
- Projects
- Assignments

- **Indirect Assessment Methods**
  - Course Exit survey

CO Assessment Process

The CO assessment processes followed in Mar Ephraem college of Engineering and Technology is given in fig 3.2.1

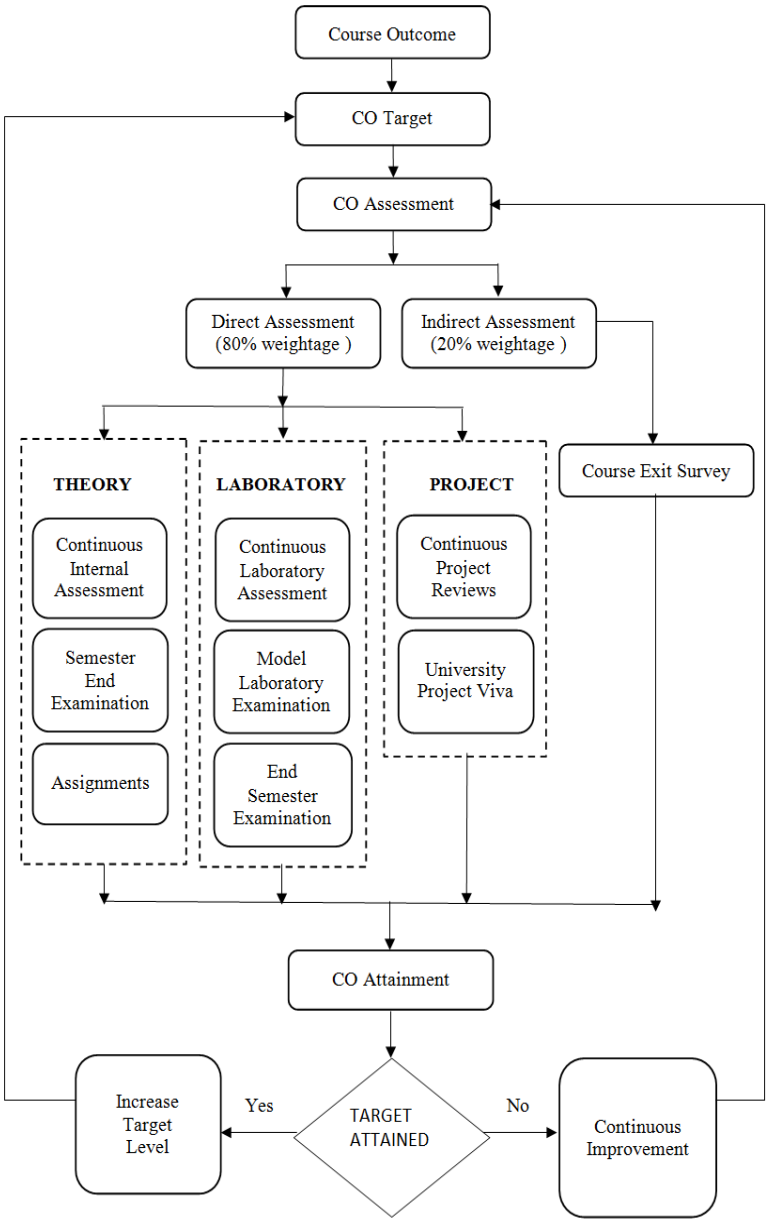


Figure 3.2.1 CO Assessment Process

CO Assessment Methodology and Tools

Table 3.2.1 (a) CO Assessment Methodology and Tools

Assessing Batch	Assessment methods		Assessment tools	Time interval	Responsible person
2016-2020	Direct Assessment (80%)				
	Theory courses	Continuous Internal Assessment	Examination	Thrice in a semester	Faculty
		Semester End Examination	Examination	Once in a semester	University
		Assignments	Rubrics	Thrice in a semester	Faculty
	Lab Courses	Continuous Laboratory Assessment	Regular Lab work assessment	Once in a week	Faculty
		Model Laboratory Examination	Examination	Once in a semester	Faculty
		Semester End Examination	Examination	Once in a semester	Faculty
	Project Work	Initial Project Review	Rubrics	Once in Pre-final semester	Project Coordinator
		Continuous Project Reviews	Rubrics	Twice in final semester	Project Coordinator
		University Project Viva	Examination	Once in a semester	University
	Indirect Assessment (20%)				
	Course Exit Survey	Survey	CO based	Once in a semester	Faculty

The Quality /Relevance of Assessment Processes & Tools used

Table 3.2.1 (b): Quality /Relevance of assessment process

Assessment Tool	Description/Relevance	Evaluated By
DIRECT ASSESSMENT		
Continuous Internal Assessment (CIA)	● Continuous Internal Assessment is a metric to continuously assess the attainment of course outcomes, student's learning domains and thus improve the teaching –learning process. ● The questions in Continuous Assessment Examination (CAE) and Model Examination (ME) are mapped against COs of respective courses.	Course faculty

	● The questions are framed in such a way that it should satisfy Bloom's Taxonomy, wherein each question is mapped to the appropriate course outcome of the respective course, which is evaluated based on the set attainment levels by the department. ● Question Paper scrutiny committee of the department ensures the quality of question papers and coverage of COs. ● The Question Paper scrutiny committee can either accept or reject or recommend for modification of the framed question paper to ensure the quality of internal question papers. ● Two Continuous Assessment Examinations and One Model Examination will be conducted for each Course. • **CAE – I :**50 marks (CO1 & CO2) • **CAE – II:** 50 marks (CO3 & CO4) • **ME:**100 marks (CO1, CO2, CO3, CO4, CO5, C06) ● Students secured less than 50% of marks in CAE 1 and having more than 3 arrears in the past University Examinations will be considered as weak students and given remedial classes using simple and smart study material.	
Semester End Examination (SEE)	● The Semester End Examination is of 3-hour duration which covers the entire Syllabus of the course. ● It would generally satisfy all course outcomes for the respective courses.	University Evaluators
Assignments	● Assignments are given to students to provide practice exposure and knowledge enhancement of the course by the faculty members concerned. ● Three assignments will be given during the course optionally based on the student's performance analysis for the course by the concerned faculty and evaluated on the basis of rubrics.	Course faculty
Laboratory Assessment	● Lab courses provide hands-on experience with course concepts and an opportunity to explore the technologies used in the domain. ● Continuous Lab Assessment is based on the lab assessment rubrics which include ability of the students to conduct the prescribed practical work, interpret the result and conclusion, Record Preparation and Submission.	Course Faculty

	• Laboratory model examination is conducted similar to the university Practical Examination to assess whether the course outcomes are attained	
University Practical Examination	• The university practical examinations are of 3-hours. The evaluation is done by the External Examiner appointed by the university. • University Practical Examination assessment is to assess whether the lab course outcomes are attained.	University Evaluators

Projects	• Students apply the knowledge gained in the theoretical and practical courses in the implementation of their academic projects
	• Periodical reviews will be conducted to monitor and evaluate the progress of project work.
	  • Review I : 20 MARKS (CO1, CO2 CO7, CO8 & CO9)
	  • Review II : 20 MARKS (CO3, CO4, CO7, CO8 & CO9)
	  • Review III: 20 MARKS (CO5, CO6, CO7, CO8 & CO9)
	• Each project is evaluated both internally by project rubrics and externally by university and graded according to the quality of project
		Project Supervisor, Internal Examiner and External Examiner.

INDIRECT ASSESSMENT		
Course Exit Survey	On completion of every semester, feedback is Obtained from the students to assess the learning outcomes of the course.	Course Faculty

Attainment of Course Outcome

CO Attainment calculation:

- In the CO attainment calculation for a course, 80% weightage is given to direct assessment and 20% weightage is given to Indirect assessment.

Table 3.2.1 (c) Weightage for CO Attainment calculation

Assessment type	Percentage

Direct Assessment 1 and 2	80
Indirect assessment (Course Exit Survey)	20

- 60% of the direct assessment is contributed by Semester End Examination and 40% from Continuous Internal Assessment (CIA) for theory courses.
- The 40% contribution from CIA includes Continuous Assessment Examination I Continuous Assessment Examination II, Model Examination and Assignments

Assignments will be provided optionally based on the student's performance analysis for the course by the concerned faculty.

Table 3.2.1 (d) Weightage distribution of Direct Assessment for CO Attainment calculation

Assessment type	Weightage Percentage
Direct Assessment 1 (CAE1, CAE 2, ME & Assignments)	40
Direct Assessment 2 (University Examination)	60

- For Lab courses, 60% of the direct assessment is contributed by Semester End Examination (SEE) and 40% by continuous assessment process.
- The 40% contribution in lab courses by continuous assessment process include continues assessment of every experiment based on rubrics and model lab examination.
- The percentage of students in the class who scored more than threshold percentage of marks in the respective CO is the attainment.
- The threshold percentage of marks is fixed based on considering the university results for the past 3 years + 5%.
- Indirect Assessment of CO attainment is based on Course Exit Survey.

Direct Attainment

Table 3.2.1 (e) Direct Attainment Calculation

Direct Attainment =No of students scored more than threshold percentage of marks x 100

Total no of students

Direct Attainment Levels:

Level 1: If less than 50% of students attained the threshold percentage of marks

Level 2: If 50% to 60% of students attained the threshold percentage of marks

Level 3: If more than 60% of students attained the threshold percentage of marks

Indirect Attainment (Course Exit Survey)

Table 3.2.1 (f) Indirect Attainment Calculation

$$Attainment = \frac{\sum_{i=1}^{5} i * no.of\ students\ gave\ i\ option}{5 * no.of\ responses}$$

3.2.2 Record the attainment of Course Outcome of all courses with respect to set attainment levels (40)

The CO attainment for the batch 2016-20 is given below:

Table 3.2.2 CO Target vs Attainment

Course Code	CO Target Attainment		CO Attainment								
	Threshold %	level	CO1	CO2	CO3	CO4	CO5	CO6	CO7	CO8	CO9
C201	60	2	2.04	2.04	2.04	2.04	2.04	2.04	-	-	-
C202	60	2	2.68	2.36	2.68	2.36	2.68	2.68	-	-	-
C203	60	2	3	2.36	3	2.36	2.36	2.36	-	-	-
C204	60	2	1.4	1.4	1.4	1.4	2.04	2.04	-	-	-
C205	60	2	2.52	2.52	2.52	2.52	2.52	2.52	-	-	-
C206	60	2	3	3	3	3	3	3	-	-	-
C207	60	2	3	3	3	3	3	-	-	-	-
C208	60	2	3	3	3	3	3	-	-	-	-
C209	60	2	2.04	2.04	1.72	1.4	2.04	2.04	-	-	-
C210	60	2	3	2.36	2.68	2.36	2.36	2.36	-	-	-

C211	60	2	3	3	3	3	3	3	-	-	-
C212	60	2	3	2.68	3	2.36	2.68	2.36	-	-	-
C213	60	2	3	3	3	3	3	3	-	-	-
C214	60	2	3	3	3	3	3	3	-	-	-
C215	60	2	3	3	3	3	3	-	-	-	-
C216	60	2	3	3	3	3	3	-	-	-	-
C217	60	2	3	3	3	3	3	-	-	-	-
C301	60	2	3	3	3	3	3	2	-	-	-
C302	60	2	2	3	3	3	3	2	-	-	-
C303	60	2	3	2.36	3	2.36	2.36	2.36	-	-	-
C304	60	2	3	2.6	3	2.2	2.68	2.2	-	-	-
C305	60	2	3	2.36	3	2.36	2.68	2.36	-	-	-
C306	60	2	3	3	3	3	3	-	-	-	-
C307	60	2	3	3	3	3	3	-	-	-	-
C308	60	2	3	3	3	3	3	-	-	-	-
C309	60	2	3	2.36	3	2.68	2.68	2.68			
C310	60	2	3	3	3	3	3	3	-	-	-
C311	60	2	1.4	1.4	1.4	1.4	2.04	2.04	-	-	-
C312	60	2	2.52	2.52	2.52	2.52	2.52	2.52	-	-	-
C313	60	2	2.36	3	2.68	3	2.68	2.36	-	-	-
C315	60	2	3	3	3	3	3	-	-	-	-
C316	60	2	3	3	3	3	3	-	-	-	-
C317	60	2	3	3	3	3	3	-	-	-	-
C401	60	2	3	2.68	3	2.68	2.68	2.36	-	-	-
C402	60	2	2.52	2.52	2.52	2.52	2.52	2.52	-	-	-
C403	60	2	3	3	3	3	3	3	-	-	-
C404	60	2	2	2	2	2	2	2	-	-	-
C408	60	2	3	3	3	3	3	-	-	-	-
C409	60	2	3	3	3	3	3	-	-	-	-

C410	60	2	3	3	3	3	3	3	-	-	-
C414	60	2	3	3	3	3	3	3	3	3	3

3.3 Attainment of Program Outcomes and Program Specific Outcomes (50)

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

List of Assessment Tools

- **Direct Assessment Methods**
  - **CO-PO&PSO Attainment**
    - Academic Courses
    - value added course
    - Technical Seminar
- **Indirect Assessment Methods**
  - **Surveys**
    - Program Exit survey
    - Employer Survey

PO & PSO - Assessment Process

The CO-PO&PSO assessment processes followed in Mar Ephraem college of Engineering and Technology is given in Figure 3.3.1

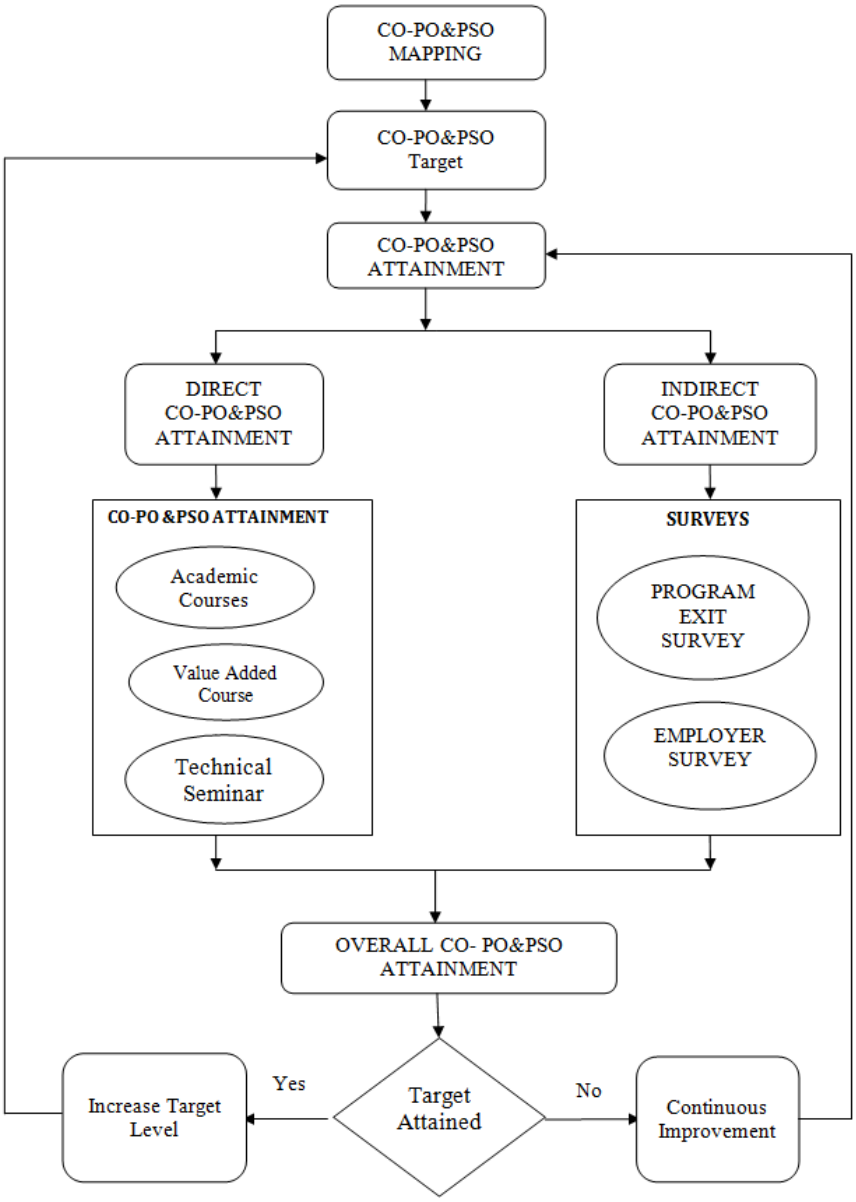


Figure 3.3.1 CO - PO & PSO Assessment Process

CO-PO & PSO Assessment Process

- The CO-PO & PSO attainment is computed through direct and indirect assessment process.
- The direct part is computed through the attainment of COs from all academic courses, value added course and technical seminar.
- The indirect attainments of the POs are computed through Program Exit Survey and Employer Survey among stakeholders.
- The overall attainment of outcomes of a program (POs) is computed by adding direct attainment and indirect attainment values in the proportion ratio of 80:20.
- That is, 80% of direct attainment and 20% of indirect attainment is taken into consideration.
- PO/PSO Attainment is computed based on the following expression:

Table 3.3.1 (a) PO/ PSO attainment calculation

Direct	**Attainment of PO/PSO through a Course:** $PO_{ij}\ \text{Attainment} = \frac{\sum_{k=1}^{CO\max} CA_k * MS}{n * NCO}$ Where, PO_{ij} is the Attainment of 'i' th PO through the course 'j' CA_k is the Attainment value of CO_k MS is the mapping strength of corresponding course outcome to which Po_i is addressed n is the maximum possible mapping strength NCO is the number of all associated COs for PO_i **Attainment of PO/PSO through all courses** Poi Attainment = Average across all Courses Addressing that POs/PSOs
Indirect	$PO_i = \frac{\sum_{i=1}^{5} i * no.of\ students\ gave\ i\ option}{5 * no.of\ responses}$ Where, PO_i is the attainment of the 'i'th PO

The Quality/Relevance of Assessment Tools/Processes Used

Table 3.3.1 (b) Quality /Relevance of PO/PSO assessment process

Assessment Tool	Description	Evaluated By	Frequency
DIRECT ASSESSMENT			
CO-PO & PSO Attainment	• The oyerall CO-PO&PSO Attainment is based on the average attainment of all associated academic courses, value added course and technical seminar • The value-added course is conducted in the 5th semester of the program and continuous assessment of value-added course is based on assessment rubrics which include ability of the students to use modern tools, effective technical communication and lifelong learning. • Technical seminar is conducted in the 7th semester of the	Course Faculty/ PAC	End of semester, for all courses.

	program and evaluated using assessment rubrics which include ability of the students to apply Engineering knowledge, use modern tools, apply ethical principles, effective technical communication and lifelong learning.		
INDIRECT ASSESSMENT			
Program Exit Survey	• Program Exit Survey is conducted for students who have graduated out of the department for that year. • Evaluation parameters are formulated in the Program Exit Survey form to evaluate attainment of POs and PSOs. • Each evaluation parameter has one to five ratings. The survey results are tabulated and the average values corresponding to each PO and PSO are determined.	PAC	End of the Program
Employer feedback	• Feedback from the employers of students is taken to assess the attainment of POs and PSOs • Evaluation parameters are formulated in the employer survey form to evaluate attainment of POs and PSOs • Each evaluation parameter has one to five ratings. The survey results are tabulated and the average values corresponding to each PO and PSO are determined.	PAC	End of the Program

3.3.2 Provide results of evaluation of PO&PSO (40)

PO Attainment

Table 3.3.2 (a) Direct Attainment of POs for 2016 - 2020 batch

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C201	1.93	1.25	0.68	-	-	-	-	-	-	-	-	-
C202	2.4	1.72	1.21	1.21	1.14	-	-	-	-	1.57	-	-
C203	2.1	1.7	1.3	1.3	2.3	-	-	-	-	2	-	1.57
C204	1.04	0.54	-	-	-	-	-	-	-	-	-	-
C205	1.9	1.4	0.84	0.84	0.42	0.28	-	-	-	-	-	-
C206	-	-	-	-	-	-	3	3	3	3	-	3
C207	3	2.2	1.4	1.4	1.4	-	-	2	3	3	-	3
C208	2.8	2	1.5	1	3	2	-	-	-	-	-	1.6
C209	1.77	1.14	0.63	-	-	-	-	-	-	-	-	-
C210	2.36	1.97	1.7	1.31	-	-	-	-	-	-	-	1.97
C211	2.1	1.4	1.12	1.12	-	-	-	-	-	2	-	-
C212	2.68	2.08	1.49	1.49	-	-	-	-	-	-	-	2.68
C213	2.3	1.67	1	1	0.5	0.33	-	-	-	-	-	-
C214	3	3	2.17	1.83	1.25	1.8	3	2.4	1.8	1.67	2	2.25
C215	3	3	3	1	2	-	-	2	3	2	-	3
C216	3	2.2	1.4	1.4	1.4	-	-	2	3	3	-	3
C217	3	3	2.6	2.25	1	1.5	1	1.5	1.5	1.5	1.25	1.6
C301	3	2	2	3	-	-	-	-	2	-	-	-
C302	3	3	2	3	3	-	-	3	3	3	-	3
C303	2.18	1.79	1.39	1.39	2.36	-	-	-	-	-	-	1.57
C304	1.82	1.38	1.51	1.08	0.91	-	-	-	-	-	-	2.68
C305	2.63	2.63	2.63	2.63	-	-	-	-	-	-	-	2.63
C306	3	3	2	2	3	2	-	-	3	2	-	3
C307	3	3	3	3	3	-	-	2	-	2	-	2
C308	3	3	3	2	2	-	-	2	-	-	-	2

C309	1.82	1.38	1.51	1.08	0.91	-	-	-	-	-	-	-
C310	3	2.83	2.33	2.33	2.33	3	2	3	3	2	3	3
C311	1.54	1.08	0.74	-	-	-	-	-	-	-	-	-
C312	2.1	1.4	1.12	1.12	0.84	-	-	-	-	1.68	-	1.68
C313	2.6	2.36	2.05	2.05	-	-	-	-	-	1.79	-	2.68
C315	3	2.6	3	3	3	2.2	2	2	3	3	2.2	3
C316	3	2.6	2	1.2	2.4	-	-	0.8	2.6	1.8	-	2.2
C317	-	-	-	-	-	-	-	2	3	3	-	3
C401	2.7	2.58	2.1	-	2.52	0.91	0.91	-	-	-	-	-
C402	2.38	1.54	0.84	-	-	-	-	-	-	-	-	-
C403	2.5	1.67	1.33	1.33	1	-	-	-	-	2	-	2
C404	3	2	2	2	-	-	-	-	-	2	-	2
C408	3	3	2.8	2.4	2.4	2.8	-	2.4	2.2	1.8	-	3
C409	3	3	3	3	3	2.2	2	2	3	3	2.4	3
C410	2.89	2.89	2.45	1.95	-	-	-	-	-	-	2	0.96
C414	3	3	2	2	2	2	2	2	2	2	2	2
C415	-	-	-	-	3	-	-	-	-	3	-	3
C416	2	-	-	-	2	-	-	2	-	-	-	3

PO Attainment Level

Table 3.3.2 (b) Overall attainment of POs for 2016 - 2020 batch

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO Attainment	2.67	2.35	2.07	2.05	2.14	1.96	2.10	2.25	2.63	2.35	2.31	2.54
Direct Attainment	2.58	2.2	1.83	1.82	1.93	1.75	1.99	2.12	2.63	2.24	2.12	2.42
InDirect Attainment	3	3	3	3	3	3	3	3	3	3	3	3

PSO Attainment

Table 3.3.2 (c) Direct Attainment of PSOs for 2016 - 2020 batch

Course Code	PSO1	PSO2
C201	-	-
C202	2.42	1.45
C203	2.57	1.12
C204	-	0.47
C205	1.96	0.42
C206	-	0.79
C207	2.8	2.2
C208	2.60	1.00
C209	-	-
C210	1.05	2.36
C211	1.98	1.98
C212	2.68	2.68
C213	2.33	1.17
C214	3.00	2.50
C215	3	1.40
C216	2.20	2.60
C217	3	1.2
C301	3	-
C302	2	2
C303	2.57	1.12
C304	1.82	0.91
C305	1.58	1.21
C306	2	2
C307	3	2
C308	3	2
C309	1.82	0.91
C310	3.00	2.67
C311	1.54	0.92

C312	1.98	1.98
C313	2.68	2.36
C315	3	3
C316	2.8	2
C317	2	2
C401	2.14	2.12
C402	-	-
C403	2.33	2.33
C404	2	2
C408	2.60	2.40
C409	3	3
C410	2.74	1.46
C414	2	2
C415	-	3
C416	-	-

PSO Attainment Level

Table 3.3.2 (d) Overall attainment of PSOs for 2016- 2020 batch

Course	PSO1	PSO2
CO Attainment	2.52	2.03
Direct Attainment	2.40	1.80
InDirect Attainment	3	3

CRITERION 4	STUDENTS PERFORMANCE	150

Table 4.1 Total no. of students admitted in the program

Item (Information to be provided cumulatively for all the shifts with explicit headings, wherever applicable)	CAY (2020-2021)	CAY*m1* (2019-2020)	CAY*m2* (2018-2019)	CAY*m3* (2017-2018)	CAY*m4* (2016-2017)	CAY*m5* (2015-2016)	CAY*m6* (2014-2015)
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 (*N*1)	59	49	57	46	47	40	46
Number of students admitted in 2nd year in the same batch via lateral entry (*N*2)	5	0	1	1	1	4	1
Separate division students, if applicable (*N3*)	-	-	-	-	-	-	-
Total number of students admitted in the Program (*N*1 + *N*2 + N3)	64	49	58	47	48	44	47

CAY – Current Academic Year
CAYm1- Current Academic Year minus1= Current Assessment Year
CAYm2 - Current Academic Year minus2=Current Assessment Year minus 1
LYG – Last Year Graduate
LYGm1 – Last Year Graduate minus 1
LYGm2 – Last Year Graduate minus 2

Table 4.2 Success rate without backlogs

Year of entry	N1+N2+N3 (As defined above)	Number of students who have successfully graduated without backlogs in any semester/year of study (Without Backlog means no compartment or failures in any semester/year of study)			
		I Year	II Year	III Year	IV Year
2020-2021 (CAY)	64	57			
2019-2020 (CAY m1)	49	16	16		
2018-2019 (CAYm2)	58	11	11	11	

2017-2018 (CAYm3)	47	14	10	8	8
2016-2017 (LYG)	48	15	5	4	3
2015-2016 (LYGm1)	43	12	9	8	3
2014-2015 (LYGm2)	47	14	8	8	4

Table 4.3 Success rate with backlogs

Year of entry	**N1+N2+N3 (As defined above)**	**Number of students who have successfully graduated (Students with backlog in stipulated period of study)**			
		I Year	II Year	III Year	IV Year
2020-2021 (CAY)	64	59			
2019-2020 (CAY m1)	49	48	47		
2018-2019 (CAYm2)	58	54	57	57	
2017-2018 (CAYm3)	47	47	47	47	46
2016-2017 (LYG)	47	47	48	47	47
2015-2016 (LYGm1)	43	40	43	43	23
2014-2015 (LYGm2)	45	46	45	45	27

4.1 Enrolment Ratio **(20)**

Enrolment Ratio=N1/N

Item (Students enrolled at the First Year Level on average basis during the previous three academic years starting from current academic year)	**Mark**
>=90% students enrolled	20
>=80% students enrolled	18
>=70% students enrolled	16
>=60% students enrolled	14
>=50% students enrolled	12
Otherwise	0

	N (From Table 4.1)	N1 (From Table 4.1)	Enrollment Ratio [(N1/N) *100]
2020-21 (CAY)	60	64	113.77
2019-20 (CAYm1)	60	49	81.66
2018-19 (CAYm2)	60	58	96.66

Average [(ER1 + ER2 + ER3) / 3]: 97.36

4.2. Success Rate in the stipulated period of the program (40)

4.2.1 Success rate without backlogs in any semester/year of study (25)

SI= (Number of students who have graduated from the program without backlog)/ (Number of students admitted in the first year of that batch and actually admitted in 2nd year via lateral entry and separate division, if applicable)

Average SI = Mean of Success Index (SI) for past three batches = 0.074

Success rate without backlogs in any year of study = 25 × Average SI = 1.9

Table 4.2.1 Success rate without backlogs

Item	Latest Year of Graduation, LYG (2016-17)	Latest Year of Graduation minus 1, LYGm1 (2015-16)	Latest Year of Graduation minus 2 LYGm2 (2014-15)
X Number of students admitted in the corresponding First year + admitted in 2nd year via lateral entry and separated division, if applicable	47	43	47
Y Number of students who have graduated without backlogs in the stipulated period	3	3	4
Success Index [SI = Y / X]	0.064	0.07	0.09

Average SI [(SI1 + SI2 + SI3) / 3] : 0.074

Assessment [25 * Average SI] : 1.9

4.2.2 Success rate with backlog in stipulated period of study (15)

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 actual 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 = 15 × Average SI

Table 4.2.2 Success rate with backlogs

Item	Latest Year of Graduation, LYG (2016-17)	Latest Year of Graduation minus 1, LYGm1 (2015-16)	Latest Year of Graduation minus2 LYGm2 (2014-15)
X Number of students admitted in the corresponding First year + admitted in 2nd year via lateral entry and separated division, if applicable	47	43	45
Y Number of students who have graduated in the stipulated period	45	23	27
Success Index [SI = Y / X]	0.957	0.53	0.6

Average SI [(SI1 + SI2 + SI3) / 3]: 0.695

Assessment [15 * Average SI]: 10.43

Note: If 100% students clear without any backlog then also total marks scored will be 40 as both 4.2.1 & 4.2.2 will be applicable simultaneously.

4.3. Academic Performance in Third Year (15)

Academic Performance = 1.5 * Average API (Academic Performance Index)

API = ((Mean of 3rd 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 Third 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 final year.

Table: 4.3 Academic performance in third year

Academic Performance	CAYm3 (2017-2018)	LYG (2016-2017)	LYGm1 (2015-2016)
Mean of CGPA or Mean Percentage of all successful students (X)	8.17	7.32	7.28
Total no. of successful students (Y)	46	47	43
Total no. of students appeared in the examination (Z)	46	47	43
API = x* (Y/Z)	AP1=8.17	AP 1=7.32	AP 2=7.28

Average API [(AP1 + AP2 + AP3)/3]: 7.59

Assessment [1.5 * Average API]: 11.38

4.4 Academic Performance in Second Year (15)

Academic Performance Level = 1.5 * Average API (Academic Performance Index)

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.

Table 4.4 Academic performance in second year

Academic Performance	CAYm2 (2018 - 2019)	CAYm3 (2017 - 2018)	LAG (2016 - 2017)
Mean of CGPA or Mean Percentage of all successful students (X)	8.185	7.58	6.8
Total no. of successful students (Y)	57	46	48
Total no. of students appeared in the examination (Z)	57	46	48
API = X* (Y/Z)	AP1=8.195	AP 1=7.58	AP 2=6.8

Average API [(AP1 + AP2 + AP3)/3]: 7.525

Assessment [1.5 * Average API]: 11.29

4.5. Placement, Higher Studies and Entrepreneurship (40)

Assessment Points = 40 × average placement

Table 4.5 Placement, Higher Studies and Entrepreneurship

Item	LYG 2016-2017	LYGm1 2015-2016	LYGm2 2014-2015
Total No. of Final Year Students (N)	47	43	45
No. of students placed in companies or Government Sector (x)	25	33	31
No. of students admitted to higher studies with valid qualifying scores (GATE or equivalent State or National Level Tests, GRE, GMAT etc.) (y)	3	…	6
No. of students turned entrepreneur in engineering/technology (z)	-	-	-
x + y + z =	28	33	37
Placement Index: (x + y + z)/N	0.622	P1=0.77	P2=0.82
Average placement= (P1 + P2 + P3)/3	0.73		
Success Rate	**29.49**		

4.5.a Provide the placement data in the below mentioned format with the name of the program and the assessment year

Programs name and assessment year: B.E Computer Science & engineering 2019-2020				
Sl.no	**Student Name**	**Enrollment No**	**Employee Name**	**Appointment letter Reference No.**
1.	Abhirami M A	961416104001	CADD Center	23/03/2020
2.	Abinaya D	961416104002	CKS Solutions	CKSBDM/NGL/8522/04032020/JENP
3.	Ajay Ninan Jacob	961416104004	Nalam Health Care IT Solutions Pvt.Ltd	11/03/2020
4.	Akshay V	961416104006	Nalam Health Care IT Solutions Pvt.Ltd	11/03/2020
5.	Alen T Alex	961416104007	TCS	TCSL/DT20217632885
6.	Amla Soumya Mathew	961416104008	Nalam Health Care IT Solutions Pvt.Ltd	11/03/2020
7.	Anandhu A	961416104009	CKS Solutions	CKSBDM/NGL/8519/04032020/JENP
8.	Anson	961416104011	CKS Solutions	CKSBDM/NGL/8534/04032020/JENP
9.	Antony Jojo	961416104012	CKS Solutions	CKSBDM/NGL/8538/04032020/JENP
10.	Aron Vijay	961416104013	ShreeTech	19/03/2020
11.	Bibin Johnson	961416104018	Livares Technologies	30/11/2021
12.	Jinsu Jacob	961416104025	Concept Solutions	CS-ITN-20-322
13.	Jivya	961416104026	Concept Solutions	CS-ITN-20-316
14.	Jomi Elizabeth	961416104028	CADD Center	23/03/2020
15.	Karthika P	961416104029	Concept Solutions	CS-ITN-20-333
16.	Karthik Vasudevan	961416104030	Encapsulated NewGen Solutions P Ltd	01-09-2021
17.	Merin S John	961416104033	CKS Solutions	CKSBDM/NGL/8529/04032020/JENP
18.	Merlin Thankam James	961416104035	Concept Solutions	CS-ITN-20-312
19.	Nandhu Raj B	961416104036	ShreeTech	19/03/2020
20.	Nikhil R S	961416104037	CADD Center	23/03/2020
21.	Nitha Mohan	961416104038	CTS (Cognizant Technologies)	HRD/3T/18-19/11720765
22.	Rakhi R S	961416104040	Concept Solutions	CS-ITN-20-324
23.	Sajin Raj	961416104043	TCS	TCSL/DT20195724100/Trivandrum

24.	Saranya K Sasi	961416104044	ShreeTech	19/03/2020
25.	Vijin Vincent	961416104048	MacroSoft IT Solutions Pvt.Ltd	23/04/2021

Programs name and assessment year: B.E Computer Science & engineering 2018-2019				
Sl.no	**Name of the student placed**	**Enrolment Number**	**Name of the Employer**	**Appointment No.**
1.	Ajin S A	961415104004	ShreeTech	30/03/2019
2.	Ani Sinju	961415104008	Concept Solutions	CS-ITN-19-118
3.	Anju C	961415104009	ShreeTech	30/03/2019
4.	Anto Vincent	961415104010	Concept Solutions	CS-ITN-19-120
5.	Anupama Aniyan	961415104011	CKS Solutions	CKSBDM/NGL/4564/17042019/JENP
6.	Anu Rajan	961415104012	Nalam Health Care IT Solutions Pvt.Ltd	11/03/2019
7.	Ashiga J.P	961415104014	CKS Solutions	CKSBDM/NGL/4575/17042019/JENP
8.	Brintha Rani K.R	961415104015	Concept Solutions	CS-ITN-19-116
9.	Christy O. Joseph	961415104016	Nalam Health Care IT Solutions Pvt.Ltd	11/03/2019
10.	Deeja D.Raj	961415104018	Concept Solutions	CS-ITN-19-117
11.	Defina David	961415104019	CKS Solutions	CKSBDM/NGL/4563/17042019/JENP
12.	Ginson Roice	961415104021	ShreeTech	30/03/2019
13.	Jaison Roy	961415104022	Concept Solutions	CS-ITN-19-121
14.	Jeffin Mathew Roy	961415104023	Infosys	HRD/3T/19-20/12933025/E
15.	Jesty James	961415104024	CKS Solutions	CKSBDM/NGL/4589/17042019/JENP
16.	Jissmon Thomas	961415104025	CADD Center	20/5/2019
17.	Libin	961415104027	HCL	L741400L1991PLC046369

	S.Oomen			
18.	Manju C.O	961415104028	Nalam Health Care IT Solutions Pvt.Ltd	11/03/2019
19.	Manju M.R	961415104029	CADD Center	20/5/2019
20.	Nesley Elizabeth Thomas	961415104030	CKS Solutions	CKSBDM/NGL/4576/17042019/JENP
21.	Nevin Abraham Philip	961415104031	Infosys	HRD/3T/19-20/12933245/E
22.	Rino Mol	961415104032	Concept Solutions	CS-ITN-19-119
23.	Riya Varghese	961415104033	CADD Center	20/5/2019
24.	Rohan George Jacob	961415104034	CKS Solutions	CKSBDM/NGL/4572/17042019/JENP
25.	Shenaka M J	961415104036	Nalam Health Care IT Solutions Pvt.Ltd	11/03/2019
26.	Shiju T.Mathew	961415104037	Infosys	HRD/3T/19-20/12933246/E
27.	Siva Prasad	961415104038	CADD Center	20/5/2019
28.	Sojo P Saju	961415104039	CKS Solutions	CKSBDM/NGL/4573/17042019/JENP
29.	Sophy	961415104040	Nalam Health Care IT Solutions Pvt.Ltd	11/03/2019
30.	Sreekanth S	961415104041	CKS Solutions	CKSBDM/NGL/4581/17042019/JENP
31.	Abisha C	961415104301	ShreeTech	30/03/2019
32.	Anisha S B	961415104302	ShreeTech	30/03/2019
33.	Jijo Janneset	961415104303	CADD Center	20/5/2019

Programs name and assessment year: B.E Computer Science & Engineering 2017-2018				
SL. No	**Name of the student**	**Enrolment Number**	**Employee Name**	**Appointment No**
1.	Abin T John	961414104001	H & R Block	05-03-2018
2.	Agil Mathews	961414104002	Saraga Geosoftware and Engineering service	10-12-2018
3.	Ajitha D	961414104003	Concept Solutions	CS-ITN-18-123
4.	Anku P Kuruvilla	961414104006	CADD Center	23-03-2018
5.	Aparna Jose	961414104007	Concept Solutions	CS-ITN-18-125
6.	Bijila M.David	961414104012	CKS Solutions	CKSBDM/NGL/211/26022018/JENP
7.	Bincy Raj R P	961414104014	Concept Solutions	CS-ITN-18-127
8.	Chinju Merin Santhosh	961414104016	ShreeTech	05-03-2018
9.	Feba T Mammen	961414104017	CADD Center	23-03-2018
10.	Fredin A S Givo	961414104018	Nalam Health Care IT Solutions	21-02-2018
11.	Gibin Punnoose	961414104019	CADD Center	23-03-2018
12.	Jancy Varghese	961414104021	Nalam Health Care IT Solutions	21-02-2018
13.	Jerin George	961414104022	CKS Solutions	CKSBDM/NGL/214/26022018/JENP
14.	Jeslet Mary P.S	961414104023	CKS Solutions	CKSBDM/NGL/221/26022018/JENP
15.	Joel Samuel	961414104026	Nalam Health Care IT Solutions	21-02-2018
16.	Joseph Paulose	961414104027	Concept Solutions	CS-ITN-18-130
17.	Libin C Mathew	961414104029	Nalam Health Care IT Solutions	21-02-2018
18.	Nijin P Mathews	961414104030	CADD Center	23-03-2018
19.	Praisy P.Thomas	961414104031	ShreeTech	05-03-2018
20.	Rachel Harrison	961414104032	Concept Solutions	CS-ITN-18-124
21.	Raji S.S	961414104033	CKS Solutions	CKSBDM/NGL/216/26022018/JENP
22.	Ralfena Mol N	961414104034	Nalam Health Care IT Solutions	21-02-2018
23.	Renjith D	961414104035	CKS Solutions	CKSBDM/NGL/229/26022018/JENP
24.	Reny Ann Cherian	961414104036	Concept Solutions	CS-ITN-18-126

25.	Saira Ann Koshy	961414104037	ShreeTech	05-03-2018
26.	Sharath Kumar	961414104038	ShreeTech	05-03-2018
27.	Shejin A. Vaidyan	961414104040	UST Global	UST/SO00052002-1-1-1/310074
28.	Shibin Mariyan Stanly	961414104041	CADD Center	23-03-2018
29.	Soji Raju	961414104044	Nalam Health Care IT Solutions	21-02-2018
30.	Sonya Thomas	961414104045	CADD Center	23-03-2018
31.	Varghese Sunny	961414104047	Infosys	HRD/3T/18-19/11720765

4.6. Professional Activities (20)

4.6.1 Professional societies/chapters and organizing engineering events (5)

Students and faculty are active members of various professional societies like IEEE, ISTE, IET, ISSE. Various programs are organized on behalf of these professional societies. This extracts the leadership potential from the student.

Table 4.6.1 (a) Professional Societies/Chapters

Sl. No.	Name of Professional Society	Year of Starting
1	Institution of Engineering and Technology (IET)	2015
2	Indian Society for Technical Education (ISTE)	2015
3	Institute of Electrical and Electronics Engineers (IEEE)	2015
4	Indian Society of Systems for Science and Engineering (ISSE)	2017
5	Vibrant Organization of Young Computer Engineers	2010

Institute of Electrical and Electronics Engineers (IEEE)

The IEEE Student chapter at Mar Ephraem College of Engineering and Technology is to Inspire, Enable, Empower and Energize our students to enhance their technical interests by providing them a platform to show case their skills.

Table 4.6.1 (a) IEEE Student Chapter office bearer

2020 – 2021

Name	Position
Dr. Jerusalin Carol	Student Chapter staff Coordinator
Ben Singh Joshua	Student Coordinator
2019 – 2020	
Name	**Position**
Dr. Jerusalin Carol	Student Chapter staff Coordinator
Shany Aleyamma	Student Coordinator
2018 – 2019	
Name	**Position**
Dr. Jerusalin Carol	Student Chapter staff Coordinator
Shany Aleyamma	Student Coordinator

Institution of Engineering and Technology (IET)

The IET Student chapter at Mar Ephraem College of Engineering and Technology **aims** to develop and exhibit skills, increasing their competence, adopting the right attitude to maximize their potential and building a professional network that will help them to succeed in their professional endeavors.

Table 4.6.1 (b) IET Student Chapter Office Bearers

2020-21	
Name	**Position**
Mr. Manoj M	IET Coordinator
Dona Sabu	Student Coordinator
2019-20	
Name	**Position**
Mr. Manoj M	IET Coordinator
Merin S John	Student Coordinator
2018-19	

Name	Position
Mr. Manoj M	IET Coordinator
Merin S John	Student Coordinator

Indian Society for Technical Education (ISTE)

The ISTE Student chapter at Mar Ephraem College of Engineering and Technology is to provide guidance and training to our students to develop better learning skills and personality by inviting eminent personalities from Industries and other Organizations to update about the recent technologies

Table 4.6.1 (c) ISTE student chapter office bearers

2020-21	
Name	**Position**
Mrs. Lincy CT	Student Chapter staff Coordinator
Ashna Bobachan	Student Coordinator
2019-20	
Name	**Position**
Mrs. Lincy CT	Student Chapter staff Coordinator
Mr.Anson Thomas	Student Coordinator
2018-19	
Name	**Position**
Mrs. Lincy C T	Student Chapter staff Coordinator
Mr.Anson Thomas	Student Coordinator

Indian Society of Systems for Science & Engineering (ISSE):

ISSE in Mar Ephraem College of Engineering and Technology unites scholars, academicians and R&D organizations for fostering the system concept

Table 4.6.1 (d) ISSE office bearers

Name	Position
Mrs. Austy B Evangeline	Staff Coordinator

Vibrant Organization of Young Computer Engineers (VOYCE)

Objective of VOYCE is

- To sharpen skills and orient attitudes of students.
- To empower students to be better communicators by providing them with relevant inputs
- To create awareness regarding managerial capabilities of students through group activities.

Events Conducted by Professional Societies and Chapters

Table 4.6.1 (e) Events conducted by professional societies and chapters

2020-2021				
Organized by	**Event**	**Date**	**Number of Members**	**Level**
IEEE	Webinar on Wireless sensor Network	07 January, 2021	32	Institutional
	Webinar on Cyber Security	09 March, 2021	23	Institutional
	Workshop on Python Programming	22/03/2021-26/03/2021	27	Institutional
ISTE	Webinar on Cloud Computing	28/01/2021	22	National
	Webinar on 5-G network	21/02/2021	31	Institutional
IET	Webinar on Bio-inspired Computing	2604/2021	36	National
2019-2020				
Organized by	**Event**	**Date**	**Number of Members**	**Level**
IEEE	Workshop on PCB Designing	14 August, 2019	28	Institutional
	Application of MATLAB in Bio signal Processing	20 August, 2019	25	Institutional
	National Workshop on Image Processing Using Matlab and Python	25/11/2019-30/11/2019	50	National
	Two Days FDTP on IOT and vision Robotics	11/11/2019 & 12/11/2019	30	National
	National Workshop on Image Processing Using Matlab and Python	25/11/2019-30/11/2019	50	National

ISTE	Application of Matlab for Engineering	04/10/2019	38	Institutional
	Poster Presentation	28/02/2020	30	Institutional
IET	National Workshop on Image Processing Using Matlab and Python	25/11/2019-30/11/2019	50	National
	Two Days FDTP on IOT and vision Robotics	11/11/2019 & 12/11/2019	30	National
	NICE 2019- IET KKLN Regional Level Competition& Techfest	28/09/2019	150	Institutional
	PAT W campus in HEAT	11/11/2019	15	District
VOYCE	National Level Technical Symposium Kryptoz'19	08/08/2019	328	National
	Tech Expo	08/08/2019	133	Institutional
2018-2019				
Organized by	**Event**	**Date**	**Number of Members**	**Level**
IEEE	Seminar on Photovoltaic's	22.2.2019	26	Institutional
	One Day workshop on robotics	14.3.2019	33	Institutional
	One Day Workshop on MATLAB training for Image Processing	22.3.2019	31	Institutional
ISTE	ISTE orientation program	21/1/2019	80	National
	Seminar on Cloud Computing	27/10/2018	60	Institutional
	Paper Presentation	16/09/2018	30	District
IET	Inaugural Ceremony	08/08/2018	67	Institutional
	IET Technical Paper Presentation	27/08/2018	30	Institutional
	Seminar on Technology	17.09.2018	60	Institutional
	Technovation'18	26.09.2018	63	Institutional
	PATW On Campus heat	28.02.2019	23	District
	IET KKLN -Aspire 19	21.03.2019	160	Institutional
	Two days seminar on Recent trends in Biomedical Instrumentation	18/03/19 & 19/03/19	40	Institutional

4.6.2. Publication of technical magazines, newsletters, et (5)

Technical Publications of our department includes,

Magazine

KryptoQuest – The essential purpose of KryptoQuest is to inform, engage, inspire and entertain a diverse readership including alumni, faculty, staff, students, parents and other friends of Mar Ephraem by presenting an intimate, timely and honest portrait of the College- its people, its programs, its history, its challenges, its resources and its mission. In the originality of its conception, in the excellence of its writing and visual presentation and in its commitment to accuracy, healthy discourse and editorial balance, the magazine endeavours to reflect the values and the quality of the institution itself. By maintaining the respect and interest of its readers, the magazine aspires ultimately to inform their opinion of the College and to strengthen their commitment to its welfare.

Table 4.6.2 (a) Advisory Committee and Board Editors-magazine

Sl.No	Name of magazines / newsletters	Year of publication	Advisory Committee (Should contain one faculty from Professional societies / chapters)	Board of editors (students)
1.	KRYPTO QUEST	2020	Prof. Ashwin G SingerjI Prof. Janila J Prof. Lincy C T	Tibin Joseph Shibu
				Prince FM
				Nitha Mohan
				Dona Sabu
2.	KRYPTO QUEST	2019	Prof. Ashwin G Singerji Dr. Dhanya D Prof. Janila J	Bibin Johnson
				Akshay
				Anandu Jayakumar
				Adarsh Anand
3.	KRYPTO QUEST	2018	Prof. Ashwin G Singerji Prof. Herlin L T Prof. Innasi Lineta	Shibin Mariyan
				Libin C
				Saira Anna
				Akhil Mon
				Nevin Abraham


KRYPTO QUEST
2K19
Mar Ephraem

School of Computer Science & Engineering

VISION :

SCHOOL OF COMPUTER SCIENCE AND ENGINEERING CREATES PROFESSIONALLY COMPETENT YOUNG COMPUTER ENGINEERS CAPABLE OF WORKING WITH MULTIDISCIPLINARY ENVIRONMENT

MISSION :

SCHOOL OF COMPUTER SCIENCE AND ENGINEERING IS COMMITTED TO ENLIGHTEN THE STUDENTS TO

M1 TURNOUT TO BE COMPETENT COMPUTER ENGINEERS WITH EXCELLENCE IN TECHNICAL SKILL

M2 COMMUNICATION EFFECTIVELY TO ENHANCE THE EMPLOYABILITY

M3 FOSTER ENTREPRENEURSHIP AND HIGHER LEARNING WITH A SOCIAL RESPONSIBILITY.

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

PEO 1 COMPUTER SCIENCE GRADUATES WILL HAVE SUFFICIENT TEAM WORK, COMMUNICATION AND ADAPT TO THE NEEDS OF THE WORKPLACE BY ACQUIRING PROFESSIONAL SKILLS.

PEO 2 COMPUTER SCIENCE GRADUATES WILL BE ABLE TO APPLY THE PRINCIPLES OF COMPUTER SCIENCE TO SOLVE REAL WORLD PROBLEMS AND PRACTICE IN THE PROFESSION WITH SOCIAL AWARENESS AND CONTRIBUTE TO THE ECONOMIC GROWTH OF THE COUNTRY

PEO 3 COMPUTER SCIENCE GRADUATES WILL BECOME EFFECTIVE COLLABORATORS, INNOVATORS, RESEARCHERS AND LEADERS TO ADDRESS SOCIAL, TECHNICAL AND BUSINESS CHALLENGES.

News Letter

EPIC: Our department releases a biannual newsletter named **EPIC**. The objective of this newsletter is to bring out the technical and non-technical activities and and achievements of faculty and students.

Table 4.6.2 (b) Advisory Committee and Board Editors-newsletter

Sl. No	Name of magazines/ newsletters	Year of publication	Advisory Committee (Should contain one faculty from Professional societies / chapters)	Board of editors (students)
1.	NEWS LETTER EPIC'20 vol-1	2020(November)	Prof.Dr Dhanya	Bintu B
				Ben singh
				Jeffy Liby Shiny
				Adlin Kanisha
2.	NEWS LETTER EPIC'20 vol-1	2020(November)	Prof.Dr Dhanya	Arun Kumar
				Febin K Jose
				Arpitha Merin
3.	NEWS LETTER EPIC'19 vol-1	2019(November)	Prof. Benisha Janice	Alen Alex
				Nivin Ninan
				Anandu Jayakumar
4.	NEWS LETTER EPIC'19 vol-1I	2019(April)	Prof. Benisha Janice	Athira Jaya kumar
				Tibin
				Bintu
5.	NEWS LETTER EPIC'18 vol-1	2018(November)	Prof. Innasi Lineta	Alwyin Raju
				Jibin Abraham
				Jithan Orappan
6.	NEWS LETTER EPIC'18 vol-II	2018(April)	Prof. Innasi Lineta	Akhil Mon
				Jissmon Thomas
				Ginson Roice

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

EXTRA CURRICULAR & CO CURRICULAR ACTIVITIES

Table 4.6.3 (a) Summary of event participation

S.No.	Academic Year	Prizes Awarded		Participation	
		Co-Curricular	Extra-Curricular	Within State	Other State
1	2019-20	32	25	78	64
2	2018-19	15	31	45	32
3	2017-18	20	6	28	29

Co-curricular Activities

A. **Events within the state**

Table 4.6.3 (b) Co - curricular activities- Events within the state

CAY (2019-20)					
Sl. No.	**Date of Event**	**Name**	**Event**	**Organised Institute**	**Prizes/Awards**
1.	26/09/2019	Shany Aleyamma Joseph	IET NICE	IET Kanyakumary Local network	I
2.	06/04/2020	Jamimah Stally	Quiz	Christopher Arts & Science College	I
3.	29/02/2020	Febin K Jose	Paper presentation	Rohini College of Engineering	I
4.	29/02/2020	Priyadarsini	Paper presentation	Rohini College of Engineering	I
5.	29/02/2020	Akhil Abraham	Paper presentation	Rohini College of Engineering	I
6.	31/08/2019	Ceyanee Shaga	Quiz	Loyola Institute of Technology & Science	II
7.	18/06/2020	Tibin Joseph	NATIONAL level QUIZ	Panimalar College of Engineering	Passed
8.	20/05.2020	Elna Saera Rajeev	E-Quiz	Sri Ramakrishna College of Arts & Science, Coimbatore	passed
9.	01.05.2020	Elna Saera Rajeev	Quiz	BON SCOURSE College for Women	Passed
10.	05/2020	Aparna P Madhu	Quiz	The Standard Fire WorksRajarathnamCollege for Women	Passed
11.	18/05/2020	Aparna P Madhu	Quiz	Noorul Islam Centre for Higher Education	Passed
12.	05/2020	Febin K Jose	Quiz	The Standard Fire WorksRajarathnamCollege for Women	Passed
13.	05/05/2020	Febin K Jose	Quiz	Nanjil Catholic College of Arts & Science	Passed
14.	17/06/2020	Arpitha Renjan	Quiz	Panimalar Engineering College	Passed
15.	17/06/2020	Arpitha Renjan	National Quiz	Panimalar Engineering College	Passed
16.	05/09/2020	Tibin Joseph	Quiz	PVKK Institue of technology	Passed

17.	05/2020	Elna Sara Rajeev	Quiz	The Standard Fire Works Rajarathnam College for Women	Passed
18.	04.05.2020	Liben Monayi	Quiz	Francis Xavier College of Engineering	Passed
19.	18/05/2020	Liben Monayi	Quiz	Noorul Islam Centre for Higher Education	Passed
20.	17/06/2020	Elna Saera	National Quiz	Panimalar Engineering College	Passed
21.	18/05/2020	Abinaya R P	Quiz	Noorul Islam Centre for Higher Education	Passed
22.	01.05.2020	Febin K Jose	Quiz	BON SCOURSE College for Women	Passed
23.	18/06/2020	Tibin Joseph	National Quiz	Panimalar Engineering College	Passed
24.	27/04/2020	Shenit Shaji	Quiz	St. Joseph's College Iringalakkuda	Passed
25.	25.04.2020	Elna Saera Rajeev	Webinar	IET Kannyakumari Local Network	Participation
26.	25/4/2020	Blessy B Mathew	Webinar	IET Kannyakumari Local Network	Participation
27.	13/06/2020	Arpitha P Renjan	Webinar on web development	Kings Engineering College, Chennai	Participation
28.	01/06/2020-05/06/2020	Athira JayaKumar	FDP on Big Data Engineering	Kings Engineering College, Chennai	Participation
29.	21/05/2020	Febin K Jose	Webinar on Emerging Technologies Redefining Automotive Industry	Sri Venkateswara College of Technology	Participation
30.	26/05/2020	Febin K Jose	Webinar on opportunities &Challenges on Hydrogen Energy &Fuel Cell	Annai Vailankani College of Engineering	Participation

			Technologies		
31.	14.05.2020	Febin K Jose	Webinar on Industrial impact of CAD/CAM	RAMCO Engineering College	Participation
32.	15.05.2020	Febin K Jose	Webinar on Industry expectation from Students	RAMCO Engineering College	Participation
33.	22/05/2020	Jamimah Stally	Webinar on Agile S/W Development	SNS College of Technology	Participation
34.	01/06/2020-05/06/2020	Jamimah Stally	FDP on Big Data Engineering	Kings Engineering College, Chennai	Participation
35.	25/4/2020	Libin Monayi	Webinar	IET Kannyakumari Local Network	Participation
36.	13/06/2020	Elna Sarea	Webinar on web development	Kings Engineering College, Chennai	Participation
37.	02/05/2020	Elna Saera	Webinar	AAlim Mohammed Salegh College	Participation
38.	05/05/2020	Febin K Jose	Power Seminar	ICT ACADEMY	Participation
39.	07/05/2020	Febin K Jose	Power Seminar on Nurturig Graduates on Industry	ICT ACADEMY	Participation
40.	07/05/2020	Febin K Jose	Power Seminar on Employability Skill for the Futere	ICT ACADEMY	Participation
41.	25/4/2020	Tibin Joseph	Webinar	IET Kannyakumari Local Network	Participation
42.	25/4/2020	FEBIN K JOSE	Webinar	IET Kannyakumari Local Network	Participation
43.	02/05/2020	Febin K Jose	Webinar	AAlim Mohammed Salegh College	Participation

44.	25/4/2020	Angel Laura	Webinar	IET Kannyakumari Local Network	Participation
45.	08.06.2020	Angel Laura	Power Seminar on Oracle DB query and Trends	Kings College of Engineering	Participation
46.	26/05/2020	Angel Laura	Webinar onHydrogen energy and fuel cell technologies	Annai Vailankanni College of Engineering	Participation
47.	04/05/2020	Angel Laura	Webinar on Post COVID-19 Job Opportunities	Francis Xavier Engineering College, Thirunelveli	Participation
48.	25/4/2020	Athira Jayakumar	Webinar	IET Kannyakumari Local Network	Participation
49.	25/4/2020	Meleta Liza	Webinar	IET Kannyakumari Local Network	Participation
50.	04/05/2020	Meleta Liza	Webinar on Post COVID-19 Job Opportunities	Francis Xavier Engineering College, Thirunelveli	Participation
51.	21/05/2020	Meleta Liza	Webinar on Emerging Technologies Redefining Automotive Industry	Sri Venkateswara College of Technology	Participation
52.	04/05/2020	Shenit Shaji	Webinar on Post COVID-19 Job Opportunities	Francis Xavier Engineering College, Thirunelveli	Participation
53.	25/4/2020	Shenit Shaji	Webinar	IET Kannyakumari Local Network	Participation
54.	04/05/2020	Ancy Peter	Webinar on Post COVID-19 Job Opportunities	Francis Xavier Engineering College, Thirunelveli	Participation
55.	25/4/2020	Ancy Peter	Webinar	IET Kannyakumari Local Network	Participation
56.	25/4/2020	Stephin J	Webinar	IET Kannyakumari Local Network	Participation

57.	25/4/2020	Ruben Varghese	Webinar	IET Kannyakumari Local Network	Participation
58.	04/05/2020	Ruben Varghese	Webinar on Post COVID-19 Job Opportunities	Francis Xavier Engineering College, Thirunelveli	Participation
59.	06/05/2020-08/05/2020	Febin K Jose	Webinar on IoT	PSNA College of Engineering	Participation
60.	02/05/2020	Stephin J	Webinar	AAlim Mohammed Salegh College	Participation
61.	06/03/2020	Gibu Mon P K	Code debugging	St. Xaviers Catholic College of Engineering	Participation
CAYm1 (2018-19)					
Sl. No.	**Date of Event**	**Name**	**Event**	**Organised Institute**	**Prizes/Awards**
1.	07/03/2019	Prince F M	Technical Quiz	Techfest, Maria College of Engineering	I
2.	07/03/2019	Gibu Mon	Code Debugging	Techfest, Maria College of Engineering	I
3.	28/02/2019	Jeffin Mathew	Technical Quiz	Rohini College of Engineering and technology	I
4.	28/02/2019	Ginson Roice	Technical Quiz	Rohini College of Engineering and technology	I
5.	28/02/2019	Rohan Jacob	Technical Quiz	Rohini College of Engineering and technology	I
6.	19/03/2019	Merlin thankam	Paper Presentation	Rohini College of Engineering	II
7.	19/03/2019	Amala Soumya	Paper Presentation	Rohini College of Engineering	II
8.	19/03/2019	Merin benchamin	Paper Presentation	Rohini College of Engineering	II
9.	15/09/2018	Gibumon P K	Seminar	St. Xaviers Cotholic College of Engineering	Participation
10.	21/02/2019	Nevin Abraham	Workshop on Embedded seystems and IoT	KINGS college of Engineering	Participation
11.	21/02/2019	Shiju T Mathew	Workshop on Embedded seystems and IoT	KINGS college of Engineering	Participation

12.	21/02/2019	Siva Kumar	Workshop on Embedded seystems and IoT	KINGS college of Engineering	Participation
13.	1/03/2019	Price Koshy	Paper Presentation	Shivaji College of Engineering	Participation
14.	09/03/2019	Ceyaneeshaga	Workshop on Machine Learning	CSE Association, Government college of Technology	Participation
15.	09/03/2019	Adlin Kanishka	Workshop on Machine Learning	CSE Association, Government college of Technology	Participation
16.	09/03/2019	Ben Sing Joshua	Workshop on Machine Learning	CSE Association, Government college of Technology	Participation
17.	09/03/2019	Alvin Raju	Workshop on Machine Learning	CSE Association, Government college of Technology	Participation
18.	09/03/2019	Sheeba S	Workshop on Machine Learning	CSE Association, Government college of Technology	Participation
19.	09/03/2019	Alan A	Workshop on Machine Learning	CSE Association, Government college of Technology	Participation
20.	22/03/2019	Bijitha Mariam	Paper Presentation	Arunachala College of College of Engineering	Participation
21.	22/03/2019	Abinaya	Paper Presentation	Arunachala College of College of Engineering	Participation
22.	22/03/2019	Nitha Mohan	Paper Presentation	Arunachala College of College of Engineering	Participation
CAYm2 (2017-18)					
Sl. No.	**Date of Event**	**Name**	**Event**	**Organised Institute**	**Prizes/Awards**
1.	15/3/2018	Ashna Bobachan	Science Project Expo	Arunachala College of Engineering for WomenI	I
2.	09/03/2018	Saira Anna Koshy	Paper Presentation	Ponjesly College of Engineering	II
3.	09/03/2018	Sonya Thomas	Paper Presentation	Ponjesly College of Engineering	II
4.	09/03/2018	Reny Ann Cheriyan	Paper Presentation	Ponjesly College of Engineering	II

5.	09/03/2018	Praisy Thomas	Code Debugging	Ponjesly College of Engineering	II
6.	15/03/2018	Sophy Mariam	Paper Presentation	St. Xaviers Catholic College of Engineering	II
7.	15/03/2018	Jesty James	Paper presentation	St. Xaviers Catholic College of Engineering	II
8.	15/03/2018	Nevin Abraham Philip	Paper presentation	St. Xaviers Catholic College of Engineering	II
9.	17/03/2018	GibuMon P K	M/C Assembling	SCIFA	Participation
10.	17/03/2018	GibuMon P K	Static Modeling	SCIFA	Participation
11.	17/03/2018	GibuMon P K	Quiz	SCIFA	Participation
12.	25/01/2018	Riya Varghese	Paper presentation	Annapoorana Engineering college	Participation
13.	25/01/2018	Manju M R	Paper presentation	Annapoorana Engineering College	Participation
14.	09/03/2018	Anu Rajan	Paper Presentation	Ponjesly College of Engineering	Participation
15.	09/03/2018	Jijo Jarnest	Paper Presentation	Ponjesly College of Engineering	Participation
16.	09/03/2018	Jancy Varghese	Paper Presentation	Ponjesly College of Engineering	Participation
17.	09/03/2018	Varghese Sunny	Web designing	Ponjesly College of Engineering	Participation
18.	09/03/2018	Jithu P Iype	Web designing	Ponjesly College of Engineering	Participation

B. Events outside the state

Table 4.6.3 (c) Co-curricular activities - Events outside the state

CAY (2019-20)					
Sl. No.	**Date of Event**	**Name**	**Event**	**Organised Institute**	**Prizes/ Awards**
1.	27/04/2020	Aparna P Madhu	Quiz	St.Joseph's College Iringalakkuda	Passed
2.	27/04/2020	Tibin Joseph	Quiz	St.Joseph's College Iringalakkuda	Passed
3.	27/04/2020	Alpha Joseph	Quiz	St.Joseph's College Iringalakkuda	`passed

4.	28.04.2020	Febin K Jose	Chandigarh Group Colleges	Quiz	Passed
5.	2020	Ancy Peter	Quiz	Bharath College of Engineering & Technology	Passed
6.	26/05/20220	Ancy Peter	Stepathon	STEP-The Hindu	passed
7.	31/08/2019	Gibu Mon P K	WorkShop on Artificial Intelligence	Networkz systems Trivandrum	Participation
8.	18/07/2019	Justin John	Workshop on Python Machine Learning	Concept Solution, Trivandrun	Participation
9.	18/07/2019	Nitha Mohan	Workshop on Python Machine Learning	Concept Solution, Trivandrun	Participation
10.	18/07/2019	Merin Benchamin	Workshop on Python Machine Learning	Concept Solution, Trivandrun	Participation
11.	18/07/2019	Karthik Vasudevan	Workshop on Python Machine Learning	Concept Solution, Trivandrun	Participation
12.	18/07/2019	Nivin Ninan	Workshop on Python Machine Learning	Concept Solution, Trivandrun	Participation
13.	18/07/2019	Antony Jojo	Workshop on Python Machine Learning	Concept Solution, Trivandrun	Participation
14.	29/4/2020	Tibin Joseph	Webinar on working from home during PANDEMIC	Achieve Centre for Leadership & workplace Performance	Participation
15.	29/4/2020	Elna Saera Rajeev	Webinar on working from home during PANDEMIC	Achieve Centre for Leadership & workplace Performance	Participation
16.	2020	Nithya S S	Boot Camp on Basics of Web development	Devtown, RANCHI	Participation

17.	2020	Nithya S S	Boot Camp on Python and time Series prediction using RNN	Birla Institute of Technology	Participation
18.	2020	Nithya S S	Boot Camp on Python and time Series prediction using RNN	ShapeAI	Participation
19.	22.05.2020	Athira Jayakumar	Christian College of Engineering &Technology	Ethical Hacking	Parcipation
20.	29/4/2020	Athira JayaKumar	Webinar on working from home during PANDEMIC	Achieve Centre for Leadership & workplace Performance	Participation
21.	27/04/2020	Blessy B Mathew	Quiz	St.Joseph's College Iringalakkuda	Participation
22.	21/05/2020	Febin K Jose	Webinar on Emerging Technologies Redefining Automotive Industry	Sri Venkateswara College of Technology	Participation
23.	29/4/2020	Febin K Jose	Webinar on working from home during PANDEMIC	Achieve Centre for Leadership & workplace Performance	Participation
24.	02/05/2020	Libin Monayi	Webinar	AAlim Mohammed Salegh College	Participation
25.	29/4/2020	Liben Monai	Webinar on working from home during pandemic	Achieve Centre for Leadership & workplace Performance	Participation
26.	14/04/2020-18/04/2020	Tibin Joseph	Power Seminar on Technology for future	ICT ACADEMY	Participation
27.	2020	Nithya S S	Boot Camp on Practical wb application hacking	ShapeAI	Participation
28.	02/05/2020	Meleta Liza	Webinar	AAlim Mohammed Salegh College	Participation

29.	29/4/2020	Shenit Shaji	Webinar on working from home during PANDEMIC	Achieve Centre for Leadership & workplace Performance	Participation
30.	30/05/2020	Ancy Peter	Webinar on Introduction to Packet Hacking	CISCO	Participation
31.	11/05/2020	Ancy Perer	Boot Camp	Grey Atom	Participation
32.	29/05/2020	Ancy Peter	Webinar on Introduction IoT	CISCO	Participation
33.	29/05/2020	Ancy Peter	Webinar on Cyber Security	CISCO	Participation
34.	15/05/2020	Ancy Peter	Training-Matlab	Math Works	Participation
35.	17/05/2020	Ancy Peter	Training-Deep Learning	Math Works	Participation
CAYm1 (2018-19)					
Sl. No.	**Date of Event**	**Name**	**Event**	**Organised Institute**	**Prizes/ Awards**
1	14/04/2019	Nivin Ninan Raju	Onilne certification course on Python Programming – A practical Approach	E&ICT Academy, IIT Kanpur	Passed
2	03/05/2019	Merin Benjamin	Paper Presentation	Mohandas College of Engineering & Technology	I
3	03/05/2019	Karthika	Paper Presentation	Mohandas College of Engineering & Technology	I
4	03/05/2019	Shany Aleyamma	Paper Presentation	Mohandas College of Engineering & Technology	I
5	03/05/2019	Prince	Hardware debugging	Mohandas College of Engineering & Technology	II
6	03/05/2019	Antony Jojo	Line Follower - Robot	Mohandas College of Engineering & Technology	II

7	03/05/2019	Karthik	Poster Presentation	Mohandas College of Engineering & Technology	II
8	23/02/2019-24/02/2019	S S Akash	IoT Boot Camp	IVA Trivandrum in Association with B-Hub & Technopark Today Trivandrum	Participation
9	July-Oct 2018	S S Akash	Online Course on “The Joy of computing using Python”	NPTEL	Participation
10	03/05/2019	Merlin Thankam	Paper Presentation	Mohandas College of Engineering & Technology	Participation
11	03/05/2019	Bijitha	Paper Presentation	Mohandas College of Engineering & Technology	Participation

CAYm2 (2017-18)

Sl. No.	Date of Event	Name	Event	Organized Institute	Prizes/ Awards
1.	20/10/2017	Reny Ann Cheriyan	Paper Presentation	Trinity College of Engineering	I
2.	20/10/2017	Riya Varghese	Paper Presentation	Trinity College of Engineering	I
3.	20/10/2017	Aparna Theresa Babu	Paper Presentation	Trinity College of Engineering	I
4.	20/10/2017	Jeffin Mathew	Quit Bug	Trinity College of Engineering	I
5.	23/02/2018	Nevin Abraham	Paper Presentation	Sahrdya College of Engineering & Technology	I
6.	23/02/2018	Sophy Mariam	Paper Presentation	Sahrdya College of Engineering & Technology	I
7.	23/02/2018	Jesty James	Paper Presentation	Sahrdya College of Engineering & Technology	I
8.	23/02/2018	Defina David	Paper Presentation	Sahrdya College of Engineering & Technology	I
9.	20/10/2017	Shiju Johnson	Techno Jam	Trinity College of Engineering	II

10.	20/10/2017	Sojo P Saju	Technical Quiz	Trinity College of Engineering	II
11.	20/10/2017	Neseley Elizebath	Technical Quiz	Trinity College of Engineering	II
12.	20/10/2017	Shiju P Mathew	Technical Quiz	Trinity College of Engineering	II
13.	20/11/2017	Reshma	Industrial Training Program	Lansa Informatics PVT LTD	Participation
14.	20/10/2017	Sojo P Saju	Paper Presentation	Trinity College of Engineering	Participation
15.	20/10/2017	Nesely Elizebath	Paper Presentation	Trinity College of Engineering	Participation
16.	20/10/2017	Shiju T mathew	Paper Presentation	Trinity College of Engineering	Participation
17.	23/02/2018	Brintha Rani	Paper Presentation	Sahrdya College of Engineering & Technology	Participation
18.	23/02/2018	Varghese Sunny	Paper Presentation	Sahrdya College of Engineering & Technology	Participation
19.	23/02/2018	Shiju Johnson	Paper Presentation	Sahrdya College of Engineering & Technology	Participation
20.	23/02/2018	Abin T John	Paper Presentation	Sahrdya College of Engineering & Technology	Participation
21.	20/10/2017	Shejin A Vaidyan	Project Expo	Trinity College of Engineering	Participation

Extra-Curricular activities

A. Events within the state

Table 4.6.3 (d) Extra-curricular activities-Events within the state

CAY (2019-20)					
Sl. No.	**Date of Event**	**Name**	**Event**	**Organised Institute**	**Prizes/ Awards**
1.	23/09/2019-24/09/2018	Nikhil Abraham	FootBall	Anna University Zonal Tournament Meet	II
2.	18/10/2019-20/10/2019	Sushmi Ringlesha	4X400 Relay	Anna University Zonal Athlete Meet	III

3.	06/2020	Jamimah Stally	Quiz	Women's Christian College Nagercoil	Passed
4.	25-05-2020	Jamimah Stally	Quiz	Vivekananda College of Engineering	Passed
5.	26/05/2020-31/05/2020	Jamimah Stally	Quiz	Womwn's Christian College Nagercoil	Passed
6.	2020	Jamimah Stally	Quiz	TamilNadu Agricultural Univrsity	Passed
7.	28/05/2020-31/05/2020	Jamimah Stally	Quiz	Noorul Islam College for Arts & Science	Participation
8.	2019-2020	Dona Sabu	REVIEW THE Presesnt	IET Kanyakumari Local Network	Participation
9.	20/08/2019-24/08/2019	Justin John	Project Expo	Malankara Catolic College, Mariagiri, MCCXIBAS 2019 second national level Science exhibition and aqua show"	Participation
10.	20/08/2019-24/08/2019	Karthik Vasudevan	Project Expo	Malankara Catolic College, Mariagiri, MCCXIBAS 2019 second national level Science exhibition and aqua show"	Participation
11.	20/08/2019-24/08/2019	Nivin Ninan	Project Expo	Malankara Catolic College, Mariagiri, MCCXIBAS 2019 second national level Science exhibition and aqua show"	Participation
12.	20/08/2019-24/08/2019	Antony Jojo	Project Expo	Malankara Catolic College, Mariagiri, MCCXIBAS 2019 second national level Science exhibition and aqua show"	Participation
13.	25/04/2020	Jamimah Stally	Photo Contest	TCO	Participation
14.	27/06/2020	Angel Laura	Essay Writing	Super 7	Participation
15.	23/09/2019-24/09/2018	Jamimah Stally	Badminton	Anna University Zonal Tournament Meet	Participation

16.	18/10/2019-20/10/2019	Priyadharsini	Shot put	Anna University Zonal Athlete Meet	Participation
17.	18/10/2019-20/10/2019	Jeffy Liby	Javelin Throw	Anna University Zonal Athlete Meet	Participation

CAYm1 (2018-19)

Sl. No.	Date of Event	Name	Event	Organised Institute	Prizes/Awards
1.	22/02/2019	Jomy Elizabath	Group Dance	Nesamony Memorial Christian College	I
2.	22/02/2019	Sarannya	Group Dance	Nesamony Memorial Christian College	I
3.	22/02/2019	Merlin thankam	Group Dance	Nesamony Memorial Christian College	I
4.	22/02/2019	Karthika P	Group Dance	Nesamony Memorial Christian College	I
5.	19/03/2019	Jomy Elizabath	Group Dance	Rohini College of Engineering and technology”	II
6.	19/03/2019	Sarannya	Group Dance	Rohini College of Engineering and technology”	II
7.	19/03/2019	Merlin thankam	Group Dance	Rohini College of Engineering and technology”	II
8.	19/03/2019	Karthika P	Group Dance	Rohini College of Engineering and technology”	II
9.	19/03/2019	Jesty James	Group Song	Rohini College of Engineering and technology	II
10.	19/03/2019	Sojo P Saju	Group Song	Rohini College of Engineering and technology	II
11.	19/03/2019	Jomy Elizebath	Group Song	Rohini College of Engineering and technology	II

12.	19/03/2019	Shany Aleyamma	Group Song	Rohini College of Engineering and technology	II
13.	19/03/2019	Antony Jojo	Group Song	Rohini College of Engineering and technology	II
14.	19/03/2019	Jissmon Thomas	Group Song	Rohini College of Engineering and technology	II
15.	19/03/2019	Ginson Roice	Group Song	Rohini College of Engineering and technology	II
16.	27/08/2018	Nevin Abraham Philip	Basket ball	Anna University Zonal Level basketball tournament	III
17.	27/08/2018	Karthik Vasudevan	Basket ball	Anna University Zonal Level basketball tournament	III
18.	04/05/2019	Karthika	Photo Contest	Aspire 2019, IET Kanyakumari Local Network	Participation
19.	04/05/2019	Biljitha	Photo Contest	Aspire 2019, IET Kanyakumari Local Network	Participation
20.	04/05/2019	Ashily JiJI	Poster presentation	Aspire 2019, IET Kanyakumari Local Network	Participation
21.	04/05/2019	Merin benchamin	Poster presentation	Aspire 2019, IET Kanyakumari Local Network	Participation
22.	11/05/2019	Bensingh Joshua	IET PATW 2019	IET	Participation
23.	11/05/2019	Jithan Orappan Raju	IET PATW 2019	IET	Participation

CAYm2 (2017-18)

Sl. No.	Date of Event	Name	Event	Organised Institute	Prizes/Awards
1.	15/03/2018	Dona Sabu	Science Expo	Arunachala College of Engineering	I
2.	09/03/2018	Bincy D J	Just a Minute	Ponjesly College of Engineering	II

3.	09/03/2018	Akila D	Photography	Ponjesly College of Engineering	II
4.	07/03/2018	Reshma R	Nail Art	Rethinam Technical Campus	Participation
5.	17/03/2018	Ceyanee Shaga	Xtempore English	SCIFA	Participation
6.	17/03/2018	Akshaya	Xtempore-Malayalam	SCIFA	Participation
7.	17/03/2018	Dona Sabu	Xtempore-Malayalam	SCIFA	Participation
8.	09/03/2018	Nijin P Mathews	photography	Ponjesly College of Engineering	Participation
9.	01/02/2018	Joseph Paulose	Drone Racing Competion	Annai Vailankanni College of Engineering	Participation
10.	01/02/2018	Shiju T Mathew	Drone Racing Competion	Annai Vailankanni College of Engineering	Participation

B. Events outside the state

Table 4.6.3 (e) Extra-curricular activities-Events outside the state

CAY (2019-20)					
Sl. No.	**Date of Event**	**Name**	**Event**	**Organised Institute**	**Prizes/Awards**
1.	06/03/2020	Ruban Varghese	Extempore-Malayalam	Mar Baselious College of Engineering, Kuttikanam	I
2.	06/03/2020	Tiji Cicily	Group Dance	Mar Baselious College of Engineering, Kuttikanam	II
3.	06/03/2020	Jeeja Jacob	Group Dance	Mar Baselious College of Engineering, Kuttikanam	II
4.	06/03/2020	Arpitha Renjan	Group Dance	Mar Baselious College of Engineering, Kuttikanam	II
5.	06/03/2020	Alpha Joseph	Group Dance	Mar Baselious College of Engineering, Kuttikanam	II
6.	06/03/2020	Jeffy Joby	Group Dance	Mar Baselious College of Engineering, Kuttikanam	II
7.	06/03/2020	Ruth	Group Dance	Mar Baselious College of Engineering, Kuttikanam	II

8.	06/03/2020	Athita Jayakumar	Group Dance	Mar Baselious College of Engineering, Kuttikanam	II
9.	06/03/2020	Priyadarshini	Group Dance	Mar Baselious College of Engineering, Kuttikanam	II
10.	27/04/2020	Ancy Perer	Quiz	St.Joseph's College Iringalakkuda	Passed
11.	05/2020	Meleta Liza	Quiz	Bharath College of Engineering & Technology	Passed
12.	27/04/2020	Jithin raju	Quiz	St.Joseph's College Iringalakkuda	Passed
13.	27/04/2020	Stephin	Quiz	St.Joseph's College Iringalakkuda	Passed
14.	27/04/2020	Rubaen Varghese	Quiz	St.Joseph's College Iringalakkuda	Passed
15.	06/03/2020	Akhil Abraham	Group Song	Mar Baselious College of Engineering, Kuttikanam	Participation
16.	06/03/2020	Rubaen Varghese	Group Song	Mar Baselious College of Engineering, Kuttikanam	Participation
17.	06/03/2020	Blessy B Mathew	Group Song	Mar Baselious College of Engineering, Kuttikanam	Participation
18.	06/03/2020	Reeja Ann	Group Song	Mar Baselious College of Engineering, Kuttikanam	Participation
19.	06/03/2020	Febin K Jose	Group Song	Mar Baselious College of Engineering, Kuttikanam	Participation
20.	06/03/2020	Jithin Raju	Group Song	Mar Baselious College of Engineering, Kuttikanam	Participation
21.	06/03/2020	Ananthu A	Group Song	Mar Baselious College of Engineering, Kuttikanam	Participation

CAYm1 (2018-19)					
Sl. No.	**Date of Event**	**Name**	**Event**	**Organised Institute**	**Prizes/Awards**
1	29/03/2019	Dona Sabu	Group Song	Musaliar College of Engineering & Technology	I

2	29/03/2019	Ashana Bobachan	Group Song	Musaliar College of Engineering & Technology	I
3	29/03/2019	Jeffy Grace	Group Song	Musaliar College of Engineering & Technology	I
4	29/03/2019	Divya P	Group Song	Musaliar College of Engineering & Technology	I
5	29/03/2019	Jithin James	Group Song	Musaliar College of Engineering & Technology	I
6	29/03/2019	Adone Y Babu	Group Song	Musaliar College of Engineering & Technology	I
7	29/03/2019	Alwin David	Group Song	Musaliar College of Engineering & Technology	I
8	29/03/2019	Alex Mathew	Best Actor	Musaliar College of Engineering & Technology	II
9	26/04/2019	Ben Singh Joshua	Music Band	Mar Baselious College of Engineering & Technology	II
10	26/04/2019	Adone Y Babu	Music Band	Mar Baselious College of Engineering & Technology	II
11	26/04/2019	Alwin David	Music Band	Mar Baselious College of Engineering & Technology	II
12	26/04/2019	Dona Sabu	Music Band	Mar Baselious College of Engineering & Technology	II
13	26/04/2019	Ashna Bobachan	Music Band	Mar Baselious College of Engineering & Technology	II
14	26/04/2019	Alwin Raju	Music Band	Mar Baselious College of Engineering & Technology	II
15	26/04/2019	Nesely Elizebath	Group Dance	Mar Baselious College of Engineering & Technology	Participation

16	26/04/2019	Sojo P Saju	Group Dance	Mar Baselious College of Engineering & Technology	Participation
17	26/04/2019	Anupama Aniyan	Group Dance	Mar Baselious College of Engineering & Technology	Participation
18	26/04/2019	Anu Rajan	Group Dance	Mar Baselious College of Engineering & Technology	Participation
19	26/04/2019	Anju C	Group Dance	Mar Baselious College of Engineering & Technology	Participation
20	26/04/2019	Jomy Elizebath	Group Dance	Mar Baselious College of Engineering & Technology	Participation
21	26/04/2019	Sarannya K Sasi	Group Dance	Mar Baselious College of Engineering & Technology	Participation

CAYm2 (2017-18)

Sl. No.	Date of Event	Name	Event	Organised Institute	Prizes/Awards
1	20/10/2017	Akhil Mon	Face Painting	Trinity College of Engineering	I
2	23/02/2018	Akhil Mon	Face Painting	Sahrdya College of Engineering & Technology	I
3	23/02/2018	Ajin S A	Photo contest	Sahrdya College of Engineering & Technology	II
4	20/10/2017	Aparna Thresa BAbu	Dubmash	Trinity College of Engineering	Participation
5	20/10/2017	Akhil Mon	Photo contest	Trinity College of Engineering	Participation
6	23/02/2018	Anupama Aniyan	Face Painting	Sahrdya College of Engineering & Technology	Participation
7	23/02/2018	Bincy D J	Poster Presentaion	Sahrdya College of Engineering & Technology	Participation
8	23/02/2018	Akhila D	Poster Presentaion	Sahrdya College of Engineering & Technology	Participation

CRITERION 5	FACULTY INFORMATION AND CONTRIBUTIONS	200

Name	PAN No.	University Degree	Date of Receiving Degree	Area of Specialization	Research Paper Publications	Ph.D Guidance	Faculty receiving Ph.D during the assessment year	Current Designation	Date (Designated as Prof/Assoc. Prof.).	Initial Date of Joining	Association Type	At present working in the Institution (Yes/No)	In case of NO, Date of Leaving	IS HOD?
Dr. Dhanya D	Exempted	ME/M. Tech and PhD	14/12/2018	Cloud Computing	21	0	0	Associate Professor	07/01/2019	10/07/2013	Regular	Yes		Yes
Dr. A. Lenin Fred	Exempted	ME/M. Tech and PhD	25/01/2010	Image Processing	90	18	2	Professor	09/04/2010	09/04/2010	Regular	Yes		No
Dr. L.C. Manikandan	Exempted	ME/M. Tech and PhD	28/11/2015	Image Processing	16			Professor	04/01/2018	15/09/2009	Regular	Yes		No
Dr. Jerusalin Carol J	Exempted	ME/M. Tech and PhD	16/07/2018	Image Processing	7	5	0	Associate Professor	07/01/2019	08/01/2018	Regular	Yes		No
Dr. R. Benzswartz	Exempted	ME/M. Tech and PhD	29/08/2017	VLSI Design	6			Associate Professor	01/02/2020	02/07/2016	Regular	Yes		No
Mr. Ashwin G Singerji	Exempted	M.E/M.Tech	30/04/2012	Computer Science and Engineering	5			Assistant Professor		03/09/2012	Regular	Yes		No
Mrs. P. Innasi Lineta	Exempted	M.E/M.Tech	30/06/2011	Computer Science and Engineering	1			Assistant Professor		01/07/2011	Regular	Yes		No

Mrs. Austy B Evangeline	Exempted	M.E/M.Tech	31/05/2011	Software Engineering	2			Assistant Professor		26/09/2011	Regular	Yes		No
Mr. R. Babu	Exempted	M.E/M.Tech	29/06/2012	Computer Science and Engineering	3			Assistant Professor		27/06/2012	Regular	No	15/07/2020	No
Mrs. Lincy C.T	Exempted	M.E/M.Tech	31/05/2011	Computer Science and Engineering	1			Assistant Professor		02/07/2012	Regular	Yes		No
Mrs. L.T. Herlin	Exempted	M.E/M.Tech	30/04/2010	Computer and Information Technology	2			Assistant Professor		06/08/2012	Regular	Yes		No
Mrs. J. Benisha Janice	Exempted	M.E/M.Tech	30/06/2012	Computer Science and Engineering	1			Assistant Professor		03/09/2012	Regular	Yes		No
Mrs. Janila J	Exempted	M.E/M.Tech	29/06/2013	Computer Science and Engineering	1			Assistant Professor		10/07/2013	Regular	Yes		No
Mrs. Renu D S	Exempted	M.E/M.Tech	31/05/2013	Computer Science and Engineering	3			Assistant Professor		10/07/2013	Regular	Yes		No
Mrs. Ashy V Daniel	Exempted	M.E/M.Tech	30/06/2014	Computer Science and Engineering	6			Assistant Professor		13/02/2015	Regular	Yes		No

5.1. Student-Faculty Ratio (20)

- No. of UG Programs in the School(n):01
- No. of PG Programs in the School(m):01
- No. of Students in UG 2nd Year=**u1**
- No. of Students in UG 3rd Year=**u2**
- No. of Students in UG 4th Year= **u3**
- No. of Students in PG 1st Year= **p1**
- No. of Students in PG 2nd Year=**p2**

No. of Students = Sanctioned Intake + Actual admitted lateral entry students

S=Number of Students in the School = UG1 + UG2 +… +UGn + PG1 + …PGn

F = Total Number of Faculty Members in the School (excluding first year faculty)

Table 5.1 (a) Students Faculty Ratio

Student Teacher Ratio (STR) = S / F			
Year	**CAY (2020-2021)**	**CAYm1 (2019-2020)**	**CAYm2 (2018-2019)**
u1.1- 2nd year	60 + 1 = 61	60 + 5 = 65	60 + 2 = 62
u1.2 – 3rd year	60 + 5 = 65	60 + 2 = 62	60 + 1 = 61
u1.3 – 4th year	60 + 2 = 62	60 + 1 = 61	60 + 5 = 65
UG1 = u1.1 + u1.2 + u1.3	**188**	**188**	**188**
p1.1 – 1st year	18	18	18
p1.2 – 2nd year	18	18	18
PG1 = p1.1 + p1.2	**36**	**36**	**36**
Total No. of Students in the School **(S)**	224	224	224
No. of Faculty in the School **(F)**	14	15	15
Student Faculty Ratio (SFR)	**SFR2 = 16**	**SFR2 = 14.93**	**SFR3 = 14.93**
Average SFR	**SFR = 15.28**		

5.1.1. Provide the information about the regular and contractual faculty as per the format mentioned below:

Table 5.1 (b) Details of Regular and Contractual faculty

Year	Total number of regular faculty in the school	Total number of contractual faculty in the school
CAY (2020 – 2021)	14	0
CAYm1 (2019-2020)	15	0
CAYm2 (2018-2019)	15	0

5.2. Faculty Cadre Proportion (25)

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

F1: Number of Professors required = 1/9 x 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 x Number of Faculty required to comply with 20:1 Student-Faculty ratio based on no. of students (N) as per5.1

F3: Number of Assistant Professors required = 6/9 x Number of Faculty required to comply with 20:1 Student-Faculty ratio based on no. of students (N) as per5.1

Table 5.2 Faculty Cadre Proportion

Year	Professors		Associate Professors		Assistant Professors	
	Required F1	Available	Required F2	Available	Required F3	Available
CAY (2020 – 2021)	1	2	2	3	7	9
CAYm1 (2019-2020)	1	2	2	2	7	11
CAYm2 (2018-2019)	1	2	2	0	7	13
Average Numbers	**RF1=1**	**AF1= 2**	**RF2=2**	**AF2=1.6**	**RF3=7**	**AF3=11**

Cadre Ratio Mark = ((AF1/RF1) + ((AF2/RF2) x 0.6) + ((AF3/RF3) x 0.4) x 12.5

= (2 + [0.8*0.6] + 1.57*0.4)*12.5 = (2+0.48+0.628)*12.5

= 3.108*12.5 = **38.85**

5.3. Faculty Qualification (25)

FQ =2.5 x [(10X +4Y)/F)]

X =No. of regular faculty with Ph.D.

Y = 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)

Table 5.3 Faculty Qualifications

Year	X	Y	F	FQ=2.5 x [(10X +4Y)/F)]
2020-2021 (CAY)	5	9	11	19.31
2019-2020 (CAYm1)	5	10	11	20.45
2018-2019 (CAY*m*2)	4	11	11	19.09
Average Assessment				**19.61**

5.4. Faculty Retention (25)

Table 5.4 (a) Percentage of faculty retention for the last three academic years

Description	2020-21	2019-20
No. of Faculty retained	14	15
Total no. of Faculty	14	15
% of Faculty Retained	93.33	100
Average Assessment		96.66

Table 5.4 (b) Faculty Retention

Item	Marks
>=90% of required Faculty members retained during the period of assessment	**25**
>=75% of required Faculty members retained during the period of assessment	
>=60% of required Faculty members retained during the period of assessment	
>=50% of required Faculty members retained during the period of assessment	
<50% of required Faculty members retained during the period of assessment	

5.5. Innovations by the Faculty in Teaching and Learning (20)

Following are the best and innovative practices undertaken by the faculty members for improving teaching and learning experience. The content and method are available in the public domain through Institutional Website.

Animated PPT/Animated Video

Faculty illustrates the concepts through animations. It encourages curiosity among students to learn new technique and its ideas.

Simulation

Faculty interprets the principles and provides experiential learning through simulations/models.

Demonstration

Faculty uses demonstration to visually organize information about a new concept in order to enrich students understanding.

Team – based activity/Role-play

Faculty members encourage team based activity/Role-play in the class which demonstrates a practical integration of knowledge, skills and abilities.

Academic Year 2019 – 2020

Table 5.5 (a) Innovative methods practiced by the faculty 2019 – 2020

S.No	Name of the Faculty	Name of the Course	Innovative Method	Description
1.	Ms. Austy B Evangeline	Artificial Intelligence	Animation	Architecture for Intelligent Agents
2.	Dr. D. Dhanya	Cloud Computing	Animation	MapReduce and Hadoop
3.	Mr. Ashwin G Singerji	Cyber Forensics	Animated video	Malware Threats - Sniffing
4.	Ms. C. T. Lincy	Compiler Design	Animated PPT	Top-down parsing and Bottom-up parsing
5.	Mr. R. Babu	Object Oriented Programming	Google Colab	Inheritance

Academic Year 2018 – 2019

Table 5.5 (b) Innovative methods practiced by the faculty 2018 – 2019

S.No	Name of the Faculty	Name of the Course	Innovative Method	Description
1.	Mrs. D. Dhanya	Data Structures	Animated PPT	Graph concept, Dijkstra's algorithm
2.	Ms. D. S Renu	Design & Analysis of Algorithms	Animated video	Knapsack Problem
3.	Ms. P. Innasi Lineta	Multi-Core Architecture and Programming	Animated PPT	n-body solvers.
4.	Ms. L. T. Herlin	Computer Networks	Animation PPT	Packet Switching
5.	Ms. Jerusalin Carol	Communication Engineering	Demonstration	Modulation and transmission of communication systems
6.	Dr. D. Dhanya	Cloud Computing	Simulation	Map Reduce

Academic Year 2017 – 2018

Table 5.5 (c) Innovative methods practiced by the faculty 2017 – 2018

S.No	Name of the Faculty	Name of the Course	Innovative Method	Description
1.	Mr. R. Babu	Internet Programming	Demonstration	Cascade Style sheets.
2.	Ms. L.T. Herlin	Computer Graphics	Animated Video	2D transformations
3.	Ms. J. Benisha Janice	Embedded and Real time Systems	Demonstration	ARM processor
4.	Ms. C. T. Lincy	Programming and Data Structures II	Animated video	Array Operations, Stack, linked list
5.	Ms. J. Janila	Operating Systems	Role play	Deadlock, Job Scheduling
6.	Ms. Austy B Evangeline	Cryptography and Network Security	Animated PPT	Playfair Cipher, Diffie Hellman Key Exchange Algorithm

5.6. 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 5.6. Calculation of Faculty as participants in Faculty Development/Training Activities/STTPs

Sl. No.	Name of the Faculty	Max. 5 per Faculty		
		CAYm1 (2019-2020)	CAYm2 (2018-2019)	CAYm3 (2017-2018)
1.	Dr. Dhanya D	5	5	3
2.	Prof. Dr. A. Lenin Fred	-	-	3
3.	Dr. L.C. Manikandan	3	-	-
4.	Dr. Jerusalin Carol J	5	5	3
5.	Dr. Benzswartz	-	5	3
6.	Mr. Ashwin G Singerji	3	-	3
7.	Ms. P. Innasi Lineta	5	-	3
8.	Ms. Austy B. Evangeline	5	5	-
9.	Mr. R. Babu	3	-	-
10.	Ms. Lincy C.T	5	-	3
11.	Ms. L.T. Herlin	5	5	3
12.	Ms. Benisha Janice	5	5	3
13.	Ms. Janila J	5	5	5
14.	Ms. Renu D.S	5	5	3
15.	Ms. Ashy V Daniel	3	5	5
Sum		57	45	40
***RF*= Number of Faculty required to comply with 20:1 Student-Faculty ratio as per 5.1**		**11**	**11**	**11**
Assessment = 3 × (Sum/0.5RF) (Marks limited to 15)		31.08	24.54	21.81
Average assessment over three years (Marks limited to 15) = 25.81				

5.7. Research and Development (30)

5.7.1 Academic Research (10)

Table 5.7 (a) Details of Journal Publications

Sl.No	Name of the Faculty	No. of publications
1.	Dr. Dhanya D	21
2.	Prof. Dr. A. Lenin Fred	90
3.	Prof. Dr. L.C. Manikandan	16
4.	Dr. Jerusalin Carol J	7
5.	Dr. Benzswartz R	6
6.	Mr. Ashwin G Singerji	5
7.	Ms. P. InnasiLineta	1
8.	Ms. Austy B. Evangeline	2
9.	Mr. R. Babu	3
10.	Ms. Lincy C.T	1
11.	Ms.L.T.Herlin	2
12.	Ms. J. Benisha Janice	1
13.	Ms. Janila J	1
14.	Ms. Renu D.S	3
15.	Ms. Ashy V Daniel	6
Total Number of publications		**165**

Quality Publications

Academic Year 2019 - 2020

Table 5.7.1 (a) Details of Quality Publications 2019 – 2020

Sl. No	Name of the Faculty	Title of the Article	Journal in which Published	UGC Recognized Journal & Scopus/ SCI journals	Citations
1.	Dr. Dhanya D, J Jerusalin Carol	Parametric Optimization of Punched out Suspended Planar	International Journal of Advanced	Scopus	

		Folded Antenna for ISM band applications	Science and Technology		
2.	Dr. Lenin Fred A	Fuzzy-Crow Search Optimization for Medical Image Segmentation	Applications of Hybrid Metaheuristic Algorithms for Image Processing, Studies in Computational Intelligence	Scopus	8
3.	Dr. Lenin Fred A, Dr. Dhanya D	Hybrid algorithm for resource provisioning with low cost and time using improved cost-based algorithm in hybrid cloud computing	Journal of Intelligent & Fuzzy Systems	SCI	
4.	Dr. D. Dhanya	Sentimental Analysis of Sports Consumer Behavior and Associated Branding Activities using Particle Swarm Optimization (PSO).	International Journal of Psychosocial Rehabilitation	Scopus	

Academic Year 2018 - 2019

Table 5.7.1 (b) Details of Quality Publications 2018 - 2019

Sl. No	Name of the Faculty	Title of the Article	Journal in which Published	UGC Recognized Journal &Scopus/ SCI journals	Citations
1.	Dr. Lenin Fred A	Denoising CT/MRI Images Restoration using Radial Basis Function Neural Network	International Journal of Innovative Technology and Exploring Engineering	Scopus	
2.	Dr. Lenin Fred A	K-means Clustering and SVM for Plant Leaf Disease Detection and Classification	IEEE	SCI	1

3.	Dr. Lenin Fred A	Denoising Medical Images Using Hybrid Filter With Firefly Algorithm	IEEE	SCI	1
4.	Dr. Lenin Fred A	Hardware Implementation of Heart Rate and QRS Complex Detection Using Raspberry Pi Processor for Medical Diagnosis	IEEE	SCI	
5.	Dr. Lenin Fred A	Group Method Data Handling Neural Network for CT Abdomen Image Segmentation based on First Order Statistics and Local Binary Pattern	IEEE	SCI	
6.	Mrs. Dhanya D	Investigating the effect of social media campaign on German 2017 Elections.	International journal of Recent technology and Engineering.	Scopus	
7.	Mrs. Dhanya D	Resource allocation through optimized three phase scheduled VMs by Grey Wolf optimization and introspection security analysis	Journal of Intelligent & Fuzzy system	SCI, Scopus	2
8.	Mrs. Dhanya D	Dolphin Partner Optimization based secure and qualified virtual machine for resource allocation with streamline security analysis	Peer-to-Peer Networking and applications-Springer	SCI, Scopus	3
9.	Dr. Lenin Fred A Mrs. Dhanya D	Hybrid algorithm for resource provisioning with low cost and time using improved cost-based algorithm in hybrid cloud computing	Journal of Intelligent & Fuzzy system	SCI, Scopus	
10.	Dr. Lenin Fred A	An efficient compound image compression using optimal discrete	Journal of Intelligent Systems	SCI	2

		wavelet transform and run length encoding techniques			
11.	Dr. Lenin Fred A Ms. Ashy V Daniel	Survey On Smart Irrigation Using Raspberry Pi	International Journal of Management, Technology and Engineering	Scopus	
12.	Dr. Lenin Fred A	Compression of CT images using contextual vector quantization with simulated annealing for telemedicine application	Journal of Medical Systems	Scopus	3
13.	Mrs. Dhanya D	An efficient distributed compressive sensing framework for reconstruction of sparse signals in mechanical systems	Journal of Mechanical Engineering and Technology	Scopus	
14.	Dr. Lenin Fred A	Bat Optimization Based Vector Quantization Algorithm for Medical Image Compression	Nature Inspired Optimization Techniques for Image Processing Applications	Scopus	2
15.	Dr. Lenin Fred A	Fuzzy c-means based adversarial whale optimization algorithm for compound image compression	Journal of Computational and Theoretical Nanoscience	Scopus	2
16.	Dr. Lenin Fred A	Simulation Based Exploration of SKC Block Cipher Algorithm	International Journal of Computer Sciences and Engineering	UGC	
17.	Dr. Lenin Fred A	An efficient method for image mining using GLCM and neural network	International Journal of Engineering & Technology	Scopus	
18.	Mr. Benzwartz R	Signal sensing Pi-bot	Journal of Advanced Research in Dynamical and Control Systems	Scopus	

Academic Year 2017 – 2018

Table 5.7.1 (c) Details of Quality Publications 2017 - 2018

Sl. No	Name of the Faculty	Title of the Article	Journal in which Published	UGC Recognized Journal &Scopus/SCI journals	Citations
1.	Dr. Lenin Fred A	Simulation Based Exploration of SKC Block Cipher Algorithm	International Journal of Computer Sciences and Engineering	UGC	
2.	Dr. Lenin Fred A	An overview of segmentation algorithms for the analysis of anomalies on medical images	Journal of Intelligent Systems	Scopus	5
3.	Dr. Lenin Fred A	An efficient grey wolf optimization algorithm based extended kalman filtering technique for various image modalities restoration process	Multimed Tools Applications, part of Springer Nature	Scopus	3
4.	Dr. Lenin Fred A, Ms. Ashy V.Daniel	Evaluation of local Thresholding techniques in Palm Leaf Manuscript Images	International Journal of Computer Sciences and Engineering	UGC	
5.	Mrs. Dhanya D	Scheduling optimized secured virtual machine using cuckoo search and flow analyzer.	Journal of computational and Theoretical Nanoscience	Scopus	4
6.	Mrs. Dhanya D	Three phase optimizations for qualified and secured VMs for resource allocation	International Journal of Enterprise and Network Management.	Scopus	2
7.	Dr. Lenin Fred A	An efficient method for image mining using GLCM and neural network	International Journal of Engineering & Technology	Scopus	
8.	Dr. Lenin Fred A	Texture based Detection of Chronic Kidney Disease	JETIR	UGC	

9.	Dr. Lenin Fred A	Active contour-based segmentation and early detection of chronic kidney disease	JETIR	UGC	
10.	Dr. Lenin Fred A	"Sparse Decomposition Technique for Segmentation and Compression of Compound Images"	Journal of Intelligent System	Scopus	
11.	Dr. Lenin Fred A	A Biometric fusion of hand and Finger vein approach for an efficient personal Authentication in health care	International Journal of current Engineering and Scientific Research	UGC	
12.	Dr. Lenin Fred A	An efficient key frame Extraction method in video-based face Recognition	International Journal of Computer Science	UGC	
13.	Dr. Lenin Fred A	AC coefficient and K-means cuckoo optimization algorithm-based segmentation and compression of compound images	IET Image Processing	Scopus	14
14.	Jerusalin Carol. J A. Lenin Fred	Feature level fusion using Physical biometric traits	Biomedical Engineering and Technology	Scopus	2
15.	Dr. Lenin Fred A	Screen content coding using code Repository for compound Image compression	IEEE	SCI	1
16.	Dr. Lenin Fred A	Block based face Recognition Algorithm	International Journal of Innovative Science, Engineering & Technology	UGC	
17.	Dr. Lenin Fred A	Biometric authentication of physical characteristics recognition using artificial neural network with PSO algorithm	International Journal of Computer Applications in Technology	SCI	10

18.	Dr. Lenin Fred A	An Efficient Video to Video Face Recognition using Neural Networks	International Journal of Computer Applications	UGC	

Faculty presented in conferences

Table 5.7.1 (d) Details of Faculty presented in Conferences

Sl.No	Name of Faculty	Title of the Paper	Name of the Organizing Institution	Sponsoring Agency (If Any)	Date/ Duration of the Programme	International/ National State/ Local
1.	Ms. C. T. Lincy	The significance of various sensing technologies in Precision agriculture	Noorul Islam Centre for Higher Education	-	02.04.2019	National (NCICSE '19)
2.	Dr. A. Lenin Fred	Hardware implementation of heart rate & QRS complex detection using raspberry Pi processor for medical diagnosis.	St. Xavier's Catholic College of Engineering	IEEE	07.03.2019 & 08.03.2019	International (ICRAECC - 2019)
3.	Mr. Benzwartz R	Signal sensing Pi-bot	8th International Conference on Engineering an Advancement in Technology – 2018	-	2018	International
4.	Ms. D. Dhanya	Data security in cloud using RSA and GNFS algorithm – An integrated approach.	Inventive Research organization	Springer	29.11.2018 & 30.11.2018	International (ICVVBIC)
5.	Dr. A. Lenin Fred	Data security in cloud using RSA and GNFS algorithm – An	Inventive Research organization	Springer	29.11.2018 & 30.11.2018	International (ICVVBIC)

		integrated approach.				
6.	Ms. Austy B Evangeline	Development of customized software for the integration of space program.	Rohini College of Engineering & Technology	ISRO	12.10.2018 & 13.10.2018	National (ASPIRE 2018)
7.	Ms. D.Dhanya	Development of customized software for the integration of space program.	Rohini College of Engineering & Technology	ISRO	12.10.2018 & 13.10.2018	National (ASPIRE 2018)
8.	Ms. Ashy V. Daniel	Development of customized software for the integration of space program.	Rohini College of Engineering & Technology	ISRO	12.10.2018 & 13.10.2018	National (ASPIRE 2018)
9.	Dr. A. Lenin Fred	Development of customized software for the integration of space program.	Rohini College of Engineering & Technology	ISRO	12.10.2018 & 13.10.2018	National (ASPIRE 2018)
10.	Ms. L. T. Herlin	An adaptive routing protocol for precision agriculture	Rohini College of Engineering & Technology	-	28.03.2018	International (ICAIET)
11.	Ms. C. T. Lincy	Fundus image Biometric security using vessel pattern and hashing	Rohini College of Engineering & Technology	-	28.03.2018	International (ICAIET)
12.	Ms. D. Dhanya	An Efficient Approach for Retinal vessel Segmentation using Wavelet Transformation	IEEE International Conference on computational Intelligence and Computing Research.	-	14 -12-2017 to 16-12-2017	International
13.	Ms. D.Dhanya	Consistency and Reliability	Vidyavardhaka College of Engineering,	-	08-09-2017 to 09-09-2017	International (ICCTCEEC 2017)

		of services in cloud computing environment	Mysuru, Karnataka.			
14.	Ms. D.Dhanya	An Efficient Retrieval of Multiple Color Images Using Visual Secret Sharing	Madras Institute of Technology Campus, Anna University, Chennai	-	16-03-2017 to 18-03-2017	International (ICSCN 2017)
15.	Ms. Austy B Evangeline	Secure and flexible offline micro payments	Christ the King Engineering College, Coimbatore	-	04.03.2017	National (NCRTSE 2017)
16.	Ms. P. Innasi Lineta	Android based Smart device directory	Christ the King Engineering College, Coimbatore	-	04.03.2017	National (NCRTSE 2017)
17.	Ms. L. T. Herlin	Retinal blood vessel Extraction Using Isodata clustering And Morphological Operations	Christ the King Engineering College, Coimbatore	-	04.03.2017	National (NCRTSE 2017)
18.	Ms. J. Janila	Location tracking in Smart Dhobi App	Christ the King Engineering College, Coimbatore	-	04.03.2017	National (NCRTSE 2017)

B. Ph.D details during the Assessment period

Table 5.7.1 (e) Faculty members who received Ph.D during the Assessment period

Sl. No	Name of the Faculty	Date	Thesis Title	University
1.	Dr. Dhanya D	14.12.2018	Optimized virtual machine selection and scheduling techniques in cloud.	Anna University
2.	Dr. Jerusalin Carol J	16.07.2018	Multimodal biometric fusion for personal authentication	Anna University

3.	Dr. Benzwartz R	29.08.2017	System Protective Design for low power mixed signal high speed devices.	Anna University

Ph.D Guided /Awarded

Table 5.7.1 (f) Details of Ph.D Guided/Awarded

Sl. No	Name of the Faculty	No. of candidates registered	No. of candidates awarded	Name of the Scholar	Status
1.	Prof. Dr. A. Lenin Fred	18	9	Ms. Jerusalin Carol. J	Completed
				Mr. S. N. Kumar	Completed
				Mr. S. Wilson	Completed
				Ms. T.R. Nisha Dayna	Completed
				Ms. C. P. Shirley	Completed
				Mr. I. Jeya Kumar	Completed
				Ms. V.N. Manju	Completed
				Ms. J. Babitha Sujana	Completed
				Ms. N. S. Priya	Completed
				Mr. Priya Vasanth	Waiting for Thesis evaluation report
				Mr. B. Baron Sam	Waiting for Thesis evaluation report
				Ms. Nisha Evangeline	Waiting for Thesis
				Ms. F. Sheeja Mary	evaluation report
				Ms. L.T. Herlin	Pursuing
				Ms. C.T. Lincy	Pursuing
				Ms. J. Janila	Pursuing
				Ms. Ashy V Daniel	Pursuing
				Ms. Brenda	Pursuing
					Pursuing
2.	Dr.Jerusalin Carol J	5	-	Ms. P. Innasi Lineta	Pursuing
				Ms. Jasmine Paul	Waiting for Thesis evaluation report
				Mr. Anish John Paul	Pursuing
				Mr. Martin	Pursuing
				Ms. Manjusha	Pursuing

Faculty pursuing Ph.D.

Table 5.7.1 (g) Details of Faculty pursuing Ph.D

Sl. No	Name of the Faculty	Ph.D. pursuing University	Year of Registration	Details of Guide	Area of Research Work
1.	Ms. L.T. Herlin	Anna University	2018	Prof. Dr. A. Lenin Fred, Mar Ephraem College of Engineering. & Technology	Wireless Sensor Networks
2.	Ms. J. Janila	Anna University	2018	Prof. Dr. A. Lenin Fred, Mar Ephraem College of Engineering. & Technology	Adhoc Networks
3.	Ms. C.T. Lincy	Anna University	2018	Prof. Dr. A. Lenin Fred, Mar Ephraem College of Engineering. & Technology	Sensors
4.	Ms. D.S. Renu	Anna University	2018	Dr. K.S.Saji V.V .College of Engineering	Image Processing
5.	Ms. P. Innasi Lineta	Anna University	2019	Dr. J. Jerusalin Carol, Mar Ephraem College of Engineering. & Technology	Image Registration
6.	Ms. Ashy V Daniel	Anna University	2019	Prof. Dr. A. Lenin Fred, Mar Ephraem College of Engineering. & Technology	Machine Learning
7.	Ms. Austy B Eangeline	Karunya Institute of Technology	2021	Dr. R. Jegan, Karunya Institute of Technology	Wireless Sensor Networks

Book Chapters

Table 5.7.1 (h) Details of Book Chapters

Sl. No	Academic Year of Publication	Name of the Faculty	Name of the Book Chapters
1.	2020-2021	Prof. Dr. A. Lenin Fred & Dr. D. Dhanya	Data Security in Cloud using RSA and GNFS Algorithms an Integrated Approach, Book Chapter-New Trends in Computational Vision and Bio-Inspired Computing, September 2020, Springer Book Chapter ISSN- 978-3-030-41862-5

2.	2019 - 2020	Prof. Dr. A. Lenin Fred	Hybrid Machine Intelligence for Medical Image Analysis, Studies in Computational Intelligence, "Segmentation of Anomalies in Abdomen CT Images by Convolution Neural Network and Classification by Fuzzy Support Vector Machine", Volume 841, Springer Book Chapter, DOI: 10.1007/978-981-13-8930-6_7
3.	2019 - 2020	Prof. Dr. A. Lenin Fred	Lossless Compression of CT Images by an Improved Prediction Scheme using Least Square Algorithm, Circuits, Systems, and Signal Processing ISSN 0278-081X Circuits Syst Signal Process, DOI 10.1007/s00034-019-01152-8, Springer Book Chapter,
4.	2018 - 2019	Prof. Dr. A. Lenin Fred	Suspicious Lesion Segmentation on Brain Mammograms and Breast MR Images using New Optimized Spatial Feature based Super-Pixel Fuzzy C-Means Clustering. Journal of Digital Image Processing Innovating Imaging Informatics, Springer Book Chapter, DOI: 10.1007/s10278-018-0149-9
5.	2018 - 2019	Prof. Dr. A. Lenin Fred	Nature Inspired Optimization Techniques for Image Processing Application, Springer Book Chapter, DOI: 10.1007/978-3-319-96002-9
6.	2017 - 2018	Prof. Dr. A. Lenin Fred	Performance Metric Evaluation of Segmentation Algorithms for Gold Standard Medical Images. Recent Findings in Intelligent Computing Techniques, pp .457-469, Springer Book Chapter, DOI: 10.1007/978-981-10-8633-5_45

5.7.1. Sponsored Research **(5)**

2020-2021 (CAY)

Sl. No	Research Title	Duration	Funding Agency	Amount
1.	Technological Intervention for preservation of tribal food processing technologies and heritage	1 year	DST	1,65,33,040
2.	Automatic Handy and Portable Nutmeg Harvesting machine	2 years	DST-AgroTech	28,12,572
				Total Amount: 1,93.45,612

2018-2019(CAYm2)

Sl. No	Research Title	Duration	Funding Agency	Amount
1.	A Proof of Concept: Design of Master Controller for Assisting the Fire Rescue team with Optimal Path Guidance in Human Detection	3 years	DRDO	15,56,496
				Total Amount: 15,56,496

2017-2018(CAYm3)

Sl. No	Research Title	Duration	Funding Agency	Amount
1.	IoT Enabled Cordial Analyzer for Farmers: A Spot Analyzer with Agile Sensing Technologies for Smart Irrigation	3 years	DST-DDP	54,47,609
				Total Amount: 54,47,609

5.7.3. Development activities (10)

A. Product development

Table 5.7.3 (a) Product Developed by the Students

Sl. No.	Student Name	Faculty Co-ordinator	Title of the Product
1.	Jijin Raj, Anandhu A, Anandhu Jeyakumar	Ms. Austy B Evangeline	MEDS – BANK (Marthandam People development Nidhi MPDN)
2.	Shiju.T.Mathew, Jijo Jannest, Ginson Roice	Mr. R. Babu	MEDS –BANK (Xavier's Nidhi)
3.	Shiju Johnson, Jerin Geroge, Sarath Kumar S, Shine John	Prof. Dr. A. Lenin Fred	A Portable Instrument for Medical Image Analyzing, Compression and Transmission Compatible for CT/MRI Low Slice thickness images

4.	Antony Jojo , Nivin Ninan Raju , Karthik Vasudevan, Jestin John	Ms. S. Shobhana	Two-Wheeler Black Box Security for Woman
5.	Bensingh Joshua, Prince F M, Arun Kumar	Ms. L. T. Herlin	Cling - Mobile App for locating tree climbers nearby
6.	Immanuvel Nesa Kuamr Anuruth V.S Syed Ali A	Ms. D. Dhanya	Customized software for the Data Management related to integration of Cryo Upper Stage(CUS-SOFT)
7.	Hitha P Thoshib, Teena P Thomas Jessin James	Ms. Shanmugha Priya	Management Information System - Wolkite University

B. Research laboratories

Table 5.7.3 (b) Research Laboratories

Sl. No	Software/Hardware	Description	Purpose
1.	Pentium I3 machines (10 numbers) –Acer Veriton	HDD: 500GB, RAM: 2GB Graphics:Intel,Processor: Intel core i3-4150 CPU@3.50GHZ OS: Windows 10,Ubuntu 18.04	Developing image processing Algorithms
2.	Pentium I5 machines (11 numbers) –Acer Veriton	HDD: 1TB, RAM: 4GB Graphics: 2GB Intel Pentium Dual core processor	Simulation of Map reduce in Cloud Computing
3.	Network Simulator 3	Event-driven simulator	Simulation applications involving Wireless sensor Networks and Adhoc networks.
4.	Python	General purpose & Object oriented programming language	Developing web based applications and IoT applications
5.	R Programming	Software environment for statistical computing	Statistical tool for research data analysis

C. Instructional Materials

Course Notes

Every faculty member prepares course wise lecture schedules, resource material and other related instruction material before commencement of semester.

PPT Slides

Content wise instruction material is developed including PPT presentations, for all the courses prior to the commencement of each semester.

Tutorial

Tutorial is provided for the students, to solve as many application level problems, so that the students can achieve our specific outcomes.

Laboratory manuals

Laboratory manuals are prepared by the faculty members and are maintained in each lab.

Self-learning materials (NPTEL)

- Expert video subject lectures delivered by the various eminent resource persons are available in the digital library and it facilitates the faculty and students to utilize E-Tutorials of NPTEL, E-Journals, etc. The following are the sample subjects and links for NPTEL video lectures.

Table 5.7.3 (c) NPTEL Courses Referred

Sl.No	NPTEL Course Name	NPTEL Link	Expert Name/ Institute	Related Courses	Referred by
1.	Computer Architecture	https://nptel.ac.in/courses/106/102/106102157/	Prof. Smruti R.Sarangi IIT Delhi	Computer Architecture	Ms. P. Innasi Lineta Ms. D. Dhanya Ms. J. Benisha Janice Ms. Ashy V Daniel
2.	Computer Organization and Architecture	https://nptel.ac.in/courses/106/106/106106166/	Prof. V. Kamakoti IIT Madras	Computer Architecture	Ms. P. Innasi Lineta Ms. D. Dhanya Ms. J. Benisha Janice
3.	Introduction to Database Systems	https://nptel.ac.in/courses/106/106/106106220/	Prof. P.Sreenivasa Kumar IIT Madras	Data Base Management System	Mr. R. Babu Ms. D.S. Renu
4.	Data Structures And Algorithms	https://nptel.ac.in/courses/106/102/106102064/	Prof. Naveen Garg IIT Delhi	Programming and Data Structure I & II	Ms. C. T. Lincy Ms. D. Dhanya Ms. D.S. Renu
5.	Digital Systems	https://nptel.ac.in/courses/106/106/106106092/	Prof. N.J. Rao IISc Bangalore	Digital Principles and	Ms. P. Innasi Lineta

				System Design	Ms. J. Jerusalin Carol
6.	Programming and Data structures (PDS)	https://nptel.ac.in/courses/106/106/106106130/	Dr. N S. Narayanaswamy IIT Madras	Programming and Data Structure I & II	Ms. C. T. Lincy Ms. D. Dhanya Ms. D.S. Renu
7.	Computer Networks and Internet Protocol	https://nptel.ac.in/courses/106/105/106105183/	Prof. Soumya Kanti Ghosh Prof. Sandip Chakrabort IIT Kharagpur	Computer Networks	Ms. L.T. Herlin Mr. Ashwin G Singerji
8.	Design and Analysis of Algorithms	https://nptel.ac.in/courses/106/106/106106131/	Prof. Madhavan Mukund IIT Madras	Design and Analysis of Algorithms	Ms. D.S. Renu
9.	Microprocessors and Microcontrollers	https://nptel.ac.in/courses/106/108/106108100/	Prof. Krishna Kumar IISc Bangalore	Microprocessors and Microcontrollers	Ms. J. Benisha Janice Ms. J. Jerusalin Carol
10.	Operating Systems	https://nptel.ac.in/courses/106/102/106102132/	Prof. Sorav Bansal IIT Delhi	Operating Systems	Ms. Austy B Evangeline Ms.J. Janila
11.	Software Engineering	https://nptel.ac.in/courses/106/105/106105182/	Prof. Rajib Mall IIT Kharagpur	Software Engineering	Ms. D. Dhanya
12.	Computer Graphics	https://nptel.ac.in/courses/106/103/106103224/	Prof. Samit Bhattacharya IIT Guwahati	Computer Graphics	Ms. L.T.Herlin Ms. J. Janila
13.	Discrete Mathematics	https://nptel.ac.in/courses/106/103/106103205/	Prof. Sajith Gopalan Prof. Benny George K IIT Guwahati	Discrete Mathematics	Ms. Johnwin Beaulah Ms. C. Salini
14.	Object-Oriented Analysis and Design	https://nptel.ac.in/courses/106/105/106105153/	Prof. ParthaPratim Das IIT Kharagpur	Object-Oriented Analysis and Design	Ms. J. Benisha Janice
15.	Theory of Computation	https://nptel.ac.in/courses/106/104/106104148/	Prof. Raghunath Tewari IIT Kanpur	Theory of Computation	Ms. D.S. Renu
16.	Artificial Intelligence	https://nptel.ac.in/courses/106/105/106105077/	Prof. Anupam Basu Prof. S. Sarkar	Artificial Intelligence	Ms. Austy B Evngeline

17.	Compiler Design	https://nptel.ac.in/courses/106/104/106104123/	Prof. Sanjeev K Aggarwal IIT Kanpur	Compiler Design	Ms. D.S. Renu Ms. C. T. Lincy
18.	Distributed Systems	https://nptel.ac.in/courses/106/106/106106168/	Dr. Rajiv Misra IIT Patna	Distributed Systems	Mr. R. Babu Ms. L.T. Herlin
19.	Mobile Computing	https://nptel.ac.in/courses/106/106/106106147/	Prof. Pushpendra Singh Prof.SridharIyer IIT Madras	Mobile Computing	Ms. J. Benisha Janice
20.	Cloud Computing	https://nptel.ac.in/courses/106/105/106105167/	Prof. Soumya Kanti Ghosh IIT Kharagpur	Cloud Computing	Ms. D. Dhanya
21.	Cryptography and Network Security	https://nptel.ac.in/courses/106/105/106105162/	Prof. Sourav Mukhopadhyay IIT Kharagpur	Cryptography and Network Security	Ms. Austy B Evngeline Ms. P. Innasi Lineta
22.	Embedded Systems Design	https://nptel.ac.in/courses/106/105/106105159/	Prof. Anupam Basu IIT Kharagpur	Embedded and Real time Systems	Ms. J. Benisha Janice
23.	Graph Theory	https://nptel.ac.in/courses/106/108/106108054/	Dr. L. Sunil Chandran IISc Bangalore/	Graph Theory	Ms. C. T. Lincy Ms. Priya Viji Ms. C. Salini
24.	Multi-Core Computer Architecture-Storage and Interconnects	https://nptel.ac.in/courses/106/103/106103183/	Prof. John Jose IIT Guwahati	Multi-Core Architectures and Programming	Ms. P. Innasi Lineta
25.	Software Project Management	https://nptel.ac.in/courses/106/105/106105218/	Prof. Rajib Mall Prof. Durga Prasad Mohapatra IIT Kharagpur	Software Project Management	Mr. Ashwin G Singerji Mr. R. Babu
26.	Wireless Ad Hoc and Sensor Networks	https://nptel.ac.in/courses/106/105/106105160/	Prof. Sudip Misra IIT Kharagpur	Adhoc and Sensor Networks	Ms. L.T. Herlin

D. Working models/charts/monograms etc

- Models and charts developed by the faculty help the students to understand the working principles and recent technologies in a better manner.

Sl.No	Details
1	Animation models to enhance the better understanding of students in their fundamental concepts
2	Power Point Presentation for effective learning

- The various technical charts are available in the laboratories to give the perception knowledge about the lab experiments, pertaining to the lab experiment.

5.7.3. Consultancy (from Industry) (5)

2020 - 2021

Project Title	Duration	Funding Agency	Amount
Banking Software for Thuckalay Nidhi	1 year	Thuckalay Nidhi	2,84,700
Hospital Management	1 year	Robin Hospital	1,15,750
			Total Amoun: 4,00,450

2019 - 20

Project Title	Duration	Funding Agency	Amount
Banking software for MPDN (add-ons)	1 year	Marthandam People development Nidhi (MPDN)	2,94,500
			Total Amount: 2,94,500

2018-19

Project Title	Duration	Funding Agency	Amount
Banking software for MPDN	1 year	Marthandam People development Nidhi (MPDN)	2,90,000.00
Banking software for Xavirt	1 year	Xavier's Nidhi	3,95,000.00
			Total Amount: 68,5000.00

5.8. Faculty Performance Appraisal and Development System (FPADS) (30)

The Institution has an effective Performance Appraisal System for the Faculty based on Teaching learning Process, Research Contribution, Professional Development and Institutional Promotion activities. Every faculty has to fill his/her Performance in a Faculty Appraisal Form at the end of every Academic year.

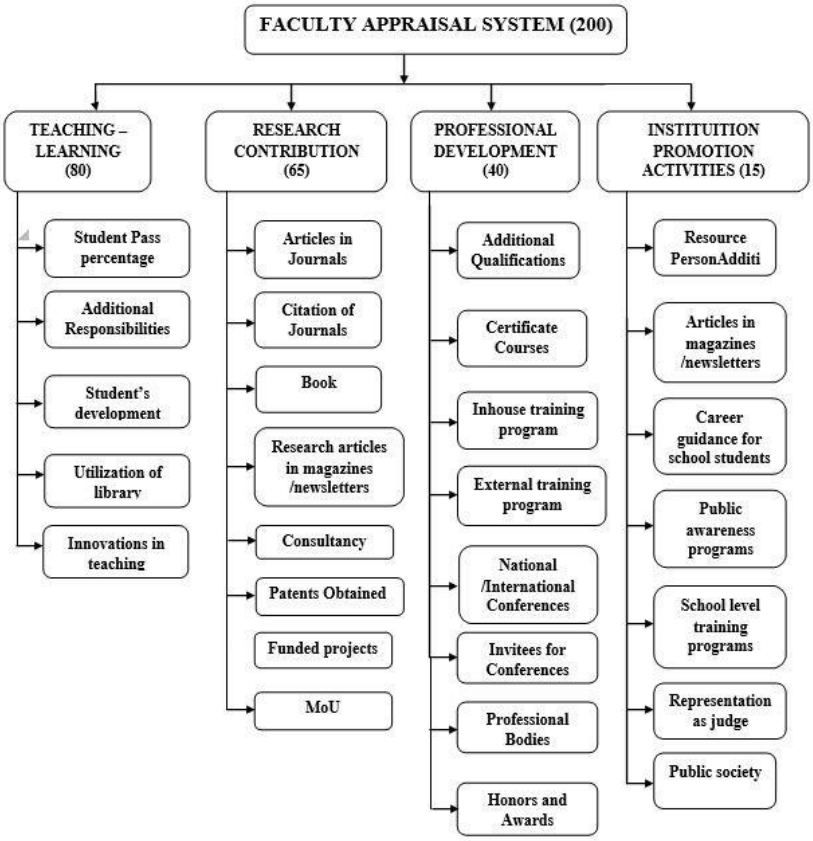


Figure 5.8 (a) Faculty Appraisal Parameters

The Process for Faculty Appraisal is Given below

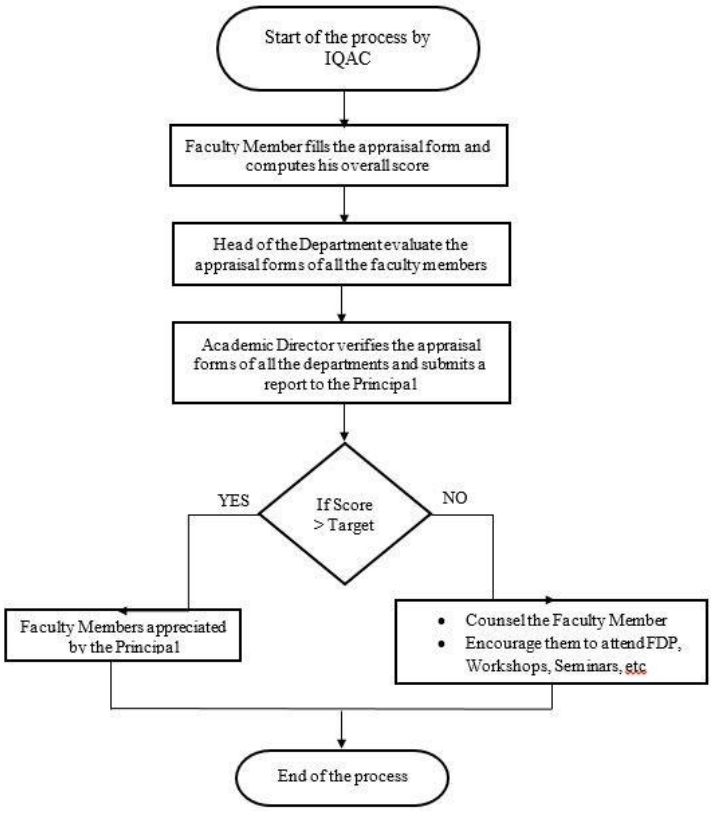
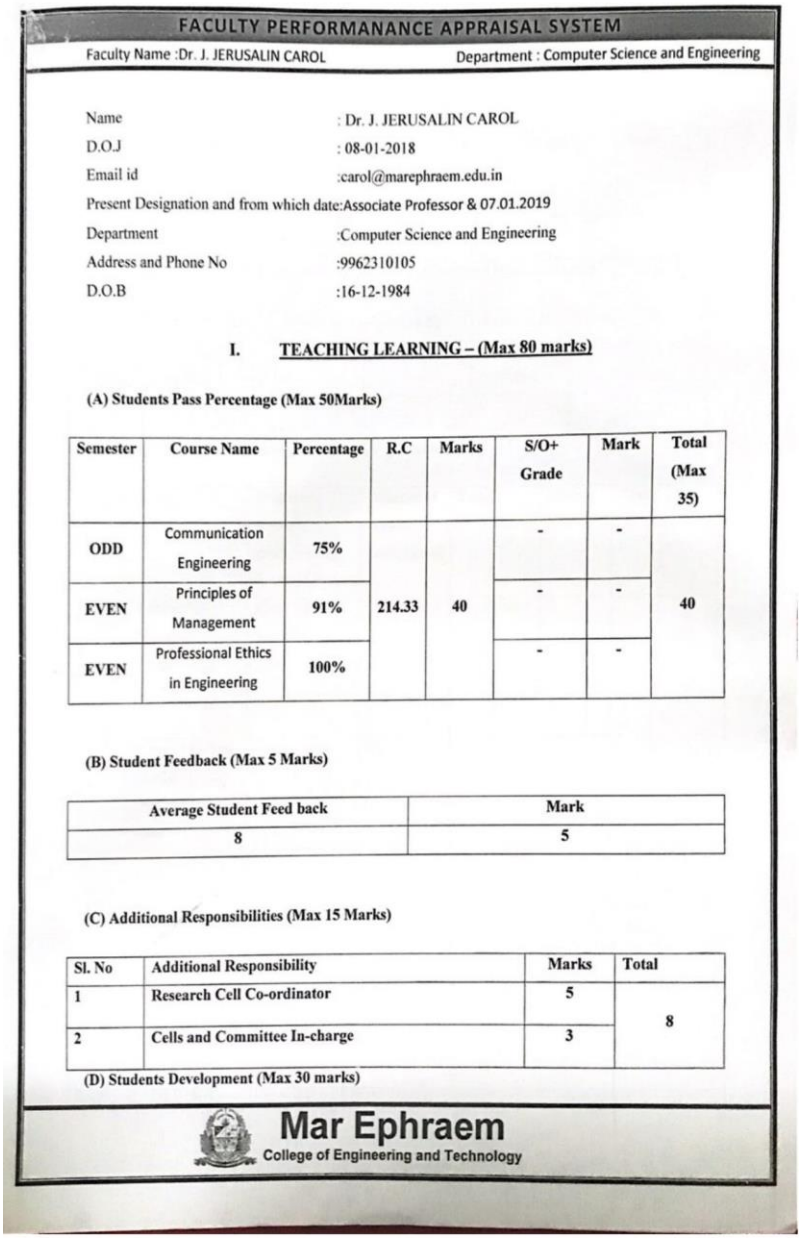


Figure 5.8 (b) Faculty Appraisal Process

Implementation and Effectiveness

- The faculty Appraisal Form is Evaluated by the Head of Department.
- The Academic Director analyze the Faculty Appraisal form for all the faculty members and submit the report to the Principal.
- The Principal approves and recommends to the management and implement the effective measures through the Head of Department. The faculty will be notified with their Performance and encourage them to come out of the weakness if any.
- The faculty members who have good score are appreciated by the management.

Sample Appraisal Form



FACULTY PERFORMANANCE APPRAISAL SYSTEM

Faculty Name :Dr. J. JERUSALIN CAROL Department : Computer Science and Engineering

Name : Dr. J. JERUSALIN CAROL
D.O.J : 08-01-2018
Email id :carol@marephraem.edu.in
Present Designation and from which date:Associate Professor & 07.01.2019
Department :Computer Science and Engineering
Address and Phone No :9962310105
D.O.B :16-12-1984

I. TEACHING LEARNING – (Max 80 marks)

(A) Students Pass Percentage (Max 50Marks)

Semester	Course Name	Percentage	R.C	Marks	S/O+ Grade	Mark	Total (Max 35)
ODD	Communication Engineering	75%	214.33	40	-	-	40
EVEN	Principles of Management	91%			-	-	
EVEN	Professional Ethics in Engineering	100%			-	-	

(B) Student Feedback (Max 5 Marks)

Average Student Feed back	Mark
8	5

(C) Additional Responsibilities (Max 15 Marks)

Sl. No	Additional Responsibility	Marks	Total
1	Research Cell Co-ordinator	5	8
2	Cells and Committee In-charge	3	

(D) Students Development (Max 30 marks)

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FACULTY PERFORMANANCE APPRAISAL SYSTEM

Faculty Name :Dr. J. JERUSALIN CAROL Department : Computer Science and Engineering

1. Contribution as guide to present paper in Conference (5 marks)

Sl.No	Name of the student	Conference	Title of the paper presentation	Marks	Total
-	-	-	-	-	--

2. Extent of participation in establishing product development labs (10 marks)

Sl.No	Name of the Lab	Established /Initiated	Funded By	Number of Students Attended	Marks	Total
-	-	-	-	-	-	-

3.Webinar / Video conferencing facility / ICT (3 Marks)

Sl.No	Topic	Webinar / Video conferencing facility / ICT	Number of students participated	Date	Marks	Total
1	Seminar on "Research Methodology"	Guest Lecture	65	15-10-2018	2	4
2	Seminar onHow to select project from the thrust areas	Guest Lecture	41	12-7-2018	2	

4. Institute Industry student linkage and relationship(5 Marks)

Sl.No	Linkage details	Industry/ Institute	Validity period	Marks	Total
-	-	-	-	-	-

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5. Contribution for Students Projects (5 Marks)

SLNo	Name of the student	Project Name	Funded By / Project Expo	Marks	Total
	-	-	-	-	-

6. Contribution for molding the student to participate in Co-Curricular events (5 Marks)

SLNo	Name of the student	Event Name	Winner / Participation	Marks	Total
	-	-	-	-	-

7. Contribution for molding the student to participate in Extra-Curricular events (5 Marks)

SLNo	Name of the student	Event Name	Winner / Participation	Marks	Total

8. Mentoring and guidance services (5 Marks)

SLNo	Number of the students	Average no. of time spent	Pass Percentage	Marks	Total
1	5	1 hr/ week	60	1	1

9. Role as Class In-charges (10 Marks)

SLNo	Class	Marks	Pass Percentage	Marks	Total
1	IICSE ,III Sem (2018-2019)	5	-	-	5
				Total	5

(D) Utilization of Library (Max 5 marks)

Sl.No	Names of Journals	Names of Magazines	Journal / Magazine Subscription	e-journal facilities	Total
1	IET	-	-	-	2
2	-	-	IEEE	-	1
Mark	-	-	-	-	3

(E) Innovations / Contributions in Teaching / other related works (Max 5 marks)

Sl.No	Subject	Marks	Total
	-		

II RESEARCH CONTRIBUTION (Maximum 65 Marks)

(A) Articles in Journals National / International (Max 10 marks)

Article Name	Index	Author	Marks	Total
"Feature level fusion using Physical biometric traits" Int. J. Biomedical Engineering and Technology, Vol. 26, No.1, 2018.	SCI	Jerusalin Carol .J, A. Lenin Fred	10	
"Compression of Images using Walsh Wavelet Transform" International Journal of Innovative Research Explorer, vol.5, Issue 5, May 2018, pg.178-185, ISSN: 2347-6060.	-	Ashy. V. Daniel, A. Lenin Fred, M. Ajitha, J. Jerusalin Carol. J	6	16

Faculty Name :Dr. J. JERUSALIN CAROL Department : Computer Science and Engineering

(B) Citation of Journals (Max 5 marks)

Article Name	Cited	Marks	Total
Feature level fusion using Physical biometric traits	2	5	5

(C) Research Articles in Newspapers / Magazines* / Newsletters, etc., (Max 5marks)

Article Name	Published In	Marks	Total
-	-	-	-

(D) Details of consultancy activities (Max 10 marks)

Area of Consultancy	Project title	Organization	Duration	Amount Received	Marks	Total
-	-	-	-	-	-	-
-	-	-	-	-	-	-

(E) Patents obtained (Product / Process / Technology transfer) (Max 5 marks)

Patent Name	Marks	Total
-	-	-

(F) Funded Projects (Max 20 Marks)

Project Name	Funded by	PI/Co-PI/Member	Marks	Total
-	-	-	-	-

(G) MOU(Active) – (Max 5 Marks)

Sl.No	Industry/ Institute	Validity period	Marks	Total
-	-	-	-	-

Faculty Name :Dr. J. JERUSALIN CAROL Department : Computer Science and Engineering

III PROFESSIONAL DEVELOPMENT (Maximum 40 Marks)

(A) Additional Qualifications acquired (Max 10 Marks)

Sl.No	Additional Qualification	University	Marks	Total
1	Ph.D	Anna University	10	10

(B) Certificate Courses/ Diploma courses (Max 5 Marks)

Sl.No	Course Name	University	Marks	Total
1	High Performance Computing for Science and Engineering	Thiagarajar College of Engineering , (Affiliated to Anna University)	2	2

(C) Details of Inhouse training program (Max 5 Marks)

Name of the training program	Date / Duration of the training program	Training Topics	Name of the Resource person	Marks	Total
Workshop on recent trends in Biomedical Instrumentation	19.03.2019 & 20.03.2019	Biomedical Instrumentation	Dr. J. Jerusalin Carol	1	1

(D) Details of External training program (Max 8 marks)

Name of the training program	Nature of the training program	Date / Duration of the training program	Training Topics	Whether the training topics discussed among the other staff & give their names	Marks	Total

(E) National /International Conferences in India and abroad (Max 8 marks):

S.No	Name of the Conference	National / International	Date / Duration	Venue	Mark	Total
1	-	-	-	-	-	-

(F) Invitations for Conferences/Seminars/Workshops/Symposia (Max 5marks)

S.No	Name of the Conference	National / International	Date / Duration	Invited as	Mark	Total
1	-	-	-	-	-	-

(G) Professional Bodies/Chapter (Max 5marks)

S.No	Name of the Professional Body/Chapter	Membership Details	Marks	Details of Program organized	Students' chapter In-charge (Yes/No)	Mark	Total
1	IEEE	Member	3	-	No	-	3

(H) Books (Max 5 marks)

Book Name	ISBN/Without ISBN	Marks	Total
-	-	-	-

(I) Honors and Awards (Max 40 marks)

S.No	Name of the Award	Internal / External Agencies	Marks	Total
	-	-	-	-

IV Institutional Promotion Level Activities (Maximum 15 Marks)

(A) Resource person for Continuing education program / Off Campus Training program

Sl.No	Name of the program	Continuing education program / Off Campus Training program	Marks	Total

		-		

Sl.No	Article Name	Newspaper/Magazine	Issue No/Date	Marks	Total
-	-	-	-	-	-

(B) Articles in Newspapers / Magazines

(C) Student development / Career Guidance for School students in Radio, TV and Social media

Sl.No	Program Name	Radio/TV/Social Media	Date	Marks	Total

(D) Public Awareness program in Radio, TV and Social media

Sl.No	Program Name	Radio/TV/Social Media	Date	Marks	Total

(E) School level Training programs

Sl.No	Program Name	School	Technical program / Career Guidance program / Expos etc	Date	Marks	Total

(F) Representation as Judge

Sl.No	Event Name and venue	Sports/Arts/Technical Events	Role	Date	Marks	Total
1						

(G) Public Society /Technical Societal Recognition

Sl.No	Recognition	Organization / Society Name	Marks	Total

How Mar Ephraem can utilize you:

I do my works allotted to me with all my effort and dedication.

FACULTY PERFORMANANCE APPRAISAL SYSTEM

Faculty Name :Dr. J. JERUSALIN CAROL Department : Computer Science and Engineering

Summary of Performance Appraisal

Teaching Learning (Max 80 Marks)	Research Contribution (Maximum 65 Marks)	Professional Development (Maximum 40 Marks)	Institutional Promotion Level Activities (Maximum15 Marks)	Total (200 Marks)
66	21	16	-	103

Submitted By
(Dr. J. JERUSALIN CAROL)

Summary of Performance Appraisal

Teaching Learning (Max 80 Marks)	Research Contribution (Maximum 65 Marks)	Professional Development (Maximum40 Marks)	Institutional Promotion Level Activities (Maximum15 Marks)	Total (200 Marks)
66	21	16	-	103

Mar Ephraem
College of Engineering and Technology

FACULTY PERFORMANANCE APPRAISAL SYSTEM

Faculty Name :Dr. J. JERUSALIN CAROL Department : Computer Science and Engineering

Remarks by HoD

Verified, Data provided are found to be Correct.

Remarks by Academic Director

Teaching & learning is good and research activities are really appreciatable. But, need more concentration in Professional development. Also initiatives are needed in Institutional Promotion activities.

Approval and Recommendation by Principal

Approved & Recommend.

HoD	Academic Director	Principal	Correspondent

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5.9 . Visiting/Adjunct/Emeritus Faculty etc. (10)

Academic Year 2019-2020

Table 5.9 (a) Visiting Faculty 2019-2020

S.No	Name of the visiting faculty	Designation	Name of the Industry	Subject / Class	Number of Hours
1	Mr. M. Saravanan	Project Manager	Concept Solutions, Technopark, Trivandrum	Python Programming	51

Academic Year 2018-2019

Table 5.9 (b) Visiting Faculty 2018-2019

S.No	Name of the visiting faculty	Designation	Name of the Industry	Subject / Class	Number of Hours
1	Mr. M. Saravanan	Project Manager	Concept Solutions, Technopark, Trivandrum	Java Programming	53
2	Mr. Franklin Edward Singh G	Network Engineer	SITA - Cochin International Airport Ltd., Cochin	Network Security	54

Academic Year 2017-2018

Table 5.9 (c) Visiting Faculty 2017-2018

S.No	Name of the visiting faculty	Designation	Name of the Industry	Subject / Class	Number of Hours
1	Mr. M. Saravanan	Project Manager	Concept Solutions, Technopark, Trivandrum	Training and Project Work	53
2.	Mr. Ahmed Kabeer H	Software Architect	Cape Start, Nagercoil	Java programming	51

CRITERION 6	FACILITIES AND TECHNICAL SUPPORT	80

6. FACILITIES AND TECHNICAL SUPPORT (80)

Adequate and well-equipped laboratories, and technical manpower (30)

Table 6.1 Details of the technical manpower support and the list of major equipment

Sl. No.	Name of the Laboratory	No. of students per setup (Batch Size)	Name of the Important equipment	Weekly utilization status (all the courses for which the lab is utilized)	Technical Manpower support		
					Name of the technical staff	Designation	Qualification
1.	Common computer Lab	1	Processor:Intel core 2 duo Speed:2.8 GHZ, HDD:250GB,RAM:2 GB UPS:5KV	21 hours/ week	Mrs.Prema	Lab Assistant	Diploma
2.	Electronics Lab	2	Digital IC Trainer Kit, Digital ICs, Digital IC Tester, HDL simulator	12hours/ week	Mr. Wilfer Lalji W. C.	Lab Assistant	B.E.
3.	Advanced Computing lab-I	1	Processor:I3 Speed: 3.30 GHz,RAM:4 GB HDD:320 GB UPS: 5 KV	12 hours/ week	Mr.A. Jose	Lab Assistant	B.Tech
4.	Advanced Computing lab-II	1	Processor:I3 Speed: 3.30GHZ, HDD :320GB RAM: 4 GB UPS 5 KV	12 hours/ week	Mr.M. Kesava Prasad.	Lab Assistant	B.Sc, PGDCA
5.	Microprocessor and microcontroller lab	2	8051 Microcontroller Kit, 8086 Microprocessor kit, Stepper motor control, Digital clock interfacing board, keyboard & display interface , Printer interface, A/D and D/A interfacing, Serial and Parallel interfacing card	12 hours/ week	Mr. Reji Raj S.	Lab Assistant	Diploma

6.	Networking Lab	1	Processor:I5 Speed: 3.7 GHZ, HDD : 1 TB, RAM: 8GB UPS 5 KV, Server	18 hours/ week	Mr. Vijin J.M	Lab Assistan t	M.Sc

Additional facilities created for improving the quality of learning experience in laboratories (25)

Table 6.2 Additional facilities created in laboratories

Sl. No.	Facility Name	Details	Reason(s) for creating facility	Areas in which students are expected to have enhanced learning	Relevanceto POs/PSOs
1.	Raspberry pi	RPi3,Off.Case,Erd5v2a,16g B,HDMI, LAN 16x2 LCD Display With Adapter Board 4x4Universal 16 Key Keypad 1ch 5v Relay Board Power Supply Board 12v 1a Adapter	To enhance student knowledge and help them to do projects using Raspberry pi.	Interfacing Raspberry pi using high level language	PO: 1,2,4,5, 10 PSO: 1,2
2.	Cup carbon	Wireless Sensor Network Simulator	To visualize and understand setting up of distributed wireless and IOT systems	Working of Wireless Sensor Networks andIOT.	PO: 1,2,4,5, 10 PSO: 1,2
3.	Wireshark	Wireshark is a network protocol analyzer	To educate in best practices for troubleshooting, securing, analyzing, and maintaining productive, efficient networking infrastructures through the use of Wire shark analysis tool.	Use Wiresharkto inspect a suspicious program's network traffic, analyze the traffic flow on the network, or troubleshoot network problems.	PO:1,3,9,12 PSO:2

4.	CloudSim	Framework for modeling and simulation of cloud computing infrastructures and services.	To improve the students skills in using the advanced technical tools for the Cloud.	Modeling, simulation, and experimentation of Cloud computing infrastructures and application services.	PO:1,3,9,12 PSO:2

Laboratories: Maintenance and overall ambiance (10)

- The Laboratories are well designed and well equipped with the latest software and are made available for students and faculties, where they are free to access the internet beyond their class hours and download any course content or access any study material.
- The college prepares a regular budget in each financial year for procurement, upgradation, deployment and maintenance of the computers and their accessories in the institution.

Maintenance:

All the labs are well equipped and maintained:

1. All the systems are checked and updated as per the requirements, before the start of every semester.
2. Lab audit is carried out during the semester vacation. This ensures that the teaching-learning process is run smoothly in all aspects throughout the semester.
3. Technical Staff are available for maintenance of Systems and software.
4. Regular cleaning and upkeep of the system is overseen by the lab in-charge.
5. Uninterrupted Power Supply is provided to all the laboratories.

Ambiance:

- Department has well-furnished State of Art laboratories which shall cater to all UG and PG courses as per curriculum requirements.
- Labs are air-conditioned with good lighting facilities
- Adequate furniture is provided in each lab.
- Labs are equipped with sufficient hardware and software to run program specific curriculum and off program curriculum.
- Each Lab is equipped with white/black board, Internet.

Project laboratory (5)

Sl.No.	Name of the Laboratory	Important Software/Hardware Provided
1	Project Lab –I	Turbo C, Java SE Development Kit, MySql, NS3, Python, R programming, Latex, Android, Scilab
2	Project Lab –II	Test Bench, Raspberry Pi Boards, Sensor Boards, Arduino Uno & Arduino Mega Boards, LoRa

- E-journal facility is available 24X7 for all students to carry research work and projects.
- High speed Internet facilities are always available to these systems.
- The systems can support advanced software which are useful in projects.

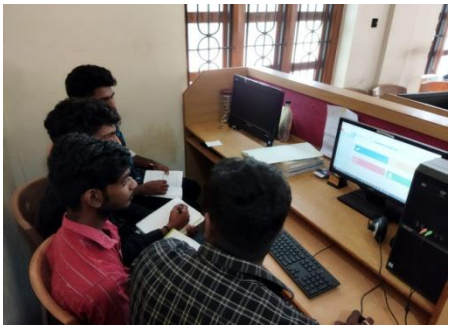


Fig 6.4(a) **Project Lab-I**

Fig 6.5 (b) **Project Lab-II**

Safety measures in laboratories **(10)**

Table 6.3. Safety measures in laboratories

Sl. No.	Name of the Laboratory	Safety measures
1.	Common Computer Lab	• Specific Safety Rules like Do's and Don'ts are displayed and instructed to all students. • First aid boxes and fire extinguishers are kept in the laboratory. • Proper earthing of all Electrical Equipment's. • CCTV installed. • Antivirus software installed. • Well trained technical supporting staff monitor the lab at all times. • Damaged systems/equipment are identified and serviced at the earliest on a regular basis.

		• Software is updated regularly.
2.	Advanced Computing lab-I	• Specific Safety Rules like Do's and Don'ts are displayed and instructed to all students. • First aid boxes and fire extinguishers are kept in the laboratory. • Proper earthing of all Electrical Equipment's. • CCTV installed. • Antivirus software installed. • Well trained technical supporting staff monitor the lab at all times. • Damaged systems/equipment are identified and serviced at the earliest on a regular basis. • Software is updated regularly.
3.	Advanced Computing lab-II	• Specific Safety Rules like Do's and Don'ts are displayed and instructed to all students. • First aid boxes and fire extinguishers are kept in the laboratory. • Proper earthing of all Electrical Equipment's. • CCTV installed. • Antivirus software installed. • Well trained technical supporting staff monitor the lab at all times. • Damaged systems/equipment are identified and serviced at the earliest on a regular basis. • Software is updated regularly.
4.	Networking Lab	• Specific Safety Rules like Do's and Don'ts are displayed and instructed to all students. • First aid boxes and fire extinguishers are kept in the laboratory. • Proper earthing of all Electrical Equipment's. • CCTV installed. • Antivirus software installed. • Well trained technical supporting staff monitor the lab at all times. • Damaged systems/equipment are identified and serviced at the earliest on a regular basis. • Software is updated regularly.

5.	Project Lab -I	• Specific Safety Rules like Do's and Don'ts are displayed and instructed to all students. • First aid boxes and fire extinguishers are kept in the laboratory. • Proper earthing of all Electrical Equipment's. • CCTV installed. • Antivirus software installed. • Well trained technical supporting staff monitor the lab at all times. • Damaged systems/equipment are identified and serviced at the earliest on a regular basis. • Software is updated regularly.
6.	Microprocessor and Microcontroller Lab	• Specific Safety Rules like Do's and Don'ts are displayed and instructed to all students. • First aid boxes and fire extinguishers are kept in the laboratory. • Proper earthing of all Electrical Equipment's. • CCTV installed. • Antivirus software installed. • Well trained technical supporting staff monitor the lab at all times. • Damaged systems/equipment are identified and serviced at the earliest on a regular basis. • Software is updated regularly.
7.	Electronics Lab	• Specific Safety Rules like Do's and Don'ts are displayed and instructed to all students. • First aid boxes and fire extinguishers are kept in the laboratory. • Proper earthing of all Electrical Equipment's. • CCTV installed. • Antivirus software installed. • Well trained technical supporting staff monitor the lab at all times. • Damaged systems/equipment are identified and serviced at the earliest on a regular basis. • Software is updated regularly.

8.	Project Lab-II	• Specific Safety Rules like Do's and Don'ts are displayed and instructed to all students. • First aid boxes and fire extinguishers are kept in the laboratory. • Proper earthing of all Electrical Equipment's. • CCTV installed. • Antivirus software installed. • Well trained technical supporting staff monitor the lab at all times. • Damaged systems/equipment are identified and serviced at the earliest on a regular basis. • Software is updated regularly.

CRITERION 7	CONTINUOUS IMPROVEMENT	50

7.1 Actions taken based on the results of evaluation of each of the POs & PSOs (20)

POs Attainment Levels and Actions for Improvement - (2019-20)

POs	Target level	Attainment level	Observations
PO1. **Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.**			
PO1	2	2.67	• The students were able to correlate the theoretical concepts from basic sciences with Computer Science and engineering applications. • Students were able to apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems through analytical problems
The following actions are taken to improve the attainment level: **Action 1:** Bridge course will be conducted at the beginning of the first semester to introduce engineering concepts. **Action 2:** To understand the application of mathematics/science in the core domain, real time examples will be included.			
PO2. **Identify, formulate, review research literature, and analyze complex engineering problems researching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.**			
PO2	2	2.35	• Target level has been attained. Students were up to the expected level of analyzing and reaching conclusions using the basic engineering concepts. • The multi-disciplinary projects enabled the students to identify, review, analyze and solve multidisciplinary engineering challenges.
The following actions are taken to improve the attainment level **Action 1:** Peer learning group will be created and students will be made to solve complex problems **Action 2:** Students will be encouraged to do mini projects that will help them to identify problems, do literature survey and problem analysis to reach a conclusion **Action 3:** Remedial classes will be given to the students to enhance their problem-solving ability**.**			
PO3. **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	2.07	The students were up to the expected level in designing solutions for complex engineering problems. The observations are • Students were exposed to industrial and societal problems through the interactive sessions with the professionals from industry

The following actions are taken to improve the attainment level.
Action 1: The students will be exposed to many design solutions by encouraging them to participate in seminars.
Action 2: The students will be encouraged to take internship for getting practical exposure.

PO4. 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	2.05	The students were not up to the expected level in using research-based knowledge and research methods to analyze, interpret and provide valid conclusions. The observations are • The students were able to publish their project work in national and international journals. • Students gained exposure in different technical aspects through the multidisciplinary projects

The following actions are taken to attain the target:

Action 1: Students will be encouraged to participate seminars related to research methodology
Action 2: Case studies in laboratory and theory courses are discussed and students are encouraged to do content beyond syllabus works in the lab and assignments

PO5. Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO5	2	2.14	Target level has been attained. Laboratory courses were conducted with the usage of modern tools wherever possible. The observations are • Students were aware of the latest technology through the seminars conducted. • Students used the possible optimization tools in their project work.

The following actions are taken to improve the attainment level
Action 1: Students will be given adequate concepts about different latest techniques like flutter, Data science and python.
Action 2: Value Added courses on latest software tools will be provided to the students.

PO6. 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	1.96	Students were not able to meet the expected level of applying reasoning to assess societal, health, safety, legal

			and cultural issues relevant to the engineering practice. The observations are • Students have not addressed the societal needs in their projects effectively • Workshops on cyber security were useful to the students. • Students' involvement in NSS and Youth Red Cross was found to be poor.
The following actions are taken to improve the attainment level **Action1:** Students will be encouraged to participate in seminars related to societal, health, safety, legal and cultural issues **Action 2:** Students are motivated to carryout projects which cater to societal needs, health monitoring, safety aspects **Action 3:** Students will be encouraged to involve in social activities through Youth Red Cross and Extension Cell.			
PO7. Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.			
PO7	2	2.1	Students were up to the expected level in understanding the impact of the professional engineering solution in societal and environmental context and the need for sustainable development. The observations are • Students were aware of the environmental impacts of technology through the seminars conducted.
The following actions are taken to improve the attainment level **Action 1:** Guest lectures will be arranged for improving the ability of students in sustainable development. **Action 2:** Seminars and workshops will be organized for creating an awareness in the environmental impacts of the technology.			
PO8. Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.			
PO8	2	2.25	The target is attained. The observations are • Students were able to be responsible through the seminar on 'Negative Impact of Lack of Ethics in Computer Profession on the Society'.
The following action is taken to attain a new target. **Action 1:** More case studies and presentations will be given to enhance ethical principles and exhibit high degree of professionalism.			
PO9. Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.			
PO9	2	2.63	The target has been attained. The students were able function effectively as an individual, and as a member or

			leader in diverse teams, and in multidisciplinary environment. The observations are • Students performed well in the roles assigned in symposium ,cultural, inter college, sports and other events
The following activities are incorporated to improve the attainment level. **Action 1:** Students are encouraged to participate in the paper presentation, poster designing and other co-curricular and extracurricular activities.			
PO10. 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	2.35	The target is attained. The students were able to meet the expected level in effective communication, effective reports writing, documentation, and in making effective presentations. The observations are • Students showed more interest to participate in paper presentations and conferences.
The following actions are taken to attain a new target. **Action 1:** Soft-skill training will be given to the students by experts. **Action 2:** Training will be provided to students to enhance the skills in the area of technical report writing and presentation. **Action 3:** Seminar hours will be conducted to improve the communication and presentation skills.			
PO11. 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	2.31	The target is achieved. Students were up to the expected level in applying engineering and management principles to manage projects. The following actions are taken to strengthen the attainment. • Students carried out multidisciplinary projects in different domains.
Action 1: Students are encouraged to organize various technical and cultural events. **Action 2:** Students are encouraged to involve in IEDC projects and the Tamil Nadu State Level Student Project Scheme.			
PO12. 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	2.54	The target is achieved. The students will have to engage in lifelong learning in the context of technological change. The observations are • Students gained exposure to new technologies in computer science through various research articles and technical magazines. • Students participated effectively in professional bodies

The following actions are taken to improve the target.

Action1: Library hours will be properly utilized by monitoring the students to ensure the effective use of journals, Magazines, Reference Books, NPTEL videos and internet facilities to browse and update the latest technological developments and current happenings in the industries and society.
Action 2: Value added courses will be conducted to equip themselves to enhance their knowledge in the context of technological change

PSOs Attainment Levels and Actions for Improvement- (2019-20)

PSOs	Target level	Attainment Level	Observations/Gap
PSO1: Apply engineering fundamentals to provide creative solutions to the problems in software domain			
PSO1	2	2.52	Target is achieved. The observations are • Students completed the training on MySQL and python programming.
The following actions are taken to improve the target **Action 1:** Students will be motivated to apply creative solutions to problems addressed in their project.			
PSO2: Develop professional skills for real-time operation and maintenance of computer hardware & networking			
PSO2	2	2.03	Target is achieved. The observations are • Students were trained in the area of robotics and computer networking through the hands-on sessions conducted.
The following actions are taken to attain a higher target. **Action 1:** Students will be motivated to carry out more hardware-oriented projects.			

7.2.Academic Audit and actions taken thereof during the period of Assessment (10)

Audit process:

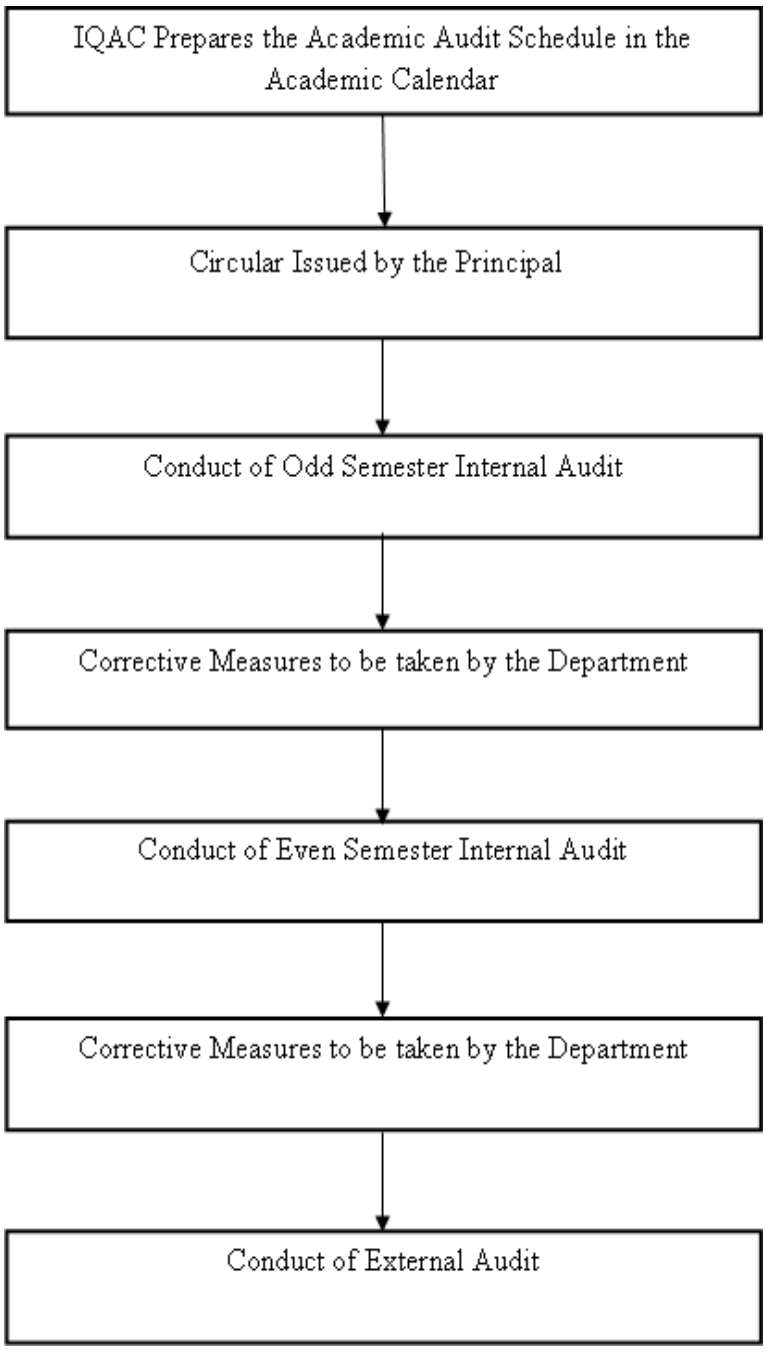


Figure 7. 2 (a) Academic Audit Process

Audit - Committee Members:

Table 7.2 (a) Internal Audit Members

S.NO	NAME	DESIGNATION	DEPARTMENT
1.	Mr. I. Jackson Thanga Roy	Assistant Professor	Mechanical Engineering
2.	Mr. G. L. Abishek	Assistant Professor	Civil Engineering
3	Mr. Aldous Huxley J. R	Assistant Professor	Electrical and Electronics Engineering

Table 7.2 (b) External Audit Member

S.NO	NAME	DESIGNATION	DEPARTMENT	INSTITUTION
1.	Dr. K. SasiKalaRani M.E.,Ph.D	Professor and Head	Computer Science and Engineering	Sri Krishna College of Engineering and Technology, Coimbatore

Audit Frequency:

- Two internal audits per year (one per semester)
- One external audit per year

Audit sheet:

Mar Ephraem

College of Engineering and Technology

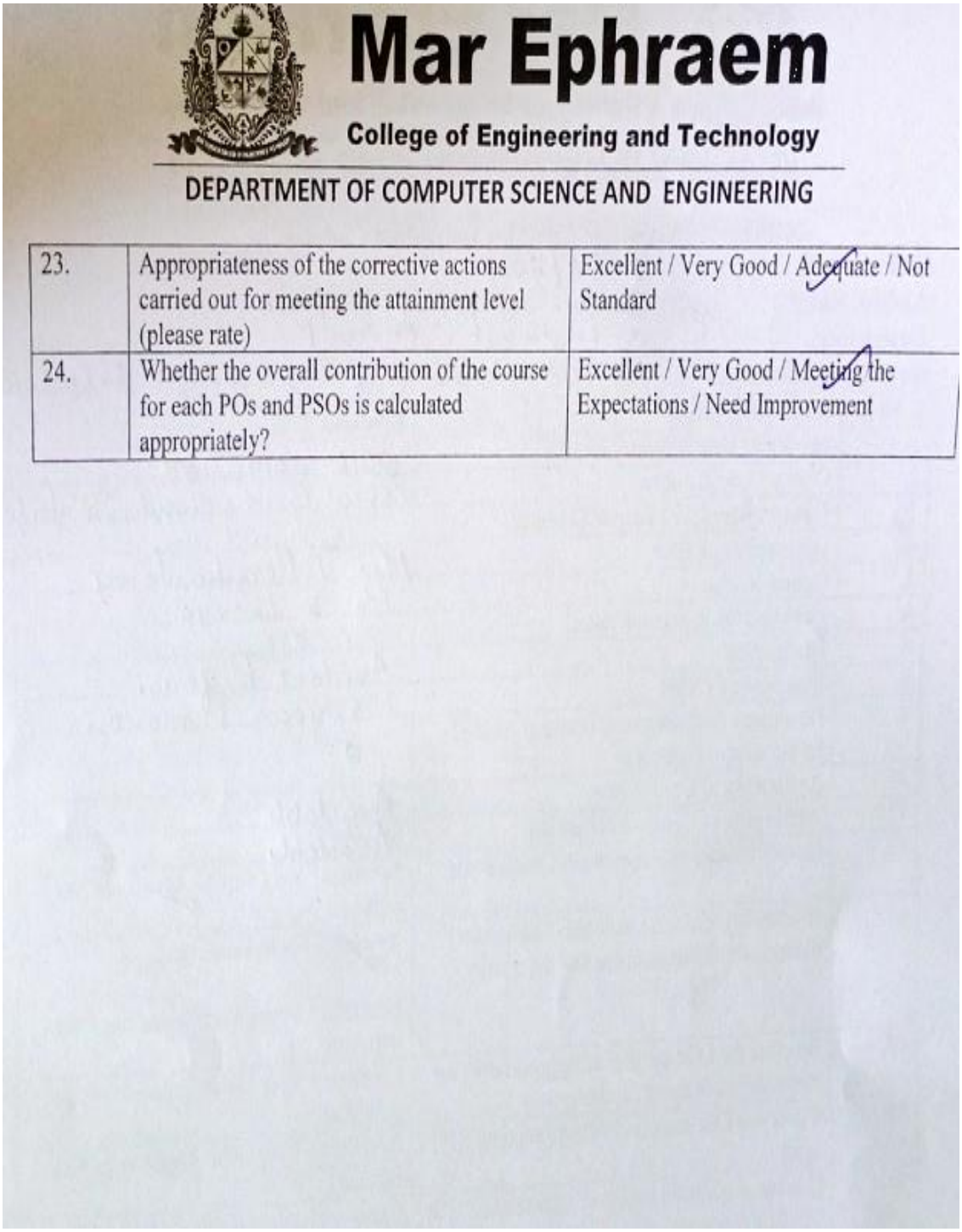
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Academic Audit for Individual Courses

Date of Audit : 04/12/2018
Auditor Name : Jackson Thonga Roy, AP/Mech
Designation : G. L. Abishek, AP/Civil
Department/Institution : Mar Ephraem College of Engineering & Technology

S.No	Audit Description	Remarks
1.	Academic Year & Semester	2018-2019, ODD
2.	Course Code & Name	CS6703 Grid & Cloud Computing
3.	Course offered for (Year & Semester)	IV ODD
4.	Course Co-ordinator	Mrs. J. Benisha Jancy
5.	Course In-charge	Ms. D. Dhanya
6.	Qualification & Specialization	M.E CSE
7.	Designation	Assistant Professor.
8.	Experience (Y&M)	5 years 5 months
9.	How many times the same course is handled by the faculty members?	2
10.	Availability of Lecture Plan	Available
11.	Availability of Course Information	Available.
12.	Quality of Internal Assessment Components	Excellent / Very Good / Adequate / Not Standard
13.	Availability of course materials / Laboratory manuals for audited course and the quality	**Available / Not Available** Excellent / Very Good / Adequate / Not Standard
14.	Whether the COs are framed appropriately for measurable outcomes? (please rate)	Excellent / Very Good / Adequate / Not Standard
15.	Quality of C0s mapping with appropriate RBT level	Excellent / Very Good / Adequate / Not Standard
16.	Quality of question papers of CIA tests (1, 2 & Model Examination)	Excellent / Very Good / Adequate / Not Standard
17.	Quality of questions for assessment components	Excellent / Very Good / Adequate / Not Standard
18.	Quality of COs mapping with POs and PSOs	Excellent / Very Good / Adequate / Not Standard
19.	Whether attainment level of COs is justified?	Fully Justified / Partially Justified / Not Justified
20.	Whether attainment level of COs is calculated appropriately?	Properly Calculated / Calculated but need improvement / Not Calculated
21.	Target level and final attainment for each C0s (in %)	CO1: Target(3 %) Attained (2.32) CO2: Target(2 %) Attained (2.34) CO3: Target(2 %) Attained (3 %) CO4: Target(2 %) Attained (2.32) CO5: Target(2 %) Attained (2.38) CO6: Target(2 %) Attained (2.32) ....
22.	Whether the loop is closed by incorporating appropriate correction action? If yes, please specify the corrective actions carried out by the course in charge	—

Figure 7. 2 (b) Sample audit sheet for individual courses



Mar Ephraem

College of Engineering and Technology

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

23.	Appropriateness of the corrective actions carried out for meeting the attainment level (please rate)	Excellent / Very Good / Adequate / Not Standard
24.	Whether the overall contribution of the course for each POs and PSOs is calculated appropriately?	Excellent / Very Good / Meeting the Expectations / Need Improvement

Figure 7. 2 (c) Sample audit sheet for individual courses

Mar Ephraem

College of Engineering and Technology

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Internal Academic Audit - Action Plan

SL No	Activity	Date	Report (Y/N)	Responsible Person	Signature	Remarks
1.	Career guidance program on Awareness in Industrial requirements	30.01.2019	Y	Mrs. D. Dhanya		–
2.	Training on how to identify research articles and preparation of project cases	07.02.2019	Y	Mrs. D. S. Renu		–
3.	MySQL performance tuning	23.02.2019	Y	Mr. R. Babu		–
4.	General seminar on "Organic farming"	25.2.2019	Y	Mrs. S. Shobhana		–
5.	Workshop on Robotics	26.2.2019	Y	Mrs. Benisha Janice		–
6.	Guest lecture on "Process Synchronization"	5.3.2019	Y	Mrs. Austy B Evangeline		–
7.	Workshop on Python Programming	16.3.2019	Y	Mrs. L.T Herlin		–

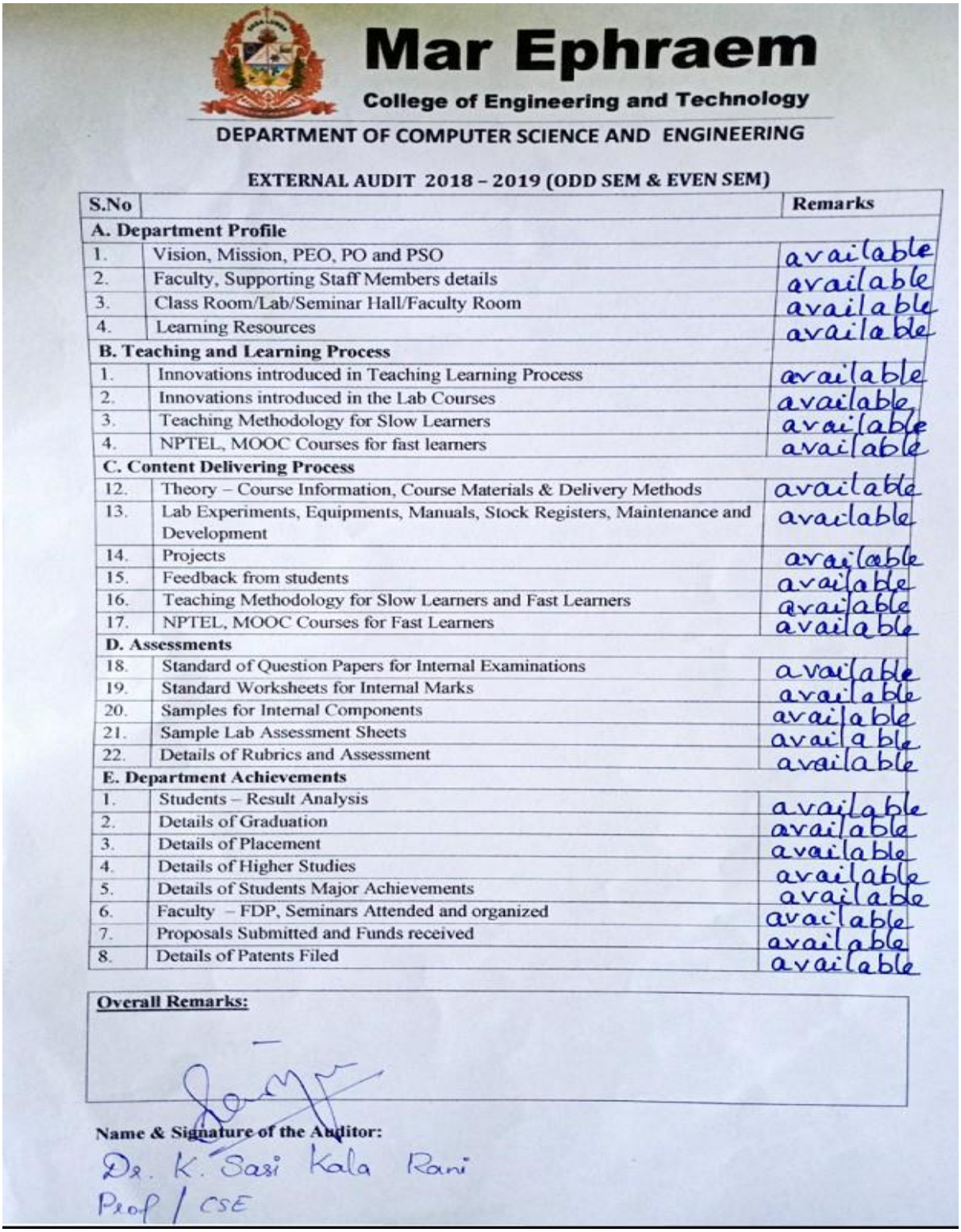
Name & Signature of the HOD (Concerned department)

Dr. D. DHANYA

Names and Signatures of the verifying Internal Auditors

1. I. JACKSON THANGA ROY
2. Gr. L. Abishek

Figure 7. 2 (d) Sample internal audit sheet of action plan



Mar Ephraem

College of Engineering and Technology

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

EXTERNAL AUDIT 2018 – 2019 (ODD SEM & EVEN SEM)

S.No		Remarks
A. Department Profile		
1.	Vision, Mission, PEO, PO and PSO	available
2.	Faculty, Supporting Staff Members details	available
3.	Class Room/Lab/Seminar Hall/Faculty Room	available
4.	Learning Resources	available
B. Teaching and Learning Process		
1.	Innovations introduced in Teaching Learning Process	available
2.	Innovations introduced in the Lab Courses	available
3.	Teaching Methodology for Slow Learners	available
4.	NPTEL, MOOC Courses for fast learners	available
C. Content Delivering Process		
12.	Theory – Course Information, Course Materials & Delivery Methods	available
13.	Lab Experiments, Equipments, Manuals, Stock Registers, Maintenance and Development	available
14.	Projects	available
15.	Feedback from students	available
16.	Teaching Methodology for Slow Learners and Fast Learners	available
17.	NPTEL, MOOC Courses for Fast Learners	available
D. Assessments		
18.	Standard of Question Papers for Internal Examinations	available
19.	Standard Worksheets for Internal Marks	available
20.	Samples for Internal Components	available
21.	Sample Lab Assessment Sheets	available
22.	Details of Rubrics and Assessment	available
E. Department Achievements		
1.	Students – Result Analysis	available
2.	Details of Graduation	available
3.	Details of Placement	available
4.	Details of Higher Studies	available
5.	Details of Students Major Achievements	available
6.	Faculty – FDP, Seminars Attended and organized	available
7.	Proposals Submitted and Funds received	available
8.	Details of Patents Filed	available

Overall Remarks:

—

Name & Signature of the Auditor:

Dr. K. Sasi Kala Rani

Prof / CSE

Figure 7. 2 (e) Sample external audit sheet

7.3 Improvement in Placement, Higher Studies and Entrepreneurship (10)

Table 7.3 (a) Improvement in Placement, Higher Studies and Entrepreneurship

Item	2016-2020	2015-2019	2014-2018
Total no. of final year students	47	43	45
Total Placement	25	23	23
Total placed in Core Company	16	18	13
Pay Package	1,44,000-4,01,986 per annum	1,52,500-3,60,000 per annum	1,35,000-3,60,000 per annum
No. of students admitted to higher studies with valid qualifying scores(GATE or equivalent State or National Level Test GRE etc	3	Nil	6
No. of students turned entrepreneurs in engineering	Nil	Nil	Nil

7.4. Improvement in the quality of students admitted to the program (10)

Table 7.4 (a) Improvement in the quality of students

Item		2020-21	2019-20	2018-19
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 Examination/ Others State Level	No of students admitted	59	52	55
	Opening Score/Rank	73	82	83
	Closing Score/Rank	41	42	46
Name of the Entrance Examination for Lateral Entry or lateral entry details State Level	No of students admitted	5	1	1
	Opening Score/Rank	80	86	85
	Closing Score/Rank	43	86	85
Average CBSE/Any other board result of admitted students (Physics/Chemistry & Maths)		57	58	63

CRITERION 8	FIRST YEAR ACADEMICS	50

8.1. First Year Student-Faculty Ratio (FYSFR) (5)

Faculty Name	Pan Number	Qualification	Date receiving highest degree			Specialization	Designation	Date of joining	Teaching Load (%)			Date of Leaving	Nature of Association
			Date	Month	Year				CAY	CAYm1	CAYm2		
Dr. Anila Rose M R	AEQPA2105Q	Ph.D	16	July	2014	English	Professor	10.10.2018	100	100	50	10-05-2021	Regular
Dr.C. Nirmala Kumari	ADBPK1852A	Ph.D	16	August	2015	Mathematics	Professor	1.03.2021	0	0	0		
Mrs. Jebapriya	AQHPJ6253B	M.Sc., M.Phil,Ph.D	13	June	2007	Chemistry	Asst.Professor	14.09.2009	100	100	100		Regular
Dr. Seema A	DIQPS6213G	M.Sc., M.Phil., Ph.D	17	February	2020	Chemistry	Asst.Professor	15-09-2009	100	100	100		Regular
Mrs. Simmi T	DHWPS0231M	M.Sc., M.Phil	14	January	2008	Chemistry	Asst.prof	10.10.2010	100	100	100		Regular
Ms. Johnsy Sugitha	BCJPJ2519P	M.Sc., M.Phil	20	July	2009	Chemistry	Asst.Professor	05.01.2015	100	100	100		Regular
Ms. Shijula Lindry	CXMPS8725B	M.Sc.Mphil,	16	July	2007	chemistry	Asst.professor	12-01-2017	100	100	100	10-05-2021	Regular
Mr. Anish Kumar S	HFJPS7984N	M.Sc., M.Phil.	10	November	2014	Physics	Asst.Prof	01-03-2019	100	100	0		Regular
Ms. E. Petdami	CWWPP3081Q	M.Sc., M.Phil.	13	October	2008	Physics	Asst.Professor	23.09.2011	100	100	100		Regular
Mrs. Bindhu L.R	BCXPB9886R	M.Sc;Mphil	10	December	2007	Mathematics	Asst.Professor	14-09-2009	100	100	100		Regular
Mrs. Asha Beulah B.P	BGRPA1152M	M.Sc., M.Phil	20	July	2009	Mathematics	Assistant Professor	19-07-2010	100	100	100		Regular
Ms. Priya Viji	BFHPP128	M.Sc.,	14	July	200	Mathemati	Assistant	12-01-	100	100	100		Regular

T	9P	M.Phil			3	cs	Professor	2017					
Ms. R. Roselin Suhi	BWEPR3815H	M.Sc., M.Phil	3	January	2011	Mathematics	Assistant Professor	29-06-2011	100	100	100		Regular
Ms. F. Giftlin	BSIPG3124L	M.Sc., M.Phil	16	August	2010	Mathematics	Assistant Professor	06-02-2012	100	100	100		Regular
Ms. Johnwin Beaula N.E	AZSPJ7082Q	M.Sc., M.Phil	15	November	2010	Mathematics	Asst.Professor	23- 07 - 2013	100	100	100		Regular
Ms. Fathima Mary	ABNPF4482F	M.Sc.M.Phil	18	July	2005	mathematics	Asst.Professor	02-07-2016	100	100	100		Regular
Ms. Salini	CPTPS4517L	M.sc,M.phill	9	September	2014	MATHEMATICS	AP	08-01-2018	100	100	100		Regular
Mrs. Sukku Joshi	AQHPJ8008L	M.A.Mphil	11	september	1978	English	AP	14-09-2009	0	100	100	08-12-2020	Regular
Mr. Vinod R.S	CADPR8168R	MA., M.Phil.	15	July	2009	English	Asst.Professor	11-03-2013	100	100	100		Regular
Ms. Anuja Malar Y	BRLPA4009E	MA., M.Phil.	8	July	2013	English	Asst.Professor	23-07-2013	100	100	100		Regular
Ms. Shanmugha Priya R. K.	CEGPS0763G	M.E.	14	APRIL	2013	CSE	Asst.Professor	16.06.2016	100	100	100		Regular
Dr. Melba Kani	FBIPM7449K	P.hd.	31	August	2016	HRM Marketing	Asso.Professor	03.07.2014	100	100	100		Regular
Ms. Shobhana S	GHMPS1027Q	M.E.	10	APRIL	2013	CSE	Asst.Professor	01-07-2014	100	100	100		Regular
Ms. Ayana A	CREPA0865L	M.E.	16	JUNE	2014	DATA MINING	Asst.Professor	05.04.2016	100	100	100		Regular
Mr. Jino Singh	AYKPJ2688R	M.E	16	April	2014	CSE	AP	04-07-2016	100	100	100		Regular
Ms. N.R. Sherly	FUNPS0501L	M.Sc., M.Phil	19	November	2014	Matematics	Asst	04.04.2016	100	100	100		Regular
Ms. Jelin Jangray J.S	AZIPJ1311N	M.A., M.Phil	25	November	2015	English	Asst.Professor	02.04.2016	100	100	100		Regular
Mr. Ajay Kumar H	AYVPA6299E	M.E.	22	April	2015	Applied Electronics	Assistant Professor	06.04.2016	100	100	100		Regular
Ms. Juliet Rose D B	FBCPB9565D	M.E	16	JUNE	2015	VLSI DESIGN	Assistant Professor	30.11.2016	100	100	100		Regular
Ms. Analin Remena	EEMPD2000H	M.E	23	JUNE	2015	VLSI DESIGN	Assistant Professor	06.02.2017	100	100	100		Regular

Abhiram M Nair	BHGPN4141R	M.E	14	JUNE	2017	Manufacturing	Assistant Professor	7.3.2018	100	100	100		Regular
Justin Vijay	BGWPJ3593G	M.E	14	JULY	2017	Manufacturing	Assistant Professor	7.3.2018	100	100	100		Regular
Bensha Davi C	APIPB7935G	M.A, M.Phil	14	Nov	2014	Physics	Assistant Professor	5.3.2020	100	0	0		Regular
Nixala Jacob	AZAPN0091P	M.Sc, Mphil	16	December	2016	English	Assistant Professor	5.3.2020	100	0	0		Regular
Mrs. Mary Prabha D	BCNPM8461R	M.Sc., M.Phil	11	June	2008	Physics	Asst.Professor	10.08.2010	0	0	100	07-08-2019	Regular
Dr. Praveena G L	CPRPP9851C	Ph.D	7	February	2018	Physics	Asst.Professor	01-03-2017	0	0	100	18-06-2019	Regular

Table 8.1 Data for first year courses to calculate the FYSFR:

Year	Number of students (approved intake strength)	Number of faculty members considering fractional load)	FYSFR	*Assessment = (5 ×20)/ FYSFR (Limited to Max. 5)
2018-2019 (CAYm2)	480	32	15	5
2019-2020 (CAYm1)	480	31	15.48	5
2020-2021 (CAY)	420	32	13.23	5
Average	460	31.67	15	5

8.2. Qualification of Faculty Teaching First Year Common Courses (5)

Table 8.2 Assessment of faculty qualification for first year

Year	X	Y	RF	Assessment of Faculty qualification (5x+ 3y)/RF
2018-2019	3	29	32	3.18
2019-2020	2	29	32	3.03
2020-2021	3	29	28	3.64
Average				3.287

Average assessment: 3.287

8.3 First Year Academic Performance (10)

Table 8.3 Data for first year academic performance

Academic Performance	2020-2021	2019-2020	2018-2019
Mean of CGPA or mean percentage of all successful students(X)	8.07	6.66	7.55
Total Number of successful students(Y)	60	52	55
Total Number of students appeared in the examination(Z)	60	52	*55*
Academic Performance AP=X*(Y/Z) CSE	8.07	6.66	*7.55*

Average API[(AP1+AP2+AP3)/3] :7.55
Assessment [1.5 * Average API] : 11.06

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)

List of Assessment Tools

- **Direct Assessment Methods**
    - Continuous Internal Assessment(CIA)
    - Semester End Examination(SEE)
    - Assignments
- **Indirect Assessment Methods**
    - Course Exit survey

CO Assessment Process

The CO assessment processes followed in Mar Ephraem college of Engineering and Technology is given in fig 8.1

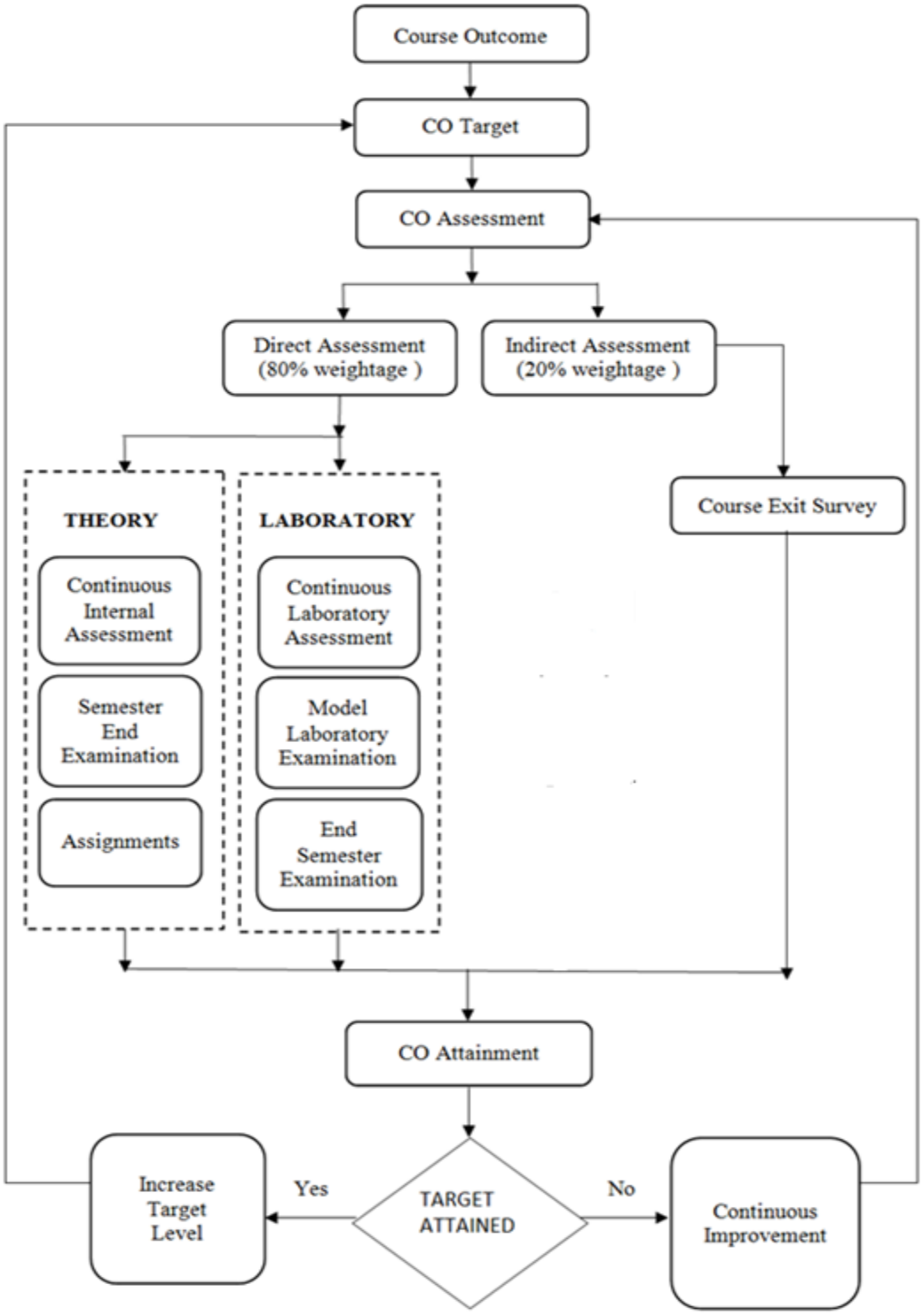


Figure 8.4.1 (a) CO Assessment Process

CO Assessment Methodology and Tools

Table. 8.4.1 (a) CO Assessment Methodology and Tools

Assessing Year	Assessment methods		Assessment tools	Time interval	Responsible person
2019 - 2020	Direct Assessment (80%)				
	Theory courses	Continuous Internal Assessment	Examination	Thrice in a semester	Faculty
		Semester End Examination	Examination	Once in a semester	University
		Assignments	Rubrics	Thrice in a semester	Faculty
	Lab Courses	Continuous Laboratory Assessment	Regular Lab work assessment	Once in a week	Faculty
		Model Laboratory Examination	Examination	Once in a semester	Faculty
		Semester End Examination	Examination	Once in a semester	Faculty
	Indirect Assessment (20%)				
	Course Exit Survey	Survey	CO based	Once in a semester	Faculty

The Quality /Relevance of Assessment Processes & Tools Used

Table 8.4.1 (b) Quality /Relevance of assessment process

Assessment Tool	Description/Relevance	Evaluated By
DIRECT ASSESSMENT		
Continuous Internal Assessment (CIA)	● Continuous Internal Assessments a metric to continuously assess the attainment of course outcomes, student's learning domains and thus improve the teaching –learning process. ● The questions in Continuous Assessment Examination (CAE) and Model Examination	Course faculty

	(ME) are mapped against COs of respective courses. ● The questions are framed in such a way that it should satisfy Bloom's Taxonomy, wherein each question is mapped to the appropriate course outcome of the respective course, which is evaluated based on the set attainment levels by the department. ● Question Paper scrutiny committee of the department ensures the quality of question papers and coverage of COs. ● The Question Paper scrutiny committee can either accept or reject or recommend for modification of the framed question paper to ensure the quality of internal question papers. ● Two Continuous Assessment Examinations and One Model Examination will be conducted for each Course. • **CAE – I :***50 marks (CO1 & CO2)* • **CAE – II:** 50 marks (CO3 & CO4) • **ME:** 100 marks (CO1, CO2, CO3, CO4,CO5,C06) ● Students secured less than 50% of marks in CAE 1and having more than 3 arrears in the past University Examinations will be considered as weak students and given remedial classes using simple and smart study material.	
Semester End Examination (SEE)	● The Semester End Examination is of 3-hour duration which covers the entire Syllabus of the course.	University Evaluators

	● It would generally satisfy all course outcomes for the respective courses.	
Assignments	● Assignments are given to students to provide practice exposure and knowledge enhancement of the course by the faculty members concerned. ● Three assignments will be given during the course optionally based on the student's performance analysis for the course by the concerned faculty and evaluated on the basis of rubrics.	Course faculty
Laboratory Assessment	● Lab courses provide hands-on experience with course concepts and an opportunity to explore the technologies used in the domain. ● Continuous Lab Assessment is based on the lab assessment rubrics which include ability of the students to conduct the prescribed practical work, interpret the result and conclusion, Record Preparation and Submission. ● Laboratory model examination is conducted similar to the university Practical Examination to assess whether the course outcomes are attained	Course Faculty
University Practical Examination	● The university practical examinations are of 3-hours. The evaluation is done by the External Examiner appointed by the university. ● University Practical Examination assessment is to assess whether the lab course outcomes are attained.	University Evaluators
INDIRECT ASSESSMENT		
Course exit survey	On completion of every semester, feedback is Obtained from the students to assess the learning	Course Faculty

	outcomes of the course.	

Attainment of Course Outcome

CO Attainment Calculation:

- In the CO attainment calculation for a course, 80% weightage is given to direct assessment and 20% weightage is given to Indirect assessment.

Table 8.4.1 (c) Weightage for CO Attainment calculation

Assessment type	Percentage
Direct Assessment 1 and 2	80
Indirect assessment (Course Exit Survey)	20

- 60% of the direct assessment is contributed by Semester End Examination and 40% from Continuous Internal Assessment (CIA) for theory courses.
- The 40% contribution from CIA includes Continuous Assessment Examination I Continuous Assessment Examination II, Model Examination and Assignments
- Assignments will be provided optionally based on the student's performance analysis for the course by the concerned faculty.

Table 8.4.1 (d) Weightage distribution of Direct Assessment for CO Attainment calculation

Assessment type	Weightage Percentage
Direct Assessment 1 (CAE1, CAE 2, ME & Assignments)	40
Direct Assessment 2 (University Examination)	60

- For Lab courses, 60% of the direct assessment is contributed by Semester End Examination (SEE) and 40% by continuous assessment process.
- The 40% contribution in lab courses by continuous assessment process include continues assessment of every experiment based on rubrics and model lab examination.
- The percentage of students in the class who scored more than threshold percentage of marks in the respective CO is the attainment.

- The threshold percentage of marks is fixed based on considering the university results for the past 3 years + 5%.
- Indirect Assessment of CO attainment is based on Course Exit Survey.

Direct Attainment

Table 8.4.1 (e) Direct Attainment Calculation

Direct Attainment = No of students scored more than threshold percentage of marks x 100
Total no of students

Direct Attainment Levels:

Level 1: If less than 50% of students attained the threshold percentage of marks

Level 2: If 50% to 60% of students attained the threshold percentage of marks

Level 3: If more than 60% of students attained the threshold percentage of marks

Indirect Attainment (Course Exit Survey)

Table 8.4.1 (f) Indirect Attainment Calculation

$$Attainment = \frac{\sum_{i=1}^{5} i * no.of\ students\ gave\ i\ option}{5 * no.of\ responses}$$

8.4.2. Record the attainment of Course Outcomes of all first-year courses

Academic Year (2019-2020)

Course Code	Course Name	CO		CO Attainment																	
				CO1			CO2			CO3			CO4			CO5			CO6		
		Target (%)	Level	Direct Method	Indirect Method	Overall	Direct Method	Indirect Method	Overall	Direct Method	Indirect Method	Overall	Direct Method	Indirect Method	Overall	Direct Method	Indirect Method	Overall	Direct Method	Indirect Method	Overall
C101	Communicative English-1	60 %	2	3	3	3	2.6	3	2.68	2.6	3	2.68	2.6	3	2.68	3	3	3	2.6	3	2.68
C102	Mathematics – I	60 %	2	2.4	3	2.52	2.4	3	2.52	2.4	3	2.52	2.4	3	2.52	2.4	3	2.52	2.4	3	2.52
C103	Engineering Physics	60 %	2	2.4	3	2.52	2.4	3	2.52	2.4	3	2.52	2.4	3	2.52	2	3	2.2	2.4	3	2.52
C104	Engineering Chemistry	60 %	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C105	Problem solving and Python programming	60 %	2	2.4	3	2.52	2.4	3	2.52	2.4	3	2.52	2.4	3	2.52	2.4	3	2.52	2.4	3	2.52
C106	Engineering Graphics	60 %	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C107	Problem solving and Python programming laboratory	60 %	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

C108	Physics and Chemistry Laboratory -I	60 %	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C109	Technical English – II	60 %	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C110	Mathematics – II	60 %	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C111	Material Science	60 %	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C112	Basic Electric, Electronics Instrumentation Engineering	60 %	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C113	Environmental Science and Engineering	60 %	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C114	Engineering Mechanics	60 %	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C115	Engineering Practices Laboratory	60 %	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C116	Basic Electric, Electronics Instrumentation Engineering Laboratory	60 %	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C117	Physics for Civil	60 %	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

	Engineering																				
C118	Basic Electrical and Instrumentation Engineering	60 %	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C119	Computer Aided Drawing Lab	60 %	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C120	Physics for Information Science	60 %	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C121	Basic Electrical, Electronics and Measurement Engineering	60 %	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C122	Programming in C	60 %	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C123	C Programming Laboratory	60 %	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C124	Physics for Electronics Engineering	60 %	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C125	Circuit Analysis	60 %	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C126	Electronic	60	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

	devices	%																			
C127	Circuit and Devices Laboratory	60 %	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C128	Basic Civil and Mechanical Engineering	60 %	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C129	Circuit theory	60 %	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C130	Electric circuits laboratory	60 %	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

8.5. Attainment of Program Outcomes from first year courses

8.5.1. Indicate results of evaluation of each relevant PO and/or PSO, if applicable

POs Attainment

Course code	Course	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C101	HS8151	Communicative English English-1	0	0	0	0	0	0	0	0	0	2.62	0	0
C102	MA8151 Engineering Mathematics-I	Mathematics – I	2.52	1.68	0.84	0	0	0	0	0	0	0	0	0
C103	PH8151	Engineering Physics	2.05	1.5	0	0	0	0	0	0	0	0	0	0
C104	CY8151	Engineering Chemistry	2	1.83	1.67	1.33	0	0	0	0	0	0	0	0
C105	GE8151	Problem solving and Python programming	2.24	1.82	1.12	2.19	0	0	0	0	0	0	0	0
C106	GE8152	Engineering Graphics	2.53	1.64	0.89	0	0	0	0	0	0	1.99	0	0
C107	GE8161	Problem solving and Python programming laboratory	3	2.2	1.4	0	2.08	0	0	0	0	0	0	0
C108	BS8161	Physics and Chemistry Laboratory -I	2.8	1.8	1.33	0	0	0	0	0	0	0	0	0
C109	HS8251	Technical English – II	0	0	0	0	0	0	0	0	0	2.41	0	0
C110	MA8251 Engineering Mathematics-II	Mathematics – II	3	2	1	0	0	0	0	0	0	0	0	0
C111	PH8251	Material Science	2.95	2.3	2.75	0	0	0	0	0	0	0	0	0
C112	BE8253	Basic Electric, Electronic Instrumentation Engineering	2.36	2.4	2.8	2.05	1.97	0	0	0	0	0	0	0
C113	GE8291	Environmental Science and Engineering	2.46	2.4	1.57	1.93	0	0	1.8	0	0	0	0	0
C114	GE8292	Engineering Mechanics	3	2.5	1.9	0	0	0	0	0	0	0	0	0
C115	GE8261	Engineering Practice Laboratory	2.2	0	0	0	0	0	0	0	2	0	0	0

C116	BE8261	Basic Electric, Electronic Instrumentation Engineering Laboratory	3	2	1	2.01	0	0	0	0	1	0	0	0
C117	PH8201	Physics for Civil Engineering	2.7	1.72	0	0	0	0	0	0	0	0	0	0
C118	BE8254	Basic Electronics and Electrical Engineering	2.5	1.67	0	0	0	0	0	0	0	0	0	0
C119	CE 8211	Computer Aided Drawing Lab	2	0	0	0	1.85	0	0	0	0	0	0	0
C120	PH8252	Physics for Information Science	2	2	0	0	0	0	0	0	0	0	0	0
C121	BE8255	Baisic Electrical, Electronics and Measurement Engineering	3	2	1.75	2	0	0	0	0	0	0	0	0
C122	CS8251	Programming in C	2.67	2.17	2.76	2.01	0	0	0	0	0	0	0	0
C123	CS8261	Programming in C Lab	3	1.9	1.6	2.1	1.97	1.5	1.7555	0	1.9333	1	0	0
C124	PH8253	Physics for Electronic Engineering	1.68	2	0	0	0	0	0	0	0	0	0	0
C125	EC8251	Circuit Analysis	3	2.17	1.17	2.05	0	0	0	0	0	0	0	0
C126	EC8252	Electronic devices	2.3	2	1.8	2	0	0	0	0	0	0	0	0
C127	EC8261	Circuit and Devices Lab	3	3	1.674	2	0	0	0	0	0	0	0	0
C128	BE8252	Basic Civil and Mechanical Engineering	2.8333	2.3	2.7	0	0	0	0	0	0	0	0	0
C129	EE8251	Circuit theory	3	2.2	1.4	2	0	0	0	0	0	0	0	0
C130	EE8261	Electric circuit lab	3	1.92	2.8	2.16	2.07	0	1	0	2	1	0	0
Average			2.60	2.04	1.71	1.99	1.99	1.50	1.52	0.000	1.73	1.80	0.00	0.00

PO Attainment Level

Course	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO 11	PO 12
Direct Attainment	2.60	2.04	1.71	1.99	1.99	1.50	1.52	0.00	1.73	1.80	0.00	0.00
CO Attainment	2.60	2.04	1.71	1.99	1.99	1.50	1.52	0.00	1.73	1.80	0.00	0.00

8.5.2. Actions taken based on the results of evaluation of relevant POs (5)

POs & PSOs Attainment Levels and Actions for improvement – CAY (2019-2020)

POs	Target level	Attainment level	Observations
PO1: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.			
PO1	2	2.60	Students are up to the expected level to apply their basic mathematics, science and Engineering knowledge in various Mechanical Engineering courses. The Observations are • Students were able to solve basic engineering problems using basic science and mathematics principles through the experiments given.
The above actions are continued.			
PO2: Identify, formulate, review research literature, and analyze complex engineering problems researching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.			
PO2	2.00	2.04	Students were not up to the expected level to analyze and develop solutions to complex Engineering problems. The Observations are • Students were not able to effectively analyze the complex problems in some courses through the tutorials given.
The above actions are continued, in order to achieve the target the following action is taken **Action 1:** Seminar on analysis of engineering problems are conducted.			
PO3: 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			

<table>
<tr><td colspan="4">safety, and the cultural, societal, and environmental considerations.</td></tr>
<tr><td>PO3</td><td>2</td><td>1.71</td><td>Designing, implementation and evaluation skills of students with realistic constraints are not up to the expected level. The Observations are
Students were not able to design effectively solutions for complex engineering problems through the workshop given.</td></tr>
<tr><td colspan="4">The above actions are continued, in order to achieve the target the following action is taken
Action 1: Seminar given on e-waste management is given.</td></tr>
<tr><td colspan="4">PO4: 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.</td></tr>
<tr><td>PO4</td><td>2</td><td>1.99</td><td>Students are able use their research-based knowledge to analyze societal challenges and to provide valuable conclusions. The observations are
The interpretation and analysis software introduced in the lab classes was useful.
The idea scouting competitions conducted for students were useful.</td></tr>
<tr><td colspan="4">The above actions are continued, in order to achieve target the following action is taken
Action 1: Workshop on data analysis using excel is to be conducted</td></tr>
<tr><td colspan="4">PO5: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.</td></tr>
<tr><td>PO5</td><td>2.00</td><td>1.99</td><td>Students are up to the expected level to use modern tools and techniques. The Observations are
Workshops on software tools for engineers are conducted by experts are useful.
The appreciable involvement in learning modern tools.</td></tr>
<tr><td colspan="4">The above actions are continued, in order to achieve the enhanced target, the following actions are taken
Action 1: Seminar on limitations of software tools in Engineering Applications is to be conducted.</td></tr>
<tr><td colspan="4">PO6: 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.</td></tr>
</table>

PO6	2	1.5	Students are not up to the expected level by gaining knowledge on societal, health, safety, legal and cultural issues. The Observations are • Special technical session arranged.by resource persons from industry was not up to the level.
The above actions are continued, in order to achieve the enhanced target, the following action is taken **Action 1:** Seminars on social responsibilities of engineers is to be conducted.			
PO7: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.			
PO7	2	1.52	Students are not up to the expected level to understand that the current technological development and its impact on sustainability. The Observations are • Seminars conducted on conservation of environment are not up to the level.
The above actions are continued, in order to achieve the enhanced target, the following action is taken **Action 1:** Students are exposed to the working principles of the biogas plant.			
PO8: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.			
PO8	-	-	
-			
PO9: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.			
PO9	2	1.73	Students are not up to the expected level to perform effectively as an individual and also as a member of a team in order to have a good career and to participate in societal events. The Observations are • Project discussions conducted was not up to the level.
The above actions are continued, in order to achieve the enhanced target the following action is taken **Action 1:** Students are encouraged to work in teams for project expo.			

<table>
<tr><td colspan="4">PO10: 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.</td></tr>
<tr><td>PO10</td><td>2</td><td>1.804</td><td>• Group discussions conducted are not up to level.</td></tr>
<tr><td colspan="4">The above actions are continued, in order to achieve the enhanced target the following action is taken
Action 1: Seminar hours are included in the timetable.</td></tr>
<tr><td colspan="4">PO11: 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.</td></tr>
<tr><td>PO11</td><td>2</td><td>-</td><td>-</td></tr>
<tr><td colspan="4">-</td></tr>
<tr><td colspan="4">PO12: 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.</td></tr>
<tr><td>PO12</td><td>2</td><td>-</td><td>-</td></tr>
<tr><td colspan="4">-</td></tr>
</table>

CRITERION 9	STUDENT SUPPORT SYSTEMS	50

9.1 Mentoring system to help at individual level (5)

A. Details of the mentoring system that has been developed for the students for various purpose and also state the efficacy of such system

Mentoring is provided for total development of the students. Faculty members will be the tutors and mentors for the students, who will help them to overcome their academic and personal difficulties. A balanced and effective mentoring is in place, maintaining a healthy relationship between faculty members and students. Around 18 students are assigned to a mentor. Mentoring is planned based on the concept "**Know about Mentee"** which emphasizes the following aspects:

- Students will be provided with an opportunity to disclose themselves
- Mentor well asses the mentee individually
- Behavioral study will be made by the mentor
- Desirable characteristics of the mentee are highly appreciated.
- Negatives were pointed out in a better way individually without hurting his ego
- Make him responsible for all his behavior.
- Maintain mentor-mentee cordial relationship.

After knowing the mentee, mentoring is planned by the mentor for the following aspects:

- Improve Academic performance.
- Develop a Research Orientation
- Guidance for Professional Career, Higher Studies & Skill Development
- Resolve Personal Issues: Behavioral; psychological
- Encourage Spirit of Innovation by motivating and training students to participate in Contests, Conferences, Projects and Internships
- Motivate to pursue Extra-curricular and Social activities
- Encourage students to participate in Cultural activities, Arts and Sports.
- Develop Personality and Character
- Foster Good Values, Healthy living and Discipline

Table 9.1 (a) Types of Mentoring System

Sl. No.	Types of mentoring system	Functions
1	**Professional Guidance**	**Skill Enhancement for better employability** • Students are encouraged to enroll themselves as members of various professional bodies and also to attend various inter-institute, state, national and international competitions to increase their exposure to the current professional practices in the engineering sector. **Nurturing innovative Ideas:** • The college also offers an incubation hub in IEDC for the startups, where they can set up a startup company with their idea.
2	**Academic Guidance**	**Academic Counseling** • Identify students with low attendance and ensure that they improve their attendance. **Support to the poor performers** • Remedial classes are conducted for each subject after the CAE1&2 for weak students.
3	**Career Advancement**	**Training programs:** ▪ Students are encouraged to attend specialized training programs through career guidance cell to enhance their career opportunities. **Training & Placement Cell guidance:** ▪ Students are directed to attend specialized training by experts from different area prior to their placement.
4	**Laboratory Specific**	**Experiment support:** ▪ Mentor in consultation with faculty; arrange extra classes in laboratories for weak students.
5	**Holistic Development**	**Holistic Development of the student** • Encourage and support students towards all round development through participation in literary, cultural and sports activities.

Table 9.1 (b) Summary of mentoring system developed

Parameters	Description
Type of mentoring system	Professional guidance / career advancement / course work specific / laboratory specific / total development /personal Development
Number of faculty Mentors	80
Average number of students per mentor/	18
Frequency of meeting	Thrice in a semester, *in some cases, as and when needed*
Professional Counselor	One dedicated counselor for the college.

B. Efficacy of mentoring/counseling system:

The mentoring/counseling system developed by the college has proved to be effective as defined by different parameters:

- Students, who were at the risk of dropout, have been saved by the mentoring and counseling system, in the last three years.
- Slow learners at the entry level are elevated to moderate and fast learners by the continuous monitoring of the mentors.
- Participation of students in technical and non-technical events are improved by the motivation of mentors

Table 9.1 (c) Efficiency of mentoring

Sl. No.	Types of mentoring system	Number of beneficiaries			
		2016-17	2017-18	2018-19	2019-20
1	Professional Guidance	312	340	404	366
2	Academic Guidance	131	196	203	232
3	Career Advancement	54	65	74	13
4	Laboratory Specific	24	21	16	15
5	Holistic Development	63	102	112	102

9.2 Feedback analysis and reward / corrective measures taken, if any (10)

A. Methodology of feedback process

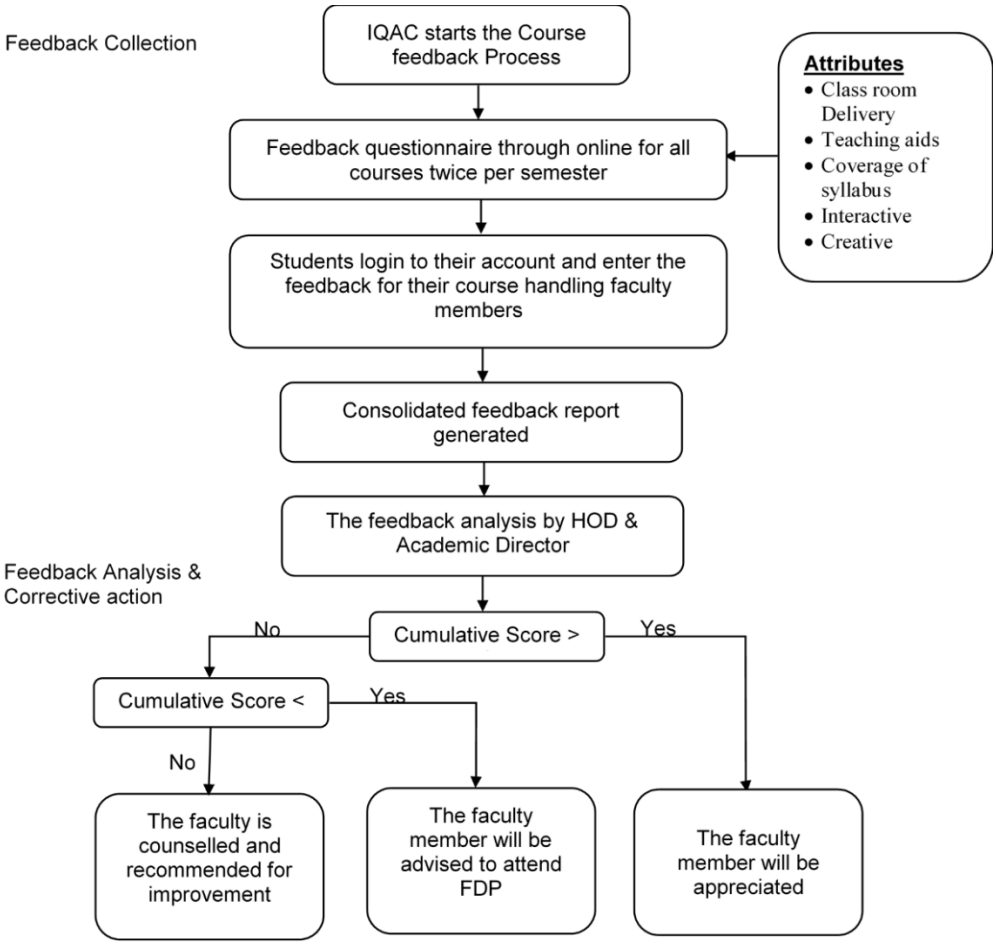


Fig.9.2 (a) Flowchart representing course feedback process

Feedback collected for all courses (Yes/No)	Yes
Average Percentage of students participating	90%

Feedback Collection Process

- A feedback questionnaire is prepared by IQAC. The students give feedback for their subject handling faculty members through online mode.
- The frequency of feedback is twice per semester (After CAE I & CAE II).
- The feedback is based on an average scale of 10 for the attributes like classroom delivery, teaching aids, coverage of syllabus, Interactive and creative.

- After the recommendations of IQAC, threshold value will be finalized. The normal value setup at present is 10- Excellent, 8- Very Good, 6-Good, 5- Satisfactory, 3- Below average.
- The consolidated feedback is generated by the Head of the Department and submitted to IQAC.
- A consolidated department report is forwarded to Academic Director.

Feedback Analysis Process

- The report is analyzed by the Academic Director along with the HOD.
- The faculty members who score 9 & 10 are appreciated.
- The faculty members will be counseled for the feedback attributes for which their feedback value is from 6 to 8. An opportunity is given to these teachers to rectify their weakness if any.
- The faculty members who score less than 6 are advised to attend FDP and incorporate other corrective measures.
- All the consolidated feedback after being analyzed by the Academic Director and HoD, the corrective measures are proposed by the HoD and approved by the Academic Director.
- The report will be forwarded to the Principal for his kind perusal.
- The feedback analysis will have an impact on their performance appraisal and promotions.

B. Record of the corrective measures taken

Based on report, the areas where the teacher is good is appreciated. The areas in which a teacher needs improvement and attention is informed and proper counseling is given to overcome the deficiency and to improve his/her performance. The faculties lacking in specific area are addressed and directed to attend faculty development programs in order to improve their skill set in teaching methodology.

Course Feedback Report - CSE - IT6011 - Knowledge Management

Name of the Course Instructor	: Austy.B.Evangeline	Course Code/title	: IT6011 / Knowledge Management
Name of the Department	: CSE	Programme	: UG
Year	: Fourth Year	Academic Year	: 2018 - 2019
Semester	: Eighth Semester	Section	: A
Total Students	: 43	Total Students Participated	: 42
Students % (Participated)	: 97.67 %	Feedback	: Feedback - I

SlNo	Parameters	Score 10 Max
1	Availability of faculty 2 minutes prior to the commencement of each class	9.19
2	Audibility of faculty's Voice and Teachers control over class	8.76
3	Capability of communicating in English	8.95
4	Initiatives takes for slow learners through remedial classes and advanced learners through training of competitive examination/ placement questions.	8.6
5	Coverage of syllabus and additional contents within given time.	8.88
6	Providing inspiration and positive energy to students	8.45
7	Applicability/relevance to real life situations and integration of content with other courses.	8.9
8	Reference of other books, journals, magazines and NPTEL videos in class.	8.67
9	Clarifying doubts inside and outside classroom.	8.62
10	Ability to use digital technology devices in classroom.	8.57
11	Involving students during lecture through interactions.	8.88
12	Addition of relevant topics required for Incustries (Content Beycnd Syllabus) and sharing current technologies and updates in class.	8.93
13	Ability to design quiz/test/mini project/assignments/self learning content /industrial visits to evaluate students understanding.	8.88
	Average Marks	8.79

Corrective action planned

1. Instructed to use more PPT's & Other digital Technology
2.
3.

Approved By

Date 24/8/19 Proposed by : HOD Academic Director

Verification of Corrective action

1. Verified PPT usage in Classroom
2.
3.

Verified By

Date 5/9/19 HOD

Fig.9.2 (b) Sample course feedback report

Course Feedback Consolidated Report - CSE - Fourth Year -

Department : CSE Programme : UG
Year : Fourth Year Academic Year : 2018 - 2019

Sl.No.	Name	Section	Course	Feedback	Marks
1	Ashwin G	A	Software Project Management	Feedback - I	8.07
2	L T HERLIN	A	Professional Ethics in Engineering	Feedback - II	8.33
3	P.Innasi Lineta	A	Multi Core Architectures and Programming	Feedback - II	8.34
4	P.Innasi Lineta	A	Multi Core Architectures and Programming	Feedback - I	8.38
5	Austy.B.Evangeline	A	Knowledge Management	Feedback - II	8.47
6	L T HERLIN	A	Professional Ethics in Engineering	Feedback - I	8.58
7	Ashwin G	A	Software Project Management	Feedback - II	8.67
8	RENU D. S.	A	Project Work	Feedback - I	8.73
9	RENU D. S.	A	Project Work	Feedback - II	8.78
10	Austy.B.Evangeline	A	Knowledge Management	Feedback - I	8.79

Director's Comment

Faculties in the list from 9-34 are appreciated and maintain the score continuously.

Fig.9.3 Sample consolidated feedback report

Other modes of feedback system

- Feedback discussion in the class committee meeting, which comprises of Chairperson, course instructors and students of different categories in the class. Students are invited to express their view on courses and other grievances to improve teaching learning process.
- Oral feedback obtained from students by mentors, course instructors, HoDs, Academic Director, Head of the Institution and management are given due importance.
- Feedback from alumni is collected during the alumni meet conducted every year.
- Feedback reports from parents are collected during Parent Teacher
- Feedback collected from suggestion box are given due importance

9.3 Feedback on facilities (5)

A standard procedure for feedback on facilities is taken up in the department. Feedback is collected from the students on the facilities available in the college such as class room infrastructure, canteen, library, sports, medical facility, etc. The feedback is analyzed and the necessary corrective measures are implemented after discussions with the management.

Following is the process of feedback on facilities.

1) Feedback collection process
2) Feedback analysis
3) Corrective measures

1. Feedback collection process:

Table 9.3 (a) Details of feedback collection process

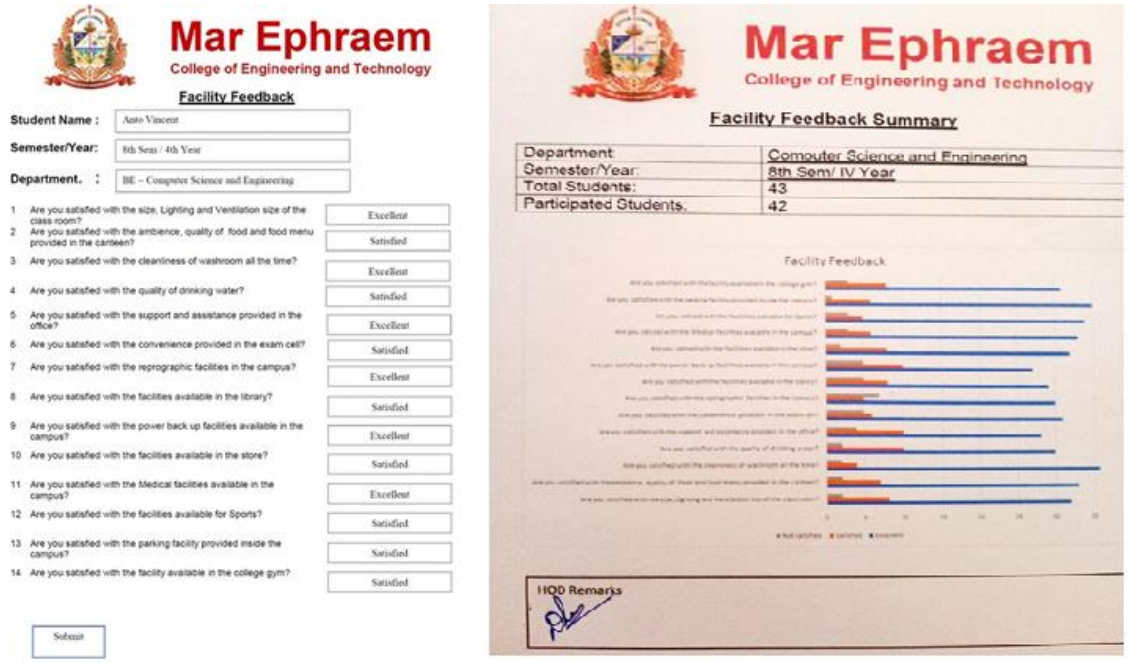
Items	Description
Feedback collected on all facilities provided by the college.	YES
Feedback collection process	Online
Feedback receiver	Head of the Department
Frequency of feedback collection	Once in an academic year
Metrics used for calculation	Excellent Satisfied Not Satisfied

2. Feedback analysis

The feedback given by the students is generated by the HoD and consolidated by the IQAC. The consolidated report is handed over to the Principal. The Principal discuss about the consolidated report with the management and come out with necessary actions.

3. Corrective Measures

Based on the feedback from students the old water filter has been replaced by a new water filter. Canteen has been renovated with more space, seating facility and updated food menu. Parking area has been extended Sports facility has been improved. Equipment's have been purchased for gym.



Mar Ephraem
College of Engineering and Technology

Facility Feedback

Student Name : Anto Vincent
Semester/Year: 8th Sem / 4th Year
Department. : BE – Computer Science and Engineering

1	Are you satisfied with the size, Lighting and Ventilation size of the class room?	Excellent
2	Are you satisfied with the ambience, quality of food and food menu provided in the canteen?	Satisfied
3	Are you satisfied with the cleanliness of washroom all the time?	Excellent
4	Are you satisfied with the quality of drinking water?	Satisfied
5	Are you satisfied with the support and assistance provided in the office?	Excellent
6	Are you satisfied with the convenience provided in the exam cell?	Satisfied
7	Are you satisfied with the reprographic facilities in the campus?	Excellent
8	Are you satisfied with the facilities available in the library?	Satisfied
9	Are you satisfied with the power back up facilities available in the campus?	Excellent
10	Are you satisfied with the facilities available in the store?	Satisfied
11	Are you satisfied with the Medical facilities available in the campus?	Excellent
12	Are you satisfied with the facilities available for Sports?	Satisfied
13	Are you satisfied with the parking facility provided inside the campus?	Satisfied
14	Are you satisfied with the facility available in the college gym?	Satisfied

Submit

Mar Ephraem
College of Engineering and Technology

Facility Feedback Summary

Department:	Computer Science and Engineering
Semester/Year:	8th Sem/ IV Year
Total Students:	43
Participated Students:	42

Facility Feedback

HOD Remarks

Fig.9.3 Sample feedback on Facilities

9.4 Self-Learning (5)

The academic system in the Institution facilitates students to learn beyond the syllabus and curriculum. Our institution offers courses like project-based laboratory, industry field training, project work, value added course, technical presentation etc. The components of self-learning are evaluated in these areas.

A. Scope for Self-Learning:

Self-learning makes the students highly motivated, persistent, independent, self-disciplined, self-confident, goal oriented. They gain practical knowledge and update the recent technology development to do their innovative project work by doing a state of art literature survey. The Institution provides many self-learning facilities like digital library, technical magazines, E books, NPTEL, Wi-Fi connectivity etc.

- Students are encouraged to attend seminars and workshops to learn about recent trends and Technologies.
- Students are encouraged to exhibit their talents by participating in paper presentation and other technical events conducted by various reputed Institutions.
- During projects, students are encouraged to identify problems based on literature review which develop their self-learning capabilities.

- Students are encouraged to take MOOC courses from platforms such as NPTEL.

B. The Institution needs to specify the facilities; materials for learning beyond syllabus, Webinars, Podcast, MOOC s etc. and demonstrate its effective utilization

Table 9.4 (a) Detailed list of self-learning facilities

Sl. No.	Self-Learning Process	Description
1	Central Library	• The college library provides information and ideas that are fundamental to functioning successfully in today's information and knowledge-based society. • College library equips students with learning skills and develop the knowledge. • The library is equipped with sufficient journals and reference books
2	Digital Library	• Availability of NPTEL videos • Sufficient systems with multimedia facilities. • Institutional membership of DELNET, a library networking database. • Internet facility
3	Department Library	• The department is facilitated with books and different sample project report models
4	Web based learning	• The internet is an open information system in which various sources of information, media and materials such as texts, images, video sequences can be linked together in diverse ways to form so-called self-learning environment. • The college is equipped with centralized Wi-Fi system. so that the students can access internet by registering the laptop or mobile by registering to the network administrator • Internet offers new possibilities to structure, represent, adopt and integrate various learning content and materials. • E-material links are provided in the website for easy access to students

Utilization and its effectiveness:

Table 9.4 (b) Library Utilization Report for the Academic year 2019-2020

Reading (Regular/Library Hour)

Sl. No.	Description	Library Hour Per Week Per Student (9 AM to 4 PM)	Beneficiary	No. of Beneficiaries	Beneficiaries in %
1.	Text Book	2	Students and Staff	1052	76
2.	Reference Book	2	Students and Staff	391	28
3.	Journals (Printed Version)	2	Students and Staff	943	68
4.	E-Journals	2	Students and Staff	57	4
5.	Magazines and Newspapers	1	Students and Staff	1057	77
6.	Competitive Exam Books	2	Students and Staff	110	8
7.	GATE Books	2	Students and Staff	126	9
8.	NPTEL Videos	2	Students and Staff	97	7
9.	Question Bank	1	Students and Staff	70	5
10.	DELNET Database	1	Students and Staff	57	4

Reading (Evening Hour)

Sl. No.	Description	Utilization Hours Per day (4 PM to 7 PM)	Beneficiary	No. of Beneficiaries	Beneficiaries in %
1.	Text Book	2	Students	235	42
2.	Reference Book	2	Students	52	9
3.	Journals (Printed Version)	2	Students and Staff	50	9

4.	E-Journals	2	Students and Staff	18	3
5.	Magazines and Newspapers	3	Students	287	52
6.	Competitive Exam Books	2	Students	35	6
7.	GATE Books	2	Students	15	2
8.	NPTEL Videos	1	Students and Staff	18	3
9.	Question Bank	1	Students	13	2
10.	DELNET Database	1	Students	18	3

9.5 Career guidance, Training, Placement (10)

A. Availability of career guidance facilities:

The **Career Guidance Cell** aims at providing the best opportunities enabling every student to realize his/her dream. This team is committed to the task of securing final placements and summer internships for every student on campus. It helps the students as mentioned below:

- Trainings and counseling were provided for the students to acquire knowledge and skills necessary to make lifelong career decisions.
- Provides latest information on training & employment opportunities, bringing students and potential employers together and arranging for placement
- To conduct Seminar, Special lectures on Career Guidance and for pursuing higher studies.
- To get placed in national and multinational companies through ON/OFF campus recruitment.
- Alumni are made to engage the students to teach various skills.

Various types and levels of placement training programs are organized like

- Group Discussions,
- Mock Interviews,
- Personality Development,
- Resume Preparation,
- Model Campus Interview Tests,
- Training for Communication,
- Training for Group Works,
- Awareness about Competitive Exams,
- Leadership Qualities,
- Team Effectiveness
- Sharing of Experience by Eminent Personalities and

- Aptitude Test

B. Counseling for higher studies

Awareness on higher studies in India and abroad is provided by eminent personalities through seminars.

Training programs and workshops are given to students regarding CAT, MAT, TANCET, GATE, IELTS and TOEFL

C. Pre placement Training

- Aptitude Development training sessions are conducted for all program by experts.
- Soft skills for all students are conducted by the seasoned trainers experienced in corporate orientation.
- Technical and domain related sessions are conducted for all the students by subject experts from industries.

Table 9.5 (a) Detailed list of pre placement trainings

Sl. No.	Type of Training	Trainer/Company
1.	Company Specific Training	Mr. D. Vignesh
2.	Training on Staad Pro	CADD centre team
3.	Pre placement Training	SMEC team
4.	Workshop on CNC	Internal Trainers
5.	Training on CATIA	CADD Centre Team

D. Placement process and support for students

The students are provided with necessary support to attain placement.

- The database of the students on their academic performance is collected.
- Placement Officer orients the students on placement opportunities and preparations required for placements.
- The companies are invited for placement by the placement Cell.
- The database is screened depending upon the eligibility criteria specified by the companies
- The students are given the special training in accordance with the company by external expert and alumni if they are working in the same company which is invited for recruitment.
- The eligible students are permitted to attend the interview and the company will carry over the placement process with the support of Placement Cell.

Table 9.5 (b) List of recruiters

Sl. No.	Company
1.	ESSEL PROPACK, Poland
2.	Environ Construction, Singapore
3.	TCS
4.	CTS
5.	Infosys
6.	UST Global
7.	HCL Technologies
8.	TATA ELXSI
9.	Quest
10.	STUP CONSULTANTS
11.	Renault Nissan
12.	INNOVATE Designers & Builders
13.	SAFA Constructions
14.	SMEC
15.	PARASCADD
16.	ONEGENE
17.	CADD Centre
18.	CADOpt Technologies
19.	SS TECHNOVATION
20.	Neel Auto Private Limited
21.	Build – Tech Engineers
22.	TVS Sundram Fasteners Limited

Efficacy of career Guidance, Training, Placement

Table 9.5 (c) Impact of career guidance, training, placement and certification

Sl. No.	Academic year	Total no. of students	No. of students placed	No. of students admitted to higher studies	No. of students as entrepreneur
1	2020-21	328	167	14	2
2	2019-20	361	279	14	3
3	2018-19	361	279	14	3
4	2017-18	377	292	23	3

9.6 Entrepreneurship Cell

Entrepreneurship development cell is formed in the institution to build a world class entrepreneurship hub to cater the needs of students with innovative ideas of social relevance and thereby introducing an entrepreneurship culture in the campus.

Mission

To develop an entrepreneurial ecosystem that enables the students and the members of the faculty to bring out their innovative and potential ideas and develop those creative ideas into innovative products to uplift the economic status of the society.

Objectives:

- To design and develop innovative products of social relevance.
- To create entrepreneurial culture among faculty members, students and alumni.
- To support other neighboring institutions to mould and effectively carry out entrepreneurial activities in their campuses.
- To focus more on innovation driven entrepreneurship from student projects.
- To encourage more women to become entrepreneurs.
- To promote start-up initiatives from faculty members and students.

Facilities

- Mentors from different industries to support new business idea
- Meeting with successful Entrepreneurs
- Pre incubation center with advanced facilities for product development.

NewGen IEDC MarEphraem

- NewGen IEDC aims to inculcate the spirit of innovation and entrepreneurship amongst the young students, encourage and support start-up creation through guidance, mentorship& support. NewGen IEDCs is established in 2019 where students are encouraged to take up innovative projects with the possibility of commercialization.

Table 9.6 (a) NewGen IEDC MarEphraem

Sl. No	Name of the Project	Sponsoring Agency	Amount	Year of grant	Status
1	NewGen IEDC	DST/NSTEDB	2.87 corers	2019	Ongoing

A. Entrepreneurship initiatives

Table 9.6 (b) Entrepreneurship initiatives in the year 2018 - 2019

Sl. No	Name of the Event	Date	No. of Beneficiaries
1	Entrepreneurship Awareness camp (EAC)	9.11.2018-10.11.2018	81
2	Entrepreneurship Awareness Camp (EAC)	6.09.2018-08.09.2018	87
3.	Entrepreneurship Awareness camp (EAC)	5.12.2018-07.12.2018	76
4	Challenge identification Competition	February 2018	224
5	Idea scouting	March 2018	48

Table 9.6 (c) Entrepreneurship initiatives in the year 2019 - 2020

Sl. No	Name of the Event	Date	No. of Beneficiaries
1	Orientation Program on Entrepreneurship	09.02.2019	63
2	One day workshop on Communication and Leadership Training	09.03.2019	58
3.	Industry Institutional Interactive Program	29.12.2018	Members of the faculty
4.	Challenge Identification Competition	22.01.2019	224
5.	Seminar on How to Identify a Great Business Idea	19.12.2018	72
6.	Robotics Automation Competition	19.04.2019	23
7.	Idea Pitching Contest	26.04.2019	71
8.	Science and Technical Exhibition	16.03.2019 & 17.03.2019	All Students
9.	Entrepreneurship Awareness camp (EAC)	6.09.2018-08.09.2018	87
10.	Entrepreneurship Awareness Camp (EAC)	9h, 10th and 12th 11. 2018	81
11.	Entrepreneurship Awareness camp (EAC)	5.12.2018-07.12.2018	76
12	Startup visit to villages	08.10.2019	63
13	Seminar on Technology commercialization and business opportunities in different sectors	04.04.2019	55
14	Seminar on IPR - Group 2	11 .02. 2019	52
15	Business plan competitions	11.08.2019	13 team Members (Each team 6 students)

Table 9.6 (d) Entrepreneurship initiatives in the year 2020 - 2021

Sl. No	Name of the Event	Date	No. of Beneficiaries
1	A Seminar on Entrepreneurial Ecosystem	11/01/2020	48
2	Entrepreneurship Awareness camp (EAC) -2	10/02/2020 to 12/10/2020	76
3	Entrepreneurship Awareness camp (EAC) -3	17/02/2020 to 12/10/2020	88
4	Seminar on Technology Commercialization and Business Opportunities in different Sectors	04/02/2020	53
5	Workshop on Effective Market Research	25/02/2020	59
6	Challenge Identification Competition	3/03/2020	96
7	Idea Pitching	12/03/2020	62
8	Workshop on how to prepare the Business Plan	17/03/2020	73
9	Start-up visit in villages -1	11/08/2020	11
10	Start-up visit in villages -1	02/09/2020	6
11	Webinar on Rethink Research	08/06/2020	67
12	Outreach Webinar series on Entrepreneurship	10/08/21 to 14/08/21	456
13	Webinar on identifying intellectual property in projects & provisional patent filing.	25/09/2020	36

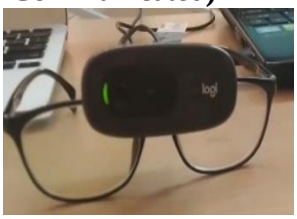
B. Data on students benefitted

Table 9.6 (e) Winners Challenge Identification Competition 2019-2020

Sl. No	Name of the student	Title of the Challenge	Department	Prize
1	Nikhil John	Recycling of paper wastes in the college.	II Mech	1st prize Rs. 10000
2	Jose Vivek Wilfred	Bionic arm for handless people.	IV Mech	2nd Prize Rs. 5000

Table 9.6 (f) NewGen IEDC Student Projects 2019-2020

Sr. No	Team/Project Description	Interventions made	Current status
1	**Student Team:** Ms. Jeba. J Ms. Julia Bergio. K Mr. Abinesh. E Mr. Alphin. A **Mentor Name:** Mr. Jackson Thanga	*Weight Reduction *Portable Setup *User Friendly *Sensor for detecting the latex layer of the tree *Rack and Pinion	Prototype completed

	Roy Assistant Professor / Mech **Project Name:** Portable Smart Rubber Harvesting Machine	mechanism	
2	**Student Team:** Mr.AshickNewbin. A.C Mr.Rahul.R.G Mr.Rithick.R.Gopal **Mentor Name:** Mr. John Thangam Assistant Professor / Civil **Project Name:** Self-Priming Automated Fodder System	*Self-Priming hydroponics manufacturing for cattle feed	*Product Completed *Patent filed 
3	**StudentsName :** Ms. Jenila Jacob Ms. Reshma Ms. Blessiya **Mentor Name:** Mr. LalinL.Laudis Assist Professor / ECE **Project Name:** Textacles	*Developed a module to recognize text and convert it into audio	Prototype completed **“**International Journal of engineering research and technology” (Paper Communicated**)** 
4	**Students Team** Mr.DeukerDikkinson Mr.Abish Raj .A Mr.Rino. M Mr.Simiyon.I **Mentor Name:** Mr. Manu Assistant Professor / Mech **Project name** Semi-Automatic Coconut dehusker	*Semi-automatic type *Roller operating system is used to dehusk the coconut.	Prototype completed 
5	**Team Members** Mr.Jaireesh J.S Aswinth Mr.Ajith B	1. Coin Acceptor setup 2.Locking system	Prototype completed

	Mr.Ajay R B Mr.Ajesh R M **Mentor Name:** Dr. John Iruthaya Raj Assistant Professor / Mech **Project Name** Coin Operated Rubber Rollers	with Modified Gear arrangement 3.Timer with Electromagnetic Push and Pull Solenoid setup	
6	**Student Team:** Mr. Alex Sasi Mr. Dani Jaison Prakash. J.U Mr. Tom Saji Ms. Ancilin. H **Mentor Name:** Mr. Arthur Vasanth Assistant Professor / EEE **Project Name:** Solar Ultrasonic Wild Boar Repeller	Developed a prototype to support Farmers to distract the wild Boar from the farming Land.	*Prototype Completed *International Journal of engineering research and technology" (Paper Communicated) 
7	**Student Team:** Mr.AjinKilbert Mr.Vinish Mr.Adarsh Mr.VelbinJijo **Mentor Name:** Mr. John Pradeep Assistant Professor / EEE **Project Name:** A Smart IOT Pill Dispenser	*Developed a prototype to support elderly persons who need care.	Prototype completed 
8	**Student Team:** Karthisuyan Sarath joe Rahul. M Sajan r **Mentor Name:** Dr. Rajeev	*Semi-automatic type Cutting wheel operating system. *Speed controllable coconut grating setup	Prototype completed 

	HOD/Mech **Project Name:** Coconut Deshelling and Grating Machine.		
9	**Student Team** Mr. Joein.J Mr. R. Relton Mr. Paul Richard. D.P Ms. Sherly.B **Mentor Name:** Mr. Dani Assistant Professor / Mech **Project title:** Telescopic Semi-Automatic Fruit Plucker	*The system has a plucking arm positioned at the top of the telescopic pole with the rack and pinion gear assembly. *The rack has teeth cut into it and they mesh with the teeth of the pinion gear. The motor is coupled with the pinion. *The controlled rotary motion of the pinion is converted into Corresponding linear movement of the rack. *The to and fro motion of the plunger will actuate the fingers to open and close. *The free end of the finger provides sniping action. *The collected fruit flows through the hollow plunger into the cloth which can be collected from the bottom**.**	*Prototype completed *Design Patent filed 
10	**Student Team:** Mr.SibinReji Mathew Mr.AntroAkash A Mr.Aneesh John Zachariah	Developed a prototype to support fire rescue care in Buildings.	Prototype completed

	Mr.Anto J C **Mentor Name:** Mr. Manjusha Assistant Professor / EEE **Project Name:** An Add-On device to detect trapped human in fire accidents		
11	**Student Team:** Mr.K.S.Ajith Mr.B.Ajil Mon Mr.C.Vinoth Mr.K.Sajin **Mentor Name:** Mr. Jude Felix Assistant Professor / Mech **Project name:** Portable coconut oil cooker	*Steam operated VCO cooker *Steam was generated in a boiler and transferred through hose *Stir is controlled by a motor	Prototype completed (MSMEUDYAM Registration is done) 
12	**Student Team:** Ms.Anuja M.L Ms.Jincy P, Ms.Anisha V. **Mentor Name:** Dr. Benschwartz Assistant Professor / EEC **Project Name:** VISAD: A Vision based System for patient Abnormality Detection	* A vision-based motion detection algorithm was developed that would activate the safe system to prevent the patient falling from the bed.	Prototype completed **VISAD**: A "Vision based System for patient Abnormality Detection", International journal of Engineering Research & Technology (Paper Communicated) 
13	**Student Team** Ms.ArpithaRenjan Mr.BintuBinu Thomas Ms.Jebin G.	Abnormality monitoring system is a hardware/software	Prototype completed

	Mentor Name: Mrs. Ashy V Daniel Assistant Professor / CSE **Project Name:** IoT based abnormality and health monitoring system for cattle.	cloud-based technology issued to remotely monitor the health status of cattle.	
14	**Student Team:** Mr.Yesudhasxavier Mr.Shivakumar R Mr.Lijin V Mr.Gokulkrishna V S **Mentor Name:** Mr. Babin Assistant Professor / EEE **Project Name:** Instinctive fertilizer feeder for cultivation in agronomy.	A dedicated GUI was developed that would monitor a given multi crop farm and irrigate with nutrition based on demand	Prototype completed 
15	**Student Team:** Mr.Nijin.S.T Mr.Pratheesh .S.D Mr.Jayan.J.J Mr.Jijo.J **Mentor Name:** Mr. Leo Bright Singh Assistant Professor / Mech **Project Name** Coconut scrubber and milk extractor	*Semi-automatic type *Roller operating system is used for scrubbing the coconut.	Prototype completed 

Startups Registered

Startups Registered

Name of the Startup: ASK Enterprises

भारत सरकार
Government of India
सूक्ष्म, लघु एवं मध्यम उद्यम मंत्रालय
Ministry of Micro, Small and Medium Enterprises

UDYAM REGISTRATION CERTIFICATE

Our small hands to make you LARGE

UDYAM REGISTRATION NUMBER	UDYAM-TN-09-0011896
NAME OF ENTERPRISE	ASK ENTREPRISE
TYPE OF ENTERPRISE *	MICRO
MAJOR ACTIVITY	MANUFACTURING
SOCIAL CATEGORY OF ENTREPRENEUR	SC

NAME OF UNIT(S)	S.No.	Name of Unit(s)
	1	Sajan Manufacturing Unit

OFFICAL ADDRESS OF ENTERPRISE				
	Flat/Door/Block No.	8/51A	Name of Premises/ Building	Melakuzhinjanvilai
	Village/Town	Vilavan Code	Block	Mullucode
	Road/Street/Lane	Melakuzhinjanvilai	City	Marthandam
	State	TAMIL NADU	District	KANNIYAKUMARI , Pin 629153
	Mobile	9566500168	Email:	sudhaachu95@gmail.com

DATE OF INCORPORATION / REGISTRATION OF ENTERPRISE	07/05/2021
DATE OF COMMENCEMENT OF PRODUCTION/BUSINESS	

NATIONAL INDUSTRY CLASSIFICATION CODE(S)	SNo.	NIC 2 Digit	NIC 4 Digit	NIC 5 Digit	Activity
	1	32 - Other manufacturing	3290 - Other manufacturing n.e.c.	32901 - Manufacture of stationary articles such as pens and pencils of all kinds whether or not mechanical, pencil leads, date, sealing or numbering stamps, hand-operated devices for printing or embossing labels, hand printing sets, prepared typewriter ribbons and inked pads, globes etc.	Manufacturing

DATE OF UDYAM REGISTRATION	05/07/2021

* In case of graduation (upward/reverse) of status of an enterprise, the benefit of the Government Schemes will be availed as per the provisions of Notification No. S.O. 2119(E) dated 26.06.2020 issued by the M/o MSME.

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For any assistance, you may contact:

1. District Industries Centre: KANYAKUMARI (TAMIL NADU)
2. MSME-DI: CHENNAI (TAMIL NADU)

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9.7 Co-curricular and Extra-curricular Activities (10)

Students are engaged in co-curricular, extra-curricular activities and field trips through student chapters and forums, which provide opportunities for students to explore new fields of interest, cultivate leadership skills, and learn teamwork. In this regard, institution has formed various committees for participating and organizing the cultural and sports activities. Every department has its own association through which department symposiums, project expo and other technical and non-technical events are being organized. These association activities benefit in developing leadership skills and make them work in teams.

A. Availability of sports and cultural facilities

Sports Facilities

The Institution has a sports ground, well equipped gym and sports kits. Students are encouraged to participate in various zonal, inter zonal, inter and intra collegiate and University tournaments. Annual Sports day is celebrated with various sports events like Athletics, Long Jump, Volleyball, Table Tennis, Cricket, Chess, and Carom, both for staff and students, as part of recreation.

Table 9.7 (a) List of indoor games available in the campus

Sl. No.	Name of the sport Facility
1	Badminton
2	Chess
3	Caroms
4	Table tennis
5	Gym

Table 9.7 (b) List of outdoor games available in the campus

Sl. No.	Name of the sport facility	Whether available beyond college regular timings
1	Basket ball	Yes, 4.30 pm-6.30 pm
2	Volley Ball	
3	Food ball	
4	Cricket	
5	Throw Ball	
6	Long Jump	
7	Cricket	
8	Shotput	
9	Javelin Throw	
10	Discus Throw	

Fig.9.7 (a) Photo gallery of Sports Activities

Achievements in sport activities:

The student achievements in sports activities in the academic year 2019- 2020 there were four awards in 4 x 400 mts running, and in Javelin Throw, Triple jump and 100 mts running there was one award. Moreover, there was first, second and third award in football, kho-kho and badminton respectively. In the academic year 2018-2019, there was one award each in triple jump, high jump and 1500 mts running. In addition, there was a third place in basketball. In the preceding academic year (2017-2018), we are the runner in football in zonal tournament. Mar Ephraem is the Anna university Zonal sports coordinating center for Zone 19 during the academic year 2019-2020.

Table 9.7 (c) Summary of achievements Students in sport activities

Sl. No	Name of the sport	No. of students won in tournaments (Zonal/State level)			
		2020-21	2019-20	2018-19	2017-18
1.	Javelin Throw	-	1	-	-
2.	Triple Jump	-	1	1	-
3.	High Jump	-	-	1	-
4.	100 mts running	-	1	-	-
5.	4*400 mts Running	-	4	-	-
6.	1500 mts Running	-	-	1	-
7.	Basket Ball	First	-	Third	-
8.	Foot Ball	-	First	-	Runner
9.	Kho-kho	First	Second	-	-
10.	Badminton	-	Third	-	-
11.	Ball Badminton	Third	-	-	-
12.	Hockey	Second	-	-	-

Cultural Activities

The fine arts club at Mar Ephraem aims to bring out talent in the student community in all the possible forms such as music, dance, literary skills, sketching or other fine art styles. Annual Cultural Event MAR FESTA , FESTINO BEATS and TALENTO are organized in the college to give opportunity for all the students and get involved in cultural enriching activities. Students are given chance to extend themselves and to grow in their area of interest.

Table 9.7 (d) Cultural Facilities Available in the Institution

S. No	Details of the facility
1.	Fine Arts Club
2.	Choir
3.	Musical instruments
4.	Clay Modeling
5.	Art from Waste
6.	Art and painting materials
7.	Auditorium

Table 9.7 (e) Achievements of academic Year (2019-2020)

S. No	Date	Name of Event	Name of the students	Venue	Recognition Received
1	29-02-2020	NAVAvRddhh 2020 Art from waste	S.Abina	Arunachala College of Engineering for Women	I Prize
2	29-02-2020	NAVAvRddhh 2020 Art from waste	J.D.BEAUTLIN	Arunachala College of Engineering for Women	I Prize
3	29-02-2020	NAVAvRddhh 2020 Collage work	D.Laffni	Arunachala College of Engineering for Women	I I Prize
4	29-02-2020	NAVAvRddhh 2020 Collage work	S.Seleena	Arunachala College of Engineering for Women	II Prize
5	29-02-2020	NAVAvRddhh 2020 Art from waste	S.Seleena	Arunachala College of Engineering for Women	Participated
6	29-02-2020	NAVAvRddhh 2020 Collage work	S.Abina	Arunachala College of Engineering for Women	Participated
7	29-02-2020	NAVAvRddhh 2020 Art from waste	D.Laffni	Arunachala College of Engineering for Women	Participated
8	29-02-2020	NAVAvRddhh 2020 Collage work	J.D.Beautlin	Arunachala College of Engineering for Women	Participated

9	24-02-2020	Drawing competition	R.K.Vijisha	Rohini College of Engineering and Technology	I Prize
10	14&15 February 2020	NEMIC FEST 2020 Elocution Competition	Bharath Krishnan	Nesamony Memorial Christian College, Marthandam.	I prize
11	14 & 15 February 2020	NEMIC FEST 2020 Solo Song Competition	Blessing Jemil.P.J	Nesamony Memorial Christian College, Marthandam	Participated
12	14 & 15 February 2020	NEMIC FEST 2020 Elocution Competition	Kebiya . G	Nesamony Memorial Christian College, Marthandam.	Participated
13	14 & 15 February 2020	NEMIC FEST 2020 Pencil Sketch Competition	R.K.Vijisha	Nesamony Memorial Christian College, Marthandam.	I Prize
14	14 & 15 February 2020	NEMIC FEST 2020 Spot Photography	Nihal	Nesamony Memorial Christian College, Marthandam.	Participated
15	14 & 15 February 2020	NEMIC FEST 2020 Solo Dance Competition	Stebin	Nesamony Memorial Christian College, Marthandam.	II prize
16	14.08.2019	Dance	Anto J C	Bethlahem Institute of Engineering	II Prize
17	14.08.2019	Dance	AntroAkash	Bethlahem Institute of Engineering	II Prize
18	14.08.2019	Dance	Abin S	Bethlahem Institute of Engineering	II Prize
19	14.08.2019	Song	Deril Jacob Robin	Bethlahem Institute of Engineering	II Prize
20	12-10-2019	Semi classical	BeautlinSumith P	Ponjesly College ofEngineering	II Prize
21	23-01-2020	clay modelling	M L Anuja	Bethlahem institute ofEngineering	II Prize

22	08-02-2020	Quiz	JerlinPriya V M	Arunachala College of engineering for women	1st Prize
23	15-02-2020	Jam Sketch	Jincy P	Udhaya school of Engineering	II Prize
24	12-10-2019	SoloDance	Jenila J L	Mar Baselios College of Engineering &Technology	II Prize

Table 9.7 (f) Achievements of academic Year (2018-2019)

S. No	Date	Name of Event	Name of the students	Venue	Recognition Received
1	19-12-2018	Jingle bells'18 Group Song	BodlinLekha, Benil Jacob Robin,Deril Jacob Robin,Adlin,Ritchu,Bensingh	St.Joseph College of Education	Participated
2	08/03/2019	Group Song	Jesty James	Rohini College of Engineering and technology Tamil Nadu	II Prize
3	08/03/2019	Group Song	Sojo P Saju	Rohini College of Engineering and technology Tamil Nadu	II Prize
4	08/03/2019	Group Song	JomyElizebath	Rohini College of Engineering and technology Tamil Nadu Within State	II Prize
5	08/03/2019	Group Song	ShanyAleyamma	Rohini College of Engineering and technology Tamil Nadu	II Prize
6	03/05/2019	Paper Presentation	Merin S John	Mohandas College of Engineering & Technology Kerala	Participation
7	22/02/2019	Group Dance	JomyElizabath	Nesamony Memorial Christian College Tamil Nadu	I Prize
8	22/02/2019	Group Dance	Sarannya	Nesamony Memorial Christian College	I Prize
9	22/02/2019	Group Dance	Merlin thankam	Tamil Nadu	I Prize

10	22/02/2019	Group Dance	Karthika P	Nesamony Memorial Christian College	I Prize
11	29/03/2019	Group Song	Dona Sabu	Musaliar College Of Engineering & Technology Kerala	I Prize
12	29/03/2019	Group Song	AshanaBobachan	Musaliar College Of Engineering & Technology Kerala	I Prize
13	29/03/2019	Group Song	Jeffy Grace	Musaliar College Of Engineering & Technology Kerala	I Prize
14	29/03/2019	Group Song	Divya P	Musaliar College Of Engineering & Technology Kerala	I Prize
15	29/03/2019	Group Song	Jithin James	Musaliar College Of Engineering & Technology Kerala	I Prize
16	29/03/2019	Group Song	Adone Y Babu	Musaliar College Of Engineering & Technology Kerala	I Prize
17	29/03/2019	Group Song	Alwin David	Musaliar College Of Engineering & Technology Kerala	I Prize
18	29/03/2019	Best Actor	Alex Mathew	Musaliar College Of Engineering & Technology Kerala	II Prize
19	28/02/2019	Group Dance	JomyElizabath	Rohini College of Engineering and technology, Tamil nadu	II Prize
20	28/02/2019	Group Dance	Sarannya	Rohini College of Engineering and technology	II Prize
21	28/02/2019	Group Dance	Merlin thankam	Rohini College of Engineering and technology	II Prize
22	28/02/2019	Group Dance	Karthika P	Rohini College of Engineering and technology	II Prize
23	26/04/2019	Music Band	Ben Singh Joshua	Mar Baselious College of Engineering & Technology Kerala	II Prize
24	26/04/2019	Music Band	Adone Y Babu	Mar Baselious College of Engineering & Technology Kerala	II Prize
25	26/04/2019	Music Band	Alwin David	Mar Baselious College of Engineering & Technology Kerala	II Prize
26	26/04/2019	Music Band	Dona Sabu	Mar Baselious College of Engineering & Technology Kerala	II Prize

27	26/04/2019	Music Band	AshnaBobachan	Mar Baselious College of Engineering & Technology Kerala	II Prize
28	26/04/2019	Music Band	AlwinRaju	Mar Baselious College of Engineering & Technology Kerala	II Prize
29	26/04/2019	Photo Contest	Karthika	Aspire 2019,IET Kanyakumari Local Network	Participation
30	26/04/2019	Photo Contest	Biljila	Aspire 2019,IET Kanyakumari Local Network	Participation
31	19-12-2018	Singing	Benil Jacob Robin	St.Josaeph College of Education	II Prize
32	19-12-2018	Singing	Deril Jacob Robin	St.Josaeph College of Education	Participated
33	11-08-2018	Folk Dance	AbiMol A N	Mar Baselios College of Engineering & Technology	1st prize
34	18-08-2018	Quiz	SnehaBabuji	Bethlahem institute of Engineering	1st Prize
35	11-08-2018	Clay modelling	Stephy R Jose	Arunachala College of engineering for women	II Prize
36	02-02-2019	Word hunt	Ahisha R K	Udhaya school of Engineering	1st Prize
37	16--02-2019	Solo song	Merlin Preetha	Ponjesly College of Engineering	II Prize

Table 9.7 (g) Achievements of academic Year (2017-2018)

Sl.No	Date	Name Of Event	Name of the students	Venue	Recognition Received
1	20/10/2017	Face Painting	Akhil Mon (CSE)	Trinity College of Engineering,Kerala	I prize
2	16-12-2017	Light music Competition	Benil Jacob Robin	Nesamony Memorial Christian College, Marthandam	III Prize
3	16-12-2017	Light music Competition	Smith Jisho	Nesamony Memorial Christian College, Marthandam	III Prize

4	16-12-2017	Light music Competition	Deril Jacob Robin	Nesamony Memorial Christian College, Marthandam	III Prize
5	16-12-2017	Light music Competition	AdlinShiji	Nesamony Memorial Christian College, Marthandam	III Prize
6	16-12-2017	Light music Competition	Beautlin Femi	Nesamony Memorial Christian College, Marthandam	III Prize
7	16-12-2017	Light music Competition	Recslin	Nesamony Memorial Christian College, Marthandam	III Prize
8	16-12-2017	Light music Competition	Richu Rajesh Singh	Nesamony Memorial Christian College, Marthandam	III Prize
9	16-12-2017	Light music Competition	Bensingh	Nesamony Memorial Christian College, Marthandam	III Prize
10	16-12-2017	Western music Competition	Benil Jacob Robin	Nesamony Memorial Christian College, Marthandam	III Prize
11	16-12-2017	Western music Competition	Smith Jisho	Nesamony Memorial Christian College, Marthandam	III Prize
12	16-12-2017	Western music Competition	Deril Jacob Robin	Nesamony Memorial Christian College, Marthandam	III Prize
13	16-12-2017	Western Song Competition	AdlinShiji	Nesamony Memorial Christian College, Marthandam	III Prize
14	16-12-2017	Western Song Competition	Beautlin Femi	Nesamony Memorial Christian College, Marthandam	III Prize
15	16-12-2017	Western Song Competition	Recslin	Nesamony Memorial Christian College, Marthandam	III Prize
16	16-12-2017	Western Song Competition	Richu Rajesh Singh	Nesamony Memorial Christian College, Marthandam	III Prize

17	16-12-2017	Western Song Competition	Ben Singh	Nesamony Memorial Christian College, Marthandam	III Prize
18	22&23 February 2018	Nemic Fest ‘18 Pencil Sketch	Arun	Nesamony Memorial Christian College, Marthandam	I prize
19	23/02/2018	Face Painting	Akhil Mon (CSE)	Sahrdya College of Engineering & Technology Trinity College of Engineering Kerala	I prize
20	23/02/2018	Face Painting	Ajin S A(CSE)	Sahrdya College of Engineering & Technology Kerala	Participation
21	15-03-2018	Mobile Photography	GibinKuruvila	Bethlahem I nstitute of Engineering	Participation
22	15-03-2018	Mobile Photography	Ajin P.	Bethlahem I nstitute of Engineering	Participation
23	15-03-2018	Mobile Photography	Alen Chris Biju	Bethlahem I nstitute of Engineering	Participation
24	15-03-2018	Mobile Photography	Abhijith K	Bethlahem Institute of Engineering	I prize
25	15-03-2018	Mobile Photography	Aravind Gopal	Bethlahem Institute of Engineering	II prize
26	05.01.2018	Song	Ranju Varghese	Malankara Catholic College	II prize
27	05.01.2018	Song	Derick J Robin	Malankara Catholic College	II prize
28	05.01.2018	Song	Princy Koshy	Malankara Catholic College	II prize
29	18-02-2018	Folk Dance	Vijithra P	St.Xaviers catholic College of Engineering	I prize
30	01-03-2018	Poster Designing	Sruthi Sunil Mathews	Arunachala College of engineering for women	I prize
31	27-01-2018	Solo Dance	Bodlin Lakha	Udhaya school of Engineering	II Prize

32	27-01-2018	Clay Modelling	Prabin S	Mar Baselios College of Engineering &Technology	I prize
33	24/03/018	Quiz	Rijil Raju	Bethlahem institute of Engineering	II Prize

B. NCC, NSS and other clubs

NSS UNIT in Mar Ephraem is organizing several useful programs for the society. The Motto of NSS "Not Me But You", reflects the essence of democratic living and upholds the need for self-less service. NSS helps the student's development & appreciation to other person's point of view and also show consideration towards other living beings. The programs like pond cleaning, helping towards flood affected people, Health education programs, tree plantation and village adoption are successfully conducted.

List of NSS Activities:

Table 9.7 (h) Summary of NSS activities

S.No	Date	Events
1	17/12/2021	Legal aid awareness Programme
2	07/04/2021	World Health
3	04/03/2021	Road safety Programme
4	10-02-2020	Novel corona virus Awareness Program
5	03-03-2020	Nilavembu kudineer issuing
6	16-07-2019	Awareness program on climatic change and human rights
7	13-07-2018	Awareness program on Organic forming and green campus
8	30-07-2018	Charity work to flood affected peoples in kerala
9	15-09-2018	Nilavembu kudineer issuing
10	22-02-2017	Pond cleaning
11	09-02-2017	Village adopting Programme

Fig.9.7 (b) Photo gallery of NSS Activities

YRC (Youth Red Cross)

The Red Cross is an international organization meant for humanitarian services. It is a non- religious, nonpolitical and a non-sectarian international body. YRC is a part of the Indian Red Cross Society; it was inaugurated at Mar Ephraem in 2010 with well-defined objectives such as: Protection of Health and Life Service to the sick and the suffering by organizing various health camps, awareness program such as eye camps, vaccination camps, health awareness, AIDS Eradication. The students of Mar Ephraem are donating the blood frequently on request by the public/Hospitals through YRC coordinator.

List of YRC Activities:

Table 9.7 (i) Summary of YRC activities

S.No	Date	Events
1	2/03/2020	Drug Awareness Programme
2	1/12/2020	Aids Awareness Programme
3	1-10-2019	World Heart Day Celebration
4	6-08-2018	Blood Donation Camp
5	18-09-2018	AIDS Awareness Program
6	9-09-2018	YRC ICTC vist
7	28-01-2017	AIDS Awareness programme
8	10-10-2017	Blood Donation Camp

Fig.9.7 (c) Photo gallery of YRC Activities

NCC

Mar Ephraem has initiated the process of establishing the NCC unit in the premises. We have submitted the application to the 11th battalion NCC office at Nagercoil and in waiting list. Also, we have applied for the same under FSFS (Fully Self-Financing Scheme) so that the unit will be started within a short span of time.

Other Clubs:

- International, national and internal professional Bodies for Co-Curricular activities
  - IET
  - ISTE
  - SAE
  - IEEE
  - IPR
  - Robotics Club
  - Research and development Cell
- Non-professional Bodies for Co-Curricular and Extracurricular activities
  - NSS
  - Youth Red Cross
  - Sports Club
  - Eco Club
  - Green Energy Cell

- Women's Cell
- Fine Arts Club

C. Annual Students Activities:

- Institution organizes Mar Festa, Sports Day, Festino Beats and College Day every year for the technical, sports and cultural activity enhancement of the students.
- Every school association organizes symposium, conference, technical competitions, interaction with alumni, industrial experts and academicians, workshop, industrial visit, seminars, guest lectures, educational tour etc.
- International and national professional bodies' student chapters help students in developing technical, personal skills by conducting technical seminars, workshop, industrial visit, charity visits, providing scholarships and presenting awards.
- Robotic club train the students with the hardware kit sponsored by MHRD and shape them to participate and win robotic competitions.
- Research Committee motivates and coordinates all the research activities of the college.
- NSS organizes NSS camp, visit to orphanages, conduct of disease awareness programs.
- YRC organizes blood donation awareness program, blood donation camp, deworming day.
- Sports division conducts university zonal level sports competitions and college annual sports day. Train and make students participate and win in zonal and state level sports competitions.
- Women cell works for the empowerment of the female students and conduct many awareness and empowerment programs. It celebrates Women's Day every year.
- Fine Arts Club organizes and coordinates all the cultural activities in the college and participation outside the college and organizes inter college cultural competition Mar Festa inter college cultural and Festino Beats every year

Fig.9.7 (c) Photo Gallery of the Co-curricular& Extra-Curricular Activities

10	GOVERNANCE, INSTITUITIONAL SUPPORTAND FINANCIAL RESOURCES	120

10.1. ORGANIZATION, GOVERNANCE AND TRANSPARENCY (40)

10.1.1. State the Vision and Mission of the Institution (5)

Vision

A world class Malankara institution of higher learning renowned for its excellence in Science and Technology and for its commitment to the holistic development of the individual and Society.

Mission

To provide quality and Value Based Education for the industrial and socio-economic development of the nation with its diverse cultures through relevant programs in teaching and learning, research, extension and community involvement.

10.1.2. Governing body, administrative setup, and functions of various bodies, service rules, procedures, recruitment and promotional policies (10)

Mar Ephraem College of Engineering and Technology is established, owned and administered by the Catholic Diocese of Marthandam. His Excellency Dr.Vincent Mar Paulos, Bishop of the Catholic Diocese of Marthandam is the Chairman of the College, wielding all the executive and ownership authorities.

The Bishop of Malankara Diocese of Marthandam constitutes a Governing Council in order to help the management in the administration of the college by making suitable policies and guidelines. Correspondent is the secretary of the Governing Council.

The major policy decisions of the College are taken by the Governing Council. These policy decisions are made operational by the Academic Planning Council. The College activities are primarily managed by Academic Planning Council, IQAC and other academic Committees.

Governing Council

Governing Council meets once in every six months and on need bases whenever required. The tenure of the council is three years and will be elected by the local society. The members of the Governing Council and their roles were as follows

Table 10.1.2 (a) Governing Council in CAY (2019-20)

Sl No	Name of the Member	Designation	Role in Governing Body
1	Most Rev. Dr.Vincent Mar Paulos	Bishop of Marthandam	Chairman
2	Rt. Rev. Msgr. S. Varghese	Vicar General, Diocese of Marthandam	Convener
3	Rev.Fr.Josephin Raj	Correspondent, Mar Ephraem College of Engineering and Technology	Secretary
4	Rev. Fr. Sunny Mathew	Chancellor, Diocese of Marthandam	Member
5	Rev. Fr. Satheesh Kumar	Procurator, Diocese of Marthandam	Member
6	Rev.Fr. Jose Bright	Correspondent, MCC	Member
7	Rev. Fr. John Kumar	Priest Representative	Member
8	Sr. Anila Christy D. M	Religious Representative	Member
9	Mr. Paul Raj	Industrial Representative	Member
10	Dr. Vinu	Laity Representative	Member

Table 10.1.2 (b) Governing Council in CAYm1 (2018-19)

Sl No	Name of the Member	Designation	Role in Governing Body
1	Most Rev.Dr.Vincent Mar Paulos	Bishop of Marthandam	Chairman
2	Rt. Rev. Msgr. S. Varghese	Vicar General, Diocese of Marthandam	Convener
3	Rev.Fr.Josephin Raj	Correspondent, Mar Ephraem College of Engineering and Technology	Secretary
4	Rev. Fr. Sunny Mathew	Chancellor, Diocese of Marthandam	Member
5	Rev. Fr. Satheesh Kumar	Procurator, Diocese of Marthandam	Member
6	Rev.Fr.Jose Bright	Correspondent, MCC	Member
7	Rev. Fr. John Kumar	Priest Representative	Member
8	Sr.Anila Christy D. M	Religious Representative	Member
9	Mr. Paul Raj	Industrial Representative	Member
10	Dr.Vinu	Laity Representative	Member

Table 10.1.2 (c) Governing Council in CAYm2 (2017-18)

Sl No	Name of the Member	Designation	Role in Governing Body
1	Most Rev.Dr.Vincent Mar Paulos	Bishop of Marthandam	Chairman
2	Rt. Rev. Msgr. S. Varghese	Vicar General, Diocese of Marthandam	Convener
3	Rev. Fr. Josephin Raj	Correspondent, Mar Ephraem College of Engineering and Technology	Secretary
4	Rev. Fr. Sunny Mathew	Chancellor,Diocese of Marthandam	Member
5	Rev. Fr. Satheesh Kumar	Procurator, Diocese of Marthandam	Member
6	Rev.Fr. Jose Bright	Correspondent, MCC	Member
7	Rev. Fr. John Kumar	Priest Representative	Member
8	Sr. Anila Christy D. M	Religious Representative	Member
9	Mr. Paul Raj	Industrial Representative	Member
10	Dr. Vinu	Laity Representative	Member

Table 10.1.2 (d) Governing Council in CAYm3 (2016-17)

Sl No	Name of the Member	Designation	Role in Governing Body
1	Most Rev.Dr.Vincent Mar Paulos	Bishop of Marthandam	Chairman
2	Rt. Rev. Msgr. S. Varghese	Vicar General, Diocese of Marthandam	Convener
3	Rev. Fr. Josephin Raj	Correspondent, Mar Ephraem College of Engineering and Technology	Secretary
4	Rev. Fr. Sunny Mathew	Chancellor,Diocese of Marthandam	Member
5	Rev. Fr. Satheesh Kumar	Procurator, Diocese of Marthandam	Member
6	Rev.Fr. Jose Bright	Correspondent, MCC	Member
7	Rev. Fr. John Kumar	Priest Representative	Member
8	Sr. Anila Christy D. M	Religious Representative	Member
9	Mr. Paul Raj	Industrial Representative	Member
10	Dr. Vinu	Laity Representative	Member

Functions and responsibilities of the Governing Council

- To control the financial affairs of the college and to approve the annual and supplementary budgets.
- To formulate the general plan and policies of the college.
- To approve the infrastructure development of the institution.
- To make, amend or revoke bye-laws and regulations for the management of the college and its affairs.

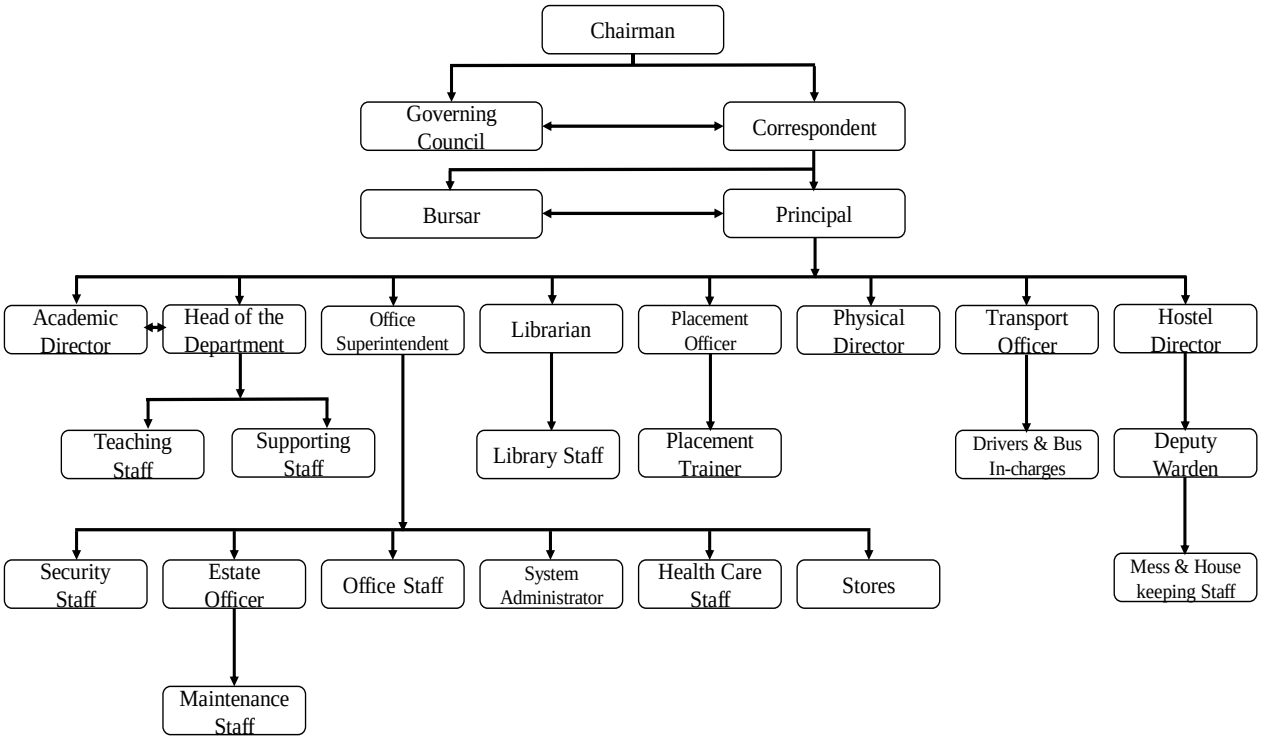

Figure 10.1.2 (a) Governing Council Organization Chart

Academic Planning Council

Academic Planning council meets once in every two months and on need basis whenever requires. All the academic matters were discussed in the council and necessary actions will be taken in this regard.

The Academic Planning council has the following responsibilities:

- To finalize all academic related matters including the preparation of academic calendar, result analysis of internal and university examinations etc.
- Making Policies and sub committees on all matters related to teaching, research and development programs.
- Responsible for assuring quality including academic integrity, assessment and research output.
- All disciplinary actions will be executed by the council.

Members of Academic Planning council

Table 10.1.2 (e) Academic Planning Council in CAY (2019-20)

Sl No	Name	Designation	Role
1	Dr. A. Lenin Fred	Principal	Chair Person
2	Dr. N. Austin	Academic Director	Member
3	Mrs. T. Priya Viji	HOD/S&H	Member Recording Secretary
4	Dr. V. Suresh	HOD/ECE	Member
5	Dr. D. Rajeev	HOD Mech./ IQAC coordinator	Member
6	Dr. D. R. Anand Rejilin	HOD/Civil	Member
7	Mr. P. Anish John Paul	HOD/EEE	Member
8	Dr. D. Dhanya	HOD/CSE	Member
9	Sr. Ancy Mathew	OS	Member
10	Dr. G. Prince	Librarian	Member
11	Mr. R. Leo Bright Singh	PRO	Member
12	Mr. S. Arun	Staff Secretary	Member

Table 10.1.2 (f) Academic Planning Council in CAYm1 (2018-19)

Sl No	Name	Designation	Role
1	Dr. A. Lenin Fred	Principal	Chair Person
2	Dr. N. Austin	Academic Director	Member
3	Mrs. T. Priya Viji	HOD/S&H	Member Recording Secretary
4	Dr. V. Suresh	HOD/ECE	Member
5	Dr. D. Rajeev	HOD Mech./ IQAC coordinator	Member
6	Dr. D. R. Anand Rejilin	HOD/Civil	Member
7	Mr. P. Anish John Paul	HOD/EEE	Member
8	Dr. D. Dhanya	HOD/CSE	Member
9	Sr. Ancy Mathew	OS	Member
10	Dr. G. Prince	Librarian	Member
11	Mr. R. Leo Bright Singh	PRO	Member
12	Mr. S. Arun	Staff Secretary	Member

Table 10.1.2 (g) Academic Planning Council in CAYm2 (2017-18)

Sl No	Name	Designation	Role
1	Dr. A. Lenin Fred	Principal	Chair Person
2	Dr. N. Austin	Academic Director	Member
3	Mrs. M. JebaPriya	HOD/S&H	Member Recording Secretary
4	Dr. V. Suresh	HOD/ECE	Member
5	Dr. D. Rajeev	HODMech/ IQAC coordinator	Member
6	Dr. D. R. Anand Rejilin	HOD/Civil	Member
7	Mr. M. Anish John Paul	HOD/EEE	Member
8	Mr. Ashwin G. Singerji	HOD/CSE	Member
9	Sr. Ancy Mathew	OS	Member
10	Dr. G. Prince	Librarian	Member
11	Mr. R. Leo Bright Singh	PRO	Member
12	Mrs. M. V. Sonia Vinni Parrot	Staff Secretary	Member

Table 10.1.2 (h) Academic Planning Council in CAYm3 (2016-17)

Sl No	Name	Designation	Role
1	Dr. A. Lenin Fred	Principal	Chair Person
2	Dr. N. Austin	Academic Director	Member
3	Mrs. M. JebaPriya	HOD/S&H	Member Recording Secretary
4	Dr. V. Suresh	HOD/ECE	Member
5	Dr. D. Rajeev	HOD Mech. / IQAC coordinator	Member
6	Dr. D. R. Anand Rejilin	HOD/Civil	Member
7	Mr. M. Anish John Paul	HOD/EEE	Member
8	Mr. Ashwin G. Singerji	HOD/CSE	Member
9	Sr. Ancy Mathew	OS	Member
10	Dr. G. Prince	Librarian	Member
11	Mr. R. Leo Bright Singh	PRO	Member
12	Mrs. M.V.SoniaVinni Parrot	Staff Secretary	Member

IQAC

Internal Quality Assurance Cell (IQAC) meets once in every three months and on need basis whenever required.

Responsibilities:

- Development and execution of quality benchmarks/parameters for the various academic and administrative programs of the College.
- Facilitating the creation of a learner-centric environment for quality education and faculty improvement to adopt the required knowledge and technology for participatory teaching and learning process.
- Arrangement of feedback responses from students, parents and other stakeholders on quality-related institutional programs.
- Dissemination of information on the various quality parameters of higher education and to conduct periodic auditing in the departments.
- Documentation of the various programmes/activities of the institution, leading to quality improvement.

Members

Table 10.1.2 (i) IQAC in CAY (2019-20)

Sl.No.	Name	Designation	Role
1	Dr. A. Lenin Fred	Principal	Chairperson
2	Fr. Alex Kumar	Bursar	Management Representative
3	Dr. N. Austin	Academic Director	Member
4	Dr. V. Suresh	HOD, ECE	Member
5	Dr. D. R. Anand Rejilin	HOD, Civil	Member
6	Mr. M. Anish John Paul	HOD, EEE	Member
7	Dr. D. Dhanya	HOD, CSE	Member
8	Mrs. M. Jeba Priya	HOD, S&H	Member
9	Mr. R. Leo Bright Singh	AP, Mech / PRO	Member
10	Mrs. P. S.Jeba	AP, ECE	Member
11	Mr. I. Jackson Thanga Roy	AP, Mech	Member
12	Mrs. L. T. Herlin	AP, CSE	Member
13	Mr. G. L. Abishek	AP, Civil	Member
14	Mr. J. R. Aldous Huxley	AP, EEE	Member
15	Mrs. R. K. ShanmugaPriya	AP, S&H	Member
16	Mrs. L. R. Bindu	AP, S&H	Member
17	Mr. P. RajendraBabu	Chief Administrator, Fathima Public School, Parassala	Member-Local Society
18	Mr. A. Raj	Proprietor, Annai Builders, Azhiyamandapam	Member- Industry

19	Mr. Jaison Johnson	MD., TISAT, Cochin	Member- Alumni
20	Mr. Prince F M	Student, III-year CSE	Member-Student
21	Dr. D. Rajeev	HOD,Mech	Co-ordinator, IQAC

Table 10.1.2 (j) IQAC in CAYm1 (2018-19)

Sl.No.	Name	Designation	Role
1	Dr. A. Lenin Fred	Principal	Chairperson
2	Fr. Alex Kumar	Bursar	Management Representative
3	Dr. N. Austin	Academic Director	Member
4	Dr. V. Suresh	HOD, ECE	Member
5	Dr. D. R. Anand Rejilin	HOD, Civil	Member
6	Mr. M. Anish John Paul	HOD, EEE	Member
7	Dr. D. Dhanya	HOD, CSE	Member
8	Mrs. M. JebaPriya	HOD, S&H	Member
9	Mr. R. Leo Bright Singh	AP, Mech / PRO	Member
10	Mrs. P. S. Jeba	AP, ECE	Member
11	Mr. I. Jackson Thanga Roy	AP, Mech	Member
12	Mrs. L. T. Herlin	AP, CSE	Member
13	Mr. G. L. Abishek	AP, Civil	Member
14	Mr. J. R. Aldous Huxley	AP, EEE	Member
15	Mrs. R. K. ShanmugaPriya	AP, S&H	Member
16	Mrs. L. R. Bindu	AP, S&H	Member
17	Mr. P. Rajendra Babu	Chief Administrator, Fathima Public School, Parassala	Member-Local Society
18	Mr. A. Raj	Proprietor, Annai Builders, Azhiyamandapam	Member- Industry
19	Mr. Jaison Johnson	MD., TISAT, Cochin	Member- Alumni
20	Mr. Amruthya S. Nair	Student, II-year Mech.	Member-Student
21	Dr. D. Rajeev	HOD, Mech	Co-ordinator, IQAC

Table 10.1.2 (k) IQAC in CAYm2 (2017-18)

Sl.No.	Name	Designation	Role
1	Dr. A. Lenin Fred	Principal	Chairperson
2	Fr. Alex Kumar	Bursar	Management

			Representative
3	Dr. N. Austin	Academic Director	Member
4	Dr. V. Suresh	HOD, ECE	Member
5	Dr. D. R. Anand Regilin	HOD, Civil	Member
6	Mr. M. Anish John Paul	HOD, EEE	Member
7	Mr. Ashwin G Singergi	HOD, CSE	Member
8	Mrs. M. JebaPriya	HOD, S&H	Member
9	Mr. R. Leo Bright Singh	AP, Mech / PRO	Member
10	Mrs. P. S.Jeba	AP, ECE	Member
11	Mr. I. Jackson Thanga Roy	AP, Mech	Member
12	Mrs. L. T. Herlin	AP, CSE	Member
13	Mr. G. L. Abishek	AP, Civil	Member
14	Mr. J. R. Aldous Huxley	AP, EEE	Member
15	Mrs. R. K. ShanmugaPriya	AP, S&H	Member
16	Mrs. L. R. Bindu	AP, S&H	Member
17	Mr. P. RajendraBabu	Chief Administrator, Fathima Public School, Parassala	Member-Local Society
18	Mr. A. Raj	Proprietor, AnnaiBuilders, Azhiyamandapam	Member- Industry
19	Mr. Jaison Johnson	MD., TISAT, Cochin	Member- Alumni
20	Mr. Sobin Solomon	Student, III year Civil	Member-Student
21	Mr. J. Bright Brabin Winsley	AP/ Civil	Co-ordinator, IQAC

Table 10.1.2 (l) IQAC in CAYm3 (2016-17)

Sl.No.	Name	Designation	Role
1	Dr.A.Lenin Fred	Principal	Chairperson
2	Fr.Alex Kumar	Bursar	Management Representative
3	Dr.N.Austin	Academic Director	Member
4	Dr.V.Suresh	HOD, ECE	Member
5	Dr.D.R.AnandRejilin	HOD, Civil	Member
6	Mr.M.Anish John Paul	HOD, EEE	Member
7	Mr.Ashwin G Singergi	HOD, CSE	Member
8	Mrs.M.JebaPriya	HOD, S&H	Member
9	Mr.R. Leo Bright Singh	AP, Mech /PRO	Member
10	Mrs.P.S.Jeba	AP, ECE	Member

11	Mr.I.JacksonThanga Roy	AP, Mech	Member
12	Mrs.L.T.Herlin	AP, CSE	Member
13	Mr.G.L.Abishek	AP, Civil	Member
14	Mr.J.R.Aldous Huxley	AP, EEE	Member
15	Mrs.R.K.ShanmugaPriya	AP, S&H	Member
16	Mrs.L.R.Bindu	AP, S&H	Member
17	Mr.P.RajendraBabu	Chief Administrator, Fathima Public School,Parassala	Member-Local Society
18	Mr.A.Raj	Proprietor, AnnaiBuilders, Azhiyamandapam	Member- Industry
19	Mr.Jaison Johnson	MD., TISAT, Cochin	Member- Alumni
20	Mr. Fredin A S Givo	Student, III year CSE	Member-Student
21	Mr. J. Bright BrabinWinsley	AP/ Civil	Co-ordinator, IQAC

Anti-Ragging Committee

- The college has an Anti-Ragging committee; the members from different departments are selected to monitor any ragging activities in the campus. The students facing any such circumstances/ any source of ragging were requested to immediately report to any of the committee members. The Committee meets twice in a year.
- All the squad members are made as conveners of a particular day in a week with around 10-12 teaching/non-teaching members assisting them.
- Critical points are identified in the campus and during the lunch break time (12:30 PM to 1:15 PM) according to their allotted duty on a particular day, faculties go to monitor the area in which they were allotted.
- Another committee monitors the first year block, canteen, college bus, store, etc.

Members

Table 10.1.2 (m) Anti Ragging Committee Members

Sl.No	Name	School	Designation	Role
1	Mr.R.S.Vinoth	S&H	A/P	Coordinator
2	Dr.N.Austin	Mech	Academic Director	Member
3	Mr.SamJ.Palson	Physical Director	PD	Member
4	Mr.S.StanlyJino	Men's Hostel	Deputy Warden	Member
5	Mr.R.Rajesh	Men's Hostel	Deputy Warden	Member
6	Sr.Leena Mathew	Women's Hostel	Deputy Warden	Member

7	Sr.Navin	Women's Hostel	Deputy Warden	Member
8	Sr.Annamal	Counsellor	Counsellor	Member
9	Dr.D. Rajeev	Mech	HOD/Mech	Member
10	Dr. D.R.AnandRejilin	Civil	HOD/Civil	Member
11	Dr.V.Suresh	ECE	HOD/ECE	Member
12	Dr.D.Dhanya	CSE	HOD/CSE	Member
13	Mr. M.Anish John Paul	EEE	HOD/EEE	Member
14	Mrs.M.JebaPriya	H&S	HOD/S&H	Member
15	Mr.Ajesh V.S	Mech	Student	Member
16	Ms.Nitha Mohan	CSE	Student	Member

Committee against Sexual Harassment of Women

Roles and Responsibilities of the Committee

- To safeguard the rights of female students, to give proper guidance to the students in need, to provide a platform for listening to complaints regarding sexual harassment.
- To take initiative to conduct classes, awareness program for boys and girls to ensure a rapport among students in the campus and for the overall development as a successful person.
- The Committee meets once in every Semester.

Table 10.1.2 (n) Members of Committee against Sexual Harassment of Women

Sl.No	Members Name	School	Designation	Role
1	Dr.A.Seema	S&H	A/P	Convenor
2	Mrs.P.S.Jeba	ECE	A/P	Member
3	Mrs. L R Bindhu	H&S	A/P	Member
4	Mrs. D.S.Manjuram	Civil	A/P	Member
5	Mrs. Shobana	CSE	A/P	Member
6	Mrs. T.C.Belicita Charles	EEE	A/P	Member
7	Mrs. C.S.Sudha	Office	Receptionist	Member
8	Mrs. Prema	CSE	Lab assistant	Member
9	Mrs. S. Vnitha	MIDS	Social Worker	Member

Discipline Committee

As per the instruction of the Academic planning council it is the responsibility of the committee to maintain the overall discipline of the Campus. Discipline Committee is constituted to assist the principal to enquire about the complaint and submit the report to the Principal. The committee meets once in every month.

Table 10.1.2 (o) Discipline Committee Members

Sl.No	Name	School	Designation	Role
1	Mr.SamJ.Palson	Physical Director	PD	Coordinator
2	Mr.P.Anto Paulin Merinto	Mech	A/P	Member
3	Mr.J.M.Aravind	ECE	A/P	Member
4	Mr.G.JeinJenish	Civil	A/P	Member
5	Mr.R.S. Vinoth	H&S	A/P	Member
6	Mr.S.Stalin	EEE	A/P	Member

10.1.2. B Service Rules Procedures and Policies

The service rules are published by the management and it will be revised from time to time as and when required. The Recruiting and promotion procedure of faculty members is as per AICTE Norms. The details of the Service Rules and Policy Manual are available in our institute website.

Published service rules web link:marephraem.edu.in/service-rule.pdf/

10.1.2.C Minutes of meeting and action taken report

Table 10.1.2 (p) Details of committees meeting

Name of the Committee	Number of Members	Functions and Responsibilities	Frequency of meeting	Attendance of the latest meeting (2020-2021)
Governing Council	14	The highest level of decision maker with the authority to form the policy and govern the institution.	Twice in a year	14
Academic Planning Council	12	• Monitors and coordinates all the academic related activities of the institution and to promote quality research. • Encourage extension and community services to install community social responsibilities among students.	Once in every two months	11

IQAC	21	• Develop and execute the quality benchmarks for the various academic and administrative programs of the College and documentation of the same. • Facilitating the creation of a learner-centric environment for quality education and faculty improvement. • Arrangement of feedback responses on quality-related institutional programs. • Dissemination of information on the quality parameters of higher education and to conduct periodic auditing in the departments.	Once in every three months	19
Anti Ragging committee	16	• To ensure compliance with the directions of the honorable supreme court of India at institute level. • To prohibit any conduction by any student/ students whether by words spoken / written / by an act which has the effect of teaching, treating or handling.	Twice in a year	15
Disciplinary Committee	8	• To help maintain discipline in the college campus. • To enforce dress code among the students. • To monitor the movement of the students in order to prevent indiscipline and misbehaviors in the campus. • To assist the anti-ragging committee in preventing ragging of any form in the campus.	Once in a month	7
Committee against Sexual	9	• To safeguard the rights of female students, to give proper guidance to the students in need	Once in a semester.	8

Harassment of Women		and to provide a platform for listening the complaints regarding sexual harassment.		

Table 10.1.2 (q) Sample minutes and action taken

Name of the Committee	Sample minutes	Action taken
Governing council	1. Fr. Josephin Raj, Correspondent and Ex officio secretary of the Council presented the previous meeting report and financial report. The same was approved by the council. He also briefed the action taken based on the report. 2. Members are requested to offer their valuable comments and suggestions for improvement of the institution in all spheres 3. The following points are discussed Members appreciated the Efforts of the Principal and Team for taking the efforts for establishing ACIC Mar Ephraem incubation forum in the College Premises and granted permission to go ahead with the activities related to the same. 4. Members reviewed the budget utilization for the year 2019-2020 5. Members appreciated the principal and the academic team for their consistent efforts. 6. Staff should be motivated to register for online courses as a part of continuous improvement. Members expressed their happiness on the research activities happening in the college	i. Financial Statemen tfor the year 2019-20is approved ii. NewGen IEDC building is Opened iii. Staff were encouraged to register for online FDP iv. The staff has not registered for PhD. were motivated to apply for the same.
Academic Planning Council	Preparation of Academic Calendar for the year 2020-21 was discussed. Staff were encouraged to register for online FDP The staff has not registered for PhD. Should be encouraged to register for the same. Decision is made to conduct the Technical symposium at the department level	Academic Calendar is prepared Informed to all the teaching staff to do online FDP conducted by reputed organizations. The staff has not registered for PhD. were

		motivated to apply through the respective Head of the departments. Departments were informed and the same was executed.
IQAC	The meeting began with the opening remarks of the IQAC coordinator. Discussed about the question paper pattern. All departments were directed to submit their question paper format to IQAC Discussed about the online feedback submitted by the students. Departments are requested to motivate their students to publish papers in indexed journals	All departments are directed to submit their question paper format to IQAC Students are informed to Submit the online feedback Students were motivated to publish papers in indexed journals
Disciplinary committee	It was found that some of the students had angry arguments among themselves near to the library for a simple issue between John Prabhahar of third year Mechanical Engineering and R.Rexcil yRijoof second year Electronics and communication Engineering .	The committee members conducted an inquiry and the students were severely warned.
Anti-Ragging committee	Anti-ragging Committee meeting conducted at Principal office by the Anti-ragging committee members. It is decided to prepare the Anti-ragging committee Affidavit for the first year students	Anti-ragging committee Affidavit is prepared for first year students and their parents.

10.1.3 Decentralization in working and grievance redressal system (10)

A. List the names of the faculty members who have been delegated powers for taking administrative decisions

Administrative Setup within the college

For the smooth functioning of the institute the following powers have been delegated among the following members. Their responsibilities and administrative powers are listed below.

Correspondent

- The Ex officio Secretary of the governing body
- Responsible for framing general policy matters of the institute in consultation with Governing Body (GB).

- Responsible for the implementation of decision taken in the GB.
- Appointing authority of all staff in the institute.
- Have the power to take disciplinary action against any staff in the institute on the basis of the recommendation of the discipline committee.
- Co-ordinate the preparation of annual plan and budget with the help of the Principal, Bursar, Office Superintendent and present it to the Governing Council for approval.
- Responsible for the infrastructure development of the Institute.

Bursar

- Assist the Correspondent for the finance management of the Institute.
- Custodian of liquid cash of the institute and verify the cash on a daily basis.
- Render all necessary help to the Correspondent for the management of the Institute.
- Assist the Correspondent to prepare annual plan and budget of the institute.

Principal

- Responsible for managing the faculty and technical staff in day to day work .
- Head of the college and responsible for maintaining high academic standards
- Maintain discipline among staff and students with help of Academic Director and HOD's.
- Liaison with AICTE/University/Government.
- President of the Parents Teachers Association.
- Coordinate the student admissions and all programmes conducted within the college.
- Responsible for conducting Internal/University examinations and forwarding the required academic data to the university.
- Prepare Human resource requirement of faculty and technical staff in various departments in consultation with concerned HOD's and place the same before the Governing Council through the Correspondent.

Academic Director

- Responsible for the smooth conduct of the Teaching Learning Process
- Responsible for the faculty development activities
- Maintaining the discipline among the staff and students

Head of the Department

- Responsible for the smooth conduct of the department
- Ensure the discipline of staff and students within the department
- Submit the budget proposal and take initiative for the all the purchase activities.

Office Superintendent

- Managing office, supply stocks and placing orders preparing regular administrative report
- Responsible for management of all non-teaching staffs (office staff, gardeners, security etc).
- will be in charge of sending and receiving all official correspondence
- Has to establish the work priorities, delegate work to the office support staff and ensure deadlines are met and procedures are followed.
- To look after the maintenance of services

Placement Officer

- Responsible for entire placement activities of the Institute.
- Mediator between Institute and companies.
- Responsible for conducting various placement training for the students in the Institute.

Table 10.1.3 (a) Faculty assigned for taking the Additional/ Administrative responsibilities

S.No	Name of the member of faculty	Basic academic designation	Additional / Administrative responsibility
1.	Dr.N.Austin	Professor of Mechanical Engineering	Academic Director
2.	Dr.D.Rajeev	Professor of Mechanical Engineering	HOD, Mech. Engg.
3.	Dr.V.Suresh	Professor of ECE	HOD, ECE
4.	Dr.D.R.Anand Rejilin	Associate Professor of Civil Engineering	HOD, Civil
5.	Dr.D.Dhanya	Associate Professor of CSE	HOD, CSE
6.	Mr.M. Anish John Paul	Assistant Professor of EEE	HOD, EEE
7.	Mrs.M.JebaPriya	Assistant Professor of S&H	HOD, S & H
8.	Mr.Sam J. Palson	Physical Director	Physical Director
9.	Mr.Charles Dyson	Assistant Professor of Civil Engineering	Placement Officer
10.	Mr.Beschi Selvan S.L.	Assistant Professor of Mechanical Engineering	Transport Officer

B. The Mechanism and Composition of Grievance Redressal Cell

Grievance redressal mechanism

- If a complaint is received from a student, it will be handed over to the Principal immediately.
- Principal in consultation with Academic Planning council will hand over the complaint to the grievance redressal committee.
- The committee will enquire about the complaints within the stipulated time and the report will be handed over to the Principal.
- The committee report will be discussed in the college council and the council will decide the disciplinary action.
- The action will be informed to the parents also.
- The parents along with the accused students have to meet the Principal before the student is permitted to attend the class.
- If there is issue of serious manhandling the matter will be reported to the police.
- In the case of academic grievances the matter will be handed over to the Head of Department for enquiry and report.
- Principal will suggest suitable measures based on the report.

Table 10.1.3 (b) Composition of Grievance Redressal Cell

Members Name	Department	Designation	Role
Dr.A.Seema	S&H	A/P	Convenor
Mr. S.Vijayakumar	Mech	A/P	Member
Mrs.D.S.Manju Ram	Civil	A/P	Member
Mr. S.StanlyJino	Hostel	Deputy Warden	Member
Mrs. Suja	Chemistry	Lab Assistant	Member

C. Action taken report of grievance redressal cell

Table 10.1.3 (c) Details of Action taken report of grievance cell

Nature of grievance	Description of grievance reported	Action taken
Academic/ infrastructure	• Few girl students expressed their discomfort and they feel insecure while using social networking websites. • Some girl students are found disturbed by peer Pressure.	1.Awareness were given to female students about the usage of social networking websites 2. Special Counseling is arranged.

10.1.4. Delegation of Financial Powers (10)

In order to improve and reform financial administration in the college, powers have been delegated to Principal , Heads of the Departments and placement officer for facilitating expeditious decision making and for speedy implementation of schemes.

A. Financial Power Delegated

Table 10.1.4 Financial Power Delegated

Sl.No	Designation	Financial Power
1	Principal	**RS.1,00,000/-**
2	HOD	**RS.20,000/-**
3	Placement Officer	**RS.20,000/-**
4	Cells and Committee	**RS.5000/-**

B. Utilization of Financial Power

All the financial matters were dealt by the management. In order to face the urgent unavoidable needs financial power are delegated to the Principal, HOD, Placement Officer and the in charges of various cells and committees. For unexpected urgent needs the money within the financial power will be utilized by the respective in charges and the same will be submitted later to the management with necessary details for approval.

10.1.5 Transparency and availability of correct / unambiguous information in public domain (5)

A. Information on the policies, rules, processes to be made available on website

Available on the college website.

Transparency

The college takes the following measures to render transparency.

Academic and Administrative Transparency:

- The decisions taken and the issues discussed in academic planning council are informed to the faculty in the meetings of the various departments by Heads of Departments.
- All the decisions taken by the statutory bodies pertaining to particular items are informed to the staff.
- Attendance of students has to be posted every month by the class advisor and the consolidated attendance is further displayed on the notice boards for the information to the students. Student's attendance is also sent to the respective parents periodically.
- The Mandates are presented on the website including the academic regulations and syllabus.
- All the information about the college is available on the college website.

- Making all the relevant documents available at the time of inspection to several bodies Including Social welfare departments, university committees, AICTE& NBA.

B. Dissemination of the information about student, faculty and staff

- Information on policies, rules, and processes are disseminated to the stakeholders through the college website.
- All the issues are discussed in the meetings of the Heads of Departments, which are held periodically and the minutes of which are circulated to all the departments.
- All the important information's are sent to the faculty, staff and students.
- There are Notice Boards in all the blocks through which information is disseminated to the staff and students and most significant circulars are sent to the classrooms.

10.2. Budget Allocation, Utilization, and Public Accounting at Institute level (30)

Summary of Current financial year's budget and actual expenditure incurred (for the **institution exclusively) in the three previous financial Years**

Total Income at Institute level: For CFY, CFYm1, CFYm2, CFYm3& CFYm4

Table 1 - CFY 2020-21

Total Income				**Actual Expenditure (till 31-3-2021)**			**Total No. of Students 1143**
Fee	**Govt.**	**Grants**	**Other Sources (Specify)**	**Recurring Including Salaries**	**Non Recurring**	**Special Projects/Any other Specify**	**Expenditure per student**
385.51	134.2	91.75	42.09	602.94	91.56	264.93	0.84

Table 2 - CFYm1 2019-20

Total Income				**Actual Expenditure (till 31-3-2020)**			**Total No. of Students1302**
Fee	**Govt.**	**Grants**	**Other Sources (Specify)**	**Recurring Including Salaries**	**Non Recurring**	**Special Projects/Any other Specify**	**Expenditure per student**
440.22	262.99	70.60	58.54	837.95	24.87	87.08	0.73

Table 3 - CFYm2 2018-19

Total Income				Actual Expenditure (till 31.3.2019)			Total No. of Students 1383
Fee	**Govt.**	**Grants**	**Other Sources (Specify)**	**Recurring Including Salaries**	**Non Recurring**	**Special Projects/ Any other Specify**	**Expenditure per student**
786.37	54.87	66.10	16.42	732.44	100.75	48.45	0.64

Table 4 - CFYm3 2017-18

Total Income				Actual Expenditure (till 31.3.2018)			Total No. of Students 1511
Fee	**Govt.**	**Grants**	**Other Sources (Specify)**	**Recurring Including Salaries**	**Non Recurring**	**Special Projects/Any other Specify**	**Expenditure per student**
659.46	64.77	53.47	12.45	730.03	238.79	42.75	0.67

Table 5 - CFYm4 2016-17

Total Income				Actual Expenditure (till 31.3.2017)			Total No. of Students 1566
Fee	**Govt.**	**Grants**	**Other Sources (Specify)**	**Recurring Including Salaries**	**Non Recurring**	**Special Projects/Any other Specify**	**Expenditure per student**
805.78	77.37	59.1	11.92	672.12	203.53	43.04	0.59

Items	**Budgeted in 2020-2021**	**Actual Expenses in 2020-2021**	**Budgeted in 2019-2020**	**Actual Expenses in 2019-2020**	**Budgeted in 2018-2019**	**Actual Expenses in 2018-2019**	**Budgeted in 2017-2018**	**Actual Expenses in 2017-2018**	**Budgeted in 2016-2017**	**Actual Expenses in 2016-2017**
Infrastructure Built-Up	100.00	86.97	20.00	18.14	100.00	98.96	200.00	196.79	180.00	195.56
Library	5.00	1.38	2.50	0.42	1.00	1.00	5.00	5.09	0.20	0.58
Laboratory Equipment	3.45	3.21	6.00	6.31	2.00	1.80	37.00	36.91	5.62	6.17
Laboratory consumables	0.15	0.11	0.88	0.86	2.00	2.11	2.25	1.58	1.18	1.22
Teaching and non-teaching staff salary	364.62	269.75	354.00	336.43	380.36	460.71	330.75	384.95	315.00	335.48
Maintenance and Spares	14.74	14.32	6.00	7.89	10.00	11.20	20.00	22.99	10.00	9.05
R&D	270.30	265.70	84.43	87.71	50.00	49.45	47.00	47.47	2.50	3.45
Training and Travel	13.50	7.69	8.00	7.69	10.00	8.15	10.00	8.58	8.00	7.04
Miscellaneous Expenses*	0	0	0	0	0	0	0	0.10	0	0.61
Administrative Expenses	74.68	71.77	105.00	106.44	130.00	126.38	180.00	185.33	200.00	191.36
Financial Charges	128.50	121.78	120.00	123.17	120.00	121.78	120.00	121.78	120.00	116.90
Total	**974.94**	**842.68**	**706.81**	**695.05**	**805.36**	**881.54**	**952.00**	**1,011.56**	**842.50**	**867.42**

10.2.1 Adequacy of budget allocation (10)

The budget is progressively increased every year to meet the purchase and servicing of equipment, replacement of condemned and creation of new labs to cope up with the upgraded syllabus

A. Quantum of budget allocation for three years

S. No.	2020-2021 (Lakhs)	2019-2020 (Lakhs)	2018-2019 (Lakhs)	2017– 2018 (Lakhs)	2016-2017 (Lakhs)
1	974.94	706.81	805.36	952.00	842.50

B. Justification of budget allocated for three years

The yearly budget is prepared based on the needs & requirements of the College and Various Departments by taking into consideration of purchase of laboratory & infrastructure developments, Students, faculty & staff requirements and promotions. Budget estimates will be prepared by each department and will be reviewed in HODs meeting with the Principal. After having deliberations, prepared budget made altered in the departments and forwarded to the Principal for preparing final budget at college level. The final budget is sent to Management for approval and sanction. The Management will approve after passing the same in the Governing council meeting. The allocation of budget and utilization for the last three years is adequate.

10.2.2. Utilization of allocation funds (15)

A. Budget utilization for three years

Years	Budgeted in (Lahks)	Expenses in (Lakhs)	Utilization of funds %
Budget in CFY (2020 - 2021)	974.94	842.68	86.43
Budget in CFY m1(2019 - 2020)	706.81	695.05	98.37
Budget in CFYm2 (2018 - 2019)	805.36	881.54	100
Budget in CFY m3(2017 - 2018)	952.00	1,011.56	100
Budget in CFY m4 (2016 - 2017)	842.50	867.42	100

10.2.3. Availability of the audited statements on the institute's websites (5)

Availability of Audited statements on website: Available

10.3. Program Specific budget Allocation, Utilization (30)

Table 1- CFY 2020-21

Total Budget:		**Actual Expenditure (Till….)**		**Total No of Students -231**
Non Recurring	Recurring	Non Recurring	Recurring	Expenditure per Student
68,000	1,02,39,370	64,874	97,28,475	42,395

Table 2 - CFY m1 2019-20

Total Budget:		**Actual Expenditure (Till…..)**		**Total No of Students -199**
Non Recurring	Recurring	Non Recurring	Recurring	Expenditure per Student
92,000	47,48,500	96,443	43,77,400	22,482

Table 3 - CFY m2 2018-19

Total Budget:		**Actual Expenditure (Till…..)**		**Total No of Students-188**
Non Recurring	Recurring	Non Recurring	Recurring	Expenditure per Student
27,200	43,37,352	24,458	45,19,000	24,167

Table 4 - CFY m3 2017-18

Total Budget:		**Actual Expenditure (Till…..)**		**Total No of Students-180**
Non Recurring	Recurring	Non Recurring	Recurring	Expenditure per Student
4,40,000	46,18,816	4,39,660	36,65,300	22,805

Table 5- CFY m4 2016-17

Total Budget:		**Actual Expenditure (Till…..)**		**Total No of Students 168**
Non Recurring	Recurring	Non Recurring	Recurring	Expenditure per Student
60,000	35,29,765	66,192	35,29,765	21,405

Items	Budgeted in 2020-2021	Actual Expenses in 2020-21	Budgeted in 2019-2020	Actual Expenses in 2019-2020	Budgeted in 2018-2019	Actual Expenses in 2018-2019	Budgeted in 2017-2018	Actual Expenses in 2017-2018	Budgeted in 2016-2017	Actual Expenses in 2016-2017
Laboratory Equipment	68,000	64,874	92,000	96,443	27,200	24,458	4,40,000	4,39,660	60,000	66,192
Software	0	0	0	0	0	0	0	0	0	0
Laboratory Consumable	2,500	2,223	14,000	13,144	27,200	28,667	26,800	18,804	12,600	13,088
Maintenance and Spare	3,03,877	2,89,407	92,000	1,20,592	1,36,000	1,52,300	2,38,200	2,73,840	1,07,000	97,088
R & D	56,50,000	53,69,790	11,90,500	13,40,545	6,80,000	6,72,162	5,60,000	5,65,501	26,800	37,011
Training and Travel	1,60,000	1,55,415	1,22,000	1,17,535	1,36,000	1,10,788	1,20,000	1,02,178	85,800	75,525
Administrative Expenses	15,22,993	14,50,470	15,00,000	16,26,827	17,67,000	17,17,980	21,44,000	22,07,750	21,45,600	20,52,927
Financial Charges	26,00,000	24,61,171	18,30,000	18,82,555	16,31,200	16,55,455	14,30,000	14,50,743	12,87,500	12,54,125
Total	**1,03,07,370**	**97,93,349**	**48,40,500**	**51,97,642**	**44,04,600**	**43,61,810**	**49,59,000**	**50,58,476**	**37,25,300**	**35,95,956**

10.3.1 Adequacy of budget allocation (10)

A. Quantum of budget allocation for three years

Table 10.3.1 Quantum of budget allocation

S.No	2020- 2021	2019- 2020	2018- 2019	2017- 2018	2016 - 2017
1	1,03,07,370	48,40,500	44,04,600	49,59,000	37,25,300

B. Justification of budget allocation for three years

The yearly budget is prepared based on the needs & requirements of the Department by taking into consideration of purchase of laboratory & infrastructure developments, Students, faculty & staff requirements and promotions. Budget estimates will be prepared by the department and will be reviewed in HODs meeting with the Principal. After having deliberations, prepared budget made altered in the departments and forwarded to the Principal for preparing final budget at college level. The final budget is sent to Management for approval and sanction. The Management will approve after passing the same in the Governing council meeting. The allocation of budget and utilization for the last three years is adequate.

10.3.2 Utilization of allocation funds (20)

Table 10.3.2 Budget Utilization Summary

Years	Budgeted	Expenses	Utilization of funds %
Budget in CFY (2020 - 2021)	1,03,07,370	97,93,349	95
Budget in CFY m1(2019 - 2020)	48,40,500	51,97,642	98.37
Budget in CFYm2 (2018 - 2019)	44,04,600	43,61,810	100
Budget in CFY m3(2017 - 2018)	49,59,000	50,58,476	100
Budget in CFY m4 (2016 - 2017)	37,25,300	35,95,956	100

10.4. Library and Internet (20)

10.4.1. Quality of learning resources (hard/soft) (10)

Mar Ephraem library is one of the kind spacious buildings with all the modern amenities that plays a pivotal role in all the aspects of academics and other related sources of enrichment in the quantity and quality of knowledge of all the stake holders related to it, comprises of a wide range of academic resources such as books, periodicals, online databases, e-journals, back volumes, CDs/DVDs, project reports, question bank etc. periodicals, online databases, e-journals, back volumes, CDs/DVDs, project reports, question bank etc

Table 10.4.1 (a) Library Details

Features	Description
Physical Area of Library	Total area of library : 1004 Sq. M
	Periodicals, E-Library and Reading area : 576 Sq M
	Reference and Stack Room : 428 Sq M
	Number of seats in reading space : 125
	Number of seats in E-Library : 25
Library Holdings	Total No. of volume of Books : 13342
	Total No. of Title of Books : 4625
	Total No. of Journals & Magazines : 43
	Total No. of E-Journals (Delnet) : 400
	Total No. of CDs/DVDs : 552
	Total No. of News Papers : 8
	E-Books : 310
Library Facilities	OPAC facility
	E-library facility (NPTEL Videos & CD/DVD database)
	Back Volumes
	Project Reports
	Question Bank (Hard/Soft Copies)
	Inter Library Loan facility (through DELNET)
	Reprographic facility
	Scanning and Printing facility
	Wi-Fi facility
Library Automation	Library is fully automated with Info Library Software with Barcode facility
	Users can be accessed to library resources and circulation status through OPAC
Library Membership	DELNET - New Delhi
	National Digital Library of India
Library Timings	On Working Days : 8.30 AM to 7.00 PM
	Weekend : 8.30 AM to 6.00 PM

	On Holidays : Library remains Closed
Library Staff Details	1. Dr. G.PRINCE, Ph.D. , Librarian
	2. V. SANTHI, M.L.I.Sc., Library Assistant
	3. R. Raja Bright Singh, Attender
Features	**Description**
Physical Area of Library	Total area of library : 1004 Sq. M
	Periodicals, E-Library and Reading area : 576 Sq M
	Reference and Stack Room : 428 Sq M
	Number of seats in reading space : 125
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	E-Books : 310
Library Facilities	OPAC facility
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	Back Volumes
	Project Reports
	Question Bank (Hard/Soft Copies)
	Inter Library Loan facility (through DELNET)
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	Scanning and Printing facility
	Wi-Fi facility
Library Automation	Library is fully automated with Info Library Software with Barcode facility
	Users can be accessed to library resources and circulation status through OPAC
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Library Membership	
Library Timings	On Working Days : 8.30 AM to 7.00 PM
	Weekend : 8.30 AM to 6.00 PM
	On Holidays : Library remains Closed
Library Staff Details	1. Dr. G.PRINCE, Ph.D. , Librarian
	2. V. SANTHI, M.L.I.Sc., Library Assistant
	3. R. Raja Bright Singh, Attender

Table 10.4.1 (b) Book Details

Year	Number of new Titles added	Number of new editions added	Number of new Volumes added
CAYm4 (2016-2017)	1014	71	1610
CAYm3 (2017-2018)	427	95	786
CAYm2 (2018-2019)	204	44	341
CAYm1 (2019-2020)	205	31	273
CAY (2020-2021)	62	23	68

Table 10.4.1 (c) Subscribed Journal Details

Year	Print Journals	E- Journals
CAYm4(2016-2017)	28	-
CAYm3(2017-2018)	50	105 (Proquest e-Journals)
CAYm2(2018-2019)	36	400 (DELNET Journals)
CAYm1(2019-2020)	43	400 (DELNET Journals)
CAY(2020-2021)	47	400 (DELNET Journals)

Table 10.4.1 (d) Library expenditure on books, magazines/journals, and miscellaneous contents

Year	Expenditures (Rs.)				
	Books	Journal/Magazine Subscription (Print Version)	E- Journal Subscription	Newspapers	Misc. Contents
CAYm4(2016-2017)	82570	56975	-	14238	-
CAYm3(2017-2018)	751697	117255	83000	15730	163910
CAYm2(2018-2019)	130687	80650	13570	15780	778
CAYm1(2019-2020)	117232	116400	13570	17300	170
CAY(2020-2021)	29696	95833	13570	1985	-

10.4.2 Internet

Name of the Internet Providers: BSNL & Shine Plus

A. Available bandwidth

- BSNL – 40 Mbps (NMEICT leased line) for LAN connections
- Shine plus – 40 Mbps (Private leased line) for Wi-Fi connections

Total Bandwidth: **80 Mbps**

B. Wi-Fi Availability

- Fully Wi-Fi campus

Wi-Fi connections for all the staff and students is provided after registering the MAC address.

C. Internet access in Labs, classrooms, library and offices of all Departments

- Office, library and all Labs as well as offices of all departments are provided with internet connection through LAN
- All class rooms are connected with internet through Wi-Fi

D. Security Mechanism

- Fort iGATE 200 D firewall is used as the security mechanism for all the LAN and Wi-Fi connections.

Declaration

The head of the institution needs to make a declaration as per the format given –

- I undertake that, the institution is well aware about the provisions in the NBA's Accreditation manual concerned for this application, rules, regulations, notifications and NBA expert visit guidelines inforce as on date and the institutes shall fully abide by them.

- It is submitted that information provided in this Self Assessment Report is factually correct.

- I understand and agree that an appropriate disciplinary action against the Institute will be initiated by the NBA. In case, any false statement/information is observed during pre-visit, visit, postvisit and subsequent to grant of accreditation.

Head of the Institute

Name : Dr.A.Lenin Fred

Designation : Principal

Signature :

Prof. Dr. A. Lenin Fred, M.E., Ph.D.
PRINCIPAL
MAR EPHRAEM COLLEGE
OF ENGINEERING & TECHNOLOGY
MALANKARA HILLS, ELAVUVILAI, MARTHANDAM - 629 171,
KANYAKUMARI DISTRICT, TAMILNADU, INDIA.

Seal of The Institution :

MAR EPHRAEM COLLEGE OF ENGINEERING & TECHNOLOGY
MALANKARA HILLS
ELAVUVILAI
MARTHANDAM - 629 171
KANYAKUMARI DISTRICT
TAMILNADU, INDIA

Place : Marthandam

Date : 28-01-2022