



Musaliar
COLLEGE OF ENGINEERING AND TECHNOLOGY
PATHANAMTHITTA

Approved by All India Council for Technical Education (AICTE) &
Affiliated to APJ Abdul Kalam Technological University, KERALA

SELF ASSESSMENT REPORT (SAR)

FOR ACCREDITATION OF UNDERGRADUATE ENGINEERING PROGRAMME (TIER-II)

BTech CIVIL ENGINEERING
(First Time Accreditation)



Submitted to
**National
Board of
Accreditation**

March 2023

PART A	Institutional Information	
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1. Name and Address of the Institution

MUSALIAR COLLEGE OF ENGINEERING AND TECHNOLOGY,
MUSALIAR COLLEGE OF ENGINEERING,
MUSALIAR COLLEGE PO.,
PATHANAMTHITTA,
KERALA.

2. Name and Address of Affiliating University

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

3. Year of establishment of the Institution:

2002

4. Type of the Institution:

<input type="checkbox"/> University	<input type="checkbox"/> Autonomous
<input type="checkbox"/> Deemed University	<input checked="" type="checkbox"/> Affiliated
<input type="checkbox"/> Government Aided	

5. Ownership Status:

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

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

Name of Institutions	Year of Establishment	Programs of Study	Location
Musaliar College of Engineering, Chirayinkeezhu	2011	B.Tech (ECE, ME,CE,BE,FT)	Chirayinkeezhu, Thiruvananthapuram, Kerala
Musaliar College of Arts and Science	2012	BCA, BBA, B.Com, M.Com	Cheenkalthadom, Pathanamthitta, Kerala
Musaliar Model Lower Primary School	2014	Primary Education	Cheenkalthadom, Pathanamthitta, Kerala

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/Decrease	Current Intake	Accreditation status	From	To	Program for consideration	Program for Duration
BTech	UG	2002	2002	60	Yes	30	Applying first time	--	--	Yes	4
Sanctioned Intake for Last Five Years for the BTech Electronics & Communication Engineering											
Academic Year						Sanctioned Intake					
2021-22						30					
2020-21						30					
2019-20						30					
2018-19						30					
2017-18						60					
2016-17						60					
MTech	PG	2011	2011	18	Yes	12	Eligible but not applied	--	--	No	2
Sanctioned Intake for Last Five Years for the MTech VLSI & Embedded Systems Design											
Academic Year						Sanctioned Intake					
2021-22						12					
2020-21						12					
2019-20						18					
2018-19						18					
2017-18						18					
2016-17						18					
B Tech Computer Science and Engineering	UG	2002	2002	60	No	60	Applying first time	--	--	No	4
M Tech Computer Science and Engineering	PG	2012	2012	18	Yes	12	Eligible but not applied	--	--	0	2

Sanctioned Intake for Last Five Years for the M Tech Computer Science and Engineering											
Academic Year						Sanctioned Intake					
2021-22						12					
2020-21						12					
2019-20						18					
2018-19						18					
2017-18						18					
2016-17						18					
B Tech Civil Engineering	UG	2004	2004	60	No	60	Applying first time	--	--	0	4
MBA	PG	2009	2009	60	No	60	Applying first time	--	--	0	2
B Tech Mechanical Engineering	UG	2002	2002	120	Yes	60	Not eligible for accreditation	--	--	0	4
Sanctioned Intake for Last Five Years for the B Tech Mechanical Engineering											
Academic Year						Sanctioned Intake					
2021-22						60					
2020-21						60					
2019-20						120					
2018-19						120					
2017-18						120					
2016-17						120					
B Tech Electrical and Electronics Engineering	UG	2004	2004	60	Yes	30	Not eligible for accreditation	--	--	0	4
Sanctioned Intake for Last Five Years for the B Tech Electrical and Electronics Engineering											
Academic Year						Sanctioned Intake					
2021-22						30					
2020-21						30					
2019-20						30					
2018-19						30					
2017-18						60					
2016-17						60					
MCA	PG	2010	2010	60	No	60	Eligible but not applied	--	--	0	2

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

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

9. Total number of employees in the institution:**A. Regular* Employees (Faculty and Staff):**

Items	2021-22		2020-21		2019-20	
	MIN	MAX	MIN	MAX	MIN	MAX
Faculty in Engineering (Male)	17	19	19	23	20	28
Faculty in Engineering (Female)	31	35	26	31	28	32
Faculty in Maths, Science & Humanities (Male)	7	7	7	7	7	8
Faculty in Maths, Science & Humanities (FeMale)	12	12	11	12	11	11
Non-teaching staff (Male)	23	23	24	24	23	25
Non-teaching staff (FeMale)	12	13	13	14	11	14

B. Contractual* Employees (Faculty and Staff):

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

10. Total number of Engineering Students:

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

Engineering and Technology- UG Shift-1

Items	2021-22	2020-21	2019-20
Total no. of Boys	75	151	93
Total no. of Girls	39	31	37
Total	114	182	130

Engineering and Technology- PG Shift-1

Items	2021-22	2020-21	2019-20
Total no. of Boys	0	0	0
Total no. of Girls	7	10	9
Total	7	10	9

Technology- MBA Shift-1

Items	2021-22	2020-21	2019-20
Total no. of Boys	7	20	8
Total no. of Girls	22	29	22
Total	29	49	30

Engineering and Technology- MCA Shift-1

Items	2021-22	2020-21	2019-20
Total no. of Boys	9	14	0
Total no. of Girls	25	34	7
Total	34	48	7

11. Vision of the Institution:

To develop into a world class pace setter with distinct identity and character to meet the demands of a changing global technological competitive scenario with a societal thrust.

12. Mission of the Institution:

M1:To impart quality Education in Engineering & Management by providing state of the art teaching learning methods.

M2:To foster innovation in Technology and its application for meeting global challenges.

M3:Inculcate global awareness, communication skills, team building and ethical values.

M4:To collaborate with industry and R & D organization for developing knowledge and sustainable technologies.

M5:To facilitate Research and Innovation in various fields of Engineering and Management

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

Head of the Institution	
Name	Dr A S Abdul Rasheed
Designation	Principal
Mobile No.	8078461703
Email ID	principal.musaliar@gmail.com
NBA Coordinator, If Designated	
Name	Prof Sarath Raj S
Designation	Associate Professor
Mobile No.	9446107944
Email ID	hodmceteee@gmail.com

CRITERION 1	Vision, Mission and Program Educational Objectives	60
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1. VISION, MISSION AND PROGRAM EDUCATIONAL OBJECTIVES (60)

Total Marks: 60

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

Total Marks: 5

1.1.1. Vision and Mission of the Institute

Vision of the Institute

To develop into a world class pace setter with distinct identity and character to meet the demands of a changing global technological competitive scenario with a societal thrust.

Mission of the Institute

- M1:** To impart quality Education in Engineering & Management by providing state of the art teaching learning methods.
- M2:** To foster innovation in Technology and its application for meeting global challenges.
- M3:** Inculcate global awareness, communication skills, team building and ethical values.
- M4:** To collaborate with industry and R & D organization for developing knowledge and sustainable technologies.
- M5:** To facilitate Research and Innovation in various fields of Engineering and Management

1.1.2. Vision and Mission of the Department of Civil Engineering

Vision of the Department

To be a fountain head of quality education delivering civil engineers empowered with core knowledge, skill and personality who can lead a sustainable society.

Mission of the Department

- M1:** To develop civil engineers of high caliber and technical skills through quality education, and industry exposure to serve their surroundings with pride.
- M2:** To inculcate a creative mind in students and to build-up their inborn technical talents through additional skill development programmes.
- M3:** To provide knowledge based consultancy services to the community in all areas of civil engineering
- M4:** To create competent civil engineers who are capable of upholding ethical values and principles of sustainable development to face the challenges of future

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

Total Marks: 5

Program Educational Objectives (PEOs)

The Graduates will be able to:

- PEO 1:** Graduates will be actively engaged in a professional career as a civil engineer or will be pursuing advanced study.
- PEO 2:** Graduates will understand professional practice issues and demonstrate a commitment to lifelong learning.
- PEO3:** Graduates will be guided by the principles of sustainable development in executing civil engineering projects by conserving the resources and leading to a healthier society.

1.3. Indicate where the Vision, Mission and PEOs are Published and Disseminated among Stakeholders (10) Total Marks: 10

The Department Vision, Mission and PEO's are disseminated in the following places for the internal as well as the external Stake holders. This dissemination creates awareness among the stake holders in relation to the activities that are carried out by the Department. The internal and external stakeholders of the Department include Students, Faculties, Parents, Alumni, Industrial Experts, Academicians, University as well as the Department Visitors.

Stakeholders are made aware of Mission & Vision/ PEOs through Interaction with employers through Training and Placement Office, Orientation programs for first year students and their parents, through Alumni meets and convocation programs, academic surveys, classroom teaching, academic counselling, interaction with parents.

Above mentioned awareness methods are reviewed from time to time.

Table 1.3.a Publications of Locations of Vision, Mission, PEOs, PSOs and POs

Sl. No.	Location	Institute		Department				Extend of awareness for stake holders
		Vision	Mission	Vision	Mission	PEO	PSO	
1	Course File	✓	✓	✓	✓	✓	✓	Faculty members, University
2	Department Newsletter/ Magazine	✓	✓	✓	✓			Faculty members, Students, Alumni, Parents, Industrial experts, Management
3	Lab Manual	✓	✓	✓	✓	✓	✓	Faculty members, Students, Staff Members, University
4	Course Diary			✓	✓	✓	✓	Faculty members, Academicians, University
5	Department Web page			✓	✓	✓	✓	Faculty members, Staff Members, Students, Alumni, Parents, Industrial experts, Management
6	Institute Website	✓	✓					Faculty members, Students, Staff Members, Alumni, Parents, Industrial experts, Management
7	Faculty Handbook	✓	✓					Faculty members, Management
8	Students Handbook	✓	✓					Students, Staff Members, Parents, Faculty Members

Table 1.3.b Poster locations of Vision, Mission, PEOs, PSOs and POs

Sl. No.	Location	Institute		Department				Extend of awareness for stake holders
		Vision	Mission	Vision	Mission	PEO	PSO	
1	College Entrance	✓	✓					Management, Faculty Members, Staff Members, Students, Parents, Alumni, Industrial expert.
2	Chairman's Chamber	✓	✓					Management, Faculty Members, Staff Members, Students, Parents, Alumni, Industrial expert.
3	Principal's Chamber	✓	✓					Management, Faculty Members, Staff Members, Students, Parents, Alumni, Industrial experts.
4	Dean – Academics and Administration	✓	✓					Management, Faculty Members, Staff Members, Students, Parents, Alumni, Industrial experts.
5	IQAC Cell	✓	✓					Management, Faculty Members, Alumni, Industrial experts, Academician
6	Board Room	✓	✓					Management, Faculty Members, Staff Members, Alumni, Industrial expert.
7	Administrative Office	✓	✓					Faculty Members, Staff Members Students, Parents.
8	Career Guidance and Placement Cell	✓	✓					Faculty Members, Students, Staff Members, Alumni, Industrial experts.
9	Central Library	✓	✓					Faculty Members, Staff members, Students.
10	Entrepreneurship Development Cell (EDC)	✓	✓					Faculty Members, Staff Members Students, Industrial experts.
11	Canteen	✓	✓					Faculty Members, Students, Staff Members, Parents, Alumni, Management, Academicians, Industrial experts.
12	Auditorium	✓	✓					Management, Faculty Members, Staff Members, Students, Parents, Alumni, Industrial experts.

Table 1.3.b Poster locations of Vision, Mission, PEOs, PSOs and POs (Contd.)

Sl. No.	Location	Institute		Department				Extend of awareness for stake holders
		Vision	Mission	Vision	Mission	PEO	PSO	
13	Hostel	✓	✓					Students, Parents.
14	Main Corridors	✓	✓					Management, Faculty Members, Staff Members, Students, Parents, Alumni, Industrial experts, Academicians.
15	Class Rooms	✓	✓	✓	✓	✓	✓	Faculty Members, Students
16	Department Notice Boards			✓	✓	✓	✓	Faculty Members, Staff Members, Students, Parents, Alumni, Industrial experts, Academician.
17	Department Library			✓	✓	✓	✓	Faculty Members, Staff members, Students.
18	Staff Rooms			✓	✓	✓	✓	Faculty Members, Students, Parents, Academicians.
19	Laboratories			✓	✓	✓	✓	Faculty Members, Staff members, Students, Academicians.
20	Department Seminar Hall			✓	✓	✓	✓	Management, Faculty Members, Students, Staff Members, Parents, Alumni, Industrial experts.
21	Department Corridors			✓	✓	✓	✓	Faculty Members, Students, Staff Members, Parents, Alumni, Industrial experts, Academicians.
22	Head of the Department Room	✓	✓	✓	✓	✓	✓	Management, Faculty Members, Students, Staff Members, Parents, Alumni, Industrial experts, Academicians.

Table 1.3.c Extent of awareness of Vision, Mission, PEOs, PSOs and POs among the stakeholders

Sl. No.	Location	Institute		Department					Extend of awareness for stakeholders
		Vision	Mission	Vision	Mission	PEO	PSO	PO	
1	DQAC meeting			✓	✓	✓	✓		Faculty Members
2	Parent- Teacher Meeting	✓	✓	✓	✓	✓	✓		Faculty Members, Students, Parents.
3	Alumni meet	✓	✓	✓	✓	✓	✓		Alumni and family, Faculty Members, Staff Members, Students, Management.
4	Placement and training activities	✓	✓	✓	✓	✓	✓		Faculty Members, Students, Industrial experts, Recruiters.
5	Induction program for Fresher's	✓	✓						Faculty Members, Students
6	Department meetings			✓	✓	✓	✓	✓	Faculty Members
7	HOD Meetings	✓	✓						Faculty Members, Management
8	Conferences	✓	✓	✓	✓				Faculty Members, Students, Academicians, Industrial experts, Management.
9	Seminars/ Workshops	✓	✓	✓	✓	✓	✓	✓	Faculty Members, Students, Academicians, Industrial experts, Management.
10	Webinars	✓	✓	✓	✓			✓	Faculty Members, Students, Academicians, Industrial experts,
11	Department Association Meetings			✓	✓	✓	✓	✓	Faculty Members, Staff Members, Students
12	Cultural Events	✓	✓						Faculty Members, Staff Members, Students, Management
13	Fitness Programs	✓	✓	✓	✓				Faculty Members, Students
14	All Faculty meeting	✓	✓						Faculty Members, Management
15	Classroom teaching			✓	✓	✓	✓	✓	Faculty Members, Students

1.4. State the Process for Defining the Vision and Mission of the Department, and PEOs of the Program (25)**Total Marks: 25****Process for defining the Vision and Mission of the Department**

The Vision and Mission statements of the department is reformulated through a consultation process including internal and external stake holders. The inputs are collected from Alumni members, industrial experts, academic personnel's, department head and senior faculty members. The department's strengths and statistics are used along with the exit survey from the students to frame the statements which is aligned with the Institutional Vision and Mission Statements.

The following steps were involved in establishing the Vision and Mission of the Department:

- Step 1:** The Vision and Mission of the Department were drafted in alignment with the Vision and Mission statements of the college. An awareness of the Vision and mission statements of the college was given to stakeholders.
- Step 2:** An awareness of the Vision and mission statements of the college was given to stakeholders.
- Step 3:** A Sub Committee was formed which created a rough draft of the statements based on the suggestions provided by the stakeholders. The draft statements were then forwarded to Department Advisory Committee (DAC).
- Step 4:** The Department Advisory Committee refined the draft based on the suggestions from the Sub Committee, the Vision and Mission statements of the institute and the statements from peer institutes to create a second draft.
- Step 5:** The modified Vision and Mission statements were submitted to IQAC.
- Step 6:** The final draft of vision and mission statements of the department is submitted to the MCET governing body for approval.
- Step 7:** Upon approval the Vision and Mission statements were disseminated among stakeholders.

The Department established the Vision and Mission of the department through a consultative process involving the Management and stakeholders of the Department as shown in the Figure given below.

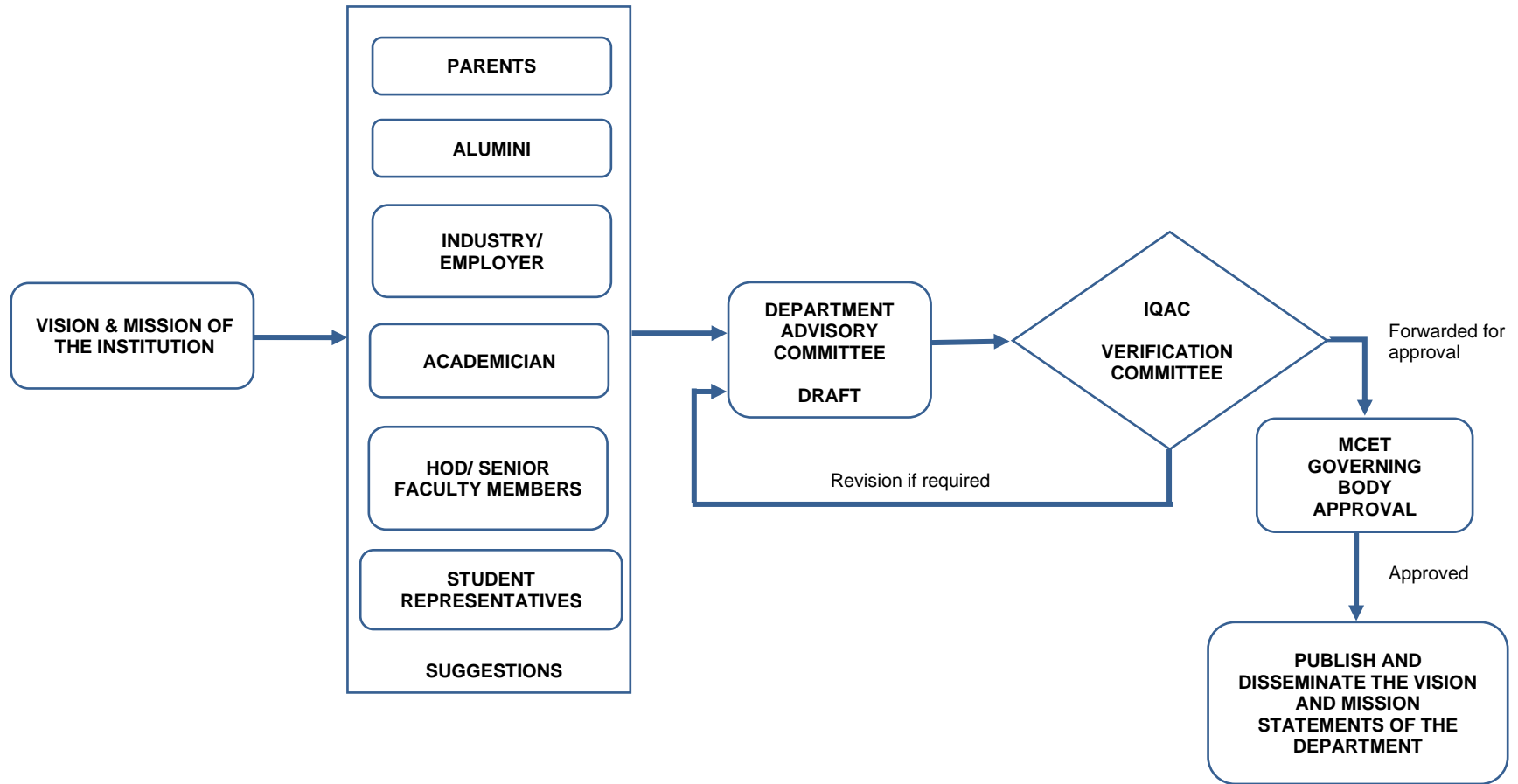


Figure 1.4.a Process Defining reformulation of Vision and Mission Statements of the Department

Process for defining the PEOs of the program

The Program Educational Objectives (PEOs) are reformulated through a consultation process involving internal and external stakeholders. The inputs are collected from Alumni Members, Industrial Experts, Academic persons, Department Head and Senior faculty members.. The Department strengths and statistics are used along with exit survey from the students to frame the statements which is aligned with institutional Vision and Mission statements, Department Vision and Mission and also Program Objectives.

The following steps were involved in establishing the PEOs of the Department

- Step 1:** PEOs are established in line with Vision and Mission of the Department & Institute, program outcomes and benchmarking from peer institutions.
- Step 2:** Department subcommittee establishes PEOs through a consultation process involving stakeholders. At department level PEOs are discussed with all faculty & staff members through department meetings & suggestions are invited.
- Step 3:** This updated draft is then discussed with the Department Advisory Committee and revisions are incorporated.
- Step 4:** Draft PEOs are presented to IQAC for review and suggestions incorporated.
- Step 5:** The final draft is submitted to the MCET governing body for approval.
- Step 6:** After approval the reformulated PEOs are published and disseminated among stake holders.

The Department established the PEO of the department through a consultative process involving the Management and stakeholders of the Department as shown in the Figure given below.

Table 1.4 Committee Members

Department Advisory Committee (DAC)	Internal Quality Assurance Cell (IQAC)
Head of Department (Chairperson)	Principal
Industrial Expert	Management Representatives
Academic Expert	IQAC Co-ordinator
Senior Faculty Members	Academician
Alumni	HOD
	Department Representatives (DQAC)

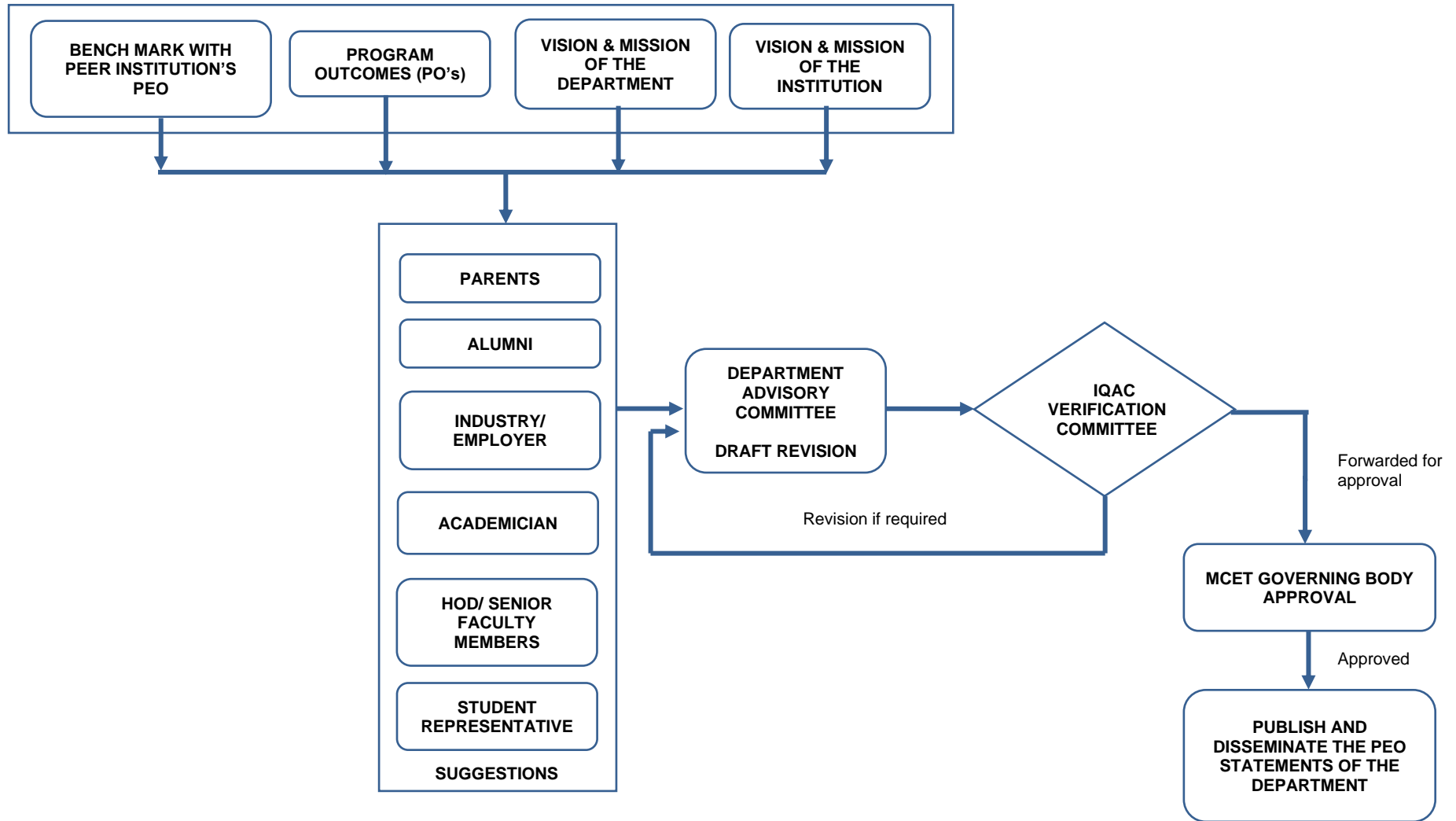


Figure 1.4.b Process Defining Formulation of PEO Statements of the Department.

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

Total Marks: 15

Table 1.5.a Consistency of PEOs with Mission of the Department

PEO's	Mission	Correlation	Justification
PEO #1 Graduates will be actively engaged in a professional career as a civil engineer or will be pursuing advanced study.	M1: To develop civil engineers of high caliber and technical skills through quality education, and industry exposure to serve their surroundings with pride.	Substantial	We offer our students the opportunity to excel as a civil engineer and in higher education through our highly- qualified faculties, modern laboratories, industry exposure, curricular and co-curricular activities. The department takes effort in equipping the graduates with construction industrial knowledge by promoting industrial visits.
	M2: To inculcate a creative mind in students and to build-up their inborn technical talents through additional skill development programmes.	Substantial	The Department offers additional skill- development workshops and seminars to students to help them develop their career as civil engineers or gain the knowledge required for advanced studies.
	M3: To provide knowledge based consultancy services to the community in all areas of civil engineering.	Moderate	The department offers consultancy services to the community, which enables the student to become a professional civil engineer. Our department startup section has carried out many government pilot projects.
	M4: To create competent civil engineers who are capable of upholding ethical values and principles of sustainable development to face the challenges of future.	Moderate	Through webinars, we promote ethical values in our department, and we promote sustainable development practices by featuring student projects. Students can apply these in their professional career.

Table 1.5.a Consistency of PEOs with Mission of the Department (Contd.)

PEO's	Mission	Correlation	Justification
PEO #2 Graduates will understand professional practice issues and demonstrate a commitment to life long learning	M1: To develop civil engineers of high caliber and technical skills through quality education, and industry exposure to serve their surroundings with pride.	Substantial	With exposure to the latest technologies and tools through exposure to the industry, our department will engage students in lifelong learning and assist them in achieving their professional goals.
	M2: To inculcate a creative mind in students and to build- up their inborn technical talents through additional skill development programmes.	Substantial	As a result of additional skill development programmes, our department will engage students in lifelong learning, and assist them in accomplishing their professional goals.
	M3: To provide knowledge based consultancy services to the community in all areas of civil engineering	Substantial	We foster a commitment in our students towards obtaining professional licensure and continuing education by providing knowledge-based consulting services to them.
	M4: To create competent civil engineers who are capable of upholding ethical values and principles of sustainable development to face the challenges of future.	Moderate	Through the inculcation of ethical values and the principle of sustainable development, the Civil Engineering department can better prepare our professional engineers for professional licensure and continuing education,

Table 1.5.a Consistency of PEOs with Mission of the Department (Contd.)

PEO's	Mission	Correlation	Justification
PEO #3 Graduates will be guided by the principles of sustainable development in executing Civil Engineering projects by conserving the resources and leading to a healthier society	M1: To develop civil engineers of high caliber and technical skills through quality education, and industry exposure to serve their surroundings with pride.	Substantial	Our department develops civil engineers of high caliber and technical skills who can contribute to society and the environment by promoting sustainable development and resource conservation.
	M2: To inculcate a creative mind in students and to build- up their inborn technical talents through additional skill development programmes.	Substantial	By instilling a creative mind in students and by building up their technical skills, which will allow them to provide a positive contribution to society and the environment while meeting the principles of sustainable development.
	M3: To provide knowledge based consultancy services to the community in all areas of civil engineering	Moderate	Through our department, we provide knowledge-based consultancy services to enhance the society, while also facilitating the adoption of sustainable development principles in Civil Engineering projects and inculcating environmentally friendly practices in our students.
	M4: To create competent civil engineers who are capable of upholding ethical values and principles of sustainable development to face the challenges of future.	Moderate	By promoting ethical values and sustainable development principles in students we will be able to execute civil engineering projects which can lead to sustainable development and conservation of resources.

Table 1.5.b: Consistency of PEOs with the Mission of the Department

PEO Statements	MISSION STATEMENTS			
	Mission 1 To develop civil engineers of high caliber and technical skills through quality education, and industry exposure to serve their surroundings with pride.	Mission 2 To inculcate a creative mind in students and to build- up their inborn technical talents through additional skill development programmes.	Mission 3 To provide knowledge based consultancy services to the community in all areas of civil engineering.	Mission 4 To create competent civil engineers who are capable of upholding ethical values and principles of sustainable development to face the challenges of future.
PEO #1 Graduates will be actively engaged in a professional career as a civil engineer or will be pursuing advanced study.	3	3	2	2
PEO #2 Graduates will understand professional practice issues and demonstrate a commitment to life long learning	3	3	3	2
PEO #3 Graduates will be guided by the principles of sustainable development in executing Civil Engineering projects by conserving the resources and leading to a healthier society	3	3	2	2

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

CRITERION 2	Program Curriculum and Teaching –Learning Process	120
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2. PROGRAM CURRICULUM AND TEACHING - LEARNING PROCESSES (120)

Total Marks: 107

2.1. Program Curriculum (20)

Total Marks: 20

Civil Engineering department of Musaliar College of Engineering & Technology, Pathanamthitta is affiliated to APJ Abdul Kalam Technological University (APJAKTU) from 2015 admission onwards. The department was affiliated to Mahatma Gandhi University (MGU) from 2004 to 2015. Both APJAKTU and MGU curriculum were parallely active till 2018. Currently 2015 and 2019 regulations are followed by the program.

Program Outcomes for B Tech Civil Engineering

As suggested by NBA, Programme Outcomes for Civil Engineering are defined as in Table 2.1. After completion of the course, B.Tech Civil Engineering graduates will have ability to attain the defined POs.

Table: 2.1 Program Outcomes and Program Specific Outcomes

PO1	Engineering knowledge: Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.
PO2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences
PO3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PSO1	Apply knowledge in analysis, design, survey, testing and construction of civil engineering structures.
PSO2	To develop and design sustainable and smart infrastructure considering the global environmental challenges

2.1.1. Process used to identify extent of compliance of the University curriculum for attaining the Program Outcomes and Program Specific Outcomes (10)**Institute Marks: 10****2.1.1.A. Process used to identify extent of compliance of the University curriculum for Attaining the POs and PSOs.**

The APJ Abdul Kalam Technological University is following a curriculum of choice-based credit system. The curriculum is divided into eight semesters. Curriculum and syllabus of Civil Engineering is framed by the Board of studies and Academic committee of APJ Abdul Kalam Technological University. The University curriculum is segregated into various courses to ensure that the program outcomes are fulfilled. This segregation was revealed in the regulations of 2015 and 2019 by the University.

The POs attainments are calculated and are compared to a predefined value to identify the curriculum gaps within the courses.

The university curriculum of Civil Engineering is segregated into various components as Humanities (H), Basic Science (BS), Basic Engineering (BE), Professional Core (PC), Professional Elective (PE), and Employability Enhancement Courses (EEC) to ensure that all the essential components required for satisfying program outcomes (POs) are covered.. Pie chart showing the contribution of courses in 2015 Regulation & 2019 regulation is shown in Fig 2.1.1.a. and in Fig 2.1.1.b. respectively.

The Professional Core (PC) of University curriculum of Civil Engineering is again segregated into three course domains. They are Structural Engineering, Construction Management and Geo Environmental & Water Resources Engineering.

Course Components of Curriculum

A brief division of the components of University Curriculum is listed in Table 2.1.1.a and Table 2.1.1.b

Table 2.1.1.a Course Components of Curriculum (2015 Regulation)

Sl. No	Category of Courses	No. of Credits	No. of Courses	Percentage of Credit in each Category of Courses
1	Basic Science	29	9	$29/182=15.93$
2	Humanities and Social Sciences including Management courses	9	3	$9/182=4.94$
3	Engineering Science courses	18	8	$18/182=9.89$
4	Professional Core Courses	94	35	$94/182=51.64$
5	Elective Courses	12	4	$12/182=6.59$
6	Employability and Enhancement Courses	18	6	$18/182=9.89$
Total Academic Credits		180		
7	Activity Point	2	0	$2/182=1.09$
Total credits for B. Tech Degree		182	65	100

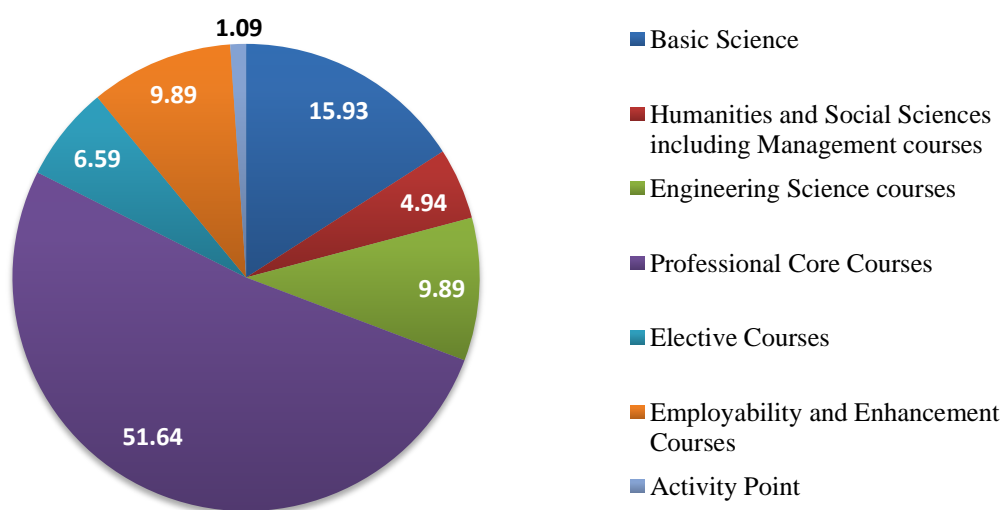
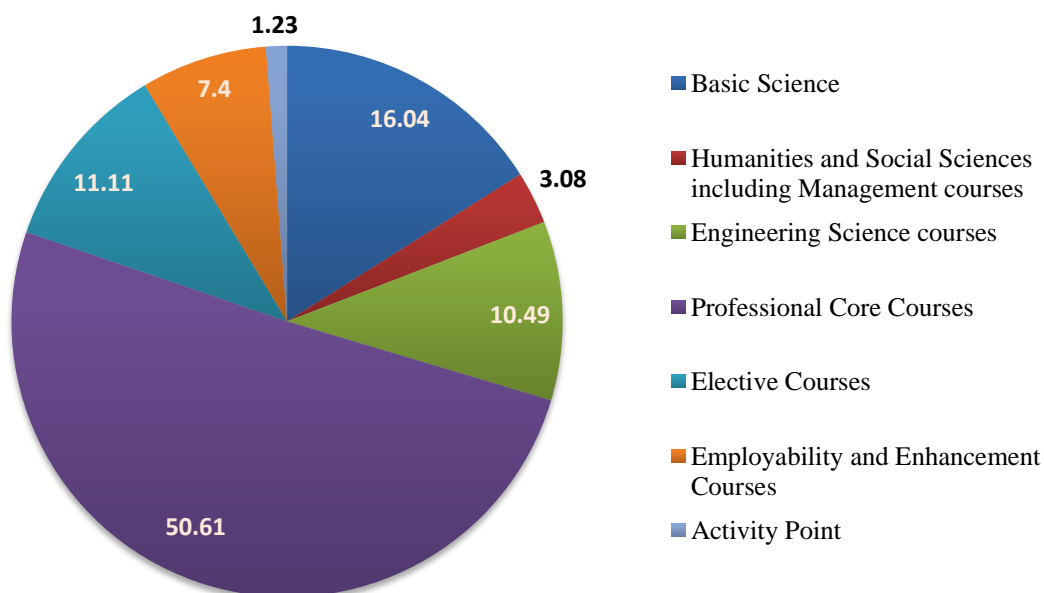


Figure: 2.1.1.a Pie chart showing the percentage of credits on each category of courses (2015 regulation)

Table 2.1.1.b Course Components of Curriculum (2019 Regulation)

Sl. No	Category of Courses	No. of Credits	No. of Courses	Percentage of Credit in each Category of Courses
1	Basic Science	26	9	$26/162=16.04$
2	Humanities and Social Sciences including Management courses	5	7	$5/162=3.08$
3	Engineering Science courses	17	6	$17/162=10.49$
4	Professional Core Courses	82	26	$82/162=50.61$
5	Elective Courses	18	6	$18/162=11.11$
6	Employability and Enhancement Courses	12	6	$12/162=7.4$
Total Academic Credits		160		
7	Activity Point	2	0	$2/162=1.23$
Total credits for B. Tech Degree		162	60	100

**Figure: 2.1.1.b Pie chart showing the percentage of credits on each category of courses (2019 regulation)**

2015 Regulation:

The APJ Abdul Kalam Technological University, takes good care in formulating the new schemes by identifying the curriculum gaps in the previous schemes. The gaps identified in 2015 scheme were addressed in 2019 scheme. The study plan of B.Tech Program in Civil Engineering is set for eight semesters having a total of 162 credits. Every course of B. Tech. Program shall be placed in one of the nine categories as listed in table below.

The courses available in the program curriculum of Kerala Technological University, Regulation 2015 are grouped based on different components and curriculum contributions to POs and PSOs is shown below. The curriculum and syllabus of B.Tech in CE is framed by the board of studies and academic committee of APJ Abdul Kalam Technological University. The detailed analysis is shown in Table 2.1.1.c.

Honours Degree (2015 Scheme)

- Students with a CGPA above 8 at the end of the fourth semester and having no credit arrears only are eligible for this option.
- Those who opted for B. Tech (Honours) but unable to earn the required additional credits in 8 semesters or whose final CGPA is less than 8 shall automatically fall back to the B. Tech. program. However, additional course credits and the grades thus far earned by them will be shown in the grade card but not included for the CGPA.

Table 2.1.1.c Course components of curriculum (2015 Regulation)

COURSE COMPONENT	COURSE CODE FOR NBA	UNIVERSITY COURSE CODE	COURSES	POs	PSOs
BASIC SCIENCE	C101	MA 101	MA101-Calculus	1, 2, 3, 4, 5, 12	-
	C102	PH 100	PH100-Engineering Physics		
	C103	CY 100	CY100-Engineering Chemistry		
	C112	MA 102	MA102- Differential Equation		
	C114	BE 103	BE103-Introduction to Sustainable Engineering		
	C201	MA 201	MA201-Linear Algebra & Complex Analysis		
	C209	MA 202	MA202-Probability Distributions, Transforms and Numerical Methods		
	C104	PH 110	PH110-Engineering Physics Lab		
	C105	CY 110	CY110-Engineering Chemistry Lab		
HUMANITIES	C214	HS 200	HS200-Business Economics	1, 2, 5, 6, 9, 12	-
	C206	HS 210	HS210-Life Skills		
	C314	HS 300	HS300-Principles of Management		

Table 2.1.1.c Course components of curriculum (2015 Regulation) (Contd.)

COURSE COMPONENT	COURSE CODE FOR NBA	UNIVERSITY COURSE CODE	COURSES	POs	PSOs
ENGINEERING SCIENCE	C116	BE 110	BE110-Engineering Graphics	1, 2, 3, 5, 12	-
	C106	ME 100	ME100-Basics of Mechanical Engineering		
	C110	EE 100	EE100-Basics of Electrical Engineering		
	C312	CE 306	CE306-Computer Programming and Computational Techniques		
	C108	EC 100	EC100-Basics of Electronics Engineering		
	C107	ME 110	ME110-Mechanical Engineering Workshop		
	C111	EE 110	EE110-Electrical Engineering Workshop		
	C109	EC110	EC110-Electronics Engineering Workshop		
STRUCTURAL ENGINEERING	C113	BE100	BE100-Engineering Mechanics	1, 2, 3, 4, 5, 8, 9, 10, 12	1, 2
	C118	CE110	CE110-Civil Engineering Workshop		
	C115	BE101	BE101-01-Introduction to Civil Engineering		
	C202	CE201	CE201-Mechanics of Solids		
	C210	CE202	CE202 -Structural Analysis I		
	C301	CE301	CE301-Design of Concrete Structures I		
	C302	CE303	CE303-Structural Analysis II		
	C401	CE401	CE401-Design of Steel Structures		
	C311	CE304	CE304-Design of Concrete Structures II		
	C402	CE403	CE403-Structural Analysis III		
	C207	CE231	CE231-Civil Engineering Drafting Lab		
	C215	CE232	CE232-Materials Testing Lab I		
	C308	CE331	CE331-Materials Testing Lab II		
C317	CE334	CE334-Computer Aided Civil Engineering Lab			
GEOENVIRONMENTAL AND WATER RESOURCE	C203	CE203	CE203-Fluid Mechanics I	1, 2, 3, 4, 6, 7, 8, 9, 10, 12	1, 2
	C204	CE205	CE205-Engineering Geology		
	C212	CE206	CE206-Fluid Mechanics II		
	C213	CE208	CE208-Geotechnical Engineering I		
	C303	CE305	CE305-Geotechnical Engineering II		
	C305	CE309	CE309-Water Resources Engineering		
	C310	CE302	CE302-Design Of Hydraulic Structures		
	C403	CE405	CE405-Environmental Engineering I		
	C409	CE402	CE402-Environmental Engineering II		
	C216	CE234	CE234-Fluid Mechanics Lab		
	C309	CE333	CE333-Geotechnical Engineering Lab		
C408	CE431	CE431-Environmental Engineering Lab			

Table 2.1.1.c Course components of curriculum (2015 Regulation) (Contd.)

COURSE COMPONENT	COURSE CODE FOR NBA	UNIVERSITY COURSE CODE	COURSES	POs	PSOs
CONSTRUCTION MANAGEMENT	C205	CE207	CE207-Surveying	1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12	1, 2
	C304	CE307	CE307-Geomatics		
	C313	CE308	CE308-Transportation Engineering I		
	C404	CE407	CE407-Transportation Engineering II		
	C405	CE409	CE409-Quantity Surveying and Valuation		
	C211	CE204	CE204-Construction Technology		
	C410	CE404	CE404-Civil Engineering Project Management		
	C208	CE233	CE233-Surveying Lab		
ELECTIVES	C316	CE332	CE332-Transportation Engineering Lab	1, 6, 7, 8	1, 2
	C306	CE361	CE361 -Advanced Concrete Technology		
	C315	CE362	CE362-Ground Improvement Techniques		
	C411	CE474	CE474-Municipal Solid Waste Management		
EMPLOYABILITY AND ENHANCEMENT COURSES	C406	CE469	CE469-Environmental Impact Assessment	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	1, 2
	C307	CE341	CE341-Design Project		
	C318	CE352	CE352-Comprehensive Exam		
	C407	CE451	CE451-Seminar & Project Preliminary		
	C413	CE492	CE492-Project		
	C117	BE102	BE102-Design And Engineering		
C412	ME482	ME482- Energy Conservation And Management			

2019 Regulation:

The courses available in the program curriculum of Kerala Technological University, Regulation 2019 are grouped based on different components as shown in the Table 2.1.1.d.

Honours Degree (2019 Scheme)

- All B.Tech students are eligible to register for B.Tech (Honours). However, their mandatory CGPA at the end of eighth semester shall be 8.5 or higher to be eligible for the award of B.Tech (Honours).
- The B. Tech (Honours) registration shall be along with the registration of the 4th semester.
- If a student fails in any course including the course chosen for B. Tech (Honours), he/she shall not be eligible to continue the B.Tech (Honours). However, the additional credits thus far earned by the student shall be included in the grade card but shall not be considered in calculating the CGPA.

Minor Degree (2019 Scheme)

- Minor is an additional credential, a student will earn if he/she does minimum 20 credits worth of additional learning in a discipline other than his/her major discipline. The Minor B.Tech degree in engineering registration shall be along with the registration of the 3rd semester.
- If a student fails in any course of the minor, he/she shall not be eligible to continue the B.Tech Minor. However, the additional credits and grades thus far earned by the student shall be included in the grade card but shall not be considered in calculating the CGPA.
- The student shall earn additional 20 credits to be eligible for the award of B. Tech Degree with Minor. Out of the 20 Credits, 12 credits shall be earned by undergoing a minimum of three courses, during the specified period. The total number of contact hours for these three courses shall be 126hours (42Hrs/course). The duration of a course shall be minimum 14 weeks. The remaining 8 credits could be acquired through two MOOCs recommended by the Board of studies and approved by the Academic Council.
- Curriculum and the syllabus of the three courses shall be approved by the Board of studies and the Academic Council.
- Under graduate Degree with minor shall be issued by the University to the students who fulfill all the academic eligibility requirements for the B. Tech program and Minor in Engineering.

Table 2.1.1.d Course components of curriculum (2019 Regulation)

COURSE COMPONENT	COURSE CODE FOR NBA	COURSES	POs	PSOs
BASIC SCIENCE	C101	MAT 101- Linear Algebra and Calculus	1, 2, 3, 4, 5, 12	1, 2
	C108	MAT 102- Vector Calculus, Differential Equations and Transforms		
	C201	MAT 201- Partial Differential Equation and Complex Analysis		
	C210	MAT 202- Probability, Statistics and Numerical Methods		
	C102	PHT 110-Engineering Physics		
	C109	CYT 100- Engineering Chemistry		
	C207	MCN201- Sustainable Engineering		
	C106	PHL 120 – Engineering Physics Lab		
	C114	CYL 120 – Engineering Chemistry Lab		
HUMANITIES AND SOCIAL SCIENCES INCLUDING MANAGEMENT COURSES	C112	HUT 102-Professional Communication	1, 2, 5, 6, 9, 12	1, 2
	C105	HUN 101- Life Skills		
	C214	MCN202- Constitution of India		
	C306	MCN 301- Disaster Management		
	C404	MCN401- Industrial Safety Engineering		
	C206	HUT200- Professional Ethics		
	C313	HUT300- Industrial Economics and Foreign Trade		

Table 2.1.1.d Course components of curriculum (2019 Regulation) (Contd.)

COURSE COMPONENT	COURSE CODE FOR NBA	COURSES	POs	PSOs
ENGINEERING SCIENCE	C113	EST 120- Basics of Civil & Mechanical Engineering	1, 2, 3, 5, 12	1, 2
	C110	EST 110 - Engineering Graphics		
	C104	EST 130- Basics of Electrical & Electronics Engineering		
	C115	ESL 120- Civil and Mechanical Workshop		
	C107	ESL 130- Electrical and Electronics Workshop		
	C113	EST 102-Programming In C		
STRUCTURAL ENGINEERING	C103	EST100 – Engineering Mechanics	1, 2, 3, 4, 5, 8, 9, 10, 12	1, 2
	C202	CET201- Mechanics of Solids		
	C301	CET301 – Structural Analysis I		
	C302	CET303- Design of Concrete Structures		
	C309	CET302 – Structural Analysis II		
	C401	CET401- Design of Steel Structures		
	C208	CEL201-Civil Engineering Planning and Drafting Lab		
	C215	CEL 202- Material Testing Lab I		
	C307	CEL 331- Material Testing Lab II		
	C316	CEL 334- Civil Engineering Software Lab		
GEOENVIRONMENTAL AND WATER RESOURCES	C211	CET202 – Engineering Geology	1, 2, 3, 4, 5, 8, 9, 10, 12	1, 2
	C203	CET203 – Fluid Mechanics and Hydraulics		
	C212	CET204 – Geotechnical Engineering I		
	C303	CET305 – Geotechnical Engineering II		
	C304	CET307- Hydrology and Water Resources Engineering		
	C310	CET304- Environmental Engineering		
	C311	CET306- Design of Hydraulic Structures		
	C216	CEL 204- Fluid Mechanics Lab		
	C308	CEL 333- Geotechnical Engineering Lab		
	C405	CEL 411- Environmental Engineering Lab		

Table 2.1.1.d Course components of curriculum (2019 Regulation) (Contd.)

COURSE COMPONENT	COURSE CODE FOR NBA	COURSES	POs	PSOs
GEOENVIRONMENTAL AND WATER RESOURCES	C211	CET202 – Engineering Geology	1, 2, 3, 4, 6, 7, 8, 9, 10, 12	1, 2
	C203	CET203 – Fluid Mechanics and Hydraulics		
	C212	CET204 – Geotechnical Engineering I		
	C303	CET305 – Geotechnical Engineering II		
	C304	CET307- Hydrology and Water Resources Engineering		
	C310	CET304- Environmental Engineering		
	C311	CET306- Design of Hydraulic Structures		
	C216	CEL 204- Fluid Mechanics Lab		
	C308	CEL 333- Geotechnical Engineering Lab		
	C405	CEL 411- Environmental Engineering Lab		
CONSTRUCTION MANAGEMENT	C213	CET206- Transportation Engineering	1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12	1, 2
	C204	CET205- Surveying and Geomatics		
	C305	CET309- Construction Technology and Management		
	C209	CEL 203- Survey Lab		
	C408	CET402- Quantity Surveying and Valuation		
	C315	CEL332- Transportation Engineering Lab		
ELECTIVE	C312	CETXXX- Elective I	1, 6, 7, 8	1, 2
	C402	CETXXX- Elective II		
	C409	CETXXX- Elective III		
	C410	CETXXX-Elective IV		
	C411	CETXXX- Elective V		
	C403	CETXXX- Open Elective		
EMPLOYABILITY AND ENHANCEMENT COURSES	C412	CET 404- Comprehensive Viva Voce	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	1, 2
	C406	CEQ 413- Seminar		
	C407	CED 415- Project Phase I		
	C413	CED 416- Project Phase II		
	C205	EST200- Design and Engineering		
	C314	CET 308-Comprehensive Course Work		

Curriculum gap analysis

The gap analysis process is initiated by the DQAC. Suggestions are collected from the stake holders including students, Alumni, Senior Academician, faculty members and Industrial expert. The final Suggestions are done by the Department Advisory committee. Figure 2.1.1.c. shows the flowchart for process of gap identification.

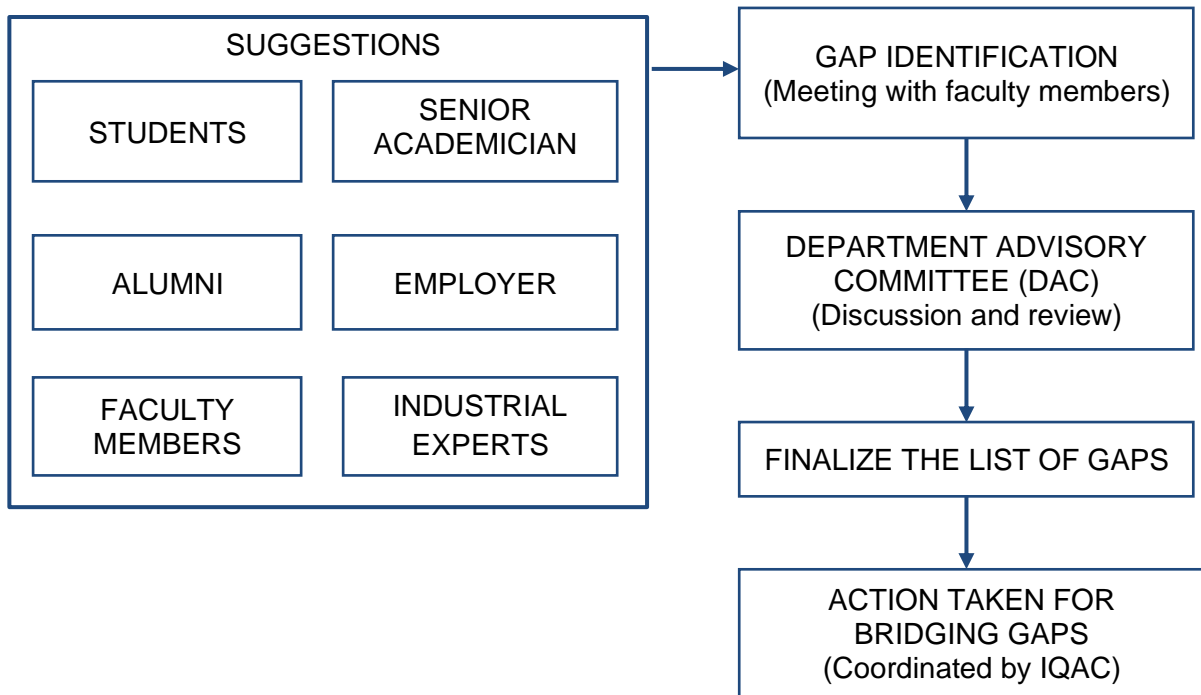


Figure: 2.1.1.c Flow Chart for the process of gap identification

- GAP identification is done by faculty in-charge in consultation with DAC using the inputs obtained from CO PO mapping.
- The faculty in-charge takes necessary measures to bridge the identified gaps.
- All the courses in the curriculum of 2015 scheme are mapped to the program outcomes and program specific outcomes. The gap in the curriculum is identified from the consolidated CO-PO/PSO mapping for all the courses. Table 2.1.1.e shows the course wise PO mapping using COs.

Table 2.1.1.e Course wise PO mapping using COs - 2015 Regulation

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C101	3.00	2.00	1.20	-	-	-	-	-	-	-	-	1.00	-	-
C102	3.00	2.00	1.67	2.00	-	1.00	1.00	-	-	-	-	-	-	-
C103	3.00	2.00	2.00	-	3.00	-	-	-	-	-	-	-	-	-
C104	1.80	2.00	1.00	-	-	2.00	-	-	2.00	2.00	-	3.00	-	-
C105	1.50	-	-	-	1.50	1.75	3.00	1.00	-	-	1.00	1.00	-	-
C106	2.60	1.75	2.00	-	-	2.00	1.00	-	-	-	-	-	-	-
C107	3.00	2.00	3.00	2.00	3.00	2.00	2.00	2.00	3.00	1.00	-	-	-	-
C108	3.00	2.00	-	-	-	-	-	-	3.00	3.00	-	-	-	-
C109	3.00	2.25	2.80	-	-	-	-	3.00	2.00	2.00	-	2.00	-	-
C110	3.00	3.00	3.00	-	-	-	-	-	-	-	-	1.00	-	-
C111	3.00	2.00	2.00	2.00	-	2.00	2.00	-	-	-	-	1.00	-	-
C112	3.00	3.00	2.00	-	-	-	-	-	-	-	-	1.00	-	-
C113	3.00	2.00	2.00	-	-	-	-	-	-	-	-	-	-	-
C114	2.40	-	3.00	-	-	-	-	-	-	-	-	1.67	-	-
C115	3.00	3.00	3.00	3.00	3.00	-	2.50	3.00	-	-	-	3.00	-	-
C116	3.00	-	-	2.00	-	-	-	2.00	3.00	1.00	-	-	-	-
C117	3.00	-	1.00	-	-	-	-	1.00	2.00	2.00	-	-	-	-
C118	1.40	-	-	-	-	-	-	2.00	2.60	2.20	-	2.50	-	-
C201	3.00	3.00	2.80	-	-	-	-	-	-	-	-	1.00	-	-
C202	2.83	2.17	1.83	2.00	-	-	-	-	-	-	-	-	3.00	-
C203	2.80	2.40	1.67	2.00	-	1.25	2.00	-	-	-	-	-	2.00	-
C204	3.00	2.00	-	-	3.00	3.00	3.00	-	-	-	-	-	3.00	-
C205	3.00	2.80	3.00	2.00	3.00	2.00	-	2.00	2.00	2.00	2.00	2.00	3.00	-
C206	-	3.00	-	-	-	-	3.00	3.00	3.00	3.00	-	3.00	-	-
C207	3.00	2.00	-	-	3.00	-	-	2.00	3.00	3.00	-	3.00	1.00	1.00
C208	3.00	2.00	-	1.50	3.00	3.00	-	2.00	3.00	3.00	-	2.50	2.00	-
C209	3.00	2.00	2.00	-	-	-	-	-	-	-	-	2.00	-	-
C210	2.80	2.40	2.00	2.00	-	1.20	-	1.00	-	-	-	2.00	3.00	-
C211	3.00	1.50	2.00	2.00	2.00	2.00	1.50	1.00	-	1.33	2.00	1.33	3.00	2.00
C212	3.00	2.80	3.00	2.00	-	2.00	2.00	2.00	-	2.00	-	2.00	3.00	-
C213	3.00	2.00	-	1.60	1.00	1.33	2.00	1.00	1.00	-	-	1.40	2.00	-
C214	-	1.00	3.00	-	2.00	-	-	-	-	-	1.60	3.00	-	-
C215	3.00	2.00	1.00	1.00	-	2.00	-	2.00	3.00	3.00	-	-	2.00	-
C216	2.17	3.00	3.00	2.50	-	3.00	2.50	-	3.00	3.00	-	-	2.33	-
C301	2.80	2.50	2.00	2.00	-	2.00	-	2.00	-	1.00	-	1.00	3.00	2.00
C302	3.00	3.00	2.00	2.00	-	1.00	-	1.00	-	-	-	1.00	3.00	-
C303	2.80	2.00	2.50	-	-	1.80	2.00	2.00	-	-	-	2.00	3.00	-
C304	2.80	2.00	1.00	1.00	2.00	-	2.00	2.00	1.00	2.00	-	1.80	2.00	-
C305	3.00	3.00	2.00	-	-	3.00	3.00	2.00	-	-	-	-	3.00	-
C306	2.00	2.00	2.67	1.50	2.00	1.50	1.67	2.00	-	2.00	-	-	2.00	2.00
C307	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.20	3.00	2.33	2.00
C308	3.00	2.00	3.00	3.00	-	3.00	-	1.00	3.00	3.00	-	2.00	3.00	-
C309	3.00	1.75	-	2.00	2.00	2.00	-	1.25	3.00	3.00	-	2.00	3.00	-

C310	3.00	2.60	2.80	1.50	-	2.20	1.50	2.80	-	-	-	1.67	3.00	3.00
C311	2.60	2.20	2.00	-	-	2.00	1.00	2.00	-	2.00	-	2.00	2.00	2.00
C312	2.67	2.50	2.50	1.50	2.20	1.00	-	-	-	1.33	1.00	1.83	-	-
C313	3.00	2.00	3.00	-	1.00	2.00	1.00	3.00	-	2.00	-	2.00	2.00	-
C314	3.00	3.00	-	-	-	2.50	-	2.67	2.50	-	3.00	2.00	-	-
C315	3.00	2.00	3.00	-	-	1.00	1.00	-	-	-	-	-	2.00	-
C316	3.00	-	-	3.00	-	2.00	2.00	3.00	3.00	3.00	-	-	2.00	-
C317	2.00	2.00	3.00	2.00	2.00	-	-	1.33	3.00	3.00	3.00	2.00	2.00	-
C318	3.00	2.00	2.00	3.00	-	-	-	-	-	2.20	-	-	-	-
C401	3.00	3.00	3.00	-	-	2.00	1.00	3.00	-	2.00	-	2.00	3.00	2.00
C402	3.00	3.00	2.00	1.80	-	2.00	-	1.00	-	2.00	-	-	2.00	-
C403	3.00	2.00	2.50	-	-	2.00	1.00	1.00	-	-	-	2.00	2.00	2.00
C404	3.00	3.00	2.00	-	-	2.00	1.00	2.00	-	2.00	-	2.00	2.60	3.00
C405	2.40	2.20	-	-	1.40	2.80	-	2.80	-	2.40	2.80	2.80	3.00	-
C406	2.80	2.67	-	-	-	1.40	3.00	-	-	-	-	2.00	-	2.40
C407	3.00	3.00	2.00	1.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00
C408	3.00	2.00	2.00	-	-	2.00	1.80	1.00	3.00	2.00	-	2.00	1.00	-
C409	3.00	2.00	2.67	-	-	2.00	2.20	1.75	-	-	-	2.00	2.60	3.00
C410	2.60	3.00	-	-	2.00	3.00	2.00	2.40	2.00	2.40	2.60	2.40	2.00	-
C411	3.00	2.00	-	-	2.00	2.17	2.17	2.00	-	-	-	2.00	-	3.00
C412	3.00	2.00	-	-	-	3.00	3.00	3.00	-	-	3.00	2.00	-	-
C413	3.00	3.00	2.50	2.50	2.00	2.00	2.00	2.25	2.25	2.25	2.33	2.33	3.00	2.50
MAPPING AVERAGE	2.82	2.31	2.27	1.98	2.22	2.02	1.94	1.96	2.49	2.2	2.12	1.96	2.46	2.33

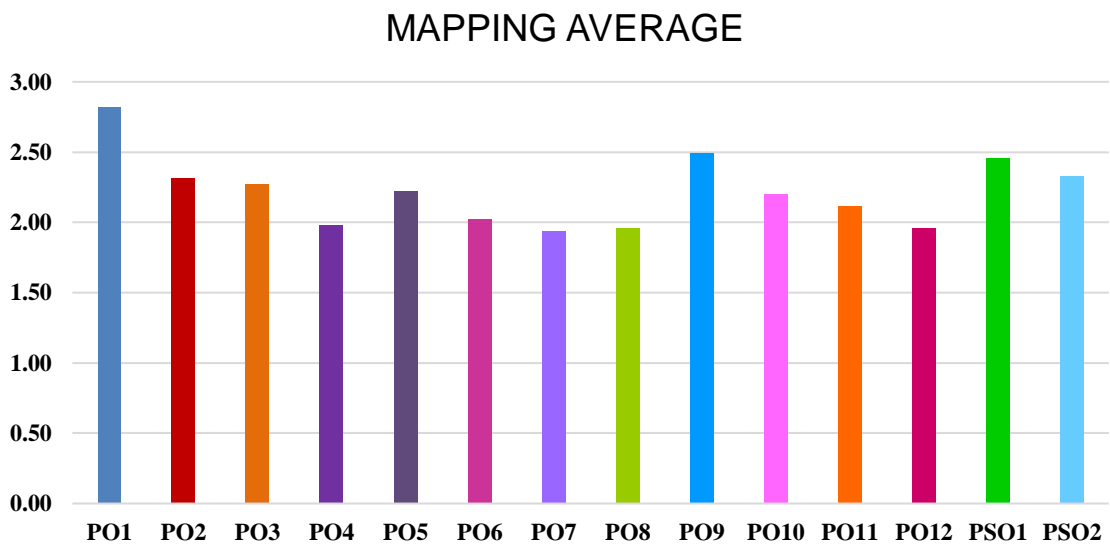


Figure: 2.1.1.d Mapping Average

2.1.1.B. List the curriculum Gap for the attainment of defined POs and PSOs

The Table below shows the average mapping level of various courses prescribed by the university to POs/PSOs. The POs/PSOs that do not get mapped to a minimum 70% leads to the curriculum gap. From the below table it shows that PO4, PO6, PO7, PO8 & PO12 are not sufficiently covered by the university curriculum, therefore necessary action has to take to fulfill the curriculum gap. The percentage level of contribution of course with POs and PSOs is shown in Table 2.1.1.f.

Table 2.1.1.f. Percentage level of contribution of course with POs and PSOs

POs and PSOs	Mapping Average	Mapping Average Percentage
PO1	2.82	94
PO2	2.31	77
PO3	2.27	75.6
PO4	1.98	66
PO5	2.22	74
PO6	2.02	67.3
PO7	1.94	64.6
PO8	1.96	65.3
PO9	2.49	83
PO10	2.20	73.3
PO11	2.12	70.6
PO12	1.96	65.3
PSO1	2.46	82
PSO2	2.33	77.6

2.1.2. State the Delivery Details of the Content beyond the Syllabus for the Attainment of POS and PSOs (10) Institute Marks: 10

Initiatives Taken to Address Curriculum Gaps

The Civil Engineering Department has initiated the following measures to bridge the identified curriculum gaps.

- **Guest lectures:** Experts from industry and academia are invited to deliver lectures on the latest trends and thrust areas in Civil Engineering.
- **Technical talks:** Students are kept updated about the advances in technologies through technical seminars.
- **Workshops:** The department has introduced a novel initiative for students, wherein they are encouraged to participate in hands-on workshops, thereby enhancing their application skills.
- **Industrial visits:** Visits to industries of repute, are organized every year to expose the students to the latest civil engineering and construction practices.
- **Internship:** Students are encouraged to take-up short-term internships in industries.
- **Student Chapters:** Student chapters like IEI, and Civil Engineering Association (ACE) provide unique opportunity for students to get more knowledge updates for their professional development.

The content beyond syllabus is essential to bridge the gap between industrial requirement and curriculum. The various activities carried out to address the gaps in curriculum for CAY, CAY m1, CAYm2, CAYm3 are listed in Table 2.1.2a to Table 2.1.2 d.

Table 2.1.2.a: Details of Various Technical Events Organized by the Department to Address the Curriculum Gaps CAY (2021- 2022)

Sl. No.	Gap	Action taken	Date- Month- Year	Resource Person with designation	% of Students Present	Relevance to	
						POs	PSOs
1	Knowledge on Entrepreneurship	Entrepreneurship Development- Opportunities & Challenges	3/12/2021	Naveen V Koshy, Assistant professor, Dept of Management, MCET, Pathanamthitta	85	6,7,8,9,11	
2	Usage of Modern tool	Workshop on STAAD and PRIMAVERA	26/04/2022- 29/04/2022	Builds Worth Academy for Professional Engineers	80 (S8)	1,2,5,11,12	1,2
3	Introduction to design aspects and model making	Project management-Ente Keralam-7-day Techno demo at Central Stadium Pathanamthitta	2/5/22 to 8/5/22	Govt: of Kerala	50 (S4)	1,2,6,7,9,10, 11,12	1,2
4	Enhancement of leadership and team management	National Football Tournament (Jeffin memorial)	6/5/2022 to 7/5/2022	Department of Civil Engineering	90 (S4, S6 and S8)	9	2
5	General Awareness on Disaster Management	Engineering Geology for disaster risk reduction	30/5/22	Dr KG Thara (Former member of state and Central Disaster Management Authority)	85 (S4)	1,6,7,8,9,11	1,2
6	Practical Exposure	Site Visit at Pathanamthitta- Road Over bridge Project- Pile Load Test	31/05/22	Sri Muhammed Thasneeh-Site Engineer	95 (S4, S6 and S8)	6,7,8,9,10,11, 12	2

Table 2.1.2.a: Details of Various Technical Events Organized by the Department to Address the Curriculum Gaps CAY (2021- 2022) (Cont..)

Sl. No.	Gap	Action taken	Date- Month- Year	Resource Person with designation	% of Students Present	Relevance to	
						POs	PSOs
7	Constitution of India	Seminar- “The Indian Constitution-A General Awareness”	20/6/22	Adv Sibi Mathew, District Court, Pathanamthitta	90 (S4)	6,7,8,	2
8	Practical Exposure	Site Visit to Thenmala dam	25/06/22	ASST executive Engineer Manilal (Irrigation, KIP RB)	95 (S6)	6,7,8,9,10,11 12	1,2
9	Career Enhancement	Civil engineering association Inauguration -Technical talk on Civil Engineering as a profession Status, Challenges and Opportunities	22/07/22	Dr Santhosh Sathyapal GM Technical, Vizhinjam International Seaport	90 (S4, S6 and S8)	1,6,7,8,11	1,2
10	Enhancement of leadership and team management	IEI Student Chapter inauguration and inaugural Address	22/7/22	Dr Sudhi Mary Kuriem, Professor TKMIT, Former professor TKM college of Engineering, Kollam	90 (S4, S6 and S8)	9	2

Table 2.1.2.b: Details of Various Technical Events Organized by the Department to Address the Curriculum Gaps CAY (2020- 2021)

Sl. No.	Gap	Action taken	Date- Month- Year	Resource Person with designation	% Of Students Present	Relevance to	
						POs	PSOs
1	Awareness on Hydrographic Survey	Webinar on ‘An Introduction to Hydrographic Survey	16/07/2020	Dr V V Ratheesh Kumar (KIHAS) Associate Professor, NSS Law College, Kollam.	85	1,2,5,11,12	1,2
2	Knowledge on Offshore structures	Webinar on” Introduction to Offshore Structures”	17/07/2020	Ms Lakshmi Sathyan P Junior Engineer, Offshore Structures.	80	1,2,5,11,12	1,2
3	Awareness on Harbour Engineering	Webinar on “Vizhinjam futuristic seaport- in the making”	18/07/2020	Dr Jayakumar, Managing Director and CEO Vizhinjam International Seaport Limited.	82	1,2,5,11,12	1,2
4	Career Enhancement	One day webinar on ‘Trending careers After Civil Engineering’	05/08/2020	Dr K A Abubaker, Chairman, Baker Associates& Consultants, Baker Academy for Science and Engineering, Kochi	85	1,6,7,8,11	1,2
5	Lack of practical exposure of AutoCAD software to real life drawings.	A short-term training programme on AutoCAD software.	30/11/2020 to 4/12/2020	Mr Aju V Chacko NTS Nexus Technical solutions.	90	1,2,5,11,12	1,2
6	Product development skill	Online project Exhibition	02/01/2021	Ms Bismi M Buhari Assistant Professor, Musaliar College of Engineering and Technology, Pathanamthitta	89	1,2,6,7,9,10, 11,12	1, 2

Table 2.1.2.b: Details of Various Technical Events Organized by the Department to Address the Curriculum Gaps CAY (2020- 2021) (Contd.)

Sl. No.	Gap	Action taken	Date- Month- Year	Resource Person with designation	% of Students Present	Relevance to	
						POs	PSOs
7	Professional ethics	Professional ethics in construction industries	31/03/2021	Adv. Praveen Babu K, High Court, Ernakulam, Kerala	85	1,6,7,8	1
8	Communication	PRAKRITHAM, Environmental Day celebration	05/6/2021	By Association of Civil engineering	88	9,10,11	1
9	Enhancement of leadership and team management	Webinar on “Being a winner for civil engineering students”.	12/06/2021	Er. Surendran C, Retd.Dty. Chief Engineer, KSEBL	70	9	1
10	Modern tool usage	Webinar on Scope of Engineers in BIM	15/6/2021	Core Institute of Technology	80	1,2,5,11,12	1
11	Career Enhancement	Alumni interaction-Talk on “Career opportunities of Civil Engineering Graduates in Middle East”	25/06/2021	Mr. Shifin M Salam, Project Civil Inspector, Tatweer Petroleum	85	1,6,7,8,11	1,2

Table 2.1.2.c: Details of Various Technical Events Organized by the Department to Address the Curriculum Gaps CAYm1 (2019- 2020)

Sl.No.	Gap	Action taken	Date-Month-Year	Resource Person with designation	% of Students Present	Relevance to	
						POs	PSOs
1.	Modern Tool Usage	Workshop on 3-day AutoCAD	26/7/2019 to 30/7/2019	Mr Jiji Alex Trainer, CADD Centre, Pathanamthitta	85	1,2,5,11, 12	1,2
2.		5 Day workshop on STAAD PRO and PRIMAVERA.	16/01/2020 to 22/01/2020	Ms Nivya Trainer CADD Centre, Pathanamthitta Ms Glinda T Shaji Technical staff and trainer CADD Centre Pathanamthitta	90	1,2,5,11, 12	1,2
3.	Practical applications of Total station in surveying	Orientation of Re-build Kerala Initiative	25/01/2020	Binod S (Assistant Engineer) Shiju Chandran (Assistant Executive Engineer)	80	1,2,5,11, 12	1,2
4.		One day training on Total Station	29/01/2020	Mr Samuel Mathew Trainer, TISAT, Pathanamthitta	83	1,2,5,11, 12	1,2
5.	Role of Engineers on society	Expert talk on Climatic resilient coastal zone management	18/2/2020	Dr K V Thomas, Former Head, Coastal Processes, NCESS, Dean, Faculty of climatic variability and aquatic ecosystem, KUFOS	80	6,7,8,	1,2
6.	Insight to the technologies in the production of Construction materials.	Introduction of a new product 'Ultratech Cement'	27/02/2020	Mahesh Mohan, Sr. Technical Manager, Ultra Tech Cement LTD	90	5,6,7	1,2

**Table 2.1.2.c: Details of Various Technical Events Organized by the Department to Address the Curriculum Gaps CAYm1 (2019- 2020)
(Contd.)**

Sl.No.	Gap	Action taken	Date- Month- Year	Resource Person with designation	% of Students Present	Relevance to	
						POs	PSOs
7.	Career Enhancement	Alumni interaction talk on “Career opportunities of Civil Engineering Graduates”	16/3/2020	Shanid P Senior Engineer, Shobha Builders	85	1,6,7,8,11	1,2
8.		Career development programme- personality development session for the final year and pre final year students.	11/11/2020	Niyas Ali, Junior Engineer, MES	78	1,6,7,8,11	1,2

Table 2.1.2.d: Details of Various Technical Events Organized by the Department to Address the Curriculum Gaps CAYm1 (2018- 2019)

Sl.No.	Gap	Action taken	Date- Month- Year	Resource Person with designation	% of Students Present	Relevance to	
						POs	PSOs
1.	Modern tool usage	Workshop on AutoCAD	11/7/2018 to 13/7/2018	Mr Ronald R CADD CENTRE, Pathanamthitta	82	1,2,5,11,12	1
2.	Enhancement of leadership and team management	Data collection survey of flood affected area under Vadasserikkara Grama Panchayat	12/9/2018 to 13/9/2018	Vadasserikkara Grama Panchayat	60	9	2
3.	Practical Exposure	Industrial visit to Kollam Harbour	20/11/2018	Mr. Sheik Pareeth IAS, Managing Director, Coastal Development and Management	88	6,7,8,9,10,11, 12	1,2
4.	Modern tool usage	Workshop on STAAD PRO and PRIMAVERA	30/01/2019 to 01/02/2019	Mr Ronald R CADD CENTRE, Pathanamthitta	85	1,2,5,11,12	1
5.	Enhancement in Project management	Project management hands on workshop	13/2/2019	Prof Navin Koshy, Assistant Professor, Musaliar Institute of Management	90	6,7,9,10, 11,12	1
6.	Human values in professional education	Awareness program on Men of Quality	11/3/2019	Mr Shaji Mon D, Excise Preventive Officer	80	6,7,8	2
7.	Lack of practical exposure to Total station	Total station camp and training	30/3/2019 to 01/04/2019	ALG International Institute of Technology, Cochin	95	1,2,3,4,5,12	1
8.	BIM (Building Information Modelling)	Workshop	5/4/2019 to 06/04/2019	Mr Arbaaz Charoliza, Innovian Technologies in Connection with IIT Varanasi	95	1,2,3,4,5,12	1

Table 2.1.2.d Details of Various Technical Events Organized to Address the Curriculum Gaps CAYm1 (2018- 2019)(Contd.)

Sl.No.	Gap	Actiontaken	Date- Month- Year	Resource Person with designation	% of Students Present	Relevance to	
						POs	PSOs
9.	Industry Interaction	Alumni interaction – A talk on Entrepreneurial challenges in construction industries	17/4/2019	Jayaram Prakash, (Director, Square Arc Architectural studio and Designers)	85	6,7,8,9,11	1,2
10.	Lack of practical exposure for structural subjects	Industrial visit to Manneth Construction, Goa	28/04/2019	Prof Muhammed Murshid A, Assistant Professor, Musaliar College of Engineering and technology, Pathanamthitta	79	6,7,8,9,10,11,12	1,2
11.	Practical knowledge on Hydraulic structures	Industrial visit to Mattupetti Dam, Munnar	4/5/2019	Prof Muhammed Ashraf, Assistant Professor, Musaliar College of Engineering and technology, Pathanamthitta	83	6,7,8,9,10,11,12	1, 2
12.	Practical Exposure	Industrial Visit to Idukki Dam	12/05/2019	Prof. Arun Raj Assistant Professor, Musaliar College of Engineering and Technology.	95	6,7,8,9,10,11,12	1
13.	Practical knowledge on Hydraulic structures	Banasura Sagar Dam, Wayanad	19/05/2019	Prof Muhammed Ashraf, Assistant Professor, Musaliar College of Engineering and technology, Pathanamthitta	87	6,7,8,9,10,11,12	1, 2
14.	Non-Destructive testing of concrete	One day Workshop on NDT	2/7/2019	Irez Academy Pvt.Ltd	95	1,2,3,4,5,12	1

2.2. Teaching - Learning Processes (100)**Total Marks: 90****2.2.1. Describe Processes Followed to Improve Quality of Teaching & Learning (25)****Institute Marks: 23**

The teaching and learning process consists of academic calendar preparation, pedagogical initiatives, classroom teaching, continuous assessment in laboratories, student feedback and action taken. The institution has a well-organized strategy for teaching, learning and assessment for facilitating the achievement of the learning outcomes. Being an affiliated institution, the academic calendar of the institution is prepared based on the academic calendar, provided by APJ Abdul Kalam Technological University. According to the academic calendar of the institution, the department plans and prepares its academic calendar by incorporating various department specific events in it. All the academic and co-curricular/extracurricular activities of the department are conducted with strict adherence to the academic calendar.

Based on their interest and expertise, the courses are allotted to the faculty members. Each faculty member prepares a detailed Course plan for his/her courses which includes the topics to be covered during each class hour depending upon the department academic calendar. A course file is also prepared for each of the courses that include Time Table, Attendance, Course plan, Course coverage, Mode of instruction Assignments questions with Cos, Tutorial Date and Question, Series Questions and Answer scripts, Question bank. The course files are verified by the DQAC and the HOD.

Two continuous Internal Evaluation (CIE) are conducted by the college through a centralized examination cell and the answer scripts are evaluated by respective faculty members. At the end of each semester, final examinations are conducted by APJ Abdul Kalam University. To help the students to perform better, previous years' university question papers along with solutions, question banks with solutions and lab manuals are provided. Feedback is collected from the students through class committee meetings and through students' feedback sessions and corrective actions are taken to improve the teaching learning process. In addition, the institution also assesses the learning outcomes from the students through indirect methods like feedback from alumni, employers and

guests who come for campus recruitment and deliver special lectures. The process used to improve quality of teaching and learning process is shown in Figure 2.2.1.a.

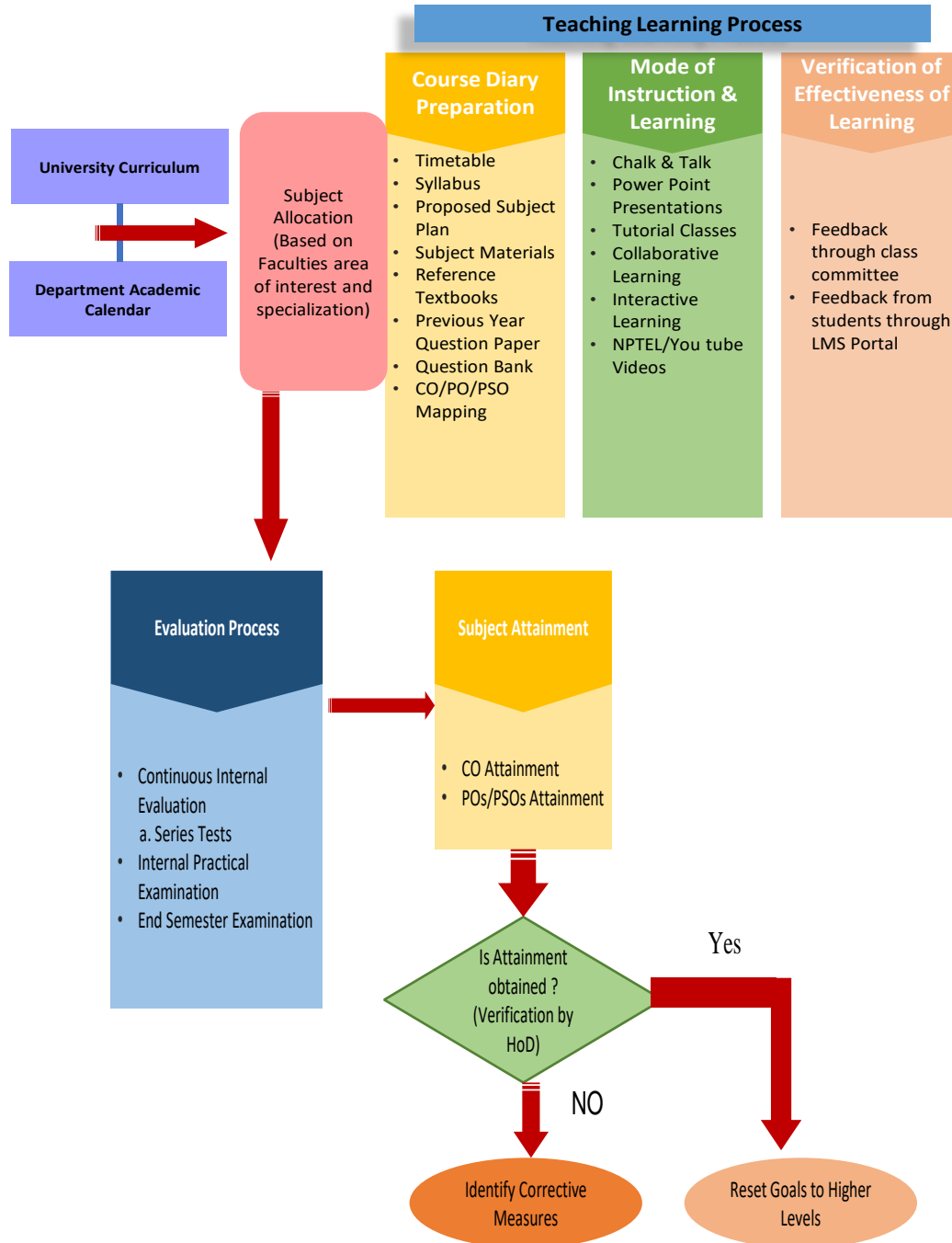


Figure 2.2.1.a Teaching Learning Process

2.2.1.A. Adherence to Academic Calendar**Academic calendar:**

- At the beginning of each semester, the University publishes an Academic calendar for all courses.
- With the reference to the university academic calendar, the Internal Quality Assurance Cell (IQAC) prepares a college calendar including all college related events and activities.
- The Department prepares a Department calendar in alignment with the college calendar including all the department related activities such as association activities and department meetings.
- After approval from the DQAC, the calendar is disseminated among stake holders.
- The Academic Calendar is revised for any unpredictable event.
- The steps involved in the preparation of academic calendar is shown in figure 2.2.1.b

Samples of Academic Calendar and Adherence Table

Samples of academic calendar and adherence table of 2020-2021 academic year is shown below.



APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
Academic Calendar - June 2020 to January 2021
 (B.Tech, B.Arch, BIMCT, B.Des, MTech, M.Arch, M.Planning, MCA and Evening B.Tech & MTech)
 (for ongoing batches of all the programmes)
 Separate calendar for MBA programme
 (Bold Numbers in Class Indicates Instructional days) Page 1/3

Jun-20				Jul-20				Aug-20				Sep-20			
Days	Date	Description	Class	Days	Date	Description	Class	Days	Date	Description	Class	Days	Date	Description	Class
Mon	1			Wed	1			Sat	1			Tue	1	Third Exam	
Tue	2			Thu	2			Sun	2			Wed	2	First Exam (see separate Date Page 2)	
Wed	3			Fri	3			Mon	3	Commencement of class and registration		Thu	3		
Thu	4			Sat	4			Tue	4			Fri	4		
Fri	5			Sun	5			Wed	5			Sat	5		
Sat	6			Mon	6			Thu	6			Sun	6	Exam vacation ends	
Sun	7			Tue	7			Fri	7			Mon	7		10
Mon	8			Wed	8			Sat	8			Tue	8		11
Tue	9			Thu	9			Sun	9			Wed	9		12
Wed	10			Fri	10			Mon	10			Thu	10	Sreekrishna Jayanti	
Thu	11			Sat	11			Tue	11			Fri	11		13
Fri	12			Sun	12			Wed	12			Sat	12		
Sat	13			Mon	13			Thu	13			Sun	13		
Sun	14			Tue	14			Fri	14			Mon	14		14
Mon	15			Wed	15			Sat	15	Independence Day		Tue	15		15
Tue	16			Thu	16			Sun	16			Wed	16	Course selection registration and mapping ends	16
Wed	17			Fri	17			Mon	17	Commencement of class and registration	1	Thu	17		17
Thu	18			Sat	18			Tue	18		2	Fri	18		18
Fri	19			Sun	19			Wed	19		3	Sat	19		
Sat	20			Mon	20	Ka-kada-hi Vavu		Thu	20		4	Sun	20		
Sun	21			Tue	21			Fri	21		5	Mon	21	Swami Vivekananda Gururambhadr Day	
Mon	22			Wed	22			Sat	22			Tue	22		19
Tue	23			Thu	23			Sun	23			Wed	23		20
Wed	24			Fri	24			Mon	24		6	Thu	24		21
Thu	25			Sat	25			Tue	25		7	Fri	25		22
Fri	26			Sun	26			Wed	26	Course selection registration and mapping begins	8	Sat	26		
Sat	27			Mon	27			Thu	27		9	Sun	27		
Sun	28			Tue	28			Fri	28	Birthday of Agricultural Quans vacation begins		Mon	28		23
Mon	29			Wed	29			Sat	29	Subramaniam		Tue	29		24
Tue	30			Thu	30			Sun	30	First Exam		Wed	30		25
				Fri	31	Dussehra		Mon	31	Thiruvonam					

Academic_Calendar_Odd_2020_-_2021

S.S. Aravind

Figure 2.2.1.b KTU Academic Calendar 2020-2021 Odd Semester

MUSALIAR COLLEGE OF ENGINEERING & TECHNOLOGY
Academic Calendar - July 2020 – December 2020
 (Numbers in 'Class' indicates instructional days)

Day	Jun-20			Jul-20			Aug-20			Sep-20		
	Class	Days	Date	Class	Days	Date	Class	Days	Date	Class	Days	Date
Mon	1		Wed	1		Sat	1		Tue	1		Third Exam
Tue	2		Thu	2		Sun	2		Wed	2		Fourth Exam/ Srini Advayana Guru Jayanti
Wed	3		Fri	3		Mon	3		Thu	3		
Thu	4		Sat	4		Tue	4		Fri	4		
Fri	5		Sun	5		Wed	5		Sat	5		
Sat	6		Mon	6		Thu	6		Sun	6		Exam vacative week
Sun	7		Tue	7		Fri	7		Mon	7		
Mon	8		Wed	8		Sat	8		Tue	8		
Tue	9		Thu	9		Sun	9		Wed	9		
Wed	10		Fri	10		Mon	10		Thu	10		Sankranti Jayanti
Thu	11		Sat	11		Tue	11		Fri	11		
Fri	12		Sun	12		Wed	12		Sat	12		
Sat	13		Mon	13		Thu	13		Sun	13		
Sun	14		Tue	14		Fri	14		Mon	14		
Mon	15		Wed	15		Sat	15	Independence Day	Tue	15		
Tue	16		Thu	16		Sun	16		Wed	16		End : Course selection registration and mapping
Wed	17		Fri	17		Mon	17	Classes begin & registration	1	Thu	17	
Thu	18		Sat	18		Tue	18		2	Fri	18	Completion of 3rd Assignment
Fri	19		Sun	19		Wed	19		3	Sat	19	
Sat	20		Mon	20	Karkada Vasa	Thu	20		4	Sun	20	
Sun	21		Tue	21		Fri	21		5	Mon	21	Five Maryama Guru Samadhi Day
Mon	22		Wed	22		Sat	22			Tue	22	
Tue	23		Thu	23		Sun	23			Wed	23	
Wed	24		Fri	24		Mon	24		6	Thu	24	
Thu	25		Sat	25		Tue	25		7	Fri	25	
Fri	26		Sun	26		Wed	26	Begin course selection registration	8	Sat	26	Series 1
Sat	27		Mon	27		Thu	27		9	Sun	27	
Sun	28		Tue	28		Fri	28	Birthday of Jayankal Exam selection begins		Mon	28	Series 1
Mon	29		Wed	29		Sat	29	Muharram		Tue	29	Series 1
Tue	30		Thu	30		Sun	30	First Exam		Wed	30	Series 1
			Fri	31	Shivar	Mon	31	Thiruvonam				

Figure 2.2.1.c MCET Academic Calendar 2020-21

Oct-20			Nov-20			Dec-20			Jan-21		
Days	Date	Description	Class	Days	Date	Description	Class	Days	Date	Description	Class
Thu	1	Series 1	26	Sun	1			Tue	1	Completion of 2nd Feedback	66
Fri	2	Gandhi Jayanti		Mon	2		45	Wed	2	Model Exam	67
Sat	3			Tue	3		46	Thu	3	Model Exam	68
Sun	4			Wed	4		47	Fri	4	Model Exam	69
Mon	5		27	Thu	5	Completion of 2nd Assignment	48	Sat	5		
Tue	6		28	Fri	6		49	Sun	6		
Wed	7		29	Sat	7			Mon	7	Model Exam	70
Thu	8		30	Sun	8			Tue	8	Model Exam	71
Fri	9		31	Mon	9		50	Wed	9	Model Exam	72
Sat	10			Tue	10		51	Thu	10	Class ends	73
Sun	11			Wed	11		52	Fri	11	Publish IA marks and attendance	74
Mon	12	Exam registration begins	32	Thu	12		53	Sat	12		
Tue	13		33	Fri	13		54	Sun	13		
Wed	14	Completion of 1st Feedback	34	Sat	14	Deepavali		Mon	14	Start date to forward the IA marks and attendance to Uty	75
Thu	15	Test 1 to be completed	35	Sun	15			Tue	15		
Fri	16		36	Mon	16	Series 2	55	Wed	16		
Sat	17	Sports meet (College level) to be completed		Tue	17	Series 2	56	Thu	17	Last date to forward the IA marks and attendance to Uty	
Sun	18			Wed	18	Series 2	57	Fri	18		
Mon	19		37	Thu	19		58	Sat	19	Christmas vacation begins	
Tue	20		38	Fri	20		59	Sun	20		
Wed	21		39	Sat	21	Sports meet (Zonal level) to be completed		Mon	21		
Thu	22		40	Sun	22			Tue	22		
Fri	23	Exam registration ends	41	Mon	23		60	Wed	23		
Sat	24	Mahavirami		Tue	24	Completion of 3rd Assignment	61	Thu	24		
Sun	25			Wed	25		62	Fri	25	Christmas	
Mon	26	Vijayadashami		Thu	26		63	Sat	26		Republic Day
Tue	27		42	Fri	27		64	Sun	27	Christmas vacation ends	
Wed	28		43	Sat	28			Mon	28		
Thu	29	Misaki-sherif		Sun	29			Tue	29	Old Semester Exam begins	
Fri	30		44	Mon	30	Test 2 to be completed	65	Wed	30		
Sat	31							Thu	31		

Figure 2.2.1.c MCET Academic Calendar 2020-21 (Contd.)

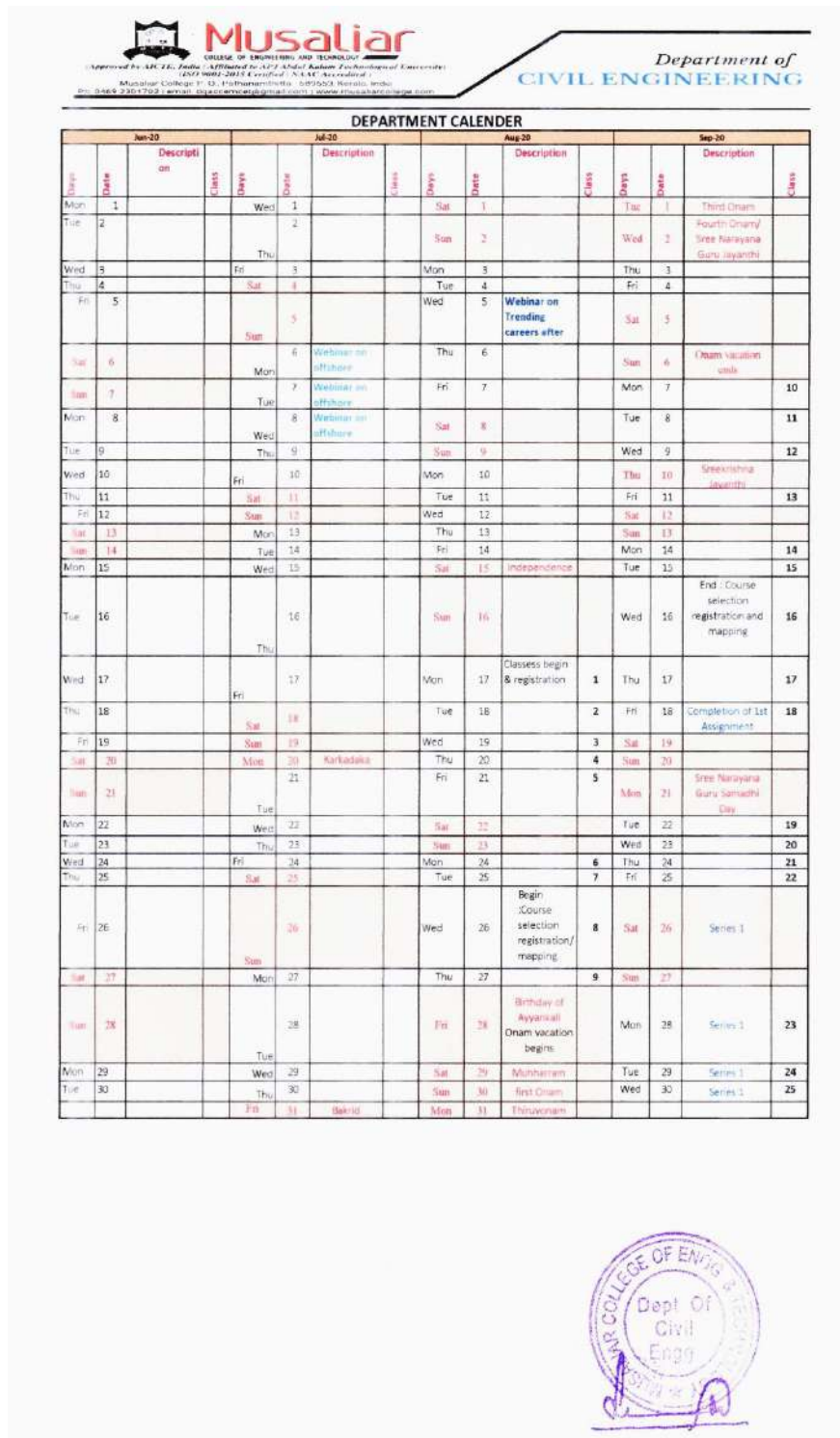


Figure 2.2.1.d CE Department Calendar 2020-2021

Oct-20				Nov-20				Dec-20				Jan-21			
Days	Date	Description	Class	Days	Date	Description	Class	Days	Date	Description	Class	Days	Date	Description	Class
Thu	1	Series 1	26	Sun	1			Tue	1	Completion of 2nd Feedback	66	Fri	1		
Fri	2	Randhi Jayanthi		Mon	2		45	Wed	2	Model Exam	67	Sat	2	Mammam Jayanthi	
Sat	3			Tue	3		46	Thu	3	Model Exam	68	Sun	3		
Sun	4			Wed	4		47	Fri	4	Model Exam Training program on Autocad Essentials	69	Mon	4		
Mon	5		27	Thu	5	Completion of 2nd Assignment	48	Sat	5			Tue	5		
Tue	6		28	Fri	6		49	Sun	6			Wed	6		
Wed	7		29	Sat	7			Mon	7	Model Exam	70	Thu	7		
Thu	8		30	Sun	8			Tue	8	Model Exam	71	Fri	8		
Fri	9		31	Mon	9		50	Wed	9	Model Exam	72	Sat	9		
Sat	10			Tue	10		51	Thu	10	Class ends	73	Sun	10		
Sun	11			Wed	11		52	Fri	11	Publish IA marks and attendance	74	Mon	11		
Mon	12	Exam registration begins	32	Thu	12		53	Sat	12			Tue	12		
Tue	13		33	Fri	13		54	Sun	13			Wed	13		
Wed	14	Completion of 1st Feedback	34	Sat	14	Deepawali		Mon	14	Start date to forward the IA marks and attendance to Uty	75	Thu	14		
Thu	15	Test 1 to be completed	35	Sun	15			Tue	15			Fri	15		
Fri	16		36	Mon	16	Series 2	55	Wed	16			Sat	16		
Sat	17	Sports meet (College level) to be completed		Tue	17	Series 2	56	Thu	17	Last date to forward the IA marks and attendance to Uty		Sun	17		
Sun	18			Wed	18	Series 2	57	Fri	18			Mon	18		
Mon	19		37	Thu	19		58	Sat	19	Christmas vacation begins		Tue	19		
Tue	20		38	Fri	20		59	Sun	20			Wed	20		
Wed	21		39	Sat	21	Sports meet (Zonal level) to be completed		Mon	21			Thu	21		
Thu	22		40	Sun	22			Tue	22			Fri	22		
Fri	23	Exam registration ends	41	Mon	23		60	Wed	23			Sat	23		
Sat	24	Mahanavami		Tue	24	Completion of 3rd Assignment	61	Thu	24			Sun	24		
Sun	25			Wed	25		62	Fri	25	Christmas		Mon	25		
Mon	26	Vijayadashami		Thu	26		63	Sat	26			Tue	26	Republic Day	
Tue	27		42	Fri	27		64	Sun	27	Christmas vacation ends		Wed	27		
Wed	28		43	Sat	28			Mon	28			Thu	28		
Thu	29	Milad-ul-Ahraf		Sun	29			Tue	29	Odd Semester Exam begins		Fri	29		
Fri	30		44	Mon	30	Test 2 to be completed	65	Wed	30			Sat	30		
Sat	31			Tue	31			Thu	31			Sun	31		

Figure 2.2.1.d CE Department Calendar 2020-2021(Contd.)



ADHERENCE CALENDER (2020-2021 ODD)				
Sl.No:	Activity	Actual Date	Adhered or Not Adhered	Reason
1	Webinar Series	16/07/2020 to 18/07/2020	Not Adhered	Inconvenience of Guest
2	DQAC Meeting	08/03/2002	Adhered	
3	Commencement of class S3,S5,S7	17/08/2020	Adhered	
4	Course selection, registration and mapping- Start	26/08/2020	Adhered	
5	Webinar on Trending careers after Civil Engineering	09/05/2020	Adhered	
6	Class committee / Course committee meeting	09/07/2020	Adhered	
7	Course selection, registration and mapping - End	16/09/2020	Adhered	
8	DQAC Meeting	22/09/2002	Adhered	
9	Series 1 S7,S5,S3	26/09/2020	Adhered	
10	Completion of 1st Feedback	14/10/2020	Adhered	
11	DQAC Meeting	11/10/2002	Adhered	
12	Series 2 S7,S5,S3	16/11/2020	Adhered	
13	Completion of 2nd Feedback	12/01/2020	Adhered	
14	Training program on Autocad Essentials	12/04/2020	Adhered	
15	Class committee / Course committee meeting	8/12/2020 to 11/12/2020	Adhered	
16	End Semester Examination	14/03/2021	Not Adhered	Due to Covid Pandemic



Figure 2.2.1.e Adherence Calendar CE Department

MAINTANENCE OF COURSE FILE

Course file is maintained for every theory and laboratory courses to track the activities during the course delivery. It is duly monitored by the Head of the Department and serving as a reference for faculty members who handle the courses. The content of the course file are listed as follows.

THEORY COURSE FILE

CONTENTS

- ✚ Institute and Department Vision, Mission Statements.
- ✚ Department PO, PSO and PEO statements.
- ✚ Course Data Sheet with syllabus, course objectives, course outcomes, PO/PSO Mapping, Mapping-Justification, Course pan, Gaps in Syllabus and content beyond syllabus.
- ✚ Time table
- ✚ Assignment Questions, Model answer and evaluation sheet.
- ✚ Tutorial Details if applicable.
- ✚ Series I and Series II question papers, answer key and model answer sheets (Best, Middle and least)
- ✚ Final attendance.
- ✚ Internal Marks.
- ✚ University Exam question paper.
- ✚ University Exam Feedback.
- ✚ University examination results.
- ✚ CO –PO Mapping and attainment.
- ✚ Notes

PRACTICAL COURSE FILE

- ✚ Institute and Department, Vision Mission Statements
- ✚ Lab Manual
- ✚ List of Lab Experiments
- ✚ Course Data sheet
- ✚ Time table
- ✚ Internal and External Exam Time table
- ✚ Exam attendance sheet
- ✚ Internal Exam Sample question
- ✚ Answer Sheets
- ✚ Sample Fair Record

Course Plan (Sample)

Branch	Civil Engineering
Semester	S7
Course	Design of steel structures
Faculty Name	Bismi M Buhari
Academic Year	2020-2021

*COURSE OUTCOME***Table 2.2.1.a Course Outcome**

CO1	Students will able to design bolted and welded connections.
CO2	Students will able to design tension members.
CO3	Students will able to design compression members.
CO4	Students will able to design laterally supported, unsupported beams and plate girders.
CO5	Students will able to design roof trusses and purlins
CO6	Students will able to design timber structures such as beam columns and composite beams.

MODULES	No of Hours Allotted as per syllabus	No of Hours planned
I	9	9
II	9	9
III	10	10
IV	9	9
V	10	10
VI	9	9
Content Beyond Syllabus		2
TOTAL HOURS	56	58

Table 2.2.1.b Sample Course coverage

Sl. No.	Proposed Plan	Hour	Mod	Topic Name	Topic Description	Actual plan	Mode of Instruction (Online)
1	17-08-2020	1	1	Introduction to steel structures	Properties of steel, structural steel section	18-08-2020	Lecture
2	18-08-2020	1	1	Introduction to design	Design loads and combinations, limit state design concept	18-08-2020	Lecture

3	19-08-2020	1	1	Introduction to bolted connection	Types, advantages and disadvantages, failure of bolted connection	19-08-2020	Lecture
4	21-08-2020	4	1	Design of bolted connection	Problems	22-08-2020	Lecture
5	22-08-2020	1	1	Design of bolted connection	Problems	25-08-2020	Lecture
6	24-08-2020	2	1	Design of bolted connection	Problems	08-09-2020	Lecture
7	25-08-2020	1	1	Introduction to welded connection	Types, advantages and disadvantages, failure of welded connection	10-09-2020	Lecture
8	26-08-2020	1	1	Design of welded connection	Problem	10-09-2020	Lecture
9	26-08-2020	2	1	Design of welded connection	Problem	11-09-2020	Lecture
10	07-09-2020	1	2	Introduction to tension members	Definition, types, net sectional area, net effective sectional area	11-09-2020	Lecture
11	08-09-2020	2	2	Failure of tension members	Types of failure, code clauses, problems related to failure load and design load	16-09-2020	Lecture
12	09-09-2020	1	2	Design of tension members	Procedure	18-09-2020	Lecture
13	10-09-2020	1	2	Design of tension members	Problems	21-09-2020	Lecture
14	11-09-2020	2	2	Design of tension members	Problems	24-09-2020	Lecture
15	11-09-2020	3	2	Design of tension members	Problems	25-09-2020	Lecture
16	14-09-2020	1	2	Lug angles	Definition-numerical problems	05-10-2020	Lecture
17	15-09-2020	2	2	Lug angles	Problems	05-10-2020	Lecture
18	16-09-2020	3	2	Shear lag	Details about shear lag in connections	05-10-2020	Lecture
19	17-09-2020	1	3	Introduction to compression members	Definitions, terminology, Design of struts	08-10-2020	Lecture
20	17-09-2020	4	3	Design of built up compression members	Numerical problems based on IS800:2007	08-10-2020	Lecture
21	18-09-2020	1	3	Design of compression members	Numerical problems based on IS800:2007	08-10-2020	Lecture
22	19-09-2020	3	3	Lacings	Introduction & Numerical problems	09-10-2020	Lecture
23	22-09-2020	3	3	Design of lacings	Problem	12-10-2020	Lecture

24	23-09-2020	2	3	Design of lacing	Problem	16-10-2020	Lecture
25	23-09-2020	3	3	Battens	Introduction & Numerical problems	20-10-2020	Lecture
26	24-09-2020	2	3	Design of battens	Problems	20-10-2020	Lecture
27	25-09-2020	1	3	Slab base	Introduction & Numerical problems	21-10-2020	Lecture
28	26-09-2020	1	3	Gusseted Base	Introduction & Numerical problems	22-10-2020	Lecture
29	26-09-2020	2	4	Laterally supported beam	Procedure & numerical problems	23-10-2020	Lecture
30	26-09-2020	3	4	Laterally supported beam	Problem	30-10-2020	Lecture
31	26-09-2020	4	4	Laterally unsupported beam	Procedure & numerical problems	02-11-2020	Lecture
32	05-10-2020	1	4	Laterally unsupported beam	Problem	02-11-2020	Lecture
33	06-10-2020	3	4	Design of simple beam	Procedure & numerical problems	03-11-2020	Lecture
34	07-10-2020	3	4	Design of compound beam	Procedure & numerical problems	03-11-2020	Lecture
35	08-10-2020	1	4	Design of plate girders without stiffeners	Procedure & numerical problems	13-11-2020	Lecture
36	09-10-2020	4	4	Design of plate girders without stiffeners	Problem	13-11-2020	Lecture
37	12-10-2020	2	4	Design of plate girders with stiffeners	Procedure & numerical problems	17-11-2020	Lecture
38	13-10-2020	2	5	Introduction to roof trusses	Components of roof trusses, load and load combinations	20-11-2020	Lecture
39	14-10-2020	3	5	Assessment of wind load	Numerical problems based on IS 875-part 3	20-11-2020	Lecture
40	15-10-2020	3	5	Design of angle section purlins	Numerical problems	20-11-2020	Lecture
41	16-10-2020	1	5	Design of angle section purlins	Numerical problems	21-11-2020	Lecture
42	19-10-2020	1	5	Design of I & channel section purlins	Introduction & Numerical problems	21-11-2020	Lecture
43	20-10-2020	3	5	Design of I & channel section purlins	Numerical problem	23-11-2020	Lecture
44	21-10-2020	3	5	Design of truss	Introduction & Numerical problems	24-11-2020	Lecture
45	22-10-2020	3	5	Design of truss	Numerical problems	24-11-2020	Lecture
46	23-10-2020	1	5	Moment resistant/ Eccentric connections	Introduction & Numerical problems	24-11-2020	Lecture
47	23-10-2020	4	5	Moment resistant/ Eccentric connections	Numerical problems	24-11-2020	Lecture

48	26-10-2020	1	6	Introduction to timber structures	Types of timber, classification, allowable stress, classifications	03-12-2020	Lecture
49	27-10-2020	3	6	Design of timber beam	Design for flexure, shear, bearing and deflection consideration	11-12-2020	Lecture
50	28-10-2020	3	6	Design of timber beam	Numerical problems	11-12-2020	Lecture
51	29-10-2020	1	6	Design of timber beam	Problems	14-12-2020	Lecture
52	30-10-2020	4	6	Design of timber column	Bending and axial consideration	14-12-2020	Lecture
53	02-11-2020	1	6	Design of timber column	Numerical problems	15-12-2020	Lecture
54	03-11-2020	3	6	Design of timber column	Numerical problems	17-12-2020	Lecture
55	04-11-2020	3	6	Design of composite section with timber and steel	Numerical problem	17-12-2020	Lecture
56	05-11-2020	1	6	Design of composite section with timber and steel	Numerical problem	17-12-2020	Lecture
57	06-11-2020	1	-	Content Beyond Syllabus		18-12-2020	Lecture
58	06-11-2020	2	-	Content Beyond Syllabus		18-12-2020	Lecture

2.2.1.B. Use of various instructional methods and pedagogical initiatives

To enhance the teaching learning process, the various instructional methods followed are mentioned in Table 2.2.1.c.

Table 2.2.1.c Teaching Learning Process

Teaching Methods	Description of the methods
Lecture method and interactive learning	The faculty members use chalk and talk methods and audio-visual aids in teaching learning process Innovative methods like explaining with the help of models, animations, video film and brain storming techniques are adopted to make the class room teaching more interactive.
Lecture using slide presentation	Students understand the concept easily through the use of multimedia which helps them to be more attentive
Assignment /Tutorial	Helps the students to have deeper understanding in the course and to work independently Analytical skills are improved through tutorial classes
Course materials in college portal	The course materials are available in the college portal which can be used by the students for effective learning apart from the classroom teaching Comprehensive e-learning materials have been developed by faculty members.
Group discussion	Group discussion on current topics related to the courses which help the students to update knowledge and improve communication
Project based learning	Project-based learning is an instructional approach designed to give students the opportunity to develop knowledge and skills through engaging projects set around challenges and problems they may face in the real world.
Youtube Videos/NPTEL Resources	Students effectively understand the concept from domain experts through video lecture of IIT professors available from various source such as NPTEL, open courseware etc
National Digital Library (NDL)	NDLI is a virtual repository of learning resources which is not just a repository with browse facilities but provides a host of services for the learner community.
Industrial visit/Internships	Demonstration of real time working modules, machineries, equipment, etc. in the industry give the exposure about the technical knowledge and Industrial environments for the students
Technical Seminars/ Workshops/ Guest Lecture/ Add on Course	To enhance their technical knowledge, to improve communication skills and continue lifelong learning.

✚ Lecture method and Interactive learning

The faculty members use chalk and talk methods and audio-visual aids in teaching learning process. Students are also encouraged to interact during the lecture hour for getting their doubts cleared on the spot. Innovative methods like explaining with the help of models, animations, video film and brain storming techniques are adopted to make the class room teaching more interactive.



Figure 2.2.1.f Interactive learning

✚ Lecture using slide presentation

Students understand the concept easily through the use of multimedia which helps them to be more attentive

✚ Assignment /Tutorial

Tutorial Sessions are provided to improve the ability of students to solve problems. Sample tutorial is shown Figure 2.2.1.g. Analytical skills are also improved through tutorial classes. Assignments helps the students to have deeper understanding in the course and to work independently.

**MUSALIAR COLLEGE OF ENGINEERING & TECHNOLOGY,
PATHANAMTHITTA**

DEPARTMENT OF CIVIL ENGINEERING

TUTORIAL SHEET

Class: *S₅ CE* Subject: *Design of Concrete Structures*
 Date: *6/12/2021* Instructor: *Ashina Begum & Subha Lekshmi*
 Venue: Room No: *601* Hour: *1 & 2*

1	Total number of students in the class	<i>33</i>
2	Number of students allotted for tutor	<i>16, 17</i>
3	Number of students attended	<i>33</i>
4	Topics covered	<i>Module 1- Analysis of singly Reinforced Beam</i>
5	Activity planned	<i>By doing problems on the topic Analysis of singly Reinforced Beam</i>
6	Change in activity (if any)	

Activity Report

The tutorial topic was from module 1. The students are assigned into 16 & 17 for each tutor respectively. The performance of the students was good & the doubts were clarified. The outcome was as expected. The students were able to solve problems based on analysis of singly Reinforced Beam.

Name & Signature of the Instructor: *Subha Lekshmi*
 Name & Signature of the Instructor: *Ashina Begum*
Mangal 160 (CE)




Figure 2.2.1.g Sample Tutorial Sheet

Course materials in college portal

The faculty members upload the course material such as slides, question banks and handouts, in the social networking sites like Google class rooms, YouTube etc. The course materials are available in the college portal which can be used by the students for effective learning apart from the classroom teaching. Comprehensive e-learning materials have been developed by faculty members. For the efficient delivery of both theory and practical courses, an online learning site has been established. The college website provides access to this platform for students, faculty, and parents. They can go to the portal whenever they want. Each course includes module wise course materials and a question bank. Faculty can also submit all materials

relevant to the course, such as PPTs, graphical representations, reference books, and so on, and students can readily access them. It consists of following learning materials. Link for accessing portal from website, course materials and google meet platform through LMS portal.

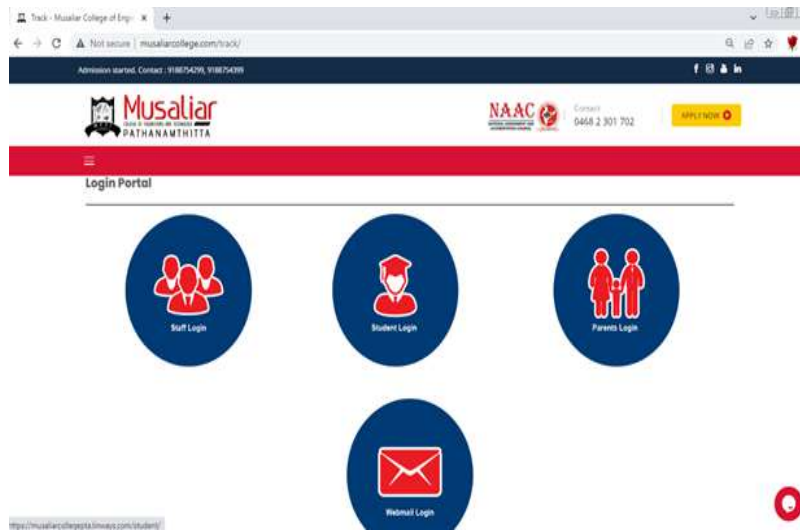


Figure 2.2.1.h Link for accessing college portal from website

Exam Timetable	Course materials	Upload Coursewares	List Coursewares	Copy Course Materials	Video Contents	List Video	Quiz And Survey	Extra Activities	BATCH WISE REPORTS	Attendance Reports	Assignments
<input type="checkbox"/>	MODULE 4 PART 2	FRAMES AND TRUSS	17-01-2022 12:48:14 AM								
<input type="checkbox"/>	MODULE 4 PART 1	BEAMS	18-12-2021 02:54:05 PM								
<input type="checkbox"/>	MODULE 3 PART 3	SINGLE JOINTED TRUSS, LACK OF FIT AND TEMP. EFFECT	18-12-2021 02:53:42 PM								
<input type="checkbox"/>	MODULE 3 PART 2	Flexibility matrix of frames and pin jointed truss	18-12-2021 02:52:52 PM								
<input type="checkbox"/>	MODULE 3 PART 1	Flexibility matrix of beams	09-12-2021 10:24:34 PM								
<input type="checkbox"/>	MODULE 2	MATRIX ANALYSIS OF STRUCTURES	15-11-2021 03:04:09 PM								

Figure 2.2.1.i. Course material in college portal

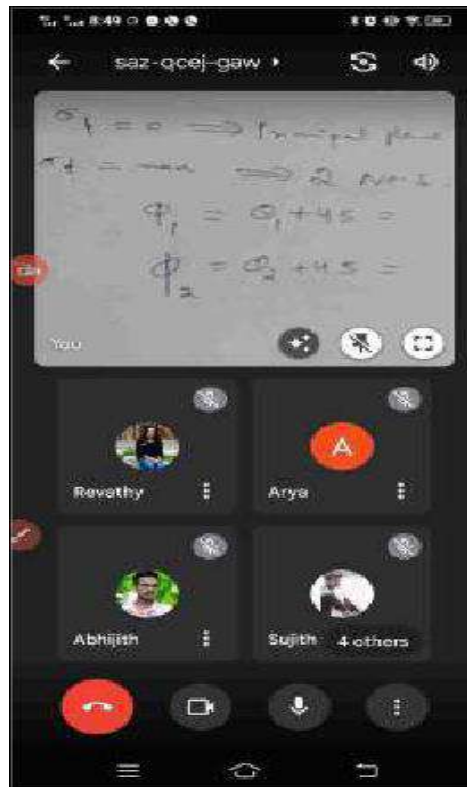


Figure 2.2.1.j Google Meet via Linways Portal

Group discussion

- ❖ Group discussion on current topics related to the courses which help the students to update knowledge and improve communication.
- ❖ Students are grouped in to a mixed ratio of bright and weak students in classes.
- ❖ This type of learning helps the students to actively participate in their academic activities.

Project based learning

1. Survey Camp

During the Survey Camp in 6th semester, the students learn to use chain, theodolite, dumpy level and Total station, to do necessary calculations and to prepare detail reports of survey.



Figure 2.2.1.k Photo taken during Survey Camp 2020

2. Prototype Based Learning

Group of students are advised to prepare still models to get a clear understand about the civil engineering structures. Being a problematic course, students find it difficult to visualize the ideal situations.

Some of the students are not capable of visualizing the pattern of arrangement of reinforcing bars in different structural members. So, it was advised to make a prototype of structural detailing of different structural members.



Fig: 2.2.1.1 Still models prepared by students



Fig: 2.2.1.l Still models prepared by students (Cont..)

3. Learning through projects associated with Government agencies

Students got opportunities to do work from the Government of Kerala; Rebuild Kerala includes the rebuilding of roads after the 2018 flood. A group of students and teachers worked in different Panchayath inside the Pathanamthitta district and data was collected using modern survey instruments such as Total station. One day total station training, prior to RKI works for staff and students was conducted. The details needed during the rebuild Kerala works and data collected from total station was explained by the government officials.



Figure 2.2.1.m Images taken during rebuild Kerala works

✚ **YouTube Videos/**

✚ **NPTEL Resources**

Students effectively understand the concept from domain experts through video lecture of IIT professors available from various source such as NPTEL, open courseware

✚ **National Digital Library (NDL)**

NDLI is a virtual repository of learning resources which is not just a repository with browse facilities but provides a host of services for the learner community



Figure 2.2.1.n NDL Certificate of Registration

✚ **Industrial visit/ Internships**

Demonstration of real time working modules, machineries, equipment, etc. in the industry give the exposure about the technical knowledge and Industrial environments for the students.

✚ **Technical Seminars/ Workshops/ Guest Lecture/ Add on Course**

To enhance their technical knowledge, to improve communication skills and continue lifelong learning. Considering the feedback from the alumni, senior academician faculties and employers, curriculum gaps were identified and ADD ON courses were conducted such as AUTOCAD, STAAD and PRIMEVERA workshop, Survey Camp.

PEDAGOGICAL INITIATIVES:

- The faculty members are encouraged to attend seminars/workshops and FDPs in various reputed institutions, learn NPTEL courses through AICTE-NPTEL, FDP schemes and to visit Industries for updating their knowledge in technical and pedagogical methods.
- FDP enhances the aware about modern teaching tools and methodologies. It provide an opportunity to acquire knowledge about current technological developments in the field.

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

Process to identify weak/bright students and steps taken to assist them:

- The high performing students are identified by the course faculty and class advisor from their participation and interaction in class and class activities, performance in the assessment tests and participation in classroom seminars, questioning ability and university result analysis.
- They are encouraged to take up competitive examinations like GATE. They are provided with the guidance about patents, project management and prototype building.
- High Performing students are encouraged to lead the students in various activities of the college.

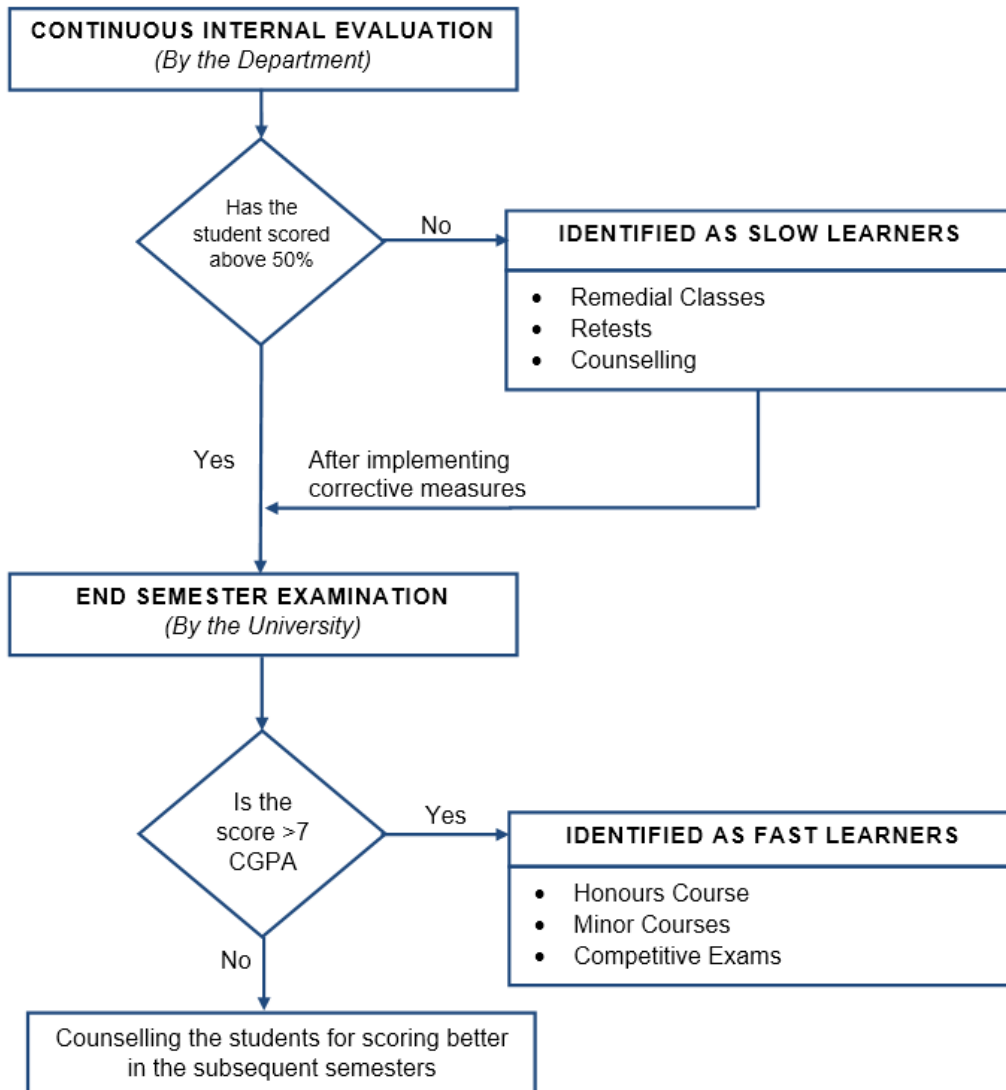


Figure 2.2.1.o Flow chart showing the process of identifying weak and bright students

Methodology to Identify High Performing Students

- The high performing students are identified by the course faculty and class advisor from their participation and interaction in class and class activities, performance in the assessment tests and participation in classroom seminars, questioning ability and University result analysis.
- They are encouraged to take up competitive examinations like GATE, UPSC. Honours and Minor courses are provided by the institute as per the curriculum of the university. They are provided with the guidance about patents, project management and prototype building. High Performing students are encouraged to lead the students in various activities of the college.
- Mementos are also distributed to motivate them to continue their Excellency in academics.
- The students are encouraged to participate in various technical programmes such as value-added course, industry certificate course, consultancy work and online certification.

Honours

- The University curriculum for Civil Engineering is offering honors degree for bright students. In 2015 Regulation high performing students with a CGPA above 8 at the end of the fourth semester and having no credit arrears are eligible for studying Honors.
- Student can start studying their honors course from sixth semester onwards. In 2019 regulation bright students have the opportunity to decide the honors course from fourth semester onwards.
- HoD assigns a faculty for taking classes for the students. Hours are allotted in the time table for honors courses.
- Two internal exams and two assignments are given to students. Table 2.2.1.d shows the list of students who are eligible for taking honors.

Table 2.2.1.d List of students opted for honour program

Sl. No.	Name of student	Course for Honours
Honours 2021-2022 (S7 CE)		
1	Haritha VS	CE465 Geoenvironmental Engineering
Honours 2021-2022 (S5 CE)		
1	Umadevi	CET395 Transportation System Management
Honours 2020-2021 (S7 CE)		
1	Joseph Samuel	CE467 Highway Pavement Design
2	Sarath S	
3	Simi Monachan	
Honours 2020-2021 (S6 CE)		
1	Haritha V S	CE374 Air Quality Management
Honours 2020-2021 (S4 CE)		
1	Umadevi	Pavement Construction Management
Honours 2019-2020(S6 CE)		
1	Joseph Samuel	CE368 Prestressed Concrete
2	Sarath S	
3	Simi Monachan	

Minor

- The University curriculum of 2019 Regulation for Civil Engineering is offering minor degree for bright students. The students have the opportunity to take course from another department as their minor course.
- There is no limitation in credit for taking minor course. Hours are allotted in the timetable for minor course.
- Two internal exams and two assignments are given to students. Table 2.2.1.e. shows the list of students who are eligible for taking minor.

Table2.2.1.e List of Students Opted for Minor Courses

MINOR2021-2022(S3CE)		
Course: Data Communication CST285		
Sl. No	University Reg No:	Name of Student
1	MCK20CE001	Abey Jose
2	MCK20CE006	Anandhu Hari
3	MCK20CE008	Arif Muhammed
4	MCK20CE009	Arya Ajith
5	MCK20CE010	Ashhad Nazar
6	MCK20CE011	Ashna Shahul
7	MCK20CE016	Elias Jithin Varghese
8	MCK20CE018	Feba Sara George
9	MCK20CE019	Gouri M
10	MCK20CE020	Hrudya Sabu
11	MCK20CE021	Jinto Thomas
12	MCK20CE024	Merina
13	MCK20CE026	Mohammed SaifudeenS
14	MCK20CE027	Ramzana R
15	MCK20CE029	Rizwan Raheem
16	MCK20CE030	Sachu Abhilash
17	MCK20CE031	Sarath KumarS
18	MCK20CE032	Shabana Basheer
19	MCK20CE033	ShanS
20	MCK20CE034	Shinaz Shaji
21	MCK20CE036	Sujith Omanakuttan
22	MCK20CE038	V S Naveen

Methodology to Identify Weak Students

- Weak students are identified immediately after the induction or enrollment to institute within two weeks by conducting preliminary assessment test to identify weak students Adequate number of bridge course are offered in the first year.

- Slow learners are identified by the faculty through analyzing various records of the students like Internal Assessments, Assignment performances, activeness in the class, responding capability and performance in seminars or projects. The slow learners are then given special attention by the course faculty member by providing important topics for examination and clarifying their doubts.
- The remedial classes are also conducted by the respective teachers for slow learners. Generally, these remedial classes are conducted by the individual course faculty member according to the availability of slots in their respective time-tables as well as the availability of the students. If required, slow learners are also provided with additional study material by the course faculty member.
- Faculties handle slow learners by explaining each topic in their own mother tongue. Those students get special attention for solving problems and how to find best solution through remedial classes. Specially developed notes and assignments are given for them and quizzes are given to them online.

In order to improve the self learning capabilities of the students the following facilities are provided.

- Central library and department library
- Digital library
- Journals and magazines
- Internet laboratory
- E-learning and online certification courses
- NPTEL course materials



Figure 2.2.1.p Central Library



Figure 2.2.1.q Department Library

Students mentoring system:

Mentors is in charge to monitor the performance of students in the internal and university examinations. The mentors takes care of discipline and their other activities of the students.

The student records containing all the details of the students are properly maintained by the staff advisors. The mentors will analyze the problems faced by each student and also solve their difficulties in learning. Career guidance is given to the students according to their area of interest.

2.2.1.D. Quality of classroom teaching:

Quality in classroom teaching is important for the student and will greatly impact the teaching learning process. The teachers adopt various innovative teaching methods to keep the students in full concentration during the class hours. The ambience of the class is also maintained to create a positive learning experience for the students. The various initiatives are:

The following aspects are followed for providing a quality teaching in the classroom.

- Class rooms are spacious, ventilated along with proper lights, provided with fans and good seating facilities for a learning ambience.
- Classroom ambience is made interactive. LCD Projectors are deployed in all the classes. This will increase the interest of learning for the students.
- Online videos are also shown for some complicated topics as well as showing working principles.
- The duration of lecture is normally divided as introduction, explanation, application and conclusion with real world examples and thought-provoking assignments based on the course requirements. Tutorial classes are conducted for analytical courses for helping the students to solve complex problems under the guidance of staff.

- Students are encouraged to be interactive in class through discussions. It ends with a question answer session. Doubts are cleared in the class itself.
- Quizzes are conducted for some courses (if necessary).
- Other resources like NPTEL video lectures and internet sources are used for effective teaching
- To get industrial exposure and bridge the gap between industry and institute, students are taken for Industrial visits Academic calendar is displayed in the notice board for student during the beginning of the semester
- Principal, Deans and Head of the Department will visit the classes randomly for monitoring teaching learning processes. Students are also motivated to give a snap talk on their interested area or recent trends.
- ICT supportive learning methods are being used by the faculty members for better content delivery

2.2.1.E. Conduct of Experiments (Observations in the Lab)

- Labs are effective learning atmospheres where students understand not only how to do the experiments, but also why the concept or process is important in their studies and how it might be applied or connected to real-world situations.
- Laboratory classes are conducted in 3-hour sessions; the faculty explains the purpose of the experiment and gives a demo of the experiment procedures to be carried out.
- The students are advised to conduct a study of the experimental setup, go through the specifications and understand the necessary safety measures and precautions during the conduct of the experiments.
- The students are then directed to execute the experiment, find out the necessary values, perform the necessary calculations and write inferences about the results obtained in the rough record/fair record
- The rough record/fair record is submitted to the faculty in-charge of the particular experiment and gets his approval, the record of the concerned lab contains the title of the experiment, the aim of the experiment, procedure of the experiment, observations and calculations and result obtained
- Students coming under KTU (2015 Admission onwards) need not maintain the fair record of the experiments; however, they have to complete every aspect of the particular

experiments in their rough record.

- We follow a continuous evaluation procedure for Laboratory Work as per KTU norms its evaluation composes of internal evaluation and end semester lab examination. All Labs are equipped with a sufficient number of instruments to conduct experiments.
- A continuous evaluation process is carried out for the laboratories where the faculty in charge monitors and evaluates the performance of the student for each experiment. The configuration, rules and general instructions as per the curriculum are displayed in the basic laboratories. Lab manuals are maintained at each lab in order to have a better understanding of the concepts by the students.
- The faculty in-charge for the lab session will be the authorized person to make the schemes/list of experiments to be conducted by incorporating suggestions from the members of Department Quality Assurance Team before the commencement of the semester
- The concerned faculty in-charges are required to hand over a copy of complete list of experiments to be conducted before the start of lab sessions. Prior information regarding the theory part supporting the lab sessions are given to the students to brush up the ideas on various elements for the smooth conduct of lab sessions.
- DQAC assures the quality of labs. Head of the Department ensures the timely up- dation of labs. Faculty in charge of lab section report any malfunction to HoD. The periodic maintenance is done by qualified technical staff and external help of qualified technician and suppliers are brought to maintain the systems in working condition.
- The concerned faculty in charge for the laboratory is responsible for creating the lab cycle at the beginning of each semester. The prepared lab cycle is submitted to the DQAC before the commencement of each semester.
- After getting the approval from DQAC lab cycle is given to the student along with an overview of the programs that are going to be covered in the laboratory. It is mandatory for the students to complete the laboratory programs in the rough/fair record.



Figure 2.2.1.r Lab class

2.12.1F Continuous Assessment in Laboratory

Continuous assessment system is implemented for the assessment of laboratory work. The assessment is done on the basis of student involvement in performing, understanding the experiment and on time submission of laboratory records. According to the norms the marks distribution splits into two sections. First 70 marks for continuous assessments based on lab performance and remaining 30 marks for End semester lab exam. The continuous assessment mark is divided as follows in the given Table 2.2.1.f.

Table 2.2.1.f Mark Distribution in Lab Courses

Division	Lab preparation and performance	Technical Writing	Viva
Maximum Mark	40	20	10

End semester examination: 30 marks

The practical Examination are conducted as per the schedule in the academic calendar with two examiners (need not be faculty member engaging the practical classes) from the department.

Lab Evaluation Criteria (KTU-2015 Regulation)

Continuous Evaluation - 70 Marks Internal Exam – 30 Marks

Lab Evaluation Criteria (KTU-2019 Regulation)

Continuous Internal Evaluation - 75 Marks End Semester Examination - 75 Mark

Table 2.2.1.g Experiment Conducting Process

Sl. No.	Experiment conducting process	Description of the processes
1	Collaborative learning	Fast and slow learners are formed as a team to perform the experiments in the laboratory
2	Practical implementation of theory concepts	Laboratory experiments are designed such that the students use what they have learnt in the theory courses to implement practically in the laboratory classes.
3	Conducting experiments	Laboratory manual are provided for doing their advanced/design based/open ended experiments.
4	Recording observations	Observed readings are recorded in the laboratory manual.
5	Evaluation of result	Overall performance evaluation of executed experiments and answers for viva voce questions.

2.2.1.G. Student Feedback of teaching learning process and action taken

Student Feedback

Student feedback are collected in class committee meeting and online feedback through LMS platform.

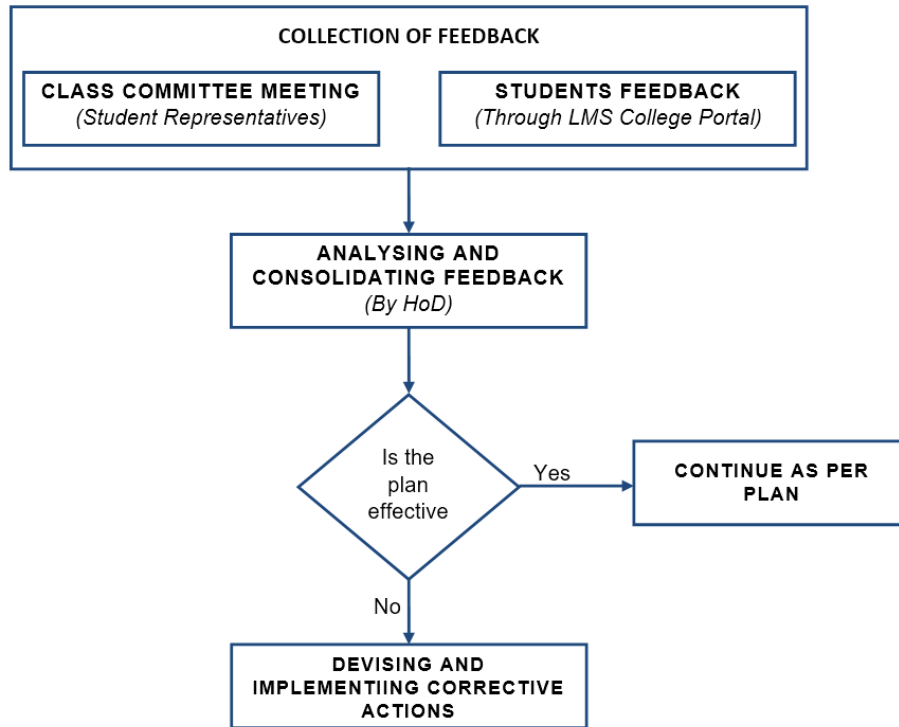


Figure 2.2.1.s Flowchart showing student feedback system

Class Committee meeting

With reference to the academic calendar, class committee meeting is held twice in each semester. During these meetings the students can express any difficulties or complaints regarding any academic matters.

The Class Committee meetings are chaired by a faculty member not handling in that class along with the faculty members handling courses. Three to four student representatives are assigned to share their feedback and express their grievances/complaints if any. The meetings are normally conducted before the commencement of the end semester examination.

During the meeting, the matters related to syllabus coverage, co-curricular and extra-curricular activities, hostel and transport facilities are discussed. Students are given freedom to raise any kind of issues related to teaching learning process, facilities provided or any other relevant matter

The chairman/chairperson notes down the points discussed in the meeting and prepares a report. The report is submitted to the head of the department for analysis. A sample of a class committee meeting report is shown in the figure 2.2.1.s.

LMS Feedback

During each semester two feedbacks are collected from the students through the college portal. The students are asked to assess the quality of teaching based on a set of criteria's given in the feedback form. The feedback form consists of 12 multiple choice questions which the students can choose to answer. They are also given the option for writing additional comments within the feedback form. This form is reviewed by the head of the department who consolidates the comments and shares it with the respective faculty so that they can improve on their skills. The questions presented to the students in the feedback form is stated in the table 2.2.1.h.

Table 2.2.1.h Question Taken for Evaluation

Sl.No	Question Taken for Evaluation
1	Overall teaching effectiveness
2	Sincerity of the teacher
3	Behaviour of the teacher
4	Does the teacher encourage questions
5	Speed of presentation
6	Teachers' ability to organize lectures
7	Whether the teacher dictates note only without explanations
8	Is able to answer questions clearly
9	Teachers' willingness to help
10	Clarity and understanding of teacher's explanations
11	Knowledge of the teacher
12	Effectiveness of online classes compared to classroom teaching

Each student evaluates a teacher based on the 12 questions mentioned above and finally, a teaching effectiveness index of the teacher is calculated (in percentage) for the course concerned. If the Teaching Effectiveness Index of the Teacher is found to be 60% or above, it is considered that the course is handled by the particular faculty member in a successful manner. If the Teaching Effectiveness Index is found to be 90% or above, then the faculty performance is ranked as excellent. If the score obtained is below 60%, the concerned faculty member is confidentially called for a meeting with the Head of the department. The HOD interacts with the faculty to understand the specific problems and suggest suitable corrective action. As the student's feedback score is critical to the staff's promotion, teachers are more conscious in maintaining quality delivery of classes.

The department collects course end survey from students after completion of the course in every semester. It contains different questions based on Course outcome and each contains five options to evaluate the question. At the end of four years of technical learning, graduate exit surveys are taken from students for the entire analysis of quality engineering education.

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

Institute Marks: 20

An assessment/evaluation is subsequent of teaching-learning activity. The alignment of course outcomes, teaching and assessment helps to make the overall learning experience more transparent.

The Civil Engineering Department offers various theory courses and laboratory courses to support the theory. There is a comprehensive system within the department to prepare the course plans for the upcoming semesters and simultaneously plan for test, quiz and assignments prior to the beginning of the semester.

Different courses are evaluated by continuous evaluation and university exams. The continuous evaluation is done by giving assignments and internal examination. Presentation skills of students are evaluated during the seminar presentation on topics of their choice pertaining to the current trends in Civil Engineering and also through the project presentation.

Initiatives and Implementation details for improving the quality of Internal Semester Question papers (Internal Assessment Test)

Question Papers

- The department conducts two internal assessment tests arranged by the Institute exam cell in every semester.
- Each test contributes 40% of the total internal mark of the course.
- While setting the question paper standard books, all previous university exam question papers are taken into consideration.
- The questions are framed in such a way that it should satisfy the cognitive level viz. Remember, Understand, Apply, Analyze, Evaluate, and Create.
- Each question is mapped to the corresponding Course Outcome and cognitive level.
- The question papers are set by the faculty members handling the course.
- DQAC assess the quality and relevance of the question papers based on its syllabus coverage, distribution of mark allocation and course outcomes.
- DQAC sends the scrutinized question papers to IQAC. IQAC evaluates the question paper and forwarded to the Institute exam cell. For any genuine reasons, if a student was unable to attend the given two internal assessment tests, retest is given to him/her. The process for question paper setting and evaluation is depicted in Figure 2.2.2a

Continuous Assessment Tools**a) For theory courses****• *Assignment***

- Assignments are an integral part of the continuous assessment process to ensure that students apply and analyses the knowledge to raise the level of learning and application.
- Assignments are generally conducted in different ways such as home/class assignments which generally evaluate the ability of students to apply the knowledge of the concerned topics studied, formulate and analyze civil engineering problems.
- Issue and submission dates of the assignments are announced by the respective faculty members.

• *Series Test*

- This performance assessment is carried out twice a semester.
- Each exam is focused in attaining some of the course outcomes.
- DQAC of the department and IQAC will ensure the quality of the question papers of each course prepared for the series test.
- After every internal assessment test, the faculty explains the solution of the questions in the class which will enable them to perform well in the upcoming examinations.
- For any genuine reasons, if a student was unable to attend the given two internal assessment tests, retest is given to him/her.
- Marks obtained from the two tests are taken for the award of internal assessment marks.

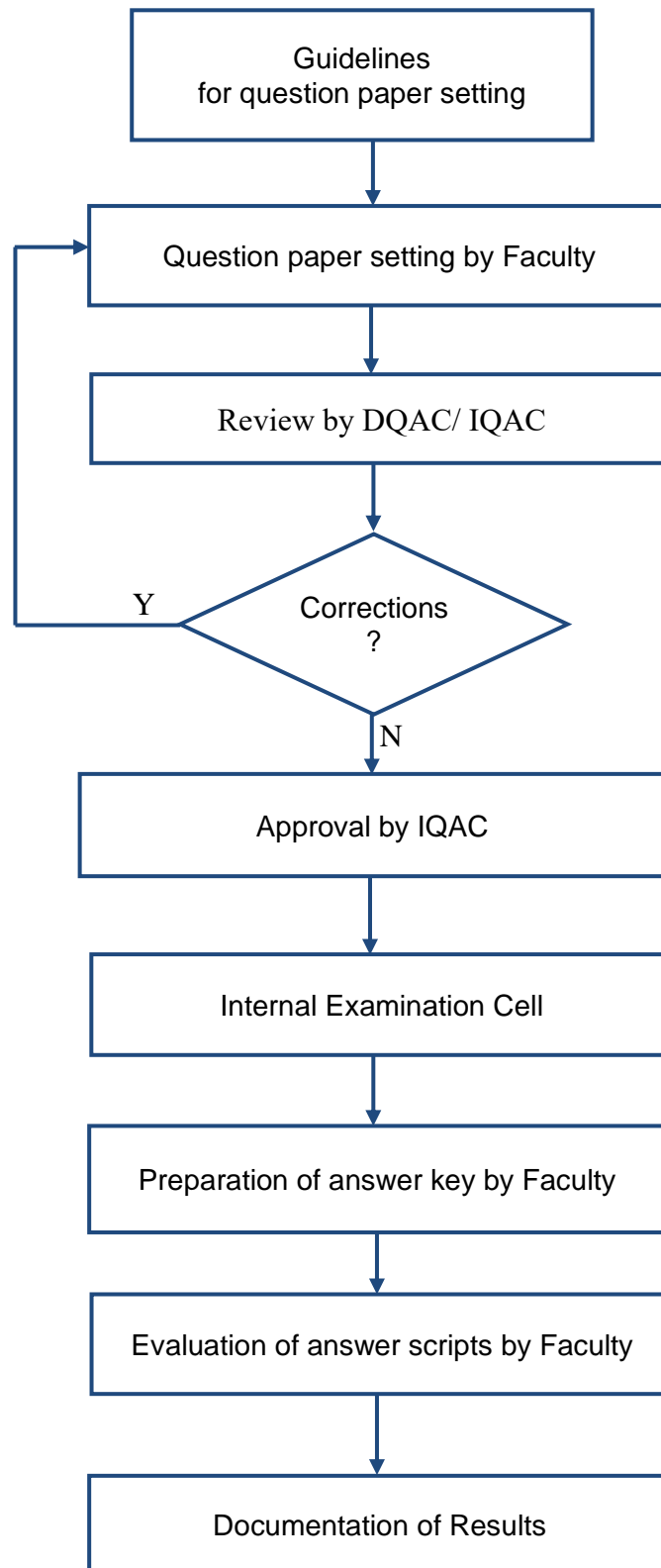


Figure 2.2.2a Process for Internal Examination

- ***End Semester University Examination***

- This examination is conducted by the university at the end of every semester.
- The duration of the examination is 3 hours and it covers the whole syllabus.
- Based on the grade obtained by the student in a course and credit of that course, a grade point average (GPA) is assigned to the student in each semester.
- The GPA obtained by the student in various semesters are finally combined to get the representative index namely Cumulative Grade Point Average (CGPA) at the end of the performance.

b) For Laboratory Course

- ***Lab work***

- Performance of the students in various laboratories is assessed mainly through records maintained by the students.
- Assessment of lab work considers the student's ability to conduct experiments, analyses data, to arrive at valid conclusions and to document the results.

- ***Lab Examinations***

- At the end of the lab classes, examination is conducted, for each lab, to assess the knowledge and skills imparted to the students through the lab course.
- A viva voce is also conducted as part of the continuous assessment.

Evaluation:

- After every internal assessment test, faculty publishes the marks through LINWAYS and also intimates the parents via mail or PTA meeting.
- For any genuine reasons, if a student was unable to attend the two internal assessment tests given, retest is given to him/her.
- Assignments are evenly distributed throughout the semester and are also used as a tool for evaluation for internal assessment.

Continuous Evaluation

- Candidates in each semester are evaluated both by continuous assessment and end semester University examination.

- Continuous monitoring of students is carried out through continuous assessment process. The primary aim of introducing continuous assessment is to improve the performance of students. CA marks will be maintained in course diary for each course.

End Semester University Examinations

- University examinations are conducted at the end of every semester in courses as prescribed under the respective scheme of examinations. Semester classes are completed at least 10 working days before the commencement of the University examination.
- The end semester examinations are held twice in a year – April/May session (for even semester) and October/November session (for odd semester). Supplementary examinations are conducted in both the sessions.

2.2.3. Quality of Student Projects (25)

Institute Marks: 22

Initiatives:

- To start with, HOD issues a circular to all the faculty members of the department to provide the list of previous projects to be given to the students at the end of even semester and same should be displayed on notice board.
- The same is being notified to the students by the way of addressing in the class room by the project coordinator.
- Students are also encouraged to come up with the idea of their own for doing the project.
- Faculties are allocated as mentors to guide the student's project.
- Each project team is formed with maximum four students.
- The details of the project are presented to the project review committee.
- After careful examination of the idea presented by the student/team, guides are allocated to the students by project coordinator.
- Details of the project are presented to the project assessment board.
- Project topic is finalized after topic presentation before the assessment board.
- Further the students are encouraged to participate in project exhibitions, present/publish their work in conferences/journals.

2.2.3.1 Project Preliminary-Evaluation Process

Project for B. Tech program starts in the seventh semester. The same project should be continued in the eighth semester by the same project team.

Course plan:

- a. Identify suitable project relevant to the branch of study.
- b. Form project team (not exceeding four students) (In special cases it is permitted up to five students on the discretion of the Principal). The students can do the project individually also.
- c. Identify a project supervisor.
- d. Present the project proposal before the assessment board and get it approved by the board.

The preliminary work to be completed:

- 1) Literature survey
- 2) Formulation of objectives
- 3) Formulation of hypothesis/design/methodology
- 4) Formulation of work plan
- 5) Preparation of preliminary report

Table 2.2.3.a Course Plan for Project in Semester VII

No.	Week	Topics to be covered
1	Week 1	Introduction to the course and Guidelines
2	Week 2	Forming Project team Identify Project Supervisor
3	Week 3,4	Selection of Project Topic Formation of Assessment Board
4	Week 5	Topic presentation (Accept / reject)
5	Week 6,7	Literature Survey
6	Week 8	Formulation of Objectives and Scope
7	Week 9	Formulation of hypothesis/ design/methodology Updating Literature Survey
8	Week 10,11	Mid Semester Presentation
9	Week 12	Preparation of work plan Preparation of preliminary report
10	Week 13,14	End semester Presentation

The project assessment board shall consist of the following members.

Chairman: Head of the Department

Members: (1) Project Co-Ordinator, (2) Project Supervisor

Evaluation of Project preliminary: 50 marks

Two progress evaluations, mid semester and end semester, are mandatory. Mid semester evaluation shall be based on progress of (1), (2), (3), (5), (6) and (7) in accordance with the above table 2.2.3.a. End semester evaluation shall be based on final improvement of (1), (2), (3), (5), (6), (7), and (9).

- a. Progress evaluation by the supervisor: 40%
- b. Progress evaluation by the assessment board: 60%.

Details of distribution of marks for Project Work are given in Tables 2.2.3.b through 2.2.3.f.

Table 2.2.3.b Mark Distribution for Project Work

Evaluation	Evaluator	Mark	Members Awarding Marks
Progress of Work I	Project Supervisor(s)	10	2
Mid semester Presentation	Dept. Assessment Board	15	3
Progress of Work II	Project Supervisor(s)	10	2
End semester Presentation	Dept. Assessment Board	15	3

Table 2.2.3.c Mark Distribution of Mid semester Progress Evaluation by Project Supervisor(s)

Sl. No.	Area of Distribution	Marks
1	Literature Survey, Formulation of objectives and Formulation of hypothesis/design/methodology	5
2	Progress of work	5
		Total =10

Table 2.2.3.d Mark Distribution of End semester Progress Evaluation by Project Supervisor(s)

Sl. No.	Area of Distribution	Marks
1	Literature Survey, Formulation of objectives and Formulation of hypothesis/design/methodology	5
2	Preparation of workplan, Preliminary Report and Progress of work	5
		Total = 10

**Table 2.2.3.e Mark Distribution of Mid semester Progress Evaluation by Project
Assessment Board**

Sl. No.	Area of Distribution	Marks
1	Literature Survey, Formulation of objectives and Formulation of hypothesis/design/methodology	5
2	Progress of work	5
3	Presentation	5
		Total = 15

**Table 2.2.3.f Mark Distribution of End semester Progress Evaluation by Project
Assessment Board**

Sl. No.	Area of Distribution	Marks
1	Literature Survey, Formulation of objectives and Formulation of hypothesis/design/methodology	5
2	Progress of work	5
3	Presentation	5
		Total = 15

2.2.3.2 Final Project- Evaluation Process

Course Plan: In depth study of the topic assigned in the light of the preliminary report prepared in the seventh semester.

- i) Review and finalization of the approach to the problem relating to the assigned topic
- ii) Preparing a detailed action plan for conducting the investigation, including team work.
- iii) Detailed Analysis/ Modelling/ Simulation/ Design/ Problem Solving/ Experiment as needed
- iv) Final development of product/process, testing, results, conclusions and future directions
- v) Preparing a paper for Conference presentation/Publication in Journals, if possible
- vi) Preparing a report in the standard format for being evaluated by the department.
assessment board
- vii) Final presentation and viva voce before the assessment board including external expert

Table 2.2.3.g Course Plan for Project in Semester VIII

Sl. No.	Week	Topics to be covered
1	Week 1	Introduction to the course and Guidelines
2	Week 2	Discussion with Guide on Methodology Progress Assessment based on previous semester Finalization of approach to the problem
3	Week 3	Preparation of detailed action plan Action Plan Approval from Guide
4	Week 4,5,6,7	Fabrication of Experimental Setup Conduct of Experiment/Design/ Analysis/ Modelling/ Simulation
		In Week 7, Draft submission of Partial Thesis with a) Chapter 1 – Introduction b) Chapter 2 - Literature survey c) Objective and Scope of work d) References
5	Week 8	First presentation before guide and coordinator
6	Week 9,10	Continuation of Project Work
7	Week 11	Result analysis Documentation and Verification of the work done
8	Week 12	Conclusion of work Draft Thesis submission to guide
9	Week 13	Second presentation before guide and coordinator Preparation of technical paper for Conference /Publication
10	Week 14	Evaluation of draft thesis by Project Assessment board (excluding External member) Submission of Final Report
11	University Exam	Project evaluation by Project Assessment board

The Project Assessment Board shall consist of the following members:

Chairman: Head of the Department

- Members:
1. Project supervisor
 2. Project coordinator
 3. Two faculty members from the Department
 4. An external expert, either from an academic/research institute or industry.

Evaluation of Final Project: 100 marks

Evaluation scheme is given below: -

- a) Two progress assessments: 20% by the faculty supervisor/s
- b) Final Project Report: 30% by the Project assessment Board (excluding the external expert)
- c) Final Project presentation and Viva: 50% by the project assessment board including external expert

If the project work is not completed satisfactorily, the student has to put in more work and appear again for assessment on a specified date, not earlier than one month after the first evaluation. If the student fails in the project, a fresh registration for the project for one semester is mandatory.

Table 2.2.3.h Mark Distribution for Project

Evaluation	Evaluator	Mark
First Progress assessment	Guide, Coordinator	10
Second Progress assessment	Guide, Coordinator	10
Report	Project Assessment Board (Excluding the external expert)	30
Project Presentation & Viva Voce	Project Assessment Board (Including external expert)	50
Total		100

Table 2.2.3.i Mark Distribution for Report

Sl. No.	Area of Distribution	Marks
1	Format of Project Report	10
2	Description of concepts and technical details	10
3	Conclusion and Discussion	10
Total		30

Table 2.2.3.j Mark Distribution for Project and Viva Voce

Sl. No.	Area of Distribution	Marks
1	Objectives achieved	10
2	Content and presentation skill	10
3	Mechanics/Grammar	10
4	Viva	10
5	Time Management	10
Total		50

2.2.3.3 List of Projects

List of projects for CAY (2017-21 Batch), CAYm1(2016-20 Batch) and CAYm2 (2015-19 Batch) are given in Table 2.2.3.3.k through 2.2.3.3.m.

Table 2.2.3.k List of Projects (2017-21)

Sl. No.	Project Title	Area of Specialization
1	Impact of sand mining on periyar river basins	Environmental Engineering
2	Wastewater treatment using natural coagulants	Environmental Engineering
3	Construction of water table contour mapping and geo hydrological studies in Pathanamthitta using GIS techniques	Environmental Engineering
4	Eco-Friendly Light Weight Concrete using PET Plastic Aggregate	Environmental Engineering
5	Sustainable Particle Board	Environmental Engineering
6	Flyover: A Solution for Traffic Congestion in Kayamkulam - Haripad	Transportation Engineering
7	Experimental study of waste glass powder as a partial replacement of sand and cement in concrete	Concrete Technology
8	Design of parking lanes and parking facility at Pathanamthitta	Transportation Engineering
9	Flood hazard mapping in Ranni	Hydraulics Engineering
10	New sewage treatment plant at Kayamkulam railway station	Environmental Engineering
11	Design of multi-storey car parking with terrace cultivation in Ranni	Structural Engineering
12	Experimental study on behavior of bricks using ball clay fly ash jaggery	Concrete Technology

Table 2.2.3.l List of Projects (2016-20)

Sl. No.	Project Title	Area of Specialization
1	Analysis Of G+5 Building Using E Tabs	Structural Engineering
2	Floating Concrete	Concrete Technology
3	Proposal for New Bus Station at Pandalam	Structural Engineering
4	Attainment of Sustainability Through Green Audit- A Case Study at MCET	Environmental Engineering
5	Design of Chamakkavu Bridge	Structural Engineering
6	Bitumen Modification With WCO, SBS And Nano Silica	Transportation Engineering
7	Design of Suspension Cable Bridge Using Etabs	Structural Engineering
8	Proposal for Waste Water Recycling At MCET	Environmental Engineering
9	Pathanamthitta Elevated Highway	Transportation Engineering
10	Properties of Sewage Sludge and Fly Ash Brick	Environmental Engineering
11	Preparation of Inundation Map for Pathanamthitta	Environmental Engineering
12	Water Quality Assessment of River Pamba	Environmental Engineering

Table 2.2.3.m List of Projects (2015-19)

Sl. No.	Project Title	Area of Specialization
1	E waste in rigid pavement	Transportation Engineering
2	Analysis of carbon footprint and sequestration in MCET	Structural Engineering
3	Water treatment using natural coagulant	Environmental Engineering
4	Rainwater harvesting in MCET	Environmental Engineering
5	Partial replacement of hospital waste ash in concrete	Concrete Technology
6	Analysis of wind response on different shapes of high-rise MIVAN wall buildings	Structural Engineering
7	Exploring the innovative reuse of dredged sand in constructions	Building Materials
8	Low-cost roofing tiles using agricultural waste	Building Materials
9	Study on suitability of sedimented soil in flooded area of Kerala for brick production	Geotechnical Engineering
10	Design of water distribution scheme for Kariyara village using EPANET	Environmental Engineering
11	Assessment of groundwater quality in Pathanamthitta district using GIS	Environmental Engineering
12	Comparative study of tyre powder and melted tyre using as an additive in paving bricks	Building Materials
13	Flood mapping using GIS	Environmental Engineering
14	Signal correction in Pathanamthitta	Transportation Engineering

2.2.4. Initiatives Related to Industry Interaction (15) Institute Marks: 13

2.2.4.1 Initiatives for industry interaction

Learning from textbooks, lectures and other study material does not suffice for holistic learning. Practical and hands-on learning is essential for better understanding of work processes. Industrial visits are organized to expose the students for industry environment which enhances the practical understanding of the concepts.

The Institute has established Industry Institute Interaction cell (IIIC) with an institute coordinator and members from all departments. The objective of IIIC is to coordinate various activities with the involvement of the industry for the benefit of students.

Industrial internship/summer training is a platform for students to get familiarized with the working standards, process and procedures involved in an industry.

Following are some of the initiatives related to industry interaction Internships programs help students to relate the theory that they have learned to practical applications and practices in the industry.

1. Industrial visits and training to students.
2. Collaboration between the industry and the department in guiding project works and consultancy.
3. Organizing expert talks, workshops and seminars in association with industrial experts.
- 4 Industrial experts offer creative suggestions in revising the curriculum.
5. Also, MOU have been signed between college and different industries to share resources for mutual benefits.

MoUs

The faculties of the department constantly try to interact with industries. MoUs was done with industries to emphasize on

- (a) Internship
- (b) Project Workshop for Students
- (c) Students specific Training

List of MOUs

Civil Engineering Department of MCET has signed MoUs with the following organizations. Table 2.2.4.a. shows the list of MOUs during each academic year.

Table 2.2.4.a List of MOUs

Sl: No:	Academic Year	Organisations
1.	2022-23	Asia Infrastructure Advisory Services Private Limited
2.	2021-2022	Baker associates and consultants, Engineering Consultancy house, #E 107, Baker square, Pattimattom, Eranakulam, Kerala
3.		Kerala Coastal development corporation
4.	2018-2019	M.P.V.H.S.S Kumbazha, Pathanamthitta

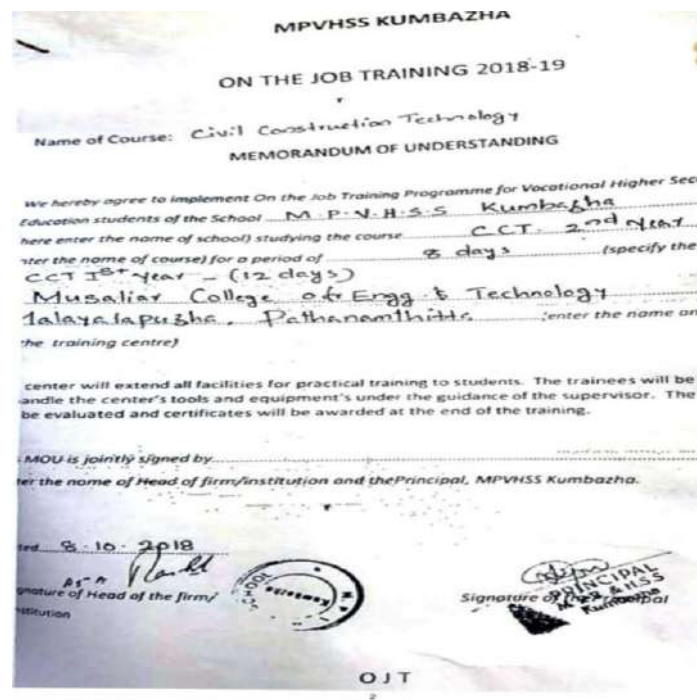


Figure 2.2.4.1.a MOU between M.P.V.H.S.S, Kumbazha during the academic year 2018-2019

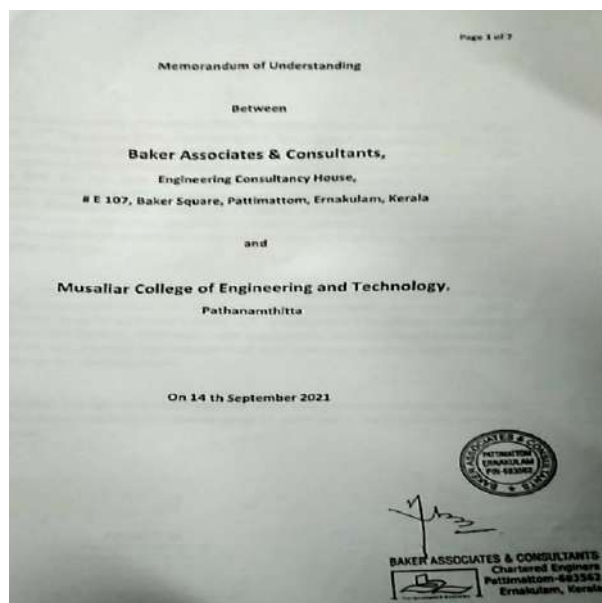


Figure 2.2.4.1.b MOU between Baker Associates and Consultants during the academic year 2021-2022

2.2.4.2. Implementation details:

The department invites experts from industries to deliver lectures to students. Students are allowed to take training at various industries. List of invited talks and industrial visits arranged during each academic year are depicted in Table 2.2.4.2.b. and 2.2.4.2.c. respectively.

Table 2.2.4.b. Invited Talks -Information of Companies whose Representatives Provided Lectures/ Seminars

Sl: No:	Event	Industry/ Resource person with Designation	Date	% of students	Relevance to POs, PSOs
2020-2021					
1.	Autocad software training programme	Autodesk and NTS Nexus Technical solutions.	30/11/2020	90	PO1, PO5, PO11, PO12, PSO1, PSO2
2.	Scope of Engineers in BIM	Core Institute of Technology	6/5/2021	92	PO1, PO5, PO11, PO12, PSO1, PSO2
2019-2020					
1.	A training programme	CADD Centre, Pathanamthitta	16/01/2020	90	PO1, PO5, PO11, PO12, PSO1, PSO2
2.	Introduction of a new product 'Ultratech Cement'	Ultra Tech Cement LTD	27/02/2020	90	PO1, PO6, PO7, PO8, PO12, PSO1

Table 2.2.4.b. Invited Talks -Information of Companies whose Representatives Provided Lectures/ Seminars (Contd.)

Sl. No.	Event	Industry/ Resource person with Designation	Date	% of students	Relevance to POs, PSOs
2018-2019					
1.	Workshop on STAAD PRO and PRIMAVERA	CADD Centre, Pathanamthitta	30/01/2019	85	PO1, PO5, PO11, PO12, PSO1, PSO2
2.	Workshop	Irez Academy Pvt.Ltd	2/7/2019	95	PO1, PO5, PO11, PO12, PSO1, PSO2
3.	Total station camp and training	ALG International Institute of Technology, Cochin	30/3/2019	95	PO1, PO5, PO11, PO12, PSO1, PSO2
4.	Workshop on Autocad	CADD Centre, Pathanamthitta	26/07/2019	90	PO1, PO5, PO11, PO12, PSO1, PSO2

Table 2.2.4.2.c List of Industrial Visits

Sl. No	Industries Visited	Date of Visit	Number of Students Visited	Relevance to POs and PSOs
2018-2019				
1	Manneth Construction, Goa	28 th April 2019	42	PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
2	Mattupetti Dam, Munnar	4 th May 2019	38	PO6, PO7, PO9, PO12, PSO1, PSO2
3	Industrial visit to Kollam Harbour	20 th November 2018	50	PO1, PO6, PO7, PO8, PO9, PO12, PSO1, PSO2
4.	Industrial visit to Idukki Dam	5 th May 2019	41	PO1, PO6, PO7, PO9, PO12, PSO1, PSO2
2019-2020				
1	Banasura Sagar Dam, Wayanad	19 th May 2019	21	PO6, PO7, PO9, PO12, PSO1, PSO2

2.2.4.3. Impact Analysis

- Student practiced and improved their industry skills.
- Students gained a better understanding of how, what they learn in class room could help them with their future.
- Students learnt the roles and responsibilities of a particular career from the people working in the field.

2.2.5. Initiatives Related to Industry Internship/Summer Training (15)**Institute Marks: 12**

- The students are encouraged to take internship program during their semester break.
- Faculty members give their guidelines, suggestions and scope and contact details of an internship. They also help the students by interacting with the industrial experts, provide the students recommendation letters and other necessary supports.
- The alumni coordinator constantly interacts with alumni those who are working in the industries and request them to provide necessary guidelines and supports for their junior's internship. Student Internship details are shown in table 2.2.5.a.

Table 2.2.5.a Details of Student Internship

Sl: No:	Industry	Duration	No: of Students Attended	Relevance to POs and PSOs
2019-2020				
1.	PWD Works	22/1/2021-30/1/2021	28	PO5, PO6, PO9, PO10, PSO1, PSO2
2018-2019				
1.	Perfect builders	9/7/2019–23/7/2019	5	PO5, PO6, PO9, PO10, PSO1, PSO2
2.	Neema builders	9/7/2019 – 24/7/2019	8	PO5, PO6, PO9, PO10, PSO1, PSO2
3.	Square Arc builders	9/7/2019 – 26/7/2019	7	PO5, PO6, PO9, PO10, PSO1, PSO2
4.	Torc Infotech	9/7/2019 – 28/7/2019	5	PO5, PO6, PO9, PO10, PSO1, PSO2
5.	AN VIN Building Design	28/06/2018	5	PO5, PO6, PO9, PO10, PSO1, PSO2
6.	M H Construction and Company	04/06/2018	11	PO5, PO6, PO9, PO10, PSO1, PSO2
7.	Alex Associates	04/05/2018	12	PO5, PO6, PO9, PO10, PSO1, PSO2
8.	Veliyam Grama Panchayath	09/06/2018	1	PO5, PO6, PO9, PO10, PSO1, PSO2
9.	Thuruthiyil Constructions	9/7/2019 – 26/7/2019	2	PO5, PO6, PO9, PO10, PSO1, PSO2



PERFECT BUILDERS
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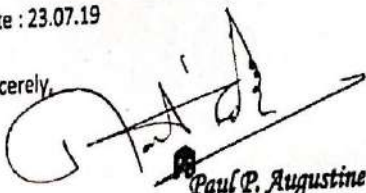
Pureparambil Arcade, 25/396(K), Puthiyakavu, Tripunithura, Kochi-682301
Ph: 0484 2780955 Mob : 9544800140 web : www.perfectbuilders.net E mail : sunilperfectbuilders@gmail.com
Reg. No. G6-2774/1774/SA, Dept. Municipal Administration Govt. of Kerala

TO WHOM-SO-EVER IT MAY CONCERN

This is to certify that Ms. Anagha S, B.Tech civil engineering 2nd semester student of Musaliar college of engineering and technology, Pathanamthitta has successfully completed her internship of 15 days from 9th July 2019 to 23th July 2019 at our company.

Date : 23.07.19

Sincerely,


PAUL P. AUGUSTINE
Managing Director

Paul P. Augustine
Reg. No. G6-2724/1774/SA
PERFECT BUILDERS
DESIGNERS / CONTRACTORS
Pureparambil Arcade
Puthiyakavu, Tripunithura
Ph: 0484 - 2780955

Figure 2.2.5.a Sample certificate of Internship

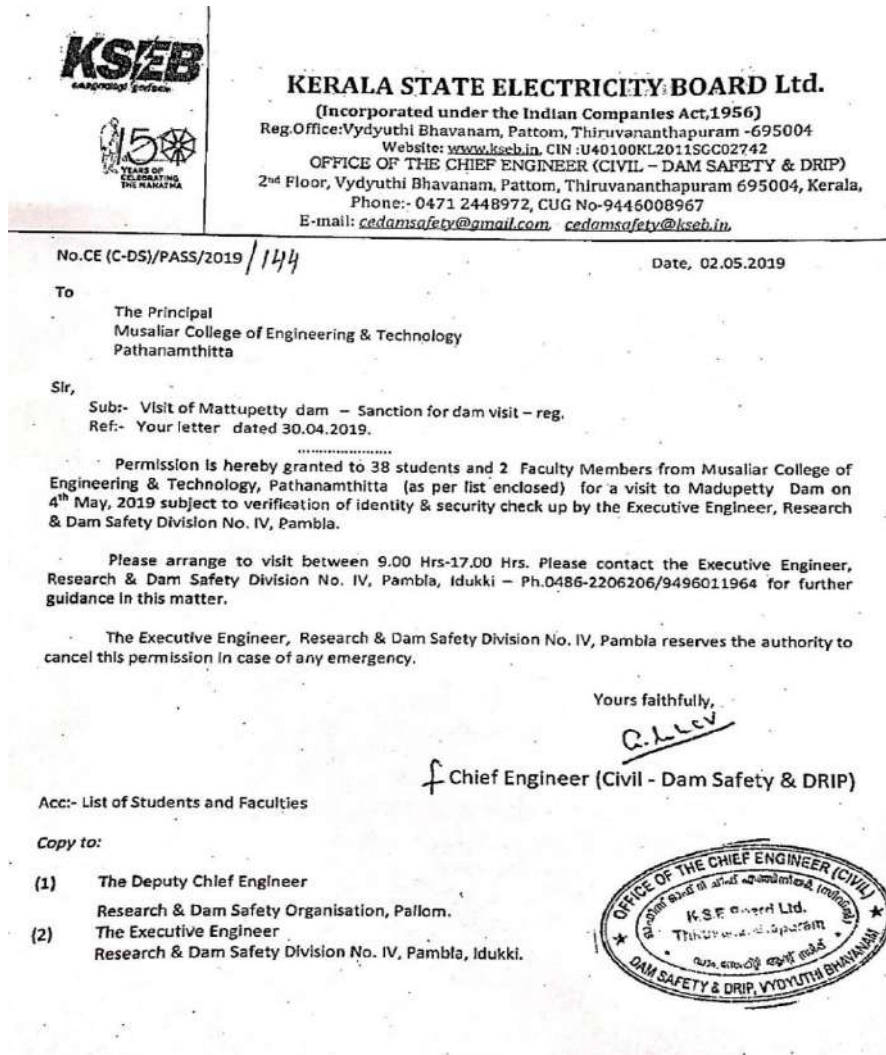


Figure 2.2.5.b Sample certificate of Industrial visit

Impact Analysis of industrial Training

Industrial visits bridge the gaps between theoretical training and practical learning in a real-life environment.

- Students gain hands-on experience of how industries function and the type of working environment that they should expect when they join the industry.
- Students get an idea to identify their prospective areas of work in the overall organizational function.
- Meeting with the industry team members enhances interpersonal skills, communication techniques and motivational level of students.
- Interaction with the industrial experts enhances knowledge of industry practices and regulations.
- Students highly appreciated the exposure they got from the industrial visits and internships and they shared their experience with the peer group

Student feedback on initiative:

- Feedback is collected from the students regarding the training.
- The students are asked to submit a report after completing the industrial visit.
- Students are asked to submit the feedback regarding their value-added courses.
- Taking necessary corrective measures based on the feedback given by the students who underwent training.

Sponsored research

An overriding objective of the venture is to achieve a transformation of minds of the students from being job-seekers to being entrepreneurs themselves, utilizing the theoretical and practical lessons they get at the College.

- An agreement was signed between MCET and revenue department in 2012 for sand auditing and river mapping of Achankovil River.



Figure 2.2.5.c Sand Auditing Report Submission



Figure 2.2.5.d Sand Auditing News Paper Cutting

- We initiated the entrepreneurial journey by starting a mission to complete 29 unfinished houses. As a result of this great beginning, many of our students came up with innovative ventures. An estimate and AutoCAD plan of each house was submitted. Honourable finance minister Thomas Isaac has agreed to extend the project to the whole state.



Figure 2.2.5.e Home for Homeless- Mezhuveli Panchayath

CRITERION 3	Course Outcomes and Program Outcomes	120
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3. COURSE OUTCOMES AND PROGRAM OUTCOMES (120)

Total Marks: 113

The Civil Engineering program followed the curriculum of APJ Abdul Kalam Technological University (KTU) since 2015 admission and is revised in the academic year 2019-20. The Course Outcomes (COs) are specified for each course in the curriculum by the University. Appropriate changes were made to the COs to accomplish the required coverage of outcomes and their levels. The courses and the COs are aimed to fulfill the Program Outcomes (POs) and Program Specific Outcomes (PSOs) established for the program.

3.1. Establish the Correlation between the Course and the Program Outcomes (POs) and Program Specific Outcomes (PSOs) (20)

Total Marks: 20

Program Outcomes (POs)

PO1	ENGINEERING KNOWLEDGE: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	PROBLEM ANALYSIS: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO3	DESIGN/DEVELOPMENT OF SOLUTIONS: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4	CONDUCT INVESTIGATIONS OF COMPLEX PROBLEMS: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.
PO5	MODERN TOOL USAGE: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6	THE ENGINEER AND SOCIETY: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	ENVIRONMENT AND SUSTAINABILITY: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	ETHICS: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	INDIVIDUAL AND TEAM WORK: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	COMMUNICATION: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO11	PROJECT MANAGEMENT AND FINANCE: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	LIFE-LONG LEARNING: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes (POs)

PSO1	Apply knowledge in analysis, design, survey, testing and construction of civil engineering structures.
PSO2	To develop and design sustainable and smart infrastructure considering the global environmental challenges.

3.1.1. Course Outcomes (COs) (5)

Institute Marks: 5

The details of COs of one course from each semester are given in the Table 3.1.1

Table 3.1.1: Course Outcomes (COs) for selected courses

Semester III		
Course Code: CE207 Course Name: Surveying (C 205) AY: 2018-19		Bloom's Taxonomy Level
C205.01	Identify various methods of surveying and its application.	K1
C205.02	Develop contour maps, compute area and volume and prepare mass diagram	K6
C205.03	Apply the principles of surveying for triangulation	K3
C205.04	Identify the possible errors in surveying and apply the corrections in field measurements	K1
C205.05	Employ surveying techniques using advanced surveying equipment.	K3
Semester IV		
Course Code: CE204 Course Name: Construction Technology (C 211) AY: 2018-19		
C211.01	Understand the properties of different materials used in construction	K3
C211.02	Illustrate the properties of various ingredients of concrete and mix proportioning method.	K3
C211.03	Enumerate the various elements of building and cost-effective construction.	K3
C211.04	Summarize construction details and finishing works.	K2
C211.05	Interpret the different aspects of tall buildings.	K3
C211.06	Analyze different types of building failures.	K4
Semester V		
Course Code: CE301 Course Name: Design of Concrete Structures (C 301) AY: 2019-20		
C301.01	Understand the design philosophies used in Reinforced Concrete based on relevant IS Codes.	K2
C301.02	Recall the fundamental concepts of limit state design and codal provisions for design of concrete members under bending, shear, compression and torsion.	K6
C301.03	Analyze reinforced concrete sections to determine the ultimate capacity in bending, shear and compression.	K4
C301.04	Design and detail beams, slab, stairs and footings using IS code provisions.	K2
C301.05	Design and detail columns using IS code.	K4

Table 3.1.1: Course Outcomes (COs) for selected courses (Contd.)

Semester VI		
Course Code: CE302 Course Name: Design of Hydraulic Structures (C 310) AY: 2019-20		Bloom's Taxonomy Level
C310.01	Describe various hydraulic structures and design of vertical drop weir.	K1
C310.02	Identify various minor irrigation structures, its characteristics and properties.	K4
C310.03	Design minor irrigation structures such as regulators, cross drainage works and canal falls.	K6
C310.04	Analysis of gravity dams, its stability conditions and modes of failure.	K4
C310.05	Analyze the causes of failure of different types of dams and their design criteria.	K2
Semester VII		
Course Code: CE409 Course Name: Quantity Surveying and Valuation (C 405) AY: 2020-21		
C405.01	Prepare specification and rates of materials and work.	K3
C405.02	Analyze rates of various structures.	K4
C405.03	Develop detailed estimates for buildings and various other structures.	K6
C405.04	Formulate bar bending schedule	K6
C405.05	Estimate Valuation of assets	K6
Semester VIII		
Course Code: CE404 Course Name: Civil Engineering Project Management (C 410) AY: 2020-21		
C410.01	Plan and Schedule a civil engineering project by using techniques like CPM, PERT	K4
C410.02	Choose an appropriate technology and equipment for a specific job	K4
C410.03	Explain the legal, safety practices and procedures in construction contracts.	K2
C410.04	Formulate suitable quality management plan for construction	K6
C410.05	Apply principles of ethics in decision making	K3

3.1.2. CO-PO Matrices of Courses Selected in 3.1.1. (5) Institute Marks: 5

The details of CO-PO and CO-PSO matrices for the courses mentioned in 3.1.1 are given in the Table.3.1.2. The level of correlation varies from 1 to 3 where 1 represents slight (low), 2 represents moderate (medium) and 3 represents substantial (high) level of correlation.

Table 3.1.2: CO-PO Matrices of Courses Selected in 3.1.1

COs	POs												PSOs	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
Semester III														
Course Code: CE207														
Course Name: Surveying (C 205)														
AY: 2018-19														
C205.01	3	3	-	2	-	2	-	2	2	2	-	-	3	-
C205.02	3	3	3	2	-	2	-	2	2	-	2	-	3	-
C205.03	3	3	-	2	-	2	-	2	2	-	-	-	3	-
C205.04	3	3	3	2	-	2	-	2	2	-	-	-	3	-
C205.05	3	2	-	-	3	2	-	2	2	-	-	2	3	-
C 205	3.0	2.8	3.0	2.0	3.0	2.0	0	2.0	2.0	2.0	2.0	2.0	3.0	0
Semester IV														
Course Code: CE204														
Course Name: Construction Technology (C 211)														
AY: 2018-19														
C211.01	3	-	-	-	-	1	1	1	-	1	-	1	3	2
C211.02	3	1	2	-	-	1	1	1	-	2	-	1	3	2
C211.03	3	-	-	-	-	3	1	1	-	1	-	1	3	2
C211.04	3	-	-	-	-	2	1	1	-	-	2	2	3	2
C211.05	3	-	-	-	-	2	2	1	-	-	-	1	3	2
C211.06	3	2	0	2	2	3	3	1	-	-	2	2	3	2
C211	3.0	1.5	2.0	2.0	2.0	2.0	1.5	1.0	0	1.3	2.0	1.3	3.0	2.0

Table 3.1.2: CO-PO Matrices of Courses Selected in 3.1.1 (Contd.)

COs	POs												PSOs	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
Semester V														
Course Code: CE301														
Course Name: Design of Concrete Structures (C 301)														
AY: 2019-20														
C301.01	2	-	1	-	-	-	-	-	-	1	-	1	3	-
C301.02	3	2	1	-	-	-	-	-	-	1	-	1	3	-
C301.03	3	2	2	-	-	-	-	-	-	-	-	1	3	2
C301.04	3	3	3	-	-	1	-	2	-	1	-	1	3	2
C301.05	3	3	3	2	-	3	-	2	-	1	-	1	3	2
C 301	2.8	2.5	2.0	2.0	0	2.0	0	2.0	0	1.0	0	1.0	3.0	2.0
Semester VI														
Course Code: CE310														
Course Name: Design of Hydraulic Structures (C 301)														
AY: 2019-20														
C310.01	3	2	2	-	-	2	-	2	-	-	-	-	3	3
C310.02	3	2	3	-	-	2	1	3	-	-	-	-	3	3
C310.03	3	3	3	2	-	3	2	3	-	-	-	2	3	3
C310.04	3	3	3	1	-	2	1	3	-	-	-	1	3	3
C310.05	3	3	3	-	-	2	2	3	-	-	-	2	3	3
C 301	3.0	2.	2.8	1.5	0	2.2	1.5	2.8	0	0	0	1.6	3.0	3.0

Table 3.1.2: CO-PO Matrices of Courses Selected in 3.1.1 (Contd.)

COs	POs												PSOs	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
Semester VII														
Course Code: CE409														
Course Name: Quantity Surveying and Valuation (C 405)														
AY: 2020-21														
C405.01	3	2	-	-	1	3	-	3	-	3	3	2	3	-
C405.02	3	3	-	-	1	3	-	3	-	3	3	3	3	-
C405.03	2	2	-	-	2	2	-	2	-	2	2	3	3	-
C405.04	2	2	-	-	2	3	-	3	-	2	3	3	3	-
C405.05	2	2	-	-	1	3	-	3	-	2	3	3	3	-
C 405	2.4	2.2	0	0	1.4	2.8	0	2.8	0	2.4	2.8	2.8	3.0	0
Semester VIII														
Course Code: CE410														
Course Name: Construction Project Management (C 410)														
AY: 2020-21														
C410.01	3	3	-	-	2	-	-	2	2	3	3	3	2	-
C410.02	3	3	-	-	2	3	-	2	-	3	3	3	2	-
C410.03	2	-	-	-	-	3	-	2	-	2	2	2	2	-
C410.04	2	-	-	-	-	3	-	3	-	2	2	2	2	-
C410.05	3	3	-	-	-	3	2	3	-	2	3	2	2	-
C 410	2.6	3.0	0	0	2.0	3.0	2.0	2.4	2.0	2.4	2.6	2.4	2.0	0

3.1.3. A Program Level Course-PO & PSO Matrix of All Courses Including First Year Courses (10)
Institute Marks: 10

Table 3.1.3.a: List of courses with course code

Sl. No.	Course Code	University Course Code	Course Name
Semester I			
1	C101	MA101	Calculus
2	C102	CY100	Chemistry
3	C103	BE110	Engineering Graphics
4	C104	BE101	Introduction to Civil Engineering
5	C105	BE103	Introduction to Sustainable Engineering
6	C106	EE100	Basics of Electrical Engineering
7	C107	CY110	Engineering Chemistry Lab
8	C108	CE110	Civil Engineering Workshop
9	C109	EE110	Electrical Engineering Workshop
Semester II			
10	C110	MA102	Differential Equations
11	C111	PH100	Engineering Physics
12	C112	BE100	Engineering Mechanics
13	C113	ME100	Basics of Mechanical Engineering
14	C114	EC100	Basics of Electronics Engineering
15	C115	BE102	Design and Engineering
16	C116	PH110	Engineering Physics Lab
17	C117	EC110	Electronics Engineering Workshop
18	C118	ME110	Mechanical Engineering Workshop

Table 3.1.3.a: List of courses with course code (Contd.)

Sl. No.	Course Code	University Course Code	Course Name
Semester III			
19	C201	MA201	Linear Algebra & Complex Analysis
20	C202	CE201	Mechanics of Solids
21	C203	CE203	Fluid Mechanics I
22	C204	CE205	Engineering Geology
23	C205	CE207	Surveying
24	C206	HS210	Life Skill
25	C207	CE231	Civil Engineering Drafting Lab
26	C208	CE233	Surveying Lab
Semester IV			
27	C209	MA202	Probability Distribution Transform & Numerical Methods
28	C210	CE202	Structural Analysis I
29	C211	CE204	Construction Technology
30	C212	CE206	Fluid Mechanics II
31	C213	CE208	Geo Technical I
32	C214	HS200	Business Economics
33	C215	CE232	Material Testing Lab I
34	C216	CE234	Fluid Mechanics Lab

Table 3.1.3.a: List of courses with course code (Contd.)

Sl. No.	Course Code	University Course Code	Course Name
Semester V			
35.	C301	CE301	Design of Concrete Structures
36	C302	CE303	Structural Analysis II
37	C303	CE305	Geotechnical Engineering II
38	C304	CE307	Geomatics
39	C305	CE309	Water Resources Engineering
40	C306	CE361	Advanced Concrete Technology
41	C307	CE341	Design Project
42	C308	CE331	Material Testing Lab II
43	C309	CE333	Geotechnical Lab
Semester VI			
44	C310	CE302	Design of Hydraulic Structure
45	C311	CE304	Design of Concrete Structure II
46	C312	CE306	Computer Programming & Computational Techniques
47	C313	CE308	Transportation Engineering I
48	C314	HS300	Principles of Management
49	C315	CE362	Ground Improvement Techniques
50	C316	CE332	Transportation Engineering Lab
51	C317	CE334	Computer Aided Civil Engineering Lab
52	C318	CE352	Comprehensive Exam

Table 3.1.3.a: List of courses with course code (Contd.)

Sl. No.	Course Code	University Course Code	Course Name
Semester VII			
53	C401	CE401	Design of Steel Structures
54	C402	CE403	Structural Analysis III
55	C403	CE405	Environmental Engineering I
56	C404	CE407	Transportation Engineering II
57	C405	CE409	Quantity Survey and Valuation
58	C406	CE469	Environmental Impact Assessment
59	C407	CE451	Seminar & Project Preliminary
60	C408	CE431	Environmental Engineering Lab
Semester VIII			
61	C409	CE402	Environmental Engineering II
62	C410	CE404	Construction and Project Management
63	C411	CE474	Municipal Solid Waste Management
64	C412	ME482	Energy Conservation and Management
65	C413	CE492	Project

The Program level Course - PO matrix for all courses including those in the first year is given in the following tables 3.1.3.b for the batch 2017-21. Table 3.1.3.c gives the PSO matrix for all courses including those in the first year for the batch 2017-21. The level of correlation varies between 1 and 3.

Table3.1.3.b: Program Level Course - PO Matrix of All Courses for Batch 2017-21

Course	Pos											
	1	2	3	4	5	6	7	8	9	10	11	12
C101	3.00	2.00	1.20	-	-	-	-	-	-	-	-	1.00
C102	3.00	2.00	1.67	2.00	-	1.00	1.00	-	-	-	-	-
C103	3.00	2.00	2.00	-	3.00	-	-	-	-	-	-	-
C104	1.80	2.00	1.00	-	-	2.00	-	-	2.00	2.00	-	3.00
C105	1.50	-	-	-	1.50	1.75	3.00	1.00	-	-	1.00	1.00
C106	2.60	1.75	2.00	-	-	2.00	1.00	-	-	-	-	-
C107	3.00	2.00	3.00	2.00	3.00	2.00	2.00	2.00	3.00	1.00	-	-
C108	3.00	2.00	-	-	-	-	-	-	3.00	3.00	-	-
C109	3.00	2.25	2.80	-	-	-	-	3.00	2.00	2.00	-	2.00
C110	3.00	3.00	3.00	-	-	-	-	-	-	-	-	1.00
C111	3.00	2.00	2.00	2.00	-	2.00	2.00	-	-	-	-	1.00
C112	3.00	3.00	2.00	-	-	-	-	-	-	-	-	1.00
C113	3.00	2.00	2.00	-	-	-	-	-	-	-	-	-
C114	2.40	-	3.00	-	-	-	-	-	-	-	-	1.67
C115	3.00	3.00	3.00	3.00	3.00	-	2.50	3.00	-	-	-	3.00
C116	3.00	-	-	2.00	-	-	-	2.00	3.00	1.00	-	-
C117	3.00	-	1.00	-	-	-	-	1.00	2.00	2.00	-	-
C118	1.40	-	-	-	-	-	-	2.00	2.60	2.20	-	2.50

Table3.1.3.b: Program Level Course - PO Matrix of All Courses for Batch 2017-21(Contd.)

Course	Pos											
	1	2	3	4	5	6	7	8	9	10	11	12
C201	3.00	3.00	2.80	-	-	-	-	-	-	-	-	1.00
C202	2.83	2.17	1.83	2.00	-	-	-	-	-	-	-	-
C203	2.80	2.40	1.67	2.00	-	1.25	2.00	-	-	-	-	-
C204	3.00	2.00	-	-	3.00	3.00	3.00	-	-	-	-	-
C205	3.00	2.80	3.00	2.00	3.00	2.00	-	2.00	2.00	2.00	2.00	2.00
C206	-	3.00	-	-	-	-	3.00	3.00	3.00	3.00	-	3.00
C207	3.00	2.00	-	-	3.00	-	-	2.00	3.00	3.00	-	3.00
C208	3.00	2.00	-	1.50	3.00	3.00	-	2.00	3.00	3.00	-	2.50
C209	3.00	2.00	2.00	-	-	-	-	-	-	-	-	2.00
C210	2.80	2.40	2.00	2.00	-	1.20	-	1.00	-	-	-	2.00
C211	3.00	1.50	2.00	2.00	2.00	2.00	1.50	1.00	-	1.33	2.00	1.33
C212	3.00	2.80	3.00	2.00	-	2.00	2.00	2.00	-	2.00	-	2.00
C213	3.00	2.00	-	1.60	1.00	1.33	2.00	1.00	1.00	-	-	1.40
C214	-	1.00	3.00	-	2.00	-	-	-	-	-	1.60	3.00
C215	3.00	2.00	1.00	1.00	-	2.00	-	2.00	3.00	3.00	-	-
C216	2.17	3.00	3.00	2.50	-	3.00	2.50	-	3.00	3.00	-	-

Table3.1.3.b: Program Level Course - PO Matrix of All Courses for Batch 2017-21(Contd.)

Course	Pos											
	1	2	3	4	5	6	7	8	9	10	11	12
C301	2.80	2.50	2.00	2.00	-	2.00	-	2.00	-	1.00	-	1.00
C302	3.00	3.00	2.00	2.00	-	1.00	-	1.00	-	-	-	1.00
C303	2.80	2.00	2.50	-	-	1.80	2.00	2.00	-	-	-	2.00
C304	2.80	2.00	1.00	1.00	2.00	-	2.00	2.00	1.00	2.00	-	1.80
C305	3.00	3.00	2.00	-	-	3.00	3.00	2.00	-	-	-	-
C306	2.00	2.00	2.67	1.50	2.00	1.50	1.67	2.00	-	2.00	-	-
C307	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.20	3.00
C308	3.00	2.00	3.00	3.00	-	3.00	-	1.00	3.00	3.00	-	2.00
C309	3.00	1.75	-	2.00	2.00	2.00	-	1.25	3.00	3.00	-	2.00
C310	3.00	2.60	2.80	1.50	-	2.20	1.50	2.80	-	-	-	1.67
C311	2.60	2.20	2.00	-	-	2.00	1.00	2.00	-	2.00	-	2.00
C312	2.67	2.50	2.50	1.50	2.20	1.00	-	-	-	1.33	1.00	1.83
C313	3.00	2.00	3.00	-	1.00	2.00	1.00	3.00	-	2.00	-	2.00
C314	3.00	3.00	-	-	-	2.50	-	2.67	2.50	-	3.00	2.00
C315	3.00	2.00	3.00	-	-	1.00	1.00	-	-	-	-	-
C316	3.00	-	-	3.00	-	2.00	2.00	3.00	3.00	3.00	-	-
C317	2.00	2.00	3.00	2.00	2.00	-	-	1.33	3.00	3.00	3.00	2.00
C318	3.00	2.00	2.00	3.00	-	-	-	-	-	2.20	-	-

Table3.1.3.b: Program Level Course - PO Matrix of All Courses for Batch 2017-21(Contd.)

Course	Pos											
	1	2	3	4	5	6	7	8	9	10	11	12
C401	3.00	3.00	3.00	-	-	2.00	1.00	3.00	-	2.00	-	2.00
C402	3.00	3.00	2.00	1.80	-	2.00	-	1.00	-	2.00	-	-
C403	3.00	2.00	2.50	-	-	2.00	1.00	1.00	-	-	-	2.00
C404	3.00	3.00	2.00	-	-	2.00	1.00	2.00	-	2.00	-	2.00
C405	2.40	2.20	-	-	1.40	2.80	-	2.80	-	2.40	2.80	2.80
C406	2.80	2.67	-	-	-	1.40	3.00	-	-	-	-	2.00
C407	3.00	3.00	2.00	1.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
C408	3.00	2.00	2.00	-	-	2.00	1.80	1.00	3.00	2.00	-	2.00
C409	3.00	2.00	2.67	-	-	2.00	2.20	1.75	-	-	-	2.00
C410	2.60	3.00	-	-	2.00	3.00	2.00	2.40	2.00	2.40	2.60	2.40
C411	3.00	2.00	-	-	2.00	2.17	2.17	2.00	-	-	-	2.00
C412	3.00	2.00	-	-	-	3.00	3.00	3.00	-	-	3.00	2.00
C413	3.00	3.00	2.50	2.50	2.00	2.00	2.00	2.25	2.25	2.25	2.33	2.33
MAPPING AVERAGE	2.82	2.31	2.27	1.98	2.22	2.02	1.94	1.96	2.49	2.2	2.12	1.96

3.1.3 B Program level Course-PSO matrix of all courses.

Table3.1.3.c: Program Level Course - PSO Matrix of All Courses for Batch 2017-21

Course	PSO	
	1	2
C101	-	-
C102	-	-
C103	-	-
C104	-	-
C105	-	-
C106	-	-
C107	-	-
C108	-	-
C109	-	-
C110	-	-
C111	-	-
C112	-	-
C113	-	-
C114	-	-
C115	-	-
C116	-	-
C117	-	-
C118	-	-
C201	-	-
C202	3.00	-
C203	2.00	-
C204	3.00	-
C205	3.00	-
C206	-	-
C207	1.00	1.00
C208	2.00	-
C209	-	-
C210	3.00	-

**Table3.1.3.c: Program Level Course - PSO Matrix of All Courses for Batch 2017-21
(Contd.)**

Course	PSO	
	1	2
C211	3.00	2.00
C212	3.00	-
C213	2.00	-
C214	-	-
C215	2.00	-
C216	2.33	-
C301	3.00	2.00
C302	3.00	-
C303	3.00	-
C304	2.00	-
C305	3.00	-
C306	2.00	2.00
C307	2.33	2.00
C308	3.00	-
C309	3.00	-
C310	3.00	3.00
C311	2.00	2.00
C312	-	-
C313	2.00	-
C314	-	-
C315	2.00	-
C316	2.00	-
C317	2.00	-
C318	-	-
C401	3.00	2.00
C402	2.00	-
C403	2.00	2.00
C404	2.60	3.00
C405	3.00	-

Table3.1.3.c: Program Level Course - PSO Matrix of All Courses for Batch 2017-21 (Contd.)

Course	PSO	
	1	2
C406	-	2.40
C407	3.00	3.00
C408	1.00	-
C409	2.60	3.00
C410	2.00	-
C411	-	3.00
C412	-	-
C413	3.00	2.50
MAPPING AVERAGE	2.46	2.33

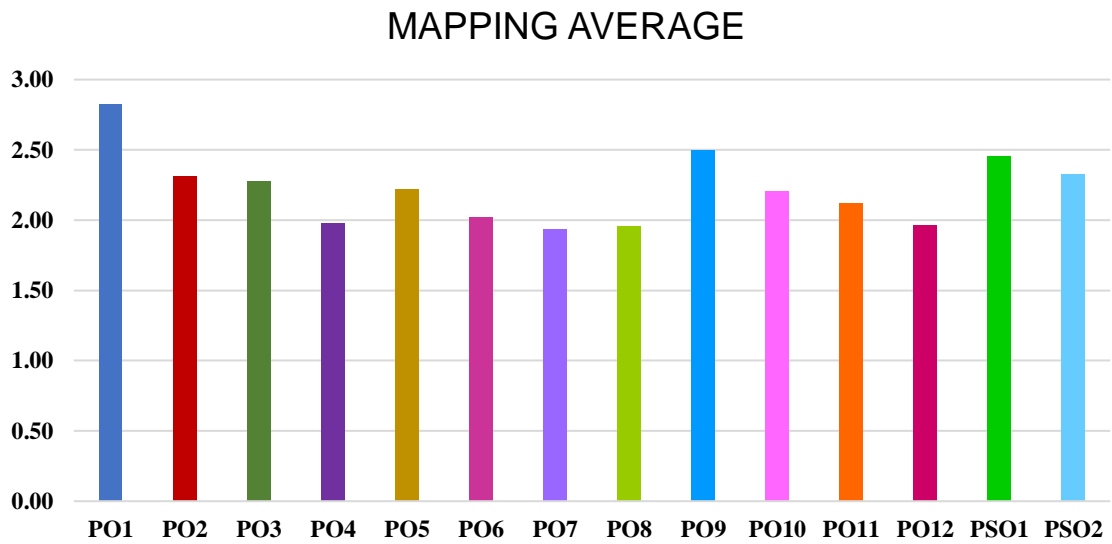
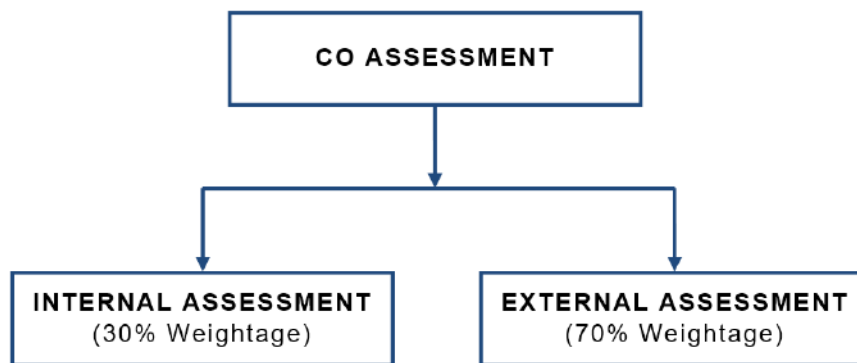


Fig 3.1.3 a Mapping Average

3.2. Attainment of Course Outcomes (50)**Total Marks: 45****3.2.1. Describe the Assessment Processes Used to Gather the Data upon which the Evaluation of Course Outcome is Based (10)****Institute Marks: 10****COs Assessment Process:**

CO assessment is done using the direct tool. For computing the CO attainment internal evaluation marks and marks from the external assessment by the university are used. 30% weightage is given for internal assessment and 70% weightage is given for the external assessment conducted by APJ Abdul Kalam Technological University. Three different scores are attributed to a different level of overall performance as 1, 2 or 3.

**Fig 3.2.1.a CO assessment method****3.2.1A List of assessment process****Table 3.2.1.a Process for CO Assessment**

Assessment tool	Assessment criteria	Data collection frequency	Relevance to COs, POs and PSOs
Internal Examinations	Internal	Twice in a semester	COs, POs and PSOs
University Examination	External	End Semester	COs, POs and PSOs
Laboratory	Internal	Continuous Assessment	COs, POs and PSOs
		End Semester Exam	
Seminar	Internal	During the seventh Semester	COs, POs and PSOs
Project	Internal	Two Evaluations per semester	COs, POs and PSOs

3.2.1 B Quality of assessment processes and tools used

1. Theory Courses

- The internal examination is conducted centrally by the Examination Cell by publishing Time table well in advance.
- The Internal Assessment marks in theory papers shall be based on two tests generally conducted twice in each semester as per the academic calendar stipulated by the affiliated university.
- There shall be a maximum of 50 Internal Assessment marks in each theory courses.
- Question papers for the corresponding course will be prepared by the respective course faculty and will be submitted to the DQAC and finally to IQAC and Examination cell well in advance.
- The external assessment of all theory courses is done by the university by conducting an end semester examination.
- The question paper setting and evaluation of answer script is completely under the control of university.

2. Laboratory Courses

- For the laboratory course, evaluation is done internally based on continuous assessment of students and a final laboratory test is conducted internally.
- The end semester evaluation out of 30 marks is conducted by any two faculty members from the Department, appointed by HoD
- For the end semester examination 25 marks are given for the experiment calculation and research 5 marks is awarded based on Oral evaluation (Viva-voce)
- Continuous evaluation system is calculated out of 70 marks.
- For continuous assessment students are evaluated based on their pre-preparation, actual execution, result and a daily viva based on the particular experiment so the total internal continuous assessment is
 - Preliminary (20 Marks)
 - Execution (20 Marks)
 - Result (20 Marks)
 - Viva (10 Marks)

3. Seminar Work Evaluation

- To acquire B Tech degree a student must have to take one seminar in partial fulfilment of their B Tech in 7th semester.

- The evaluation of the seminar as done by a committee consisting of
 - Head of the department
 - Respective Guides
 - Seminar Coordinator
- Seminar topic shall be selected from the emerging technical areas.
- The Internal Assessment marks are given based on the evaluation done by the committee members (Head of the Department and Seminar Coordinator(s)) along with the guide following the rubrics set by the department according to KTU norms as follows:
 - Seminar:50 marks
 - Distribution of marks for seminar as follows
 - Presentation: 40%
 - Ability to answer questions: 30%
 - Report: 30%

Table 3.2.1.b The evaluation sheet used to assess Seminar

Name of the Student	Presentation (20)	Ability to answer Question (15)	Report (15)	Total (50)	Faculty Name	Sign	Remarks

4. Project Work

Project Preliminary (CE 451) – S7 CE

Process for monitoring and evaluation:

- The Head of the Department assigns a senior faculty as project coordinator and a review committee is constituted by the following members
 - Head of the Department
 - Project coordinator
 - Project Supervisor
- The project preliminary work (phase I) is done in seventh semester.
 - The project committee conduct two reviews in the seventh semester for the assessment of project preliminary and preparatory work and the project phase II work has to be

completed by the end of the eighth semester.

- In seventh semester internal evaluation of the project phase I is done out of 50 marks.

Project (CE 492) – S8 CE

- During eighth semester, project (phase II) work has to be completed.
- Two evaluations are done by the committee to assess the progress of project work and necessary instructions are given to the students.
- During the review meetings, the committee assess the contribution of an individual and the project team as a whole and award marks based on the progress of the project work. Students are supposed to meet the project guide and report the status on all days specified in their time table.
- The review committee members are, the HoD, the project coordinator, project guide and two panel members from our department.
- During eighth semester both internal and external evaluations are done.
- Project phase II in S8 is evaluated internally for 20 marks and 80 marks externally.
- The final project presentation and Viva Voce is evaluated by the evaluation committee including the external expert.

Overall mark allocation pattern:

- Individual and team performance are tested by the innovations in the project and their involvement in the project work.

Table 3.2.1.d Evaluation parameters and mark allocation for project work

Evaluation parameters	Mark allocation
Progress evaluation by the supervisor	20
Progress evaluation by the assessment board excluding external expert (mid semester S7)	15
Progress evaluation by the assessment board excluding external expert (end semester S7)	15
Progress evaluation by the faculty supervisor (mid semester S8)	10
Progress evaluation by the faculty supervisor (end semester S8)	10
Final project report	30
Final project presentation and viva voce	50

Review evaluation pattern:

- **Mid semester S7 (R1):** Literature survey, Formulation of objectives, Formulation of hypothesis/design/methodology, Formulation of work plan, Progress of work (at least 10% of work)
- **End semester S7 (R2):** Literature survey, Formulation of objectives, Formulation of hypothesis/design/methodology, Formulation of work plan, progress of work (at least 20% of work) and Preparation of preliminary report should be completed in end semester review conducted in S7.
- **Mid semester S8 (R3):** Review and finalization of the approach to the problem relating to the assigned topic, preparing a detailed action plan for conducting the investigation, including team work and Detailed Analysis, Design, Problem Solving, Experiment as needed are verified.
- **End semester S8 (R4):** Final development of product/process, testing, results, conclusions and future directions, preparing a paper for Conference presentation/Publication in Journals, if possible and preparing a report in the standard format for being evaluated by the dept. assessment board in end semester review conducted in S8.

Table 3.2.1.e Review evaluation pattern.

Cognitive level	Supervisor (20 Marks)	R1 (15 Marks)	R2 (15 Marks)	R3 (10 Marks)	R4 (10 Marks)
Progress evaluation by the supervisor	20	-	-	-	-
Presentation	-	5	5	3	3
Viva voce	-	5	5	3	3
Document Preparation	-	3	3	2	2
Coordination	-	2	2	2	2
Total	20	15	15	10	10
Total marks Semester wise		S7 = 50		S8 = 20	

Method of data collection for computing COs attainment:

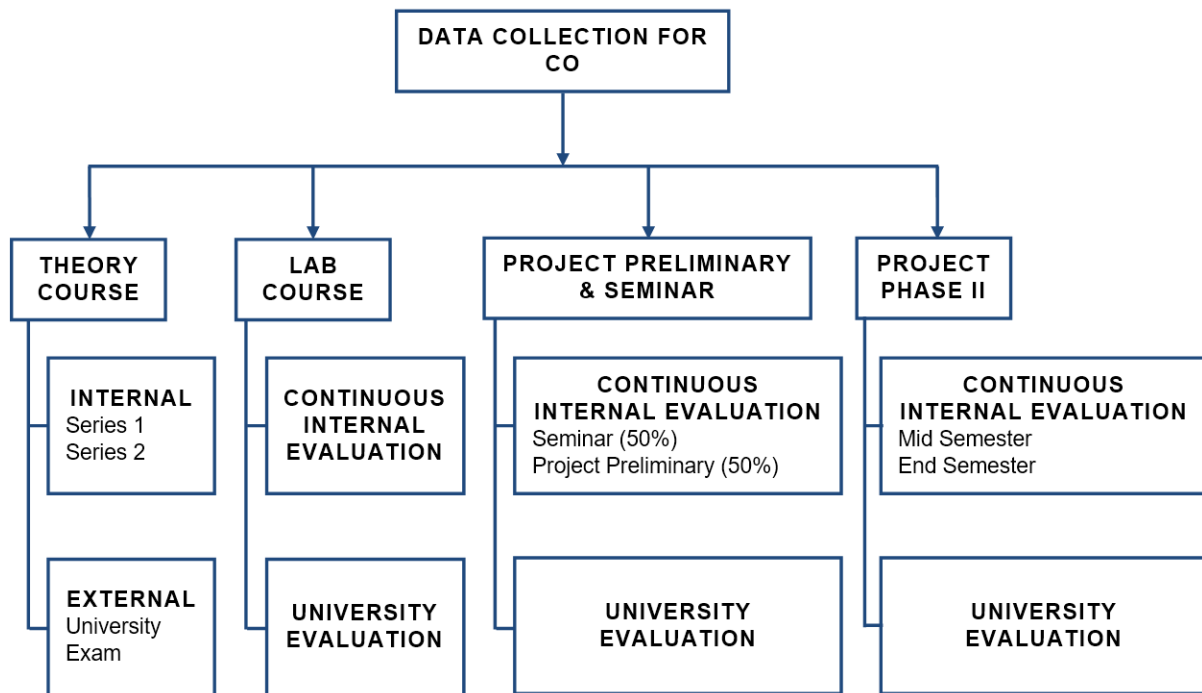


Fig 3.2.1.b The data collection process involved for computing COs attainment.

Evaluation Criteria for computing attainment level for 2017-2021 Batch

Internal Assessment:

COs Attainment level is calculated by segregating the internal examination marks based on the defined course outcomes. The marks gained by the students for every CO are taken and the threshold value is set as 50% of the maximum mark for every CO.

The attainment levels and target levels set for each course are fixed as follows:

Table 3.2.1.f Attainment level rubrics for series examination.

Attainment Level	Condition
1	if the number of students secured 50% mark which is $\leq 50\%$ of class strength
	if the number of students secured 50% mark which is $>50\%$ and $< 60\%$ of class strength
2	if the number of students secured 50% mark which is $\geq 60\%$ and $< 70\%$ of class strength
3	if the number of students secured 50% mark which is $\geq 70\%$ of class strength

External Assessment:

The attainment level is calculated by converting the grades secured for each course to the corresponding grade point and the threshold value is set as 50% of the maximum value of the grade point.

The attainment levels and target levels set for each course are fixed as follows:

Table 3.2.1.g Attainment level rubrics for university examination

Attainment Level	Condition
1	if the number of students secured C grade is \leq 50% of class strength
	if the number of students secured C grade is $>$ 50% and $<$ 60% of class strength
2	if the number of students secured C grade is \geq 60% and $<$ 70% of class strength
3	if the number of students secured C grade is \geq 70% of class strength

Table 3.2.1.h Grade system as per the university norms

Letter Grade	Grade Point	% of Total Mark obtained in the course
O (Outstanding)	10	90 % and above
A+ (Excellent)	9	85 % and above but less than 90%
A (Very Good)	8	80 % and above but less than 85%
B+ (Good)	7	70 % and above but less than 80%
B (Above Average)	6	60 % and above but less than 70%
C (Average)	5	50 % and above but less than 60%
P (Pass)	4	45 % and above but less than 50%
F (Fail)	0	Less than 45%
FE	0	Failed due to eligibility criteria
I		Course Incomplete

The overall COs attainment for any course is equal to the sum of 70% of attainment based on student's performance in the end semester examinations conducted by the university and 30% of attainment in Continuous Assessment Tests (Internal examinations).

Attainment Level = 0.7 X Attainment level based on University Examination marks + (0.3 X Attainment level based on Continuous Assessment Test marks)

**Table 3.2.1.i The evaluation done for CO measurement for the course -
Surveying (C205)**

Semester	Third
Course Name	C205 Surveying
Course Code	CE 207
Academic Year	2018-19
Faculty Name	Subha Lekshmi

Sl No	Reg No	Name	TEST1			TEST 2		UNIV EXAM (10)
			CO1	CO2	CO3	CO4	CO5	
1	MCK17CE001	Abhijith S	10	13	16	5	7	0
2	MCK17CE002	Abiah Alex	13	13	19	15	16	6
3	CML17CE001	Ajay P Shaji	6	6	15	5	5	5
4	MCK17CE003	Ajay Raj V	6	5	10	10	9	0
5	MCK17CE004	Alfiya Musthafa	3	3	10	9	9	0
6	MCK17CE005	Amal Jacob George	2	1	10	3	6	0
7	MCK17CE006	Anamika Chandra	12	12	16	15	14	6
8	MCK17CE007	Anand T O	13	11	15	14	14	5
9	MCK17CE008	Anandu R	7	7	16	15	16	5
10	MCK17CE009	Anila Babu	14	13	20	19	19	6
11	MCK17CE010	Anjana S Babu	12	11	15	15	14	5
12	MCK17CE011	Aparna B Lal	13	13	19	18	19	6
13	MCK17CE012	Aparnajan G	6	6	12	13	13	0
14	MCK17CE013	Arja V Nair	6	5	12	13	16	0
15	MCK17CE014	Arunima S	11	11	14	11	10	0
16	MCK17CE015	Aswathy V	3	3	7	12	13	0
17	MCK17CE016	Binshad Basheer	3	3	8	11	11	0
18	MCK17CE017	Chithira B	9	9	9	9	9	0
19	MCK17CE018	Divya S Anil	11	11	13	3	4	0
20	MCK17CE019	Drisya Suresh	13	13	17	0	0	5
21	MCK17CE020	Fathimathu Rushdha	5	4	14	12	12	0
22	CML17CE010	Gowri Sanker	10	10	12	9	10	5
23	MCK17CE022	Harikrishnan	9	9	9	14	16	6
24	MCK17CE023	Jino K Abraham	11	11	16	10	11	5
25	MCK17CE024	Joseph Samuel	9	10	12	8	10	6
26	MCK17CE025	Jyothish Kumar	6	5	14	14	14	5
27	MCK17CE026	Lekshmi R	3	3	8	5	7	0
28	MCK17CE028	Muhammed Hilal Nazar	2	1	5	1	4	0
29	MCK17CE029	Muhammed Souban A	5	4	14	5	6	0
30	MCK17CE030	Muhemmed Basim	5	4	14	8	8	0
31	MCK17CE031	Nayana Krishna	6	5	15	15	16	0
32	CML17CE021	Nayana Prasad	11	12	17	8	8	5
33	MCK17CE033	Sandra K Shaji	14	14	20	21	21	7
34	CML17CE027	Sangeetha Sanal	10	10	12	12	12	0
35	MCK17CE034	Santhanu G Nath	5	5	11	7	8	0

**Table 3.2.1.i The evaluation done for CO measurement for the course - Surveying
(C205) (Contd.)**

Sl No	Reg No	Name	TEST1			TEST 2		UNIV EXAM (10)
			CO1	CO2	CO3	CO4	CO5	
36	MCK17CE035	Sarath R Sasi	7	7	14	15	14	6
37	CML17CE029	Sarath S	14	14	20	23	24	8
38	MCK17CE036	Shahana Shaji	8	10	16	5	10	0
39	MCK17CE037	Sijo C Sajan	8	9	11	9	9	0
40	MCK17CE038	Simi Monachen	10	10	20	0	0	4
41	CML17CE034	Stephin Sam	11	11	17	14	15	6
42	CML17CE035	Sudheesh Kumar S	10	10	20	18	18	6
43	CML17CE037	Veni Gayathri. P	11	9	15	8	8	5
44	MCK17CE039	Vishnu K	11	11	15	14	16	6
45	LMCK17CE040	Athira Ajikumar	14	14	19	19	19	6
46	LMCK17CE041	Haritha Krishnan	14	14	19	19	20	5
47	LMCK17CE042	Sreelekshmi K S	13	14	20	15	15	6
48	LMCK17CE043	Subina T Sulaiman	7	7	17	7	7	5
49	LMCK17CE044	Syam Kumar M S	9	8	18	20	19	5
Number of students attended			49	49	49	49	49	49
Max mark CO wise			15	15	20	25	25	10
50 % of max mark CO wise			7.5	7.5	10	12.5	12.5	5
No of students above threshold 50%			30	30	43	22	23	27
Level			2	2	3	1	1	1

RUBRICS

Number of students	Condition	Attainment Level
1-29	If number of students, who secured 50% mark is, <50% class strength	1 (LOW)
	If number of students, who secured 50% mark is, >=50% and <60% class strength	
29-34	If number of students, who secured 50% mark is, >=60% and < 70% of class strength	2 (MEDIUM)
34-49	If number of students, who secured 50% mark is, >=70% of class strength	3 (HIGH)

C205	TEST1	TEST2	INT	UNIV
CO1	2	0	2.00	1.00
CO2	2	0	2.00	1.00
CO3	3	0	3.00	1.00
CO4	0	1	1.00	1.00
CO5	0	1	1.00	1.00
Internal/Univ Attainments			1.80	1.00
Weightage			30%	70%
CO Attainment for the course			0.54	0.70
Final CO Attainment for the course			1.24	

3.2.2. Attainment of Course Outcomes of All Courses with respect to Set Attainment Levels (40) Institute Marks: 35

The below table shows the CO attainment for all the courses from S1 to S8 obtained from direct tool assessment.

Table 3.2.2.a CO attainment for all courses from S1 to S8 (Direct tool assessment)

Course Code	Course Name	Attainment by Internal Assessment	Attainment by Internal Assessment (30%)	Attainment By External Assessment	Attainment By External Assessment (70%)	Total
C101	Calculus	1.8	0.54	3	2.1	2.64
C102	Chemistry	2.6	0.78	3	2.1	2.88
C103	Engineering Graphics	1.1	0.33	3	2.1	2.43
C104	Introduction to Civil Engineering	3	0.9	1	0.7	1.6
C105	Introduction to Sustainable Engineering	2	0.6	3	2.1	2.7
C106	Basics of Electrical Engineering	1.6	0.48	3	2.1	2.58
C107	Engineering Chemistry Lab	3	0.9	3	2.1	3
C108	Civil Engineering Workshop	3	0.9	3	2.1	3
C109	Electrical Engineering Workshop	3	0.9	3	2.1	3
C110	Differential Equations	2.4	0.72	3	2.1	2.82
C111	Engineering Physics	1.6	0.48	3	2.1	2.58
C112	Engineering Mechanics	2	0.6	3	2.1	2.7
C113	Basics of Mechanical Engineering	1.2	0.36	1	0.7	1.06
C114	Basics of Electronics Engineering	1.8	0.54	3	2.1	2.64
C115	Design and Engineering	3	0.9	3	2.1	3
C116	Engineering Physics Lab	3	0.9	3	2.1	3
C117	Electronics Engineering Workshop	3	0.9	3	2.1	3
C118	Mechanical Engineering Workshop	3	0.9	3	2.1	3

Table 3.2.2.a CO attainment for all courses from S1 to S8 (Direct tool assessment)**(Contd.)**

Course Code	Course Name	Attainment by Internal Assessment	Attainment by Internal Assessment (30%)	Attainment By External Assessment	Attainment By External Assessment (70%)	Total
C201	Linear Algebra & Complex Analysis	2.2	0.66	3	2.1	2.76
C202	Mechanics of Solids	1.2	0.36	1	0.7	1.06
C203	Fluid Mechanics I	2	0.6	2	1.4	2
C204	Engineering Geology	1.4	0.42	1	0.7	1.12
C205	Surveying	1.8	0.54	1	0.7	1.24
C206	Life Skill	1.8	0.54	3	2.1	2.64
C207	Civil Engineering Drafting Lab	3	0.9	3	2.1	3
C208	Surveying Lab	3	0.9	3	2.1	3
C209	Probability Distribution Transform & Numerical Methods	2.2	0.66	2	1.4	2.06
C210	Structural Analysis I	1.2	0.36	1	0.7	1.06
C211	Construction Technology	2.6	0.78	3	2.1	2.88
C212	Fluid Mechanics II	1.2	0.36	1	0.7	1.06
C213	Geo Technical I	1.4	0.42	1	0.7	1.12
C214	Business Economics	1.2	0.36	3	2.1	2.46
C215	Material Testing Lab I	3	0.9	3	2.1	3
C216	Fluid Mechanics Lab	3	0.9	3	2.1	3
C301	Design of Concrete Structures	1.8	0.54	3	2.1	2.64
C302	Structural Analysis II	1.2	0.36	1	0.7	1.06
C303	Geotechnical Engineering II	2	0.6	1	0.7	1.3
C304	Geomatics	1.6	0.48	1	0.7	1.18
C305	Water Resources Engineering	1.6	0.48	2	1.4	1.88
C306	Advanced Concrete Technology	1.5	0.45	2	1.4	1.85
C307	Design Project	3	0.9	3	2.1	3
C308	Material Testing Lab II	3	0.9	2.4	1.68	2.58
C309	Geotechnical Lab	3	0.9	3	2.1	3
C310	Design of Hydraulic Structure	3	0.9	3	2.1	3
C311	Design of Concrete Structure II	1.6	0.48	3	2.1	2.58
C312	Computer Programming & Computational Techniques	3	0.9	3	2.1	3
C313	Transportation Engineering I	1.4	0.42	2	1.4	1.82
C314	Principles of Management	1.8	0.54	3	2.1	2.64

Table 3.2.2.a CO attainment for all courses from S1 to S8 (Direct tool assessment)
(Contd.)

Course Code	Course Name	Attainment by Internal Assessment	Attainment by Internal Assessment (30%)	Attainment By External Assessment	Attainment By External Assessment (70%)	Total
C315	Ground Improvement Techniques	2	0.6	3	2.1	2.7
C316	Transportation Engineering Lab	3	0.9	3	2.1	3
C317	Computer Aided Civil Engineering Lab	3	0.9	3	2.1	3
C318	Comprehensive Exam	3	0.9	3	2.1	3
C401	Design of Steel Structures	2.6	0.78	3	2.1	2.88
C402	Structural Analysis III	2.2	0.6	1	0.7	1.36
C403	Environmental Engineering I	2	0.6	3	2.1	2.7
C404	Transportation Engineering II	3	0.9	3	2.1	3
C405	Quantity Survey and Valuation	2.2	0.66	3	2.1	2.76
C406	Environmental Impact Assessment	2.2	0.66	3	2.1	2.76
C407	Seminar & Project Preliminary	3	0.9	3	2.1	3
C408	Environmental Engineering Lab	3	0.9	3	2.1	3
C409	Environmental Engineering II	3	0.9	3	2.1	3
C410	Construction and Project Management	3	0.9	3	2.1	3
C411	Municipal Solid Waste Management	3	0.9	3	2.1	3
C412	Energy Conservation and Management	3	0.9	3	2.1	3
C413	Project	3	0.9	3	2.1	3

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

Institute Marks: 48

The process involved in PO calculation using direct and indirect method is shown below.

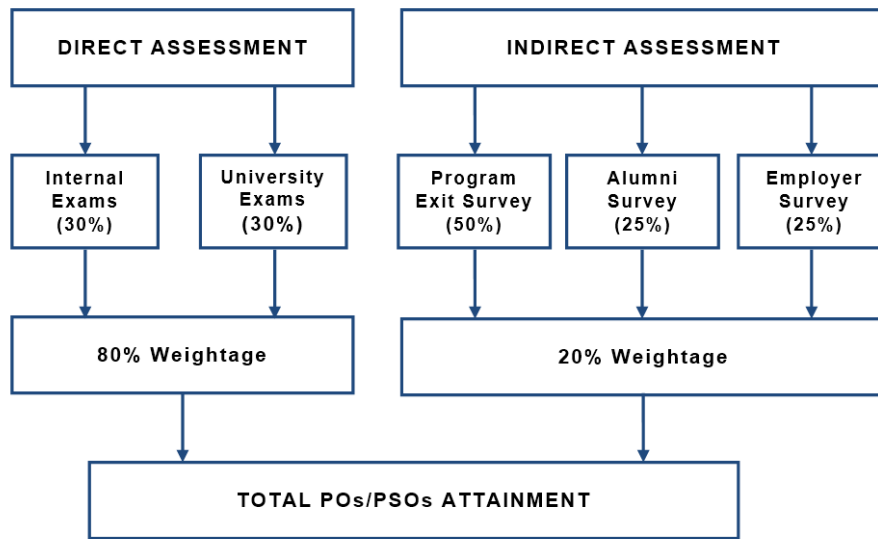


Fig 3.3.1.a: Process involved in PO calculation

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)

Institute Marks: 10

A. List of assessment processes

Table 3.3.1.a Assessment processes for PO measurement

POs and PSOs assessment tools and processes				
		Course type	Assessment methods	Frequency
		Direct	PO Assessment	Theory	Internal examination	Twice in a course
University examination	Once in a course			
Laboratory	Continuous Internal Evaluation			Once in a course
	End Semester Exam			Once in a course
Project	Review1			Once in a course
	Review2			Once in a course
	Review3			Once in a course
	Review4			Once in a course
	Project Report & Presentation			End of the course
				Viva Voce	End of the course
Indirect	Surveys	Program exit survey		Once in a year
		Employer survey		Once in a year
		Alumni Survey		Once in a year

3.3.1 B. Quality of assessment tools/ process used

POs/PSOs over all attainment is assessed for every out going batch

- The PO's/PSO's attainment is assessed in 2 parts and then combined together to get the final score. The first part is the direct assessment part while the second part is the indirect assessment part.
- **POs/PSOs attainment = Direct assessment part (80% weightage) + Indirect assessment part (20% weightage)**

POs/PSOs attainment assessment (Direct part):

- It is computed by averaging the COs attainment of all courses corresponding to each of the POs/PSOs.

$$\text{PO Attainment Direct} = \frac{[(\text{CO \& PO Mapping Average}) \times \text{CO Attainment}]}{\text{Maximum Attainment (3)}}$$

POs/PSOs attainment assessment (Indirect part):

- It is done by collecting and analyzing the feedback which is received through Exit survey, Alumni Survey, and Employer's survey. All the surveys are made on a 3-point scale. The average value of the score obtained through the survey is taken for computing POs/PSOs attainment. At the end of every year, the overall POs/PSOs attainments of the passing out batch are arrived by aggregating COs attainment of all the courses mapped to specific POs/PSOs. 80% of Direct Attainment (through COs attainment) and 20% of Indirect Attainment (through Exit Survey, Alumni survey and Employers survey) are summed up and the overall POs/PSOs attainment is calculated.

1. Exit Survey

- Exit Survey is conducted every year with all the outgoing students who have completed their study in the concerned program. Survey questionnaires are mapped to relevant POs/PSOs. An online survey is done through google form. Google form containing all the questions relatable to POs and PSOs are created and the corresponding Google form link is sent through email to the corresponding student's Email ID to collect the response

Table 3.3.1.b The summary of responses of students for the academic batch 2017-2021

PROGRAM EXIT SURVEY									
Sl No	Questions	Excellent	Good	Satisfactory	Need Improvement	Poor	Total Marks	Percentage	3 Scale Point
1	Have you applied knowledge of mathematics, science and engineering to engineering problems	8	5	1	0	0	63	90	2.7
2	Have you Identified, formulated, reviewed research literature, and analyzed complex engineering problems.	8	5	1	0	0	63	90	2.7
3	Designed 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.	8	5	1	0	0	63	90	2.7
4	Used research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.	8	5	1	0	0	63	90	2.7
5	Created, selected, and applied appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities	8	5	1	0	0	63	90	2.7
6	Applied 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.	8	5	1	0	0	63	90	2.7
7	Understood the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development	7	6	1	0	0	62	89	2.7
8	Applied ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice	8	5	1	0	0	63	90	2.7
9	Able to Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings	6	7	1	0	0	61	87	2.6
10	Can communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write	7	6	1	0	0	62	89	2.7
11	Able to 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	7	6	1	0	0	62	89	2.7
12	Able to 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	6	7	1	0	0	61	87	2.6
13	Able to apply knowledge in analysis, design, survey, testing and construction of civil engineering structures	6	7	1	0	0	61	87	2.6
14	Able to develop and design sustainable and smart infrastructure considering the global environmental challenges	7	6	1	0	0	62	89	2.7

TABLE 3.3.1 c Relation of POs and PSOs with questionnaire

POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
QUESTIONS	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14
PO ATTAINMENT	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.7	2.7	2.7	2.6	2.6	2.7

2. Alumni Survey

- Alumni survey is based on the assessment of graduates after five year of their graduation. Survey questionnaires are mapped to relevant POs/PSOs. An online survey is done through google form. Google form containing all the questions relatable to POs and PSOs are created and the corresponding google form link is sent through email to the corresponding student's Email ID to collect the responses.

Table 3.3.1.d The summary of alumni survey

ALUMNI SURVEY									
SI No	Questions	Excellent	Good	Satisfactory	Need Improvement	Poor	Total Marks	Percentage	3 Scale Point
1	Have you applied knowledge of mathematics, science and engineering to engineering problems	7	15	4	0	0	107	82	2.5
2	Have you Identified, formulated, reviewed research literature, and analyzed complex engineering problems.	7	15	4	0	0	107	82	2.5
3	Designed 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.	7	16	3	0	0	108	83	2.5
4	Used research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.	7	15	4	0	0	107	82	2.5
5	Created, selected, and applied appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities	7	16	3	0	0	108	83	2.5
6	Applied reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.	7	15	4	0	0	107	82	2.5
7	Understood the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development	6	14	6	0	0	104	80	2.4
8	Applied ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice	6	16	4	0	0	106	82	2.5

Table 3.3.1.d The summary of alumni survey (Contd.)

9	Able to Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings	7	15	4	0	0	107	82	2.5
10	Can communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write	7	16	2	1	0	107	82	2.5
11	Able to 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	8	14	3	1	0	107	82	2.5
12	Able to 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	8	13	4	1	0	106	82	2.5
13	Able to apply knowledge in analysis, design, survey, testing and construction of civil engineering structures	7	15	4	0	0	107	82	2.5
14	Able to develop and design sustainable and smart infrastructure considering the global environmental challenges	7	16	2	1	0	107	82	2.5

Table 3.3.1.e Relation of POs and PSOs with the questionnaire

POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
QUESTIONS	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14
PO ATTAINMENT	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5

3. Employer Survey

- Employer's survey is obtained from the HR managers of the organization where our alumni are working. It is obtained whenever the opportunity arises to collect the information. Survey questionnaires are mapped to relevant POs/PSO

Table 3.3.1.f Employer Survey

EMPLOYER SURVEY									
SI No	Questions	Excellent	Good	Satisfactory	Need Improvement	Poor	Total Marks	Percentage	3 Scale Point
1	How you found our graduates with respect to their Technical, analytical and problem-solving skills?	0	2	0	0	0	8	80	2.4
2	How you rate our graduates with respect to their Ethical, Moral and environmental Values?	0	2	0	0	0	8	80	2.4
3	How you rate our graduates with respect to Project management, Team work and Communication Skills?	1	1	0	0	0	9	90	2.7

Table 3.3.1.f Employer Survey (Contd.)

4	How you rate our graduates with respect to being open to new ideas and learning new techniques/technologies?	0	1	1	0	0	7	70	2.1
5	How you rate our graduates with respect to Knowledge and hands on competence in the electronics and communication engineering domain?	1	0	1	0	0	8	80	2.4

Table 3.3.1.g Relation of POs with the questionnaire

POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
QUESTIONS	Q1	Q1	Q1	Q1	Q4	Q2	Q2	Q2	Q3	Q3	Q3	Q4
PO ATTAINMENT	2.4	2.4	2.4	2.4	2.1	2.4	2.4	2.4	2.7	2.7	2.7	2.1

Table 3.3.1.h Relation of PEOs and PSOs with the questionnaire

POs	PSO1	PSO2	PEO1	PEO2	PEO3
QUESTIONS	Q5	Q5	Q1, Q4	Q2, Q3	Q2
PO ATTAINMENT	2.4	2.4	2.25	2.4	2.4

Table 3.3.1.i PO attainment using indirect tools

INDIRECT TOOL	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
Program Exit Survey	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.7	2.7	2.7	2.6	2.6	2.7
Alumni Survey	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Employer Survey	2.4	2.4	2.4	2.4	2.1	2.4	2.4	2.4	2.7	2.7	2.7	2.1	2.4	2.4
Total (.5* Program Exit Survey + .25*Alumni Survey + .25*Employer Survey)	2.57	2.57	2.57	2.57	2.5	2.57	2.5	2.52	2.6	2.65	2.65	2.45	2.52	2.57

The process involved in setting the target for POs/PSOs:

Table 3.3.1.j Target set for various POs and PSOs

PO	TARGET
PO1, PO2, PO3, PO4, PO5	65% of Highest Scale (3 x .65) 1.95
PO6, PO7, PO8, PO9, PO10, PO11, PO12	65% of Highest Scale (3 x .65) 1.95
PSO1 & PSO2	65% of Highest Scale (3 x .65) 1.95

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

Institute Marks: 38

Table 3.3.2.a PO attainment for all courses

PO ATTAINMENT														
SUBJECTWISE PO ATTAINMENT														
COURSE CODE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C101	2.64	1.76	1.06	-	-	-	-	-	-	-	-	0.88	-	-
C102	2.88	1.92	1.60	1.92	-	0.96	0.96	-	-	-	-	-	-	-
C103	2.43	1.62	1.62	-	2.43	-	-	-	-	-	-	-	-	-
C104	0.96	1.07	0.53	-	-	1.07	-	-	1.07	1.07	-	1.60	-	-
C105	1.35	-	-	-	1.35	1.58	2.70	0.90	-	-	0.90	0.90	-	-
C106	2.24	1.51	1.72	-	-	1.72	0.86	-	-	-	-	-	-	-
C107	3.00	2.00	3.00	2.00	3.00	2.00	2.00	2.00	3.00	1.00	-	-	-	-
C108	3.00	2.00	-	-	-	-	-	-	3.00	3.00	-	-	-	-
C109	3.00	2.25	2.80	-	-	-	-	3.00	2.00	2.00	-	2.00	-	-
C110	2.82	2.82	2.82	-	-	-	-	-	-	-	-	0.94	-	-
C111	2.58	1.72	1.72	1.72	-	1.72	1.72	-	-	-	-	0.86	-	-
C112	2.70	2.70	1.80	-	-	-	-	-	-	-	-	0.90	-	-
C113	1.06	0.71	0.71	-	-	-	-	-	-	-	-	-	-	-
C114	2.11	-	2.64	-	-	-	-	-	-	-	-	1.47	-	-
C115	3.00	3.00	3.00	3.00	3.00	-	2.50	3.00	-	-	-	3.00	-	-
C116	3.00	-	-	2.00	-	-	-	2.00	3.00	1.00	-	-	-	-

Table 3.3.2.a PO attainment for all courses (Contd.)

C117	3.00	-	1.00	-	-	-	-	1.00	2.00	2.00	-	-	-	-
C118	1.40	-	-	-	-	-	-	2.00	2.60	2.20	-	2.50	-	-
C201	2.76	2.76	2.58	-	-	-	-	-	-	-	-	0.92	-	-
C202	1.00	0.77	0.65	0.71	-	-	-	-	-	-	-	-	1.06	-
C203	1.87	1.60	1.11	1.33	-	0.83	1.33	-	-	-	-	-	1.33	-
C204	1.12	0.75	-	-	1.12	1.12	1.12	-	-	-	-	-	1.12	-
C205	1.24	1.16	1.24	0.83	1.24	0.83	-	0.83	0.83	0.83	0.83	0.83	1.24	-
C206	-	2.64	-	-	-	-	2.64	2.64	2.64	2.64	-	2.64	-	-
C207	3.00	2.00	-	-	3.00	-	-	2.00	3.00	3.00	-	3.00	1.00	1.00
C208	3.00	2.00	-	1.50	3.00	3.00	-	2.00	3.00	3.00	-	2.50	2.00	-
C209	2.06	1.37	1.37	-	-	-	-	-	-	-	-	1.37	-	-
C210	0.99	0.85	0.71	0.71	-	0.42	-	0.35	-	-	-	0.71	1.06	-
C211	2.88	1.44	1.92	1.92	1.92	1.92	1.44	0.96	-	1.28	1.92	1.28	2.88	1.92
C212	1.06	0.99	1.06	0.71	-	0.71	0.71	0.71	-	0.71	-	0.71	1.06	-
C213	1.12	0.75	-	0.60	0.37	0.50	0.75	0.37	0.37	-	-	0.52	0.75	-
C214	-	0.82	2.46	-	1.64	-	-	-	-	-	1.31	2.46	-	-
C215	3.00	2.00	1.00	1.00	-	2.00	-	2.00	3.00	3.00	-	-	2.00	-
C216	2.17	3.00	3.00	2.50	-	3.00	2.50	-	3.00	3.00	-	-	2.33	-
C301	2.46	2.20	1.76	1.76	-	1.76	-	1.76	-	0.88	-	0.88	2.64	1.76
C302	1.06	1.06	0.71	0.71	-	0.35	-	0.35	-	-	-	0.35	1.06	-
C303	1.21	0.87	1.08	-	-	0.78	0.87	0.87	-	-	-	0.87	1.30	-
C304	1.10	0.79	0.39	0.39	0.79	-	0.79	0.79	0.39	0.79	-	0.71	0.79	-
C305	1.88	1.88	1.25	-	-	1.88	1.88	1.25	-	-	-	-	1.88	-

Table 3.3.2.a PO attainment for all courses (Contd.)

C306	1.23	1.23	1.64	0.93	1.23	0.93	1.03	1.23	-	1.23	-	-	1.23	1.23
C307	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.20	3.00	2.33	2.00
C308	3.00	2.00	3.00	3.00	-	3.00	-	1.00	3.00	3.00	-	2.00	3.00	-
C309	3.00	1.75	-	2.00	2.00	2.00	-	1.25	3.00	3.00	-	2.00	3.00	-
C310	3.00	2.60	2.80	1.50	-	2.20	1.50	2.80	-	-	-	1.67	3.00	3.00
C311	2.24	1.89	1.72	-	-	1.72	0.86	1.72	-	1.72	-	1.72	1.72	1.72
C312	2.67	2.50	2.50	1.50	2.20	1.00	-	-	-	1.33	1.00	1.83	-	-
C313	1.82	1.21	1.82	-	0.61	1.21	0.61	1.82	-	1.21	-	1.21	1.21	-
C314	2.64	2.64	-	-	-	2.20	-	2.35	2.20	-	2.64	1.76	-	-
C315	2.70	1.80	2.70	-	-	0.90	0.90	-	-	-	-	-	1.80	-
C316	3.00	-	-	3.00	-	2.00	2.00	3.00	3.00	3.00	-	-	2.00	-
C317	2.00	2.00	3.00	2.00	2.00	-	-	1.33	3.00	3.00	3.00	2.00	2.00	-
C318	3.00	2.00	2.00	3.00	-	-	-	-	-	2.20	-	-	-	-
C401	3.00	3.00	3.00	-	-	2.00	1.00	3.00	-	2.00	-	2.00	3.00	2.00
C402	1.36	1.36	0.91	0.82	-	0.91	-	0.45	-	0.91	-	-	0.91	-
C403	2.70	1.80	2.25	-	-	1.80	0.90	0.90	-	-	-	1.80	1.80	1.80
C404	3.00	3.00	2.00	-	-	2.00	1.00	2.00	-	2.00	-	2.00	2.60	3.00
C405	2.21	2.02	-	-	1.29	2.58	-	2.58	-	2.21	2.58	2.58	2.76	-
C406	2.58	2.45	-	-	-	1.29	2.76	-	-	-	-	1.84	-	2.21
C407	3.00	3.00	2.00	1.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00
C408	3.00	2.00	2.00	-	-	2.00	1.80	1.00	3.00	2.00	-	2.00	1.00	-
C409	3.00	2.00	2.67	-	-	2.00	2.20	1.75	-	-	-	2.00	2.60	3.00
C410	2.60	3.00	-	-	2.00	3.00	2.00	2.40	2.00	2.40	2.60	2.40	2.00	-
C411	3.00	2.00	-	-	2.00	2.17	2.17	2.00	-	-	-	2.00	-	3.00
C412	3.00	2.00	-	-	-	3.00	3.00	3.00	-	-	3.00	2.00	-	-
C413	3.00	3.00	2.50	2.50	2.00	2.00	2.00	2.25	2.25	2.25	2.33	2.33	3.00	2.50
Attainment	2.33	1.88	1.85	1.62	1.88	1.68	1.60	1.69	2.33	1.97	1.95	1.67	1.88	2.21

Table 3.3.2.b PO attainment level

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Direct Attainment	2.33	1.88	1.85	1.62	1.88	1.68	1.60	1.69	2.33	1.97	1.95	1.67
Indirect Attainment	2.58	2.58	2.58	2.58	2.50	2.58	2.55	2.52	2.65	2.65	2.65	2.45
Direct Attainment (80%)	1.87	1.51	1.48	1.29	1.50	1.35	1.28	1.35	1.87	1.57	1.56	1.34
Indirect Attainment (20%)	0.52	0.52	0.52	0.52	0.50	0.52	0.51	0.50	0.53	0.53	0.53	0.49
Total PO Attainment	2.39	2.03	2.00	1.81	2.00	1.87	1.79	1.85	2.40	2.10	2.09	1.83

Table 3.3.2.c PSO attainment level

Course	PSO1	PSO2
Direct Attainment	1.88	2.21
Indirect Attainment	2.52	2.58
Direct Attainment (80%)	1.50	1.77
Indirect Attainment (20%)	0.50	0.52
Total PSO Attainment	2.01	2.28

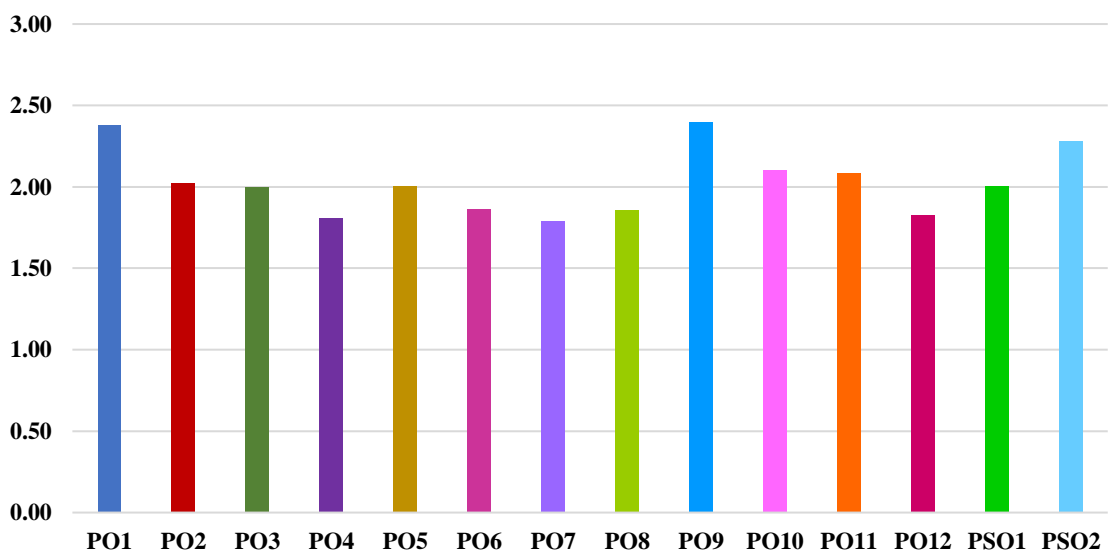


Fig 3.3.2 PO/PSO Attainment

CRITERION 4	Students' Performance	150
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4. STUDENTS' PERFORMANCE (150)**Total Marks: 75.78**

The details of student intake for the four academic years are given in Table 4.a

Table 4.a: Student Intake

Item	CAY (2021-2022)	CAYm1 (2020-2021)	CAYm2 (2019-2020)	CAYm3 (2018-2019)
Sanctioned intake of the program (N)	60	60	60	60
Total number of students admitted in first year Minus number of students migrated to other programs/institutions plus no. of students migrated to this program (N1)	14	39	29	29
Number of students admitted in second year in the same batch via lateral entry (N2)	0	1	4	2
Separate division students, if applicable (N3)	NA	NA	1	1
Total number of students admitted in the program (N1+N2+N3)	14	40	34	32

Table 4.b shows the number of students who have successfully graduated without backlogs in any semester / year of study for seven years (CAY up to LYGm2). While Table 4.c, provides the number of students who have successfully graduated with backlog in the stipulated period of study.

Table 4.b: No. of Successful Students without History of Backlog

Year of Entry	N1+N2+N3	Number of Students who have Successfully Graduated without Backlogs in any Semester/Year of Study			
		I Year	II Year	III Year	IV Year
CAY (2021-22)	14				
CAYm1 (2020-21)	40	8			
CAYm2 (2019-20)	34	19	15		
CAYm3 (2018-19)	32	8	3	3	
LYG (2017-18)	53	19	14	12	12
LYGm1 (2016-17)	52	20	16	16	15
LYGm2 (2015-16)	65	23	18	18	18

Table 4.c: No. of Successful Students with Backlog in Stipulated Period of Study

Year of Entry	N1+N2+N3	Number of Students who have Successfully Graduated in Stipulated Period of Study			
		I Year	II Year	III Year	IV Year
CAY (2021-22)	14				
CAYm1 (2020-21)	40	37			
CAYm2 (2019-20)	34	29	33		
CAYm3 (2018-19)	32	29	26	25	
LYG (2017-18)	53	36	48	46	19
LYGm1 (2016-17)	52	39	37	48	28
LYGm2 (2015-16)	65	63	55	55	39

4.1. Enrolment Ratio (20)**Total Marks: 0**

The enrolment ratios for the Civil Engineering program for the three academic years are given in Table 4.1.a.

Table 4.1.a: Enrolment ratio

Year of Entry	N	N1	Enrolment Ratio = $\frac{N_1}{N} \times 100$
CAY (2021-22)	60	14	23.33
CAYm1 (2020-21)	60	39	65
CAYm2 (2019-20)	60	29	48.33
Average			45.55

4.2. Success Rate in the Stipulated Period of the Program (40) Total Marks: 14.25**4.2.1. Success Rate without Backlogs in any Semester/Year of Study (25)****Institute Marks: 6.75**

$$\text{Success Index (SI)} = \frac{\text{Number of students who have graduated from the program without backlog}}{\text{Number of students admitted in the first year of that batch and admitted in second year via lateral entry and separate division, if applicable}}$$

$$\text{Average SI} = \text{Mean of SI for the past three batches}$$

$$\text{Average SI from Table 4.2.1} = 0.27$$

$$\text{Success rate without backlogs in any year of study} = 25 \times \text{Average SI}$$

$$= 25 \times 0.27$$

$$= 6.75$$

The details of success rate without backlogs in any semester/year of study for the three academic years: LYG (2017-18), LYGm1 (2016-17) and LYGm2 (2015-16) are given in Table 4.2.1.

Table 4.2.1: Success Rate without Backlogs in any Semester/Year of Study

Item	LYG (2017-18)	LYGm1 (2016-17)	LYGm2 (2015-16)
Number of students admitted in the corresponding first year + admitted in second year via lateral entry and separate division if applicable (X)	53	52	65
Number of students who have graduated without backlogs in the stipulated period. (Y)	12	15	18
Success Index (SI =Y/X)	0.23	0.29	0.28
Average SI	0.27		

4.2.2. Success Rate with Backlogs in Stipulated Period (15) Institute Marks: 7.5

$$\text{Success Index (SI)} = \frac{\text{Number of students who have graduated from the program in the stipulated period of course duration}}{\text{Number of students admitted in the first year of that batch and admitted in 2nd year via lateral entry and separate division, if applicable}}$$

Table 4.2.2 shows the success rate of students with backlogs within the stipulated period of study.

Table 4.2.2: Success Rate with Backlogs in Stipulated Period

Item	LYG (2017-18)	LYGm1 (2016-17)	LYGm2 (2015-16)
Number of students admitted in the corresponding first year + admitted in second year via lateral entry and separate division if applicable (X)	53	52	65
Number of students who have graduated with backlogs in the stipulated period. (Y)	19	28	39
Success Index (SI= Y/X)	0.36	0.54	0.6
Average SI	0.5		

Average SI = Mean of SI for the past three batches

Average SI from Table 4.2.2 = 0.5

Success rate without backlogs in any year of study = $15 \times \text{Average SI}$
 $= 15 \times 0.5$
 $= 7.5$

4.3. Academic Performance in Third Year (15)

Total Marks: 8.97

$$\text{API} = \left(\begin{array}{l} \text{Mean of third year grade point} \\ \text{average of all successful students} \\ \text{on a 10 point scale} \end{array} \right) \times \left(\begin{array}{l} \text{Number of Successful Students} \\ \text{Number of Students appeared} \\ \text{in the Examination} \end{array} \right)$$

Academic performance of students in third year is shown in Table 4.3.

Table 4.3: Academic Performance in Third Year

Academic Performance	CAYm3 (2018-19)	LYG (2017-18)	LYGm1 (2016-17)
Mean of CGPA or Mean Percentage of all successful students (X)	5.99	5.87	6.63
Total number of successful students (Y)	25	46	48
Total number of students appeared in the examination (Z)	25	46	48
$\text{API} = \frac{X \times Y}{Z}$	5.99	5.87	6.63
Average API = $\left(\frac{\text{AP1} + \text{AP2} + \text{AP3}}{3} \right)$	6.16		

Academic Performance from Table .4.3 = 6.16

Academic Performance = $1.5 \times \text{Average API}$
 $= 1.5 \times 6.16$
 $= 9.245$

4.4. Academic Performance in Second Year (15)**Total Marks: 7.36**

$$\text{API} = \left(\begin{array}{l} \text{Mean of second year grade point} \\ \text{average of all successful students} \\ \text{on a 10 point scale} \end{array} \right) \times \left(\begin{array}{l} \text{Number of Successful Students} \\ \text{Number of Students appeared} \\ \text{in the Examination} \end{array} \right)$$

Table 4.4: Academic Performance in Second year

Academic Performance	CAYm2 (2019-20)	CAYm3 (2018-19)	LYG (2017-18)
Mean of CGPA or Mean Percentage of all successful students (X)	6.34	5.94	4.86
Total number of successful students (Y)	33	26	48
Total number of students appeared in the examination (Z)	33	26	48
$\text{API} = \frac{X \times Y}{Z}$	6.34	5.94	4.86
Average API = $\left(\frac{\text{API}_1 + \text{API}_2 + \text{API}_3}{3} \right)$	5.71		

Academic Performance from Table B.4.4 = 5.71

Academic Performance = 1.5 × Average API

= 1.5 × 5.71

= 8.56

4.5. Placement, Higher Studies and Entrepreneurship (40)**Total Marks: 25.2**

$$\text{Assessment Points} = 40 \times \text{Average Placement}$$

$$= 40 \times 0.6$$

$$= 24$$

Table 4.5.a: Placement, Higher Studies and Entrepreneurship

Item	CAYm1 2020-21	CAYm2 2019- 2020	CAYm3 2018-2019
Total Number of final year students (N)	47	45	54
Number of students placed in companies or Government sector (x)	17	12	36
Number of students admitted to Higher studies with valid qualifying scores (GATE or equivalent state or National Level Tests, GRE, GMAT etc.) (y)	6	12	6
Number of students turned entrepreneur in Engineering / Technology (z)	0	0	0
$x+y+z =$	25	26	42
$\left(\frac{x+y+z}{N}\right) =$	0.49	0.53	0.78
Average Placement Index = $\frac{(P_1 + P_2 + P_3)}{N}$	0.6		

Details of placement and higher studies for CAYm1 (2020-21), CAYm2 (2019-20), CAYm3 (2018-19) are provided in Table 4.5.b, Table 4.5.c and Table 4.5.d respectively.

Table 4.5.b: Placement Details for the Academic Year 2020-2021 (CAYm1)

Sl. No.	Name of the Student Placed	Enrolment Number	Name of the Employer	Appointment Letter Reference Number with Date
1	Anila Babu	MCK17CE009	ASAP Kerala Government	30/10/2022
2	Anandu R	MCK17CE008	Facet Builders & Interiors	15/11/2021
3	Vishnu K	MCK17CE039	RKH QITARAT	01/02/2022
4	Sudheeshkumar S	CML17CE035	Alcon LLC	09/06/ 2022
5	Simi Monachan	MCK17CE038	Oranzai Builders,Aluva,Kerala	28/03/2022
6	Anand T O	MCK17CE007	Nest Builders and Developers	27/12/2021
7	Subina T Sulaiman	LMCK17CE043	QWAEID Engineering Consultancy LLC	10/03/2022
8	Jino K Abraham	MCK17CE023	Siraj Associates, Ernakulam	1/12/2021
9	Stephin Sam	CML17CE034	Gopher Developers	26/09/2022
10	Divya S Anil	MCK17CE018	Siraj Associates, Ernakulam	01/02/2022
11	Harikrishnan S	MCK17CE022	Facet Builders & Interiors	01/12/2021
12	Jyothish Kumar S	MCK17CE025	Nest Builders and Developers	27/12/2021
13	Muhemmed Basim	MCK17CE030	Square Arc Architectural Studio Designers	03/01/2022
14	Arja V Nair	MCK17CE013	Bijus The Learning App	EMP ID: TNL2189602
15	Anjana S Babu	MCK17CE010	Advance Auto Parts	28/12/2022
16	Anamika Chandra	MCK17CE006	Nest Builders and Developers	27/12/2021
17	Haritha Krishnan	LMCK17CE041	Plus Positive Technical Works LIC	26/10/2022

Table 4.5.c: Placement Details for the Academic Year 2019-2020 (CAYm2)

Sl. No.	Name of the Student Placed	Enrolment Number	Name of the Employer	Appointment Letter Reference Numberwith Date
1	Aswin Hanuraj R	MCK16CE018	SKJK Infrastructure and Developer's Pvt Ltd,Ranni	11/10/2021
2	Gokul Krishnan R	MCK16CE020	SKJK Infrastructure and Developer's Pvt Ltd,Ranni	05/01/2021
3	Hashim Huzzine	MCK16CE022	Facet Builders & Interiors	15/12/2021
4	Salma Saheer	MCK16CE034	St.Simon Builders	02/08/2021
5	Krupa Sara Binu	MCK16CE024	Square Arc Architectural Studio Designers	10/01/2021
6	VishakSasidhar	MCK16CE039	GSM Shipping and Cargo LLC	18-04-2022
7	Aparna E N	MCK16CE015	Hindustan Petroleum Corp. Ltd	GAT No37439310
8	Anandu R Pillai	MCK16CE008	Tulsi Builders and Developers, Kakkanad	10/01/2021
9	Alan P Thomas	MCK16CE003	Al Estimad Const.Cont.L.L.C.U.A.E	26/2/2023
10	Arya S	MCK16CE016	Pandalam Municipality	01/02/2022
11	Noufal N	MCK16CE030	Olivia Projects, Thrissur	30/12/2021
12	Mekha N P	MCK16CE027	Square Arc Architectural Studio Designers	1/02/2021

Table 4.5.d: Placement Details for the Academic Year 2018-2019 (CAYm3)

Sl. No.	Name of the Student Placed	Enrolment Number	Name of the Employer	Appointment Letter Reference Number with Date
1	Aleena Mery Roy	MCK15CE006	Neema Buildings Pathanamthitta	EC-NB 17
2	AchalaAniyan	MCK15CE002	Cosmic Developers	14/09/2022
3	Ancy Mariam Thomas	MCK15CE010	Infosys Limited Hosur Road, Bangalore	11 October 2021
4	Annie A Varghese	MCK15CE012	Theruvath Builders, Pathanamthitta	1 March 2022
5	Arya R	MCK15CE016	Blue Pencil Interiors	AAL-8890
6	Ashna Johnson	MCK15CE018	Ideal Environmental Solutions and Consultancy, Pathanamthitta	30 November 2019
7	Ashna Nazar	MCK15CE019	Kozhencherry Panchayat	27 January 2021
8	Athira D Nair	MCK15CE021	Byjus App	TNL21
9	Athira Rajan	MCK15CE022	PWD, Bridges Sub Division, Kollam	14 August 2018
10	Bhavya Prasannan	MCK15CE023	Think And Learn Private Limited	7 January 2022
11	Bibin K Daniel	MCK15CE024	Coromandel Eservices Limited	11-04-2022
12	Fathima Sulaiman	MCK15CE028	Abu Dhabi Airports Capital Projects & Construction (Trojan General Contracting)	30 October 2021
13	HashimaHarees	MCK15CE030	Strudco Services LIP, Structural Consultancy Servies	1 September 2021
14	Jahas Muhammad	MCK15CE031	Emirates Madina Group	March 2022
15	Jobin Varghese	MCK15CE032	SukuInfracon (P) Ltd	December 2019
16	Jubith K Moncy	MCK15CE033	Palathra Constructions and Infra Developers	6 January 2021
17	Chethus Uday	MCK15CE026	Echoboom Management & Entrepreneurial Solutions Private Limited	23/11/2022
18	Mithin V.	MCK15CE038	SukuInfracon PVT Ltd.	SI/AL/2019-20/0720
19	Rithu Rachel Roy	MCK15CE047	Omaloor Grama Panchayat, MGNREGS Overseer	25 November 2021
20	Shajinamol S	MCK15CE049	Studioghats Pvt. Ltd.	2 September 2019
21	ShibinShaji	MCK15CE051	SukuInfracon (P) Ltd	13 November 2019
22	ShifanaSherief	MCK15CE052	Urbanleaf Designs and Developers Pvt. Ltd Kaloor, Cochin 26	U45201KL2020PTC 064829
23	Kailas Mohan	MCK15CE054	AB Construction & Project	17/10/2019
24	Sony C Luke	MCK15CE055	Aishu Builders and Developers	29 April 2022

Table 4.5.d: Placement Details for the Academic Year 2018-2019 (CAYm3) (Contd.)

Sl. No.	Name of the Student Placed	Enrolment Number	Name of the Employer	Appointment Letter Reference Number with Date
25	Steffy Angel Sunny	MCK15CE057	Associated Designers	29 May 2020
26	Thasni P Shyam	MCK15CE060	AB Constructions & Project	11-09-2019
27	Vivin Samuel	MCK15CE063	Kerala forest department	1 September 2021
28	Anjana Krishna	MCK15CS011	Govt. of Kerala, Haritha Kerala Mission	0206/2020
29	Vivek Radhakrishnan	MCK15CE064	AB Constructions & Project	03/10/2019
30	Abhijith Aravind	MCK15CE001	Facet Builders & Interiors	01/01/2020
31	Thanzeer A	MCK15CE059	Nest Builders and Developers	01/04/2021
32	Mohammed Riyas	MCK15CE040	Experts E&I, Abu Dhabi	01/02/2021
33	Kavyalakshmi K S	MCK15CE035	Facet Builders & Interiors	15/05/2020
34	Alen Joe Mathew	MCK15CE007	Square Arc Architectural Studio and Designers	01/01/2021
35	Reshma R	MCK15CE045	Facet Builders & Interiors	25/09/2021
36	Rani Mary Mathew	MCK15CE044	PCL Constructors Canada	1 November 2022

4.6. Professional Activities (20)**Total Marks: 20****4.6.1. Professional Societies/Chapters and Organizing Engineering Events, etc. (5)****Institute Marks: 5**

Details of professional activities for the year 2020-21, 2019-20, 2018-19 are provided in Table 4.6.1.b, Table 4.6.1.c and Table 4.6.1.d respectively.

Table 4.6.1.a Details of Professional Societies/Chapters

Sl.No.	Name of Chapter
1	The Institution of Engineers (INDIA) IEI Student Chapter
2	Association of Civil Engineering
3	(Indian Society for Technical Education) ISTE Kerala

Table 4.6.1.b: Professional societies/ chapters and organizing engineering events (2020-21)

Sl. No.	Date	Name of Event	Associated with Professional society/Chapter/ student association	Details of the Resource Person
1	5/8/2020	One day webinar on Trending Careers after Civil Engineering	Association of Civil Engineering, MCET	Prof K A Abubaker, Chairman, Bakers Academy for Engg& Technology, Kochi
2	30/11/2020 to 04/12/2020	Short term training programme on AutoCAD	Association of Civil Engineering, MCET	MrAju V Chacko NTS, Nexus Technical Solutions
3	16-07-20 to 18-07-20	3 day Webinar series on coastal & offshore structures	Association of Civil Engineering, MCET	Dr. (Adv) V V Ratheesh Kumar, KIHAS, Associate professor, N S S Law College, Kollam
				Mrs. Lakshmi Satyan P, Junior Engineer, offshore Structures
				Dr. Jayakumar, Managing Director & CEO, Vizhingam International seaport LTD.
4	15/6/2021	Scope of Engineers in BIM	Association of Civil Engineering, MCET	Core Institute of Technology
5	5/6/2021	PRAKRITHAM	Association of Civil Engineering, MCET	Dr Abdul Rasheed A , Principal , MCET, PTA
6	25/6/2021	Alumni interaction- Talk on “Career opportunities of Civil Engineering Graduates in Middle East”	Association of Civil Engineering, MCET	Mr. Shifin M Salam, Project Civil Inspector, Tatweer Petroleum
7	12/6/2021	Spark Session “Being a winner	Association of Civil Engineering, MCET	Er. Surendran C, Rtd. Dty. Chief Engineer, KSEL.
8	2/1/2021	Online project Exhibition	Association of Civil Engineering, MCET	MsBismi M Buhari, Assistant Professor, Amal Jyothi College of Engineering, Kanjirappally
9	23/06/2021	Faculty improvement program on writing & publishing a scientific research paper- Upskills	Association of Civil Engineering, MCET& MRPG	Dr Shan M Assis, HoD, Dept of Mechanical Engineering, MCET, PTA
10	31/03/2021	Professional ethics in construction industries	Association of Civil Engineering, MCET& MRPG	Adv. Praveen Babu K, HighCourt, Ernakulam, Kerala

Table 4.6.1.c: Professional societies/ chapters and organizing engineering events (2019-20)

Sl. No.	Date	Name of Event	Associated with Professional society/Chapter/ student association	Details of the Resource Person
1	26/07/2019, 29/07/2019, 30/07/2019	3-day AutoCAD Training	Association of Civil Engineering, MCET	Mr Jijo Alex, Trainer, CADD Centre Pathanamthitta
2	16/01/2020 to 22/01/2020	5-day workshop on STAADPRO and primavera	Association of Civil Engineering, MCET	Ms Nivya R, Trainer, CADD Centre Pathanamthitta Ms Glinda T Shaji, Technical Staff & Trainer, CADD centre Pathanamthitta
3	25/1/2020	One day training session on Rebuild Kerala Initiative	Association of Civil Engineering	Er. Binod S Assistant Engineer, PMU, RKI-LSGD
4	29/1/2020	1 day training on total station	Association of Civil Engineering, MCET	Mr Samuel Mathew, Trainer, TISAT, Pathanamthitta
5	16/03/2020	Alumni interaction - Talk on "Career opportunities of Civil Engineering Graduates"	Association of Civil Engineering, MCET	Shanid P, Senior Engineer, Shobha builders
6	27/02/2020	Talk on the recent advancement in Cement Production	Association of Civil Engineering, MCET	Manish Mohan, Regional technical advisor- Ultratech Cement
7	11/11/2020	Career development programme- Personality development session for the final year and prefinal year students	Association of Civil Engineering, MCET	Niyas Ali, Junior Engineer, MES
8	18/02/2020	Expert talk on Climatic resilient coastal zone management"	Association of Civil Engineering, MCET	Dr. K V Thomas, Former head, Coastal Processes, NCESS Dean, Faculty of climate variability and aquatic ecosystem, KUFOS
Co-curricular activity				
1	28/02/2020-29/02/2020	Jeffin memorial football tournament	Association of Civil Engineering, MCET	Shri P I Sherief Muhammed, Chairman MIET

Table 4.6.1.c: Professional societies/ chapters and organizing engineering events (2018-19)

Sl. No.	Date	Name of Event	Associated with Professional society/Chapter/ student association	Details of the Resource Person
1	30/03/2019 to 01/04/2019	Survey camp & total station workshop	Association of Civil Engineering, MCET	ALG International Institute of Technology, Zera tower, HN 14, Cheranalloor, Kochi
2	30/01/2019 to 01/2/2019	Training programme on STAAD PRO & primavera	Association of Civil Engineering, MCET	CADD CENTRE, PATHANAMTHITTA
3	05-04-19 to 06-04-19	National workshop on BIM	2-day national workshop on BIM	Mr. Arbaaz Charoliza, Innovians Technologies and IIT Varanasi
4	11/07/2018 to 13/07/2018	Workshop on AutoCAD	Association of Civil Engineering, MCET	Mr. Ronald R CADD center, Pathanamthitta
5	17/4/2019	Alumni interaction – A talk on Entrepreneurial challenges in construction industries	Association of Civil Engineering, MCET	Jayaram Prakash, (Director, Square Arc Architectural studio and Designers)
6	12/5/2019	Industrial visit to Idukki Dam	Association of Civil Engineering, MCET	Prof. Arun Raj Assistant Professor, Musaliar College of Engineering and Technology.
7	11/3/2019	Awareness programme: Men of Quality	Association of Civil Engineering, MCET	MrShaji Mon D, Excise Preventive Officer
8	2/7/2019	1 Day workshop on NDT	Association of Civil Engineering, MCET	IREZ Academy Pvt. Ltd
9	12/9/2018-13/9/2018	Data collection survey of flood affected area under Vadasserikkara Grama Panchayat	Association of Civil Engineering, MCET	Vadasserikkara Grama Panchayat
10	13/2/2019	Project management hands on workshop	Association of Civil Engineering, MCET	Prof Navin Koshy, Assistant Professor, Musaliar Institute of Management
11	20-11-2018	Industrial visit to Kollam Harbour	Association of Civil Engineering, MCET	Mr. Sheik Pareeth IAS, Managing Director, Coastal Development and Management

4.6.2. Publication of Technical Magazines, Newsletters, etc. (5)**Institute Marks: 5**

The details of publication by students of the year 2018-19, 2019-20,2020-21 are shown in the Table 4.6.2.a, Table 4.6.2.b,Table 4.6.2.c. Table 4.6.2.d shows the details of publication of technical magazines and news letters

Table4.6.2.a: Publication by students (2018-19)

Sl. No.	Name of the Author	Title of the Paper	Name of the Journal	ISSN No.	Month & Year of Publication	National/ International
1	Fathima Sulaiman	Partial replacement of cement with hospital waste ash in concrete	Journal of Emerging Technologies & Innovative Research(JETIR)	ISSN:2349-5162 , Vol 6, Issue 5	May-19	International
	Arya R					
	Noora Nizar					
	Sreehari Unnikrishnan					
2	AthiraRajan	Influence of Natural	International Research	e-ISSN: 2395-	Jun-19	International
	Alice Bruno K A					
	Kavya Lakshmi					
	Sony C Luke					
3	AnjanaKrishna	Study on suitability of sedimented soil from flooded areas of Kerala	Proceedings of the second conference on Emerging researches & Innovations in Civil Engineering	ERICE19	May-19	National
	Athira D Nair					
	Bhavya Prasannan					
	Godsy Jose					
4	Ashna Johnson	Exploring the innovative use of Dredged material in construction	International Journal of Engineering Research & Technology (IJERT)	ISSN:2278-0181 Vol-9, Issue 04	Apr-20	International
	Aleena Mery Roy					
	Ancy Mariam Thomas					
	Chethus Uday					

Table 4.6.2.b: Publication by students (2019-20)

Sl. No.	Name of the Author	Title of the Paper	Name of the Journal	ISSN No.	Month & Year of Publication	National/ International
1	Alan Varghese	Design and Analysis of A Bus Terminal Building	International Journal of Engineering Research & Technology (IJERT).	, ISSN: 2278-0181, Vol. 9 Issue 03,	Mar-20	International
	Bibin Babu					
	Gokulkrishnan R					
	Raveena R Nair					
2	Adharsh A	Attainment of Sustainability through Green Auditing: A Case Study of Musaliar Institute, Pathanamthitta	International Journal of Engineering Research & Technology (IJERT)	ISSN: 2278-0181 Vol. 9 Issue 06,	Jun-20	International
	Anju Aji					
	AswathyShaji					
	Noufal N					
3	Thasnem Fathima	Structural Analysis and Redesign of a Cable-Stayed Suspension Bridge across Achankovil River in Kerala	International Journal of Engineering Research & Technology (IJERT)	ISSN: 2278-0181	Jun-20	International
	Jincy K Jose					
	Aparna E N					
	Renjana R S					
4	Mekha N P	Preparation of Inundation Map of Pathanamthitta Municipality	International Journal of Engineering Research & Technology (IJERT)	e-ISSN: 2395-0056 Volume: 07 Issue: 07 | p-ISSN: 2395-0072	Jul-20	International
	Salma Saheer					
	Sini Jose					
5	AswiniMareenasam	Structural Analysis and Design of an Auditorium using Extended-3D Analysis of Building System	International Journal of Engineering Research & Technology (IJERT).	ISSN: 2278-0181 Vol. 9 Issue 06,	Jun-20	International
	Panchami P					
	Devika J S					
	Muhammed Salih					
6	Anna Mariam Saji	Design and analysis of Chamakkavu bridge	International Research Journal of Engineering and Technology (IRJET)	e-ISSN: 2395-0056 Volume: 07 Issue: 07 |	Jul-20	International
	Aneetta Varghese					
	Maneesh T Manoj					
	Ashwin Hanuraj					

Table 4.6.2.b: Publication by students (2019-20) (Contd.)

7	AthiraSomarajan	Water Quality Analysis of River PAMBA using WQI method and GISMapping	International Journal of Engineering Research & Technology (IJERT),	ISSN:2278-0181, Issue 6, June 2020	Jun-20	International
	VisakhSasidhar					
	Merlin Daniel					
8	Alan Varghese	Planning of New Municipal Bus	International Journal of	ISSN: 2278-0181.	Feb-20	International
	Bibin Babu					
	Gokulkrishnan R					
	Raveena R Nair					

Table 4.6.2.c: Publication by students (2020-21)

Sl. No.	Name of the Author	Title of the Paper	Name of the Journal	ISSN No.	Month & Year of Publication	National/ International
1	Abhijith S,	Design and Analysis of Flyover"	International Journal of Engineering Research & Technology (IJERT),	ISSN: 2278-0181. Vol. 10 Issue 07	Jul-21	International
	Aparna B Lal,					
	Joseph Samuel,					
	Sarath S.					
2	Abiah Alex	Impact of sand mining on Periyar River basin	International Journal of Engineering Research & Technology (IJERT),	ISSN: 2278-0181. Vol. 10 Issue 07,	Jul-21	International
	Divya S Anil					
	Jyothish Kumar					
	Sarath R Sasi					
3	Anandu R	Eco-Friendly Light Weight Concrete Using PET Plastic Aggregates	International Research Journal of Engineering and Technology (IRJET)	e-ISSN: 2395-0056 Volume: 08 Issue: 07	Jul-21	International
	Anila Babu					
	Arja V Nair					
	Nayana Prasad					

Table 4.6.2.c: Publication by students (2020-21) (Contd.)

4	Abhijith S,	Planning of Flyover : A Solution for Traffic Congestion At Kayamkulam - Haripad Road.	International Journal of Engineering Research & Technology (IJERT),	ISSN: 2278-0181.Vol. 10 Issue 07,	Jul-21	International
	Aparna B Lal,					
	Joseph Samuel,					
	Sarath S.					
5	Anandhu R Pillai	Elevated Highway: A solution to the Developmental Problems in Pathanamthitta	International Journal of Engineering Research & Technology (IJERT),	ISSN:2278-0181, Vol , Vol 9, Issue 8	Aug-20	International
	Anaswar Das H					
	Pavishi P					
	SenuDaison					
6	Arya V S,	Floating concrete using thermocol beads and eggshell powder	International Research Journal of Engineering and Technology (IRJET)	e-ISSN: 2395-0056 Volume: 07 Issue: 08	Aug-20	International
	Anagha M Babu					
	Devika A					
	Hashim Huzzian					

Table 4.6.2.d: Publication of Technical Magazines and News Letters

Academic Year	Magazine/Newsletter	Name of Publisher
2018 – 2019	Ormakkay (Magazine)	Dept. of Civil Engineering
2019 – 2020	Magazine - Men at Work	Dept. of Civil Engineering
2021 -2022	Newsletter -TIMES OF CIVIL'22	Dept. of Civil Engineering

4.6.3. Participation in Inter-Institute Events by Students of the Program of Study (10)**Institute Marks: 10**

The details of student participation in various Inter-Institute events during CAY (2021-22), CAYm1 (2020-21), CAYm2 (2019-20) and CAYm3 (2018-19) are given in Table 4.6.3.a through Table 4.6.3.d

Table 4.6.3.a: Participation in Inter-Institute Events by Students in 2018-2019

Sl. No.	Name	Name of event	Date	Organised by
1	Amal Jacob George	Country Cricket Tournament, Aaroh 2k19	07.04.2019	College Of Engineering, Adoor
2	Binshad Basheer			
3	Stephin Sam	Gesture Controlled Bot Using Ros	10.03.2019	College Of Engineering, Trivandrum
4	Ajay Raj	Inter College Games Tournament Spike 2019	22.3.2019	St. Thomas College Of Engineering And Technology, Kozhuvallur
5	Amal Jacob George			
6	Binshad Basheer			
7	Harikrishnan S			
8	Ajay P Shaji			
9	Amal Jacob George	Inter College Seven a Side Football Tournament	22.10.2018	Providence College Of Engineering, Chengannur
10	Binshad Basheer			
11	Harikrishnan S			
12	Santhanu G Nath			
13	Sarath R Sasi			
14	Anand To	National Level Techno Cultural Fest	16.02.2019	Saintgits College Of Engineering, Kottayam
15	Joseph Samuel			
16	Jyothish Kumar S			
17	Gowri Sanker			
18	Sudheesh Kumar S			
19	Anamika Chandra	National Workshop on Building Information & Modeling	6.04.2019	Innovians Technologies, India
20	Anila Babu			
21	Arja V Nair			
22	Divya S Anil			
23	Sandra K Shaji			
24	Sarath S			
25	Simi Monachan			
26	Nayana Prasad			
27	Stephin Sam	Python And Machine Learning Workshop, Tesla 19	24.02.2019	College of Engineering, Trivandrum
28	Sangeetha Sanal	Treasure Hunt	27.10.2018	Providence College Of Engineering, Chengannur
29	Joseph Samuel	Workshop On BIM and Application Of GIS	12.10.2018	National Institute of Technology, Calicut
30	Anju Aji	Aquaripa, Burj Al Sticks	9.11.2018-11.11.2018	Amal Jyothi College of Engineering, Kanjirappally
31	Anju Aji	5G	9.11.2018-11.11.2018	Amal Jyothi College of Engineering, Kanjirappally
32	Anaswar Das	Music Competition	14.03.2018	Musaliar college of Engineering and technology

Table 4.6.3.a: Participation in Inter-Institute Events by Students in 2018-2019 (Contd.)

Sl. No.	Name	Name of event	Date	Organised by
33	Haritha Krishnan	Quiz competition	21.12.2018	Musaliar college of engineering and technology
34	Anaswar Das H	Caricature	26.10.2018-27.10.2018	Providence College of Engineering Chengannur
35	Anaswar Das H	Creatrix	17.11.2018-18.11.2018-19.11.2018	Drishti CET Trivandrum
36	Anagha M Babu	Bridge Design	27.10.2018	Carmel College of Engineering and technology Punnapra, Alappuzha
37	Anagha M Babu	Treasure Hunt	27.10.2018	Carmel College of Engineering and technology Punnapra, Alappuzha
38	Anagha M Babu	Lazer Maze	27.10.2018	Carmel College of Engineering and technology Punnapra, Alappuzha
39	Anaswar Das H	Wall painting	26.10.2018-27.10.2018	Providence College of Engineering Chengannur
40	Arja V Nair	Quiz competition	21.12.2018	Musaliar college of engineering and technology
41	Anand T O	Quiz competition	21.12.2018	Musaliar college of engineering and technology
42	Anandhu R	Quiz competition	21.12.2018	Musaliar college of engineering and technology
43	Anila Babu	Quiz competition	21.12.2018	Musaliar college of engineering and technology
44	Abhijith S	quiz competition	21.12.2018	Musliar college of engineering and technology
45	Abhijith S	Drawing	1.11.2018	Musaliar college of engineering and technology
46	Anaswar Das S	Quiz competition	21.12.2018	Musaliar college of engineering and technology
47	Alan P Thomas	Creatrix	17.11.2018-18.11.2018-19.11.2028	Drishti, CET Trivandrum
48	Divya S Anil	Music competition	14.03.2018	Musaliar college of engineering and technology
49	AthiraSomarajan	Treasure Hunt	26.10.2018-27.10.2018	Providence college of engineering, Chengannur
50	AthiraSomarajan	Pencil drawing	26.10.2018-27.10.2018	Providence college of engineering, Chengannur
51	Athira	Caserroprogetto	24.08.2018	Believers church carmel engineering college
52	Arya VS	Caricature	26.10.2018-27.10.2018	Providence college of engineering, Chengannur
53	Arya VS	Treasure hunt	26.10.2018-27.10.2018	Providence college of engineering, Chengannur
54	Arya VS	Pencil drawing	26.10.2018-27.10.2018	Providence college of engineering, chengannur
55	Arya VS	Weapon of Venus	26.10.2018-27.10.2018	Providence college of engineering, chengannur
56	Lekshmi R	Ducati Workshop	5.02.2018	FISAT
57	Joseph Samual	Quiz competition	21.12.2018	Musliar college of engineering and technology
58	Jino K Abraham	Quiz competition	21.12.2018	Musliar college of engineering and technology

Table 4.6.3.a: Participation in Inter-Institute Events by Students in 2018-2019 (Contd.)

Sl. No.	Name	Name of event	Date	Organised by
59	Aneeta Varghese	5G	9.11.2018-10.11.2018	Amal Jyothi College of Engineering,Kanjirappally
60	Bibin Babu	Quiz competition	21.12.2018	Musliar college of engineering and technology
61	Adharsh A	Creatrix	17.11.2018-18.11.2018-19.11.2018	Drishti,CET Trivandrum
62	Adharsh A	Wall painting	26.10.2018-27.10.2018	Providence college of engineering,chengannur
63	Gowri Sanker	Quiz competition	21.12.2018	Musaliar college of engineering and technology
64	Alan P Thomas	Wall painting	26.10.2018-27.10.2018	Providence college of engineering
65	Arya V S	Quiz competition	21.12.2018	Musaliar college of engineering and technology
66	Veni Gayathri	Treasure Hunt	26.10.2018-27.10.2018	Providence college of engineering
67	Sudheesh Kumar S	Quiz competition	21.12.2018	Musaliar college of engineering and technology
68	Shahana Shaji	Treasure Hunt	26.10.2018-27.10.2018	Providence college of engineering,chengannur
69	Nayana Prasad	Quiz competition	21.12.2018	Musaliar college of engineering and technology
70	Muhammed Hilal	Slip soccer	22.03.2018	Sree Buddha college of engineering,Elavumthitta
71	Mohammed Hilal	Beat the clock	22.03.2018	Sree Buddha college of engineering,Elavumthitta
72	Hashim Huzzine	Football tournament	19.10.2018-22.10.2018	Providence college of engineering,chengannur
73	Gokul Krishnan R	Pencil drawing	26.10.2018-27.10.2018	Providence college of engineering,chengannur
74	Gokul Krishnan R	Wall painting	26.10.2018-27.10.2018	Providence college of engineering,chengannur
75	Gokul Krishnan R	Football tournament	19.10.2018-22.10.2018	Providence college of engineering,chengannur
76	Gokul Krishnan R	Creatrix	17.11.2018-18.11.2018-19.11.2018	Drishti,CET Trivandrum
77	Devika	Blind Coding	27.03.2018-28.03.2018	Musaliar college of engineering and technology
78	Devika J S	Treasure Hunt	26.10.2018-27.10.2018	Providence college of engineering,chengannur
79	Bibin Babu	Basic 3D Animation using Blender	16.03.2018	Indian institute of Technology Bombay
80	Bibin Babu	Creatrix	17.11.2018-18.11.2018-19.11.2018	Drishti,CET Trivandrum
81	VishakSasidhar	Creatrix	17.11.2018-18.11.2018-19.11.2018	Drishti,CET Trivandrum
82	VishakSasidhar	Wall painting	26.10.2018-27.10.2018	Providence college of engineering,chengannur

Table 4.6.3.a: Participation in Inter-Institute Events by Students in 2018-2019 (Contd.)

Sl. No.	Name	Name of event	Date	Organised by
83	Sini Jose	5G	9.11.2018-10.11.2018	Amal Jyothi College of Engineering,Kanjirappally
84	Salma Sahir	5G	9.11.2018-10.11.2018	Amal Jyothi College of Engineering,Kanjirappally
85	Panchami PS	Pencil drawing	26.10.2018-27.10.2018	Providence college of engineering,chengannur
86	Panchami PS	Treasure Hunt	26.10.2018-27.10.2018	Providence college of engineering,chengannur
87	Panchami PS	Solo singing	26.10.2018-27.10.2018	Providence college of engineering,chengannur
88	NoufalNoushad	Football	09.03.2018-10.03.2018	Sreenarayana institute of technology Adoor
89	Noufal N	Football tournament	19.10.2018-22.10.2018	Providence college of engineering,chengannur
90	Merlin Daniel	Treasure Hunt	26.10.2018-27.10.2018	Providence college of engineering,chengannu
91	Merlin Daniel	Pencil drawing	26.10.2018-27.10.2018	Providence college of engineering,chengannur
92	Merlin Danie	Quiz competition	21.12.2018	Musaliar college of engineering and technology
93	Mekha NP	5G	9.11.2018-10.11.2018	Amal Jyothi College of Engineering,Kanjirappally
94	Krupa Sara Binu	Quiz competition	21.12.2018	Musaliar college of engineering and technology
95	Krupa Sara Binu	Burj Al Sticks,Aquaripa	9.11.2018-10.11.2018	Amal Jyothi College of Engineering,Kanjirappally
96	Krupa Sara Binu	5G	9.11.2018-10.11.2018	Amal Jyothi College of Engineering,Kanjirappally

Table 4.6.3.b: Participation in Inter-Institute Events by Students in 2019-2020

Sl. No.	Name	Name of event	Date	Organised by
1	Abiah Alex	National Level Techno Cultural Fest	15.02.2020	Saintgits College Of Engineering,Kottayam
2	Aparna B Lal			
3	Jyothish Kumar S			
4	Sandra K Shaji			
5	Simi Monachan			
6	Gowri Shanker			
7	Abiah Alex	Online Quiz Competition	21.02.2020	NSS Units of TKM College Of Engineering
8	Aparna B Lal			
9	Jino			
10	Jyothish Kumar S			
11	Muhammed Souban A			
12	Sarath R Sasi			
13	Simi Monachan			
14	Stephin Sam			
15	AthiraAjayakumar			
16	Haritha Krishnan			
17	Sreelekshmi K S	Engineering mathematics quiz	June-20	Narayanamma institute of technology and science
18	Subina T Sulaiman			
19	Anu Nizy Andrews			
20	SreeVignesh V R			
21	Noble Sam Louis			
22	Rahul Krishna			
23	LibinmonJohn Aprem			
24	Anisha A Varghese	Quiz. Mechatronics club	02-05-2020	Marian engineering college
25	Fathima Rahim			
26	Arya Krishnan	Quiz life of Gandhi	21/2/2020.	NSS Units of TKM College Of
27	Vishnu Haridas			
28	SreeVignesh V R			
29	Noble Sam Louis			
30	LibinmonJohn Aprem			
31	Alfiya Salim	Bridge design- nakshatra 2019	15/02/2019 16/02/2019	Saintgits college of engineering
32	Anagha M Babu	Volleyball-spike 2019	21/03/2019	St thomas college of engineering and technology
33	Ajay P Shaji	Anchoring- avishkar 2019	12/04/2019 13/04/2019	Musaliar college of engineering and technology
34	Anamika Chandra	Best engineer- aavishkar 2019	12/04/2019	Musaliar college of engineering and technology
35	Vishnu K	Best engineer- aavishkar 2019	12/04/2019	Musaliar college of engineering and technology
36	Sharath S	Best engineer- aavishkar 2019	12/04/2019	Musaliar college of engineering and technology
37	Haritha Krishnan	Braniac tech quiz- aavishkar 2019	13/04/2019	Musaliar college of engineering and technology
38	Sharath R Sasi	Best engineer- aavishkar 2019	12/04/2019	Musaliar college of engineering and technology
39	JyothishKumar	Best engineer- aavishkar 2019	12/04/2019	Musaliar college of engineering and technology
40	StephinSam	Best engineer- aavishkar 2019	12/04/2019	Musaliar college of engineering and technology

Table 4.6.3.b: Participation in Inter-Institute Events by Students in 2019-2020 (Contd.)

Sl. No.	Name	Name of event	Date	Organised by
41	SanthanuG Nath	Best engineer-aavishkar 2019	12/04/2019	Musaliar college of engineering and technology
42	Hashim Huzzine	Football-spike 2019	22/03/2019	St thomas college of engineering and technology
43	Devika J S	Mop the mess -eka 2019	11/02/2019 12/02/2019	College of engineering pathanapuram
44	Devika J S	Spell bee-avishkar 19	13/04/2019	Musaliar college of engineering and technology
45	Joseph Reji	Bridge design-nakshatra 2019	15/02/2019	Saint gits college of engineering
46	Manish Manoj	Anchoring-aavishkar 2019	12/04/2019 13/04/2019	Musaliar college of engineering and technology
47	NoufalN	Football -spike 2019	22./03/2019	St thomas college of engineering and technology
48	ThasnemFathima	Endurance-360	16/03/2019 17/03/2019	Tkm college of engineering kollam
49	Haritha V S	Quiz competition	19/05/2020	G.narayanamma institute of technology and science
50	Haritha V S	Sustainability and engineering	18/07/2020	Musaliar college of engineering and technology
51	Haritha V S	An introduction to hydrographic survey	16/07/2020	Musaliar college of engineering and technology
52	Haritha V S	Vizhinjam futuristic sea port in the making	18/07/2020	Musaliar college of engineering and technology
53	Haritha V S	Introduction to offshore structures	17/07/2020	Musaliar college of engineering and technology
54	Alfiya Salim	The current paradigm for cosmology with exascale computing	06/08/2020	Saint gits college of engineering
55	Haritha V S	Basics of structural design	27/10/2020	Jyothi engineering college
56	Haritha V S	Global faculty development program	17-22/08/2020	Rajagiri school of engineering & technology
57	Haritha V S	Trending careers after civil engineering	05/08//2020	Musaliar college of engineering & technology
58	Haritha V S	Future of robotics in surveillance	28/07/2020	Saint gits college of engineering
59	Haritha V S	Dc chopper for large input voltage	28/07/2020	Saint gits college of engineering
60	Aparna A P	Trending careers after civil engineering	05/08//2020	Musaliar college of engineering & technology
61	Anisha A Varghese	Sustainability and engineering	18/07/2020	Musaliar college of engineering and technology
62	Anoop S	Quiz competition	19/05/2020	G.narayanamma institute of technology and science
63	Anoop S	Trending careers after civil engineering	05/08//2020	Musaliar college of engineering & technology
64	Alfiya salim	Mega quiz	09/08/2020	Marian college
65	Alfiya salim	Trending careers after civil engineering	05/08//2020	Musaliar college of engineering & technology

Table 4.6.3.b: Participation in Inter-Institute Events by Students in 2019-2020 (Contd.)

Sl. No.	Name	Name of event	Date	Organised by
66	Anoop S	Quiz competition	19/05/2020	Gnarayanamma institute of technology and science
67	Aleena Raju	Mega quiz	09/08/2020	Marian college
68	Ajay P Shaji	Paper presentation	05/12/2020	Saint gits college of engineering
69	Akhil T	Introduction to offshore structures	17/07/2020	Musaliar college of engineering and technology
70	AnainaFathima	Ingenio	12-16/06/2020	College of engineering chengannur
71	SreeVignesh V R	Mega quiz	09/08/2020	Marian college
72	LibinmonJohn Aprem	Vizhinjam futuristic sea port in the making	18/07/2020	Musaliar college of engineering and technology
73	SreeVignesh V R	Vizhinjam futuristic sea port in the making	18/07/2020	Musaliar college of engineering and technology
74	SreeVignesh V R	Trending careers after civil engineering	05/08//2020	Musaliar college of engineering & technology
75	Akhil T	Sustainability and engineering	18/07/2020	Musaliar college of engineering and technology
76	Akhil T	Vizhinjam futuristic sea port in the making	18/07/2020	Musaliar college of engineering and technology
77	Akhil T	Mega quiz	09/08/2020	Marian college
78	Ajay P Shaji	Empresario(product development)	05/12/2020	Saint gits college of engineering
79	Haritha V S	An insight into geospatial technologies in civil engineering	8/008/2020	TKM institute of technology
80	Rahul Krishna	An insight into geospatial technologies in civil engineering	8/008/2020	TKM institute of technology
81	SreeVignesh V R	An insight into geospatial technologies in civil engineering	8/008/2020	TKM institute of technology

Table 4.6.3.c: Participation in Inter-Institute Events by Students in 2020-2021

Sl. No.	Name	Name of event	Date	Organised by
1	BhushiraShaji	Webinar On "An Insight into Geospatial Technologies In Civil Engineering",	06-08-2020	Tkm Institute Of Technology Kollam
2	Jishnu R			
3	Levin Thomas			
4	Nabil Nazer Ahamed			
5	BhushiraShaji	Webinar On dc Chopper for Large Input-Voltage Fluctuations in Solar PV Based Applications",	09-08-2020	Saintgits College Of Engineering, Kottayam
6	Nabil Nazer Ahamed			
7	Aswathy Anand	Seminar On "Ethics for Autonomous and Intelligent Systems",	14-08-2020	SjcetPalai
8	Aswin Babu			
9	BhushiraShaji			
10	Jishnu R			
11	Nabil Nazer Ahamed			
12	Anu K	Workshop On Future of Robotics in Surveillance	09-08-2020	Saintgits College Of Engineering, Kottayam
13	Aswathy Anand			
14	BhushiraShaji			
15	Nabil Nazer Ahamed			
16	Aswathy Anand	Webinar On "Introduction to Autonomous Driving",	11-05-2021	SJCET Palai
17	BhushiraShaji			
18	Aleena Raju	An Insight into Geospatial Technologies in Civil Engineering,		TKM Instituteof Technology
19	Anu K			
20	Megha Mohan			
21	Alsha Marlin Joseph	Cad - Disegno,	11-05-2021	Universal Engineering College
22	Neena P Achankunju			
23	Jayakrishnan			
24	Najiya C Salim	Importance Of Sustainable Technology,	07-06-2021	Mangalam College Of Engineering Kottayam
25	Aleena Raju	Introduction To Artificial Intelligence	11-05-2021	SJCET, Palai
26	Anu K			
27	Ashna A	Introduction To IEEE TEMS, IEEE SB	12-05-2021	SJCET, PalaiAnd IEEE SB LBSITW
28	Levin Thomas			
29	Megha Mohan			
30	Najiya C Salim			
31	Levin Thomas	National Level Quiz Competition,	15-12-2020	Vikrant Institute Of Technology And Management,Indore
32	Nabil Nazer Ahamed			
33	Ashna A			
34	Zainaba Z			
35	Jayakrishnan			
36	Ajmal			

Table 4.6.3.c: Participation in Inter-Institute Events by Students in 2020-2021(Contd.)

Sl. No.	Name	Name of event	Date	Organised by
37	Jayakrishnan	"Ind Quivers:Mega Quiz 2020, Marian College, Kuttikkanam"	09-08-2020	Marian College, Kuttikkanam
38	Levin Thomas			
39	BhushiraShaji			
40	Shahina R			
41	Haritha V S			
42	Athul M A			
43	Nabil Nazer Ahamed			
44	Mohammed Irfan	"An Insight into Geospatial Technologies in Civil Engineering"	07-06-2021	TKM College Of Engineering
45	Ashna A	Independence Quiz Competition	15-08-2021	SNIT Adoor
46	Ashna A	Essay Writing,	22-08-2020	College Of Engineering Pathanapuram
47	Megha Mohan	Upskilling With Google,	11-05-2021	Government Engineering College Barton Hill
48	Aleena Raju			
49	Anu K			
50	Zainaba Z	Quiz On Engineers Day & Ozone Day,	19-09-2021	Musaliar College Of Engineering
51	Shahina R			
52	Aparna A P	Webinar (Analysis of Multi-Story Building Using Staad.Pro)	12-06-2021	St Johns Group of Institution
53	HariPriya V			
54	Anisha A Varghese	Internship	24 -4 -2021	Knowledge Solutions India
55	Anoop S			
56	Libinmon John Aprem			
57	Vishnu Haridas	5-dayInternship on Basic. SiteEngineering	29/12/2021 -2/1/2022	MA CollegeKothamangalam
58	Sree Vignesh V R	Workshop On Bim	15/06/2021	Core Institute OF Technology Kerala
59	Anoop S			
60	Libinmon John Aprem			
61	Anisha A Varghese			
62	Alvin Jose	Webinar On "New Generation Concrete"	20/5/2021	St.Johns Group Of Institutions
63	Muhammed Muzammil			
64	Anoop S			
65	Anisha A Varghese			
66	Libinmon John Aprem	Webinar On an Insight into Geospatial Technologies in Civil Engg	6-8 Aug 2020	TKM College Kollam

Table 4.6.3.c: Participation in Inter-Institute Events by Students in 2020-2021 (Contd.)

Sl. No.	Name	Name of event	Date	Organised by
67	Haritha V S	Recent Research Advances in Geotechnical and Geological Engineering	17-22 Aug 2020	TKM College Kollam
68	Anoop S	Nptel E Workshop	18.07.2021	Musaliar College Of Engineering and Technology
69	Anisha A Varghese			
70	Akhil T			
71	Ashik Ansari			
72	Alfiya Salim			
73	Muhammed Muzammil			
74	Anoop S	Webinar (Benefits of Cyber Security and Ethical Hacking)	16.05.2021	Sree Buddha College of Engineering
75	Anisha A			
76	Akhil T			
77	Ashik Ansari	Webinar (Electrical Safety in Building Construction)	22.07.2021	Musaliar College Of Engineering and Technology




Table 4.6.3.d: Prizes & Awards received in Inter-Institute Events

Date	Name of Event	Organized by	Name of Student	Prize
ACADEMIC YEAR 2020-21				
15-12-2020	National level Quiz competition	Vikrant Institute of Technology and management, Indore	Ashna A	Third
22-08-2020	Essay writing,	College of Engineering Pathanapuram	Ashna A	First
ACADEMIC YEAR 2019-20				
08-03-2019	Inter college volleyball championship	Musaliar college of engineering and technology	Ajay P Shaji	First
03-04-2019	Avishkar 19	Musaliar college of engineering and technology	Harikrishnan S	First
03-04-2019	Avishkar 19	Musaliar college of engineering and technology	Binshad Basheer	First
12-03-2019	Avishkar 19	Musaliar college of engineering and technology	Vishnu K	First
05-04-2019 to 07-04-2019	Aaroh 2K19	College of Engineering Adoor	Sijo C Sajan	Second
05-04-2019 to 07-04-2019	Aaroh 2K19	College of Engineering Adoor	Vishnu K	Second

Table 4.6.3.d: Prizes & Awards received in Inter-Institute Events (Contd.)

Date	Name of Event	Organized by	Name of Student	Prize
ACADEMIC YEAR 2018-19				
09-11-2018	Aquaripa	Amal Jyothi College of Engineering, Kanjirappally	Salma Saheer Sini Jose Mekha N P	First
09-11-2018	Aquaripa	Amal Jyothi College of Engineering, Kanjirappally	Aneetta Varghese Alfiya Asharaf Krupa Sara Binu	Second
21-12-2018	Quiz Competition	Musaliar college of engineering and technology	Anamika	Third
21-12-2018	Quiz Competition	Musaliar college of engineering and technology	Subina T Sulaiman	Third
22-03-2018	Water day quiz	Musaliar college of engineering and technology	Anila Babu	Second
21-12-2018	Water day quiz	Musaliar college of engineering and technology	Arja V Nair	Second
21-12-2018	Water day quiz	Musaliar college of engineering and technology	Anuja P Anil	Second
21-12-2018	Water day quiz	Musaliar college of engineering and technology	Aparna E N	Third
21-12-2018	Water day quiz	Musaliar college of engineering and technology	Bibin Babu	First
01-11-2018	Literature Contest	Musaliar college of engineering and technology	Raveena R Nair	First
01-11-2018	Literature Contest	Musaliar college of engineering and technology	Devika J S	First
01-11-2018	Literature Contest	Musaliar college of engineering and technology	Jyothish Kumar	First
01-11-2018	Literature Contest	Musaliar college of engineering and technology	Anaswar Das	Second
10-03-2018	Khelo 2k18	Musaliar college of engineering and technology	Harikrishnan S	Second
23-01-2018	Innovate '18	College of Engineering Kidangoor	Bibin Babu	Second
23-01-2018	Innovate '18	College of Engineering Kidangoor	Gokul krishnan R	Second
21-05-2018	Vihara 2K 18	KVM College of engineering and IT	Anagha M Babu	First

Table 4.6.3.d: Other Achievements by students

SI No	Name of students	Achievement	Aurthority	Date	Photos
1	Salma Saheer	The academic project titles “ Preparation of Inundation Map of Pathanamthitta Town has been approved by the Pathammthitta Municipality”	Pathanamthitta Municipality	30-09-2020	
2	Sini Jose				
3	Mekha N P				
4	Alan Varghese	The academic project titled “ Design and Analkysisw of a Bus Terminal Building” is approved by PandalamMunicipality. The study report was handed over to the Mayor Mrs T K Sathi and got appreciated for the effort taken by the students and faculties in proposing a possible technical solution for a social issue which hinders the entire development schemes in the area	Pathanamthitta Municipality	23-06-2020	
5	Bibin Babu				
6	Gokulkrishnan R				
7	Raveena R Nair				
8	Amina Najeem	The academic project titled “ Subway- apossible solution for traffic and pedestrian problems in East Fort” is handled over to the Thiruvanthapuram Municipality Mayor Mr V K Prasanth and got appreciated for the effort taken by the students to address a social relevant issue	Thiruvanthapuram Municipality	25-06-2019	
9	Rakhi Krishna P G				
10	Bafinshaw				
11	Sulfikar A				

CRITERION 5	Faculty Information and Contributions	200
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5. FACULTY INFORMATION AND CONTRIBUTIONS (200)**Total Marks: 152.70**

The details of the faculty members are given in Table 5.a, Table 5.b and Table 5.c.

Table 5.a: Details of the Faculty Members during the Academic Year 2021-2022

SI No.	Name of the Faculty Member	Qualification			Association with the Institution	Designation	Date on which Designated as Professor/ Associate Professor	Date of Joining the Institution	Department	Specialization	Academic Research			Currently Associated (Y/N) Date of Leaving (In case Currently Associated is ("No")	Nature of Association (Regular/Contract)
		Degree (highest degree)	University	Year of attaining higher qualification							Research Paper Publications	Ph.D. Guidance	Faculty Receiving Ph.D. during the Assessment Years		
1	Dr. Bushra I	PhD	IIT Madras	2011	Professor	Professor	01/01/2018	01/01/2018	CE	Geotechnical Engineering	Nil	Nil	Nil	Y	Regular
2	Manju R	M.Tech	Cochin University of Science and Technology	2001	Assistant Professor	Assistant Professor		25/8/2021	CE	Computer Aided Structural Analysis and Design	1	Nil	Nil	Y	Regular
3	Subha Lekshmi	M E	Anna University	2015	Assistant Professor	Assistant Professor		27/01/2010	CE	Construction Engineering and Management	Nil	Nil	Nil	7/5/2022	Regular
4	Nisha Sekhar	M Tech	Anna University	2013	Assistant Professor	Assistant Professor		1/1/2015	CE	Construction Engineering and Management	Nil	Nil	Nil	Y	Regular
5	Bismi M Buhari	M Tech	Mahatma Gandhi University	2016	Assistant Professor	Assistant Professor		18/10/2013	CE	Computer Aided Structural engineering	1	Nil	Nil	Y	Regular

Table 5.a: Details of the Faculty Members during the Academic Year 2021-2022 (Contd.)

SI No.	Name of the Faculty Member	Qualification			Association with the Institution	Designation	Date on which Designated as Professor/ Associate Professor	Date of Joining the Institution	Department	Specialization	Academic Research			Currently Associated (Y/N) Date of Leaving (In case Currently Associated is (" No")	Nature of Association (Regular/Contract)
		Degree (highest degree)	University	Year of attaining higher qualification							Research Paper Publications	Ph.D. Guidance	Faculty Receiving Ph.D. during the Assessment Years		
6	Shamila Habeeb	M Tech	University of Kerala	2015	Assistant Professor	Assistant Professor		22/09/2014	CE	Structural Engineering and construction Management	Nil	Nil	Nil	7/5/2022	Regular
7	Athira Lakshmi	M E	Anna University	2019	Assistant Professor	Assistant Professor		1/6/2020	CE	Construction Engineering and Management	1	Nil	Nil	18/11/2021	Regular
8	Haleema M	M.Tech	University of Kerala	2015	Assistant Professor	Assistant Professor		24/8/2020	CE	Geo technical Engineering	Nil	Nil	Nil	30/4/2022	Regular
9	Ashna Beegum	MTech	APJ Abdul Kalam Technological University	2020	Assistant Professor	Assistant Professor		15/04/2021	CE	Structural Engineering	1	Nil	Nil	Y	Regular
10	Soniya Sony	MTech	APJ Abdul Kalam Technological University	2021	Assistant Professor	Assistant Professor		15/04/2021	CE	Geomechanics and Structures	1	Nil	Nil	7/10/2022	Regular
11	Lekshmi Nair	M.Tech	APJ Abdul Kalam Technological University	2017	Assistant Professor	Assistant Professor		25/8/2021	CE	Computer Aided Structural Engineering	1	Nil	Nil	Y	Regular
12	Fathima Shajahan	M.Tech	APJ Abdul Kalam Technological University	2021	Assistant Professor	Assistant Professor		20/4/2021	CE	Geomechanics and Structures	Nil	Nil	Nil	Y	Regular
13	Ms Dinu Ann Babu	M.Tech	APJ Abdul Kalam Technological University	2021	Assistant Professor	Assistant Professor		30/03/2022	CE	Structural Engineering	Nil	Nil	Nil	Y	Regular
14	Ms Siji V V	M E	Anna University	2020	Assistant Professor	Assistant Professor		1/4/2022	CE	Structural Engineering	Nil	Nil	Nil	Y	Regular

Table 5.b: Details of the Faculty Members during the Academic Year 2020-2021

SI No.	Name of the Faculty Member	Qualification			Association with the Institution	Designation	Date on which Designated as Professor/ Associate Professor	Date of Joining the Institution	Department	Specialization	Academic Research			Currently Associated (Y/N) Date of Leaving (In case Currently Associated is (“ No”)	Nature of Association (Regular/Contract)
		Degree (highest degree)	University	Year of attaining higher qualification							Research Paper Publications	Ph.D. Guidance	Faculty Receiving Ph.D. during the Assessment Years		
1	Dr. Bushra I	PhD	IIT Madras	2011	Professor	Professor	01/01/2018	01/01/2018	CE	Geotechnical Engineering	1	Nil	Nil	Y	Regular
2	Leena V P	M E	Anna University	2013	Assistant Professor	Assistant Professor		16/01/2014	CE	Construction Engineering and Management	2	Nil	Nil	29/9/2021	Regular
3	Subha Lekshmi	M E	Anna University	2015	Assistant Professor	Assistant Professor		27/01/2010	CE	Construction Engineering and Management	3	Nil	Nil	7/5/2022	Regular
4	Nisha Sekhar	M E	Anna University	2013	Assistant Professor	Assistant Professor		1/1/2015	CE	Construction Engineering and Management	Nil	Nil	Nil	Y	Regular
5	Bismi M Buhari	M Tech	Mahatma Gandhi University	2016	Assistant Professor	Assistant Professor		18/10/2013	CE	Computer Aided Structural engineering	2	Nil	Nil	Y	Regular
6	Shamila Habeeb	M Tech	University of Kerala	2015	Assistant Professor	Assistant Professor		22/09/2014	CE	Structural Engineering and construction Management	Nil	Nil	Nil	7/5/2022	Regular
7	Muhammed Murshid	M Tech	University of Kerala	2012	Assistant Professor	Assistant Professor		01/08/2012	CE	Hydraulics Engineering	Nil	Nil	Nil	29/5/2021	Regular

Table 5.b: Details of the Faculty Members during the Academic Year 2020-2021(Contd.)

SI No.	Name of the Faculty Member	Qualification			Association with the Institution	Designation	Date on which Designated as Professor/ Associate Professor	Date of Joining the Institution	Department	Specialization	Academic Research			Currently Associated (Y/N) Date of Leaving (In case Currently Associated is (" No")	Nature of Association (Regular/Contract)
		Degree (highest degree)	University	Year of attaining higher qualification							Research Paper Publications	Ph.D. Guidance	Faculty Receiving Ph.D. during the Assessment Years		
8	Muhammed Ashraf S	M Tech	NIT Calicut	2018	Assistant Professor	Assistant Professor	13/1/2020	CE	Offshore structures	Nil	Nil	Nil	30/4/2021	Regular	
9	Athira Lekshmi	M E	Anna University	2019	Assistant Professor	Assistant Professor	1/6/2020	CE	Construction Engineering and Management	Nil	Nil	Nil	18/11/2021	Regular	
10	Haleema M	M.Tech	University of Kerala	2015	Assistant Professor	Assistant Professor	24/8/2020	CE	Geo technical Engineering	2	Nil	Nil	30/4/2022	Regular	
11	Ms Sonia Sony	M.Tech	APJ Abdul Kalam Technological University	2020	Assistant Professor	Assistant Professor	15/04/2021	CE	Geomechanics and Structures	Nil	Nil	Nil	7/10/2022	Regular	
12	Ms Ashna Beegum	M.Tech	APJ Abdul Kalam Technological University	2020	Assistant Professor	Assistant Professor	15/04/2021	CE	Structural Engineering	1	Nil	Nil	Y	Regular	
13	Ms Fathima Shajahan	M.Tech	APJ Abdul Kalam Technological University	2020	Assistant Professor	Assistant Professor	20/4/2021	CE	Geomechanics and Structures	1	Nil	Nil	17/1/2022	Regular	

Table 5.c: Details of the Faculty Members during the Academic Year 2019-2020

SI No.	Name of the Faculty Member	Qualification			Association with the Institution	Designation	Date on which Designated as Professor/ Associate Professor	Date of Joining the Institution	Department	Specialization	Academic Research			Currently Associated (Y/N) Date of Leaving (In case Currently Associated is (" No")	Nature of Association (Regular/Contract)
		Degree (highest degree)	University	Year of attaining higher qualification							Research Paper Publications	Ph.D. Guidance	Faculty Receiving Ph.D. during the Assessment Years		
1	Dr. Bushra I	PhD	IIT Madras	2011	Professor	Professor	01/01/2018	01/01/2018	CE	Geotechnical Engineering	Nil	Nil	Nil	Y	Regular
2	Leena V P	M E	Anna University	2013	Assistant Professor	Assistant Professor		16/01/2014	CE	Construction Engineering and Management	Nil	Nil	Nil	29/9/2021	Regular
3	Dr.Rajeev Kumar P	Ph D	IIT Bombay	2002	Professor	Professor	29/7/2019	29/7/2019	CE	Geotechnical Engineering	3	Nil	Nil	17/6/2020	Regular
4	Subha Lekshmi	M E	Anna University	2015	Assistant Professor	Assistant Professor		27/01/2010	CE	Construction Engineering and Management	2	Nil	Nil	7/5/2022	Regular
5	Nisha Sekhar	M E	Anna University	2013	Assistant Professor	Assistant Professor		1/1/2015	CE	Construction Engineering and Management	Nil	Nil	Nil	Y	Regular
6	Bismi M Buhari	M Tech	Mahatma Gandhi University	2016	Assistant Professor	Assistant Professor		18/10/2013	CE	Computer Aided Structural engineering	3	Nil	Nil	Y	Regular
7	Shamila Habeeb	M Tech	University of Kerala	2015	Assistant Professor	Assistant Professor		22/09/2014	CE	Structural Engineering and construction Management	1	Nil	Nil	7/5/2022	Regular

Table 5.c: Details of the Faculty Members during the Academic Year 2019-2020(Contd.)

SI No.	Name of the Faculty Member	Qualification			Association with the Institution	Designation	Date on which Designated as Professor/ Associate Professor	Date of Joining the Institution	Department	Specialization	Academic Research			Currently Associated (Y/N) Date of Leaving (In case Currently Associated is (“ No”)	Nature of Association (Regular/Contract)
		Degree (highest degree)	University	Year of attaining higher qualification							Research Paper Publications	Ph.D. Guidance	Faculty Receiving Ph.D. during the Assessment Years		
8	Muhammed Murshid	M Tech	University of Kerala	2012	Assistant Professor	Assistant Professor		01/08/2012	CE	Hydraulics Engineering	1	Nil	Nil	29/5/2021	Regular
9	Athira S Mohan	M Tech	APJ Abdul Kalam Technological University	2018	Assistant Professor	Assistant Professor		01/08/2019	CE	Structural Engineering and construction Management	0	Nil	Nil	9/5/2020	Regular
10	Athulya Sabu	M Tech	APJ Abdul Kalam Technological University	2019	Assistant Professor	Assistant Professor		14/08/2019	CE	Structural Engineering and construction Management	0	Nil	Nil	2/5/2020	Regular
11	Shalu Thomas	M Tech	APJ Abdul Kalam Technological University	2018	Assistant Professor	Assistant Professor		18/7/2018	CE	Environmental Engineering	0	Nil	Nil	31/7/2019	Regular
12	Greeshma Mathews	M Tech	APJ Abdul Kalam Technological University	2018	Assistant Professor	Assistant Professor		18/7/2018	CE	Structural Engineering and Construction Management	0	Nil	Nil	31/7/2019	Regular
13	Muhammed Ashraf S	M Tech	NIT Calicut	2018	Assistant Professor	Assistant Professor		13/1/2020	CE	Offshore structures	2	Nil	Nil	30/4/2021	Regular
14	Athira Lekshmi	M E	Anna University	2019	Assistant Professor	Assistant Professor		1/6/2020	CE	Construction Engineering and Management	0	Nil	Nil	18/11/2021	Regular

5.1. Student-Faculty Ratio (SFR) (20)

Total Marks: 16

No. of UG Programs in the Department (n): 1

No. of PG Programs in the Department (m): NIL

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 department = UG1 + UG2 + UG3 + PG1 + PG2

F = Total number of faculty members in the department (excluding first year faculty).

$$\text{SFR} = \text{Student Faculty Ratio} = \frac{\mathbf{S}}{\mathbf{F}}$$

The Student – Faculty Ratio (SFR) for the assessment years are given in Table 5.1.

Table 5.1: Student – Faculty Ratio

Year	CAY (2021-22)		CAYm1 (2020-21)		CAYm2 (2019-20)	
	Sanction Intake	Actual admitted through lateral entry students	Sanction Intake	Actual admitted through lateral entry students	Sanction Intake	Actual admitted through lateral entry students
2nd Year	60	1	60	4	60	2
3rd Year	60	4	60	2	60	5
4th Year	60	2	60	5	60	0
Sub-Total	180	7	180	11	180	7
Total number of Students in the Department(S)	187		191		187	
No. of Faculty in the Department (F)	11		10		10	
Student Faculty Ratio (SFR)	17		19.1		18.7	
Average SFR = $\frac{\text{SFR1} + \text{SFR2} + \text{SFR3}}{3}$	18.27					

Average Assessment for these assessment years: 18.27 < 20

5.1.1. The Information about the Regular and Contractual Faculty

The information about regular and contractual faculty are given in Table 5.1.1

Table 5.1.1: information about the regular and contractual faculty

Year	Total number of regular faculty in the department	Total number of contractual faculty in the department
CAY	11	0
CAYm1	10	0
CAYm2	10	0

5.2. Faculty Cadre Proportion (25)

Total Marks: 20

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

F1: Number of Professors required = $1/9 \times$ Number of Faculty required to comply with 20:1 Student-Faculty ratio based on no. of students (N) as per 5.1.

F2: Number of Associate Professors required = $2/9 \times$ Number of Faculty required to comply with 20:1 Student-Faculty ratio based on no. of students (N) as per 5.1.

F3: Number of Assistant Professors required = $6/9 \times$ Number of Faculty required to comply with 20:1 Student-Faculty ratio based on no. of students (N) as per 5.1.

The details of faculty cadre proportions for the assessment years are given in Table 5.2.

Table 5.2: Faculty Cadre Proportions

Year	Professors		Associate Professors		Assistant Professors	
	Required F1	Available	Required F2	Available	Required F3	Available
CAY	1	1	2	0	6	10
CAYm1	1	1	2	0	6	9
CAYm2	1	2	2	0	6	8
Average	RF1=1	AF1=1.33	RF2=2	AF2=0	RF3=6	AF3=9

$$\text{Cadre Ratio Marks: } \left[\left[\frac{AF1}{RF1} \right] + \left[\frac{AF2 \times 0.6}{RF2} \right] + \left[\frac{AF3 \times 0.4}{RF3} \right] \right] \times 12.5$$

$$\text{Cadre Ratio Marks} = \{(1/1) + (0/2) \times 0.6\} + (9/6 \times 0.4) \times 12.5 = 20$$

5.3. Faculty Qualification(25)**Total Marks: 13.70**

$FQ = 2.5 \times [(10X + 4Y)/F]$ where X is no. of regular faculty with Ph.D., Y is no. of regular faculty with M. Tech. F is no. of regular faculty required to comply 20:1 Faculty Student ratio (no. of faculty and no. of students required are to be calculated as per 5.1).

The details of faculty qualification for the assessment years are given in Table 5.3.

Table 5.3: Faculty Qualification

Years	X	Y	F	$FQ=2.5 \times [(10X + 4Y)/F]$
CAY	1	10	9	13.89
CAYm1	1	9	9	12.78
CAYm2	2	8	9	14.44
Average Assessment				13.70

5.4. Faculty Retention (25)**Total Marks: 15**

No. of regular faculty members in CAYm2=10, CAYm1=10 and CAY=11

The guidelines of mark distribution for faculty retention are as given below.

Mark Distribution for Faculty Retention

Item	Marks
<i>>=90% of required Faculty members retained during the period of assessment keeping CAYm2 as base year)</i>	25
<i>>=75% of required Faculty members retained during the period of assessment keeping CAYm2 as base year)</i>	20
<i>>=60% of required Faculty members retained during the period of assessment keeping CAYm2 as base year)</i>	15
<i>>=50% of required Faculty members retained during the period of assessment keeping CAYm2 as base year)</i>	10
<i><50% of required Faculty members retained during the period of assessment keeping CAYm2 as base year)</i>	0

The details of faculty retention for the assessment years are given in Table 5.4

Table 5.4: Faculty Retention

Year	Total Number of faculty	No of faculties retained	Percentage of Retention (%)
CAY	10	7	$(7/10) \times 100 = 70$
CAYm1	10	5	$(5/10) \times 100 = 50$
Average % Retention			60

5.5. Innovations by the Faculty in Teaching and Learning (20)**Total Marks: 20**

For effective learning, the department has implemented many aspects of innovation in the teaching learning process, such as question and answer method, Flipped classrooms, PowerPoint presentations, group discussions, assignments, seminars, NPTEL videos, Google class room, reference to library materials via Linways platform, hands-on programming language training, tutorial classes, classes engaged by adjunct/visiting/guest faculty to fill the curriculum gap and Morning test.

Faculty members participate in a faculty development programme related to the course they teach to expertise in that course and improve their ability to ensure learning among students.

E-learning facilities are used to distribute NPTEL videos to students. Faculty members create lecture notes for their assigned course and present the material in class and in Learning Management System. Students are counseled by their advisers to identify their academic concerns and are frequently guided to improve their performance.

5.5. A Work made available on institute website:

Apart from classroom instruction, the course materials are available on the college website through learning management system for students to use for optimum learning. Faculty members have developed e-learning materials. For the efficient delivery of both theory and practical courses, an online learning site has been established. The college website provides access to this platform for students, faculty, and parents. They can go to the portal whenever they want. Each course includes module wise course materials and a question bank. Faculty can also submit all materials relevant to the course, such as PPTs, graphical representations, reference books, and so on, and students can readily access them. Also, students can able to submit the assignment, quiz, online test through portal. Fig. 5.5.a shows the tile for accessing portal from Musaliar college website.

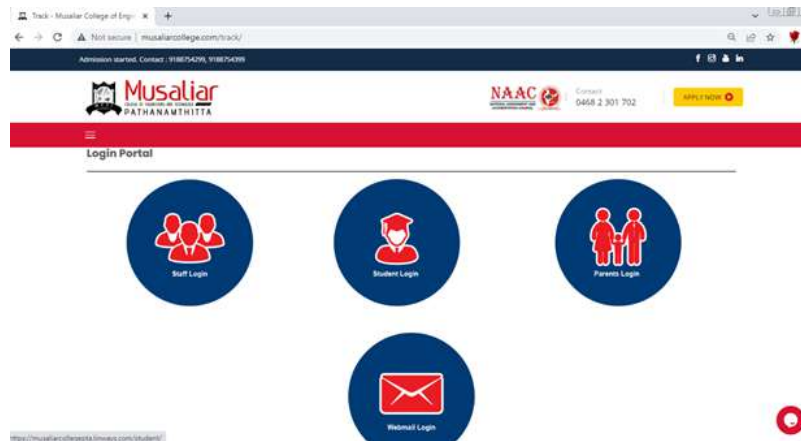


Fig 5.5.a: Link for accessing college portal from website

Content for Theory courses:

- Handouts
- Power Point Presentation Slides
- Question Bank and e-books
- Assignment and quizzes

Fig. 5.5.b shows the screenshot from student's portal for course material.

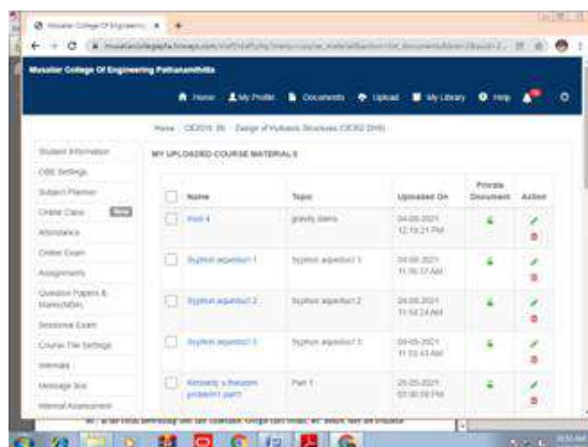


Fig 5.5.b: Course materials on institute portal

NPTEL-based learning:

Faculties are encouraged to enroll in an NPTEL program/subject online certification course in their own areas of teaching and research interests to improve their teaching abilities and knowledge. Bright students are also urged to enroll in the NPTEL certification course in order to improve their comprehension of courses and also for getting honors degree along with B-tech graduation certificate. Students get access to all of the NPTEL video lectures via

a central digital library. Additionally, interested students are also encouraged to register for NPTEL certification courses for understanding the potential concepts much effectively. Fig 5.5.c and 5.5.d shows the sample NPTEL certificate.



Fig 5.5.c: NPTEL faculty certificate



Fig 5.5.d: NPTEL student certificate

Professional Society Chapter/Association:

Various professional society and association chapters are formed to help the students in technical and co-curricular activities. Table 5.5.a lists out the professional society and association membership in the department. Various programs for course enrichment were conducted under these associations.

Table 5.5.a: Professional Society/Association Membership

SI No:	Name Society /Association
1	Institute of Engineers India (IEI) Chapter
2	Indian Society for technical education (ISTE)
3	Association of civil engineers- MCET

National Digital Library (NDL):

NDL is a project under Ministry of Education, Govt. of India. It is a digital repository containing textbooks, articles, videos, audio books, lectures, fiction and all other kinds of learning media. The NDLI provides free of cost access to many books in the Indian languages & English. NDLI is a virtual repository of learning resources which is not just a repository with browse facilities but provides a host of services for the learner community. Musaliar College of Engineering & Technology is a part of the NDLI Club. All interested students and faculties and employers of MCET can enroll themselves as members of MCET NDLI club using the passkey given below.

<https://club.ndl.iitkgp.ac.in/sign-up>



Fig 5.5.e: NDL Club registration certificate

Additional Courses:

Considering the feedback from the alumnus, faculties and employers, curriculum gaps were identified and ADD ON courses were conducted in the following academic year such as AUTOCAD, STAAD and PRIMEVERA workshop, Survey Camp etc. based on surveying related courses. Fig. 5.5.f shows a sample photo from the survey camp conducted for 2016-2020 B-tech batches.



Fig 5.5.f: Photo taken during survey camp 2020

Placement Training:

Considering the feedback from the students, alumnus, faculties and employers institution is organizing placement training program for all students. Fig.5.5.g is a picture taken during the placement program.



Fig 5.5.g: Sample of placement training program conducted

Maintenance of Quality Course files:

In all academic year staff handling courses are directed to prepare quality course files with all relevant documents. Documents such as course syllabus, course information sheet, Course outcome assessment and methodology sheet, model lesson plan , lecture note, question bank, gaps and plans, content beyond syllabus, assignment topic, assignment sample etc. Details of course file content listed in Table 5.5.b. These quality course files made available in the department as the reference for upcoming academic years and also this course files are subjected to internal audit by IQAC.

Table 5.5.b: Lists of contents in course files

Sl. No.	Description
1.	Institute and Department Vision, Mission Statements.
2.	Department PO, PSO and PEO statements.
3.	Course Data Sheet with syllabus, course objectives, course outcomes, PO/PSO Mapping, Mapping-Justification, Course pan, Gaps in Syllabus and content beyond svllabus
4.	Time table
5.	Assignment Questions, Model answer and evaluation sheet.
6.	Tutorial Details if applicable.
7.	Series I and Series II question papers, answer key and model answer sheets (Best. Middle and least)
8.	Final attendance
9.	Internal Marks
10.	University Exam question paper
11.	University Exam Feedback
12.	University examination results
13.	CO –PO Mapping and attainment
14.	Notes

Employability skill development:

For enhancing employability skills following measures are taken;

- Foundation Course (ADD on Course) in AutoCAD, STAAD Pro, PRIMVERA etc.
- Workshops/ FDP's are attended by the faculty to upgrade themselves.
- Training in different course through visiting faculties
- Industrial visits/ Industrial tours/Internships/MOU.
- Learning through surveys and development programs conducted by Government agencies

Table 5.5.c, Table 5.5.d and Table 5.5.e shows the details of MOU's, Internships and Industrial visits/ Industrial tours respectively.

Table 5.5.c: Details of MOU's

Sl. No.	Name of event	Date	Organization
1	MOU	23/02/2023	Asia Infrastructure Advisory Services Private Limited
2		15/12/2021	Kerala Coastal development corporation
3		14/09/2021	Baker associates and consultants, Engineering Consultancy house, #E 107, Baker square, Pattimattom, Kerala
4		8/10/2018	M.P.V.H.S.S Kumbazha, Pathanamthitta
5		17/09/2015	Managing Director, PAN Environ India Private limited
6		12/8/2014	District Collector, Alappuzha

Table 5.5.d: Details of Internships

Sl No	Name of event	Date	Location
1	Internship	7/04/2022-20/4/2022	Mahima Constructions, Pathanamthitta
2		7/04/2022-20/4/2022	Jissjith Trading & Contracting, Pathanamthitta
3		22/01/2021-30/01/2021	Public works department, Kerala
4		9/7/2019-23/7/2019	Perfect Builders
5		9/7/2019-24/7/2019	Neema Builders

Table 5.5.d: Details of Internships (Contd.)

Sl No	Name of event	Date	Location
6		10/7/2019-26/7/2019	Square Arc Builders
7		10/7/2019-28/7/2019	Torc infotech

Table 5.5.e: Details of Industrial visits

Sl. No.	Name of event	Date	Location
1	Industrial visit	20/11/2018	Kollam harbour
2		28/4/ 2019	Manneth Construction, Goa
3		4/5/ 2019	Mattupetti Dam, Munnar
4		12/5/2019	Idukki Arch dam
5		19/5/2019	Banasura Sagar Dam, Wayanad
6		31/5/2022	Pile load testing at Pathanamthitta
7		25/6/2022	Tenmala Dam

Table 5.5.f and Table 5.5.g show the details of additional courses and details of surveys and development programs conducted by Government agencies

Table 5.5.f: Details of Additional Courses

Sl. No.	Academic Year	Additional course	Institution	Date
1	2020-2021	Training Programme on AutoCAD Essentials	Autodesk and NTS Nexus Technical solutions	30 th November to 4 th December 2020
2	2019-2020	One day training program on Total station equipment	TISAT institute, Pathanamthitta	20 th January 2020
3		Workshop on STAAD And PRIMAVERA	CADD Centre, Pathanamthitta	16 th -20 th January 2020
4	2018-2019	Workshop on AUTOCAD	CADD Centre, Pathanamthitta	26 th July to 30 th July 2019
5		Workshop on BIM (Building Information Modelling)	Innovian Technologies In Connection with IIT Varanasi	5 th -6 th April 2019

Table 5.5.f: Details of Additional Courses (Contd.)

Sl. No.	Academic Year	Additional course	Institution	Date
6	2018-2019	Total Station Camp and Training	ALG International Institute of Technology, Cochin	30 th march – 1 st April 2019
7		Workshop on STAAD PRO and PRIMAVERA	CADD Centre, Pathanamthitta	30 th January – 1 st February 2019

Table 5.5.g: Details of surveys and development programs conducted by Government agencies

Sl. No.	Academic Year	Work	Government Authority
1	2019-2020	Rebuild Kerala works- Survey using total station	Ranni Gramapanchayat
2		Preparation of Inundation Map for Pathanamthitta District	Pathanamthitta Municipality
3		Proposal For New Bus Stand for Pandalam Municipality	Pandalam Municipality
4	2018-2019	Data Collection Survey of Flood Affected Area Under Vadasserikkara Grama Panchayat	Vadasserikkara Grama Panchayat
5		Subway- A possible solution for traffic and pedestrians problems in East fort	Thiruvanthapuram Municipal Corporation

5.5.B. Statements of clear goals, use of appropriate methods, significance of results, effective presentation and reflective critique:

Faculty members use a variety of new content distribution methods to deliver courses and encourage active learning among students. Table 5.5.h shows the delivery and description process.

Table 5.5.h: Lists the forms of delivery and a description of the process

Sl. No.	Modes of content delivery	Description of the Process
1	Lecture using slide and multimedia presentation	Students understand the concept easily through the use of multimedia, which helps them to be more attentive. Animation videos and presentation slides improve the students' learning by giving ideas virtually about the particular topic. Students learn the content in a more meaningful way by using different media elements.

Table 5.5.h: Lists the forms of delivery and a description of the process (Contd.)

Sl. No.	Modes of content delivery	Description of the Process
2	Lecture with quiz	Immediate reply to the questions. Quiz is conducted then and there in the class room to assess the understanding level of the lecture
3	Assignment / Tutorial	Helps the students to have deeper understanding in the course and to work independently. Case studies improve critical thinking and student's awareness on contemporary issues. Analytical skills are improved through tutorials. Students can meet the faculty members to clarify their doubt during the break and evening hours.
4	Practical	Students understand the theoretical concepts more clearly through open ended experiments.
5	Industrial visit	Demonstration of real-time working modules, machineries, equipment, etc. in the industry give the exposure about the technical knowledge and Industrial environments for the students.
6	Group discussion	Group discussions on current topics related to the courses help the students to update the knowledge and improve communication.
7	Industrial training	Industrial training helps the students by giving a idea about the actual practical condition.
8	Technical seminars/ Workshops / Guest lectures	Seminars / Workshops / Guest lecturers help the students to enhance their technical knowledge, to improve communication skills and continue lifelong learning.
9	Video lecture and presentations	Students effectively understand the concepts from domain experts through Video lecture of IIT professor available from various sources such as NPTEL, Open courseware etc. Video presentations effectively communicate the working of actual engineering solutions and their impact.
10	Seminar	Students can improve their presentation skill and they can also develop their communication skills by participating in seminars which are conducted by faculties on their respective courses.
11	Still model / Prototype, /Poster Making	Students get actual idea of a concept or a structure by preparing still model/prototype making/by making poster related to course concerned.

*Process to improve Teaching/Learning process***Table 5.5.i: Process to improve teaching learning**

Sl. No.	Process to improve Teaching/Learning	Description of the Process
1	Interactive class room	Seminar presentation by students on topics related to curricular/co-curricular activities
2	Recording observation	Recording the observations in the laboratory manual and recording the results in the record notes
3	Analysis of data	Data analysis of conducted experiments review through evaluation sheets
4	Effectively conducting experiments	Providing laboratory manual with advanced/ design-based experiments. Open ended experiments in laboratory provide opportunity for the students to conduct the experiments in their own
5	Collaborative learning	Peer learning through project, design project activities, industrial training, assignment, association activities by combining bright and weak students.
6	Encouraging bright students	Improving the standard of bright students by providing well prepared teaching materials from the faculty members course files, recommendations of reference or text books, e-resources, journals, etc.
7	Assisting weak students	Assisting weak students through coaching classes, remedial measures, more practice in university questions and continuous monitoring of the students by conducting various examinations.
8	Video lectures	Power point presentations/video lectures related to the curriculum or content beyond syllabus topics as per the course plan schedule.
9	Assignments	Giving assignments to the students in groups in terms of case studies, recent trends, latest technology which improve the students analytical and critical thinking abilities
10	Tutorials	Preparing tutorial materials and conducting effective tutorial classes for students.
11	Self-learning facilities	College library, Digital library, Department library, NPTEL lectures and IIT spoken tutorials.
12	Co-curricular activities	Conducting workshops, seminars, conferences, guest lectures, short term courses and value-added courses.

5.5.C. Work reproducible and developed further by other scholars:

Faculty members create and publish course materials such as presentations, question banks, and other items to social networking sites such as like Slideshare, Google classrooms and YouTube videos. As a result, they are open to peer review and discussion, and they can be replicated and developed further by other scholars.

YouTube video presentations:

The YouTube video presentation for the courses are uploaded in the YouTube channel of the faculty members and the link is available in the learning management system of the college. So, that the students can watch the video class from the LMS directly. It is an easy platform for effective learning in a simple manner.

It is a good platform for the students to review the missed lectures and clarify their doubts individually.

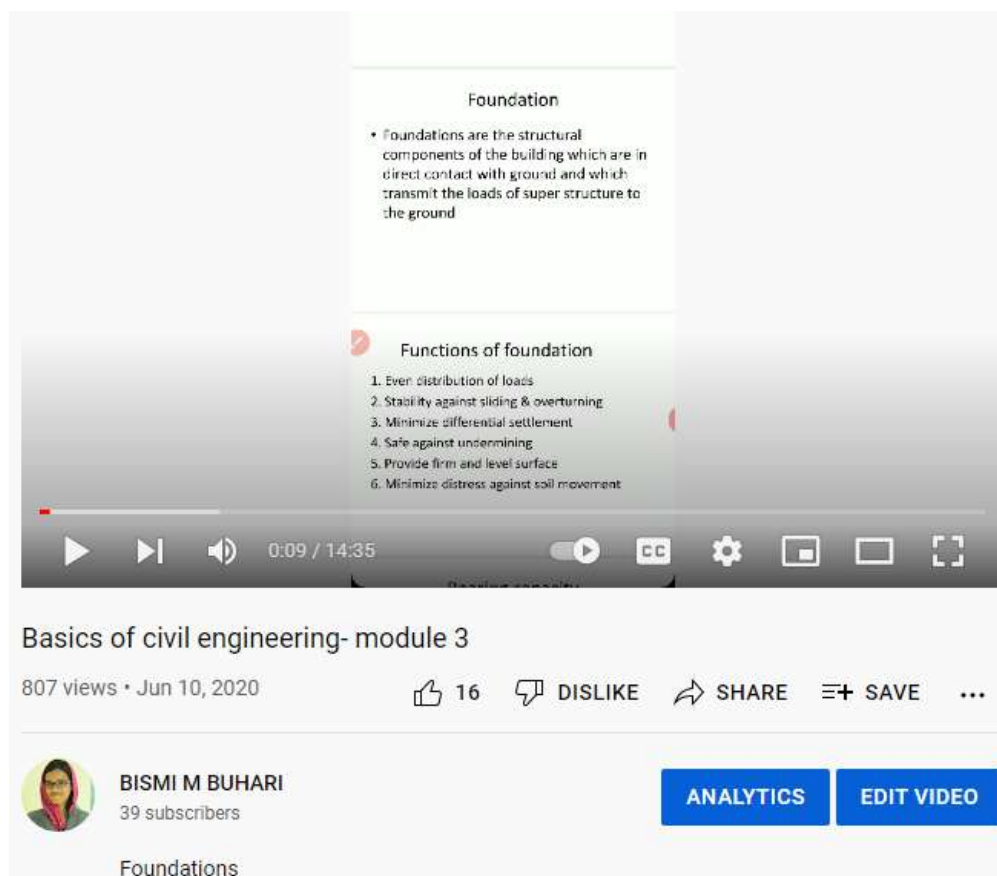


Fig 5.5.h: YouTube Video sample

YouTube video sample link: <https://youtu.be/SwGFRPUw2O8>

Google Classroom:

Google Classroom practice exposes students to the technology revolution by uploading question banks, study materials, and assignments for students to access at their convenience. The absent students might seek access to the classroom materials from their locations.

Collaborative learning:

Collaborative learning methods are followed by grouping the batch members in the projects and also in laboratory sessions mingling equal number of weak and bright students, which improves the knowledge of weak students. Open ended and content beyond syllabus experiments are provided to improve self-learning.

Peer Group Learning and Project based learning methods are additionally adopted:

Peer Group Learning:

Students are grouped in a mixed ratio of bright and weak in coaching sessions, project and assignment activities, which helps the students to create interest in their learning and show improvement in the examinations

Project based learning:

During the period of seventh, and eighth semesters application-based projects are given to the students which gives exposure to practical knowledge.

5.6. Faculty as Participants in Faculty development/training activities/STTPs (15)**Total Marks: 15**

The details of faculty members who have attended Faculty development / training activities / STTPs during the assessment years are given in Table 5.6.a.

Table 5.6.a: Faculty as participants in Faculty development/ training activities

Name of the faculty	CAY m1 2020-21	CAYm2 2019-20	CAYm3 2018-19
Bushra I	3	3	2
Nisha Sekhar	3	3	3
Subhalekshmi	3	3	3
Bismi M Buhari	5	5	3
AthiraLekshmi	3	3	-
Haleema M	3	-	-
AshnaBeegum	3	-	-

Table 5.6.a: Faculty as participants in Faculty development/ training activities (Contd.)

Name of the faculty	CAY m1 2020-21	CAYm2 2019-20	CAYm3 2018-19
Soniya Sony	3	-	-
Leena V P	3	3	3
Shamila Habeeb	3	3	3
Muhammed Murshid	3	3	3
Muhammed Ashraf	3	3	3
Sum	38	29	20
RF= Number of Faculty required to comply with 20:1	9.35	9.55	9.35
Assessment =3*(Sum/0.5 RF) (marks Limited to 15)	24.39	18.22	12.83
Average assessment over three years (Marks limited to 15) (2018-19 to 2020-21) =55.44/3=18.48			

5.7. Research and Development (30)**Total Marks: 22****5.7.1. Academic Research (10)****Institute Marks: 10****List of book/ Chapter Published**

Table 5.7.1.a shows the list of book/chapter published

Table 5.7.1.a: List of book/ Chapter Published

Sl No	Name of Author	Name of Book /Chapter	Details of Publication
1	Dr. Bushra I	Electro-osmosis: A Review from the Past (Chapter)	Springer, September 2020, DOI:10.1007/978-981-15-6237-2_36, In book: Problematic Soils and Geoenvironmental Concerns, Proceedings of IGC 2018 (pp.433-442)

Table 5.7.1.b shows the list of paper publication.

Table 5.7.1.b: List of paper publications

Sl. No.	Name of the Faculty/Guide	2020-21	2019-20	2018-19
1	Subha Lekshmi	3	2	0
2	Bismi M Buhari	2	3	1

Table 5.7.1.b: List of paper publications (Contd.)

Sl. No.	Name of the Faculty/Guide	2020-21	2019-20	2018-19
3	Athira Lakshmi A	0	0	0
4	Haleema M	2	0	0
5	AshnaBeegum	1	0	0
6	Leena V P	2	0	0
7	Shamila Habeeb	0	1	1
8	Muhammed Murshid	0	1	0
9	Muhammed Ashraf	0	2	0
10	Dr. Rajeev Kumar P	0	3	0
TOTAL		10	12	2

- Dr. Bushra I, Electro-osmosis: A Review from the Past (Chapter), Springer, September 2020, DOI:10.1007/978-981-15-6237-2_36, In book: Problematic Soils and Geoenvironmental Concerns, Proceedings of IGC 2018 (pp.433-442)
- Subha Lekshmi, 2021 July, Impact of sand mining on Periyar river basin, International Journal of Engineering Research and Technology (IJERT), ISSN: 2278-0181, Vol.10. Issue 07.
- Subha Lekshmi, 2021 July, Eco friendly light weight concrete using PET aggregate, International Research Journal of Engineering and Technology (IRJET), e-ISSN: 2395-0056 p-ISSN: 2395-0072
- Subha Lekshmi, 2020 August, Elevated Highway: A Solution to Developmental Problems in Pathanamthitta, International Research Journal of Engineering and Technology (IRJET), e-ISSN: 2378-0181 Vol. 09, Issue 08.
- Subha Lekshmi, 2020 June, Water quality analysis of river Pampa using WQI method and GIS mapping, International Journal of Engineering Research and Technology (IJERT), ISSN: 2278-0181, Vol.9. Issue 06.
- Subha Lekshmi, 2020 April, Exploring the Innovative use of Dredged Material in Construction, International Research Journal of Engineering and Technology (IRJET), e-ISSN: 2278-0181, Vol.9, Issue 04.
- Bismi M Buhari, 2021 July, Design and analysis of flyover, International Journal of Engineering Research and Technology (IJERT), ISSN: 2278-0181, Vol.1. Issue 07.
- Bismi M Buhari, 2021 July, Planning of flyover- A solution for traffic congestion at Kayamkulam-Haripad road, International Journal of Engineering Research and Technology (IJERT), ISSN: 2278-0181, Vol.1. Issue 07.
- Bismi M Buhari, 2020 March, Design and analysis of a bus terminal building, International Journal of Engineering Research and Technology (IJERT), ISSN: 2278-0181, Vol.9. Issue 03.

- Bismi M Buhari, 2020 February, Design Planning of new bus terminal, Pandalam, International Journal of Engineering Research and Technology (IJERT), ISSN: 2278-0181, Vol.9. Issue 02.
- Bismi M Buhari, 2020 February, Splitting tensile strength of ternary blended concrete containing phosphogypsum and silica fume, International Journal of Engineering Research and Technology (IJERT), ISSN: 2278-0181, Vol.9. Issue 02.
- Bismi M Buhari, June 2019, Influence of natural coagulants in turbid water treatment, International Research Journal of Engineering and Technology (IRJET)), e-ISSN: 2395-0056, p-ISSN: 2395-0072, Vol.6. Issue 06.
- Haleema M, 2021 July, Sewage treatment plant at Kayamkulam railway station, International Journal of Engineering Research and Technology (IJERT), ISSN: 2278-0181, Vol.1. Issue 07.
- Haleema M, 2021 July, Sustainable particle board, International Journal for advances in Engineering and management (IJAEM), ISSN: 2935-5252, Vol.3. Issue 07.
- AshnaBeegum, 2021 July, Construction of water table contour map and geo hydrological studies in Pathanamthitta using GIS techniques, International Journal of Engineering Research and Technology (IJERT), ISSN: 2278-0181, Vol.1. Issue 07.
- Leena V P, 2020 September, Waste water treatment in Musaliar College, International Journal of Engineering Research and Technology (IJERT), ISSN: 2278-0181, Vol.9. Issue 9.
- Leena V P, 2021 July, Waste Design of parking lanes at Pathanamthitta, International Research Journal of Engineering and Technology (IRJET), e-ISSN: 2395-0056 p-ISSN: 2395-0072
- Shamila Habeeb, 2020 June, Attainment of sustainability through green auditing-A case study of Musaliar Institute Pathanamthitta, International Journal of Engineering Research and Technology (IJERT), ISSN: 2278-0181, Vol.9. Issue 06.
- Shamila Habeeb, 2019 May, Partial Replacement of Cement With Hospital Waste Ash In Concrete, Journal of Emerging Technologies and Innovative Research (JETIR), ISSN-2349-5162, Vol.6, Issue 05.
- Muhammed Murshid A, 2020 July, Preparation of Inundation Map of Pathanamthitta Municipality, International Research Journal of Engineering and Technology (IRJET), e-ISSN: 2395-0056 p-ISSN: 2395-0072
- Muhammed Ashraf S, 2020 August, Floating Concrete Using Thermocol Beads and Egg Shell Powder, International Research Journal of Engineering and Technology (IRJET), e-ISSN: 2395-0056 p-ISSN: 2395-0072, Vol.07, Issue 08.
- Muhammed Ashraf S, 2020 July, Design and Analysis of Chamakkavu Bridge, International Research Journal of Engineering and Technology (IRJET), e-ISSN: 2395-0056 p-ISSN: 2395-0072
- Dr. Rajeev Kumar P, 2020 June, Structural Analysis and Design of an Auditorium using Extended-3D Analysis of Building System, International Journal of Engineering Research and Technology (IJERT), ISSN: 2278-0181, Vol. 9 Issue 06.
- Dr. Rajeev Kumar P, June 2020, Structural Analysis and Redesign of a Cable-Stayed Suspension Bridge across Achankovil River in Kerala, International Journal of Engineering Research and Technology (IJERT), ISSN: 2278-0181, Vol. 9 Issue 06.

- Dr. Rajeev Kumar P, March 2020, Role of Agricultural Wastes in Construction Industry, International Journal of Engineering Research and Technology (IJERT), ISSN: 2278-0181, Vol. 9 Issue 03.

5.7.2. Sponsored Research (5)**Institute Marks: 5**

Sl. No	Duration	Project Title	Funding Agency & Scheme	Amount
2020-2021 AY				
NIL				
2019-2020 AY				
	01.08.2019 - 28.02.2020	Sand auditing and river Mapping of Achencovil river (Alappuzha)	Institute of Land & Disaster Management (ILDm), Thiruvananthapuram	Rs 1325848
2018-2019 AY				
	01.08.2018 - 30.07.2019	Sand auditing and river Mapping of Achencovil river (Pathanamthitta)	Institute of Land & Disaster Management (ILDm), Thiruvananthapuram	Rs 988768
Total Amount				Rs 2314616

5.7.3. Development activities (10)**Institute Marks: 10****5.7.3. A. Product Development:****Best Main project:**

Table 5.7.3.a lists out the best project in assessment years.

Table 5.7.3.a: Best project in assessment years.

Sl. No.	Batch	Student Name	Project Title
1.	2015-2019	Athira D Nair Anjana Krishna Bhavya Prasannan Godsy Jose	Study On Suitability of Sedimented Soil in Flooded Area of Kerala for Brick Production
		Kailas Mohan Vivek Radhakrishnan Vivin Samuel Rithu Rachel Roy	Assessment Of Groundwater Quality in Pathanamthitta District Using Gis
		Reshma R Rijo George ShiniBala Steffy Angel Sunny	Flood Mapping Using Gis
2.	2016-2020	Mekha N P Sini Jose Salma Saheer	Preparation Of Inundation Map for Pathanamthitta District
		Alan Varghese Bibin Babu Gokul Krishnan G Raveena R Nair	Proposal For New Bus Stand for Pandalam Municipality
		Adharsh A Anju Aji AswathyShaji Noufal N	Attainment Of Sustainability Through Green Audit- A Case Study AtMcet
3.	2017-2021	Anamika Chandra Sandra K Shaji Simi Monachen Vishnu K	Construction Of Water Table Contour Mapping and Geo Hydrological Studies In Pathanamthitta Using GIS Techniques
		ShahanaShaji Veni Gayatri Sangeetha Sanal	Flood Hazard Mapping in Ranni
		Abiah Alex Sarath R Sasi Divya S Anil Jyothish Kumar	Impact Of Sand Mining on Periyar River Basins

5.7.3. C. Instructional materials

Instructional materials includes: lab manuals, permanent projector, NPTEL videos and PPTs for effective content delivery by faculty members. Table 5.7.3.b shows the lab manuals available in the department.

Table 5.7.3.b: Best project in assessment years.

Sl No	Scheme	Courses	Availability of Manual
1	2015	CE110-Civil Engineering Workshop	Soft copy as well as hard copy is available
		CE231-Civil Engineering Drafting Lab	
		CE232-Materials Testing Lab I	
		CE331-Materials Testing Lab II	
		CE334-Computer Aided Civil Engineering Lab	
		CE234-Fluid Mechanics Lab	
		CE333-Geotechnical Engineering Lab	
		CE431-Environmental Engineering Lab	
		CE233-Surveying Lab	
		CE332-Transportation Engineering Lab	
2	2019	ESL 120- Civil and Mechanical Workshop	Soft copy as well as hard copy is available
		CEL201-Civil Engineering Planning and Drafting Lab	
		CEL 202- Material Testing Lab I	
		CEL 331- Material Testing Lab II	
		CEL 334- Civil Engineering Software Lab	
		CEL 204- Fluid Mechanics Lab	
		CEL 333- Geotechnical Engineering Lab	
		CEL 411- Environmental Engineering Lab	
		CEL 203- Survey Lab	
		Cel332- Transportation Engineering Lab	

5.7.4. Consultancy (from Industry) (5)**Institute Marks: 2**

The details of Consultancy within the department during the assessment years are given in Table 5.7.4.a and Table 5.7.4.d.

Table 5.7.4.a: Details of Consultancy Work 2020-2021 (CAYm1)

Project Title	Duration	Funding Agency	Amount (Rs.)
Compressive strength of concrete	01/08/2020-30/07/2021	Consultancy work from public and private sector	112337
Test on steel	01/08/2020-30/07/2021	Consultancy work from public and private sector	7872
Soil test	01/08/2020-30/07/2021	Consultancy work from public and private sector	15748
Soil test (field density)	01/08/2020-30/07/2021	Consultancy work from public and private sector	2360
Non-destructive test-rebound hammer	01/08/2020-30/07/2021	Consultancy work from public and private sector	4720
Bitumen extraction	01/08/2020-30/07/2021	Consultancy work from public and private sector	3540
Cement tests	01/08/2020-30/07/2021	Consultancy work from public and private sector	4464
Total			151041

Table 5.7.4.b: Details of Consultancy Work 2019-2020 (CAYm2)

Project Title	Duration	Funding Agency	Amount (Rs.)
Compressive strength of concrete	01/08/2019-30/07/2020	Consultancy work from public and private sector	122188
Test on steel	01/08/2019-30/07/2020	Consultancy work from public and private sector	4956
Mix design	01/08/2019-30/07/2020	Consultancy work from public and private sector	30780
Testing of interlock tile	01/08/2019-30/07/2020	Consultancy work from public and private sector	3540
Soil test	01/08/2019-30/07/2020	Consultancy work from public and private sector	1770
Non-destructive test-rebound hammer	01/08/2019-30/07/2020	Consultancy work from public and private sector	2360
Bitumen extraction	01/08/2019-30/07/2020	Consultancy work from public and private sector	1770
Total			147364

Table 5.7.4.c: Details of Consultancy Work 2018-2019 (CAYm3)

Project Title	Duration	Funding Agency	Amount (Rs.)
Compressive strength of concrete	13/10/2018-28/6/2019	PWD, KSEB Kerala etc.	44761
Bitumen extraction and bitumen test	11/12/2018-15/5/2019	PWD road section	15443
Cube and tor steel testing	17/5/2019-10/6/2019	Private	7198
mix design	27/10/2018-19/11/2018	PWD Building Section	15930
Total			83332

Table 5.7.4.d: Amount of Consultancy Work (Consolidated)

Year	Amount (Rs.)
CAYm1 (2020-21)	151041
CAYm2 (2019-20)	147364
CAYm3 (2018-19)	83332
Total (For 3 years)	401737

5.8. Faculty Performance Appraisal and Development System (FPADS) (30)**Total Marks: 30**

A very organized system is followed for the assessment and evaluation of the faculty performance appraisal which includes:

a. Student feedback system

A structured online feedback system (LINWAYS campus software) is used to collect feedback from the students. The feedback mechanism provides a platform for the students to express their views regarding the classes handled by the faculty members. Evaluation is done twice a semester for every course - (i) immediately after the first internal assessment examination and (ii) towards the end of the semester. Every student has a unique account on the site where they need to log in to perform 'Teacher Evaluation'. A set of questions addressing various aspects of the quality of teaching are presented. For each question, students will have to choose the most appropriate response from the given options. There is also a provision for students to enter any additional comments about the teacher or the course. All the students are expected to submit their feedback which is recorded anonymously.

Feedback collected for each course/teacher is analysed and a performance index is calculated. Based on the analysis, an index mark is provided to each faculty member, which helps to

evaluate themselves and bring in the required changes to improve their teaching abilities or approaches. These responses from the students, for every teacher, is analysed by the Head of the Department (HoD) who gives suggestions for improvement to the concerned faculty if needed and encourages faculty to excel in their academics.

b. Self-Appraisal

Faculty performances are evaluated annually by means of a common performance appraisal form in a well-defined format available in the institute. This report covers the curricular and co-curricular activities of the faculty members. Each faculty member is required to submit the self-appraisal report annually on the basis of parameters such as teaching hours, the number of courses taught, research papers/articles/books published, conferences attended, papers presented in the conferences, new curricula designed/developed, participation in extra/co-curricular activities, other responsibilities assigned by the institute and any contributions made to the society.

Self-assessment by teachers not only helps them to identify their strengths and weaknesses but also to evolve as reflective practitioners. Self-assessment reports of the faculty members approved by the Head of the Department are submitted to the Principal at the end of every academic year. Based on the report, they are appreciated for their efforts or advised to take corrective measures for further improvements.

c. Provision for attending workshops, seminars, faculty development programs

Faculty members are encouraged to attend the Faculty Development Programs (FDP), workshops and conferences to get acquainted with the latest techniques available in their field. They are also encouraged to acquire higher qualifications through quality improvement programs.

d. Sharing administrative responsibilities

For the smooth functioning of the institute, each faculty member has a role to play in assisting the Head of the Department and the Principal on academic and non-academic activities for which various committees at the institutional level are formed. The faculty members are regularly involved in the internal audit of academic criteria.

e. Research activities and interaction with the outside world

Students are encouraged to take up undergraduate projects in areas of latest/current developments and present their work in conferences and publish papers in peer-reviewed

journals. Faculty members innovate and conduct research for their self-renewal, to keep abreast with changes in technology, and to develop expertise for the effective implementation of curricula.

Faculty involvement in curriculum development is highly appreciated. Faculty are encouraged to take part in social service activities and to identify solutions for the problems faced by society.

Moreover, faculty are encouraged to assist in various initiatives of government organizations and to take up positions like consultants for various external projects as well.

Every faculty is provided with different responsibilities at department and institution level to

- Evaluate their working capabilities as an individual and in a team.
- To assess their academic and administration skills.

Feedback from the students is a key component in assessing the faculty performance. Research activities by the faculty are also given due importance in his/her performance. Head of the department asks the faculty to submit their achievements & academic activities done by them in the form of their appraisal.

Implementation: Appraisal implementation will be carried out every year.

Impact Analysis: Appraisal form of the faculty is evaluated by HOD and then evaluation is done by the IQAC team, and forwarded to Principal and Management for their recommendations. Based on the evaluation the respective faculty is called by the Principal and Management to prove their competency and the decision is taken by the authorities.

MURALIDHAR COLLEGE OF ENGINEERING & TECHNOLOGY
PERFORMANCE APPRAISAL - FACULTY
SELF APPRAISAL (2019-2020)

Part I: Details

NAME of the Faculty: DEEPAK KUMAR KUMAR
 1. Designation: Assistant Professor
 2. Telephone: 9845678901
 3. Address: ...
 4. Date of Birth: ...
 5. Name of Spouse: ...
 6. Qualifications: B.Tech, M.Tech, Ph.D.
 7. Experience: ...
 8. Special Remarks: ...

Part II: Class Room Teaching (Max - 40 Points) (Only theory subjects present academic year)

Sr. No.	Period	Course/Subject Taught	Class Taken	Att. Taken	Assess. Taken	Final %	Remarks
1	1st	Thermodynamics	25	25	25	100	Very Good
2	2nd	Thermodynamics	25	25	25	100	Very Good
3	3rd	Thermodynamics	25	25	25	100	Very Good
4	4th	Thermodynamics	25	25	25	100	Very Good
5	5th	Thermodynamics	25	25	25	100	Very Good

Part III: Other Academic duties assigned and performed (Max-5 Points)

Sr. No.	Activity	Level of achievement/Contribution	Remarks
1	Research paper presented	...	...
2	Guest lecture	...	...
3	Invited lecture	...	...
4	Workshop	...	...

Part IV: Students Projects (Max - 5 Points) (For indigenous projects only)

Sr. No.	Period	Project description	Features	Remarks by HOD
1	2019-20	...	...	...
2	2019-20	...	...	...
3	2019-20	...	...	...

Fig. 5.8: Faculty performance evaluation sheet

IV. Leadership /Coordination/Additional responsibilities in College (Max- 5 Points)
 responsibilities like NSS, Startup, NAAC etc. Members of various committees need not be mentioned

Sl No	Period	Type of Responsibility	Contribution	Remarks by HoD
1				
2		N/A		
3				
4				
5				

Part VI: Research Publications and Academic contributions.

(a) Technical Papers/Books Published (Min 1 in reputed Journals each year. 5/10 Points)

Sl No/Month & Year	Title	Journal/Book etc	Reference	Remarks by HoD
1				
2		N/A		
3				

(b) Papers presented in National/International Conferences, Seminars, Workshops, etc.

Sl No/Month & Year	Title	Occasion/Venue/Event	Place	Remarks by HoD
1				
2		N/A		
3				
4				
5				

(c) Quality Improvement Programs attended, (Min 2 in a year. Max- 5 Points for 10 days)

Sl No	Period	Title	University/Institution	Duration	Remarks by HoD
1	Jan - Dec	1st Floor, P. Nagar, Hyderabad	221 P. Nagar	6 days	not in the academic year
2					
3					
4					

(d) Research works carried out/extension. (Max-5 Points as per status)

Sl No/Month & Year	Title	University/Institution	Stage	Remarks by HoD
1	21-04-2020	Final Year Project of B.Tech. in AI & ML	Final	Link of project

Part VII: Professional Memberships (One for each. Max-5 Points)

Sl No	Agency	Membership Type	Membership No	Validity	Remarks by HoD
1					
2					
3					
4					
5					

Part VIII: Major Events/Responsibilities handled (FEST, Seminars/Workshops etc. Max-5 Points)
 (Not for College coordinators/committee members only)

Sl No	Period	Description	Role	Remarks by HoD
1		N/A		
2				
3				
4				

Part IX: Other Information (Contributions to College/Achievements, etc)
 (not mentioned earlier. Max - 5 points)

Sl No	Period	Details	Remarks by HoD
1	July - Sep 2020	Actively participated in all activities related to project	
2			
3			
4			
5			

I hereby certify that the information provided above is correct and the supporting documents are held by me.

Name & Signature of the Approver: Mohammed Muneer A

Name & Signature: Mohammed Muneer A

Date: 28/11/20

ASSESSMENT BY HoD/Dean
 (Confidential when Filled)

Name of Appraiser: Mohammed Muneer A Designation: Asst. Professor Period: 2019-2020 (1st Sem)

Sl No	Attribute (Professional)	Grading (0-10)	Sl No	Attribute (Behavioural)	Grading (0-10)
1	Professional Knowledge	6.00	1	Integrity and Loyalty	6.50
2	Communication Skills	6.00	2	Determination	6.50
3	Teaching Ability	6.50	3	Dependability	6.00
4	Planning	5.40	4	Sense of Responsibility	5.00
5	Target Achievement	6.50	5	Bearing and Demeanour	6.50
6	Quality of Output	6.50	6	Initiative/Creativity	6.00
7	Time consciousness (Observing Time frames)	6.00	7	Interpersonal Relations & Co-operation	5.50
8	Mentoring (students)	6.00	8	Self Confidence	6.5
9	Event organising capability	6.00	9	Willingness for Additional Duties	7.00
10	Students Feedback	7.00	10	Discipline & Punctuality	6.00
Average		6.19	Average		6.07

Feedback (Task performance, Human relations & Leadership, Personal characteristics)

The evaluation is based on the metrics.

- His performance is average based on the evaluation
- The quality & quantity of the work meets the requirement
- Some times become impatient in nature
- Occasionally needs reminder for completing a work.
- Leadership quality is average.
- His personal character is good in any knowledge.

Date: 30-01-2020

Signature: [Signature]
 Name: [Name]
 Designation: Asst. Prof.

FINAL ASSESSMENTS
 (Confidential when Filled)

Name of Appraiser: MUHAMMED MUNEER A Designation: Asst. Professor Period: 2019-2020

Overall Assessment by HoD/Dean

Exceptional/Very Average/Average/Below Average/Poor

Average

Date: 16/11/20

Signature: [Signature]
 Name: [Name]
 Designation: Dean (Academy)

Remarks by Principal/Director (Confidential)

Need to improve leadership qualities (Academy) and prepare for a better career prospect.

Overall Grading: Average

Date: 16/11/20

Signature: [Signature]
 Name: [Name]
 Designation: Principal/Director

CHAIRMAN GOVERNING BODY/MEET

See focus on publications, research etc.

Date: 16/11/2020

Fig. 5.8: Faculty performance evaluation sheet (Contd.)

5.9. Visiting/Adjunct/Emeritus Faculty etc. (10)**Total Marks: 10**

Sl No	Academic year	Title of guest Lectures /Seminars	Name of resource persons	Designation and Address of resource Persons	Hours
1	2020-2021	Facing challenges in public sector construction	Santa Rajani	Third Grad Overseer PWD Building Section, Kottarakkara	30
2		Design and construction of skyscraper building	Er. Manikantan N	Balaji constructions, Nagour, Maharashtra	24
3	2019-2020	Emerging trends in planning and design in residential sector	Er.Jayaram	Director (Design), square arc, Adoor, Pathanamthitta	24
4		Facing challenges in public sector construction	Santa Rajani	Third Grad Overseer PWD Building Section, Kottarakkara	30
5	2018-2019	Design and construction of skyscraper building	Er. Manikantan N	Balaji constructions, Nagour, Maharashtra	24
6		Facing challenges in public sector construction	Santa Rajani	Third Grad Overseer PWD Building Section, Kottarakkara	30

CRITERION 6	Facilities and Technical Support	80
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6. FACILITIES AND TECHNICAL SUPPORT (80)

Institute Marks: 78

The Department of Civil Engineering of Musaliar College of Engineering and Technology is having infrastructure and facilities to meet the curriculum requirements of all its programs. The laboratories are established to impart practical oriented teaching to professionally develop the students and to motivate them to achieve the Mission of the department.

6.1. Adequate and Well-Equipped Laboratories, and Technical Manpower (30)

Institute Marks: 30

The following are the laboratories in our department.

1. Laboratory Name: Material Testing Laboratory

The Material Testing lab is well established with required equipments for testing the properties of different materials like, steel, timber, brick, tile etc. Mechanical properties of metals like hardness, toughness, torsional rigidity etc. are the tests conducted in the lab. Consultancy works are undertaken to find out the mechanical properties of different materials apart from regular lab services. An overall ambience of Material testing laboratory I is shown in Fig.6.1. a.



Figure 6.1.a. Material Testing Laboratory

Area of the laboratory: $11.9\text{m} \times 9.4\text{m} = 112\text{m}^2$.

2. Laboratory Name: Geotechnical Engineering Laboratory

The Lab is equipped with various experimental setups for the testing of different types of soils. The lab is also utilized for consultancy services to analyze engineering and index properties of soil on a regular basis. Fig.6.1. b. shows the arrangement of Geotechnical engineering laboratory of the department.



Figure 6.1.b. Geotechnical Engineering Laboratory

Area of the laboratory: $8.5\text{m} \times 9.3\text{m} = 79\text{ m}^2$.

3.Laboratory Name: Environmental Engineering Laboratory

The lab is well equipped with facilities required for testing the quality of drinking water and waste water. Fig.6.1.c. shows the arrangement of Environmental engineering laboratory of the department.



Figure 6.1.c. Environmental Engineering Laboratory

Area of the laboratory: $8.3\text{m} \times 9.45\text{m} = 78.4\text{ m}^2$.

4. Laboratory Name: Material Testing Laboratory II

The Department has got a well-set Concrete lab with facilities for conducting various tests on freshly prepared concrete as well as testing various properties of hardened concrete cubes and beams. Regular research and consultancy works are being carried out in the lab. Fig.6.1. d. shows an overall ambience of Material testing laboratory II in the department.



Figure 6.1.d. Material Testing Laboratory II

Area of the laboratory: $8.5\text{ m} \times 9.5\text{ m} = 80.75\text{ m}^2$

5. Laboratory Name: Transportation Engineering Laboratory

The Laboratory is equipped with various experimental setups for the testing of bitumen and aggregates used for construction works. The lab is also utilized for consultancy services to analyze the strength characteristics of aggregates and properties of bitumen on a regular basis. An overall ambience of Transportation engineering laboratory is shown in Fig.6.1.e.



Figure 6.1.e Transportation Engineering Laboratory

Area of the laboratory: $8.5\text{m} \times 9\text{m} = 76.5\text{m}^2$.

6. Laboratory Name: Survey Laboratory

The survey lab is equipped with instruments that help in computing area, level difference, elevation and distance of points. The lab provides training in surveying using chain, tape, compass, level, theodolite and plane table. The lab is also equipped with a Total station. Fig.6.1. f. shows an overall ambience of Survey laboratory in the department.



Figure 6.1.f. Survey Laboratory

Area of the laboratory: $12\text{m} \times 4.5\text{m} = 54\text{m}^2$

7. Laboratory Name: Computer Laboratory

The computer lab is a central facility of the department where all the under graduate students, and faculty members can work with the latest software's to carry out their academic and research work. The Computer Laboratory has a number of systems with the latest configurations. The lab consists of 34 systems with recently developed modelling software and analysis Software. There is an A4 printer (Canon LBP 2900) for printing the drawings developed by the students as a part of their exercise. An overall ambience of Computer laboratory is shown in Fig.6.1.g.



**Figure 6.1.g. Computer
Laboratory**

Area of the laboratory: $9.4\text{m} \times 8.1\text{ m} = 76.14\text{ m}^2$.

8. Basic Civil Engineering Workshop

The basic civil engineering workshop is utilized for conducting civil engineering workshop classes for first year students.

Table 6.1.a: Details of Major Equipment and Technical Man Power

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	Material Testing Lab- I	30	1. Torsion testing machine. 2. Spring testing machine 3. Impact testing machine (i) Charpy impact testing machine (ii) Izod impact testing machine 4. Hardness Testing machine (i) Rockwell hardness Test (ii) Brinell hardness test 5. Universal Testing machine. 6. Torsion Pendulum 7. Clerk's Maxwell's law of Reciprocal Theorem apparatus	12 hours per week	Mr Binu M P	Lab Instructor	ITI CIVIL

Table 6.1.a: Details of Major Equipment and Technical Man Power (Contd.)

Sl. No.	Name of the Laboratory	Batch Size	Name of the Important Equipment	Weekly utilization status	Technical Manpower Support		
					Name of the technical staff	Designation	Qualification
2	Surveying Lab	30	1. Theodolite – 16 2. Dumpy level – 15 3. Total station- 1 4. Prismatic compass – 11 5. Surveyors compass – 1 6. Plane Table – 20 7. Levelling staff- 16 8. Ranging rod – 19 9. Tape – 11 10. Chain-7 11. Wooden Peg-20	6 hours per week	Mr Saseendran Nair N	Lab Instructor	ITI CIVIL
3	Material Testing Lab-II	30	1. Compression Testing machine 2. Vicat apparatus with plunger. 3. Le Chatelier's flask 4. Compacting factor apparatus 5. Slump testing apparatus 6. Vee- Bee Consistometer 7. Sieves and Sieve shaker 8. Moulds (i) Cubical (ii)Cylindrical (iii)Cuboidal	6 hours per week	Mr Rajasekharan Nair	Grade Instructor I	B.Tech.

Table 6.1.a: Details of Major Equipment and Technical Man Power (Contd.)

Sl. No.	Name of the Laboratory	Batch Size	Name of the Important Equipment	Weekly utilization status	Technical Manpower Support		
					Name of the technical staff	Designation	Qualification
4	Transportation Engineering Lab	30	1. Aggregate Impact Testing Machine 2. Compressive Testing Apparatus 3. Los Angeles abrasion test apparatus 4. Penetrometer 5. Ductility machine 6. Ring and ball apparatus 7. Viscosity Apparatus (orifice dia. 10 mm) 8. Pensky Marten closed flash & fire point 9. CBR Testing machine 10. Pycnometer 11. Flakiness index apparatus 12. Elongation index apparatus. 13. Wire basket.	6 hours per week	Ms Jubairiyath A I	Lab Instructor	ITI CIVIL

Table 6.1.a: Details of Major Equipment and Technical Man Power (Contd.)

Sl. No.	Name of the Laboratory	Batch Size	Name of the Important Equipment	Weekly utilization status	Technical Manpower Support		
					Name of the technical staff	Designation	Qualification
5	Geotechnical Engineering Lab	30	1. Pycnometer 2. Sieves and Sieve shaker 3. Atterberg limits (i) Casagrande's liquid limit device (ii) Shrinkage dish 4. Hydrometer 5. Field density measuring apparatus (i) Sand replacement apparatus (ii) Core cutter apparatus 6. Direct Shear apparatus 7. Permeability test apparatus (i) Constant Head Permeability apparatus (ii) Variable Head Permeability apparatus 8. Unconfined Compression test apparatus 9. Consolidometer 10. Hot Air Oven	6 hours per week	Ms Jubairiyath A I	Lab Instructor	ITI CIVIL
6	Computer Laboratory	34	1. Auto CAD 2. STAAD Pro 3. Primavera	12 hours per week	Ms Preethu P Nair	Lab Instructor	CTTC*

*CTTC – Computer Teachers Training Course

Table 6.1.a: Details of Major Equipment and Technical Man Power (Contd.)

Sl. No.	Name of the Laboratory	Batch Size	Name of the Important Equipment	Weekly utilization status	Technical Manpower Support		
					Name of the technical staff	Designation	Qualification
7	Environmental Engineering Lab	30	1. Water distillation unit 2. Jar test apparatus 3. Hot air oven 4. pH meter 5. Digital turbidity meter 6. Incubator	6 hours per week	Ms Preethu P Nair	Lab Instructor	CTTC*
8	Basic Civil Engineering Workshop	30	1.Trowel 2.Spirit level 3.Masons Square 4.Plumb bob 5.Tape 6.Ranging rod 7.Screw gauge 8.Vernier caliper 9.Dumpy Level 10.Levelling Staff	6 hours per week	Ms Jubairiyath A I	Lab Instructor	ITI CIVIL

Technical Manpower Support in the Department

Details of educational qualification and experience of lab Instructors are shown in table 6.1.b.

Table 6.1.b. Technical Manpower Support in the Department

Sl. No.	Name	Qualification	Designation	Experience in years
1	Mr Rajasekharan Nair	B Tech	Grade Instructor I	40
2	Mr Saseendran Nair N	ITI CIVIL	Lab Instructor	35
3	Ms Jubairiyath A I	ITI CIVIL	Tradesman	14
4	Ms Preethu P Nair	Computer Teachers Training course (CTTC)	Lab Assistant	9
5	Mr Binu M P	ITI CIVIL	Lab Instructor	10

6.2. Additional Facilities Created for Improving the Quality of Learning Experience in Laboratories (25)**Institute Marks: 23**

Table 6.2 gives the details of additional facilities available in the department.

Table 6.2: Additional Facilities

Sl. No.	Facility Name	Details	Reason(s) for creating facility	Utilization	Areas in which students are expected to have enhanced learning	Relevance to POs/ PSOs
1.	ICT enabled lab	Laptop, Projector	To conduct lectures	Throughout the semester	Presentation	PO4, PO5, PO10, PO11
2.	Project lab	Computer, Water analyzer, Spectrophotometer, cone-penetrometer, Penetrometer, Planimeter, Box Sextant, Total Station	To aid research activities and project activities	Throughout the semester	Execution of project work and lab activities.	PO1, PO3, PO4, PO5, PO9, PO12, PSO1, PSO2
3.	Communication lab	Headset	To enhance communication skills	4 hours per week	To improve communication skills	PO5, PO10, PO12
4.	Consultancy Work in Material Testing Lab II	Testing of Concrete cubes	To provide consultancy service for checking the quality of building materials with reference to their IS code values.	Utilized throughout the academic year	Consultancy Service and project work	PO1, PO2, PO3, PO4, PO6, PO12, PSO1

Table 6.2: Additional Facilities (Contd.)

Sl. No.	Facility Name	Details	Reason(s) for creating facility	Utilization	Areas in which students are expected to have enhanced learning	Relevance to POs/ PSOs
5.	Consultancy work in Geotechnical Lab	Testing of engineering properties of soil	To provide consultancy service for checking the quality of soil with reference to the IS codevalues	Utilized throughout the academic year.	Consultancy Service and project work	PO1, PO2, PO3, PO4, PO6, PO12, PSO1
6.	Consultancy work in Transportation Lab	Testing of bitumen	To provide consultancy service for checking the quality of bitumen with reference to the IS Code values	Utilized throughout the academic year.	Consultancy Service and project work	PO1, PO2, PO3, PO4, PO6, PO12, PSO1
7.	Department library	Books, Computer	To enable self-learning	Utilized throughout the academic year.	Project work and Reference	PO1, PO2, PO3, PO4, PO9, PO12
8.	Digital Library	Online journals, NPTEL videos,online books, DELNET, NDLI	To enable self-learning	Utilized throughout the academic year.	Online utilization	PO1, PO2, PO3, PO4, PO5, PO12
9.	NPTEL Videos	Online video course	To enable self-learning	Utilized throughout the academic year.	Project work and Practical Section	PO1, PO2, PO3, PO5, PO9, PO11, PO12

Table 6.2: Additional Facilities (Contd.)

Sl. No.	Facility Name	Details	Reason(s) for creating facility	Utilization	Areas in which students are expected to have enhanced learning	Relevance to POs/ PSOs
10.	Virtual Classroom	iPad and iPod connectivity	Virtual learning	1 hour per day	Practical Section	PO5, PO12
11.	Civil Engineering planning & drafting lab	Drawing Table - 37.5" x 60"	To improve drawing skills	6 hours per week	Drawing and project work	PO1, PO3, PSO1

6.3. Laboratories Maintenance and Overall Ambience (10)**Institute Marks: 10**

The maintenance and overall ambience of each of the laboratories are taken care by a faculty incharge along with a qualified technical staff.

Maintenance of laboratory equipments:

- Calibration of equipment done internally/externally as applicable.
- Scheduled maintenance is done for all equipments in the lab.
- Maintenance register and service register is maintained for each lab and is properly maintained.
- Stock register is maintained for all consumable materials in the laboratory.
- All laboratories of the department have technical support during working hours
- Extra working hours are provided to the students as per requirements with the help of technical staffs.
- Daily maintenance of cleanliness is done by housekeeping department in place in each lab
- Ambient air circulation by natural air currents and through exhaust fans; maintained periodically.

Fig.6.3.a depicts the flowchart for routine maintenance of laboratory equipment's done in the department.

ROUTINE MAINTENANCE

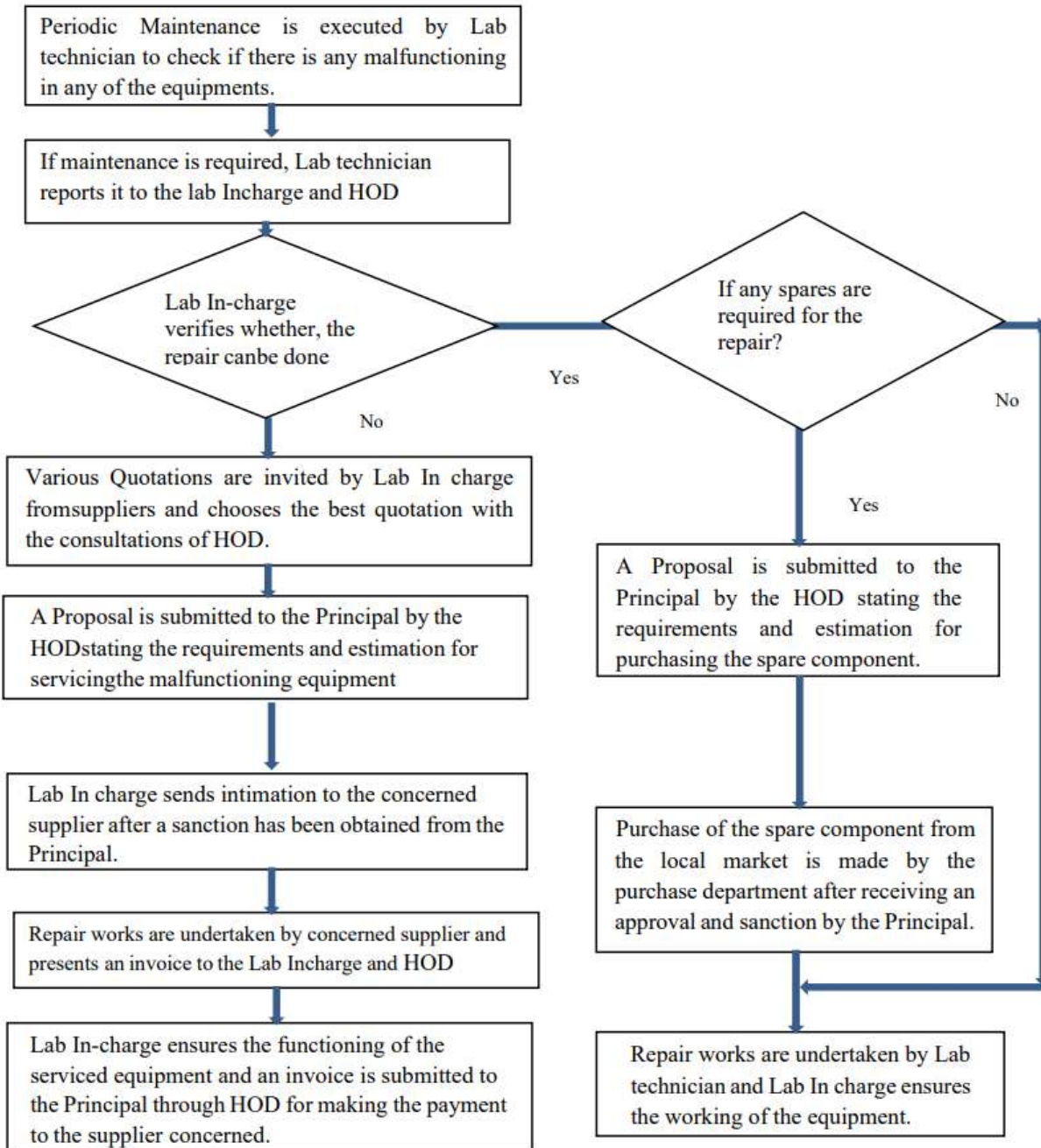


Figure 6.3.a. Process for conducting routine maintenance and repairs of the lab

ANNUAL MAINTENANCE

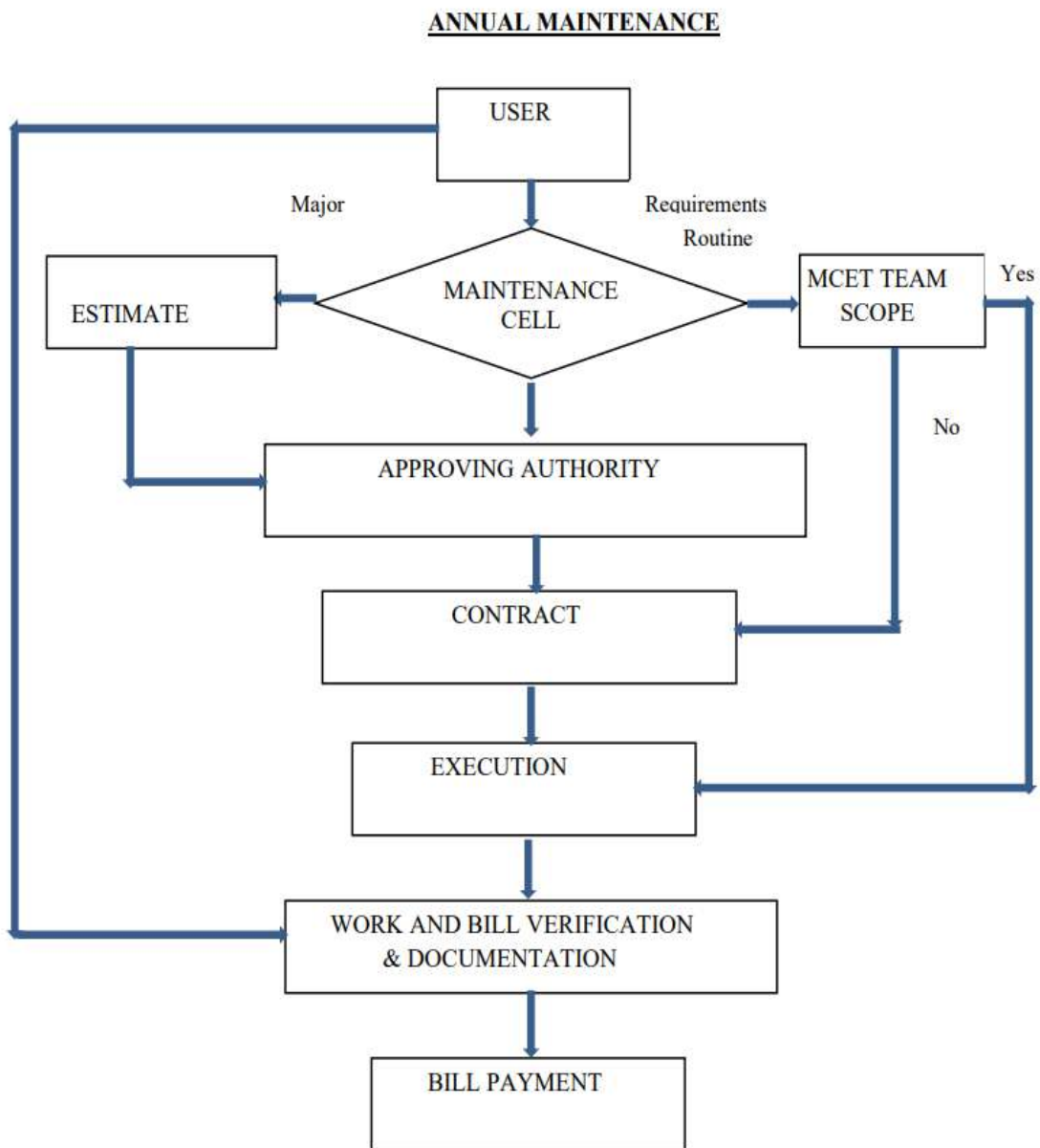


Figure 6.3.b Process for conducting annual maintenance and repairs of the lab

Fig. 6.3.c shows a sample of maintenance register which provides the details of maintenance done for laboratory equipment's in each laboratory of the department.

Date	Equipment Description	Description of work done	Specification	Signature	Signature
6/1/2017	C.R. test apparatus	Instrument cleaning and greasing	Am-202/07/167	21/1/2017	Speth
15/1/2017	MT-Lab instruments	cleaning and greasing	2172-Au-1/07/188	21/1/2017	Speth
26/2/2017	test compressive strength machine	cleaning and Oiling	"	21/1/2017	Speth
6/3/2017	All instruments	cleaning and greasing, dial gauge fitting, screw fitting etc.	Am-202/21/162/21/16	2172-Au-1/02/14/16/16	Speth
13/3/2017	vicat apparatus	cleaning and needle setting	8/6/2017, 14/1/2016	14/1/2016	Speth
20/6/2017	C.S.F. machine	testing machine cleaning and Oiling	2172-Au-1/02/14/16/16	21/1/2017	Speth
22/6/2017	C.R. test apparatus	cleaning and Oiling	062/02/167/25/1/2017	25/1/2017	Speth
29/6/2017	Specific gravity apparatus	cleaning and greasing	14/1/2016	14/1/2016	Speth
17/8/2017	Compression testing machine	cleaning and Oiling	2172-Au-1/02/14/16/16	21/1/2017	Speth
21/8/2017	Veeco consistency	cleaning and greasing	14/05/2007	14/05/2007	Speth
30/8/2017	Compression factor apparatus	cleaning, screw fitting and greasing	2172-Au-1/02/14/16/16	21/1/2017	Speth
6/8/2017	Vicat apparatus	cleaning and Oiling	8/6/2017, 14/1/2016	14/1/2016	Speth

Figure 6.3.c Maintenance template

Servicing of Lab equipment and its components are carried out regularly at the beginning of each semester. Fig.6.3.d shows a sample of service register which provides the details of service done for laboratory equipment's in each laboratory of the department.

1

Equipment in Strength & Materials Laboratory

1. Universal Testing Machine
2. Tensile Testing Machine
3. Brinell Rockwell Hardness Testing Machine
4. Vicok's Hardness Testing Machine
5. Torsion Testing Machine
6. Impact Testing Machine

All machines are serviced on 15/07/2011.

Checked by: _____
Signature of Lab Tech

Equipment in Strength & Materials / Material Testing Lab-1

1. Vicok's Hardness Testing Machine
2. Torsion Testing Machine
3. Impact Testing Machine

Servicing, oiling & cleaning done on 25/08/2012.

The following Machines in Strength & Materials / Material Testing Lab-1 are done

1. Brinell Hardness Testing Machine
2. Tensile Testing Machine

repairing and zero setting arrangement are done on 29/1/2015.

The following Machine in Strength & Materials / Material Testing Lab-1

1. Universal Testing Machine
2. Vicok's Hardness Testing Machine

check the Hydraulic oil level, Testing done on 12/2/2014.

Figure 6.3.d Service template

Maintenance details of all the laboratories in the department are shown in table 6.3.a.

Table 6.3.a. Maintenance details of laboratories

Sl No:	Name of the Lab	Staff In charge	Technical Support	Maintenance
1	Material Testing Laboratory- I	Ms Nisha Sekhar	Mr Binu M P	Scheduled maintenance
2	Geotechnical Engineering Laboratory	Ms Haleema M	Mrs Jubariyath AI	Scheduled maintenance
3	Environmental Engineering Laboratory	Ms Shamila Habeeb	Mrs Preethu P Nair	Scheduled maintenance
4	Material Testing Laboratory II	Ms Bismi MBuhari	Mr Rajasekharan Nair	Scheduled maintenance
5	Transportation Engineering Laboratory	Ms Subhalekshmi	Mrs Jubariyath AI	Scheduled maintenance
6	Surveying Laboratory	Ms Athira Lekshmi	Mr Saseendran Nair A N	Scheduled maintenance
7	Computer Laboratory	Ms Subha lekshmi	Mrs Preethu P Nair	Scheduled maintenance

Overall ambience

- The Civil department has well equipped lab facilities to meet the curriculum.
- The overall ambience of labs at the department is good with a scope for further improvement.
- List of experiments are properly displayed in the lab.
- Mission and PEOs are displayed in labs to motivate and encourage the students to acquire the specified PEOs.
- Sufficient number of windows is available for ventilation, natural light and additional lighting system is provided.
- Each lab is provided with first aid medical kit.
- Fire extinguishing system is provided in each lab.
- Layout is displayed in each lab.

6.4. Project Laboratory (5)**Institute Marks: 5**

The Civil Department is equipped with a Project lab along with other labs, which provide additional equipments and facilities to aid research and project activities of students and faculties. Project lab is open on all working days with availability of additional working hours, if required. Students exhibits and models based on their projects are displayed in the project lab. The lab is engaged with a Lab In charge and Lab Instructor.

Laboratory In charge: Prof Manju R

Lab instructor: Mr Saseendran Nair N

Details of equipment's available in the project laboratory are shown below in table 6.4.a.

Table 6.4.a. Equipment details in Project Labs

Sl No:	Equipment details	Course
1.	Water Analyzer	Environmental Engineering
2.	Spectrophotometer	Environmental Engineering
3.	Computer with software's installed (AutoCAD, Staad Pro, Primavera)	Structural Engineering,
4.	Planimeter	Surveying
5.	Box Sextant	Surveying
6.	Total Station	Surveying
7.	Cone-penetrometer	Geotechnical Engineering
8.	Field density apparatus	Geotechnical Engineering
9.	Penetrometer	Transportation Engineering

The following table 6.4.b. provides the details of the courses conducted in the project lab.

Table 6.4.b. Details of courses conducted in the project laboratory

Course Code	Course	Semester
C 407	Project phase I	7th Semester (2019 Scheme)
C 413	Project phase II	8th Semester (2019 Scheme)
C 408	Seminar & Project Preliminary	7th Semester (2015 Scheme)
C 413	Project	8th Semester (2015 Scheme)

Best three Projects

Best projects during the academic year 2020-2021, 2019-2020, 2018-2019 are shown in table 6.4.d.

Table 6.4.d. Best three Projects

Sl. No	Batch	Student Name	Project Title	Guided By	Laboratory
1.	2020-2021	Anamika Chandra Sandra K Shaji Simi Monachen	Construction of water table contour mapping and geo hydrological studies in Pathanamthitta using GIS techniques	Mr Muhammed Murshid A	Environmental Lab
2.		Shahana Shaji VeniGayatri Sangeetha Sanal	Flood hazard mapping in Ranni	Mr Muhammed Murshid A, Prof FathimaShajahan	Geotechnical Lab
3.		Abiah Alex Sarath R Sasi Divya S Anil	Impact of sand mining on periyar river basins	Ms Subhalekshmi	Geotechnical Lab
1.	2019-2020	Mekha N P Sini Jose Salma Saheer	Preparation of inundation Map for Pathanamthitta district	Mr Muhammed Murshid A	Geotechnical Lab
2.		Alan Varghese Bibin Babu Gokul KrishnanG Raveena R Nair	Proposal for new bus stand for Pandalam municipality	Ms BismiM Buhari	Computer Lab
3.		Adharsh A Anju Aji Aswathy Shaji Noufal N	Attainment of sustainability through green audit- A case study at MCET	Ms Shamila Habeeb	Survey Lab, Environmental Lab
1.	2018-2019	Jyothish Kumar Anjana Krishna Bhavya Prasannan Godsy Jose	Study on suitability of sedimented soil in flooded area of Kerala for brick production	Mr Muhammed Ashraf	Geotechnical Lab, Material Testing Lab II
2.		Kailas Mohan Vivek Radhakrishnan	Assessment of groundwater quality in Pathanamthitta district using GIS	Ms Shalu Thomas	Environmental Lab
		Vivin Samuel Rithu Rachel Roy			
3		Reshma R Rijo George Shini Bala Steffy AngelSunny	Flood mapping using GIS	Mr Muhammed Murshid A	Geotechnical Lab

"Preparation of inundation map for Pathanamthitta district" done by Mekha N P, Sini Jose, Salma Saheer under the guidance of Mr Muhammed Murshid A, assistant professor department of civil engineering, was selected as the best project in the year 2019-2020. The project work was recognized by Pathanamthitta Municipality and Fig.6.4.a. shows the newspaper cutting and report submission image of "Preparation of inundationmap for Pathanamthitta district" to Mrs Roselin Santhosh counsellor of Pathanamthitta Municipality.



Figure 6.4.a. News paper cutting and report submission image of “Flood map preparation of Pathanamthitta Municipality”

A detailed report and model of the new private bus stand of Pandalam Municipality was prepared by final year students Alan Varghese, Bibin Babu, Gokul Krishnan G, Raveena R Nair under the guidance of Ms Bismi M Buhari, assistant professor department of civil engineering. Fig.6.4.b. shows the newspaper cutting, prototype and report submission image of "Proposal for new bus stand for Pandalam municipality" to Ms T K Sathi, Municipal chairperson of Pandalam Municipality.



Figure 6.4.b. News paper cutting, prototype and report submission image of “Proposal for new bus stand for Pandalam municipality”

6.5. Safety Measures in Laboratories (10)
Marks: 10**Institute****General Laboratory Safety Measures**

General safety practices used in workshops and laboratories are listed below:

1. Conduct them in an appropriate and responsible manner to ensure their own safety and the safety of others.
2. Follow all written and verbal instructions carefully. If you do not understand a direction or part of a procedure, **ASK YOUR TEACHER BEFORE PROCEEDING WITH THE ACTIVITY.**
3. Never work alone in the laboratory. No student may work in the Laboratory without the presence of the academic/technical staff
4. Do not touch any equipment, chemicals, or other materials in the laboratory area until you are instructed by responsible academic/technical staff.
5. Perform only those experiments authorized by your teacher. Carefully follow all instructions, both written and oral. Unauthorized experiments are not allowed.
6. Do not eat food, drink beverages, or chew gum in the laboratory. Do not use laboratory glassware as containers for food or beverages.
7. Wash your hands with soap and water after performing all experiments
8. When handling any toxic or hazardous agent, always wear the appropriate gloves.
9. Dispose of all chemical waste properly. Never mix chemicals in sink drains.
10. Always keep your work area(s) tidy and clean.
11. Labels and equipment instructions must be read carefully before use.
12. Must remain within designated areas.
13. Avoid stepping on electrical wires or any other cables.
14. All the students are instructed to wear lab coat and wear shoes that fully cover their feet (bare feet, slippers or open toed sandals are unacceptable) to avoid any unpredicted incidents.

15. All the laboratories are provided with First Aid box.
16. All the laboratories are provided with fire extinguisher
17. Wear appropriate clothing to avoid safety hazards.
18. Always tie back hair that is chin-length or longer.
19. Enter your name and roll number in the register before entering to a machine

SAFETY MEASURES IN LABORATORY

Table 6.5 shows list of laboratories and safety measures adopted in each laboratory.

Table 6.5: Safety measures in laboratories

Name of the Laboratory	Safety Measures
Material Testing Lab	<ol style="list-style-type: none"> 1. First aid box 2. Fire extinguishing system 3. Proper earthing. 4. Sand bucket 5. Safety shoes 6. Girls should put up their hair. 7. Windows for ventilation 8. Lab uniform
Surveying Lab	<ol style="list-style-type: none"> 1. First aid box 2. Fire extinguishing system 3. Safety shoes 4. Girls should put up their hair. 5. Windows for ventilation Lab uniform
Material Testing Lab-II	<ol style="list-style-type: none"> 1. First aid box 2. Fire extinguishing system 3. Proper earthing. 4. Sand bucket 5. Safety shoes 6. Girls should put up their hair. 7. Windows for ventilation Lab uniform

Table 6.5: Safety measures in laboratories (Contd.)

Name of the Laboratory	Safety Measures
Transportation Engineering Lab	<ol style="list-style-type: none"> 1. First aid box 2. Fire extinguishing system 3. Proper earthing. 4. Sand bucket 5. Safety shoes 6. Girls should put up their hair. 7. Windows for ventilation 8. Lab uniform
Geotechnical Engineering Lab	<ol style="list-style-type: none"> 1. First aid box 2. Fire extinguishing system 3. Proper earthing. 4. Sand bucket 5. Safety shoes 6. Girls should put up their hair. 7. Windows for ventilation 8. Lab uniform
Computer Laboratory	<ol style="list-style-type: none"> 1. UPS facilities 2. Rubber mat 3. First aid box 4. Fire extinguishing system 5. Proper earthing. 6. Sand bucket 7. Windows for ventilation

CRITERION 7	Continuous Improvement	50
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7. CONTINUOUS IMPROVEMENT (50)**Total Marks: 41****7.1. Actions Taken Based on the Results of Evaluation of Each of the POs &PSOs (20)****Total Marks: 18**

The attainment of POs and PSOs are the key indicators of the performance of the program, which are analysed every year and actions are initiated to improve the levels of attainment. The areas of weakness in the program are identified and corrective measures are taken to rectify the issues in the academic year. The details of attainment levels of POs and PSOs and the actions for improvement are presented in Table 7.1.

**Table 7.1: POs & PSOs Attainment Levels and Actions for Improvement
CAYm1 (2020-21)**

POs	Target Level	Attainment Level	Observations
PO1: Engineering knowledge: To Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.			
PO1	1.95	2.38	Target Achieved
<p>Action 1: Tutorial classes to be conducted for analytical subjects and complex topics to improve problem solving skills and extra classes were conducted to improve fundamentals of engineering mathematics, science and engineering fundamentals for weak students.</p> <p>Action 2: It is aimed that the Course Projects, final year Project Works and Camps relate the knowledge of applied and basic sciences to engineering applications in order to solve different types of complex engineering problems and also inspire students to participate in technical events, other events where their basic knowledge should convert to application based problems.</p>			
PO2: Problem analysis: Identify, formulate, review research literature, and analyze complex Engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.			

PO2	1.95	2.02	Target Achieved
<p>Action 1: Guide the students to perform proper literature survey for analyzing and solving Complex engineering problems</p> <p>Action 2: Encourage students to refer journals both online and offline and motivate them to read research journals regularly to improve their problem analysis skills.</p>			
<p>PO3: Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate considerations for the public health and safety, and the cultural, societal, and environmental considerations.</p>			
PO3	1.95	2.00	Target Achieved
<p>Action1: Extra classes were conducted to improve understanding of design procedure with design procedure protocol for every step.</p> <p>Action 2: Industrial training was made compulsory for all the students which provided a hands on experience in the various design procedures and ultimately, a better understanding on various design methodologies.</p>			
<p>PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.</p>			
PO4	1.95	1.81	93% attainment achieved.
<p>Action1: Students are encouraged to conduct site visits so as to get a better understanding of execution of Civil Engineering projects.</p> <p>Action 2: Motivate students to refer standard text books and journals and online resources like learning / Instructional videos on YouTube etc, so as to develop their research aptitude and analytical skills.</p>			
<p>PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.</p>			
PO5	1.95	2.00	Target achieved.

Action1: Trainings for AutoCAD & STAAD Pro software organised in college.			
Action 2: Students are encouraged to do projects which include simulation packages			
PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.			
PO6	1.95	1.86	95% attainment achieved.
Action1: Classes on Constitutional rights, and Seminars/ Webinars on Intellectual Property Rights are to be conducted.			
Action 2: Encouraged students to take part in NSS, Swachh Bharat drives, Blood Donation Camps etc			
PO7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.			
PO7	1.95	1.79	92 % attainment achieved.
Action 1: Class Room Discussions on current projects like Vizhinjam Port, Metro rail etc for understanding the impact of these projects on the environment.			
Action 2: Students are encouraged for Industrial visits, Internships and training to become aware about the need for sustainable development			
Action 3: Students are encouraged to indulge in projects, in which global and environmental issues are improved, with respect to consumption of energy and utilization of renewable energy resources			
PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.			
PO8	1.95	1.85	95 % attainment achieved.
Action 1: To conduct more seminars and group discussions in topics related to ethics.			
Action 2: Students are motivated and made aware about the demands of engineering profession, duties towards society & fellow human beings and importance of honesty and ethics.			
Action 3: To encourage students to Participation in Co-Curricular activities and Games			

and promote commitment to ethical principles and an understanding of sportsmanship and that participation is more important than winning.			
PO9: Individual and team work: Function effectively as an individual and as a member or leader in diverse teams, and in multidisciplinary settings.			
PO9	1.95	2.40	Target achieved.
<p>Action 1: During Tech Fest, Sports meet, NSS and Departmental voluntary works the students are assigned different tasks during which they learn to work as a team.</p> <p>Action 2: The final year project work was conducted by grouping students which help them to learn to as a team, to interact freely and develop the quality of team work.</p>			
PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.			
PO10	1.95	2.10	Target achieved.
<p>Action 1: Students are encouraged to become members of professional society chapters and clubs to improve their communication skills by participating in various events.</p> <p>Action 2: Communication Labs are arranged for weak students to improve their communication skills</p>			
PO11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.			
PO11	1.95	2.09	Target achieved.
<p>Action 1: During Tech Fests and Sports Meets the students are entrusted with the responsibility of conducting the various events as well as managing the finance required for the events.</p> <p>Action 2: Students are encouraged to attend the workshops on Entrepreneurship to learn about project management and financial skills</p>			

PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.			
PO12	1.95	1.84	94% attainment achieved.
<p>Action 1: Existence of chapters of professional bodies/ societies like Institution of Engineers and events under the banner of these societies gives students opportunity to have a lifelong learning.</p> <p>Action 2: The students are involved in the activities of alumni association and are encouraged to take membership of professional bodies.</p>			
PSO1: Apply knowledge in analysis, design, survey, testing and construction of civil engineering structures.			
PSO1	1.95	2.01	Target achieved.
<p>Action 1: Academic workshops and training programs are arranged to apply more knowledge in terms of conduction of experiments and analysis as required.</p> <p>Action2: Site Visits and on-site demonstrations are conducted to get a better understanding regarding the construction of civil engineering structures.</p>			
PSO2: To develop and design sustainable and smart infrastructure considering the global environmental challenges.			
PSO2	1.95	2.28	Target achieved.
<p>Action 1: Seminars on current trends and workshops with hands-on training to be provided for enhanced learning.</p> <p>Action 2: Students are motivated to take up the real life problems during their project work which includes design, analysis and finding solutions using latest technologies which promote sustainability.</p>			

7.2 Academic Audit and Assessments

Monitoring of the various activities and taking timely corrective measures wherever required for the betterment of various systems was the strength of the institution. Quality monitoring in various forms existed in the institution ever since its birth. However a formal ‘Quality Assurance System’- the ‘Internal Quality Assurance Cell’ (IQAC) - of Musaliar College of Engineering and Technology was established in 2015 in line with the guide lines of National Assessment and Accreditation Council.

Objective

The objectives of IQAC are:-

- To develop a system for conscious, consistent and catalytic action to improve the academic and administrative performance of the institution.
- To promote measures for institutional functioning towards quality enhancement through internalization of quality culture and institutionalization of best practices.
- To implement the Outcome Based Education in all the departments of the institution.

Functions

The main functions of IQAC are:-

- a) Development and application of quality benchmarks.
- b) Defining parameters for various academic and administrative activities of the institution.
- c) Budgeting and monitoring the implementation of approved budget.
- d) Quality assurance of all capital and revenue works.
- e) Facilitating a learner-centric environment conducive to quality education and faculty maturation to adopt for participatory teaching and learning process.
- f) Collection and analysis of feedback from all stakeholders on quality-related institutional processes.
- g) Dissemination of information on various quality parameters to all stakeholders.
- h) Organization of inter and intra institutional workshops, seminars on quality related themes and promotion of quality circles.
- i) Documentation of the various programs/activities leading to quality improvement.
- j) Acting as a nodal agency of the Institution for coordinating quality-related activities, including adoption and dissemination of best practices.

- k) Development and maintenance of institutional database through MIS for the purpose of maintaining /enhancing the institutional quality.
- l) Periodical conduct of Academic and Administrative Audit and its follow-up.
- m) Actions to implement the Outcome Based Education in all the departments of the institution.
- n) Knowledge enrichment and career planning of staff.
- o) Preparation and submission of the Annual Quality Assurance Report (AQAR) as per guidelines and parameters of NAAC (post accreditation activity).

Composition of the IQAC

Table 7.2.a Composition of IQAC

Dr AS Abdul Rasheed	Principal	Chairman
Prof R Jayaprasad	Dean, (Acds & Admn)	Coordinator
Prof Madhu G	Asso Prof – ME	Member
Prof Femi Susan Babu	Asso Prof – H&S	Member
Prof Renuka Devi	Asso Prof – EEE	Member
Prof Nisha Sekhar	Asst Prof – CE	Member
Prof Nidiya Habeeb	Asso Prof – ECE	Member
Prof Naveen Koshy	Asst Prof – Mgt	Member
Prof Arun R	Asst Prof - Alumni Secretary	Member
Prof M K Salitha	Asst Prof – CSE	Member

Department Quality Assurance Cell is formed at the department for implementation of policies/guidelines issued by IQAC as well as to ensure quality of various departmental activities. DQAC to organise meetings regularly as mentioned below in respect of a semester and minutes of meetings need to be forwarded to IQAC.

Audit Process and its implementation:

1. The Dean (Acds & Admn) of the institute is chosen as the chairman of IQAC. He with the consensus of the Principal constitutes a committee for assessing the academic performance of the different departments.
2. Planning of Academic Audit

Table 7.2.b Frequency of Academic Audit

Audit	Frequency of Audit
Internal Academic Audit	Twice per Semester
External Academic Audit	Once per Semester

3. Every committee member is assigned with the internal auditing of one or two departments.

4. The auditor will visit the department as per the schedule given by IQAC to inspect the correctness and completeness of academic documents:
 - Planning of course delivery
 - Quality of course outcomes
 - Quality of learning materials
 - Quality of internal assessment and assignment questions
 - Quality of scheme of valuation
 - Adherence to academic calendar
 - Quality of Projects
 - Application
 - Product
 - Research
 - Core
 - Inter disciplinary
 - Teaching methods incorporated
 - Fairness in evaluation of internal assessment and assignments
 - Support to the students
5. The Auditor will then prepare a report of his findings and submits the same to the Director, IQAC and also shares it with Head of the Department.
6. The Coordinator IQAC shall consolidate the reports submitted by all the members and prepares corrective/preventive actions as necessary.
7. The report of the Coordinator IQAC is submitted to the Principal to deliberate implementation of the suggested actions in the academic council.

The Head of the department discusses audit findings with the faculty and prepares plan of action in the DQAC meeting for addressing any concern(s) raised by the auditor

INTERNAL AUDIT CRITERIA**Table 7.2.c Internal Audit Checklist**

Key Aspects	Parameters/Documents/Records for verification
Class/Course committee meetings and Action taken Report	Minutes of meeting in format with action taken.
Advisory meetings and Action taken Reports	Minutes of meeting in format with action taken.
Result analysis of previous odd semester	Detailed Result analysis, Inferences & corrective actions (if any).
Syllabus coverage as per course plan	Syllabus coverage details
Conduct of Practical courses with relevant details	<ul style="list-style-type: none"> • Authenticated List of experiments indicating mandatory experiments • Course diary, Availability of Lab Manual and demonstration videos of experiments. • Sample reading wherever required. • Online assessment of procedure. conduct of online Viva. • Final Assessments.
Conduct of Minor/ Honours classes	Course diary for conduct of Minor/Honours classes
Platform for LMS/Course and lectures uploaded	Verify portal for details (Study materials, Lecture classes, Question bank, Assignments, Class tests, Assessments, Attendance etc)
NPTEL/SWAYAM course material recommended for reading	Availability of NPTEL/ SWAYAM course materials and its availability in college portal for knowledge enrichment. Also as content beyond syllabus
Conduct of Internal assessments for theory and lab classes	Question Papers, Model Answers, Answer key & Marking scheme, Sample Answer papers Mark list for theory.
The mechanism for taking feedback as to whether the online classes are effective	Check online feedback from students. Parents feedback during PTA
Conduct of series tests	Question Papers, Model Answers, Answer key & Marking scheme, Sample Answer papers, Mark list, Result analysis and remedial actions
Maintenance of course diary	Physical availability of Course diary with all relevant documents updated.(Course plan, assignments, attendance, internal test marks, extra classes, course materials, ICT/Digital mode of instruction etc shall be entered in the course diary.
Register showing activity points	Activity point register with split up of each semester & Activity Point Plan

Faculty evaluation by students & remarks of HoD	<p>First feedback should have been completed by 14 Oct 2020.</p> <p>Assessed based on</p> <ul style="list-style-type: none"> • Feed backs taken in a semester. • % of students participated • Corrective actions taken for improving teaching effectiveness • Peer evaluation
Conduct of Seminar & Projects Preliminary	<ul style="list-style-type: none"> • Course Diary. • Evaluation Team for both Seminar & project authorized by HoD. • Process of Selection of seminar topic and project Topic • Evaluation and distribution of marks as per Guide lines. • Availability of Rubrics for evaluation <p>The preliminary work to be completed</p> <ul style="list-style-type: none"> • Literature Survey • Formulation of Objectives • Formulation of Hypothesis/ design/ methodology • Formulation of work plan • Preparation of preliminary report
Conduct of Project Phase II	<p>Evaluation Team for Project authorized by HoD</p> <p>Quality of Projects</p> <ul style="list-style-type: none"> ○ Application ○ Product ○ Research ○ Core ○ Inter disciplinary <p>Two progress evaluations, mid semester and end semester, are mandatory and marks distribution in course diary</p>
Students attending MOOC or other online courses	<p>Relevant documents/registers as proof. List of students registered for MOOC, Institution/Agency, From - To, Duration, Progress, Certification details.</p>

EXTERNAL AUDIT CHECKLIST**Table 7.2.d External Audit Checklist**

APJ Abdul Kalam Technological University			
Academic Audit Check List			
College Specifications			
SI No	Key Aspects	Remarks	Action by
1	Availability of Academic Calendar	Copy of Academic Calendar	KTU coordinator
2	Compliance to the Academic Calendar of KTU	Activities as per academic calendar. Deviations recorded	All faculties
3	Functioning of students grievances and appeal committee	Committee composition & Minutes of meeting	Chairman-committee
4	Functioning of Academic Discipline & Welfare committee	Committee composition & Minutes of meeting	Chairman-committee
5	Functioning of Anti ragging Committee	Committee composition & Minutes of meeting	Chairman-committee
6	Information on progress of students to parents	Feedback to parents/PTA meeting details etc	Advisor, Dept coordinator
7	Student feedback on co-curricular and extracurricular activities	Co-curricular activities conducted -awareness to students	Class Advisor
8	Students strength in each Program	Actual strength in each class & Nominal Roll	KTU coordinator
9	Faculty Strength & List	Faculty List including Adjunct Faculty	KTU coordinator
10	Average student to faculty ratio index	Student-Faculty Ratio	KTU coordinator
11	Progress of Monthly report uploading	Details of uploading reports & copy	KTU coordinator
12	Details of Staff Advisors	List of staff Advisors with contact no & email ID	HoD, Dept coordinator
13	Details of Guest Lectures by External/industry Experts	List of talks by external experts (Date-Subject-Expert-Organisation)	HoD, Dept coordinator
14	List of facility available for co-curricular activities in the college	NSS, Hobby clubs, funded projects etc	KTU coordinator
15	List of facility available for extra-	Sports, Games, Cultural facilities etc	KTU coordinator

	curricular activities in the college.		
16	Details on entrepreneurship development activities.	Start-up Facilities, Boot camp	HoD, Dept coordinator
17	Details of placement activities undertaken.	List of students placed, planning	Placement Officer
18	Details on industry interaction for students.	Industry tie-ups for projects etc	HoD, Dept coordinator
Programme Specific Assessments			
Sl No	Key Aspects	Remarks	Action by
1	Schedule of Time Table	Department, Class & Course(in Course Diary) Time Table	HoD-Advisor-Faculty
2	Functioning of class/course committees	Minutes of meeting	Chairman-committee
3	Attendance of students	Attendance sheet	Faculties
4	Quantity & Quality of Assignments/Mini Projects	Assignments - Sample work	Faculties - Advisor-HoD
5	Conduct of Tutorial Classes	Details of tutorials with additional faculties	Faculties - Advisor-HoD
6	Syllabus coverage as per course plan	Syllabus coverage details	Faculties - Advisor-HoD
7	Use of ICT enabled teaching & Digital courses	Details of PP Class, Video clippings, Virtual Class etc	Faculties - Advisor-HoD
8	Quality, coverage etc. of question papers of internal exam	Series Question Papers	Faculties - HoD -IQAC
9	Evaluation of internal exams	Series Exam Results & Sample Answer sheets (Best-Mode-Poor)	Faculties - Advisor-HoD
10	Conduct of Practical classes	Authenticated List of experiments indicating mandatory ones	Faculties - Advisor-HoD
11	Syllabus coverage of practical courses	Details of Labs conducted	Faculties - Advisor-HoD
12	Evaluation of students performance in practical classes	Evaluation details in Lab Records	Faculties - Advisor-HoD
13	Conduct of Comprehensive Exam	Methodology - Plan & Progress details of Comprehensive Exam	Faculties - Advisor -HoD
14	Conduct of remedial/bridge classes	Details/plan of remedial classes	Faculties - Advisor -HoD
15	Maintenance of course diary	Updation of course diary	Faculties - Advisor -HoD
16	Maintenance of Course	Course file with study	Faculties - Advisor -HoD

	File	materials and other enclosures	
17	Student feedback on curriculum coverage	Awareness to students on Syllabus coverage	Faculties - Advisor -HoD
18	Student feedback on infrastructural facilities	Awareness to students on Lab/workshop/start-up etc facilities	Faculties - Advisor -HoD
19	List of students with respective Staff advisor & Counselling Records	Class wise list with respective advisor & Counselling Register	Advisor -HoD
20	Result status & Credit status	Class wise Result & credit status	Advisor -HoD
21	Details of Internship by students	Details in an Excel sheet with Activity no of days & Organisation	Advisor -HoD
22	Activity Point status of students	Summary of activity points	Advisor -HoD

Due to Covid Pandemic No External Audit was Conducted and KTU instructed the Colleges to Audit internally through the IQAC

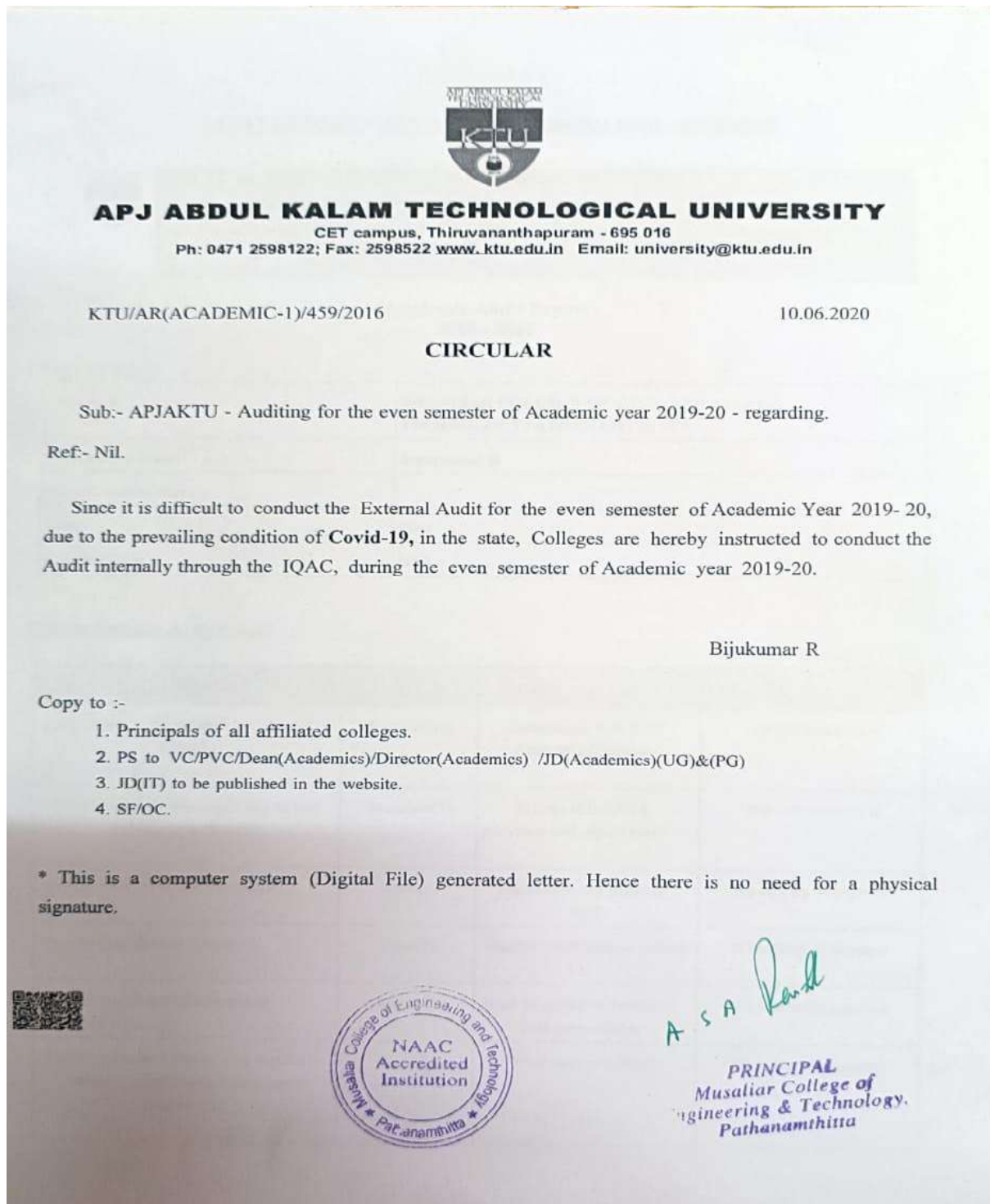


Fig 7.2.a: Circular from KTU to Conduct Internal Audit through IQAC

MCET/ADMIN/1007

29.10.2020

ORDER

The following faculty members are appointed duty of 1st Academic Auditing for the department shown against their names. The Audit must be completed on 03-11-2020 & 04-11-2020 and the report must be submitted to IQAC within in one week after the Audit.

SL No.	Staff members	Department to be Audited
1	Prof Renuka Devi SM (Asso Prof, EEE) Prof Sreeranjini K (Asso Prof, EEE)	Civil Engineering
2	Prof Madhu G (Asso Prof, ME) Prof Femi Susan Babu (Asso Prof, H&S) Prof Rahul R (Asst Prof, ME)	Computer Science and Engineering
3	Prof Salitha MK (Asst Prof, CSE) Prof Shyma Kareem (Asst Prof, CSE) Prof Usha Gopalakrishnan (Asso Prof, CSE)	Electronics and Communication Engineering
4	Prof Navin Koshy (Asst Prof, MBA) Prof Arya Jayakumar (Asst Prof, MBA)	Electrical & Electronics Engineering
5	Prof Nisha Sekhar (Asst Prof, CE) Prof Shubhalekshmi (Asst Prof, CE)	Mechanical Engineering
6	Prof Nidiya Habeeb (Asso Prof, ECE) Prof Arun R (Asst Prof, ECE)	MBA

Copy to-

All Deans and HoDs

IQAC

Office



Principal

A S A
29/10/20
PRINCIPAL
Musaliar College of
Engineering & Technology,
Pathanamthitta

Fig 7.2.b: Posting Order for Audit Team to various Departments

AUDIT REPORT FOR THE YEAR 2020-2021 ODD SEMESTER

Academic Audit Report 2020 – 2021

 **APJ Abdul Kalam Technological University**
CET Campus, Thiruvananthapuram
Kerala -695016
India

**Academic
Audit Report
2020 - 2021**

Basic Details

Institution	MUSALIAR COLLEGE OF ENGINEERING AND TECHNOLOGY PATHANAMTHITTA
First Auditor Name	Jayaprasad R
Second Auditor Name	
Visit	First
Semester Type	Odd

College Specific Assessments

Key Aspects	Rating	Auditor Remarks	Principal's Response
Compliance to the Academic Calendar of KTU(B)	Excellent(5)	Compliance with KTU Academic Calendar	We will maintain it
Functioning of students grievances and appeal committee (B)	Excellent(5)	Prompt in handling grievance and appeal cases	We will maintain it
Average student to faculty ratio (A)	Good(4)	Student Faculty Ratio is 0.97	We will try to improve



S. S. R. Parth
PRINCIPAL
Musaliar College of
Engineering & Technology
Pathanamthitta

Fig 7.2.c: KTU Audit Report for The Year 2020-2021 Odd Semester (First Audit)

Faculty Qualification Index(A)	Poor(2)	Faculty Qualification Index 4.5	We will try to improve
Number of qualified technical staff (A)	Good(4)	Total 26 qualified Technical Staff are available	We will try to improve
Facility of central library with respect to volume, title of books, online print journals (A)	Good(4)	Well stocked Library	We will try to improve
Functioning of IQAC and Progress of IQAC report uploading (A)	Excellent(5)	IQAC is actively associated with all Academic activities	We will maintain it

Student Interaction

Key Aspects	Rating	Auditor Remarks	Principal's Response
Syllabus coverage (B)	Good(4)		We will try to improve
Effectiveness of teaching/learning process	Good(4)		We will try to improve
Conduct of Labs (B)	Poor(2)	Few experiments were conducted online. Actual lab classes are planned in Nov	We will try to conduct more labs.
Continuous assessment (B)	Good(4)		We will try to improve
Interaction/discussion/doubt clearing etc (A)	Good(4)		We will try to improve
Net connectivity issue	Poor(2)	Most of the students are at hilly areas and as such the net	We will try to improve




A S A Parakkal
PRINCIPAL
 Musaliar College of
 Engineering & Technology,
 Pathanamthitta

Fig 7.2.c: KTU Audit Report for The Year 2020-2021 Odd Semester (First Audit) (Contd.)

CIVIL ENGINEERING-(Full Time)

Key Aspects	Rating	Auditor Remarks	Principal's Response
Class/course committee meetings and action taken report (B)	Excellent(5)	Minutes maintained	We will maintain it
Advisory meetings and action taken report (B)	Excellent(5)	Minutes maintained	We will maintain it
Result analysis of previous odd semester (A)	Excellent(5)	Result analysis with trend available	We will maintain it
Syllabus coverage as per course plan (A)	Good(4)	A lag for few courses as per Course plan due to network issues	We will try to improve
Platform used for LMS/Course materials and lectures uploaded (A)	Excellent(5)	Linways Technologies Platform is outsourced	We will maintain it
Conduct of minor/honours classes (A)	Good(4)	Minors finalized late hence coverage lagging	We will try to improve
NPTEL/SWAYAM course materials recommended for reading (B)	Excellent(5)	Links to course materials are provided	We will maintain it
Conduct of Internal assessments for theory and lab classes (A)	Good(4)	Lab assessments are lagging	We will try to conduct more labs.
The mechanisms for taking feedback as to whether the online classes are effective (B)	Excellent(5)	Students feedback and parents feedback taken	We will maintain it
Conduct of series tests (A)	Excellent(5)	Conducted systematically	We will maintain it
Maintenance of course diary (A)	Excellent(5)	Well maintained	We will maintain it
Register showing Activity points (B)	Excellent(5)	Semester wise details maintained	We will maintain it
Conduct of laboratory classes with relevant details(A)	Poor(2)	Conducted only limited Laboratory classes	We will try to improve
Online Faculty evaluation amp remarks of the HoD (A)	Excellent(5)	Records maintained	We will maintain it



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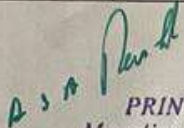

PRINCIPAL
 Musaliar College of
 Engineering & Technology,
 Puthanambhitta

Fig 7.2.c: KTU Audit Report for The Year 2020-2021 Odd Semester (First Audit) (Contd.)

MINUTES OF INTERNAL QUALITY ASSURANCE MEETING HELD ON 13 NOVEMBER 2020 AT 1130 h

1. The Internal Quality Assurance Committee meeting of MCET held at the office of the Principal on 13 November 2020 at 1130 h. The following were present:-

1	Dr Abdul Rasheed A S	Principal	Chairman
2	Prof R Jayaprasad	Dean Acds & Admn	Coordinator
3	Prof Nisha Sekhar	Dept of CE	Member
4	Prof Salitha M	Dept of CSE	"
5	Prof Nidiya Habeeb	Dept of ECE	"
6	Prof Renuka Devi	Dept of EEE	"
7	Prof Madhu G	Dept of ME	"
8	Prof Arun R	Alumni Secretary	

2. **Agenda.**

- (a) Review of audit conducted on 03/04-11- 2020
3. The meeting commenced at 11.30 AM. The Chairman welcomed everybody to the meeting and informed that the Internal Quality Assurance Committee (IQAC) is formed primarily to improve quality of all academic activities of the college and the cooperation of all staff was required for the success of the IQAC.

Observation / Suggestion	Action to be taken	Action by
(a) Effectiveness of Online Classes. The chairman discussed about the feedback from auditors. The effectiveness of the online classes was discussed. Network issues were raised by most of the students.	-Upload the videos of classes in the linways portal and insist the students to watch the video classes.	HoD, Faculties.
(b) Faculty Qualification Index is very Poor.	-Faculties to plan for acquiring PhD in a staggered manner.	HoD, Faculties.
(h) Maintenance of Course Diary needs improvement.	- HoD to verify the course coverage plan approve the same. - HoD to review the course progress on weekly basis to make arrangements to cover deviations from course plan and make endorsement in Course diary.	HoD Faculties

4. There being no other points, the meeting concluded at 12.15 PM



A S Rasheed
Dr A S Abdul Rasheed
Principal

R Jayaprasad
(R Jayaprasad)
IQAC Coordinator

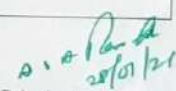
Fig 7.2.d: Minutes of IQAC Meeting (13 November 2020)


MCET/ADMIN/1008 28.01.2021

ORDER

The following faculty members are appointed duty of IInd Academic Auditing for the department shown against their names. The Audit must be completed on 08-02-2021 & 09-02-2021 and the report must be submitted to IQAC within in one week after the Audit.

SL No.	Staff members	Department to be Audited
1	Prof Renuka Devi SM (Asso Prof, EEE) Prof Sreeranjini K (Asso Prof, EEE)	Civil Engineering
2	Prof Madhu G (Asso Prof, ME) Prof Femi Susan Babu (Asso Prof, H&S) Prof Rahul R (Asst Prof, ME)	Computer Science and Engineering
3	Prof Salitha MK (Asst Prof, CSE) Prof Shyma Kareem (Asst Prof, CSE) Prof Usha Gopalakrishnan (Asso Prof, CSE)	Electronics and Communication Engineering
4	Prof Navin Koshy (Asst Prof, MBA) Prof Arya Jayakumar (Asst Prof, MBA)	Electrical & Electronics Engineering
5	Prof Nisha Sekhar (Asst Prof, CE) Prof Shubhalekshmi (Asst Prof, CE)	Mechanical Engineering
6	Prof Nidiya Habeeb (Asso Prof, ECE) Prof Arun R (Asst Prof, ECE)	MBA


 Principal




Copy to-

- All Deans and HoDs
- IQAC
- Office

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 Musaliar College of
 Engineering & Tech-
 Pathan...

Fig 7.2.e: Posting Order for Audit Team to various Departments



APJ Abdul Kalam Technological University
CET Campus, Thiruvananthapuram
Kerala -695016
India


**Academic
 Audit Report
 2020 - 2021**

Basic Details

Institution	MUSALIAR COLLEGE OF ENGINEERING AND TECHNOLOGY PATHANAMTHITTA
First Auditor Name	Jayaprasad R
Second Auditor Name	
Visit	Second
Semester Type	Odd

College Specific Assessments

Key Aspects	Rating	Auditor Remarks	Principal's Response
Compliance to the Academic Calendar of KTU(B)	Excellent(5)	Compliance with KTU Academic Calendar	Will maintain it
Functioning of students grievances and appeal committee (B)	Excellent(5)	Prompt in handling grievance and appeal cases	Will maintain it
Average student to faculty ratio (A)	Good(4)	Student Faculty Ratio is 0.97	will try to improve it
Faculty Qualification Index(A)	Poor(2)	Faculty Qualification Index is 4.5	will try to improve it
Number of qualified technical staff (A)	Good(4)	Total 26 qualified Technical Staff are available	will try to improve it
Facility of central library with respect to volume, title of books, online print journals (A)	Good(4)	Well stocked Library	will try to improve it



A. S. R. Parakkal
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Pathanamthitta

Fig 7.2.f: KTU Audit Report for The Year 2020-2021 Odd Semester (Second Audit)

Functioning of IQAC and Progress of IQAC report uploading (A)	Excellent(5)	IQAC is actively associated with all Academic activities	Will maintain it
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Student Interaction			
Key Aspects	Rating	Auditor Remarks	Principal's Response
Syllabus coverage (B)	Good(4)		will try to improve it
Effectiveness of teaching/learning process	Good(4)		will try to improve it
Conduct of Labs (B)	Good(4)	Experiments were conducted in Lab	will try to improve it
Continuous assessment (B)	Good(4)		will try to improve it
Interaction/discussion/doubt clearing etc (A)	Good(4)		Will maintain it
Net connectivity issue	Poor(2)	Most of the students are at hilly areas and as such the net connectivity is slow	Will maintain it
Extra fees/fine imposed on students (B)	Not Relevant		
Approach of the management/institution in addressing student grievances (B)	Good(4)		will try to improve it
Availability of Faculty for all subjects (A)	Good(4)		will try to improve it
Any other remarks (C)	Not Relevant	No other remarks	

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Pathanamthitta

Fig 7.2.f: KTU Audit Report for The Year 2020-2021 Odd Semester (Second Audit) (Contd.)

CIVIL ENGINEERING-(Full Time)

Key Aspects	Rating	Auditor Remarks	Principal's Response
Class/course committee meetings and action taken report (B)	Excellent(5)	Minutes maintained	will try to improve it
Advisory meetings and action taken report (B)	Excellent(5)	Minutes maintained	will try to improve it
Result analysis of previous odd semester (A)	Excellent(5)	Result analysis with trend available	will try to improve it
Syllabus coverage as per course plan (A)	Good(4)	A lag for few courses as per Course plan due to network issues	Will maintain it
Platform used for LMS/Course materials and lectures uploaded (A)	Excellent(5)	Linways Technologies Platform is outsourced	will try to improve it
Conduct of minor/honours classes (A)	Good(4)	Syllabus coverage is Good	Will maintain it
NPTEL/SWAYAM course materials recommended for reading (B)	Excellent(5)	Links to course materials are provided	will try to improve it
Conduct of Internal assessments for theory and lab classes (A)	Good(4)	Lab Exams conducted	Will maintain it
The mechanisms for taking feedback as to whether the online classes are effective (B)	Excellent(5)	Students feedback and parents feedback taken	will try to improve it
Conduct of series tests (A)	Excellent(5)	Conducted systematically	will try to improve it
Maintenance of course diary (A)	Excellent(5)	Well maintained	will try to improve it
Register showing Activity points (B)	Excellent(5)	Semester wise details maintained	will try to improve it
Conduct of laboratory classes with relevant details(A)	Good(4)	Conducted Laboratory classes & Exam	Will maintain it
Online Faculty evaluation amp remarks of the HoD (A)	Excellent(5)	Records maintained	will try to improve it

Page No: 3

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 Engineering & Technology,
 Pathanamthitta

Fig 7.2.f: KTU Audit Report for The Year 2020-2021 Odd Semester (Second Audit) (Contd.)

MINUTES OF INTERNAL QUALITY ASSURANCE MEETING HELD ON 20 FEBRUARY 2021 AT 1130 h

1. The Internal Quality Assurance Committee meeting of MCET held at the office of the Principal on 20 February 2021 at 1130 h. The following were present:-

1	Dr Abdul Rasheed A S	Principal	Chairman
2	Prof R Jayaprasad	Dean Acds & Admn	Coordinator
3	Prof Nisha Sekhar	Dept of CE	Member
4	Prof Salitha M	Dept of CSE	Member
5	Prof Nidiya Habeeb	Dept of ECE	Member
6	Prof Renuka Devi	Dept of EEE	Member
7	Prof Madhu G	Dept of ME	Member
8	Prof Arun R	Alumni Secretary	Member

2. **Agenda.**

- (b) Review of audit conducted on 08/09-02- 2021
3. The meeting commenced at 11.30 AM. The Chairman welcomed everybody to the meeting and informed that the Internal Quality Assurance Committee (IQAC) is formed primarily to improve quality of all academic activities of the college and the cooperation of all staff was required for the success of the IQAC.

Observation / Suggestion	Action to be taken	Action by
(a) Co-curricular & Extracurricular activities be improved.	<ul style="list-style-type: none"> - Organise Expert Lectures/ Workshops/visits. - Organise Sports, Games and Cultural activities 	HoD, Class Advisors. Asst Director Physical Education
(b) Faculty Qualification Index is very Poor.	-Faculties to plan for acquiring PhD in a staggered manner.	HoD, Faculties.
(c) Conduct of Practical Classes and Test be improved.	<ul style="list-style-type: none"> - Lab Manual show details of "Prepared by" (Faculty) and "Approved by" (HoD). - List of mandatory experiments be approved by HoD. - All works related to practicals – Record work, experiment, Viva etc be completed in the lab itself. - Evaluation be completed on the same day except for experiments which needs more processing time. - Split ups of marks for each experiment be 	HoD Faculties <i>Practical classes monitored on a regular basis.</i>

Fig 7.2.g: Minutes of IQAC Meeting (20 February 2021)

	<p>shown clearly in course diary.</p> <ul style="list-style-type: none"> - Practical examination be conducted with two examiners, one not engaging the lab and HoD to issue a detailing order. - Schedule of examination be published by HoD. - Question paper along with the answer key be maintained by Departments. - All documents- Exam schedule, question paper & answer key, attendance sheet, answer sheets, mark split up statement etc be maintained at least for one year. 	
(d) More number of Tutorial hours can be taken.	- Organise more tutorial classes for difficult courses wherever possible.	HoD Faculties

4. There being no other points, the meeting concluded at 12.15 PM

20/02/2021

Dr A S Abdul Rasheed
Principal

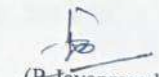

(R Jayaprasad)
IQAC Coordinator



Fig 7.2.g: Minutes of IQAC Meeting (20 February 2021) (Contd.)

Table 7.2.e Action Implementation and Effectiveness

SI No	Concern in Audit	Action Taken
1	Need for improvement in Co-curricular and Extracurricular activities	1. While preparing the academic calendar, emphasis is given to introduce more co-curricular activities like seminar, invited talks and industrial visits 2. Since the institution academic activities are online due to covid pandemic, extracurricular activities cannot be arranged; however, when the academic activities are switching to offline mode institute will promote cultural activities and inter collegiate sports activities
2	Faculty qualification index were found to be very poor	This matter is presented to the governing body with its concurrence steps are under way to induct more qualified faculties
3	Conduct of practical classes and test to be improved	Since the institution academic activities are online due to covid pandemic, virtual labs were conducted so students don't have a hands-on training on the experiments. Extra lab classes can be arranged once the academic activities are switched to offline mode

7.3. Improvement in Placement, Higher Studies and Entrepreneurship (10)**Total Marks: 8****a. Placement & Higher Studies Data**

The list of student placed and those who opted for higher studies for three assessment years are listed in Table below.

Table B.7.3a: Placement Data for the Year 2020-2021

Item	Placement and Higher Studies		
	LYG	LYGm1	LYGm2
	2020-21	2019-20	2018-19
Total number of students corresponding to LYG including lateral entry	47	45	54
Total number of students obtained jobs as per there record of placement office	19	14	36
Number of students who opted for higher studies	6	12	6
Entrepreneurs	0	0	0
Percentage of total students who got placed and went for higher studies	53%	55%	76%

7.4. Improvement in the Quality of Students Admitted to the Program (10)**Total Marks: 5**

Improvement in quality of students admitted to the program is evaluated based on several criteria as: opening and closing rank in state level entrance examination and percentage of marks obtained in qualifying examination (XIIth grade examination). The details are presented in Table 7.4.

Table 7.4 Rank Details of Entrance Examination

Item		CAY (2021-22)	CAYm1 (2020-21)	CAYm2 (2019-20)
National Level Entrance Examination (Name of the Entrance Examination)	No. of Students admitted	0	0	0
	Opening Score/Rank	-	-	-
	Closing Score/Rank	-	-	-
State/University/Level Entrance Examination/Others	No. of Students Admitted	4	4	11
(KEAM)	Opening Score/Rank	34875	12536	16686
	Closing Score/Rank	47031	46307	45165
Name of the Entrance Examination for Lateral Entry or Lateral entry details	No. of Students admitted	1	4	2
	Opening Score/Rank	2835	991	1776
	Closing Score/Rank	2835	3823	2741
Average CBSE/Any other Board Result of admitted students (Physics, Chemistry & Mathematics)		84	76	60

CRITERION 8	First - Year Academics	50
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8. FIRST-YEAR ACADEMICS (50)**Institute Marks: 43.09****8.1. First Year Student-Faculty Ratio (FYSFR) (5)****Institute Marks: 5**

Data for first-year courses to calculate the FYSFR:

Table 8.1: First Year Student Faculty Ratio (FYSFR)

Year	Number of Students (Approved intake strength)	Number of Faculty Members (considering fractional load)	FYSFR	Assessment = (5 ×20)/ FYSFR (Limited to Max. 5)
2019-20 (CAYm2)	240	12	20	5
2020-21 (CAYm1)	240	12	20	5
CAY (2021-22)	240	12	20	5
Average	240	12	20	5

8.2. Qualification of Faculty Teaching First Year Common Courses (5)**Institute Marks: 3.33**Assessment of qualification = $(5x + 3y)/RF$,

x= Number of Regular Faculty with Ph.D.

y = Number of Regular Faculty with Post-graduate qualifications.

RF= Number of faculty members required as per SFR of 20:1.

Table 8.2: Qualification of Faculty Teaching First Year Common Courses

Year	x	y	RF	Assessment of Faculty Qualification = $(5x+3y)/RF$
2019-20	2	10	12	3.33
2020-21	2	10	12	3.33
2021-22	2	10	12	3.33
Average Assessment				3.33

8.3. First Year Academic Performance (10)**Institute Marks: 4.9**

Academic Performance = ((Mean of 1st Year Grade Point Average of all successful Students on a 10-point scale) or (Mean of the percentage of marks in First Year of all successful students/10)) x (number of successful students/number of students appeared in the examination)

Successful students are those who are permitted to proceed to the second year.

Table 8.3: First Year Academic Performance

Academic Performance	2021-22(CAY)	2020-21(CAYm 1)	2019-20(CAYm 2)
Mean of CGPA or mean percentage of all successful students(X)	4.33	3.51	6.86
Total number of successful students (Y)	11	36	28
Total number of students appeared in the examination (Z)	11	36	28
API[X*(Y/Z)]	4.33	3.51	6.86
Average API [(AP1+AP2+AP3)/3]	4.9		

8.4. Attainment of Course Outcomes of First Year Courses (10) Institute Marks: 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) Institute Marks: 5****COs Assessment Process:**

- CO assessment is done using the Direct tool. For computing the CO attainment internal evaluation marks and marks from the external assessment by the university are used. 30% weightage is given for internal assessment and 70% weightage is given for the external assessment conducted by Kerala Technological University. Three different scores are attributed to a different level of overall performance as 1, 2 or 3.

Theory Courses

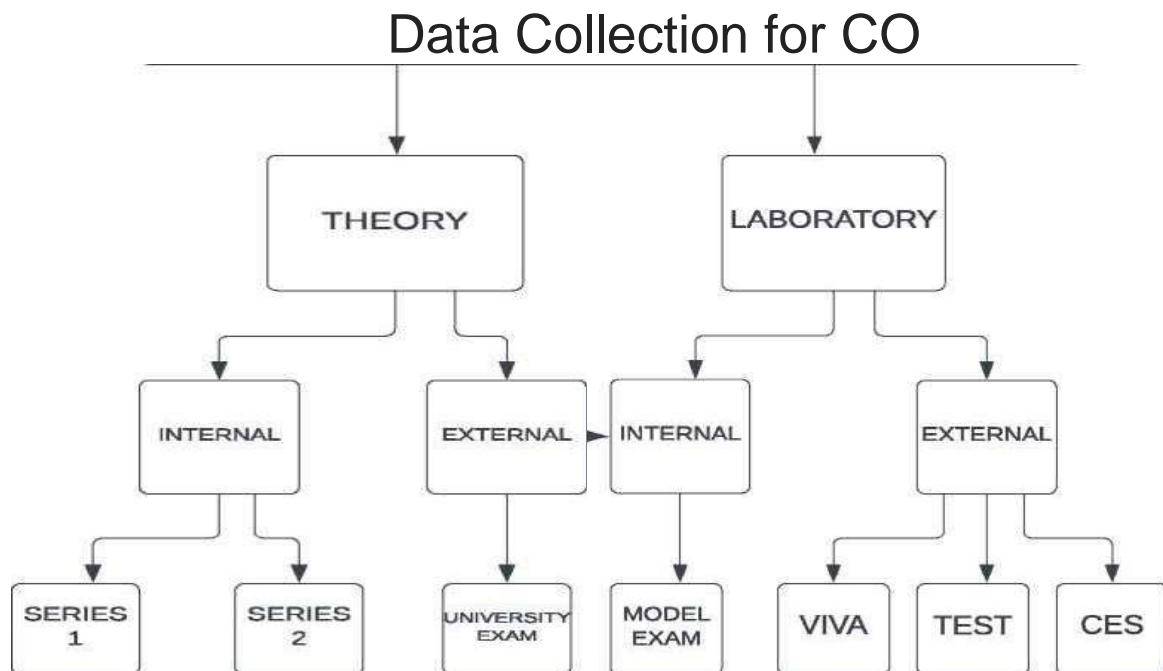
- The internal examination is conducted centrally by the Examination Cell by publishing time table well in advance.
- The Internal Assessment marks in theory papers shall be based on two tests generally conducted twice in each semester as per the academic calendar stipulated by the affiliated university.
- There shall be a maximum of 50 internal Assessment marks in each theory subjects.
- Question papers for the corresponding course will be prepared by the respective course faculty and will be submitted to the DQAC and finally to IQAC and Examination cell well in advance.
- The external assessment of all theory courses is done by the university by conducting an end semester examination. The question paper setting and evaluation of answer script is completely under the control of university.

Laboratory Courses

- For the laboratory course, evaluation is done internally based on continuous assessment of students and a final laboratory test is conducted internally.
- The end semester evaluation is conducted by Faculty in-charge out of 30 marks.
- For the end semester examination 20 marks are given for the experiment calculation and research and 10 mark is awarded based on Oral evaluation (Viva Voce)
- Continuous evaluation system is calculated out of 70marks

- For continuous assessment students are evaluated based on their pre-preparation, actual execution, result and a daily viva based on the particular experiment so the total internal continuous assessment is
- Attendance: 20 Marks
- Class work/ Assessment /Viva-voce:50 Marks

Methodology for CO Assessment



8.4.2. Record the Attainment of Course Outcomes of All First Year Courses (5)

Institute Marks: 5

The attainment level records of a first-year course (C101 Linear Algebra and Calculus) for CAY (2021-22), is given in Table 8.4.2.e. The level of correlation varies from 1 to 3 where 1 represents slight (low), 2 represents moderate (medium), and 3 represents the substantial (high) level of correlation. First year courses are listed in table 8.4.2.a.

Table 8.4.2.a: List of First Year Courses Offered

Sl. No.	Course Code	Course Name
1	C101	Linear Algebra and Calculus
2	C102	Engineering Physics B
3	C103	Engineering Mechanics
4	C104	Basics of Electrical and Electronics Engineering
5	C105	Life Skills
6	C106	Engineering Physics Lab
7	C107	Electrical and Electronics Engineering Workshop
8	C108	Vector Calculus Differential Equation and Transforms
9	C109	Engineering Chemistry
10	C110	Engineering Graphics
11	C111	Basics of Civil and Mechanical Engineering
12	C112	Professional Communication
13	C113	Programming in C
14	C114	Engineering Chemistry Lab
15	C115	Civil and Mechanical Engineering Workshop

Evaluation Criteria for computing attainment level

Internal Assessment:

COs Attainment level is calculated by segregating the internal examination marks based on the defined course outcomes. The marks gained by the students for every CO are taken and the threshold value is set as 50% of the maximum mark for every CO.

The attainment levels and target levels set for each course are fixed as shown in table 8.4.2.b.

Table 8.4.2.b: Rubrics for CO attainment (Internal Evaluation)

Attainment Level	Condition
1	if the number of students secured 50% mark is $\leq 50\%$ of class strength
	if the number of students secured 50% mark is $>50\%$ and $< 60\%$ of class strength
2	if the number of students secured 50% mark is $\geq 60\%$ and $< 70\%$ of class strength
3	if the number of students secured 50% mark is $\geq 70\%$ of class strength

External Assessment:

The attainment level is calculated by converting the grades secured for each subject to the corresponding grade point and the threshold value is set as 50% of the maximum value of the grade point.

The attainment levels and target levels set for each course are fixed as shown in table 8.4.2.c.

Table 8.4.2.c: Rubrics for CO attainment (External Evaluation)

Attainment Level	Condition
1	if the number of students secured P grade is $\leq 50\%$ of class strength
	if the number of students secured P grade is $> 50\%$ and $< 60\%$ of class strength
2	if the number of students secured P grade is $\geq 60\%$ and $<70\%$ of class strength
3	if the number of students secured P grade is $\geq 70\%$ of class strength

As per the university norms the grade system is shown in the table 8.4.2.d.

Table 8.4.2.d: University Grade System

Sl. No.	Course Code	Course Name
LETTER GRADE	GRADE POINT	RANGE OF MARKS
S	10	90 % and above
A+	9	85 % and above but less than 90%
A	8.5	80 % and above but less than 85%
B+	8	75 % and above but less than 80%
B	7.5	70 % and above but less than 75%
C+	7	65% and above but less than 70%
C	6.5	60 % and above but less than 65%
D	6	55% and above but less than 60%
P	5.5	50 % and above but less than 55%
F	0	Failed

The overall COs attainment for any course is equal to the sum of 70% of attainment based on students' performance in the end semester examinations conducted by the university and 30% of attainment in Continuous Assessment Tests (Internal examinations).

Attainment Level = (0.7 × Attainment level based on University Examination marks) + (0.3 × Attainment level based on Continuous Assessment Test marks)

Table 8.4.2.e Evaluation done for CO measurement for C101 Linear Algebra and Calculus (CAY 2021-22)

No	Name	CO1	CO2	CO3	CO4	CO5	University
1	Abdul Ahad	60.32	38.69	92.86	54.76	66.67	0
2	Abel K George	84.13	92.86	50	50	66.67	0
3	Afsal Sulaiman	55.56	45.63	38.1	58.73	66.67	6
4	Afsana Salim	100	100	81.75	100	100	10
5	Aiswarya R Panicker	92.06	61.9	56.35	50	66.67	7
6	Akash P Suresh	42.86	57.74	44.05	83.33	66.67	7
7	Ashley T Samuel	73.81	53.17	45.24	56.35	33.33	8
8	Jibin B	100	85.71	58.73	47.62	33.33	7
9	Krishna Priya Santhosh	77.78	100	100	95.24	100	0
10	Riya Anna Cherian	96.83	92.86	81.75	90.48	100	10
11	Sanju S Kumar	68.25	63.89	65.87	79.37	66.67	6
Class Strength		11					
No of student mapped to at least one CO		11					
No of students with CO value ≥ 50		10	9	8	10	9	
% of students with CO value ≥ 50		90.91	81.82	72.73	90.91	81.82	
Average		77.42	72.04	64.97	69.63	69.7	
CO Attainment Level		3	3	3	3	3	
Internal Average Value		3					
External Average Value							3
Total= (Internal AVG \times .3) +(External \times 0.7)		3					

The CO attainment for all the courses of S1 and S2 obtained from direct tool assessment is given in table 8.4.2.f

Table 8.4.2.f CO attainment for all courses of S1 and S2 (CAY 21-22)

Sl. No.	Course Code (NBA)	Course Name	Attainment by Internal Assessment	Attainment by Internal Assessment (30%)	Attainment by external assessment	Attainment by external assessment (70%)	TOTAL
1	C101	Linear Algebra and Calculus	3	0.9	3	2.1	3
2	C102	Engineering Physics	1.4	0.42	1	0.7	1.12
3	C103	Engineering Mechanics	2.2	0.66	1	0.7	1.36
4	C104	Basics of Electronics and Electrical Engineering	2.17	0.651	1	0.7	1.351
5	C105	Life Skills	2.2	0.66	3	2.1	2.76
6	C106	Engineering Physics Lab	3	0.9	3	2.1	3
7	C107	Electrical and Electronics Engineering Workshop	3	0.9	3	2.1	3
8	C108	Vector Calculus Differential Equation And Transforms	2.4	0.72	2	1.4	2.12
9	C109	Engineering Chemistry	2.4	0.72	2	1.4	2.12
10	C110	Engineering Graphics	2.96	0.888	2	1.4	2.288
11	C111	Basics of Civil and Mechanical Engineering	2.17	0.651	1	0.7	1.351
12	C112	Professional Communication	1.8	0.54	3	2.1	2.64
13	C113	Programming in C	3	0.9	1	0.7	1.6
14	C114	Engineering Chemistry Lab	3	0.9	3	2.1	3
15	C115	Civil and Mechanical Engineering Workshop	3	0.9	3	2.1	3

8.5. Attainment of Program Outcomes from First Year Courses (20) Total Marks: 20**8.5.1. Indicate Results of Evaluation of Each Relevant PO and PSO, if applicable (15)****Institute Marks: 15****8.5.1.2. Program Outcome Attainment Levels**

The PO attainment of all first-year courses for CAY (2021-2022) is shown in table 8.5.1.2.

Table 8.5.1.2: PO Attainment for CAY (2021-2022)

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C101	3.00	2.20	1.60									1.00
C102	1.12	0.75	0.75	0.75		0.56	0.75					0.37
C103	1.27	1.27	0.73	0.45								1.36
C104	1.35	0.45	0.90									0.90
C105		0.92	1.84			1.84		1.84	1.54	2.07		0.92
C106	1.80	2.00		3.00				1.00	1.20	1.00		
C107	2.75			1.00	2.00	2.00		1.00	2.00	1.50		1.60
C108	2.12	2.12	2.12									1.41
C109	2.12	1.41	0.71	0.28	0.42	0.42	0.71					
C110	2.29	0.76			2.29					1.53		
C111	1.35	0.82		0.45	1.35	1.35	0.90	0.90	0.90			
C112	0.88	0.88							1.47	2.29		2.20
C113	1.42	1.33	1.33	0.80	1.17	0.53				0.71	0.53	0.98
C114	2.00	2.00	2.00	3.00	2.50	2.00	1.00	1.00	1.67			
C115	1.00	2.00			1.00	1.00		2.00	2.20	2.17	1.00	1.00

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Direct Attainment	1.75	1.35	1.33	1.22	1.53	1.21	0.84	1.29	1.57	1.61	0.77	1.17
PO Attainment	1.75	1.35	1.33	1.22	1.53	1.21	0.84	1.29	1.57	1.61	0.77	1.17

8.5.2. Actions Taken Based on the Results of Evaluation of Relevant POs (5)**Institute Marks: 5**

The PO attainment levels, observations, and actions implemented for first-year courses are provided for CAY (2021-22). The direct attainment levels of POs are presented here.

PO Attainment Levels and Actions for Improvement – CAY (2021-22)

POs	Target Level	Attainment Level	Observations
PO1: Engineering Knowledge			
PO1	1.5	1.75	Target Achieved
Action 1: Tutorial classes to be conducted for analytical subjects and complex topics to improve problem solving skills			
PO2: Problem Analysis			
PO2	1.5	1.35	90% attainment achieved
Action 1: Solved questions with answers for analytical subjects to be provided for better learning			
PO3: Design/development of Solutions			
PO3	1.5	1.33	89% attainment achieved
Action 1: Labs and workshops are given more weight so that students can have a sense of how to design and develop solutions			
PO4: Conduct Investigations of Complex Problems			
PO4	1.5	1.22	81% attainment achieved
Action 1: Tutorial sessions to solve engineering problems.			
PO5: Modern Tool Usage			
PO5	1.5	1.53	Target Achieved
Action 1: Workshops are encouraged for students to become familiar with modern tools.			
PO6: The Engineer and Society			
PO6	1.5	1.21	81% attainment achieved
Action 1: In higher semesters they would be encouraged to participate in NSS, blood donation camps, village visits, UNAI Aspire Chapter and other relevant club activities.			
PO7: Environment and Sustainability			
PO7	1.5	0.84	56% attainment achieved
Action 1: Students are encouraged to take part in initiatives that address global and environmental related matters such as energy consumption and renewable energy resources.			

PO8: Ethics			
PO8	1.5	1.29	86% attainment achieved
Action 1: Quotes addressing ethics are shown in classrooms			
Action 2: Awareness programs on personality development.			
PO9: Individual and Team Work			
PO9	1.5	1.57	Target Achieved
Action 1: Students are encouraged to participate in a variety of extracurricular and co-curricular activities			
PO10: Communication			
PO10	1.5	1.61	Target Achieved
Action 1: Additional English practice sessions.			
Action 2: Group discussions			
PO11: Project Management and Finance			
PO11	1.5	0.77	51% attainment achieved
Action 1: Mini projects are encouraged as a way for students to learn project management and financial skills in higher semesters.			
PO12: Lifelong Learning			
PO12	1.5	1.17	78% attainment achieved
Action 1: Tutorial classes to be conducted for analytical subjects and complex topics to improve problem solving skills.			
Action 2: Students are urged to join professional bodies as life members in higher semesters to continue their education.			

CRITERION 9	Student Support System	50
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9. STUDENT SUPPORT SYSTEM (50)**Total Marks: 50****9.1. Mentoring System to Help at Individual Level (5)****Total Marks: 5**

The details of the mentoring system that the institution has built for students for various objectives, as well as its efficacy, are detailed below.

Details of the Mentoring system

- The purpose of mentoring system is to monitor the student with regard to their academic and professional well-being.
- Every student is assigned to a faculty member who continues to be the mentor for that student till the completion of his/her course. Mentors identify the shortcomings with respect to punctuality, attendance, academic performance etc.,
- Mentors also identify the core competencies of the students and guide them to become better professionals.
- Mentors interact with students and their parents and have a better understanding about the social back ground of each student. Mentor provide all psychological, mental support to a student to overcome all the stresses during the course duration.
- As and when issues are found among students, they are recommended for professional counselling. Parent Teacher meetings are conducted as and when required.
- An independent login is provided to every student in LMS (Linways student portal) for sharing the pertinent information like attendance, academic performance, feedback etc..
- All mentors encourage the students to participate in co-curricular, extra-curricular and other professional activities, which motivates them and stimulate their growth to become all-round young professionals.

Table 9.1.a: Mentors for the Academic batch 2020-2024

Sl. No.	Department	Mentors
1	Civil Engineering	Prof. Leena V P Prof Subhalekshmi
2	Computer Science & Engineering	Prof. M K Salitha Prof. Athira B
3	Electronics & Communication Engineering	Prof. Aneesh S P
4	Electrical & Electronics Engineering	Prof. Blessy ARahiman Prof. Praveen K
5	Mechanical Engineering	Prof. Ajai M Prof. Anoop S R
6	Management Studies	Prof. Arya Raj

MUSALIAR COLLEGE OF ENGINEERING AND TECHNOLOGY PATHANAMTHITTA MENTOR MENTEE LIST ACADEMIC YEAR :2020-2021			
DEPARTMENT OF CIVIL ENGINEERING B.TECH : FIRST YEAR (2020 - 24)			
Sl no:	Student enrollment number	Name of student	Mentor
1	20226	A.R.ASLAM	Prof. SUBHALEKSHMI
2	20017	AJMAL BIJU	
3	20008	ABEY JOSE	
4	20219	ABHIJITH UTHAMAN	
5	20020	AKASH A B	
6	20003	ALAN JOHNSON	
7	20176	ANANDHU HARI	
8	20223	ARIF MUHAMMED	
9	20074	ARYA AJITH	
10	20222	ASHHAD NAZAR	
11	20082	ASHNA SHAHUL	
12	20011	ASWIN ASHOKAN	
13	20005	ATHUL S NAIR	
14	20232	BADILUSHA BADARUDEEN	
15	20018	DEVADUTH U	
16	20014	ELIAS JITHIN VARGHESE	
17	20316	FATHIMA NAVAS	
18	20227	FEBE SARA GEORGE	
19	20016	GOURI M	
20	20234	HRUDYA SABU	
21	20233	JINTO THOMAS	
22	20010	JOE S YOHANNAN	
23	20004	KIRAN KRISHNAN	
24	20230	MERINA	
25	20236	MIDHUN M	
26	20229	MOHAMMED SAIFUDEEN S	
27	20224	RAMZANA R	
28	20228	REVATHI SAJEEV	
29	20225	RIZWAN RAHIM	
30	20007	SACHU ABHILASH	
31	20220	SARATH KUMAR S	
32	20206	SHABANA BASHEER	
33	20231	SHAN S	
34	20002	SHINAZ SHAJI	
35	20235	SREEJITH T S	
36	20009	SUJITH OMANAKUTTAN	
37	20012	VIDYA SAGAR	
38	20221	V S NAVEEN	
39	20019	MUHEZINA MUJEEB	
			Prof. LEENA V P.



Principal
Musaliar College
Engineering & Tech
Pathanamthitta

Figure 9.1.a: Mentors for the Academic batch 2020-2024

Table 9.1.b: The Mentor list for the academic batch 2020 – 2024

Academic Year	ECE	EEE	CE	CSE	ME	Total No. of Mentors
2021-22	8	6	7	13	8	42
2020-21	9	7	8	13	8	45
2019-20	9	6	8	14	10	47

Number of students per mentor: On an average 20 students per mentor.

Frequency of meeting: Twice in a semester

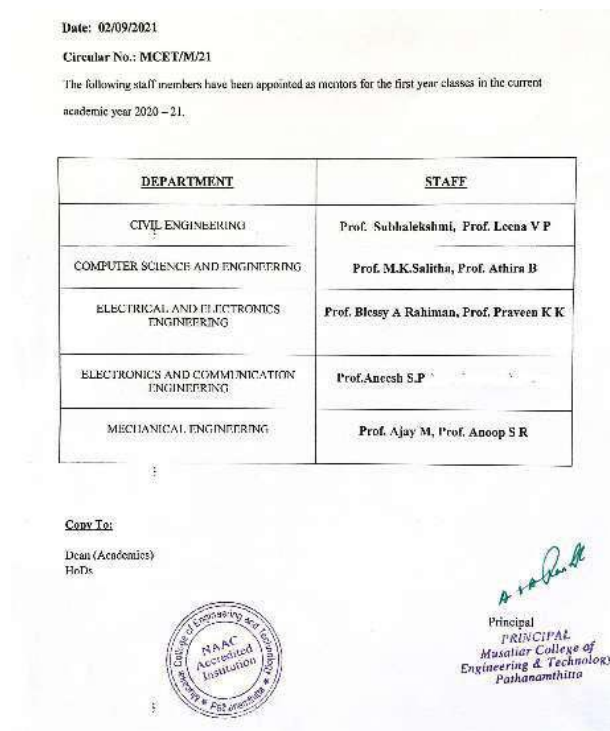


Figure 9.1.b: Mentors for the Academic batch 2020-2024

Table 9.1.c: Description of Mentoring System

Sl. No.	Type of mentoring system	Functions
1	Professional guidance	<ul style="list-style-type: none"> • Encouraging the students to participate in technical competitions to enhance their technical knowledge • Stimulate students to exhibit innovation in projects. • Encourage students to present their ideas through paper presentations in conferences • Encourage students to be part of professional societies
2	Career advancement	<ul style="list-style-type: none"> • Guiding the students to do additional domain certification courses which adds value in addition to their qualifications related to career. • Provide career guidance and workshops apart from Soft skill training provided by the Training & Placement Cell. • Encourage students to participate in competitive examinations like GATE, IELTS, GMAT etc
3	Course work specific	<ul style="list-style-type: none"> • Identify academically slow learning and weaker students and counsel them to ensure that they improve their academic performance. • This is achieved by providing them with additional reading materials, model questions along with solutions and remedial classes
4	Laboratory specific	<ul style="list-style-type: none"> • Students are advised to utilize the lab to carry out mini projects/projects etc., • Encourage the students to perform the experiments beyond the curriculum. • Supporting the students to have repetition of the Experiments for enhancement of practical knowledge
5	All-round development	<ul style="list-style-type: none"> • To encourage the student to learn team work, leadership and motivate them to participate in sports and cultural activities. To create ethical and moral awareness. • Support the students to strengthen their Interpersonal relationships, improve their Academic progress, involvement in sports, Extra-curricular activities, career advancement Courses and soft skill improvements. • Encourage and inspire them to get involved in social and environmental issues., National Service Scheme (NSS), UNAI and Blood donation camps.

The details of the mentoring system that the institution has built for students for various objectives, as well as its efficacy, are detailed below. In general, the institutions mentoring system has been shown to be effective with respect to the following points.

Efficacy of the Mentoring/ Counselling system

In general, the institutions mentoring system has been shown to be effective with respect to the following points.

- Improvement in personality development of individual student.
- Improvement in stress management and interpersonal relationships.
- Enhances the scope for career advancement of each student.
- Proficiency in addressing the societal issue

9.2. Feedback Analysis and Reward / Corrective Measures Taken, if any (10)

Total Marks: 9

Feedback plays a vital role in the teaching-learning process. It helps the Faculty to appraise their work critically and to reflect on what they need to do for improvement.

1. Student Feedback Collection Process: Learning Management Systems –Linways

The teaching-learning system followed by any educational institution needs continuous refinement. To capacitate this process of continuous refinement, the institution has adopted a feedback system that takes suggestions from students of each program. This eventually helps to fine-tune the teaching-learning process and the curriculum. The institution follows a well-defined and formal feedback system. It has been identified as one of the important process in our Quality Management System.

The feedback from students regarding the quality of teaching is collected during each semester, through the LINWAYS. In the middle of the semester, the students are asked to respond to a feedback questionnaire with 12 questions. Once the feedback process is complete, the reports are generated automatically based on the formula. The consolidated report containing grade for each course is sent to the respective Heads of the department and the information is disseminated to the faculty in the department. Corrective actions are taken for the faculty members who have obtained 2 and 1 grade points by the Head of the Department.



Figure 9.2.a: Student feedback response analysis

Figure 9.2.b: Student feedback from Linways

The evaluation of the feedback by the students is done as follows

$$\text{Marks} = \frac{((\sum S1) * 5) + ((\sum S2) * 4) + ((\sum S3) * 3) + ((\sum S4) * 2) + ((\sum S5) * 1)}{X * 100}$$

where X is the total number of students participated in the feedback collection process. The grades are assigned with the help of the following grade ranges

Table 9.2.1 Table of marks and grade point

Marks	91-100	81-90	71-80	61-70	<=60
Grade point	5	4	3	2	1

Students’ feedback regarding the teaching-learning process is also collected from students orally during class committee meetings.

2. Course exit survey

At the end of each semester, students are required to complete a semester Course End Survey. In this, students will be required to respond to questions that examine how well they have acquired the skills on learning the respective course and subsequently attainment of COs and thereby POs attainment is computed.

Sample Course Exit survey

Questionnaire of Environmental Engineering 2

1. 1.In your opinion what percentage of questions in the university exam were taught in the course work? 2.Effectiveness of online class through linways portal
2. I am able to design circular and rectangular sewers under different flow conditions.
3. I am able to explain sewer appurtenances systems and sewage characteristics.
4. I am able to describe various aspects of primary treatment of sewage and design of various treatment units.
5. I am able to explain secondary treatment methods and various sludge disposal methods.
6. I am able to design septic tank and imhoff tank.
7. Was the course supported by adequate library resources?
8. What are your suggestions to improve this course?

The image shows a spreadsheet titled 'DEPARTMENT OF CIVIL ENGINEERING ENVIRONMENTAL ENGINEERING 2'. It contains a table with columns for 'QUESTION', 'MARKS', 'PERCENTAGE', 'ATTAINMENT', 'CO1', 'CO2', 'CO3', 'CO4', 'CO5', 'CO6', 'CO7', 'CO8', 'CO9', 'CO10', 'CO11', 'CO12', 'CO13', 'CO14', 'CO15', 'CO16', 'CO17', 'CO18', 'CO19', 'CO20', 'CO21', 'CO22', 'CO23', 'CO24', 'CO25', 'CO26', 'CO27', 'CO28', 'CO29', 'CO30', 'CO31', 'CO32', 'CO33', 'CO34', 'CO35', 'CO36', 'CO37', 'CO38', 'CO39', 'CO40', 'CO41', 'CO42', 'CO43', 'CO44', 'CO45', 'CO46', 'CO47', 'CO48', 'CO49', 'CO50', 'CO51', 'CO52', 'CO53', 'CO54', 'CO55', 'CO56', 'CO57', 'CO58', 'CO59', 'CO60', 'CO61', 'CO62', 'CO63', 'CO64', 'CO65', 'CO66', 'CO67', 'CO68', 'CO69', 'CO70', 'CO71', 'CO72', 'CO73', 'CO74', 'CO75', 'CO76', 'CO77', 'CO78', 'CO79', 'CO80', 'CO81', 'CO82', 'CO83', 'CO84', 'CO85', 'CO86', 'CO87', 'CO88', 'CO89', 'CO90', 'CO91', 'CO92', 'CO93', 'CO94', 'CO95', 'CO96', 'CO97', 'CO98', 'CO99', 'CO100'. The rows contain student names and their corresponding scores for each question and CO.

Figure 9.2.c: Course exit survey analysis

3. Student feedback: Graduate survey

Graduate survey for academic year (Batch: 2017-2021) were obtained online. Feedback questionnaire approved by IQAC were circulated to students who cleared all subjects till eighth semester through Google forms and responses were recorded. 40 students of fourth year responded. Evaluation was done on 3-point scale and submitted to DQAC.

Fig 9.2.d: Graduate survey analysis

4. Alumni feedback

Department of Civil Engineering, conducted a alumni feedback collection survey. Total 15 questions were asked related to different criteria like college academics, administration, discipline, campus environment, canteen and other supporting facilities, placement, teacher student relationship etc. Alumni feed feedback for six batches were collected in googleform.

**Musaliar College of Engineering and Technology
Department of Civil Engineering**

Alumni Feedback

Musaliar College of Engineering and Technology, Pathanamthitta, alumni survey form to improve on all facets of total educational experience delivered to students so as to make them excel in their professional career and to become engineers with humane values. In this mission, an opinion of alumni plays a vital role in evaluating attainment of our objectives and to plan for further course for improvement. Kindly spend some of your valuable time to fill up this form and give us your valuable feedback and suggestions for further improvement of the Institution. Your inputs will be of great use to improve the quality of our academic programmes and enhance the credibility of our Institution.

Name:	Year of Study:
Email ID:	
Current Organization:	
Current Position:	
Current Domain/Specialization:	

Attributes	Excellent (4)	Very Good (3)	Good (2)	Average (1)	Poor (0)
Transparency of Admission procedure					
Fee structure is properly communicated in advance					
Faculty involvement in Academic progress and course planning					
Laboratories & Equipment					
Maintenance and upkeep of Class rooms					
Internet & Online journal facility					
Sports and Cultural facilities					
Evaluation System					
Hostel Facilities					
Library/Severns/Reading Room					

To what extent were the following *Programme Educational Objectives* fulfilled by the Department/ Institution? For each of the Programme Educational Objectives given below, rate according to your understanding.

PROGRAMME EDUCATIONAL OBJECTIVE(PEOs)

PEO1: Graduates shall acquire technical and managerial competence in analysis, research and innovation towards pursuing careers as successful engineers and entrepreneurs.

PEO 2: Graduates shall develop professional and social ethics, team spirit, communication skills and awareness of social responsibilities and adapt to current trends through lifelong learning.

PEO 3: Graduates shall attain expertise in integrating analytical and problem-solving abilities and software hardware knowledge to develop technically and economically feasible systems in Electronics and communication field.

Your assessment	Strongly Agree (2)	Agree (1)	Neutral (0)	Disagree (-1)	Strongly Disagree (-2)
Programme Educational Objectives					
1. Four-year B Tech program paved strong technical knowledge and skill to analyse and develop innovative research in my professional career.					
2. The four-year undergraduate study in Electronics and Communication Engineering at MCET is helpful in evolving solutions to technical problems in a responsible way following all ethical principles					
3. Professional education at MCET provided me a quest for lifelong learning to find problems to societal needs.					
4. During the four-year undergraduate study in Electronics and Communication Engineering, I have acquired software and hardware knowledge and skill to develop technical and economically feasible solutions in the field of Electronics and communication					

Figure 9.2.e: Alumni survey questionnaire

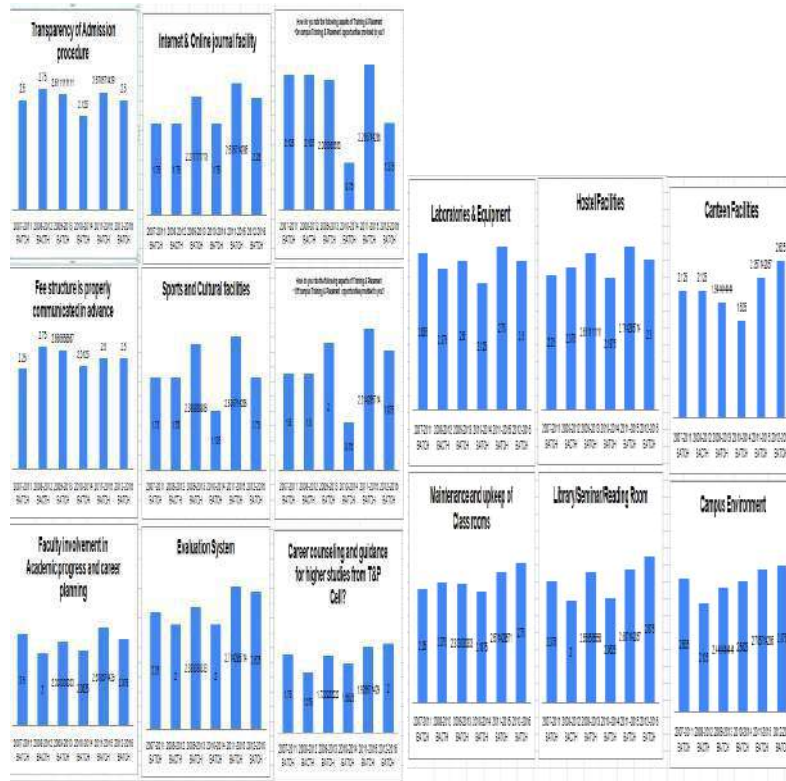


Fig 9.2.f: Alumni survey questionnaire and response graphs

5. Parent feedback

Parents feedback for 2019-2020 even semester was conducted through online platform. 11 parents responded from S8 batch, 39 responded from S6 batch, 19 responded from S4 batch and 26 responded from S2 batch.

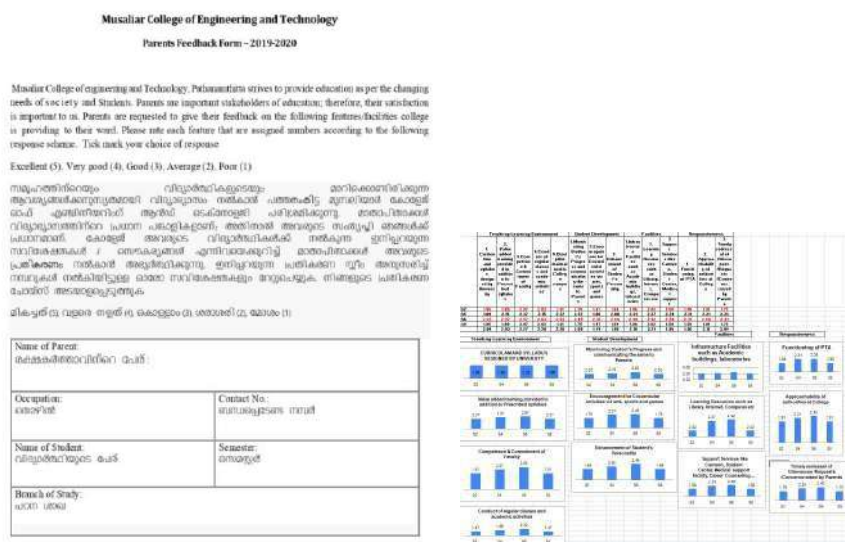
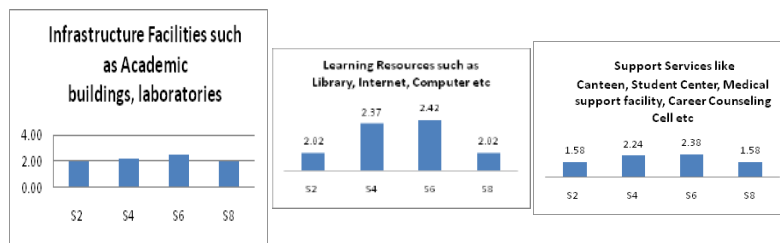


Fig 9.2.g: Parents feedback questionnaire and response graphs

9.3. Feedback on Facilities (5)**Total Marks:5**

The institution follows a well-defined and formal feedback system. It has been identified as one of the important process in our Quality Management System. Feedback is collected from stakeholders regarding the facilities provided by institution like academic buildings, laboratories, library, internet, computer, canteen, Student Center, Medical support facility, Career Counseling Cell etc. Analysis is being done from the data collected from alumni and parents.

**Fig 9.3 Graphs of feedback on facilities****9.4. Self-learning (5)****Total Marks: 5**

Self-learning is the process by which the students take initiative by themselves to enrich their knowledge. They try to explore new relevant technologies and skills with the background they obtained from classroom learning. Due to their own urge for acquiring knowledge they try to find out human or material resources that help them to achieve the course outcomes. Here, at Musaliar College of Engineering and Technology much importance is given to this process. And students are encouraged to use different resources to satisfy their urge to expand their knowledge base.

1. We have established a library which caters to the needs of the students of all branches. A number of reputed journals are available here and the students have access to all. Students are encouraged to use the library and the digital sources to study the subject of their interest. Departments have the provision of independent library where books and resources catering to specific departments are being utilized for knowledge enhancement process.
2. All the students have been made to register at the National Digital Library of India. The benefits of using NDLI had been communicated to the students and many of them are using those facilities also.
3. The institution also motivates students to undergo massive open online courses (MOOC). With this intend the institution has initiated formation of NPTEL local

chapter. Faculty and students are made aware of the MOOC courses offered under SWAYAM NPTEL.

4. Students are sent on industrial visits and industrial training so that they can practically observe the various theories that they have studied in their classroom. They are asked to make presentation based on their visits and training.
5. Students take part in various technical competitions like quizzes, workshops, hackathons etc.
6. Students also participate in Government Sponsored Programs. They are encouraged to develop their own ideas and present them.

9.5. Career Guidance, Training, Placement (10)**Total Marks: 10**

The institution has a structured and organized training and placement cell. A large number of reputed companies in various domains visit the institution for recruitment. This has been made possible by specific training and skill-based trainings through outsourced agencies and in-house training.

Career guidance

All the students of Musaliar College of Engineering and Technology are provided with intense and multidimensional career guidance throughout the course duration. Professional organizations and consultants/experts in higher education conduct seminars and counselling sessions, group wise. Special emphasize is given to induce students to undertake higher education in forms of master degree, doctoral degrees in India and abroad.

Training and placement facility

The placement at Musaliar College of Engineering and Technology campus is a dynamic, real-time process which is inclusive, proactive, ambitious and wholesome. The placement process is constantly tuned based on industry need and feedback. The placement cell monitors the employment opportunities and arranges campus recruitment process interviews for the final year students and provides internship opportunities for pre-final year students. A dedicated training and placement cell work round the year to provide efficient, effective training and employment opportunities for all the students. Musaliar College of Engineering and Technology has an exclusive training department which takes care of the training needs of all its departments. The training imparted includes aptitude, communication, analytical reasoning, problem solving along with the basic etiquettes.

The details of office bearers of Career guidance and placement cell for the academic year 2020-2021 are as follows

Table 9.5.a: Office bearers of Career guidance and placement cell

Chairman/ Coordinator	Frequency of meetings	Members
Prof. Aneesh S P, Assistant Professor, Electronics & Communication Engineering	Twice per semester or as and when required	Prof. Sujith Balachandran, Assistant Professor, Management Studies.
		Prof. Sarath S, Assistant Professor, Electrical & Electronics Engineering#
		Prof. Praseetha S Nair, Assistant Professor, Computer Science & Engineering
		Prof Haleema, Assistant Professor, Civil Engineering.
		Prof. Ruby Thankam George, Assistant Professor, Computer Science & Engineering
		Prof. Naveen Koshy, Assistant Professor, Management Studies.

To assist the committee in all the activities an administrative assistance is provided round the year by Mrs. Kavitha S, Office assistant.

Table 9.5.b: Number of training programmes conducted for past 3 years and current year

Year /Branch	No of Programs
2018-2019	4
2019-2020	5
2020-2021	1
2021-2022	5

The number of placements for both under graduate and post graduate students through campus recruitment for last 3 years and current year are shown in Table 9.5.c.

Table 9.5.c: Placement record for last 3years and current year

Courses	Year	No of eligible students	No. of students placed in campus	No. of students placed off campus	% of students placed
UG	2018-2019	170	32	39	41.76
	2019-2020	170	51	27	45.88
	2020-2021	123	47	15	50.41
	2021-2022	94	12	0	12.77
PG	2018-2019	92	40	18	63.04
	2019-2020	101	45	18	62.38
	2020-2021	34	26	2	82.35
	2021-2022	103	15	0	14.56

A large number of recruiters visit Musaliar College of Engineering and Technology campus year on. The companies who visited the campus for the on-going recruitment till date for the year 2018-19, 2019-20 and 2020-21 are indicated in the following table

Table 9.5.d: Recruiters visited during 2018-19, 2019-20 and 2020-21

ABBA Soft Technologies	MuzirisSofttech
BYJUs	Ospyn Technologies Pvt. Ltd.
Cognizant	PoornamInfovision Pvt. Ltd.
CSS Corp	Pivot Technology solutions Inc
Experion Technologies	QuEST Global
Guide House India Pvt Ltd	Speridian Technologies
IBS software	TCS
Infosys Ltd	Test House India Pvt. Ltd.
Innoval Digital Solutions	Triassic Solutions Pvt. Ltd.
Innovature Lab	UST Global
Litmus7 systems Consulting Ltd.	VVDN Technologies
Mphasis Ltd.	Wipro Ltd.
Accenta Education	Federal Bank Ltd.
Axis Bank Ltd.	ICICI Prudential Life Insurance Company Ltd.
Dalmia Cement Ltd.	Jaro Education
Educational Gamers Pvt. Ltd.	JSW Cement
ESAF Bank Ltd.	Sutherland Global Services
Envestnet Inc	

9.6. Entrepreneurship Cell (5)**Total Marks: 4****Vision**

The Entrepreneurship Development Cells mission is to inspire college students to start their own business. The following initiatives are part of a focused mission to attain this goal:

- Organizing Workshops and Lectures on a regular basis to raise entrepreneurship awareness.
- Providing Entrepreneurial Seminar.
- Encourage students innovative ideas and assist them in product development companies.
- Encouraging students launching their own start-ups.

Table 9.6.a: The following office bearers are members of IEDC cell for the academic year 2020-2021

Chairman/ coordinator	Frequency of meetings	Members
Prof. Vishnu Raj, Assistant Professor, Electronics & Communication Engineering	Twice per academic year or as when required	Dr. Babu B, Professor, Managemnt Studies
		Prof. Ajai M, assistant Professor, Mechanical Engineering
		Prof. Praveen K, Assistant Professor, Electrical & Electronics Engineering
		Prof. Ashna Begum, Assistant Professor, Civil Engineering

The various programs conducted to encourage innovations by the institute for the period from 2018 to 2022 is listed below

Table 9.6.b: Programmes under IEDC

Sl No	Date	Name of the Programme	Resource Per
1	6 th August 2018	Probiotics an emerging field of Industrial Academic Interest	Shri. Lakshminarayanan
2	11 th August 2018 at MCET seminar hall	Entrepreneur Seminar	Mr Deborshi de.
3	2 nd and 4 th October 2018 at Computer Science Ritchie Lab, MCET	Workshop for BTech Students in connection with Kerala Start-up mission. Gave basic idea on developing android applications.	Mr Sanoj C.K, Senior Software Engineer, Triassic Solutions Techno Park.
4	4 th to 6 th November 2018. Musaliar Institute of Management studies Seminar Hall	Start-up Mission I8	Mr Rohit Radhakrishnan, Open fuel

5	13 th January 2019	Seminar on webpage designing & hacking for MCA	Muhammed Shamil and Tinu Thomson
6	1 st to 3 rd March 2019 at Mechanical Seminar Hall, MCET.	Arduino & IOT Workshop	Mr Abu Mathew Thoppan, Thopps Technologies, Kochi.
7	5 th April 2019.	One Day Entrepreneurship workshop for the students of Mount Zion College of Engineering, Kadamanitta	Nodal Officer, of MCK Bootcamp
8	28 th and 29 th July 2019	Workshop on Ideation and Entrepreneurship	Mohit, Mr Aravind and Mr Akshay.
9	Conducted on 2 nd October 2019 at Mechanical Seminar Hall, MCET	Innovation and entrepreneurship program for first year	Prof. Sherin Sam Jose, Assistant Professor, Amal Jyothi College of Engineering, Kanjirapally.
10	4 th September 2019	Introduction to Indian Patent System & Patent Filing Procedures	Prof. Jippu Jacob
11	21st January 2020	One day workshop on C Programming on 21/01/2020	Prof. Amritha Vishnuprya
12	11 th and 12 th of February 2020 Electronic Dept. Seminar Hall, MCET	Robotics Workshop	Prof. Lijesh L
13	10 th Feb-2021	Design of Automatic Disinfectant gate sanitizing booth	Innovative Projects under IEDC
14	24-Mar-21	Conventional IC Engine To BLDC Powered Electric Motorcycle Conversion E Motorcycle	Innovative Projects under IEDC
15	1 st April 2021 at Musaliar Institute of Management	Intercollege entrepreneur-level Competition	Prof. Usha Gopalakrishnan
16	30th April 2021	Virtual Internship on Web Development	Dr. Teena Joseph
17	Oct30-Nov1 2021	Intercollege virtual workshop on Hybrid vehicles, Machine Learning & Cyber Security	Dr. Ajesh F

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

Total Marks: 10

Students are engaged in co-curricular and extracurricular 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, the institution has formed various committees for participating and organising the cultural and sports activities. Every department has its own association through which various department symposiums, project expo and other technical and non-technical events are being conducted. These association activities benefit in developing leadership skills and make them work in teams. Apart from the academic, co-curricular and extracurricular activities, students also take part in various fest coordinated and conducted by themselves under the able guidance of institute and faculty.

9.7.1. Sports Facilities

The College encourages the students to take part in sports, outdoor and indoor games. The College maintains a fully-fledged sports activity centre that provides necessary facilities for the conduct of sports and games. A spacious playground is available in our campus in which daily practice is given for the outdoor games such as badminton, Throw Ball, Cricket, Kabaddi, Foot ball, Volley Ball, basket ball Athletic events etc. Students are trained in indoor games such as Table Tennis, Badminton, Chess, and Carom.

Table 9.7.1.a: Sports- Activities (2018-2019)

Name of the Game	Venue	Date
National Inter Collegiate Volley Ball Competition	Musaliar College of Engineering & Technology, Pathanamthitta	7/7/2018 to 10/7/2018
Inter Collegiate Foot Ball Tournament	TKM College of Engineering, Kollam	28/09/2018
Inter Collegiate Cricket Tournament	Musaliar College of Engineering & Technology, Pathanamthitta	12/01/2019-16/01/201

Cultural Activities

As the cultural activities are the integral part of college life, the students are permitted to participate in various cultural activities inside and outside the campus. It provides personal growth by learning skills, to meet new people and to pass on the cultural traditions.

The elected college union is entrusted to promote cultural talents of students. Students actively participate in cultural activities during the annual day function organised by the Institute every year. College also has a professional musical band which performs at various occasions.

In connection with the techno cultural festival various cultural competitions are conducted. The institute promotes active participation from other institutes within the state. Fabulous prizes were distributed to the prize winners.

Avishkar

The institution conducts annual techno cultural festival – Avishkar. The event functions as a ideal platform for students to express their technical and cultural skills. Events are held at intercollege level. Fests provide a platform for students to showcase ones unique talents and are important in the holistic development of the personality of the students, providing a break from the monotonous routine of evaluation and academics

Main Objectives of Avishkar are:

- To promote the interest of current technology among students of BITS and also the students who visit the fest. To bridge the gap between industry and campus.
- To provide an arena for students to test their engineering skills.
- To connect the students with ground breaking ideas with the experts. To meet the right people
- To have a break from Books
- To create a platform for demonstrate their talent.

Institutional Social Initiatives

Apart from regular academic activities the institute conducts colloquium where eminent scientists, academicians, and law makers deliver keynote lectures to attain various PO's. Institute conducts awareness programs which include seminars, invited talks and competitions to educate youth on moral values, drug abuse, traffic regulations and its violations, effect of junk foods and food safety. Institution organizes such events in association with district administration and various government departments

‘Pratheeksha’ is the annual event organized by the institute in association with district administration and various government organizations with an emphasis to create an awareness on moral and societal values among youth. As part of our social commitment the institute conducts various competitions like quiz program, painting debate, elocution etc where students of the institute organize and participate in various events thereby some of the PO's are strengthened.

Table 9.7.1.b: Pratheeksha

MUSALIAR COLLEGE OF ENGINEERING AND TECHNOLOGY PRATHEEKSHA - INSTITUTIONAL SOCIAL INITIATIVE		
Pratheeksha 2020	Shri VM Sudheeran Inaugurating Praheeksha 20	
Pratheeksha 2020	Invitation Poster	
Pratheeksha 2022	Invitation poster	
Pratheeksha 2022	Shri Gopinath Muthukad Inaugurating Prtheeksha 22	

9.7.2. NSS & UNAI

The College is well networked with its neighbourhood community and promotes constant interaction to ensure student participation and involvement in social issues. The college lends all support and encouragement to students and is evident from the various projects and programs that different student bodies undertook during each academic year to make them better citizens. These activities enable students to identify the issues and problems faced in the locality and initiate activities as a solution to societal needs. The extension activities of the college are through NSS, UNAI chapter and Department Associations. The NSS cell of Musaliar College of Engineering and Technology is very active in planning and carrying out

Socio centric programs aimed at the benefit of society. College is located in a socially backward area of Pathanamthitta district. Many parts of the district share boundaries with Ranni reserve forest. NSS unit identifies government schools that have minimal resources at remote locations and take initiatives in maintenance and development of basic infrastructural facilities. Maintenance of basic support facilities in public health centres and taluk hospitals in the district was carried out through the program “Punarjani”. Awareness programs were conducted in the locality on various socially relevant issues. A survey on water scarcity is regularly taken in Malayalappuzha panchayath where the college is located and people are given guidelines on scientific methods of rainwater harvesting. Cleaning of public places like bus stands, panchayath offices, government hospitals, public health centres, etc. are carried out under swachh bharat abhiyan and Kerala suchitwa mission. Blood donation camps are conducted at regular intervals in association with the Indian Medical Association. UNAI (United Nations academic Impact) Aspire chapter of Musaliar College of Engineering and Technology organises various programs and events in the campus and the neighbourhood which actively supports the principles of United Nations namely

1. Human Rights
2. Education opportunity for all
3. Higher education opportunity for all
4. Capacity building in higher education
5. Global Citizenship
6. Peace and conflict resolution
7. Addressing Poverty
8. Sustainability and
9. Intercultural dialogue.

Various days of importance like environment day, Engineers day, ozone day, Teachers day, etc are celebrated in the campus giving awareness to the student community about the relevance of observance. UNAI Chapter has taken initiative to conduct a cancer awareness program where there was active participation from panchayats and local self-help groups in the locality.

The Institution encourages students and staff to actively participate in the various events as part of the festival celebration.

Every year institution celebrate the following Indian national festivals

1. Onam

Onam is the national festival of Kerala. The Department of Higher Education of our state declares a one-week holiday for Onam. Prior to the start of the holidays a working day is set aside for the celebration. The celebration starts with an address by the Principal and sending out the Onam message and greetings to staff and students. Various cultural programs befitting and depicting the cultural heritage of Onam are organised in the campus.

2. Teacher's day

On this day we honour our beloved teachers for their selfless effort towards shaping the carriers of their students and elevating the education system of India as a whole. Teacher's day is organised by department associations and by various student bodies like NSS.

3. Engineer's day

The Engineering Community celebrates Engineers Day on 15 September every year as a remarkable tribute to the greatest Indian Engineer Bharat Ratna Mokshagundam Visvesvaraya (popularly known as Sir MV). "Role of Engineers in a developing India" is the theme of Engineers Day. Efforts are made each year to inculcate among students the value of Engineers towards society.

4. Gandhi Jayanthi:

Gandhi Jayanti is Celebrated every year to mark the birth anniversary of Mohandas Karamchand Gandhi, Father of Our Nation. Student volunteers form NSS and department associations carry out cleaning of public places in the locality.

5. National Integration Day

National Integration Day is celebrated every year to mark the birth anniversary of Late Prime Minister Indira Gandhi. The National Integration pledge is taken in all the classes by students and staff.

6. Christmas celebration

Christmas celebration is celebrated on 23rd December 2021. Each department organised a cake cutting ceremony with students cultural events including christmas carol.

Table 9.7.2.a: NSS Events 2018-2019

Sl. No.	Program	Venue	Date
1	Orientation Program by Principal	Musaliar College of Engineering & Technology, Pathanamthitta	01-08-2018
2	Awareness class on electricity	Catholicate H.S.S pathanamthitta	02-08-2018
3	Awareness class on environmental pollution	Thaikkavu H.S.S pathanamthitta	04-08-2018
4	Fundraising Project for Sanitary Napkin Vending Machine for Tribal Students	Kisumum govt. School	08-08-2018
5	Panchayat survey	Malayalapuzha Panchayat	09-09-2018 & 16-09-2018
6	Engineers day celebration	Musaliar College of Engineering & Technology, Pathanamthitta	15-09-2018
7	NSS day celebration	Musaliar College of Engineering & Technology, Pathanamthitta	4-09-2018
8	Swatchhta Hi Seva	Pathanamthitta Town Hall and KSRTC Bus Stand.	02-10-2018-
9	PUNARJJANI - 7 DAY CAMP 2018	General Hospital Pathanamthitta	17-10-2018 to 21-10-2018, 27-10-2018 & 28-10-2018
10	Republic Day celebration	Musaliar College of Engineering & Technology, Pathanamthitta	26-01-2019
11	Drug relief orientation class	Musaliar College of Engineering & Technology, Pathanamthitta	23-02-2019
12	Seminar based on drug relief	Edathavalam pathanamthitta	24-02-2019
13	Womens Day celebration	Musaliar College of Engineering & Technology, Pathanamthitta	08-03-2019
14	Water day	Musaliar College of Engineering & Technology, Pathanamthitta	22-03-2019
15	Election awareness and quiz competition	Musaliar College of Engineering & Technology, Pathanamthitta	12-04-2019
16	Orientation programme	Musaliar College of Engineering & Technology, Pathanamthitta	17-04-2019
17	Water for birds	Musaliar College of Engineering & Technology, Pathanamthitta	12-05-2019
18	Farewell	Musaliar College of Engineering & Technology, Pathanamthitta	17-05-2019
19	Environment day celebration	Musaliar College of Engineering & Technology, Pathanamthitta	05-06-2019

Table 9.7.2.b: NSS Events 2018-2019

Sl. No.	Program	Venue	Date
1	YOGA DAY- YOGA FROM HOME	Musaliar College of Engineering & Technology, Pathanamthitta	20-06-2020
2	ORIENTATION FOR NEW VOLUNTEERS	Musaliar College of Engineering & Technology, Pathanamthitta	02-08-2020
3	Independence Day Celebration	Musaliar College of Engineering & Technology, Pathanamthitta	15-08-2020
4	My Nation Independence Quiz	Musaliar College of Engineering & Technology, Pathanamthitta	15-08-2020
5	Orientation program	Musaliar College of Engineering & Technology, Pathanamthitta	23-08-2020
6	Teachers Day	Musaliar College of Engineering & Technology, Pathanamthitta	05-09-2020
7	NSS Day Celebration	Musaliar College of Engineering & Technology, Pathanamthitta	24-09-2020
8	Gandhi Jayanti - Vegetable planting	Volunteers house and premises	02-10-2020
9	Gandhi Jayanthi - Community cleaning program	Volunteers house and premises	02-10-2020
10	Indian Airforce Day	Musaliar College of Engineering & Technology, Pathanamthitta	08-10-2020
11	World Food Day	Musaliar College of Engineering & Technology, Pathanamthitta	16-10-2020
12	ORIENTATION BY PROGRAM OFFICER	Musaliar College of Engineering & Technology, Pathanamthitta	20-10-2020
13	UN Day	Musaliar College of Engineering & Technology, Pathanamthitta	24-10-2020
14	Childrens day	Musaliar College of Engineering & Technology, Pathanamthitta	14-11-2020
15	World Aids Day	Musaliar College of Engineering & Technology, Pathanamthitta	01-12-2020
16	Indian Navy Day	Musaliar College of Engineering & Technology, Pathanamthitta	04-12-2020
17	Human Rights Day	Musaliar College of Engineering & Technology, Pathanamthitta	10-12-2020
18	Awareness class about Social Media Usage During The Pandemic	Musaliar College of Engineering & Technology, Pathanamthitta	14-12-2020
19	Anganavady Renovation Project	Ward 14 Anganwadi Number 2	17-12-2020 to 11-01-2021

20	Orientation on social determinants of health and gender factor	Musaliar College of Engineering & Technology, Pathanamthitta	22-12-2020
21	Christmas Day: Letter writing competition- Letter to santa	Musaliar College of Engineering & Technology, Pathanamthitta	25-12-2020
22	WORLD ENVIRONMENT DAY	In respective volunteer houses	05-06-2021

UNAI

Table 9.7.2.c UNITED NATIONS ACADEMIC IMPACT (UNAI) Activities (2018-2019)

Name of the activity	Year of the activity (2018-2019)	Numbers of teachers participated in such activities	Numbers of students participated in such activities
Debate on gender equality	(2018-2019)	7	25
Wise quackers-World environment day	(2018-2019)	10	30
Awareness programme on Electrical hazards	(2018-2019)	8	20
Pratheeksha	(2018-2019)	12	75
Independence day celebration	(2018-2019)	4	20
Teachers day celebration	(2018-2019)	5	15
Engineers day	(2018-2019)	12	32
Ozone day	(2018-2019)	2	27
Water monitoring day	(2018-2019)	7	45
Gandhi Jayanthi celebration	(2018-2019)	5	28
UN Day celebration.	(2018-2019)	3	46
National Education Day	(2018-2019)	5	57
Consciente	(2018-2019)	4	25
Childrens day	(2018-2019)	9	35

Other Clubs

As the cultural activities are an integral part of college life, the students are permitted to participate in various cultural activities inside and outside the campus. It provides personal growth by learning skills, to meet new people and to pass on the cultural traditions. The Institute has various hobby clubs like debate club, photography club, music club and micro projects club where student members are motivated to participate in various competitions there by providing facilities to the student community to exhibit and nurture their skills. Students show their hidden talent by participating in the above clubs.

Various clubs in the institution and training cell help to improve their confidence, communication, and other related soft skills. Each club has a student Chairman from the final year and Secretary from the third year. The students from the institution who are interested in a particular club can associate themselves with the club. The Chairman and Secretary of the concerned club is responsible for conducting various awareness programs for the benefit of the student.

Table 9.7.2.c The club details are given below:

Sl. No	Clubs
1	Women's Development Cell
2	Music club
3	Eco club
4.	Debate club
5	Photography club

Women's Cell

Musaliar Women Cell is formed to look after the welfare and problems faced by girl students and lady staff. The internal complaint committee (women) constituted by the institute act as the women's cell. All of its programs are aimed at achieving the dictum of Embodiment, Empowerment and Enhancement of Women.

Table 9.7.2.d EVENTS ORGANIZED BY WOMEN CELL

SL. NO	PROGRAM NAME	GUEST OF HONOR	MONTH & YEAR	ORGANISED BY
1	Seminar on Gender equality	Shri Gopinath Muthukad	March 8, 2022	Women's Cell
2	Seminar on personal Hygiene	Dr. Reshma kannan, Asst. Surgeon, PHC, Malayalappuzha	March 8, 2021	Women's Cell
3	Motivational Talk	Dr. Hari S Chandran, Sr., Consultant Psychologist	June 16, 2020	Women's Cell
4	Womens Day Celebration	Dr.P A Fathima, Director, CEDS	Mar-2019	WOMEN CELL, UNNAI, NSS
5	National Women Commission of India, Quiz Competition (Prize Distribution ceremony)	Hon. District Judge John J Illikadan	Feb-2019	Women's Cell
6	Awareness programme on Constitutional and Legal Rights of Women	Adv. Binny B, District Court Pathanamthitta	Oct-2019	Women's Cell
7	Women Entrepreneurship Program-Dreamher Session	Fathima Shermin (4Tune Factory), Chandravadana (4Tune Factory), Enfa George (Pehia Foundation)	Mar-2019	Women's Cell, IEDC
8	National Women Commission of India, Quiz Competition		Dec-2018	Women's Cell

CRITERION 10	Governance, Institutional Support and Financial Resource	120
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10. GOVERNANCE, INSTITUTIONAL SUPPORT AND FINANCIAL RESOURCE

Total Marks: 120

10.1. Organization, Governance and Transparency (40)

Total Marks: 40

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

Institute Marks: 5

Vision:

To develop into a world class pace setter with distinct identity and character to meet the demands of a changing global technological competitive scenario with a societal thrust.

Mission:

- To impart quality Education in Engineering & Management by providing state of the art teaching learning methods
- To foster innovation in technology and its application for meeting global challenges
- Inculcate global awareness, communication skills, team building and ethical values.
- To collaborate with industry and R & D organization for developing knowledge and sustainable technologies.
- To facilitate Research and Innovation in various fields of Engineering and Management

10.1.2. Governing Body, Administrative Setup, Functions of Various Bodies, Service Rules, Procedures, Recruitment and Promotional Policies (10)

Institute Marks: 10

Nature of Governance

Musaliar College of Engineering & Technology, Pathanamthitta is a self-financing HEI to promote quality education in the fields of Technical & management studies. This Institute is governed by in a decentralized manner to satisfy the needs of its stakeholders. Various administrative and academic committees are formed to regulate and implement the policies. The overall effectiveness of the functions of the various bodies are overviewed by the governing body.

The Governing Body was constituted as per the guidelines of AICTE. The Governing Body which consists of the Chairman, Trust members, experts from industry, education and

Principal is the apex body for formulating the policies and perspective plans keeping the vision of the institution as the ultimate goal. This apex body draws out draft yearly plan/targets and circulates to College Council –IQAC-Departments. After deliberating views of Departments, IQAC, PTA Executive Committee and College Council (consists of Principal, Deans, HoDs and first year Coordinator), the yearly plan/target with suggestions, if any, gets presented to the Governing Board for finalization. The finalized yearly plan issued for implementation. The Departments then draws out the action plan and IQAC monitors the implementation. Progress in implementation is regularly discussed at College Council meetings as well as PTA meetings and the Management is appraised on the progress.

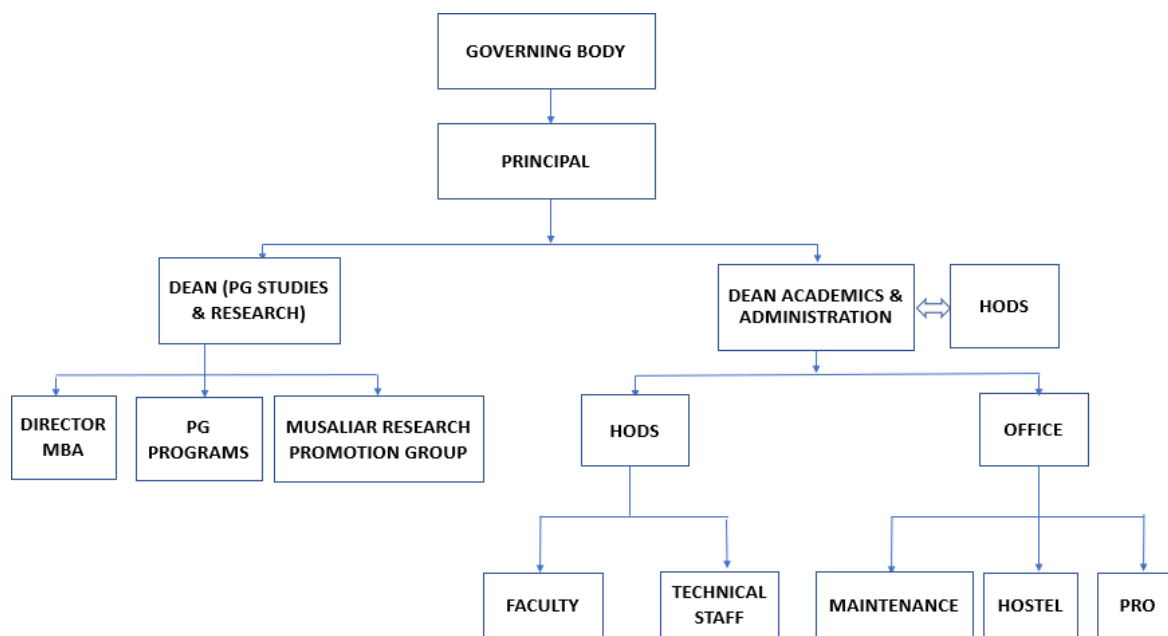


Fig10.1.2.a: ORGANOGRAM

College Academic Council

The College Academic council is constituted by Principal as per regulation of affiliated University. The council consists of Principal, Deans, Director (Management Studies) , HoDs and student representative as special invitee. Modernization of the existing facilities, expansion of infrastructure of laboratories, library resources, class rooms, seminar halls and sporting facilities are the usual criteria in the annual plan of the institution. The academic plan (semester wise) is prepared by the Dean (Academics) and issued after approval of the College Academic Council. The scheduling of industrial visits, conferences, workshops, seminars, FDPs, association activities, club activities, and sports tournaments are finalized by College Council after discussions with team conveners and student representatives.

Principal

The head of the institution takes decisions in the academic activities in tune with the regulation of the affiliating Universities. Academic Council, PTA, Departments and various other committees conducts the meeting regularly.

Deans (Academics & Administration, PG Studies)

They are responsible to implement the academic activities and administrative policies effectively and conduct periodic assessments of the successful implementation.

Head of Departments

Responsible for the overall academic, co-curricular and extracurricular activities of respective departments. Faculty meetings with the HOD play a pivotal role in formulation of curricular and co-curricular activities and the points/suggestions of the faculty meetings are deliberated at College Academic Council meetings before approval. Principal's subsequent meetings with the top management and with the Governing Body ensures that all the information and suggestions reach from bottom to top and from top to bottom travel in a smooth fashion.

**MUSALIAR COLLEGE OF ENGINEERING & TECHNOLOGY, PATHANAMTHITTA
GOVERNING BODY MEMBERS**

Table 10.1.2.1: Authority –Item IX of the Minutes of Vth AGM dated.25.09.2006 and changes approved in the subsequent general body meeting of Musaliar Education Trust. The present Governing body members are as follows.

Sl. No.	Name&Address	Appointment	Remarks
1	Dr S Chand Basha IFS (Retd) Palarivattom, Kochi-682025Mob: 9447290238	Chairman	Chairman, Musaliar Education Trust
2	Mr M Ibrahim Kutty IFS (Retd)T.C.12/1237(LVMRA-5) Govt. Law College Junction Thiruvananthapuram- 695035Mob:9447111702	Member	Member, Musaliar Education Trust
3	Mr. P.I. Sherief Muhammed Palasseril House Thottumugam PO, Aluva-683105 Mob: 9447071703/8289837938	Member	Member, Musaliar Education Trust
4	Mr P. I. Habeeb Muhammed Palasseril, Churilicode POPathanamthitta-689668 Mob: 9447022726	Member	Member, Musaliar Education Trust
5	Mr I Safeer No9.148, D Block, Prestige Palms ECC Road, Near ITPL, WhiteFieldBangalore-560066	Member	Industrialist
6	Mr Sheik Pareeth IAS (MD Kerala, State Coastal Area Development Corporation Ltd) Palasseril, TKMC POKollam-691005 Mob: 9495963789	Member	Nominee, Govt. of Kerala
7	Mr Muhamed Ismail Sr Software Engineer KariathVeedu, PullichiraPO Kollam-6910304Mob: 09947282546	Member	Industrialist
8	Mr George Jacob	Member	Industrialist
9	Mr K Sivaraja Vijayan IAS	Member	Eminent Person
10	Dr Bushra I	Member	Faculty, Musaliar College of Engineering &Technology
11	Prof. Fathima	Member	Academician, Faculty representative
12	Dr. A S Abdul Rasheed	Member (Secretary)	Principal

Table 10.1.2.2: Roles and Responsibilities

Sl. No.	Designation	Duties and Responsibilities
1	Governing Body	<ul style="list-style-type: none"> • Formulation of policy for the institute and amend and approve the policies from time to time. • Final authority to provide final approval for all major policy matters on expansions, collaborations, financial outlays, budgetary allocations and major admin related decision. • Motivate and support the administration to make the institute an outcome-based institution. • Ensure compliance to norms prescribed by AICTE, Government & concerned University from time to time
2	Principal	<ul style="list-style-type: none"> • Appointed by the Chairman, Musaliar Education trust in consultation with governing Body. • He functions as the Head of the Institution and is the Member Secretary of the Governing Body. He is responsible for overall development of the Institution. • Ensure the attainment of vision of the Institution through strategic mission. Delegate responsibilities of various positions in the organization. • Periodic monitoring and evaluation of various activities in the institution. • Prepare annual budget, conduct periodic meetings of academic council, HOD's and all the administrative committees. Oversee office administration • Sole responsibility in maintaining the discipline with in the campus • Coordinates the needs of meeting statutory and regulatory requirements of the government (AICTE, UGC, DTE) and University. Take part in employee recruitment process • Channelizes the growth and benchmarking activities of accreditation (NBA/NAAC) and affiliation processes for the institute. • Single point contact (SPC) for external bodies (industries, academia, regulators, institutions/organizations, companies) and also for stakeholders: industries, parents and alumni. Develops roadmap(s) for the institute, in consultation with his team and disseminates it to all concerned.
3	Dean Academics & Administration	<ul style="list-style-type: none"> • Appointed by the chairman, Musaliar Educational trust in consultation with the Governing body and Principal Act as coordinator of Internal Quality Assurance Cell. • Coordinate with Principal in all administrative and academic responsibilities Prepare academic calendar of the institute • Prepare the strategic plan and oversee the expenditure and report to the principal Responsible for the procurement operations • Managing the transportation facility, hostel facility, security systems, IT infrastructure and routine office administration.
4	Dean PG Studies & Research	<ul style="list-style-type: none"> • Appointed by the chairman, Musaliar educational trust in consultation with the governing body To motivate and mend the faculty & students in developing Research culture. • To develop the Research laboratories. • To guide the faculty & students in publishing articles in Journals. To assist in writing project proposals for grant of funds. • Development of new PG programs. • Preparing Evaluation schedules of all PG programs Coordinates with MRPG in promoting research activities

Table 10.1.2.2: Roles and Responsibilities (Contd.)

Sl. No.	Designation	Duties and Responsibilities
5	Head of Department	<ul style="list-style-type: none"> • Appointed by Principal in consultation with Musaliar education Trust and Governing Body. Functional and administrative head of the respective department. • Ensures the smooth running of the concerned department by laying goals and milestones of the department. • Activities of the department are formulated and implemented in line with the Vision and Mission statements. • HoD builds and leads the team of required numbers of faculty members (Professors, Associate Prof and Assistant Prof), staff (Lab Instructors, Lab Assistants, Admin staff) and students. • The HoD ensures planning, execution, troubleshooting of all academic activities (theory and lab classes), examination (CIE) along with supporting smooth conduction of university examinations, research and publication, projects and developmental activities. • Monitor course delivery and advisory/mentoring system and conduct of course committee meetings. • Address grievances of students, if any during process of course delivery. • Provide a meaningful platform for interaction between students and staff. • Conduct periodical appraisal from students and faculty. • Coordinates intra (with IIC, T & P and other depts./centres at the institute) and inter (with other academia and industries) institutional communicational roles. • HOD plans and organizes events (conference, seminars, workshops, and training) and conducts industrial visits and guest lectures for the benefit of dept. (students and faculty members). Organizes meetings with stakeholders (particularly, parents) in form of PTA. The additional roles and responsibilities: • Develop Calendar of events, Timetables for each section/semester, Upkeep and maintain records of the department, maintain laboratories and assets, assign duties and monitor faculty performance, verifies faculty appraisal, benchmark the growth parameters, monitor mentoring of students by the mentors (faculty team), identify and execute action on departmental needs, develop team towards audits and compliance, monitor R&D and project activities of the department, ensure up-keeping of departmental library, lead team towards publications and IP, seek MOUs from related industries. • Renders all support to the team lead, Principal. • Encourages and motivates the team to contribute for the positive growth of the department, in turn the institution.
6	Director, MBA	<ul style="list-style-type: none"> • Appointed by the chairman, Musaliar Education trust in consultation with the Governing body and Principal Strategic planning and development of Management studies. • Liasoning with Professional bodies and Industries for academic support for management studies. Encourage faculty and student publication in the field of management studies. • Development of new pedagogical methods in teaching learning. Prepare project plans for sponsored research. • Monitoring of preparation of teaching cases. Coordinate industrial consultancy. • Conduct staff appraisal activities in management studies • Coordinate industrial professionals in curriculum development for other PG and research program in management studies Initiate MoU and partnerships with Industries and organizations • Develop collaborative research projects with other organizations.

Functional Bodies/Committees at Institute level

1. College Academic Council

Table 10.1.2.3: College Academic Council members

Chairman/ Coordinator	Frequency of meetings	Members
Principal	Four times per semester or as and when required	Dr Chithraprasad D, Dean (PG Studies & Research)
		Prof Jayaprasad, Dean (Acads)
		Dr Shan M Assis, (Hod Mechanical Engineering)
		Prof Vinod C (HoD, Electronics & Communication Engineering)
		Dr Bushra I (HoD, Civil Engineering)
		Prof. Sarath Raj (Hod, Electrical & Electronics Engineering)
		Dr. Teena Joseph, (HoD, Computer Science & Engineering)
		Prof. Femi Susan Babu (HoD, General Science & Humanities)
		Dr. Hari Sunder (Director, Management Studies)
		Student Council Chairman

- Constituted of Principal, Deans, Director (Management Studies), HoDs and student representative. Review of academic plans
- Decisions on matters concerning campus discipline.
- Formulate, finalize and regulate extracurricular activities viz educational tour, technical fest, Industrial visits, Internships etc. Recommendation on improvement of results in examination and other academic activities.
- Carries out result analysis and suggest corrective measures to Principal. Initiate supplementary teaching methods.

2. Disciplinary & Action committee

Table 10.1.2.4: Disciplinary & Action committee members

Chairman/ Coordinator	Frequency of meetings	Members
Dr. Shan M Assis, Associate Professor & Head, Mechanical Engineering	Twice per semester or as and when required	Prof. Asha S John, Assistant Professor, Electronics & Communication Engineering
		Prof. Giri S M, Assistant Professor, Computer Science Engineering
		Prof. Girijadevi R, Assistant Professor, General Science & Humanities

- Appointed by principal and intimated to university
- Enquiry and recommendation of actions related to malpractices in internal and external examinations.

3. Counselling Committee

Table 10.1.2.5: Counselling Committee members

Chairman/ Coordinator	Frequency of meetings	Members
Prof. Femi Susan Babu, Associate Professor & Head, Humanities & Science	Twice per semester or as and when required	Prof. Shyma Kareem, Assistant Professor, Computer Science & Engineering
		Prof. Asha S John, Assistant Professor, Electronics & Communication Engineering
		Prof. Sarath Sasi, Assistant Professor, Electrical & Electronics Engineering

4. Canteen Committee

Table 10.1.2.6: Canteen Committee members

Chairman/ Coordinator	Frequency of meetings	Members
Prof. Anoop S R, Assistant Professor, Mechanical Engineering	Twice per Academic year or as and when required	Prof. Fathima Shahjahan, Assistant Professor, Civil Engineering
		Shri Vijayan, Administrative Assistant

- Constituted by Principal
- Upkeep and maintenance of canteen facilities
- Monitoring the menu and price of items sold through canteen Monitoring adherence to Institutional policies and practices Ensuring adherence to FSSAI rules and regulations.

5. Central Computing Committee

Table 10.1.2.7: Central computing Committee members

Chairman/ Coordinator	Frequency of meetings	Members
Prof. Jayaprasad R, Dean Acds & Admin	Twice per Academic year or as and when required	Prof. Giri S M, Assistant Professor, Computer Science & Engineering
		Smt. Deepa Biju, Lab Instructor
		Shri Renju John, Lab Instructor

- Constituted by the Principal.
- Responsible for the installation and up keep of computing, networking and internet facilities at the Institution Formulate layout and assist procurement for additional IT infrastructure facilities.

6. Continuing Education Cell

Table 10.1.2.8: Continuing Education Cell members

Chairman/ Coordinator	Frequency of meetings	Members
Prof. Renukadevi SM Associate Professor Electrical & Electronics Engineering		Prof. Salitha M K, Assistant Professor, Computer Science & Engineering
		Prof. Haleema, Assistant Professor, Civil Engineering.
		Dr. Vinod K Raju, Associate Professor, Management Studies

- Constituted by Principal
- Provide assistance and support to students and faculty in pursuing add on courses and MOOC courses. Disseminate information related to higher education programs in India and abroad.
- Advise students on admission formalities for higher education in various universities.

7. Alumni Association

Table 10.1.2.9: Alumni Association members

Chairman/ Coordinator	Frequency of meetings	Members
Prof. Aneesh S P, Assistant Professor, Electronics & Communication Engineering	Twice per Academic year or as and when required	Prof. Jithin K, Assistant Professor, Mechanical Engineering
		Prof. Blessy A Rahiman, Assistant Professor, Electrical & Electronics Engineering
		Prof. Sonia K S, Assistant Professor, Electronics & Communication Engineering
		Prof. Jan Mary Thomas, Assistant Professor, Computer Science & Engineering
		Prof. Bismi M Buhari, Assistant Professor, Civil Engineering.

- Constituted Under the Society of Registrars act. Facilitates Institute Alumni Interaction.
- Keep track of Alumni whereabouts and contact details Organizes Alumni get-together.

8. Sports Council

Table 10.1.2.10: Sports Council members

Chairman/Coordinator	Frequency of meetings	Members
Shri Muhammed Rasheed, Director, Physical Education	Twice per semester or as and when required	Shri Amrith Raj, Asst Director, Physical Education
		Shri Vineeth, Lab Instructor
		Shri Donny S, Lab Instructor
		Sports secretary (Student)

- To provide an environment for physical development of the students.
- To develop team spirit among the students.
- To provide opportunity for the students to showcase their talent in sports.
- To promote sportsmanship among students by organizing various sports activities.
- Organizing various indoor and outdoor games during sports week.
- Motivating students to participate in sports events organized at university, national and international levels.
- Organizing sports events for staff members.

9. Community Service Cell

Table 10.1.2.11: Community Service Cell members

Chairman/Coordinator	Frequency of meetings	Members
Prof Anoop T, Assistant Professor, Mechanical Engineering	Twice per Academic year or as and when required	Prof. Nizamony, Assistant Professor, Electrical & Electronics Engineering
		Prof. Sujith Balachandran, Assistant Professor, Management Studies
		Prof. Sonia Soni, Assistant Professor, Civil Engineering.

- Coordinate Institute Society Interaction
- Guidance and monitoring of activities involving local community.

10. SC/ST Committee

Table 10.1.2.12: SC/ST Committee members

Chairman/ Coordinator	Frequency of meetings	Members
Prof. Madhu G, Associate Professor, Mechanical Engineering	Twice per Academic year or as and when required	Prof. Sarath Sasi, Assistant Professor, Electrical & Electronics Engineering
		Mr. Radhakrishnan, Lab Instructor
		Mr. Raphymon, Lab Instructor
		Mr. Nithin Shibu Mathew (Student)

- Welfare of SC/ST students admitted to the Institution
- Facilitate Scholarships and grants from various Government & non-government bodies Monitor & prevent SC/ST atrocities

11. Eco Club

Table 10.1.2.13: Eco Club members

Chairman/ Coordinator	Frequency of meetings	Members
Prof. Smitha G Nair, Assistant Professor, Mechanical engineering	Twice per semester or as and when required	Prof. Shabana Sulaiman, Assistant Professor, General Science & Humanities
		Smt. Sulatha O, Lab Instructor
		Smt. Rajitha Raj, Lab Instructor

12. Students Grievance Redressal (Service & Infrastructure)

Table 10.1.2.14 Students Grievance Redressal (Service & Infrastructure)members

Chairman/ Coordinator	Frequency of meetings	Members
Prof. Sarath Raj S, Associate Professor, Electrical & Electronics Engineering	Twice per Academic Year or as and when required	Prof. Nisha Shekhar, Associate Professor, Civil Engineering.
		Prof. Sonia K S, Assistant Professor, Electronics & Communication Engineering
		Prof. Shyma Kareem, Assistant Professor, Computer Science & Engineering
		Shri Hari Kumar M G, Office Assistant
		Prof. Sonia Katherine Mathew, Associate Professor, Management Studies

- Facilitate students' welfare within the campus.
- Disseminate the information of various welfare measures of government NGO's and Institute. Assist students on educational loan.
- Appointed by Principal
- Responsible to address grievances of students in infrastructure and services offered by the Institute

13. Students Welfare Committee

Table 10.1.2.15 Students Welfare Committee members

Chairman/ Coordinator	Frequency of meetings	Members
Prof. Soumya Letha, Associate Professor, Mechanical Engineering	Twice per semester or as and when required	Prof. Subbalakshmi, Assistant Professor, Civil Engineering.
		Prof. Shabana Sulaiman, Assistant Professor, General Science & Humanities
		Prof. Nizamony, Assistant Professor, Electrical & Electronics Engineering
		Shri. Muraleedhran (Administrative Assistant))

- Facilitate students' welfare within the campus.
- Disseminate the information of various welfare measures of government NGO's and Institute. Assist students on educational loan

14. Industry Institute Interaction cell & IEDC

Table 10.1.2.16 Industry Institute Interaction cell & IEDC members

Chairman/ Coordinator	Frequency of meetings	Members
Prof. Vishnu Raj, Assistant Professor, Electronics & Communication Engineering	Twice per Academic year or as and when required	Dr. Babu, Professor, Management Studies
		Prof. Ajai M, Assistant Professor, Mechanical Engineering
		Prof Praveen K, Assistant Professor, Electrical & Electronics Engineering
		Prof. Ashna Begum, Assistant Professor, Civil Engineering.

- To create a platform for industry institute interaction.
- To establish inter-relationship between Institute & Industry through know-hows and MoU's. To facilitate student/faculty internships at industries.
- To organise industrial visits for the students.
- To organise technical talks for the students from the industry experts To nurture the student ideas and to develop innovative products.
- To support the student projects with funding. To establish & maintain incubation centre.
- To create entrepreneurs echo system for students.
- To maintain data relevant to entrepreneurship programmes. To encourage & establish start-up companies

15. Ethics Committee

Table 10.1.2.17 Ethics Committee members

Chairman/ Coordinator	Frequency of meetings	Members
Dr. Ranjith Thomas, Associate Professor, Electronics & Communication Engineering	Twice per Academic year or as and when required	Prof. Sreeranjini K, Associate Professor, Electrical & Electronics Engineering
		Prof. Bismi M Buhari, Assistant Professor, Civil Engineering.
		Prof. Deepa Thomas, Assistant Professor, Computer Science & Engineering
		Prof. Arya Raj, Assistant Professor, Management Studies

- Responsible for formulating ethical codes and implementation strategies within the institute.

16. Grievances & Appeals (Academic)

Table 10.1.2.18 Grievances & Appeals (Academic) members

Chairman/ Coordinator	Frequency of meetings	Members
Dr. Teena Joseph, Associate Professor, Computer Science & Engineering	Twice per Academic year or as and when required	Prof. Raji Elsa Varghese, Assistant Professor, Electronics & Communication Engineering
		Prof. Sofia, Assistant Professor, General Science & Humanities
		Prof. Jithin K, Assistant Professor, Mechanical Engineering

- Address issues related to continuous internal assessment. Recommend retest in genuine cases.
- Ensure the transparency of Internal assessment process.

17. PTA Executive Committee

Table 10.1.2.19 PTA Executive Committee members

Chairman/ Coordinator	Frequency of meetings	Members
Prof. Lijesh L	Twice per semester or as and when required	Prof. Praveen K, Assistant Professor, Electrical & Electronics Engineering
		Prof. Arya Jayakumar, Assistant Professor, Computer Science & Engineering

- Coordinate the various activities of PTA.
- Liaison between parent and institute.
- Coordinate stake holder feedback.
- Conduct periodical meeting and arrange annual general body meeting (AGM).

18. Bus Transportation

Table 10.1.2.20 Bus Transportation members

Chairman/ Coordinator	Frequency of meetings	Members
Prof. Jayaprasad, Dean Administration	Twice per semester or as and when required	Shri Vinil Kumar, Lab Instructor
		Shri. Noushad K, Lab Instructor
		Shri Amrith Raj, Assistant Professor, Physical Education

- Facilitate College bus facilities from Institution to various destinations.
- Overlook maintenance and upkeep of transport facilities

19. Research & Consultancy Cell (MRPG)

Table 10.1.2.21 Research & Consultancy Cell (MRPG) members

Chairman/ Coordinator	Frequency of meetings	Members
Dr. Shan M Assis, Associate Professor, Mechanical Engineering.	Twice per semester or as and when required	Dr. Teena Joseph, Associate Professor, Computer Science & Engineering
		Dr. Sonia Katherine, Associate Professor, Management Studies
		Dr. Ranjith Thomas, Associate Professor, Electronics & Communication Engineering
		Dr. Vinod K Raju, Associate Professor, Management Studies

- To manage faculty research evaluation / review scheme. To review project proposals for grants / sponsors.
- To manage the faculty research grants, publications and funds through consultancy. To develop facilities for research through collaboration / inter-disciplinary modes. To monitor student projects evaluation and review.
- To encourage students' projects and publications of their work. To publish institute research bulletin periodically

20. College Union

Table 10.1.2.22 College Union members

Frequency of Meeting	Twice per semester or as and when required
Chairman	Prof. Anoop S R, Associate Professor, Mechanical Engineering
Staff Advisor	Prof Lijesh L, Associate Professor, Electronics & Communication Engineering.
Chairperson	Ajith Kumar A G, S7 ME
Vice Chairperson	Greeshma Ganesh, S7 CSE
General Secretary	Anandhu P M, S5 ME
Arts Club Secretary	Haritha V S, S7 CE
Magazine Editor	Meenakshi S, S5 ECE
University Union Councilor	Vaishnav N, S5 EEE
Lady Representative	Aleena Raju, S5 CE
Lady Representative	Rizana Shajahan, S3 ECE

- Students representatives are elected by college union election
- Responsible for coordinating extracurricular & cultural activities of students. Coordinates representation of students to authorities
- Promote cultural activities among students.

21. Grievance Redressal Cell for Faculty/Staff

Table 10.1.2.23 Grievance Redressal Cell for Faculty/Staff members

Chairman/ Coordinator	Frequency of meetings	Members
Prof. Manju N, Associate Professor, Civil Engineering.	Twice per semester or as and when required	Prof. Juby Raju, Associate Professor, Electronics & Communication Engineering.
		Prof. Usha Goplakrishnan, Associate Professor, Computer Science & Engineering
		Shri Harikumar K M, Lab Instructor

- Address issues related to staff of the institute.
- Conduct hearing for staff grievances and recommend principal on corrective action

22. Professional Bodies

Table 10.1.2.24 Professional Bodies members

Name of Professional Body	Frequency of meetings	Members
Indian Society for Technical Education (ISTE)	Twice per semester or as and when directed by parent professional body	Prof. Soumyaletha, Associate Professor, Mechanical Engineering
Institution of Mechanical Engineers (IMECHE)		Prof. Smitha G Nair, Assistant Professor, Mechanical Engineering
Computer Society of India (CSI)		Prof. Amritha Vishnupriya, Assistant Professor, Computer Science & Engineering
Institution of Engineers (IE)		Prof. Rahul R, Assistant Professor, Mechanical Engineering
American Society of Mechanical Engineers (ASME)		Prof. Jithin K, Assistant Professor, Mechanical Engineering
Indian Society of Heating Refrigeration & Airconditioning Engineers (ISHRAE)		Prof. Ajai M, Assistant Professor, Mechanical Engineering
United Nations Academic Impact (UNAI)		Prof. Renuka devi SM, Associate Professor, Electrical & Electronics Engineering
Institute of Electrical & Electronics Engineers (IEEE)		Prof. Sarath Raj S, Associate Professor, Electrical & Electronics Engineering
Kerala Productivity Council (KPC)		Prof. Praveen K, Assistant Professor, Electrical & Electronics Engineering
Confederation of Indian Industries (CII)		Dr Babu, Professor, Management Studies
National Institute of Personal Management (NIPM)		Dr Sonia Katheriene

23. Career Guidance & Placement Cell

- To manage placements database.
- To organize skill development programs for students through internal & external experts. To ensure imparting proper training skills to the students by the trainers.
- To maintain data of students pursuing higher education.
- To organize periodical meets of alumni association.
- To publish placement data in institute website time to time. To arrange for carrier guidance.

- To enhance employability of students by empowering them with technical competencies, Domain Skills, leadership, techno-managerial qualities and communicative abilities to ensure they are industry ready.

Table 10.1.2.25 Career Guidance & Placement Cell members

Chairman/ Coordinator	Frequency of meetings	Members
Prof. Aneesh S P, Assistant Professor, Electronics & Communication Engineering	Twice per semester or as and when required	Prof. Sujith Balachandran, Assistant Professor, Management Studies.
		Prof. Sarath S, Assistant Professor, Electrical & Electronics Engineering
		Prof. Praseetha S Nair, Assistant Professor, Computer Science & Engineering
		Prof Haleema, Assistant Professor, Civil Engineering.
		Prof. Ruby Thankam George, Assistant Professor, Computer Science & Engineering
		Prof. Naveen Koshy, Assistant Professor, Management Studies.

24. Library Council

Table 10.1.2.26 Library Council members

Chairman/ Coordinator	Frequency of meetings	Members
Prof. Sreeranjini K, Associate Professor, Electrical & Electronics Engineering	Twice per Academic year or as and when required	Prof. Praseetha Nair, Assistant Professor, Computer Science & Engineering
		Dr. Vinod K Raju, Associate Professor, Management Studies.
		Smt. Tina Sherly Koshy, Librarian
		Smt. Jaseem Basheer, Library Assistant

- Appointed by principal.
- Advise and assist the libraries on issues and policies related to strategic planning, organization, operations, and resource allocation Monitor Annual stock verification process

25. Hostel Committee

Table 10.1.2.27 Hostel Committee members

Chairman/ Coordinator	Frequency of meetings	Members
Prof. Nidiya Habeb, Associate Professor, Electronics & Communication Engineering	Twice per semester or as and when required	Prof. Ajai M, Assistant Professor, Mechanical Engineering
		Prof. Pramod P, Lab Instructor
		Hostel Secretary (Mens Hostel)
		Hostel Secretary (Ldies Hostel)

- Appointed by Principal
- Oversee adherence to rules regulations and policy matters pertaining to hostel, both boys and girls. Address grievances by inmates.

26. Internal Complaint Committee (Women)

Table 10.1.2.28 Complaint Committee (Women) members

Chairman/ Coordinator	Frequency of meetings	Members
Prof. Usha Gopalakrishnan, Associate Professor, Computer Science & Engineering.	Twice per semester or as and when required	Prof. Deepa Thomas, Assistant Professor, Computer Science & Engineering
		Prof. Ciya Paulose, Assistant Professor, Electrical & Electronics Engineering
		Prof. Raji Elsa Varghese, Assistant Professor, Electronics & Communication Engineering
		Prof. Sofia, Assistant Professor, General Science & Humanities
		Smt. Tina Sherly Koshy, Librarian
		Prof. Arya raj, Assistant Professor, Management Studies

- Appointed by Principal.
- Redressal of issues of Sexual harassment for the Women Employee and girls Students in the College if any. To conduct gender sensitization programme for the Prevention and Prohibition of gender-based violence
- Organizing programmes which bring about attitudinal and other changes for effective participation of women from all levels undertakes, promotes and coordinates both fundamental and applied research on women and development.
- Develops and promotes (in collaboration with other agencies) educational training and action programmes for women.

27. Estate monitoring committee**Table 10.1.2.29 Estate monitoring members**

Chairman/ Coordinator	Frequency of meetings	Members
Prof. Jayaprasad, Dean (Acads & Admn)	Once per Academic Year or as and when required	Er. Rajashekharan Nair
		Shri Abhilash, Lab Instructor
		Shri Pramod A, Lab Instructor
		Shri Saseendran Nair, Lab Instructor
		Shri Gopalakrishnan KN, Lab Instructor
		Shri Vinod, Lab Instructor
		Shri Binu VS, System Administrator

- Responsible to oversee the upkeep and maintenance of institute campus.

28. Anti-Ragging Committee**Table 10.1.2.30 Anti-Ragging Committee members**

Chairman/ Coordinator	Frequency of meetings	Members
Principal	Twice per semester or as and when required.	Prof. Sarath Raj , Associate Professor & Head, electrical & Electronics Engineering
		Prof. R Jayaprasad, Dean (Acads & Admin)
		Dr. Shan M Assis, Associate Professor & Head, Mechanical Engineering
		Prof. Vinod C, Associate Professor & Head, Electronics & Communication Engineering
		Prof. Manju N, Associate Professor & Head, Civil Engineering.
		Shri Muraleedharan (Councilor)
		Shri Gopakumar (SI Narcotic Cell)

On receipt of the recommendation of the Anti-ragging squad or on receipt of any information concerned to the incident of ragging, Head of the Institution shall immediately determine whether a case under the penal laws could be out and if so, either on his own or through an authorised member of the Anti-Ragging Committee, shall proceed to file a First Information Report (FIR), within 24 hours of receipt of such

information or recommendation with the police and local authorities, under the appropriate penal provisions relating to one or more of the following. Namely

- Abetment to ragging
- Criminal conspiracy to ragging
- Unlawful assembly and rioting while ragging Public nuisance created during ragging
- Violation of decency and morals through ragging Injury to body, causing casual or grievous hurt Wrongful restraint
- Wrongful confinement Use of criminal force
- Assault as well as sexual offences or unnatural offences Extortion
- Criminal trespassing Offences against property Criminal intimidation
- Attempts to commit any or all of the above-mentioned offences against the victim(s)
Threat to commit any or all of the above-mentioned offences against the victim(s).
- Other offences following from the definition of “Ragging

29. NSS

Table 10.1.2.31 NSS members

Chairman/ Coordinator	Frequency of meetings	Members
Prof. Pramod B, Assistant Professor, Mechanical Engineering	Twice per academic year or as and when required	Prof. Sonia Soni, Assistant Professor, Civil Engineering

- Develop a sense of social and civic responsibility among students.
- Utilize student’s knowledge in finding practical solution to individual and community problems. Acquire leadership qualities and democratic attitude. Develop community service attitude during emergencies and natural disasters

30. IQAC

- Development and application of quality benchmarks.
- Defining parameters for various academic and administrative activities of the institution. Budgeting and monitoring the implementation of approved budget.
- Quality assurance of all capital and revenue works.
- Facilitating a learner-centric environment conducive to quality education and faculty maturation to adopt for participatory teaching and learning process. Collection and analysis of feedback from all stakeholders on quality-related institutional processes.
- Dissemination of information on various quality parameters to all stakeholders

- Organization of inter and intra institutional workshops, seminars on quality related themes and promotion of quality circles.
- Documentation of the various programs/activities leading to quality improvement
- Acting as a nodal agency of the Institution for coordinating quality-related activities, including adoption and dissemination of best practices Development and maintenance of institutional database through MIS for the purpose of maintaining /enhancing the institutional quality Periodical conduct of Academic and Administrative Audit and its follow-up.
- Actions to implement the Outcome Based Education in all the departments of the institution. Knowledge enrichment and career planning of staff.
- Preparation and submission of the Annual Quality Assurance Report (AQAR) as per guidelines and parameters of NAAC

Table 10.1.2.32 IQAC members

Chairman/ Coordinator	Frequency of meetings	Members
Dr A S Abdul Rasheed, Principal.	Four times per semester	Prof Jayaprasad R, Dean (Acds & Administration)
		Prof. Femi Susan Babu, Associate Professor & Head, General science & Humanities
		Prof. Madhu G, Assistant Professor. Mechanical Engineering
		Prof. Renukadevi SM, Associate Professor Electrical & Electronics Engineering
		Prof. Salitha MK, Assistant Professor Computer Science Engineering
		Prof. Nisha Shekhar, Assistant Professor, Civil Engineering
		Prof. Nidiya Habeeb, Assistant Professor, Electronics & Communication Engineering
		Prof. Navin V Koshy, Assistant Professor, Management Studies.

31. Examination Committee

Table 10.1.2.33 Examination Committee members

Chairman/ Coordinator	Frequency of meetings	Members
Prof. Anoop SR, Assistant Professor. Mechanical Engineering		Prof. Sherry George, Assistant Professor, General science & Humanities
		Prof. Ciya Paulose, Assistant Professor, Electrical & Electronics Engineering
		Prof. Ajai M, Assistant Professor. Mechanical Engineering
		Prof. Athira Lekshmi, Assistant Professor, Civil Engineering
		Prof. Vishnu Raj, Assistant Professor, Electronics & Communication Engineering
		Dr. Sonia Katherine Mathew, Associate Professor, Management Studies.
		Prof. Ruby Thankam George, Assistant Professor Computer Science Engineering

- Appointed by Principal
- Schedule and Conduct of Internal Examinations of the Institute. Conduct of University Examinations as per the published schedule.
- Packing and despatch of answer scripts of university examinations to valuation camps
- Overall supervision of conduct of all examinations including theory and practicals with in the institute.

32. Admission Committee

- Ensure dissemination of institute profile to aspiring students and parents. Oversee the admission process at the institute
- Ensure quality of students admitted. Prepare list of shortlisted candidates.

Table 10.1.2.34 Admission Committee members

Chairman/ Coordinator	Frequency of meetings	Members
Prof. Sujith Balachandran, Assistant professor, Management Studies	Twice in and Academic year or as and when required.	Prof. Soumyaletha D, Associate Professor, Mechanical Engineering
		Prof. Lijesh L, Associate Professor, Electronics & Communication Engineering
		Prof. Sherry George, Assistant Professor, General science & Humanities
		Prof. Sarath Sasi, Assistant Professor, Electrical & Electronics Engineering
		Prof. Jan Mary Thomas, Assistant Professor Computer Science Engineering
		Prof. Ashna Begum, Assistant Professor, Civil Engineering
		Prof. Navin V Koshy, Assistant Professor, Management Studies.

33. Functional bodies/committees- Department level**Table 10.1.2.35 Functional bodies/committees- Department level members**

Sl. No	Committee	Constituent members	Frequency of Meeting	Functions
1	Department Advisory Committee (DAC)	Principal Dean Academics HOD 4 Senior faculty At least one expert from Academics from Industry One alumnus	Twice in a year or as and when required	Constituted by Principal. Advice on strategic planning, policies and procedures pertaining to academics Advice on defining vision, mission and PEO's.
2	Department Quality Assurance Cell (DQAC)	HoD as Chairman IQAC representative All Senior advisors	Minimum Four meetings per semester or as and when required	Appointed by Principal Plan, monitor and review academics. Plan and review internships, project and seminar.
3	Class committee	Senior Advisor Faculties handling courses Student representatives nominated by HoD	Twice per semester or as and when required.	Appointed by HoD Review and assess academic and non-academic issues.
4	Course Committee	Senior Faculty not handling the subject as Chairman Faculty handling Courses	Twice per Semester or as and when required	Appointed by Principal. Review and monitor deliver of courses
5	Department Association	Faculty in charge Student office bearers Class representatives.	Twice in a semester or as and when required.	Faculty in charge is nominated by HoD. Student office bearers are elected/nominated. To organize cocurricular and extracurricular activities in the department.

RECRUITMENT POLICY

General Procedure

Vacancies arising at the institutions are normally advertised in leading newspapers/electronic media. The institution forms a Board with appropriate members for conducting an interview and prepares a rank list. The MET then interviews the short listed candidates and finalises the appointments. Initially the appointments are on probation and are confirmed subject to satisfactory performance.

Qualifications

AICTE norms are followed for appointments to the teaching posts and appropriate qualifications to the other posts. However the Musaliar Education Trust has the right to appoint professionals and others for the wellbeing of the institution.

Remuneration

The salary policy is governed by Qualifications, Experience, Capabilities and contributions in academic as well as non-academic fields. AICTE scale of pay is followed for the teaching faculties.

Increment

Annual increment according to the scale applicable shall be granted after every year of service if the work and the conduct of the employee are reported to be satisfactory as per the Appraisal Report. In the case the employee is on a consolidated pay (probation/contract etc) and not on a scale of pay, ad-hoc lump sum increment may be given after the end of every year at the discretion of management, provided the employee's work and conduct are satisfactory. Special increment may be granted to an employee in exceptional cases or for outstanding work during the services. The annual increment may be withheld as a disciplinary measure if an adverse report is received against the employee and it is decided by the management after necessary enquiry. In all cases, the employee concerned would be informed regarding the withholding of the increment for a particular period with or without cumulative effect. In the case of increment withheld for a particular period with cumulative effect, he will be entitled to get increment immediately after completion of the particular period.

Probation Period & Confirmation

Initially the selected candidate will be on probation for a period of 6 to 24 months, after which the performance of the appointee will be reviewed for regularization of the

appointment. If the performance is satisfactory, the employee will be confirmed in the service of the Institution after completion of the probationary period. In case of the performance is not up to the desired standard, the employee may be terminated or probation period may be extended further as per the discretion of the management.

Transfers

All employees are liable for the transfer/deputation from one institution to another of the 'Musaliar Group of Institutions' at the sole discretion of the management. Also, all employees are liable for being shifted from one discipline/function, department, section, branch, etc., to another of the 'Musaliar Group of Institutions', provided that such transfer does not adversely affect the nature of duties as per terms of appointment and the salary of the individual concerned except in case of transfer requested by an employee for his personal reasons and granted by the Management.

In the event of refusal to accept a transfer/deputation, the employee shall be considered absent from duty without leave and shall not be eligible for any salary for that period. Such an employee shall also be liable for disciplinary action including termination of service. The management may grant special scale or allowance on transfer/deputation depending on the merits of the case.

Retirement

Every teaching and non-teaching staff of the institution will retire from services on completing 65 years of age. Persons who are physically fit and whose services are considered necessary and beneficial to the institution by the management may be appointed on contract for a specified period. The contract tenure can be extended by the management considering the continued contributions to the institution.

Note: In case where the date of retirement of an employee falls on a holiday, the employee may be allowed duty pay for the holiday.

Resignation

If an employee desires to resign, he must give notice of resignation in writing to the Head of the Institution through proper channel (HoD/Section-in-charge – Dean (Administration) - Principal - Management). As a general rule, the member of the teaching staff shall not be permitted to resign from their posts during the midst of an academic year/semester. Any member of the faculty in permanent service shall give three months' notice in case he/she desires to be relieved from the services. Alternatively he/she shall pay three months' salary in lieu thereof. No service certificate, testimonials, etc., are to be issued until his/her accounts

are settled and relieved. The end benefits will be materialized after the normal procedure of Institution.

Termination of Service The services of an employee are liable to be terminated with or without a notice in the event of insubordination, dereliction of duty, professional misconduct and other undesirable activities, as per the disciplinary procedures. One month's pay in lieu of the notice period may be sanctioned at the discretion of the management. The service of a temporary employee is liable to be terminated at any time without assigning any reasons whatsoever.

Deserter

If an employee remains absent for more than 7 consecutive working days, without prior sanction of leave he shall be deemed to have abandoned the employment voluntarily from the date on which the absence exceeded 7 consecutive working days and he is also liable for disciplinary action at the discretion of the management.

Documentation

All personnel on joining the institution should submit the copies certificates of qualifications, Resume, Aadhar, PAN, experience (if any) etc as required. A service file shall be maintained in respect of each employee of the college where all his/her particulars and documents will be available.

Performance Appraisal reports would be raised annually for maintaining the records.

LEAVE POLICY

Leave is to be treated not as a right, but as a privilege to be availed with restraint. Leave planning is to be done with prior approval of the superiors/HoD concerned so that smooth working of the institution is ensured. Head of the institution is the sanctioning authority for normal leave (Casual Leave, Vacation Leave & Duty Leave) and the management for all other type of leaves. During exigencies, discretion to refuse or revoke leave of any staff is reserved to the sanctioning authority. All employees are expected to be present at all departmental/ Institutional Programs and Staff Meetings. They are expected to apply for leave sufficiently early and can avail leave only after getting sanction. All leaves are to be reckoned with respect to each Calendar Year viz. January to December. Confirmed employees are eligible for all types of leave but employees on probation are eligible for only casual leave and vacation leave subject to a continuous service of six months. Employees appointed on contract basis will be eligible for leaves applicable for confirmed employees.

Casual Leave

These leave are granted for certain unforeseen situation or were you are require to go for one or two days leave. The casual leave entitlement will be proportionate to an employee's total authorization and the services rendered. Employees cannot avail casual leave in advance/excess of their entitlement. Following are other details of casual leave:-

- a) Employees other than administrative staff are eligible for 15 casual leave in a year.
- b) Administrative staff is eligible for 20 days casual leave in a year.
- c) Casual leave cannot exceed three consecutive days at a stretch.
- d) Casual leaves can be availed for half day also.
- e) Casual leave can be combined with Sundays or other declared holidays but such continuous period of absence shall not in any case extend to more than five days at a stretch.
- f) The maximum period of casual leave fixed shall not in any way indicate entitlement to avail of the same in full as a routine matter. The entitlement of casual leave will be proportionate to the completed months of service during a year.
- g) Any staff availing casual leave must make work arrangement with the approval of the HoD/Section in charge and inform the Head of the Institution, so that the regular functioning of Institution is not affected.
- h) If a faculty member due to unavoidable reasons expects to arrive late to the college, it should be intimated personally over phone to HoD or section in charge at least half an hour before the commencement of the forenoon or afternoon sessions.
- i) It is the responsibility of the Faculty Member to ensure that working arrangement with another faculty is made with the concurrence of the HoD concerned, beforehand in the event of such late coming/casual leave, so that the students are engaged meaningfully in academic work.
- j) Casual Leave for Faculty Members shall be recommended by the concerned HoD and sanctioned by Principal. Sanctioned leave application is to be send to the college office for updating leave records.
- k) In the case of Lab Instructor/Trades Instructor/Tradesman too, the above procedure will be followed.
- l) The concerned HoD/ Workshop Superintendent has to ensure that the sanctioned casual leave is as per the leave policy by referring to the leave records at the college office.

Vacation Leave

Vacation Period is granted for four weeks during an academic year to all permanent teaching, Lab and library staff who attended to their academic duties for one year. Vacation leave may be sanctioned to staff on probation proportionately. Following need to be observed for vacation leave:-

- a) The Vacation period is granted as slots and Faculty Members/Lab staff is entitled to avail the vacation during the earmarked slots only.
- b) Days on Loss of Pay leave if any which falls in the vacation period of the academic year will not be treated as loss of pay. However this policy is not applicable for those Faculty Members who are in Loss of Pay Leave for longer periods, higher studies etc.
- c) Even if Vacation Leave is granted, the Faculty/Staff Member is bound to attend to any duties assigned by the Head of the Institution for which compensation may be availed.
- d) Vacation leave falls during long leaves will not be eligible to avail any compensation.

On Duty Leave

Faculties and staff may be assigned outstation duties like Examination Duty, other assignments engaged by the University, Attending Conferences, workshops & FDPs, consultancy works etc. This is to be recommended by HOD and sanctioned at the discretion of the Head of the Institution. Following are to be observed for On Duty Leave:-

- a) On Duty leave shall be taken in a planned way that will not disturb the academic program.
- b) Prior permission from HoD/Principal is mandatory for availing Duty Leave.
- c) Leave application with supporting documents must be submitted immediately after if not submitted earlier.
- d) Leave approval will be done on the basis of certificate attached.

Loss of Pay Leave

Loss of Pay leave (long leave) will be sanctioned only by the Management on individual basis after considering the merits of each requirement.

Medical Leave

Confirmed employees may be granted medical leave at the discretion of management with proper medical certificate, provided all other leaves are exhausted.

- a) Holidays falling within the leave period shall also be included for calculating the number of days of medical leave availed.

- b) Holidays can be prefixed or suffixed with medical leave and such continuous period of absence not be exceeding 5 days at a stretch.
- c) Medical leave for prolonged illness/major surgery shall be considered case by case at by the management only after exhausting all types of leave including vacation leave. Such leave applications are to be routed through proper channel.

Maternity Leave

All confirmed employees are eligible for maternity leave with pay for a period not exceeding 10 weeks totally viz. with a minimum period of two weeks or maximum period of four weeks preceding the delivery day (including) and a further period of eight weeks or period of six weeks immediately following delivery.

Maternity leave with pay is permissible only for those who have completed one year of continuous service in MCET with confirmation.

- a) Those who do not complete one year of continuous service have to avail Maternity Leave as Loss of pay Leave. This condition is applicable for all the staff members having break in service after confirmation too.
- b) Maternity leave will be granted only on prior written request by employee duly supported by a certificate from the attending doctor and the eligibility will be only for two times.
- c) An undertaking in stamped paper stating that the employee would serve the organisation for at least five years after re-joining is mandatory for availing maternity leave with pay.

Study Leave

Study leave may be granted after a minimum of one year of continuous service after confirmation to pursue a special line of study or research directly related to his/her work in the College or to make a special study of the various aspects of College organization and methods of education. The maximum period of study leave should be for 3 years, but 2 years may be given in the first instance, extendable by one more year, if there is adequate progress as reported by the Research Guide. Following provisions are there for availing study leave:-

- a) Study grant for meeting the books and stationery will be provided at the discretion of management subject to executing a 'Bond' stating that the staff would serve the Musaliar Institutions at least for five years after awarding Higher Qualification/PhD.
- b) Staff who have got admission for higher studies and not completed one year of confirmed service are not entitled for Study leave. However, such cases will be decided by management according to merit for sanctioning Loss of Pay leave/leave with study grant.

- c) Faculty who intend to go on study leave has to give at least three months' notice and plan the commencement of such leave with the approval of their HoD, so that academic program is not disrupted midway in a semester.

Research Leave.

Permanent Faculty Members registered for PhD are eligible for 10 days Research leave to ensure progress in their doctoral work, co-ordination with guide and such connected academic assignments. This Special leave will be available only within a period of 3 calendar years from the date of registration, subject to a maximum of 30 days. The submission of the registration document with the MET office is a pre-condition for sanction of such leave by the Management. Those availing research leave are bound to continue their service to the Institution for not less than three year from the date of awarding PhD by the concerned University and required to execute a 'Bond' to this effect.

PERFORMANCE APPRAISAL

Purpose

The primary purpose of Performance Appraisal is to evaluate and record the performance of all 'Staff' and make use of this data for the optimum utilisation of staff for achieving the organisational objectives. In addition, Appraisal reports are important documents as they form the basis for assessing the training and development needs of a staff and for determining their suitability for promotion, placements, courses, deputation, extension of service etc. Such assessments are of vital importance to the organisation as well as to the appraisee. It is therefore emphasised that these reports be completed with utmost care and attention and in an objective and unbiased manner.

Occasions for Raising the Appraisal Report

Appraisal Reports are to be generally raised for a calendar year (01 January to 31 December). In any case an Appraisal Report will be raised as on 31 December, if a staff has been on strength for the preceding six months.

Appraisal Reports are to be raised on the following occasions:-

- **Annual Performance Appraisal Reports (PARs)** are to be raised as on 31 December of every year provided the staff has spent at least six months of effective service.
- **Confirmation of Appointment:** Performance Appraisal Reports (PARs) are to be raised for staff on probation for confirmation of appointments.

- **Promotion Boards:** Performance Appraisal Reports (PARs) are to be raised for staff empanelled for promotion, if the Promotion Board assembles after Jun, else Annual Performance Reports are considered.
- **On Transfer out /Resigning/ Retirement of the Appraisee:** Performance Appraisal Reports are to be raised on transfer / resigning/ retirement of the appraisee is to be raised so as to issue service/experience certificate, relieving orders and releasing the payments due, if any.
- **On the availing long leave:** AR on availing long leave for study purpose, research, maternity etc is to be raised if the Appraisee has spent at least six months in the institution.

Procedure to fill Performance Appraisal Report Form

The appraisee will complete 'Self-Assessment' part and submit to the Section in-charge/ HoD/Dean (as applicable) and sign all pages of the Appraisal Form. The Section in-charge/ HoD/Dean to verify the self-assessment and endorse their remarks. Further the HoD has to make a numerical assessment on 'Professional' and 'Behavioural' aspect of the appraisee. Once assessed the details will be 'Confidential' and will be accessible to only concerned functionaries. Hence the assessors are to be more objective in awarding numbers and differentiating the staff in Professional and Behavioral aspects. It is mandatory that the appraisee to work under the assessor for a period not less than three months excluding long leave. Guide lines for assessment is issued separately.

Self Appraisal

Self-Appraisal in the form of work review has to be recorded by the appraisee in the prescribed format given in the PAR form. Appraisee has to give the details of jobs undertaken/subjects handled and the result attainment against the targets of the previous two semesters where the results are declared(for teaching staff). Just previous semester is not considered for this purpose as the results are normally not declared at the time of submitting the PAR. Appraisee to mention the various tasks allotted, including professional development/ research activities and achievement of the same during the period of report.

Assessment by Superior

Section in-charge/HoD/Dean to verify the self-appraisal and record comments on each work done by the appraisee. Directives issued on Academic improvements, Administration and on miscellaneous activities must be kept in mind while making the comments on self-appraisal. Also due importance be given to professional development/career progression activities and

the remarks are mandatory. The grading in professional & behavioural attributes and pen picture must commensurate with the comments on the self-appraisal. Pen picture of the appraisee is to be given covering his job performance on duties assigned, human relations and personal characteristics.

Superiors must exercise caution not to get prejudiced by other agencies/person during performance assessment. However expert opinion may be sought on specific cases where the appraiser is not directly monitoring the performance of the appraisee. It should be the endeavour of each appraiser to present the truest possible picture of the appraisee with regard to his performance and potential, keeping in mind the distinction between facts and opinions.

Pen picture of the appraisee should bring out the following aspects: -

- a) Performance on primary as well as additional task should cover the quality of the work performed and special achievements and tasks that were not performed satisfactorily. Any seeming series drawbacks in the performance to be highlighted. Performance in additional task is to commence with the nature of the additional tasks assigned and the willingness to undertake the same. Suitability for teaching assignments and research aptitude be mentioned.
- b) Paragraph on human relations is to cover the inter-personal effectiveness and the man-management aspects. It should highlight the appraisees style of leadership (authoritarian, democratic, laissez faire etc.) and the way the
- c) appraisee interacts and gets along with people at various levels, viz. seniors, colleagues, juniors and students.
- d) Paragraph on personal characteristics, is to provide a sketch of appraisees character and personality. Mention such aspects of the appraisee as temperament, cheerfulness, courage (physical/moral), interest in hobbies/games/sports and participation in various curricular, co-curricular and extracurricular activities. Any rectifiable weaknesses noticed also to be mentioned.

Performance appraisal through confidential reports should be used as a tool for human resource development. Superiors should realize that the objective is to develop a faculty so that he/she realizes his/her true potential. It is not a fault-finding process but a developmental one. The Superiors should not shy away from reporting shortcomings in performance, attitude or overall personality of the staff reported upon.

Performance counselling

Performance counselling be conducted by the HoD/Dean at least once in a semester. During performance counselling, the strong as well as weak areas and suggestions for improvement be communicated to the appraisee. It would be obligatory on the part of superior (Assessor) to communicate the appraisees strengths, weakness, shortcomings and directions improvements (if any) while filling the Performance Appraisal Reports. A record of the same be maintained in a counselling register.

10.1.3. Decentralization in Working and Grievance Redressal Mechanism (10)**Institute Marks: 10**

The Governing Body is the apex body of the institution and monitors the implementation of institutional strategic plan. The Governing Body reviews the progress of various strategic plan implementations and takes corrective measures wherever required. The top management, Principal, Deans, HoDs, teaching & non-teaching staff, students and stake holders work as a team to reinforce the culture of excellence. The institution is headed by the Principal.

As a part of decentralization, Deans and HoDs are entrusted duties and responsibilities. The principal exercise the functional and administrative control through the Deans and HoDs. Heads of the departments take the responsibility of all administrative and academic activities of the department. They are authorised to take decisions as per the needs of the situations in exigencies and get them ratified by the Head of the Institution subsequently at a later stage. The Principal, HODs and Team leads are in communication always so as to keep abreast the progress of each activity.

Well-crafted organizational structure is in place for the smooth functioning of the Institution. A hand book is available for the staff describing the duties/responsibilities, services rules, procedures, recruitment, promotional policies, grievance redressal mechanism etc. Recruitment of teaching, non-teaching and office administration staff is planned at the end of every academic year as per the requirements of the next academic year. Advertisements in leading newspapers and social media are followed to get better qualified personnel. Initially the appointments are on probation and confirmed on satisfactory performance. Staff appraisal system is in existence for performance appraisal.

As part of decentralization various committees are constituted at institute level. The committees are empowered to take up appropriate decisions on the issues placed before it. The recommendations and suggestions of these committees are approved and necessary orders are issued.

The grievance redressal mechanism helps to address the expectations of the staff.

1. Students Grievance Redressal Cell

Table 10.1.3.a: Students Grievance Redressal Cell

Sl. No.	Name of Faculty	Department	Responsibility
1	Prof. Sarath Raj S,	Associate Professor, Electrical & Electronics Engineering	Coordinator
2	Prof. Nisha Shekhar	Assistant Professor, Civil Engineering	Member
3	Prof. Shyma Kareem	Assistant Professor, Computer Science & Engineering	Member
4	Prof. Sonia K S	Assistant Professor, Electronics & Communication Engineering	Member
5	Shri Hari Kumar M G	Office Staff	Member

- Suggestion boxes are placed on all corridors in the Institute to lodge the feedback/complaint/suggestion of all stakeholders.
- The cell reviews the grievances received and report of grievance committee is forwarded to Principal for further action
- Thereafter, the principal on reviewing and understanding the level of the problem forwards the same to the management committee for necessary action

2. Anti-ragging Committee

Table 10.1.3.b: Anti-ragging Committee

Sl. No.	Name of Faculty	Department	Responsibility
1	Principal		Chairman
2	Prof. R Jayaprasad	Dean Academics & Administration	Member
3	Prof. Sarath Raj	Associate Professor & Head, Electrical & Electronics Engineering	Member
4	Dr. Shan M Assis	Associate Professor & Head, Mechanical Engineering	Member
5	Prof. Vinod C	Associate Professor & Head	Member
6	Prof. Manju N	Associate Professor & Head	Member
7	Shri Muraleedharan	Councilor, Municipality	Member
9	Shri Gopakumar	SI Narcotic Cell	Member

On receipt of the recommendation of the Anti-ragging squad or on receipt of any information concerned to the incident of ragging, Head of the Institution shall immediately determine whether a case under the penal laws could be out and if so, either on his own or through an authorised member of the Anti-Ragging Committee, shall proceed to file a First Information Report (FIR), within 24 hours of receipt of such information or recommendation with the police and local authorities, under the appropriate penal provisions relating to one or more of the following. Namely

- Abetment to ragging
- Criminal conspiracy to ragging
- Unlawful assembly and rioting while ragging
- Public nuisance created during ragging
- Violation of decency and morals through ragging Injury to body, causing casual or grievous hurt
- Wrongful restraint
- Wrongful confinement
- Use of criminal force
- Assault as well as sexual offences or unnatural offences
- Extortion
- Criminal trespassing
- Offences against property
- Criminal intimidation
- Attempts to commit any or all of the above-mentioned offences against the victim(s)
- Threat to commit any or all of the above-mentioned offences against the victim(s).
- Other offences following from the definition of “Ragging”.

3. Grievances and Appeal Committee.

Table 10.1.3.c: Grievances and Appeal Committee

Sl. No.	Name of Faculty	Department	Responsibility
1	Dr. Teena Joseph	Associate Professor & Head, Compute Science & Engineering	Chairman
2	Prof. Raji Elsa Varghese	Assistant Professor, Electronics & communication Department	Member
3	Prof. Sofia PE	Assistant Professor, General Science Department	Member
4	Prof. Jithin K	Assistant professor, Mechanical Engineering	Member

4. Grievance redressal cell for faculty/ staff**Table 10.1.3.d: Grievance redressal cell for faculty/ staff Committee**

Sl. No.	Name of Faculty	Department	Responsibility
1	Prof. Manju R	Associate Professor & Head, Civil Engineering	Chairman
2	Prof. Juby Raju	Associate Professor, Electronics & Communication Department	Member
3	Prof. Usha Goplakrishnan	Associate Professor, Computer Science & Engineering	Member
4	Shri Harikumar K M	Lab Assistant, mechanical Engineering	Member

5. Internal Complaint Committee (Women)**Table 10.1.3.e: Internal Complaint Committee (Women)**

Sl. No.	Name of Faculty	Department	Responsibility
1	Prof. Usha Gopalakrishnan	Associate Professor, Computer Science & Engineering	Chairman
2	Prof. Deepa Thomas	Assistant Professor, Computer Science & Engineering	Member
3	Prof. Ciya Paulose	Assistant Professor, Electrical & Electronics Engineering	Member
4	Prof. Raji Elsa Varghese	Associate Professor, Electronics & Communication Department	Member
5	Prof. Sofia	Assistant Professor, General Science Department	Member
6	Smt. Tina Sherly Koshy	Librarian	Member

10.1.4. Delegation of Financial Powers (10)**Institute Marks: 10**

The Principal has been given financial powers with autonomy. Principal is one of the authorized signatories for operating institute bank accounts. Further, Principal has an imprest amount of 25000/- per month for the institute miscellaneous expenditure. Further to function effectively the following administrative heads are entitled to sanction various amounts shown as below.

Table 10.1.4.1 Financial power given to various administrative heads

Sl. No.	Name of Faculty	Department
1	Principal	up to Rs 50000/-
2	Dean Acds & Admin	up to Rs. 25000/-
3	Dean PG Studies & Research	up to Rs. 25000/-
4	Director MBA	up to Rs. 15000/-
5	HoD's	up to Rs. 10000/-
6	Placement Officer	up to Rs. 10000/-

10.1.5. Transparency and Availability of Correct/Unambiguous Information in Public**Domain (5)****Institute Marks: 5**

The Vision, Mission and objectives of the institution are displayed in the College campus at Principals Office, Administrative Office, Portico, Auditorium, Canteen, Hostel building, library and other prime locations to engross the attention of all students, faculty, staff and visitors. The same is also communicated through college website and Newsletter to all the stakeholders for wide publicity.

- The web-site of the institution publishes the information pertaining to the institute and programs for circulation to stakeholders and the general public.
- The Quality policies of the institution are available on college web-site for information and dissemination.
- Annual audited reports are published and available to the stakeholders and public in the college website.
- Notices or Circulars concerned to students are circulated in the class rooms and displayed on the notice boards.

- Circulars or notifications from the university regarding academic matters are sent to all the Heads of the departments and circulated among the faculty members and students.
- The institution is transparent in providing timely information to its staff enabling better connectivity and proficiency in day-to-day academic and administrative works.
- Regular class work schedule & examination schedule and lecture schedule are displayed on notice boards.
- Marks in internal exams & attendance particulars are displayed on notice boards regularly institution LMS platform.
- An SMS alert is sent to parents/guardians if their ward fails to attend the classes.
- Regularly we intimate to parents/ guardian regarding the attendance and academic progress of their wards.
- Parents can view the all the academic progress of students including daily attendance through the institution LMS platform (Login & Password Provided).
- Registered alumni association fund utilization of the institution is audited by external chartered accountants and submitted to the registrar of societies Kerala annually. Audited balance sheets are circulated to the members in the annual general body meeting.

10.2. Budget Allocation, Utilization, and Public Accounting at Institute Level (30)**Total Marks: 30****10.2.1. Adequacy of Budget Allocation (10)****Institute Marks: 10**

The Institution is a self-financing one and the only income is the fee from students, the key factor of budgeting. Prior to preparation of budget, requirements from the departments/user sections are taken. The requirements from the Departments are analysed, prioritized based the probable income/available funds for the institution and a draft budget for the next year is prepared by the IQAC. The draft budget with is placed before the governing body for approval. As the Departments/user sections are involved right from the beginning of the budgeting process, the fund allocation is in line with the projected requirements. Generally, the budget allocations are adequate and satisfaction level is high, as the institution is practicing 'Participative Budgeting'.

The budget is prepared focusing more emphasis on R & D ,Laboratory consumables and maintenance. The institute try to give more or less the same allocation to its library funding.Budget requirements under recurring and non recurring heads are collected from each department before the commencement of financial year,Principal consolidates the budget requirement of all the departments and place in the college council ,priorities are fixed and the consolidated modified draft proposal and is placed before the governing body.Considering the annual revenue collection forecast and the need of departments and the institute the governing body modifies the proposed budget.The adequacy of budget allocation is evident in the attached table

MUSALIAR COLLEGE OF ENGINEERING & TECHNOLOGY, PATHANAMTHITTA									
INSTITUTION BUDGET: 2018-19 to 2021-22									
Sl No	Items	2021-22 (As on 26-		2020-21		2019-20		2018-19	
		Budget	% Allo	Budget	% Allo	Budget	% Allo	Budget	% Allo
1	Infrastructure Development	1300000	7.20%	1550000	8.60%	3050000	10.30%	2200000	6.60%
2	Library	800000	4.40%	750000	4.20%	900000	3.00%	900000	2.70%
3	Laboratory Equipmnt	1300000	7.20%	1300000	7.20%	1700000	5.70%	1300000	3.90%
4	Laboratory Consumables	100000	0.60%	500000	2.80%	500000	1.70%	500000	1.50%
5	Teaching & Non Teaching Salary	34000000		44000000		44000000		44000000	
6	Maintenance & Spares-MCET	500000	2.80%	500000	2.80%	500000	1.70%	500000	99.20%
7	R & D	725000	4.00%	610000	3.40%	650000	2.20%	700000	2.10%
8	Training & Travel	725000	4.00%	725000	4.00%	725000	2.40%	725000	2.20%
9	Miscellenious Expenses	11000000	61.00%	8000000	44.50%	15500000	52.40%	20500000	61.40%
10	Others, Specify	1575000	8.70%	4060000	22.60%	6075000	20.50%	6075000	18.20%

10.2.2. Utilization of Allocated Funds (15)**Institute Marks: 15**

The funds allotted for a particular year are utilized in the same year itself. Budget allocation and utilization are in order, and no deficiency was observed. The required laboratory equipment and consumables have been purchased, benefiting the students to conduct experiments. Adequate funds have been utilised for maintenance and spares of laboratory equipment. Similarly, the funds have been utilized for the Technical Fest and other college academic activities. Various committees functioning in the college effectively monitor the timely implementation and progress of development activities envisaged for the respective years. Annual review of utilisation of allocated funds by the Governing Body ensured proper discipline in finance management.

Allocated funds are usually utilized to the full extent. The institution is given the flexibility of changing allocation within the categories without altering the total allocation to meet contingencies due to changed scenario/priorities. This helps in effective utilization of the allocated funds. The utilization data for the current financial year and previous years are given for reference.

Financial Year	Budget	Utilisation	% Utilisation
2021-22	52025000	43203053	83%
2020-21	61995000	42365776	68.3%
2019-20	73600000	64904805	88.2%
2018-19	77400000	7473270	96.6%

The fund utilization during 2020-21 is low, since the institution remained closed due to covid-19 pandemic situation as per orders of Central / state governments.

The attached table is self explanatory on the success of the utilization of funds. The institute approaches the trust for any extra expenditure over the budgeted amount. Permission may be given to utilize any single head expenditure over the budgeted amount in such a manner that the overall expenditure is within the total annual budgetary allocation.

MUSALIAR COLLEGE OF ENGINEERING & TECHNOLOGY, PATHANAMTHITTA												
INSTITUTION BUDGET Utilization: 2018-19 to 2021-22												
Sl No	Items	21-22 (As on 26-03-20)		2020-21			2019-20			2018-19		
		Budget	Expenses	Budget	Expense	Util %	Budget	Expense	Util %	Budget	Expense	Util %
1	Infrastructure	1300000	984187	1550000	1035870	66.8%	3050000	3171038	104.0%	2200000	2192745	0.996702
2	Library	800000	705865	750000	575832	76.8%	900000	827547	91.9%	900000	1144241	1.271379
3	Laboratory	1300000	1091402	1300000	997380	76.7%	1700000	1084867	63.8%	1300000	831046	0.639266
4	Laboratory	100000	53194	500000	213234	42.6%	500000	467954	93.6%	500000	340990	0.68198
5	Teaching &	34000000	27980896	44000000	30325219	68.9%	44000000	39847032	90.6%	44000000	46026672	
6	Maintenanc	500000	117658	500000	179952	36.0%	500000	429051	85.8%	500000	496014	99.2%
7	R & D	725000	720850	610000	465182	76.3%	650000	454900	70.0%	700000	412155	0.588793
8	Training &	725000	336120	725000	486703	67.1%	725000	533013	73.5%	725000	800009	1.103461
9	Miscellaneous	11000000	10815830	8000000	5867304	73.3%	15500000	13919352	89.8%	20500000	18511001	0.902976
10	Others, Spe	1575000	397051	4060000	2219100	54.7%	6075000	4170051	68.6%	6075000	3977828	0.654787

10.2.3. Availability of the audited statements on the institute's website (5)

Institute Marks: 5

Every financial year all the bills and vouchers are audited internally and a final audit is done by a Chartered Account appointed by the Musaliar Educational Trust. Principals has all the power for fund utilization. The Musaliar Educational Trust overview the expenditure. The audited account is disseminated to its stake holder by publishing it in the college website.

The audited statements are available in institution website

<https://musaliarcollege.com/AUDIT/>

Summary of current financial year's budget and actual expenditure incurred (for the institution exclusively) in the three previous financial years:

Total Income at Institute level: For CFY, CFYm1, CFYm2 & CFYm3.

CFY: (Current Financial Year), CFYm1: (Current Financial Year minus 1), CFYm2: (Current Financial Year minus 2) and CFYm3: (Current Financial Year minus 3)

Table 10.2.a: CFY 2021-22

Total Income: 47564722				Actual Expenditure: 43203053			Total No. of Students: 677
Fee	Govt.	Grant(s)	Other Sources (Other fee)	Recurring including Salaries	Non- recurring	Special Projects/ Any other, specify	Expenditure per Student
46117820	0	1446902	0	29080130	14122923	0	63815.44

Table 10.2.b: CFYm1 2020-21

Total Income: 46014741				Actual Expenditure: 42365776			Total No. of Students: 730
Fee	Govt.	Grant(s)	Other Sources (Other fee)	Recurring including Salaries	Non- recurring	Special Projects/ Any other, specify	Expenditure per Student
44567839	0	1446902	0	31990522	10375254	0	58035.31

Table 10.2.c: CFYm2 2019-20

Total Income: 64796298				Actual Expenditure: 64904805			Total No. of Students: 764
Fee	Govt.	Grant(s)	Other Sources (Interest and other fees)	Recurring including Salaries	Non- recurring	Special Projects/ Any other, specify	Expenditure per Student
64796298	0	0	0	41565486	23339319	0	84953.93

Table 10.2d: CFYm3 2018-19

Total Income: 73768844				Actual Expenditure: 74732700			Total No. of Students: 935
Fee	Govt.	Grant(s)	Other Sources (Specify)	Recurring including Salaries	Non- recurring	Special Projects/ Any other, specify	Expenditure per Student
73768844	0	0	0	47987941	26744759	0	79928.02

Items	Budgeted in 2021-22	Actual Expenses in 2021-22	Budgeted in 2020-21	Actual Expenses in 2020-21	Budgeted in 2019-20	Actual Expenses in 2019-20	Budgeted in 2018-19	Actual Expenses in 2018-19
Infrastructure Built-Up	1300000	984187	1550000	1035870	3050000	3171038	2200000	2192745
Library	800000	705865	750000	575832	900000	827547	900000	1144241
Laboratory Equipment	1300000	1091402	1300000	997380	1700000	1084867	1300000	831046
Laboratory consumables	100000	53194	500000	213234	500000	467954	500000	340990
Teaching and non-teaching staff salary	34000000	27980896	44000000	30325219	44000000	39847032	44000000	46026672
Maintenance and spares	500000	117658	500000	179952	500000	429051	500000	496014
R&D	725000	720850	610000	465182	650000	454900	700000	412155
Training and Travel	725000	336120	725000	486703	725000	533013	725000	800009
Miscellaneous Expenses	11000000	10815830	8000000	5867304	14000000	13919352	20500000	18511000
Others, specify	1575000	397051	4060000	2219100	6075000	4170051	6075000	3977828
Total	52025000	43203053	61995000	42365776	72100000	64904805	77400000	74732700

10.3. Program Specific Budget Allocation, Utilization (30)**Total Marks: 30****10.3.1. Adequacy of budget allocation (10)****Institute Marks: 10**

Budget is prepared based on the need and requirement of the Department of Civil Engineering. Since the department has started in 2002, most of the infrastructural and the major equipment were installed already. So the focus of attention is given to allot more funds in R & D, Training & Travel, and Annual maintenance of laboratory equipments. The below table indicates the percentage of allocation of funds in various heads of utilization.

Table 10.3.1.a: Budget Allocation

CIVIL ENGINEERING										
FY			2021-22		2020-21		2019-20		2018-19	
Dept	Sl. No.	Category	Budgeted in2021- 2022	% Budget Allocation	Budgeted in2020- 2021	% Budget Allocation	Budgeted in2019- 2020	% Budget Allocation	Budgeted in2018- 2019	% Budget Allocation
CE	1	Laboratory Equipment	80000	15%	80000	14%	200000	30%	100000	17%
	2	Software	50000	9%	75000	13%	75000	11%	75000	13%
	3	Laboratory consumable	75000	14%	100000	17%	100000	15%	100000	17%
	4	Maintenance & Spares	50000	9%	50000	9%	50000	7%	50000	8%
	5	R & D	100000	19%	100000	17%	75000	11%	100000	17%
	6	Training & Travel	75000	14%	75000	13%	75000	11%	75000	13%
	7	Miscellaneous Exp	100000	19%	100000	17%	100000	15%	100000	17%
		TOTAL	530000		580000		675000		600000	

Total Income at Institute level: For CFY, CFYm1, CFYm2 & CFYm3

CFY: (Current Financial Year),

CFYm1: (Current Financial Year minus 1),

CFYm2: (Current Financial Year minus 2) and

CFYm3: (Current Financial Year minus 3)

Table 10.3.1.b: CFY 2021-22

Total Budget:530000		Actual expenditure: 214367		Total No. of Students: 106
Non Recurring	Recurring	Non Recurring	Recurring	Expenditure per Student
400000	130000	199097	15270	2022.33

Table 10.3.1.c: CFYm1 2020-21

Total Budget:580000		Actual expenditure: 424040		Total No. of Students: 143
Non Recurring	Recurring	Non Recurring	Recurring	Expenditure per Student
450000	130000	393834	30206	2965.31

Table 10.3.1.d: CFYm2 2019-20

Total Budget: 675000		Actual Expenditure: 456121		Total No. of Students: 144
Non Recurring	Recurring	Non Recurring	Recurring	Expenditure per Student
500000	175000	423629	32492	3167.51

Table 10.3.1.e: CFYm3 2018-19

Total Budget: 600000		Actual Expenditure: 574335		Total No. of Students: 175
Non Recurring	Recurring	Non Recurring	Recurring	Expenditure per Student
500000	100000	533422	40913	3281.91

Table 10.3.1.f

Items	Budgeted in 2020-21	Actual Expenses in 2020-21	Budgeted in 2020-21	Actual Expenses in 2020-21	Budgeted in 2019-20	Actual Expenses in 2019-20	Budgeted in 2018-19	Actual Expenses in 2018-19
Laboratory Equipment	80000	55407	80000	91963	200000	165800	100000	149034
Software	50000	15321	75000	65586	75000	5000	75000	59760
Laboratory Consumable	75000	10238	100000	40464	100000	99760	100000	70442
Maintenance and spares	50000	9121	50000	26316	50000	36663	50000	57426
R & D	100000	75000	100000	73380	75000	50000	100000	66180
Training and Travel	75000	35000	75000	86000	75000	21730	75000	73768
Misc. Expenses	100000	14280	100000	40331	100000	77168	100000	97725
Total	530000	214367	580000	424040	675000	456121	600000	574335

10.3.2. Utilization of allocated funds (20)**Institute Marks: 20**

Excluding the salary component, other expenditure and its allocation is budgeted properly considering the resources and the various academic activities. Even though the number of students admitted is less compared to the total sanctioned intake the institute provides additional funding from the trust to meet all the expenses. It is self-explanatory that the fund utilization in the previous financial year is more than the budgetary allotment. Management take special care to fund all the academic needs of the Computer Science and Engineering Department.

DEPARTMENT BUDGET & UTILISATION-CMIL ENGINEERING														
Dept	SL NO	Category	2021-22			2020-21			2019-20			2018-19		
			Budgeted in 2021-2022	Actual exp in 2021-2022	% Utilisation	Budgeted in 2020-2021	Actual exp in 2020-2021	% Utilisation	Budgeted in 2019-2020	Actual exp in 2019-2020	% Utilisation	Budgeted in 2018-2019	Actual exp in 2018-2019	% Utilisation
CE	1	Laboratory Equipm	80000	55407	69.3%	80000	91963	115.0%	200000	165800	82.9%	100000	149034	149.0%
	2	Software	50000	15321	30.6%	75000	65586	87.4%	75000	5000	6.7%	75000	59760	79.7%
	3	Laboratory consum	75000	10238	13.7%	100000	40464	40.5%	100000	99760	99.8%	100000	70442	70.4%
	4	Maintenance & Sp	50000	9121	18.2%	50000	26316	52.6%	50000	36663	73.3%	50000	57426	114.9%
	5	R & D	100000	75000	75.0%	100000	73380	73.4%	75000	50000	66.7%	100000	66180	66.2%
	6	Training & Travel	75000	35000	46.7%	75000	86000	114.7%	75000	21730	29.0%	75000	73768	98.4%
	7	Miscellaneous Exp	100000	14280	14.3%	100000	40331	40.3%	100000	77168	77.2%	100000	97725	97.7%
	TOTAL			530000	214367	40.4%	580000	424040	73.1%	675000	456121	67.6%	600000	574335	95.7%

10.4. Library and Internet (20)**Total Marks: 20****10.4.1. Quality of learning resources (hard/soft) (10)****Institute Marks: 10**

The Central Library of Musaliar College of Engineering & Technology is a proud partner in the institutes march towards its vision playing a vital role in acquisition, organization and dissemination of knowledge. The Central Library plays a major role in providing excellent user services, optimal use of resources, support quality and enhancement in learning, teaching and research.

The Central Library presently covers a total user area of 5000 sq.ft., with a seating capacity of 55 and caters to the information needs of the faculty, staff and students. The Central Library has textbook section, circulation section, reference section, periodical section with rich collection of journals and books. Linways – The Library Management Software is used for automation and in house information management. Separate departmental libraries are established in each department for quick access purpose in addition to the Central library.

Timing: 8.45 am to 6 pm on Monday to Friday

8.45 am to 4 pm on Saturday

The Quality Learning Resources in the Library

- a) The printed books, national and international journals on various subjects of reputed publishers to enhance the advanced knowledge and skills of Students and Faculty
- b) Magazines, Newspapers, placement and personality development books for updating their knowledge
- c) The e-resources of e-journals, E-books, video lectures (NPTEL), audio lectures of various publishers are made available in the Digital Library for effective teaching learning process.
- d) The learning materials, Previous Question Papers, Project reports of all departments made available in Central Library and Departmental Libraries
- e) DELNET facility is available in the Central Library

Facilities provided in the library

- a) Separate study spaces available for students and staff
- b) Provision for CD Rom playing and audio assistance
- c) Reprographic facility is available within the library
- d) Barcoding facility with LINWAYS automation Software

- e) OPAC facility – computerized catalog used by the library public.
 f) 26 pcs with Wi- Fi facility

DIGITAL CONTENTS

No.	Details	Available
1.	Multimedia PCS	26
2.	NPTEL – video lectures Notes Pictures	19038 videos 22720 notes 3250 pictures
3.	E- Journals	DELNET, SPRINGER
4.	NDL	More than 8,17,93016 datas
5.	CD Roms	36
6.	Question papers	1000
7.	Barcode facility	YES

Details of Printed Books in the Central and Department Libraries

TOTAL : 23065

Section	Department	No. of Titles	No. of Volumes
Central Library	Central	3898	17313
Departments	Civil	150	400
	Computer	250	520
	Mechanical	55	190
	Electrical	68	192
	Electronics	210	400
	MBA	2130	4050

Journal Subscription

Financial Year	No. of Journals Subscribed	
	Hard Copy	Soft Copy
2021-2022	14	DELNET, NDL
2020-2021	28	Springer, DELNET, NDL
2019-2020	63	Springer, DELNET, NDL
2018-2019	75	Springer, DELNET, NDL

10.4.2. Internet (10)**Institute Marks: 10****Table 10.4.2: Internet Details**

Name of the Internet Provider	BSNL, Reliance
Available bandwidth	160 Mbps
Wi-Fi availability	JIO, 45 Wifi Devices
Internet access in laboratories, classrooms, library, faculty rooms of all Departments, hostel	Yes, Wifi access in labs, class rooms, library and all departments
Security/privacy/Internet users	Network Firewall and antivirus software available

Annexure I**(A) PROGRAM OUTCOME (POs)****Engineering Graduates will be able to:**

- **Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- **Problem Analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

- **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

(B) PROGRAM SPECIFIC OUTCOME (PSOs)

PSO1: Apply knowledge in analysis, design, survey, testing and construction of civil engineering structures.

PSO2: To develop and design sustainable and smart infrastructure considering the global environmental challenges

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 in force 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, post visit and subsequent to grant of accreditation.

Head of the Institute


Name: Dr A S ABDUL RASHEED

Designation: PRINCIPAL

Signature:

Place: PATHANAMTHITTA

Date: 05-04-2022 14:36:29


Seal of The Institution :
Dr. A.S.ABDUL RASHEED
Principal
Musaliar College of Engineering
and Technology
Pathanamthitta