

Mechanical Engineering

Part A :

1 Name and Address of the Institution:

NIRMALA COLLEGE OF ENGINEERING TECHNOLOGY AND MANAGEMENT
KUNNAPPILLY PO, CHALAKUDY, THRISSUR, KERALA - 680311

2 Name and Address of the Directorate of Technical Education:

Name of the Director of Technical Education: Dr. Jayaprakash P

Address of the Directorate of Technical Education:

The Director of Technical Education

Padmavilasam Street, Fort P.O

Thiruvananthapuram, Kerala – 695023

3 Year of Establishment:

2018

4 Type of the Institution:

- | | |
|---|--|
| ☐ University | ☐ Autonomous |
| ☐ Deemed University | ☒ Any Other(Please Specify) |
| ☐ Affiliated | |

Provide Details:

Self Supported

5 Ownership Status:

☐ Central Government	☐ Trust
☐ State Government	☐ Society
☐ Government Aided	☐ Section 25 Company
☒ Self financing	☐ Any Other(Please Specify)

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

Name of Institutions	Year of Establishment	Programs of Study	Location
Nirmala College of Arts and Sciene	2014	M.Com, MTTM, B.Sc (Artificial Intelligence)	Meloor, Chalakkudi
Nirmala College of Health Science	2016	M.Pharm, B.Pharm, D.Pharm, Pharm.d	Meloor, Chalakkudi

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

Name of Program	Program Applied level	Start of year	Year of AICTE approval	Initial Intake	Intake Increase	Current Intake	Accreditation status	From	To	Program for consideration	Program for Duration
Mechanical Engineering	Diploma	2018	2018	60	No	60	Applying first time	--	--	Yes	3
Civil Engineering	Diploma	2018	2018	60	No	60	Applying first time	--	--	No	3

[illegible]

Name of Program	Program Applied level	Start of year	Year of AICTE approval	Initial Intake	Intake Increase	Current Intake	Accreditation status	From	To	Program for consideration	Program for Duration
Sanctioned Intake for Last Five Years for the Mechanical Engineering											
Academic Year					Sanctioned Intake						
2021-22					60						
2020-21					60						
Civil Engineering	UG	2011	2011	60	Yes	30	Eligible but not applied	--	--	0	4
Sanctioned Intake for Last Five Years for the Civil Engineering											
Academic Year					Sanctioned Intake						
2025-26					30						
2024-25					30						
2023-24					60						
2022-23					60						
2021-22					60						
2020-21					60						
MBA	PG	2019	2019	60	Yes	120	Eligible but not applied	--	--	0	2
Sanctioned Intake for Last Five Years for the MBA											
Academic Year					Sanctioned Intake						
2025-26					120						
2024-25					120						

Name of Program	Program Applied level	Start of year	Year of AICTE approval	Initial Intake	Intake Increase	Current Intake	Accreditation status	From	To	Program for consideration	Program for Duration
Sanctioned Intake for Last Five Years for the MBA											
Academic Year					Sanctioned Intake						
2023-24					120						
2022-23					60						
2021-22					60						
2020-21					60						
MCA	PG	2026	2026	60	No	60	Not eligible for accreditation	--	--	0	2

7a Accreditation History

Sr.No	Name of the Department	Name of the Program	Year of 1st Accreditation(if Applicable)	Year of 2nd Accreditation(if Applicable)	Year of 3rd Accreditation(if Applicable)
1					

7b Programs to be considered for Accreditation vide this application:

S No	Level	Discipline	Program
1	Diploma	Engineering & Technology	Civil Engineering

2	Diploma	Engineering & Technology	Mechanical Engineering
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8 Total number of Employees:

A. Regular* Employees (Faculty and Staff):

Engineering and Technology- Diploma	☒ Shift1	☐ Shift2
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Engineering and Technology- Diploma Shift-1

Items	2025-26		2024-25		2023-24		2022-23	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
Faculty in Engineering & Technology (Male)	15	15	13	13	18	18	14	14
Faculty in Engineering & Technology (Female)	22	22	22	22	15	15	17	17
Faculty in Science & Humanities (Male)	3	3	3	3	3	3	2	2
Faculty in Science & Humanities (FeMale)	6	6	6	6	6	6	7	7
Non-teaching staff (Male)	10	10	10	10	10	10	10	10
Non-teaching staff (FeMale)	7	7	6	6	6	6	5	5

B. Contractual Staff (Not Covered in 9.A):

Engineering and Technology- Diploma	☐ Shift1	☐ Shift2
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9 Total number of Students:

Engineering and Technology- Diploma	☐ Shift1	☐ Shift2
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10 Contact Information of the Head of the Institution and NBA Coordinator:

Head of the Institution

Name Julien Joseph E

Designation Principal

Mobile No. 9790678100

Email ID principal.nit@nirmalacollege.edu.in

☒ **NBA Coordinator, If Designated**

Name Harikrishnan T K

Designation Head of the Department, Mechanical Engineering

Mobile No. 9847852716

Email ID E-Mail

Mechanical Engineering

PART B: Criteria Summary

Criteria No.	Criteria	Total Marks	Institute Marks
1	VISION, MISSION AND PROGRAM EDUCATIONAL OBJECTIVES	50	50.00
2	PROGRAM CURRICULUM AND TEACHING - LEARNING PROCESSES	200	200.00
3	COURSE OUTCOMES AND PROGRAM OUTCOMES	100	100.00
4	STUDENTS' PERFORMANCE	200	111.15
5	FACULTY INFORMATION AND CONTRIBUTIONS	150	131.33
6	FACILITIES AND TECHNICAL SUPPORT	100	100.00
7	CONTINOUS IMPROVEMENT	75	75.00
8	STUDENT SUPPORT SYSTEMS	50	50.00
9	GOVERNANCE, INSTITUTIONAL SUPPORT AND FINANCIAL RESOURCES	75	75.00
	Total	1000	892

Part B

1 VISION, MISSION AND PROGRAM EDUCATIONAL OBJECTIVES (50)

1.1 State the Vision and Mission of the Department and Institution (5)

Vision of the institute

To be a premier polytechnic, moulding technically skilled and ethically driven learners making impactful contributions to the sustainable development of society

Mission of the institute

M1: To foster technical skills and creativity by embracing innovative practices in the teaching learning process

M2: To support the overall personality development of students through the promotion of holistic education

Vision of the Department

To nurture skilled diploma mechanical engineers capable to serve the technical needs of the society.

✓

Mission of the Department

Mission No.	Mission Statements
M1	To provide sound knowledge of fundamentals of Mechanical Engineering ✓
M2	To improve technical and practical skills of students through industry-oriented programs ✓
M3	To impart leadership quality and professional ethics among the students ✓

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

PEO No.	Program Educational Objectives Statements
PEO1	Prepare the diploma students with employability skills ✓
PEO2	Motivate the students to pursue higher education ✓
PEO3	Inculcate the entrepreneurship skills among the students ✓

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

1. Indicate where and how the vision, mission and PEOs are published and disseminated among stakeholders (10)

Department of Mechanical Engineering Vision, Mission and PEOs are published and widely disseminated via the below mentioned prominent places/mode as mentioned in Table 1.7 and Table 1.8. for internal and external stakeholders respectively aware of the programme Vision, Mission, and PEOs. Internal and External stakeholders of the department include Students, Faculty, Alumni, Parents and Employer.

1. Student: Student plays the most prominent role in the program whose views are considered in upgrading the teaching and learning methodologies.
2. Faculty: Faculty are a key component in providing inputs for establishment of the POs & PEOs and execution of the program in attaining its Vision & Mission.
3. Alumni: Alumni are a measure of the long-term accomplishment of the program. They provide inputs with necessary information for the amendments to be incorporated in the program for the benefit of student community.
4. Parents: The suggestions from parents are taken into consideration in view of good professional career and higher education of their wards.
5. Employer: Employer represents the majority end users of the graduates who give inputs to strengthen industry-institute interaction

A. Adequacy in respect of publication and dissemination (2)

Table 1.7 Publication and Dissemination of vision, mission and PEO statements

Sl. No.	Vision and missions are published at	Stakeholder	
		Internal	External
1	Department page of institute website (https://nit.nirmalacollege.edu.in/department/civil-engineering)	√	√
2	HOD cabin	√	
3	Department staff room	√	
4	Three classrooms	√	
5	All departmental laboratories	√	
Sl. No.	Vision and missions are disseminated through		
1	Department advisory committee (DAC) and Program Assessment Committee (PAC) meetings	√	
2	Orientation programs	√	√
3	Department level alumni meet	√	√
4	Lab instruction manuals	√	

5	Seminar and project reports	√	
6	Continuous Internal Assessment (CIA) booklets	√	
7	Course files of all courses	√	
8	All other department files	√	
Sl. No.	PEOs are published at		
1	Department page of institute website	√	√
2	HOD cabin	√	
3	Department staff room	√	
4	Three classrooms	√	
5	All departmental laboratories	√	
Sl. No.	PEOs are disseminated through		
1	Department advisory committee (DAC) and Program Assessment Committee (PAC) meetings	√	
2	Orientation programs	√	√
3	Department level alumni meet	√	
4	Continuous Internal Assessment (CIA) booklets	√	√
5	Course files of all courses	√	
6	All other department files	√	

The published and disseminated vision, mission and PEO statements are well adequate. Internal stakeholders include students, faculty, supporting staffs, HOD, principal and governing body members. External stakeholders include alumni, en

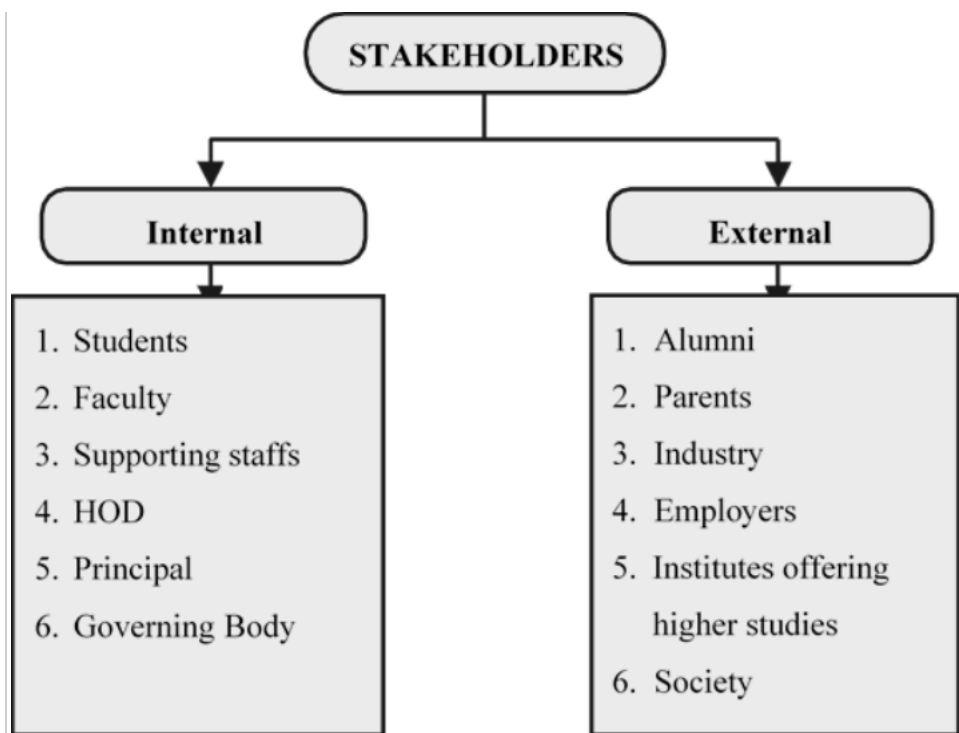


Figure 1.1 Stakeholders

A. Process of dissemination among stakeholders (2)

The vision, mission and PEO statements are disseminated first through the induction program and class PTA meetings for the newly admitted students. During the Department Advisory and Program Assessment Committee meetings, student faculty meetings we spread maximum awareness about all these statements. Every year in the beginning of the semester, HOD addresses the students and spread awareness about all the statements.

Table 1.8 Locations of Vision, Mission, PEOs, POs & PSOs are displayed

Location	Institute		Department		
	Vision	Mission	Vision Mission	PEOs POs PSOs	
College Entrance	ü	ü			Faculty member
Principal Chamber	ü	ü			Faculty member
HOD Room	ü	ü	ü	ü	Faculty member

Administrative Office	ü	ü			Faculty member
Central Library	ü	ü			Faculty member
Placement Cell	ü	ü			Faculty member
IEDC Cell	ü	ü			Faculty member
IQAC Cell	ü	ü			Faculty member
College Website	ü	ü	ü	ü	Faculty member
Department page of Institute Website			ü	ü	Faculty member
Staff Rooms	ü	ü	ü	ü	Faculty member
Class Rooms	ü	ü	ü	ü	Faculty member
Laboratories	ü	ü	ü	ü	Faculty member
Drawing Hall	ü	ü			Faculty member
Department Notice Board	ü	ü	ü	ü	Faculty member
Main Corridors	ü	ü			Faculty member
Seminar Hall	ü	ü			Faculty member

A. Extent of awareness of vision, mission and PEOs among the stakeholders (6)

The institution actively disseminates its Vision, Mission, and Program Educational Objectives (PEOs) to ensure alignment across all stakeholder groups. Various channels and mechanisms are employed to raise and maintain this awareness.

a. Students

- Displayed in classrooms, laboratories, and student record books.
- Orientation programs for new students include sessions on Vision, Mission, and PEOs.
- Regular workshops and seminars integrate these elements to reinforce their relevance.
- Feedback is collected through surveys to assess understanding and alignment.

b. Faculty and Staff

- Shared during induction and training programs.
- Embedded in curriculum design and course delivery planning.
- Periodic meetings and strategic planning sessions revisit and realign these elements.
- Faculty appraisals and academic audits often reference contribution to institutional goals.

c. Alumni

- Discussed during alumni meets and newsletters.
- Shared via email communications and social media.
- Alumni feedback is sought for continuous improvement of PEOs

d. Employers and industry partners

- Industry advisory board meetings include discussions on Vision, Mission, and PEOs.
- Collaborations and MoUs highlight mutual objectives aligned with institutional goals.
- Employer surveys gather insights into the relevance and applicability of PEOs.

e. Parents and community

- Parent-teacher meetings and open houses offer brief overviews.
- Website and institutional brochures provide access to Vision, Mission, and PEOs.

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

A. Description of process for defining the vision, mission of the department (7)

The department Vision and mission were arrived at, through a consultative procedure with a bench marking on college vision and mission with due consideration to future scope and societal and environmental values. The process has got a th Committee and Academic Council. In establishing the vision and mission of the department, the following steps were followed:

- The vision and mission of the Department were drafted in alignment with the vision and mission of the College.
- An awareness of college vision and mission were given to the stake holders through various kinds of feedback mechanisms and suggestions were taken from the Stake holders towards framing Vision and Mission of the department by t
- The Program Assessment committee reviewed the statements based on the suggestions collected and submitted it to the Advisory Committee.
- The Department Advisory Committee refined the draft. Suggestions from the committee were sent back to Assessment committee for further discussion and modifications. Modified vision and mission is submitted to the Academic Cou ratification by Board of Governors.

The finalized Vision and Mission of the Department are disseminated to the stake holders. The same will be validated through the verification of outcome attainment and may be reviewed and refined periodically.

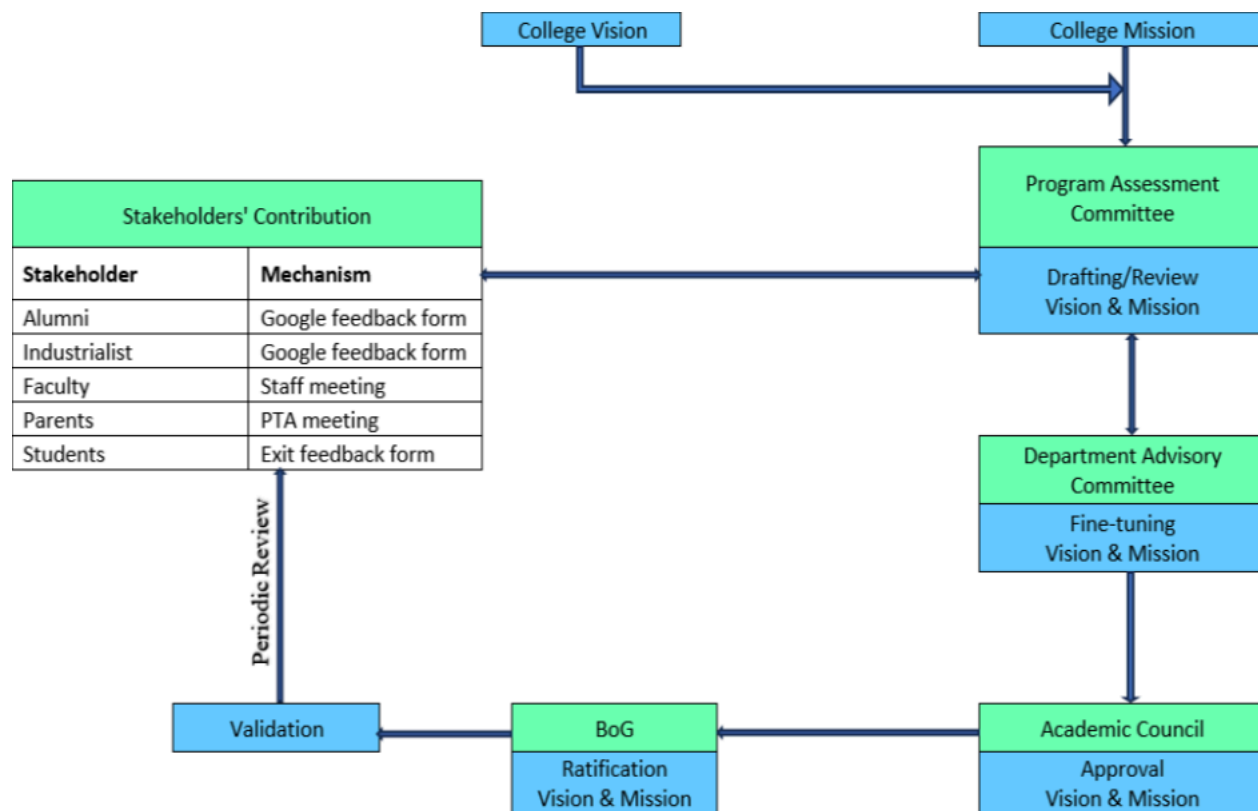


Figure 1.2 Process of framing vision and mission of the department

Members of Department Advisory Committee (DAC)

- Head of the department (Chairperson)
- Principal
- Two representatives from industry as technical advisors
- Two representatives from institutions offering higher education as academicians
- Two representatives from alumni
- One representative from PTA
- All faculty members from the department
- One representative from workshop

Members of Program Assessment Committee (PAC)

- Head of the department (Chairperson)
- All lecturers of the department
- All demonstrators of the department
- One representative from general department
- One representative from workshop

B.Description of process involved in defining the PEOs of the department (8)

Programme Educational Objectives envisage the professional and social accomplishments that the students would gain after completion of the programme. The College and Department Vision and Mission were taken as the foundation for defining the PEOs. The Department Vision and Mission adopted for the due attainment of the Department Vision and Mission.

In defining the PEOs, the following steps were undertaken:

- The PEOs of the Department were drafted in alignment with the Mission of the Department. The Program Assessment Committee had multiple brainstorming sessions to make a draft. Suggestions were taken from the various stakehold Department coordinator.
- Program Assessment Committee reviewed the statements taking into account the feedbacks and future industry requirements, and submitted it to the Department Advisory Committee.

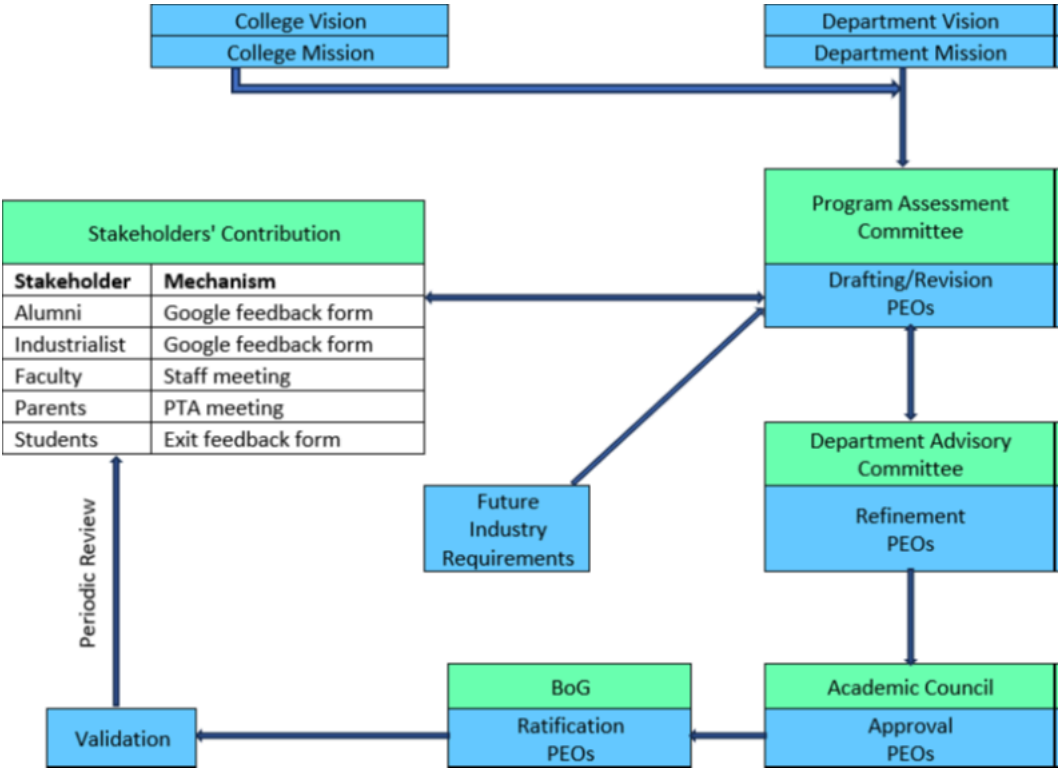


Figure 1.3 Process for framing PEOs of the department

- The Department Advisory Committee reviewed and refined the draft. Suggestions from the committee were fed back to the Assessment Committee for further discussion and modification, if required. Modified statements of PEOs were
- Academic Council tables the PEOs for ratification by Board of Governors (BoG). The finalized PEOs of the Department were disseminated to the stakeholders.

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

A.Preparation of a matrix of PEOs and elements of Mission Statement (5)

Table 1.11 shows how the Program Educational Objectives are correlated to Mission of the department

PEO Statements	M1	
Prepare the diploma students with employability skills	3	
Motivate the students to pursue higher education	3	
Inculcate the entrepreneurship skills among the students	3	

B.Consistency / justification of Co-relation parameters of the above matrix (10)

PEO 1 – M1	Strongly mapped; Mission Statement M1 focuses on providing a strong foundation in core subjects enhances students technical understanding, making them job-ready. This foundational approach which is the basics of PEO 1
PEO 1 – M2	Strongly mapped; Mission Statement M2 aims to keep students up-to-date with recent advancements, tools, and technologies in mechanical engineering. This directly supports PEO1, which focuses directly.
PEO 1 – M3	Strongly mapped; Mission M3 focuses on developing responsibility and self-reliance which enhances students' employability. It also develops leadership qualities and instilling professional ethics competencies enable graduates to take on responsible positions, lead teams, and make ethical decisions in complex professional settings—directly supporting the goal of PEO 1.
PEO 2 – M1	Strongly mapped; Mission M1 provides a strong academic foundation by focusing on both theoretical understanding and practical skills. This dual emphasis cultivates a deep interest in the subject advanced studies and engage in continuous professional development.
PEO 2 – M2	Strongly mapped; Mission M2 focuses on exposure to real-world applications enhances students' understanding and interest in specialized higher education fields.By introducing students to the pursue higher education, ensuring they remain relevant in a fast-evolving field. This directly aligns with PEO 2, which emphasizes motivating students for higher education.
PEO 2 – M3	Strongly mapped; Mission M3 emphasizes leadership qualities and professional ethics, both of which are essential for motivating students to pursue higher studies and engage in lifelong learning higher academic and professional responsibilities. These personal qualities are essential for independent learning, research, and success in higher academic pursuits.
PEO 3 – M1	Strongly mapped; Mission M1, which focuses on building both theoretical understanding and practical expertise, plays a key role in fostering entrepreneurship. To succeed as entrepreneurs, students apply these concepts in real-world situations. This combination of knowledge and hands-on skills empowers them with the technical proficiency and problem-solving ability required to start and effectively preparing students for entrepreneurial pursuits that benefit both themselves and society.
PEO 3 – M2	Strongly mapped; Mission M2 places a strong emphasis on introducing students to modern technology and trends, which are crucial for entrepreneurship in the ever evolving world of today. In a changing societal demands, entrepreneurs must keep up with the most recent developments in technology and market trends. Being exposed to innovative advancements cultivates an entrepreneurial society as a whole.
PEO 3 – M3	Strongly mapped; Mission M3 places a strong emphasis on professional ethics and leadership development, two things that are essential for successful entrepreneurship. To manage teams, motivate technical and practical capabilities but also great leadership qualities. Entrepreneurs are also guided in making responsible decisions that benefit society and their enterprises by a foundation of professional standards in order for companies to thrive and contribute favorably to the advancement of society.

PEO Statements	M1	M2	M3
Prepare the diploma students with employability skills	3	3	3
Motivate the students to pursue higher education	3	3	3
Inculcate the entrepreneurship skills among the students	3	3	3

2 PROGRAM CURRICULUM AND TEACHING - LEARNING PROCESSES (200)

2.1 Program Curriculum (40)

All POs and PSOs are being demonstrably met through Curriculum ? : NO

2.1.1 State the process used to identify extent of compliance of the Board curriculum for attaining the Program Outcomes (POs) and Program Specific Outcomes (PSOs) as mentioned in AnnexureI. Also mention the identified cu

A. Process used to identify extent of compliance of curriculum for attaining POs & PSOs (15)

The State Institute of Technical Teachers Training and Research (SITTTR) is the only institute of its kind established by the Government of Kerala under the Technical Education Department, with the objective of promoting technical education. In the district, SITTTR has functioned as the flagship center for Polytechnic education since 1990, when the state had only three polytechnic colleges. Over time, its mandate expanded from curriculum revision and faculty training to academic manpower development initiatives in coordination with the National Skill Development Mission and other central agencies.

The curriculum for Diploma in Engineering programs offered across Polytechnic Colleges in Kerala is designed, developed, and periodically revised by the State Institute of Technical Teachers Training and Research (SITTTR), Kalamassery, in close consultation with the National Institute of Technical Teachers Training and Research (NITTTR), Chennai, and in strict conformity with the model curriculum guidelines issued by the All-India Council for Technical Education.

Since the curriculum forms the foundation on which the attainment of Program Outcomes (POs) and Program Specific Outcomes (PSOs) is built, it is essential to have a well-defined, verifiable process to establish the extent to which the curriculum is carried out through four systematically sequenced steps, illustrated in Figure 1 below, and elaborated in the sections that follow.

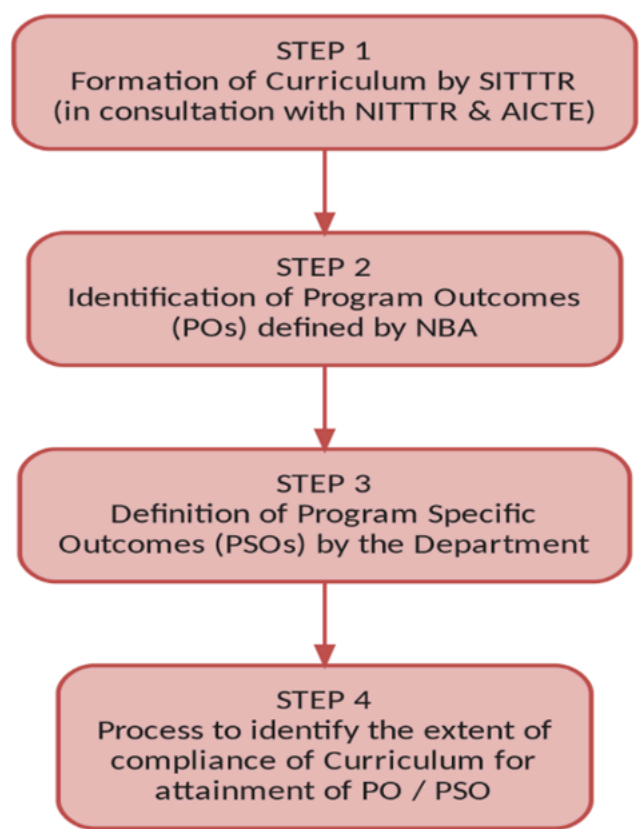


Figure 2.1 Four step process for identifying curriculum compliance for attainment of PO/PSO

Table 2.1 Overview of Four Steps

Step	Title	Description
1	Formation of Curriculum by SITTTTR	The curriculum is designed and periodically revised by SITTTTR in consultation with NITTTR, strictly following AICTE model curriculum guidelines and Outcome-Based Education (OBE) principles.
2	Identification of Program Outcomes (POs) defined by NBA	The generic Program Outcomes prescribed by the National Board of Accreditation (currently seven for engineering diploma programs) are identified and adopted as the outcome framework.
3	Definition of Program Specific Outcomes (PSOs)	The department defines PSOs specific to the branch of engineering, capturing discipline-specific competencies not covered by the generic Pos.

4	Process to identify extent of compliance of PO/PSO attainment	Course Outcomes (COs) of every course are mapped against the POs/PSOs, validated through stakeholder feedback, academic result analysis, and industry vetting, to establish the degree of compliance.
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Step 1: Formation of Curriculum by SITTTR

The state-level curriculum is set by the Kerala State Board of Technical Education through SITTTR, in consultation with NITTTR, Chennai, and AICTE guidelines. The curriculum is revised once every five years based on structured analysis industry.

The Program follows curriculum Revision 2015 and Revision 2021 across the assessment years CAY 2025 – 2026, CAYm1 2024 – 2025, CAYm2 2023 – 2024, CAYm3 2022-23, CAYm4 2021-22, and CAYm5 2020-21. Both curricula are built out at the departmental level to rearrange and remap Course Outcomes (COs) with Program Outcomes (POs) when NBA revised the POs to seven for engineering diploma programs.

A program-wise curriculum committee is constituted by SITTTR for every revision cycle, headed by a senior faculty member as chairman, with content developers drawn from government and aided polytechnic colleges having considerable experience in revising the curriculum is summarized in Table 2.2 and illustrated in Figure 2.2.

Figure 2.2 Methodology adopted by SITTTR for curriculum formation/ revision

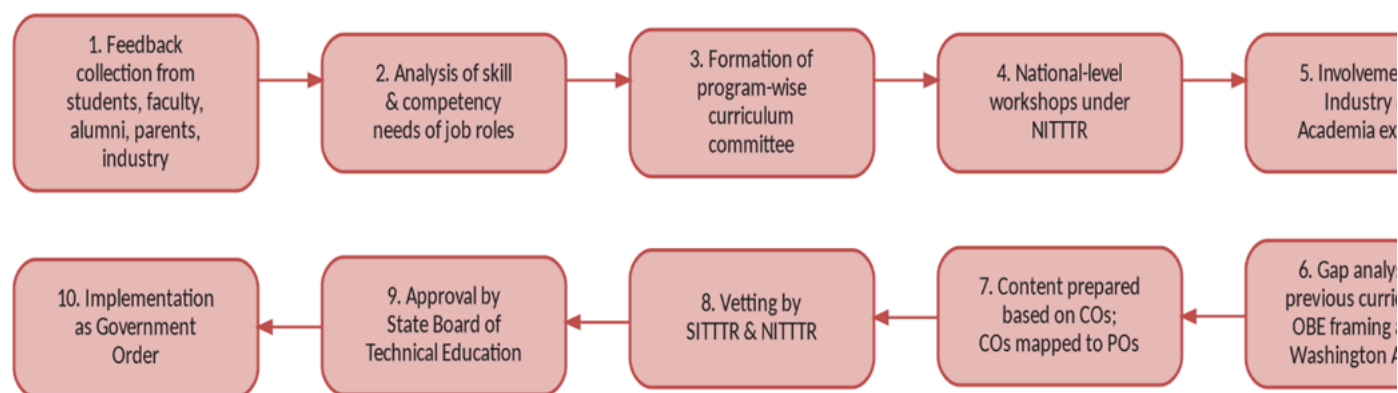


Table 2.2 Methodology adopted by SITTTR for curriculum formation/ revision

Sl. No.	Activity	Description
1	Feedback collection	Detailed institution-wise feedback was collected throughout the state from students and faculty members through online
2	Skill & competency analysis	A thorough analysis of the skills and competencies required for various job roles in industry was carried out.
3	Formation of curriculum committee	SITTTR formulates a program-wise curriculum committee with a senior faculty member as chairman, supported by con
4	National-level workshops	National-level workshops were conducted by SITTTR under the supervision of NITTTR for framing the curriculum.
5	Industry & academia involvement	Experts from industry and academia were involved in vetting and finalizing the curriculum.
6	Analysis of previous curriculum	Academic result analysis and a detailed review of the earlier curriculum revision were carried out.

7	AICTE guideline compliance	Guidelines set by AICTE were taken as the template for every revision, ensuring national-level standardization.
8	Training on OBE / taxonomy	Workshops on Outcome-Based Education and Blooms taxonomy were conducted for faculty involved in curriculum rev
9	Course gap analysis	Additions and deletions of courses were finalized based on curriculum gap analysis and technological advancement.
10	CO–PO mapping & content development	Course Outcomes were defined to match Program Outcomes, strengthening cognitive, psychomotor, and affective doma
11	Vetting & approval	Upon finalization and vetting by SITTTTR and NITTTR, the syllabus was approved by SBTE and implemented through

Step 2: Identification of Program Outcomes (POs) Defined by NBA

Once the curriculum framework is established, the Program Outcomes prescribed by the National Board of Accreditation are identified and adopted as the reference outcome set against which the curriculum must be evaluated. NBA currently framework was revised, the department carried out the necessary exercise of rearranging and remapping its Course Outcomes to correspond with the updated set of POs, ensuring that no outcome area was left unaddressed and that the mappir

Table 2.3 Program Outcomes

POs	Description
PO 1	Basic and Discipline Specific Knowledge: Apply knowledge of basic mathematics, science and engineering fundamentals and engineering specialization to solve the engineering problems.
PO 2	Problem Analysis: Identify and analyse well defined engineering problems using codified standard methods.
PO 3	Design / Development of Solutions: Design solutions for well – defined technical problems and assist with the design of systems components or processes to meet specified needs
PO 4	Engineering Tools, Experimentation and Testing: Apply modern engineering tools and appropriate technique to conduct standard tests and measurements.
PO 5	Engineering practices for society, sustainability and environment: Apply appropriate technology in context of society, sustainability, environment and ethical practices.
PO 6	Project Management: Use engineering management principles individually, as a team member or a leader to manage projects and effectively communicate about well defined engineering.
PO 7	Life-long learning: Ability to analyse individual needs and engage in updating in the context of technological changes.

Step 3: Definition of Program Specific Outcomes (PSOs)

In addition to the generic POs defined by NBA, the department defines Program Specific Outcomes that are unique to the discipline of Mechanical Engineering. PSOs capture the specialized knowledge, skills, and competencies expected of a engineering, engineering drawing, manufacturing processes, materials, and CAD/CAM to design and produce basic mechanical components according to specified requirements and also manage mechanical maintenance activities and ensure techniques.— that are not fully captured by the generic POs alone. Defining PSOs at the department level ensures that the outcome framework remains both nationally standardized (through POs) and locally/programmatically relevant (throug

Table 2.4 Program Specific Outcomes

PSOs	Description
PSO 1	Able to design and produce engineering components with the acquired knowledge
PSO 2	Able to manage maintenance system and attain quality of products in industry.

Step 4: Process to Identify the Extent of Compliance for Attainment of PO/PSO

This is the core evaluative stage of the framework, in which the actual degree of alignment between the curriculum and the POs/PSOs is systematically established. It is carried out through the following sub-processes:

Table 2.5 Process to Identify the Extent of Compliance for Attainment of PO/PSO

Sl. No.	Sub Process	Purpose
1	CO–PO/PSO mapping	Every Course Outcome of every course in the curriculum is mapped against the POs and PSOs to determine the strength of correlation (e.g., low/medium/high).
2	Domain-coverage check	Verifies that outcomes set for cognitive, psychomotor, and affective domains collectively cover the complete expected outcome set.
3	Gap identification	Feedback and academic result analysis from previous curriculum cycles are used to identify POs/PSOs that were inadequately addressed.
4	Industry validation	Industry feedback and expert vetting confirm whether curriculum content translates into industry-relevant, real-world competence.
5	Corrective gap closure	Course additions, deletions, or content modifications are made specifically to strengthen weak CO–PO/PSO linkages identified during the review.
6	Institutional approval	The revised mapping and curriculum content are vetted by NITTTR and formally approved by SBTE before implementation.

Through this closed loop of mapping, feedback, gap analysis, and corrective revision — repeated once every five years — SITTTR ensures that the curriculum is not merely delivered but is demonstrably capable of enabling the attainment of

Program Curriculum

The curriculum comprises theory, practical, seminar, and project work as prescribed. Its curricular components are classified into Foundation Courses, Common Courses, Basic Technology Courses, Applied Technology Courses, and Elective additional provisions to bridge curricular gaps, including Industry–Institute Interaction (comprising industry visits, training, project work, and expert lecture series), Finishing Schools, and Visiting Faculty Programs.

The Revision 2015 curriculum, structured around the same core categories of courses, laid the foundation for competency-based diploma education in the state. Building on this, the Revision 2021 curriculum development process began in April 2020, with stakeholders on requirements and emerging industry trends. Unlike its predecessor, Revision 2021 was designed as an outcome-based curriculum aligned with the Model Curriculum published by the AICTE, envisioning the measurement of student Outcomes (POs). These regulations apply to students admitted from the 2021–22 academic year onward, and from 2022–23 for those admitted through the Lateral Entry Scheme. As part of this revised structure, every student is required to undertake four semesters respectively, reinforcing the curriculum's emphasis on industry exposure alongside the existing Industry–Institute Interaction, Finishing School, and Visiting Faculty provisions. The scheme of Revision 2015 and Revision 2021

Table 2.6 Scheme of Revision 2015

CURRICULUM REVISION – 2015, PROGRAM SCHEME

STATE BOARD OF TECHNICAL EDUCATION, KERALA

Sl No.	SITTTR Code	Course	Course Category	Periods per week		
				Theory	Practical	Total
Semester I						
1	1001	English for Communication I	F	2	2	4
2	1002	Engineering Mathematics I	F	6	0	6
3	1003	Engineering Physics I	F	3	0	3
4	1004	Engineering Chemistry I	F	3	0	3
5	2005	Engineering Graphics	F	2	3	5
6	1009	Health & Physical Education	C	1	2	3
7	2008	Workshop Practice	F	0	3	3
8	1008	Computing Fundamentals	C	2	3	5
9	2007	Engineering Science Lab I	F	0	3	3
				19	16	35
Semester II						
10	2001	English for Communication II	F	2	2	4
11	2002	Engineering Mathematics II	F	6	0	6

12	2003	Engineering Physics II	F	3	0	3
13	2004	Engineering Chemistry II	F	3	0	3
14	2021	Basic Mechanical Engineering	B	4	0	4
15	2005	Engineering Graphics	F	1	3	4
16	2008	Workshop Practice	F	0	3	3
17	2007	Engineering Science Lab II	F	0	3	3
18	2029	Basic Mechanical Engineering Lab	B	0	3	3
19	2009	Life Skill	C	1	1	2
				20	15	35
Semester III						
20	3021	Electrical & Electronics Engg.	B	5	0	5
21	3023	Manufacturing Process	B	5	0	5
22	3022	Fluid Mechanics & Pneumatics	B	6	0	6
23	3001	Environmental Science & Disaster Management	C	3	0	3
24	3024	Machine Drawing	B	1	3	4
25	3027	Workshop Practice III	B	0	6	6
26	3029	Fluid Mechanics Lab	B	0	3	3
27	3028	Electrical Technology Lab	B	0	3	3
				20	15	35
Semester IV						
28	4023	Metallurgy & Machine Tools	B	5	0	5

29	4022	Automobile Engineering	B	4	0	4
30	4021	Applied Mechanics and Strength of Materials	A	5	0	5
31	4024	Thermal Engineering	B	5	0	5
32	4026	Production Drawing	A	1	3	4
33	4029	Workshop Practice IV & Mini Project	A	0	6	6
34	4028	Material Testing Lab	A	0	3	3
35	4027	Heat Engines Lab	B	0	3	3
				20	15	35
Semester V						
36	5001	Industrial Management & Safety	C	4	0	4
37	5021	Design of Machine Elements	A	5	0	5
38	5022	Industrial Engineering	A	5	0	5
39	5023	Power Plant Engineering	E	4	0	4
	5024	Alternate Energy Sources and Management	E	4	0	4
	5025	Material Handling	E	4	0	4
40	5028	Industrial Maintenance and Servicing Laboratory	A	0	4	4
41	5029	Machine Shop Practice	A	0	4	4
42	5027	CADD Lab I	A	0	3	3
43	5009	Industrial Training/Industrial Visit/Collaborative work	A		2 Week	
44	6009	Project & Seminar	A	0	6	6

					18	17	35
Semester VI							
45	6022	Hydraulic Machines	A	5	0	5	
46	6021	Advanced Production Processes	A	5	0	5	
47	6023	Refrigeration & Air Conditioning	A	6	0	6	
48	6025	Industrial Automation & Mechatronics	E	4	0	4	
	6024	CAD-CAM	E	4	0	4	
	6026	Maintenance Engineering	E	4	0	4	
49	6028	CADD Lab II	A	0	3	3	
50	6029	Advanced Machine Tool Laboratory	A	0	3	3	
51	6027	Hydraulic Machines and Fluid Power Lab	A	0	3	3	
52	6009	Project & Seminar	A	0	6	6	
				20	15	35	

Abbreviations used:

Course Categories: F - Foundation Courses, C - Common Courses, B - Basic Technology Courses, A - Applied Technology Courses, E - Elective Courses

Evaluation Type: T - Theory, P - Practical, D - Drawing, Pr - Project

Table 2.7 Scheme of Revision 2021

CURRICULUM REVISION 2021 - PROGRAMME SCHEME

STATE BOARD OF TECHNICAL EDUCATION, KERALA

SEMESTER: First Semester

Sl. No.	Course Category	Course Code	Course Name	Teaching Scheme	Evaluation Scheme
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				Contact Hours/ week				CA	ESA	Total Marks
				L	T	P	Total			
1	Humanities & Social Sciences	1001	Communication Skills in English	4	0	0	4	50	75	125
2	Basic Science	1002	Mathematics I	5	0	0	5	50	75	125
3	Basic Science	1003	Applied Physics I	3	0	0	3	50	75	125
4	Basic Science	1004	Applied Chemistry	3	0	0	3	50	75	125
5	Engineering Science	1005	Engineering Graphics	0	0	3	3	50	75	125
6	Basic Science	2006	Applied Physics Lab	0	0	2	2	^	^	^
7	Basic Science	1007	Applied Chemistry Lab	0	0	2	2	75	50	125
8	Engineering Science	1008	Introduction to IT systems Lab	1	0	2	3	75	50	125
9	Engineering Science	2009	Engineering Workshop Practice	0	0	3	3	^	^	^
10	Humanities & Social Sciences	1009	Sports and Yoga	0	0	2	2	75	50	125
				16	0	14	30			

SEMESTER: Second Semester

				Teaching Scheme				Evaluation Scheme		
Sl. No.	Course Category	Course Code	Course Name	Contact Hours/ week				CA	ESA	Total Marks
				L	T	P	Total			
1	Basic Science	2002	Mathematics II	4	0	0	4	50	75	125
2	Basic Science	2003	Applied Physics II	3	0	0	3	50	75	125
3	Common Courses	2001	Environmental Science	3	0	0	3	50	75	125
4	Engineering Science	2021	Engineering Mechanics	3	0	0	3	50	75	125

5	Engineering Science	2022	Manufacturing Technology	3	0	0	3	50	75	125
6	Humanities & Social Sciences	2008	Communication Skills in English Lab	0	0	3	3	75	50	125
7	Basic Science	2006	Applied Physics Lab	0	0	2	2	75	50	125
8	Engineering Science	2029	Engineering Mechanics Lab	0	0	3	3	75	50	125
9	Engineering Science	2028	Basic CAD Lab	0	0	3	3	75	50	125
10	Engineering Science	2009	Engineering Workshop Practice	0	0	3	3	75	50	125
				16	0	14	30			
Summer Internship I to be conducted after Semester 2										
1	Common Courses	3009	Internship I	3 Weeks				0	75	75
SEMESTER: Third Semester										
Teaching Scheme								Evaluation Scheme		
Sl. No.	Course Category	Course Code	Course Name	Contact Hours/ week				CA	ESA	Total Marks
				L	T	P	Total			
1	Programme core course	3021	Strength of Materials	2	1	0	3	50	75	125
2	Programme core course	3022	Material Science and Metrology	2	1	0	3	50	75	125
3	Programme core course	3023	Machine Tools	3	1	0	4	50	75	125
4	Programme core course	3024	Fundamentals of Electrical Engineering	3	1	0	4	50	75	125
5	Programme core course	3025	Machine Drawing	0	0	3	3	50	75	125
6	Programme core course	3026	Material Testing and Metallography Lab	0	0	3	3	75	50	125
7	Programme core course	3027	Mechanical Workshop III	0	0	3	3	75	50	125
8	Programme core course	3028	Electrical and Electronics Lab	0	0	3	3	75	50	125

				L	T	P	Total			
1	Common Courses	5001	Industrial Management and Safety	3	1	0	4	50	75	125
2	Programme core course	5021	Design Of Machine Elements	3	1	0	4	50	75	125
3	Programme core course	5022	Refrigeration and Air conditioning	3	1	0	4	50	75	125
4	Program Elective course	5023A	Modern Production Process	4	0	0	4	50	75	125
	Program Elective course	5023B	Material Handling	4	0	0	4	50	75	125
	Program Elective course	5023C	Power Plant Engineering	4	0	0	4	50	75	125
5	Programme core course	5027	Machine Shop Practice	0	0	3	3	75	50	125
6	Programme core course	5028	Hydraulic Machines Lab	0	0	3	3	75	50	125
7	Program Elective course	5029	Automotive Lab	0	0	3	3	75	50	125
8	Seminar	5008	Seminar	0	0	2	2	0	75	75
9	Major Project	6009	Major Project	0	0	3	3	0	0	0
				13	3	14	30			

The student has two options to complete the sixth semester and he/she shall select any one:

1. NORMAL PATHWAY 2. INTERNSHIP PATHWAY

1. NORMAL PATHWAY

SEMESTER: Sixth Semester

Sl. No.	Course Category	Course Code	Course Name	Teaching Scheme				Evaluation Scheme		
				Contact Hours/ week				CA	ESA	Total Marks
				L	T	P	Total			
1	Humanities & Social Sciences	6001	Entrepreneurship and Startup	3	1	0	4	50	75	125
2	Program Elective course	6021A	Mechatronics	3	1	0	4	50	75	125

	Program Elective course	6021B	Computer Integrated Manufacturing	3	1	0	4	50	75	125
	Program Elective course	6031D	Electric Vehicles	3	1	0	4	50	75	125
	Program Elective course	6051A	Electric and Hybrid Vehicles	4	0	0	4	50	75	125
3	Open Elective course	6022A	Computer Aided Design and Manufacturing	4	0	0	4	50	75	125
	Open Elective course	6022B	Operation Research	4	0	0	4	50	75	125
	Open Elective course	6022C	Renewable Energy Technologies	4	0	0	4	50	75	125
	Open Elective course	6022D	Product Design	4	0	0	4	50	75	125
4	Common Courses	6002	Indian Constitution	2	0	0	2	50	75	125
5	Programme core course	6027	Production Software Lab	0	1	3	4	75	50	125
6	Programme core course	6028	Refrigeration and Airconditioning Lab	0	0	3	3	75	50	125
7	Program Elective course	6029	Advanced Machine Tools Lab	0	0	3	3	75	50	125
8	Major Project	6009	Major Project	0	0	6	6	75	50	125
				12	3	15	30			

2. INTERNSHIP PATHWAY

SEMESTER: Sixth Semester

Teaching Scheme

Evaluation Scheme

Sl. No.	Course Category	Course Code	Course Name	Contact Hours/ week				CA	ESA	Total Marks
				L	T	P	Total			
1	Humanities & Social Sciences	6001	Entrepreneurship and Startup	3	1	0	4	50	75	125
2	Common Courses	6002	Indian Constitution	2	0	0	2	50	75	125

3	Programme core course	6027	Production Software Lab	0	1	3	4	75	50	125
4	Programme core course	6028	Refrigeration and Airconditioning Lab	0	0	3	3	75	50	125
5	Internship	6007	Internship	4 - 6 months per semester				250	250	500
				5	2	6	13			

Teaching Scheme: L-Lecture, T-Tutorial, P- Practical Examination Type: T-Theory, P-Practical, D-Drawing

Examination Mode: B-Board Level, I-Institution Level

^ Carried over to next semester

Various Course categories and its courses in Curriculum Revision 2015

The courses of study shall be in accordance with the scheme and syllabi prescribed in the curriculum. The diploma in Mechanical engineering programme shall consist of following course categories:

- Foundation Courses (F): Foundation Courses are courses for building up a strong foundation for a programme selected by the student by considering the future scope of further studies on the same topic.
- Common Courses (C): Common Courses are courses to be mandatorily studied by all students admitted to a programme.
- Basic Technology Courses (B): Basic Technology Courses are foundation courses which aim to bridge the course of pure science / social science / commercial practice / applied science / management with the applied technology and etc.
- Applied Technology Courses (A): Applied Technology Courses are professional level terminal courses through which the desired knowledge and skills are achieved by the students to perform his/her job functions in the programme selected.
- Elective Courses (E): Elective Courses are integrated courses providing detailed knowledge in specific areas in the same or related course with an aim to develop knowledge and awareness in other interdisciplinary area of study.

Table 2.8 Various course categories and its courses in Curriculum Revision 2015

Sl No.	SITTTTR Course Code	Course	Semester	Theory Hours	Practical Hours	Total Hours	Credit
F: Foundation Courses							
1	1001	English for Communication I	1	2	2	4	3
2	1002	Engineering Mathematics I	1	6	0	6	6
3	1003	Engineering Physics I	1	3	0	3	3
4	1004	Engineering Chemistry I	1	3	0	3	3
5	2005	Engineering Graphics	2	2	3	5	
6	2008	Workshop Practice	1	0	3	3	

7	2007	Engineering Science Lab I	1	0	3	3	
8	2001	English for Communication II	2	2	2	4	3
9	2002	Engineering Mathematics II	2	6	0	6	6
10	2003	Engineering Physics II	2	3	0	3	3
11	2004	Engineering Chemistry II	2	3	0	3	3
12	2005	Engineering Graphics	2	1	3	4	5
13	2008	Workshop Practice	2	0	3	3	3
14	2007	Engineering Science Lab II	2	0	3	3	3
				31	22	53	41

C - Common Courses

15	1009	Health & Physical Education	1	1	2	3	2
16	1008	Computing Fundamentals	1	2	3	5	4
17	2009	Life Skill	2	1	1	2	2
18	3001	Environmental Science & Disaster Management	3	3	0	3	3
19	5001	Industrial Management & Safety	5	4	0	4	4
				11	6	17	15

B - Basic Technology Courses

20	2021	Basic Mechanical Engineering	2	4	0	4	4
21	2029	Basic Mechanical Engineering Lab	2	0	3	3	2
22	3021	Electrical & Electronics Engg.	3	5	0	5	5
23	3023	Manufacturing Process	3	5	0	5	5

24	3022	Fluid Mechanics & Pneumatics	3	6	0	6	6
25	3024	Machine Drawing	3	1	3	4	3
26	3027	Workshop Practice III	3	0	6	6	3
27	3029	Fluid Mechanics Lab	3	0	3	3	2
28	3028	Electrical Technology Lab	3	0	3	3	2
29	4023	Metallurgy & Machine Tools	4	5	0	5	5
30	4022	Automobile Engineering	4	4	0	4	4
31	4024	Thermal Engineering	4	5	0	5	5
32	4027	Heat Engines Lab	4	0	3	3	2
				35	21	56	48

A- Applied Technology

33	4021	Applied Mechanics and Strength of Materials	4	5	0	5	5
34	4026	Production Drawing	4	1	3	4	3
35	4029	Workshop Practice IV & Mini Project	4	0	6	6	5
36	4028	Material Testing Lab	4	0	3	3	2
37	5021	Design of Machine Elements	5	5	0	5	5
38	5022	Industrial Engineering	5	5	0	5	4
39	5028	Industrial Maintenance and Servicing Laboratory	5	0	4	4	2
40	5029	Machine Shop Practice	5	0	4	4	2
41	5027	CADD Lab I	5	0	3	3	2

42	5009	Industrial Training/Industrial Visit/Collaborative work	5	2 Week	2	P	50
43	6009	Project & Seminar	6	0	6	6	0
44	6022	Hydraulic Machines	6	5	0	5	4
45	6021	Advanced Production Processes	6	5	0	5	5
46	6023	Refrigeration & Air Conditioning	6	6	0	6	6
47	6028	CADD Lab II	6	0	3	3	2
48	6029	Advanced Machine Tool Laboratory	6	0	3	3	2
49	6027	Hydraulic Machines and Fluid Power Lab	6	0	3	3	2
50	6009	Project & Seminar	6	0	6	6	10
				32	44	76	61

E - Elective Courses

51	5023	Power Plant Engineering	5	4	0	4	4
52	5024	Alternate Energy Sources and Management	5	4	0	4	4
53	5025	Material Handling	5	4	0	4	4
54	6025	Industrial Automation & Mechatronics	6	4	0	4	4
55	6024	CAD-CAM	6	4	0	4	4
56	6026	Maintenance Engineering	6	4	0	4	4
				24	0	24	24

Table 2.9 Curriculum Content and its proportion in curriculum Revision-2015

Course Categories	Curriculum Content (% of total number of credits in the program)	Total Number o Hours
Foundation Courses	23%	53
Common Courses	9%	17
Basic Technology	27%	56
Applied Technology Courses	36%	76
Elective Courses	5%	8
Foundation Courses	23%	53

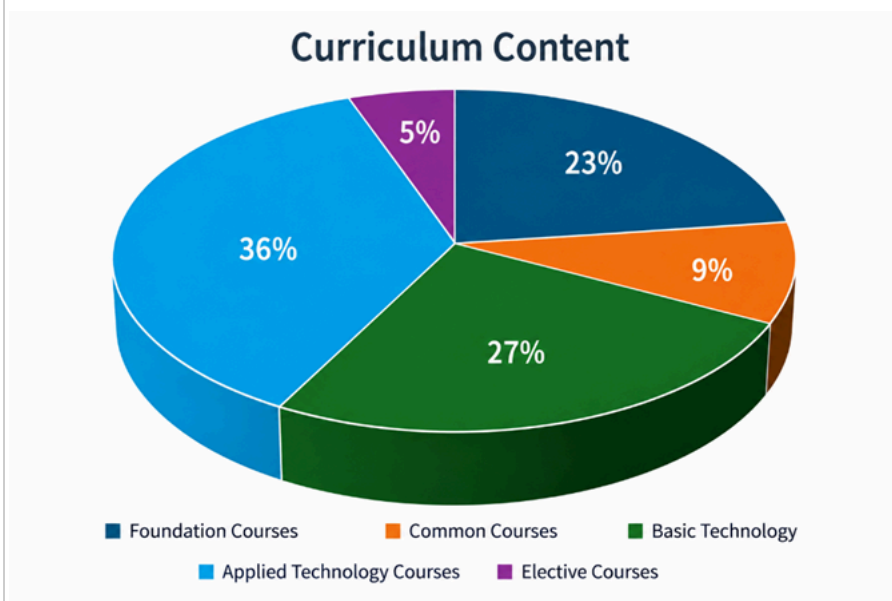


Figure 2.3 Curriculum Content % - Revision 2015

Various Course categories and its courses in Curriculum Revision 2021

The courses of study shall be in accordance with the scheme and syllabi prescribed in the curriculum. The diploma in Mechanical engineering programme shall consist of following course categories:

- **Basic Science Courses:** Basic Science Courses are foundation-level courses in Mathematics, Physics, and Chemistry that build the fundamental scientific base required for understanding and applying engineering concepts across the programme.
- **Engineering Science Courses:** Engineering Science Courses are courses that bridge basic sciences with core engineering practice, introducing fundamental engineering tools, techniques, and workshop-based skills common to all engineering disciplines.
- **Humanities & Social Sciences Courses:** Humanities & Social Sciences Courses are courses aimed at developing communication skills, physical wellbeing, and entrepreneurial/professional attributes necessary for holistic personal and career development.
- **Common Courses:** Common Courses are courses to be mandatorily studied by all students admitted to the programme, covering environmental awareness, constitutional knowledge, safety, and institution-coordinated internships that build professional skills.
- **Programme Core Courses:** Programme Core Courses are professional/discipline-specific courses through which students acquire the core technical knowledge and skills required to perform the job functions of a Mechanical Engineer in the industry.
- **Program Elective Courses:** Program Elective Courses are courses within the discipline that allow students to gain specialized, in-depth knowledge in specific areas of Mechanical Engineering based on their interest or career aspirations.
- **Open Elective Courses:** Open Elective Courses are courses that allow students to gain interdisciplinary knowledge and awareness in areas outside their core discipline, broadening their overall perspective.
- **Minor Project / Seminar / Major Project:** These are course components in which students apply their acquired theoretical knowledge and skills to identify, analyse, and solve real-world engineering problems, while also developing presentation and report-writing skills.
- **Internship:** Internship is a work-integrated learning component during which students gain practical, industry-based exposure, either as short mandatory summer internships (after Semesters 2 and 4) or as an extended 4–6-month internship.

Table 2.10 Various course categories and its courses in Curriculum Revision 2021

Sl No.	SITTTR course code	Course	Semester	Lecture hours	Tutorial hours	Practical hours	Total hours	Credit
Basic Science Courses								
1	1002	Mathematics I	I	5	0	0	5	5
2	1003	Applied Physics I	I	3	0	0	3	3
3	1004	Applied Chemistry	I	3	0	0	3	3
4	1007	Applied Chemistry Lab	I	0	0	2	2	1
5	2002	Mathematics II	II	4	0	0	4	4
6	2003	Applied Physics II	II	3	0	0	3	3
7	2006	Applied Physics Lab	II	0	0	2	2	1
				18	0	4	22	20
Program core course								
8	3021	Strength of Materials	3	2	1	0	3	3
9	3022	Material Science and Metrology	3	2	1	0	3	3
10	3023	Machine Tools	3	3	1	0	4	4
11	3024	Fundamentals of Electrical Engineering	3	3	1	0	4	4
12	3025	Machine Drawing	3	0	0	3	3	1.5

13	3026	Material Testing and Metallography Lab	3	0	0	3	3	1.5
14	3027	Mechanical Workshop III	3	0	0	3	3	1.5
15	3028	Electrical and Electronics Lab	3	0	0	3	3	1.5
16	3029	Advanced CADD Lab	3	0	0	4	4	0
17	4021	Thermal Engineering	4	3	1	0	4	4
18	4022	Fluid Mechanics and Hydraulic Machines	4	3	1	0	4	4
19	4023	Automobile Engineering	4	3	1	0	4	4
20	4024	Industrial Engineering	4	3	0	0	3	0
21	4027	Thermal Engineering Lab	4	0	0	3	3	1.5
22	4028	Fluid Mechanics Lab (Mechanical)	4	0	0	3	3	1.5
23	4029	Mechanical Workshop IV	4	0	0	3	3	1.5
24	5021	Design Of Machine Elements	5	3	1	0	4	4
25	5022	Refrigeration and Air conditioning	5	3	1	0	4	4
26	5027	Machine Shop Practice	5	0	0	3	3	1.5
27	5028	Hydraulic Machines Lab	5	0	0	3	3	1.5
28	6027	Production Software Lab	6	0	1	3	4	2.5
29	6028	Refrigeration and Airconditioning Lab	6	0	0	3	3	1.5
				28	10	37	75	51.5

Humanities & Social Sciences

30	1001	Communication Skills in English	I	4	0	0	4	4
31	1009	Sports and Yoga	I	0	0	2	2	1
32	2008	Communication Skills in English Lab	II	0	0	3	3	1.5
33	6001	Entrepreneurship and Startup	VI	3	1	0	4	4
				7	1	5	13	10.5
Engineering Science								
34	1005	Engineering Graphics	1	0	0	3	3	1.5
35	1008	Introduction to IT systems Lab	1	1	0	2	3	2
36	2009	Engineering Workshop Practice	2	0	0	3	3	^
37	2021	Engineering Mechanics	2	3	0	0	3	3
38	2022	Manufacturing Technology	2	3	0	0	3	3
39	2029	Engineering Mechanics Lab	2	0	0	3	3	0
40	2028	Basic CAD Lab	2	0	0	3	3	0
41	2009	Engineering Workshop Practice	2	0	0	3	3	1.5
				7	0	17	24	11
Program Elective course								
42	5023A	Modern Production Process	5	4	0	0	4	4
42	5023B	Material Handling	5	3	0	0	3	3
42	5023C	Power Plant Engineering	5	3	0	0	3	3
43	5029	Automotive Lab	5	0	0	3	3	1.5
44	6021A	Mechatronics	6	3	1	0	4	4

44	6021B	Computer Integrated Manufacturing	6	4	1	0	5	5
44	6031D	Electric Vehicles	6	4	1	0	5	5
44	6051A	Electric and Hybrid Vehicles	6	4	0			
45	6029	Advanced Machine Tools Lab	6	0	0	3	3	1.5
				7 or 8	1 or 0	6	14	11

Open Elective course

46	6022A	Computer Aided Design and Manufacturing	6	4	0	0	4	4
46	6022B	Operation Research	6	4	0	0	4	4
46	6022C	Renewable Energy Technologies	6	4	0	0	4	4
46	6022D	Product Design	6	4	0	0	4	4
				4	0	0	4	4

Common Courses

47	2001	Environmental Science	2	3	0	0	3	0
48	3009	Internship I	3	3 Weeks				2
49	4001	Community Skills in Indian knowledge system	4	2	0	0	2	0
50	5009	Internship II	5	4 Weeks				3
51	5001	Industrial Management and Safety	5	3	1	0	4	0
52	6002	Indian Constitution	6	2	0	0	2	0
				10	1	0	11	5

Project work								
59	6009	Major Project	VI	0	0	6	6	4
60	4009	Minor Project	IV	0	0	4	4	2
				0	0	10	10	6
Seminar								
61	5008	Seminar	V	0	0	2	2	1

Table 2.11 Curriculum Content and its proportion in curriculum Revision-2021

Course Categories	Curriculum content (% of total number of credits in the program)	Total Number of contact Hours	Total Number of Credits
Basic Science	16.67%	24	20
Programme core course	42.92%	75	51.5
Humanities & Social Sciences	8.75%	13	10.5
Engineering Science	9.17%	24	11
Program Elective course	9.17%	14	11
Open Elective course	3.33%	4	4
Common Courses	4.17%	11	5
Project	5.00%	13	6
Seminar	0.83%	2	1
All/ Total :		180	120

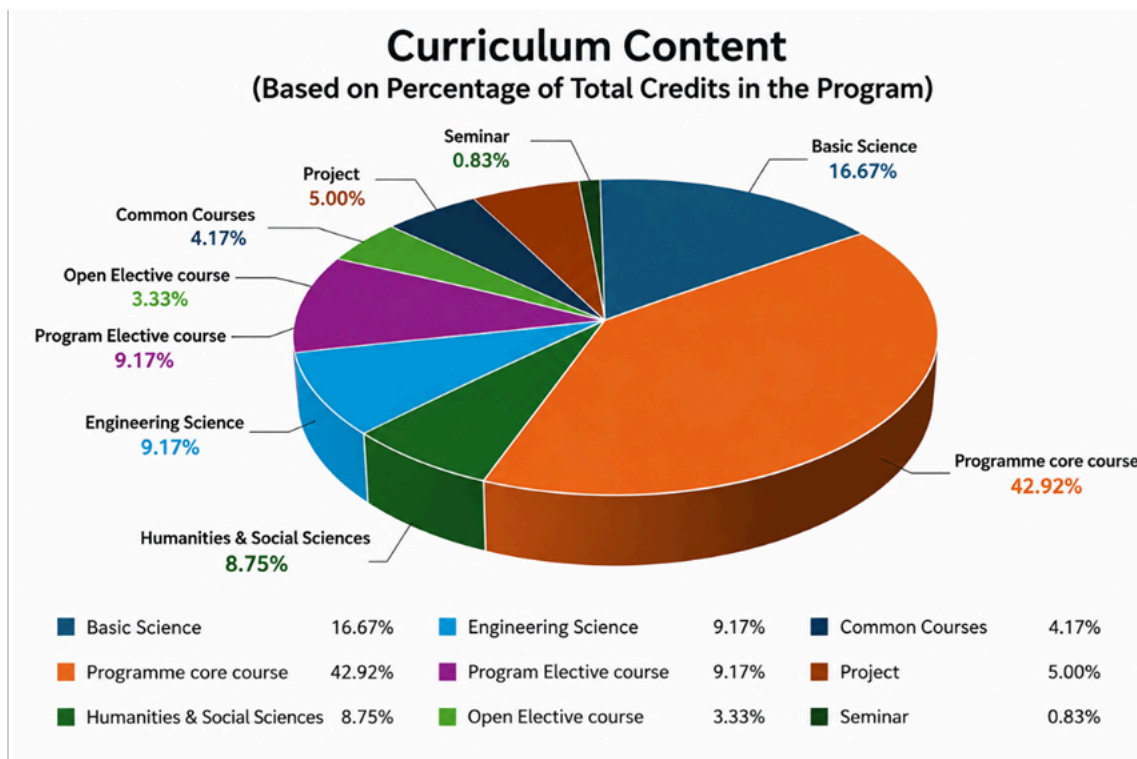


Figure 2.4 Curriculum Content % - Revision 2021

Framing CO-PO-PSO correlation

In the outcome-based curriculum, every faculty member frames the Course Outcomes (COs) for the course/s allotted to them, writing each CO using Blooms Taxonomy action verbs to clearly indicate the cognitive level at which the topic is i correlation matrix, mapping each Course Outcome to the relevant Program Outcomes (PO) and Program Specific Outcomes (PSO) based on defined Competency levels and Performance Indicators, thereby establishing how strongly each cou 2015 scheme, Course Outcomes were framed by faculty at the institution level after the syllabus was finalized, in the Revision 2021 scheme the Course Outcomes are directly taken from the syllabus itself, as they are pre-defined for each cou without framing them independently, for carrying out the CO-PO-PSO mapping and for teaching, assessment, and attainment measurement

Compliance of the Board curriculum with POs and PSOs

Compliance of the Board curriculum with Program Outcomes (POs) and Program Specific Outcomes (PSOs) refers to the extent to which the courses, course outcomes, and their associated performance indicators, prescribed by the State Boa holder at the end of the programme. In the Revision 2015 scheme, this compliance was largely indirect and institution-dependent — since Course Outcomes were framed by individual faculty after the syllabus was finalized, the extent to whi alignment, varied from college to college, making uniform attainment measurement and accreditation reporting difficult. In the Revision 2021 scheme, compliance is built directly into the curriculum design itself: since COs are pre-defined ir specified Performance Indicators and Competency levels aligned to the POs and PSOs of the programme, ensuring that every polytechnic college following the Board curriculum measures and reports outcome attainment on a consistent, com

Table 2.13 Compliance of the Board curriculum with POs and PSOs – Revision 2015

Sl No	DTE Course Code	SAR Course Code	Course Title	Programme Outcome				
				PO1	PO2	PO3	PO4	PO5
1	1001	C101	English for Communication I	2	2.5			

2	1002	C102	Engineering Mathematics I	3	2		1	
3	1003	C103	Engineering Physics I	3	2.25	1.5	2	1
4	1004	C104	Engineering Chemistry I	3	1.5	1	2	1.7
5	1009	C105	Health & Physical Education					1.5
6	1008	C106	Computing Fundamentals	1.25	1	1.5	2	
7	2007	C107	Engineering Science Lab I	3	2.25	1.25	3	1
8	2001	C108	English for Communication II		1	1		1.5
9	2002	C109	Engineering Mathematics II	3	3	2.5	1.3	
10	2003	C110	Engineering Physics II	3	2.75	2.25	1.5	1.3
11	2004	C111	Engineering Chemistry II	3	2	2	1	2
12	2021	C112	Basic Mechanical Engineering	3	2.5	2.5	2	2.25
13	2005	C113	Engineering Graphics	2.5	2.25	2	2	
14	2008	C114	Workshop Practice	3	2	1	1.5	1
15	2007	C115	Engineering Science Lab II	3	2.25	1.25	3	1
16	2029	C116	Basic Mechanical Engineering Lab	2.5	2.25	2.25	2.5	2.5
17	2009	C201	Life Skill		2	1		
18	3021	C202	Electrical & Electronics Engg.	3	3	2	2.25	2
19	3023	C203	Manufacturing Process	3	3	2.75	2.75	2
20	3022	C204	Fluid Mechanics & Pneumatics	3	3	2.75	3	2
21	3001	C205	Environmental Science & Disaster Management	2	2.5	1.5	1.75	3
22	3024	C206	Machine Drawing	3	2.5	3	3	1.25

23	3027	C207	Workshop Practice III	3	3	2.75	3	2
24	3029	C208	Fluid Mechanics Lab	3	3	2.25	3	2
25	3028	C209	Electrical Technology Lab	3	3	2	3	2
26	4023	C210	Metallurgy & Machine Tools	3	3	2.75	2.75	2
27	4022	C211	Automobile Engineering	2.75	2.5	2	2.25	1.75
28	4021	C212	Applied Mechanics and Strength of Materials	3	3	2.5	2	1.5
29	4024	C213	Thermal Engineering	3	3	2.5	2.5	1.75
30	4026	C214	Production Drawing	3	2.5	2.5	2.5	1.5
31	4029	C215	Workshop Practice IV & Mini Project	2.5	2.5	2.25	2.75	2
32	4028	C216	Material Testing Lab	2.75	2.75	2	3	1.75
33	4027	C301	Heat Engines Lab	2.75	3	2	3	2
34	5001	C302	Industrial Management & Safety	2.75	2.5	1.75	2	2
35	5021	C303	Design of Machine Elements	3	2.87	2.5	1.87	1.33
36	5022	C304	Industrial Engineering	3	3	2.25	2.5	2
37	5023	C305	Power Plant Engineering	3	2.75	2	2.25	2.25
38	5024	C306	Alternate Energy Sources and Management	3	2.75	2	2	3
39	5025	C307	Material Handling	3	3	2.25	2.5	2.5
40	5028	C308	Industrial Maintenance and Servicing Laboratory	3	2.75	2	3	3
41	5029	C309	Machine Shop Practice	3	3	2.5	3	2.75
42	5027	C310	CADD Lab I	3	2.5	2.75	3	1.33
43	5009	C311	Industrial Training/Industrial Visit/Collaborative work	2.25	2.5	1.5	1.5	2

44	6022	C312	Hydraulic Machines	3	2.75	2.75	2.25	2
45	6021	C313	Advanced Production Processes	3	3	2.5	3	2.25
46	6023	C314	Refrigeration & Air Conditioning	3	3	2.5	2.5	2.5
47	6025	C315	Industrial Automation & Mechatronics	3	3	2.75	2.75	2.25
48	6024	C316	CAD-CAM	3	3	2.75	3	2.25
49	6026	C317	Maintenance Engineering	3	3	2.5	2.75	2.5
50	6028	C318	CADD Lab II	3	2.75	3	3	1.75
51	6029	C319	Advanced Machine Tool Laboratory	3	3	3	3	2
52	6027	C320	Hydraulic Machines and Fluid Power Lab	3	3	2.5	3	2.25
53	6009	C321	Project & Seminar	2.5	2.75	2.25	2.25	2.25

Table 2.14 Compliance of the Board curriculum with POs and PSOs – Revision 2021

2021	Dte Course Code	Sar Course Code	Course Title	Programme Outcome M			
				PO1	PO2	PO3	PO4
1	1001	C101	Communication Skills in English	1.50	2.25	1.00	1.25
2	1002	C102	Mathematics I	3.00	3.00	1.50	1.50
3	1003	C103	Applied Physics I	3.00	3.00	1.75	2.00
4	1004	C104	Applied Chemistry	3.00	2.50	1.75	1.50
5	1005	C105	Engineering Graphics	3.00	2.50	2.25	2.25
6	1007	C106	Applied Chemistry Lab	3.00	3.00	1.75	3.00

7	1008	C107	Introduction to IT systems Lab	2.50	2.50	1.75	2.75
8	1009	C108	Sports and Yoga	1.00	1.25	1.00	
9	2002	C109	Mathematics II	3.00	2.75	1.75	1.00
10	2003	C110	Applied Physics II	3.00	2.75	1.50	1.25
11	2001	C111	Environmental Science	3.00	2.00	1.67	1.00
12	2021	C112	Engineering Mechanics	3.00	2.50	2.00	1.75
13	2022	C113	Manufacturing Technology	3.00	2.00	2.75	1.25
14	2008	C114	Communication Skills in English Lab	1.00	1.75	1.00	
15	2006	C115	Applied Physics Lab	3.00	3.00	1.75	3.00
16	2029	C116	Engineering Mechanics Lab	3.00	3.00	2.00	3.00
17	2028	C117	Basic CAD Lab	2.50	2.00	2.00	3.00
18	2009	C118	Engineering Workshop Practice	3.00	2.80	2.80	3.00
19	3009	C201	Internship I	1.75	2.00	1.75	1.25
20	3021	C202	Strength of Materials	3.00	2.75	2.25	2.00
21	3022	C203	Material Science and Metrology	3.00	2.75	2.00	2.25
22	3023	C204	Machine Tools	3.00	2.50	2.50	2.25
23	3024	C205	Fundamentals of Electrical Engineering	3.00	2.50	2.50	2.25
24	3025	C206	Machine Drawing	3.00	2.50	3.00	2.50
25	3026	C207	Material Testing and Metallography Lab	3.00	3.00	2.25	3.00
26	3027	C208	Mechanical Workshop III	3.00	3.00	3.00	3.00

27	3028	C209	Electrical and Electronics Lab	3.00	3.00	2.75	3.00
28	3029	C210	Advanced CADD Lab	3.00	2.75	3.00	3.00
29	4021	C211	Thermal Engineering	3.00	2.75	2.00	2.00
30	4022	C212	Fluid Mechanics and Hydraulic Machines	3.00	2.75	2.50	2.00
31	4023	C213	Automobile Engineering	3.00	2.25	2.00	2.00
32	4001	C214	Community Skills in Indian knowledge system	1.75	2.50	2.25	1.50
33	4024	C215	Industrial Engineering	3.00	2.75	2.75	2.50
34	4027	C216	Thermal Engineering Lab	3.00	3.00	2.00	3.00
35	4028	C217	Fluid Mechanics Lab (Mechanical)	3.00	3.00	2.00	3.00
36	4029	C218	Mechanical Workshop IV	3.00	3.00	2.50	3.00
37	4009	C219	Minor Project	3.00	2.75	2.25	2.75
38	5009	C301	Internship II	2.00	2.20	1.40	1.60
39	5001	C302	Industrial Management and Safety	2.25	2.25	1.50	1.75
40	5021	C303	Design Of Machine Elements	3.00	3.00	3.00	2.50
41	5022	C304	Refrigeration and Air conditioning	3.00	2.50	2.25	2.50
42	5023A	C305	Modern Production Process	3.00	2.50	2.75	2.75
43	5023B	C306	Material Handling	3.00	2.25		2.50
44	5023C	C307	Power Plant Engineering	3.00	2.00	2.25	2.00
45	5027	C308	Machine Shop Practice	3.00	2.75	3.00	3.00
46	5028	C309	Hydraulic Machines Lab	3.00	2.75	2.25	3.00

47	5029	C310	Automotive Lab	3.00	2.75	2.50	3.00
48	5008	C311	Seminar	1.67	1.67	1.00	2.33
49	6001	C312	Entrepreneurship and Startup	2.25	2.25	2.25	1.50
50	6021A	C313	Mechatronics	3.00	2.75	2.50	3.00
51	6021B	C314	Computer Integrated Manufacturing	3.00	2.50		3.00
52	6031D	C315	Electric Vehicles		2.75	2.25	2.75
53	6051A	C316	Electric and Hybrid Vehicles		2.75	2.50	2.75
54	6022A	C317	Computer Aided Design and Manufacturing	3.00		3.00	3.00
55	6022B	C318	Operation Research	3.00	3.00	2.25	2.00
56	6022C	C319	Renewable Energy Technologies	3.00	2.50	2.25	2.00
57	6022D	C320	Product Design	3.00		3.00	2.25
58	6002	C321	Indian Constitution	1.00	1.67	1.00	
59	6027	C322	Production Software Lab	2.75	2.00	2.75	3.00
60	6028	C323	Refrigeration and Airconditioning Lab	3.00	2.75	2.25	3.00
61	6029	C324	Advanced Machine Tools Lab	3.00	2.75	2.75	3.00
62	6009	C325	Major Project	2.00	2.17	2.17	2.20
63	6007	C326	Internship	2.00	2.17	2.00	1.83

B. List the curricular gaps for the attainment of POs & PSOs (10)

Methodology Adopted to Identify Curriculum Gap

Figure 2.5 illustrates the systematic process followed by the Department of Mechanical Engineering to identify gaps in the SITTTR curriculum and address them through supplementary academic and industry-oriented activities. The methodology involves identifying Program Outcomes (POs) and Program Specific Outcomes (PSOs) and that identified deficiencies are addressed through appropriate interventions.

Step 1: Inputs for Gap Identification

The gap-identification process begins with three major inputs:

1. SITTTR Curriculum

The Board-prescribed SITTTR curriculum, including the syllabus, course outcomes (COs), course structure, theory and practical components, is considered the baseline for analysis.

2. Mapping of COs with POs and PSOs

The Course Outcomes of each Mechanical Engineering course are mapped with the relevant POs and PSOs. The CO–PO–PSO mapping is analyzed to determine the extent to which the prescribed curriculum contributes to each graduate attribute.

3. Identification of Curriculum Gaps

The mapping data is systematically analyzed to identify POs and PSOs that have inadequate coverage in the existing curriculum. Areas related to emerging technologies, industrial practices, employability skills and practical competencies are identified.

Step 2: Quantitative Criteria for Identifying Gap

Two quantitative compliance criteria are applied to the CO–PO–PSO mapping data.

PO Compliance Threshold:

If the percentage of Mechanical Engineering courses mapped with a particular PO is less than 70%, that PO is considered to have a curriculum gap. This indicates that the prescribed curriculum provides insufficient opportunities for students to achieve that PO.

PSO Compliance Threshold:

If the percentage of Mechanical Engineering courses mapped with a particular PSO is less than 80%, the PSO is identified as having a curriculum gap. A higher threshold is adopted for PSOs because they represent the specific technical competencies required for the program.

Thus:

PO Gap: Course mapping with PO < 70%

PSO Gap: Course mapping with PSO < 80%

Figure 2.5 Methodology adopted to identify the curriculum gaps

SITTTR Curriculum



CO–PO & PSO Mapping



Identification of Curriculum Gaps



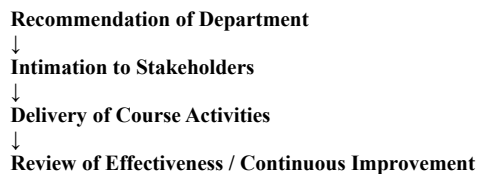
Gap Analysis



Measures to Bridge the Gaps

- Workshop
- Seminar
- Guest Lecture
- Industrial Visit
- Value Added Course
- Virtual Lab





Step 3: Measures to Bridge Gaps

Once gaps are identified, the institution deploys a set of supplementary academic and co-curricular activities — shown inside the large blue box, centred around "Measure to Bridge Gaps" — to compensate for the shortfall. These include:

- Workshop
- Industrial Training
- Seminar
- Virtual Lab
- Guest Lecture
- Value Added Course
- Industrial Visit

These activities are chosen based on which specific PO/PSO is underrepresented, so that students still achieve exposure to that outcome even though the regular curriculum doesnt sufficiently cover it.

Step 4: Recommendation of Department

After selecting the appropriate bridging activities, the concerned department formally recommends them — typically through department-level academic committee discussion — to address the identified gap in a structured, planned manner.

Step 5: Intimation to Stakeholders

The finalized recommendations are communicated to relevant stakeholders — which may include students, faculty, industry partners, or the Academic Council/IQAC — so that everyone involved is aware of the additional activities being intr

Step 6: Delivery of Course Activities

Finally, the recommended bridging activities are actually delivered/conducted as planned, closing the loop between gap identification and gap resolution. The curved arrow returning to the top of the flowchart indicates this is a continuous, cy cycles to verify whether the gap has been sufficiently addressed, or whether further bridging measures are needed.

This methodology ensures that even though the Board-prescribed curriculum is fixed and uniform across all polytechnics, individual institutions can proactively identify where the fixed curriculum under-serves specific POs or PSOs (based o academic enrichment activities — thereby strengthening actual outcome attainment beyond what the standard syllabus alone guarantees.

Table 2.15 Compliance of the Board curriculum with POs – Revision 2021

Program Outcomes	No. of courses maj
PO1: Basic and Discipline specific knowledge	
PO 2: Problem analysis	
PO 3: Design/Development of Solutions	
PO 4. Engineering Tools, Experimentation and Testing	
PO 5: Engineering practices for society, sustainability and environment	

PO 6: Project Management	
PO 7: Life-long learning	

Table 2.16 Compliance of the Board curriculum with POs – Revision 2015

Program Outcomes	No. of P ₁
PO1: Basic and Discipline specific knowledge	
PO2: Problem analysis	
PO 3: Design/Development of Solutions	
PO.4. Engineering Tools, Experimentation and Testing	
PO 5: Engineering practices for society, sustainability and environment	
PO.6. Project Management	
PO.7. Life-long learning	

Table 2.17 Compliance of the Board curriculum with PSOs – Revision 2021

Program Specific Outcomes	No. of courses m
PSO-1: Able to design and produce engineering components with the acquired knowledge.	
PSO-2: Able to manage maintenance system and attain quality of products in industry	

Table 2.18 Compliance of the Board curriculum with PSOs – Revision 2015

Program Specific Outcomes	No. of courses m
PSO-1: Able to design and produce engineering components with the acquired knowledge.	
PSO-2: Able to manage maintenance system and attain quality of products in industry	

The following POs and PSOs are identified as curricular gaps as per the criteria

PO 5	Engineering practices for society, sustainability and environment: Apply appropriate technology in context of society, sustainability, environment and ethical practices.
PO 6	Project Management: Use engineering management principles individually, as a team member or a leader to manage projects and effectively communicate about well-defined engineering activities.
PO7	Life Long learning-Ability to analyze individual needs and engage in updating in the context of technological changes.
PSO1	Able to design and produce engineering components with the acquired knowledge

Table 2.19 Comparison of compliance of Revision 2015 and Revision 2021

Program Outcome	Revision 2015
PO 1: Basic and Discipline specific knowledge	94
PO 2: Problem analysis	98
PO 3: Design/Development of Solutions	94
PO 4: Engineering Tools, Experimentation and Testing	92
PO 5: Engineering practices for society, sustainability and environment	89
PO 6: Project Management	66
PO 7: Life-long learning	83
PSO-1: Able to design and produce engineering components with the acquired knowledge.	89
PSO-2: Able to manage maintenance system and attain quality of products in industry	96

The table presents a comparison of compliance levels for Program Outcomes (POs) and Program-Specific Outcomes (PSOs) between the 2015 and 2021 curriculum revisions for Mechanical Engineering program, as part of an outcome-based 2015 and 2021 curriculum revisions shows an overall improvement in all outcomes, with no decline in any area. PO1, PO2 and PO3 increased to 100%, while PO4 improved from 92% to 95%, PO5 showed the highest improvement from 89% to 100%. Similarly, PSO1 increased from 89% to 95%, reflecting improved competency in designing and producing engineering components, while PSO2 improved from 96% to 97%, indicating better capabilities in maintenance management and production of intended outcomes, particularly in areas that required greater improvement, while maintaining the already strong performance of other outcomes.

Program Outcome Attainment Comparison: Revision 2015 vs Revision 2021

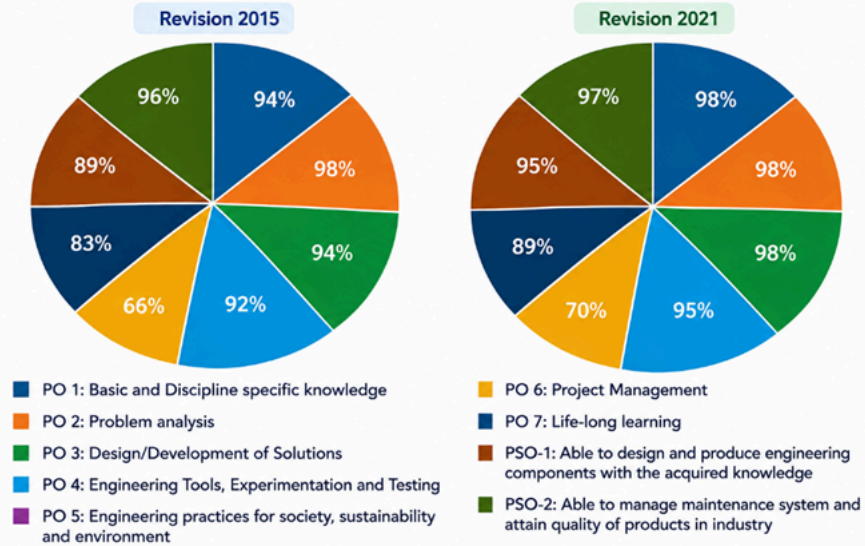


Figure 2.6 Compliance comparison of POs and PSOs: Revision 2015 vs. Revision 2021

2.1.2 Contents beyond the Syllabus (15)

A. Steps taken to get identified gaps included in the curriculum (eg. letters to Board) (2)

The attainment levels of Program Outcomes (POs) and Program Specific Outcomes (PSOs) for Revision 2015 and Revision 2021 were analyzed to identify gaps in attainment and to plan appropriate improvement actions. The following system 1. Data Collection Attainment data for all POs and PSOs for Revision 2015 and Revision 2021 were collected from the relevant assessment and attainment records. 2. Data Tabulation The attainment percentages were tabulated outcome-wise for both revisions to facilitate a systematic comparison. 3. Gap Calculation The gap for each outcome was calculated by subtracting the Revision 2015 attainment from the Revision 2021 attainment. Gap = Attainment (Revision 2021) – Attainment (Revision 2015) 4. Gap Analysis Based on the calculated improvement, outcomes were categorized as follows: • Significant Gap: ≥ 10% improvement • Moderate Gap: 5% to 9% improvement • Minor/No Gap: < 5% improvement 5. Identification of Key Focus Areas Outcomes showing moderate or significant gaps were identified as priority areas requiring focused improvement interventions. 6. Root Cause Analysis For each identified gap, possible reasons were analyzed through faculty discussions, stakeholder feedback, and review of teaching-learning and assessment processes. 7. Action Plan Development Targeted improvement actions were planned for the identified gaps, including curriculum enhancement, improvement in teaching-learning practices, assessment reforms, student support activities, and faculty development. 8. Implementation The planned improvement actions were implemented during the subsequent academic period with appropriate monitoring by the department. 9. Monitoring and Evaluation The attainment levels for Revision 2021 were reviewed against Revision 2015 to evaluate the effectiveness of the improvement actions and to support continuous improvement. Attainment Comparison and Gap Analysis
--

Outcome	Revision 2015 (%)	Revision 2021 (%)	Gap (%)	Gap Category
PO 1: Basic and Discipline specific knowledge	94	98	+4	Minor
PO 2: Problem analysis	98	98	0	No Gap
PO 3: Design/Development of Solutions	94	98	+4	Minor
PO 4: Engineering Tools, Experimentation and Testing	92	95	+3	Minor
PO 5: Engineering practices for society, sustainability and environment	89	97	+8	Moderate
PO 6: Project Management	66	70	+4	Minor
PO 7: Life-long learning	83	89	+6	Moderate
PSO-1: Able to design and produce engineering components with the acquired knowledge.	89	95	+6	Moderate
PSO-2: Able to manage maintenance system and attain quality of products in industry	96	97	+1	Minor

Summary of Gaps

Gap Category	Range of Gap (%)	Number of Outcomes

Significant Gap	≥ 10%	0
Moderate Gap	5% to 9%	3
Minor/No Gap	< 5%	6

Observation: The overall attainment shows improvement in all outcomes in Revision 2021 compared to Revision 2015. Three outcomes—PO5, PO7 and PSO-1—show moderate improvement and are therefore identified as priority areas for

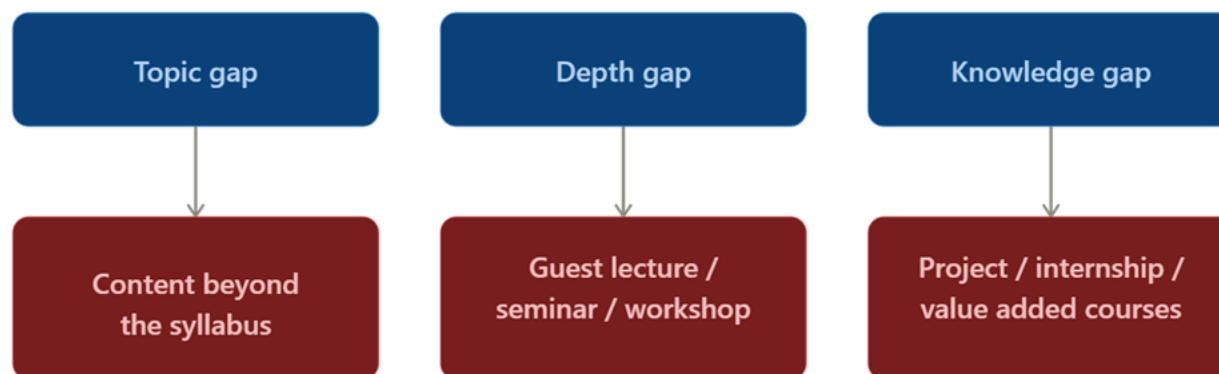


Figure 2.7 Classification of curricular gaps

Table 2.20 Action Taken for Gaps Based on Levels

Levels	Action Taken
Faculty Level	Content Beyond the Syllabus – Topics Covered
Department Level	Seminar / Workshop / Industrial Visit
Institute Level	Project / Internship / Value Added Courses
Beyond Institute Level	Sending letter to DTE

The identified curricular gaps are fulfilled by the following process.

- Workshops/ Seminar/ Guest Lectures and Symposium
- Value Added Courses
- Technical lectures (Internal academic experts / External academic experts / Industrial experts)
- Open ended projects
- Internships and Industrial visits

Table 2.21 Number of Enrichment programs conducted

Sl.No	Academic Year	Total No. of Enrichment Programmers Conducted	Total No. of Value-Added Courses Conducted	Total No. of Industrial
1	CAY 2025-2026	4	1	4
2	CAYm1-2024-2025	4	1	4
3	CAYm2-2023-2024	4	1	4
4	CAYm3-2022-2023	4	1	4

Table 2.22 Details of Enrichment programs conducted

Sl No	Date – Month– Year	Name of the Event	
CAY 2025-2026			
1	15/07/2025	Workshop on: PROJECT COOLDOW	
2	20/09/2025	Seminar on Diagnostic Techniques in Automotive Systems	
3	17/01/2026	Introduction to Manufacturing	
4	13/02/2026	Solid works -workshop (3 D drawing)	
CAYm1 2024-2025			
1	6/09/2024,7/09/2024	Workshop on 3D Printing Technology	
2	10/01/2025	Marine Engine Technology	

2	24/ 01/ 2025	Skill Enhancement Program on Hyundai Service Standards	
3	03/02/2026	Skill to Build-Workshop on Design and Manufacturing	
CAYm2 2023-2024			
1	18/09/2023	Seminar on Automobile service	
2	05/01/2024	Seminar on CNC Machine	
3	16/2/2024	Maintenance Training	
4	8/3/2024	Workshop on: Design – AutoCAD Software	

Table 2.23 Value Added Courses

Sl. No.	Value Added Course	
1	QA /QC	
2	HVAC TRAINING	
3	QA /QC	

C. Mapping of content beyond syllabus with the POs & PSOs (3)

2025-26

S.No	Gap	Action Taken	Date-Month-Year	Resource Person with Designation	Mode	
1	Practical knowlec	Workshop on PR	15/07/2025	Mr. Devanunni P, Experience	offline	80
2	Practical knowlec	Seminar on Diag	25/09/2025	Mr. Joy Varghese, Diagnostic	offline	60
3	Exposure to mod	Introduction to M:	17/01/2026	Mr. Arun R, Engineer, HMT K	offline	58
4	Advanced CAD n	SolidWorks Work	13/03/2026	Mr. Sumesh B, CAD Trainer,	offline	66
5	QA/QC Training	Value Added cou	06/12/2025	Mr.Jestin Jose,Trainer,Tech 5	offline	27

2024-25

S.No	Gap	Action Taken	Date-Month-Year	Resource Person with Designation	Mode	
1	Lack of practical	Workshop on 3D	06/09/2024	Mr. Nivin Joseph Vins, Founc	offline	65
2	Limited industrial	Marine Engine Te	10/01/2025	Mr. Arun Sankar, Chief Engin	offline	70
3	Need for awaren	Skill Enhanceme	24/01/2025	Mr. Sunil Jacob, Senior Man	offline	75
4	Need for practica	Skill to Build – W	03/02/2025	Mr. Manu Eswar, Design Eng	offline	66
5	MEP	Value Added Cou	19/11/2024	MR.Sahad M S,Trainer Tech	offline	12

2023-24

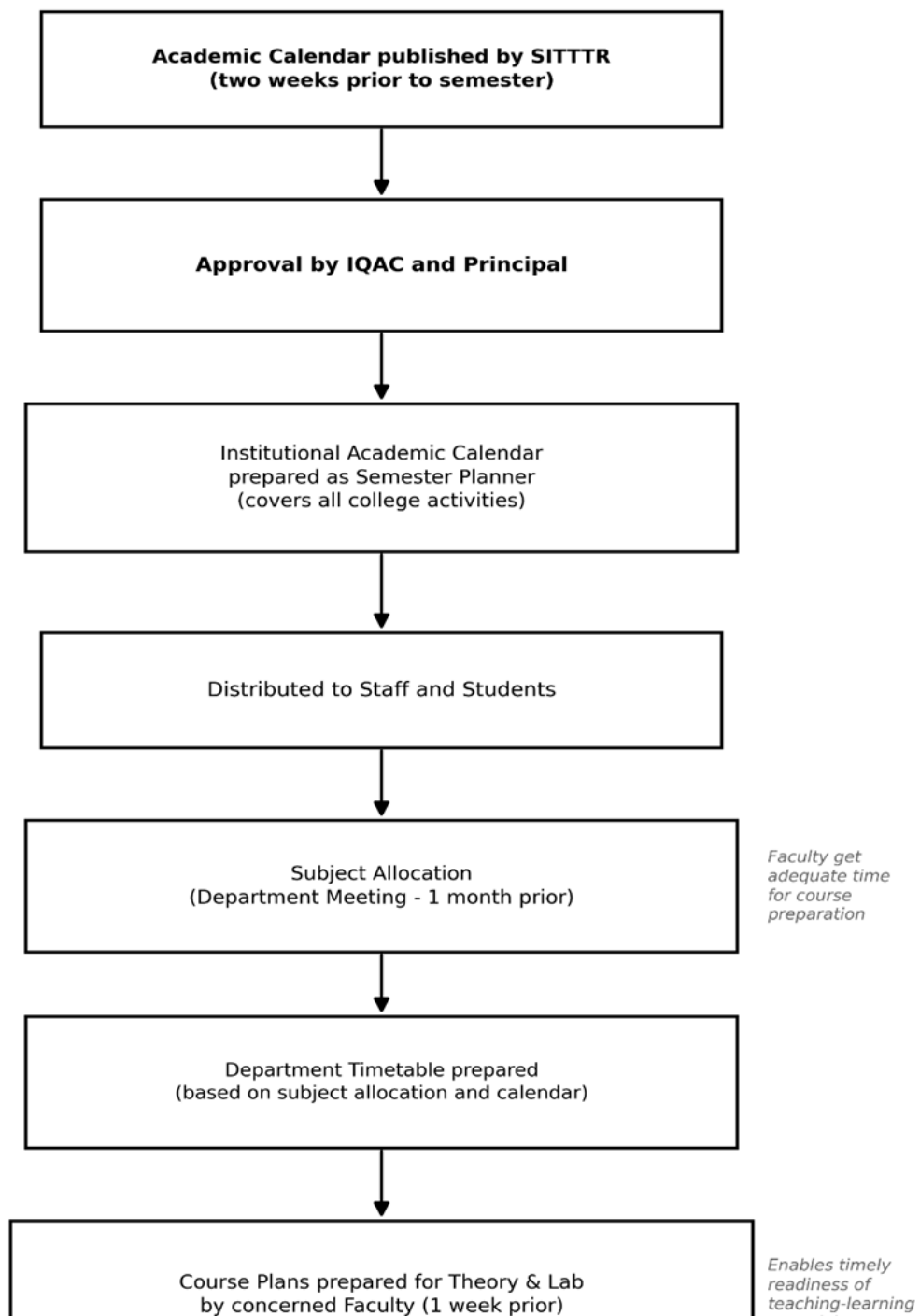
S.No	Gap	Action Taken	Date-Month-Year	Resource Person with Designation	Mode	
1	Need for practica	Seminar on Autoi	18/09/2023	Mr. Vinod S, Area Training M	OFFLINE	70
2	Need for hands-c	Seminar on CNC	5/01/2024	Mr. Sarath Raj P. R, Manage	OFFLINE	72
3	Need for industri	Maintenance Tra	16/02/2024	Mr. Vikas K V, Assistant Man	offline	65
4	Need for enhanc	Workshop on De:	08/03/2024	Ms. Vinitha, Trainer, CAD Ce	offline	72
5	QA/QC	Value Added Cou	06/12/202	Mr.Jestin Jose,Trainer Tech	offline	20

2.2 Teaching - Learning Process (160)

2.2.1 Describe Processes followed to ensure/improve quality of Teaching & Learning based on following points (25)

A. Adherence to Academic Calendar (3)

Adherence to Academic Calendar (3) The academic calendar is published by the State Institute for Technical Teachers Training (SITTTR) two weeks prior to the commencement of each semester. Based on this academic calendar, and with the approval of the IQAC and the Princip semester, encompassing all college activities. This institutional calendar is then distributed to staff and students, enabling faculty to schedule their activities effectively. Subject allocation within the department is carried out during department adequate time for course preparation. Department timetables for all semesters are then prepared based on the subject allocation and the institutional academic calendar. Course plans for both theory and laboratory courses are prepared by the c is executed with minimal deviation, ensuring that all courses are completed within the stipulated time frame. The academic calendar will be published by State Institute for Technical Teachers Training and Research (Figure 2.9, 2.10, 2.11) ar



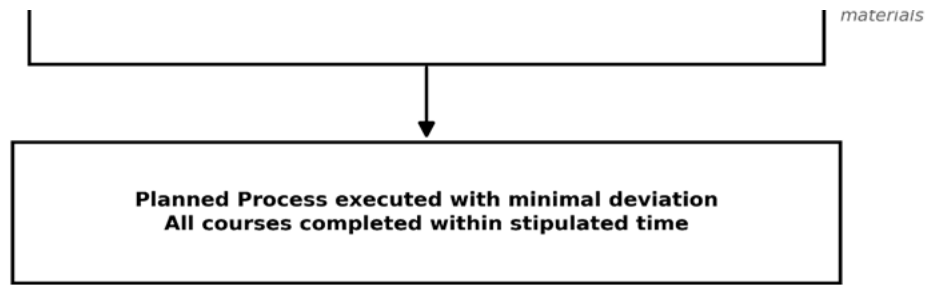


Figure 2.8 Flow chart showing course plan preparation according to academic calendar and institution calendar



STATE INSTITUTE OF TECHNICAL TEACHERS TRAINING & RESEARCH
DEPARTMENT OF TECHNICAL EDUCATION
GOVERNMENT OF KERALA

ACADEMIC CALENDAR FOR THIRD & FIFTH SEMESTER IN 2025 - 26

(FOR ALL POLYTECHNIC COLLEGES UNDER SBTE IN THE STATE)

Academic Calendar for S3 Regular & PT(2024 adm) and S5 Regular & PT(2023 adm)

JUNE 2025 (No. of Instructional days : 16)

02.06.2025 to 07.06.2025	College reopens after summer vacation. Completion of Practical and institution mode examinations of S2, S4 & S6 as per notification from JCTE and Internship.
05.06.2025	World Environment Day^.
09.06.2025	Commencement of S3 & S5 classes
14.06.2025	World Blood Donor's Day^.

JUNE 2025						
SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
28	30					

JULY 2025 (No. of Instructional days : 22)

07.07.2025	Publication of Attendance Statement of the month June.
15.07.2025	Formative Assessment(as per curriculum) No.1
21.07.2025	Summative Assessment(as per curriculum) No.1.

JULY 2025						
SUN	MON	TUE	WED	THU	FRI	SAT
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

AUGUST 2025 (No. of Instructional days : 19)

07.08.2025	Publication of attendance of the month of July Semester Registration starts for S3 and S5
15.08.2025	Independence Day^
19.08.2025	Formative Assessment(as per curriculum) No.2
21.08.2025	Summative Assessment(as per curriculum) No.2
26.08.2025	National Sports Day^

AUGUST 2025						
SUN	MON	TUE	WED	THU	FRI	SAT
31					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

29.08.2023

Polytechnic College closes for Onam Holidays*

SEPTEMBER 2025 (No of Instructional days: 17)

08.09.2025	Polytechnic College reopens after Onam Holidays*
11.09.2025	Publication of attendance of the month of August
26.09.2025	Notification for End Semester Examination Nov 2025'
26.09.2025	Formative Assessment(as per curriculum) No.3
29.09.2025	Model exam for S3 & S5

SEPTEMBER 2025						
SUN	MON	TUE	WED	THU	FRI	SAT
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

OCTOBER 2025 (No of Instructional days: 9)

08.10.2025	Publication of attendance of the month of September
10.10.2025	Student's Union Election as per notification from DTE(Tentative)
15.10.2025	last working day for S3 & S5
17.10.2025	Publication of internal marks and consolidated attendance statement of S3 & S5
27.10.2025	Commencement of End Semester Examination for S3 & S5'

OCTOBER 2025						
SUN	MON	TUE	WED	THU	FRI	SAT
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Academic work shall be handled in online/contact mode as per the directions of the Govt. from time to time

^ Institutions may arrange programmes to observe these days and other days as notified by Govt./ AICTE.

* Onam Holidays shall be according to directives from Govt. of Kerala.

` Any change in the Examination related dates will be informed in due course by JCTE.

Details regarding fee remittance shall be notified by DTE.

Academic Calendar shall be updated as and when higher authorities schedule remedial classes, practical classes and examinations.

Other directives from higher authorities, for conduct of classes due to the pandemic or other causes shall be followed and the academic calendar shall be updated accordingly.

Academic Calendar shall be modified if required.

Shortage in the number of working Days may be compensated by conducting special classes on Saturdays and ensure that requisite number of instructional days are obtained.



Depok
for Joint Director
SITTTR

JOINT DIRECTOR
INSTITUTE OF TECHNICAL TEACHERS TRAINING & RESEARCH



WET JUNCTION, KALAMASSERY
PIN - 686 104



STATE INSTITUTE OF TECHNICAL TEACHERS TRAINING & RESEARCH
DEPARTMENT OF TECHNICAL EDUCATION
GOVERNMENT OF KERALA
ACADEMIC CALENDAR FOR FOURTH & SIXTH SEMESTER in 2025 - 26
(FOR ALL POLYTECHNIC COLLEGES UNDER SBTE IN THE STATE)
 Academic Calendar for S4,S6 (Regular/PT/WP)

NOVEMBER 2025 (No. of Instructional days : 5)

24.11.2025	Commencement of fourth and sixth semester classes
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NOVEMBER 2025						
SUN	MON	TUE	WED	THU	FRI	SAT
30	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

DECEMBER 2025 (No. of Instructional days : 17)

01.12.2025	World Aids Day^
01.12.2025	Commencement of Sixth Semester Internship 2025-26
02.12.2025	World Pollution Prevention Day^
14.12.2025	National Energy Conservation Day^
18.12.2025	Union Inauguration (Tentative)
19.12.2025	College Sports Day (Tentative)
23.12.2025	Polytechnic College closes for X'mas Holidays*

DECEMBER 2025						
SUN	MON	TUE	WED	THU	FRI	SAT
*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	*	*	*

JANUARY 2026 (No. of Instructional days : 19)

05.01.2026	Polytechnic College reopens after X'mas Holidays*
12.01.2026	Formative Assessment(as per curriculum) No.1
13.01.2026	Publication of attendance of the month of November & December 2025
15.01.2026 16.01.2026	College Level Arts Festival(Tentative)
19.01.2026	Summative Assessment(as per curriculum) No.1.

JANUARY 2026						
SUN	MON	TUE	WED	THU	FRI	SAT
*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24

26.01.2026	Republic Day^	25	26	27	28	29	30	31
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FEBRUARY 2026 (No of Instructional days: 20)

06.02.2026	Publication of attendance of the month of January 2026
18.02.2026	Formative Assessment(as per curriculum) No.2
25.02.2026	Summative Assessment(as per curriculum) No.2
27.02.2026 to 01.03.2026	State Athletic Meet (<i>Tentative</i>)

FEBRUARY 2026						
SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
*	*	*	*	*	*	*

MARCH 2026 (No of Instructional days: 15)

03.03.2026	Formative Assessment(as per curriculum) No.3
05.03.2026 - 08.03.2026	Interpoly Arts Festival (<i>Tentative</i>)
09.03.2026	Publication of attendance of the month of February 2026
10.03.2026	Model examination for S4 & S6
23.03.2026	Last working day for S4 & S6
24.03.2026	Publication of internal marks and consolidated attendance statement of S4 & S6
30.03.2026	End Semester Examination as per notification of JCTE. Conduct of Institution level and practical examinations. (<i>Tentative</i>)

MARCH 2026						
SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	*	*	*	*

APRIL 2026 (No of Instructional days:)

30.04.2026	Last day for conducting institution level and practical examination of S4 and S6.
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APRIL 2026						
SUN	MON	TUE	WED	THU	FRI	SAT
*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

MAY 2026 (No of Instructional days:)

01.05.2026	Internship II for S4 students(4 weeks)
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MAY 2026						
SUN	MON	TUE	WED	THU	FRI	SAT
31	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

Academic work shall be handled in online/contact mode as per the directions of the Govt. from time to time

^ Institutions may arrange programmes to observe these days and other days as notified by Govt./ AICTE.

* X'mas Holidays shall be according to directives from Govt. of Kerala.

Details regarding fee remittance shall be notified by DTE.

Academic Calendar shall be updated as and when higher authorities schedule remedial classes, practical classes and examinations.

Other directives from higher authorities, for conduct of classes due to the pandemic or other causes shall be followed and the academic calendar shall be updated accordingly.

Academic Calendar shall be modified if required.

Joint Director

SITTTR

Signed by
Cinimole K G
Date: 17-12-2025 17:58:25

Figure 2.10 Sample Academic calendar published by SITTTR (Even Semester)

Table 2.25 Sample semester planner with adherence to academic calendar published by SITTTR (Odd Semester)

NiRMALA COLLEGE OF ENGINEERING TECHNOLOGY AND MANAGEMENT (Diploma Programme)

Odd Semester Plan of Academic Year 2025-2026

S3 & S5

DAY	DATE	WD	ACTIVITY
Mon	2-Jun		College reopens after Summer Vacation
Tue	3-Jun		
Wed	4-Jun		Submission of Module 1& 2 Notes, SAT-1 Question Bank & Lab Manual
Thu	5-Jun		End Semester Examination of 3009 - Internship I & 5009 - Internship II / World Environment Day
Fri	6-Jun		Public Holiday - Bakrid / Eid al Adha
Sat	7-Jun		Holiday - Students
Sun	8-Jun		Holiday
Mon	9-Jun	1	Commencement of Classes Issue of Module 1& 2 Notes, SAT-1 Question Bank & Lab Manual
Tue	10-Jun	2	
Wed	11-Jun	3	S5 - Project Work Group Formation & Guide Allocation

Thu	12-Jun	4	S5 - Seminar Topic Draft Submission
Fri	13-Jun	5	S5 - Submission of Finalized Seminar Topic
Sat	14-Jun		Holiday / World Blood Donors Day
Sun	15-Jun		Holiday
Mon	16-Jun	6	S5 - Seminar Abstract Draft Submission
Tue	17-Jun	7	S5 - Submission of Finalized Seminar Abstract
Wed	18-Jun	8	S5 - Seminar PPT Draft Submission
Thu	19-Jun	9	
Fri	20-Jun	10	S5 - Submission of Finalized Seminar PPT
Sat	21-Jun		Holiday - Students
Sun	22-Jun		Holiday
Mon	23-Jun	11	S5 - Seminar Presentation Commences
Tue	24-Jun	12	
Wed	25-Jun	13	
Thu	26-Jun	14	
Fri	27-Jun	15	
Sat	28-Jun		Holiday
Sun	29-Jun		Holiday
Mon	30-Jun	16	
Tue	1-Jul	17	
Wed	2-Jul	18	

Thu	3-Jul	19	
Fri	4-Jul	20	
Sat	5-Jul		Holiday - Students
Sun	6-Jul		Holiday
Mon	7-Jul	21	Publication of Attendance Statement of the month June
Tue	8-Jul	22	Formative Assessment No.1 QP Issue to students (All Sub)
Wed	9-Jul	23	
Thu	10-Jul	24	Last date for Payment of Tuition Fees Without Fine
Fri	11-Jul	25	Commencement of Submission of Semester Enrollment Form (Accounts)
Sat	12-Jul		Holiday
Sun	13-Jul		Holiday
Mon	14-Jul	26	
Tue	15-Jul	27	Last Date for Submission of Formative Assessment No.1
Wed	16-Jul	28	
Thu	17-Jul	29	Publication of Formative Assessment-1 Marks
Fri	18-Jul	30	
Sat	19-Jul	31	
Sun	20-Jul		Holiday
Mon	21-Jul	32	
Tue	22-Jul	33	
Wed	23-Jul	34	Last Date to Complete Teaching of Module 1 & 2

Thu	24-Jul		Public Holiday - Karkidaka Vavu
Fri	25-Jul	35	S5 - End of Seminar Presentation
Sat	26-Jul		Holiday
Sun	27-Jul		Holiday
Mon	28-Jul	36	S5 - Seminar Report Work Commences
Tue	29-Jul	37	Presentation Competition - Batch List Submission
Wed	30-Jul	38	Last Date to Complete Teaching of Module 1 & 2 Presentation Competition - Grooming Session Commences
Thu	31-Jul	39	Revision Class for SAT-1
Fri	1-Aug	40	Revision Class for SAT-1
Sat	2-Aug		Holiday - Students
Sun	3-Aug		Holiday
Mon	4-Aug	41	Summative Assessment No.1
Tue	5-Aug	42	
Wed	6-Aug	43	Submission of Module 3 & 4 Notes, SAT-2 Question Bank
Thu	7-Aug	44	Publication of Attendance Statement of the month July Semester Registration starts for S3 and S5
Fri	8-Aug	45	
Sat	9-Aug		Holiday
Sun	10-Aug		Holiday
Mon	11-Aug	46	S5 - Seminar Report Work Draft Submission Issue of Module 3 & 4 Notes, SAT-2 Question Bank

Tue	12-Aug	47	Formative Assessment No.2 QP Issue to students (All Sub) Last Date for Submission of Semester Enrollment Form - Academic Clearance (Stage 1 of 2)
Wed	13-Aug	48	Publication of Summative Assessment No.1 Marks Presentation Competition - End of Grooming Session
Thu	14-Aug	49	S5 - Submission of Finalized Seminar Report Commencement of Remedial Class of SAT-1
Fri	15-Aug		Public Holiday - Independence Day
Sat	16-Aug		Holiday - Students
Sun	17-Aug		Holiday
Mon	18-Aug	50	
Tue	19-Aug	51	Last Date for Submission of Formative Assessment No.2
Wed	20-Aug	52	
Thu	21-Aug	53	Publication of Formative Assessment-2 Marks
Fri	22-Aug	54	Presentation Competition Day of NIT
Sat	23-Aug		Holiday
Sun	24-Aug		Holiday
Mon	25-Aug	55	
Tue	26-Aug	56	
Wed	27-Aug	57	Completion of Remedial Class of SAT-1
Thu	28-Aug		Public Holiday - Ayyankali Jayanthi
Fri	29-Aug		National Sports Day Polytechnic College closes for Onam Holidays
Sat	30-Aug		Holiday - Students
Sun	31-Aug		Holiday

Mon	1-Sep		Onam Holidays
Tue	2-Sep		Onam Holidays
Wed	3-Sep		Onam Holidays
Thu	4-Sep		Public Holiday - First Onam
Fri	5-Sep		Public Holiday - Thiruvonam / Milad-i-Sherif
Sat	6-Sep		Onam Holidays
Sun	7-Sep		Holiday
Mon	8-Sep	58	Polytechnic College reopens after Onam Holidays
Tue	9-Sep	59	
Wed	10-Sep	60	
Thu	11-Sep	61	Publication of Attendance Statement of the month August
Fri	12-Sep	62	
Sat	13-Sep		Holiday
Sun	14-Sep		Holiday
Mon	15-Sep	63	Formative Assessment No.3 (Class Notes) Sub 1 & 2 Submission
Tue	16-Sep	65	Formative Assessment No.3 (Class Notes) Sub 3 & 4 Submission
Wed	17-Sep	65	Last Date to Complete Teaching of Module 3 & 4 Publication of Formative Assessment-3 Marks & Publication of Consolidated Formative Assessment Mark Statement
Thu	18-Sep	66	Revision Class for SAT-2
Fri	19-Sep	67	Revision Class for SAT-2
Sat	20-Sep		Holiday - Students

Sun	21-Sep		Holiday
Mon	22-Sep	68	Summative Assessment No.2
Tue	23-Sep	69	
Wed	24-Sep	70	
Thu	25-Sep	71	
Fri	26-Sep	72	Notification for End Semester Examination Nov 2025
Sat	27-Sep		Holiday
Sun	28-Sep		Holiday
Mon	29-Sep	73	Commencement of Revision Class
Tue	30-Sep	74	Revision Class
Wed	1-Oct		Public Holiday - Mahanavami
Thu	2-Oct		Public Holiday -Vijayadasami/Gandhi Jayanthi
Fri	3-Oct	75	Revision Class Publication of Summative Assessment No.2 Marks
Sat	4-Oct	76	Revision Class / Commencement of Remedial Class of SAT-2 Publication of Consolidated Summative Assessment Mark Statement
Sun	5-Oct		Holiday
Mon	6-Oct	77	Revision Class
Tue	7-Oct	78	Revision Class
Wed	8-Oct	79	Revision Class Publication of attendance of the month of September
Thu	9-Oct	80	Revision Class
Fri	10-Oct	81	Revision Class Students Union Election as per notification from DTE (Tentative)

Sat	11-Oct		Holiday
Sun	12-Oct		Holiday
Mon	13-Oct	82	Revision Class
Tue	14-Oct	83	Revision Class / Completion of Remedial Class of SAT-2
Wed	15-Oct	84	Revision Class
Thu	16-Oct	85	Revision Class Last Date for Submission of Semester Enrollment Form - Academic Clearance (Stage 2 of 2)
Fri	17-Oct	86	Revision Class / Last Working Day Publication of internal marks and consolidated attendance statement
Sat	18-Oct		Holiday - Students
Sun	19-Oct		Holiday
Mon	20-Oct		Public Holiday - Deepavali
Tue	21-Oct		
Wed	22-Oct		
Thu	23-Oct		
Fri	24-Oct		
Sat	25-Oct		Holiday
Sun	26-Oct		Holiday
Mon	27-Oct		Commencement of End Semester Examination

Table 2.26 Sample semester planner with adherence to academic calendar published by SITTTR (Even Semester)

Even Semester Plan of Academic Year 2025-2026

DAY

DATE

S4 & S6

WD			ACTIVITY
Mon	1-Dec	1	Date of Commencement of Classes / World Aids Day Commencement of Sixth Semester Internship 2025-26
Tue	2-Dec	2	World Pollution Prevention Day
Wed	3-Dec	3	Issue of Module 1 & 2 Notes, Lab Manual & Preparation of SAT-1 QB
Thu	4-Dec	4	S4 - Minor Project Work Group Formation & Guide Allocation
Fri	5-Dec	5	Major & Minor Project Topic Draft Submission
Sat	6-Dec		Holiday - Students
Sun	7-Dec		Holiday
Mon	8-Dec	6	
Tue	9-Dec	7	
Wed	10-Dec	8	Last Date for Payment of II Instalment Fees without Fine
Thu	11-Dec	9	Commencement of Submission of Semester Clearance Form / Submission of Finalized Major & Minor Project Topic
Fri	12-Dec	10	Odd Sem Presentation Competition - Semi Final
Sat	13-Dec		Holiday
Sun	14-Dec		Holiday / National Energy Conservation Day
Mon	15-Dec	11	
Tue	16-Dec	12	Major & Minor Project Abstract Draft Submission
Wed	17-Dec	13	Odd Sem Presentation Competition - Final
Thu	18-Dec	14	Submission of Finalized Major & Minor Project Abstract
Fri	19-Dec	15	Commencement of Major / Minor Project Work Fabrication

Sat	20-Dec	16	Formative Assessment No.1 QP Issue to students (All Sub) / Presentation Competition - Batch List Submission
Sun	21-Dec	17	Commencement of Presentation Competition - Grooming Session
Mon	22-Dec	18	
Tue	23-Dec	19	Polytechnic College closes for Xmas Holidays
Wed	24-Dec		Holiday
Thu	25-Dec		Holiday
Fri	26-Dec		Holiday
Sat	27-Dec		Holiday
Sun	28-Dec		Holiday
Mon	29-Dec		Holiday
Tue	30-Dec		Holiday
Wed	31-Dec		Holiday
Thu	1-Jan		Holiday
Fri	2-Jan		Mannam Jayanthi Holiday
Sat	3-Jan		Holiday - Students
Sun	4-Jan		Holiday
Mon	5-Jan	21	Polytechnic College reopens after Xmas / Publication of attendance of the month of November & December 2025 / Commencement of Industry Talk Session
Tue	6-Jan	22	Submission of Formative Assessment (as per curriculum) No.1 / Valuation camp starts (Tentative)
Wed	7-Jan	23	S6 - 3 or 4 Days Education Tour (Any 3 Departments)
Thu	8-Jan	24	Last Date for Submission of Semester Clearance Form
Fri	9-Jan	25	Last Date of Submission of Record Note (Phase-1) / College Sports Day (Tentative)

Sat	10-Jan		Holiday
Sun	11-Jan		Holiday
Mon	12-Jan	26	Closing of Industry Talk Session
Tue	13-Jan	27	Presentation Competition - End of Grooming Session
Wed	14-Jan	28	Last Date to Complete Teaching of Module 1 & 2 / Issue of SAT-1 Question Bank / Submission of FA-1 Marksheet / Valuation camp ends (Tentative)
Thu	15-Jan	29	Revision Class for SAT-1
Fri	16-Jan	30	Revision Class for SAT-1
Sat	17-Jan		Holiday - Students
Sun	18-Jan		Holiday
Mon	19-Jan	31	Summative Assessment(as per curriculum) No.1 Sub1
Tue	20-Jan	32	Summative Assessment(as per curriculum) No.1 Sub2
Wed	21-Jan	33	Summative Assessment(as per curriculum) No.1 Sub 3
Thu	22-Jan	34	Summative Assessment(as per curriculum) No.1 Sub 4
Fri	23-Jan	35	Summative Assessment(as per curriculum) No.1 Sub 5
Sat	24-Jan		Holiday
Sun	25-Jan		Holiday
Mon	26-Jan		Holiday - Republic Day
Tue	27-Jan	36	Commencement of Remedial Class of SAT-1 / Preperation of SAT-2 QB
Wed	28-Jan	37	Submission of SAT - 1 Consolidated Marksheet / Issue of Module 3 & 4 Notes / Commencement of Presentation Competition Prelims
Thu	29-Jan	38	Commencement of Major / Minor Project Work Fabrication
Fri	30-Jan	39	Review of Major / Minor Project Work Fabrication

Sat	31-Jan	40	S4 - Industrial Visit
Sun	1-Feb		Holiday
Mon	2-Feb	41	Commencement of Major / Minor Project PPT & Report Draft Work / Application for Revaluation last date
Tue	3-Feb	42	Commencement of Subject Related Model Creation Work
Wed	4-Feb	43	Completion of Presentation Competition Prelims / S6 - 3 or 4 Days Education Tour (Any 3 Departments)
Thu	5-Feb	44	Publication of attendance of the month of January 2026
Fri	6-Feb	45	Last Date of Submission of Record Note (Phase-2) / Completion of Remedial Class of SAT-1
Sat	7-Feb		Holiday - Students
Sun	8-Feb		Holiday
Mon	9-Feb	46	Submission of Subject Related Model Creation Work
Tue	10-Feb	47	Submission of Major / Minor Project PPT & Report Draft Work
Wed	11-Feb	48	Formative Assessment No.2 QP Issue to students (All Sub)
Thu	12-Feb	49	Presentation Competition Semi Final
Fri	13-Feb	50	Presentation Competition Final
Sat	14-Feb		Holiday
Sun	15-Feb		Holiday
Mon	16-Feb	51	Submission of Finalized Major / Minor Project PPT & Report Work / Even sem registration
Tue	17-Feb	52	Major / Minor Project PPT Presentation
Wed	18-Feb	53	Last Date to Complete Teaching of Module 3 & 4 / Issue of SAT-2 Question Bank
Thu	19-Feb	54	Revision Class for SAT-2 / Submission of Formative Assessment (as per curriculum) No.2
Fri	20-Feb	55	Revision Class for SAT-2 / Last Date for Certification of Record Note

Sat	21-Feb		Holiday - Students
Sun	22-Feb		Holiday
Mon	23-Feb	56	Summative Assessment(as per curriculum) No.2 Sub1
Tue	24-Feb	57	Summative Assessment(as per curriculum) No.2 Sub2
Wed	25-Feb	58	Summative Assessment(as per curriculum) No.2 Sub 3 / Submission of FA-2 Marksheet
Thu	26-Feb	59	Summative Assessment(as per curriculum) No.2 Sub 4
Fri	27-Feb	60	Summative Assessment(as per curriculum) No.2 Sub 5 / State Athletic Meet (Tentative)
Sat	28-Feb		Holiday
Sun	1-Mar		Holiday
Mon	2-Mar	61	Board Exam Revision Class / Commencement of Remedial Class of SAT-2
Tue	3-Mar	62	Board Exam Revision Class / Submission of Formative Assessment (Full Notes) No.3
Wed	4-Mar	63	Board Exam Revision Class / Submission of SAT-2 Consolidated Marksheet
Thu	5-Mar	64	Board Exam Revision Class / Interpoly Arts Festival (Tentative)
Fri	6-Mar	65	Board Exam Revision Class / Interpoly Arts Festival (Tentative) / Completion of Remedial Class of SAT-2
Sat	7-Mar		Holiday - Students
Sun	8-Mar		Holiday
Mon	9-Mar	66	Board Exam Revision Class / Publication of attendance of the month of February 2026
Tue	10-Mar	67	Board Exam Revision Class / Submission of FA & SAT Consolidated Marksheet
Wed	11-Mar	68	Board Exam Revision Class
Thu	12-Mar	69	Board Exam Revision Class
Fri	13-Mar	70	Board Exam Revision Class / / Issue of Semester Closing Form

Sat	14-Mar		Holiday
Sun	15-Mar		Holiday
Mon	16-Mar	71	Board Exam Revision Class
Tue	17-Mar	72	Board Exam Revision Class
Wed	18-Mar	73	Board Exam Revision Class / Last Date for Submission of Semester Closing Form
Thu	19-Mar	74	Last working day for S4 & S6 / Publication of internal marks and consolidated attendance statement of S4 & S6
Fri	20-Mar		Eid al-Fitr - Holiday
Sat	21-Mar		Holiday - Students
Sun	22-Mar		Holiday
Mon	23-Mar		
Tue	24-Mar		End Semester Examination as per notification of JCTE. Conduct of Institution level and practical examinations.(Tentative)
Wed	25-Mar		
Thu	26-Mar		
Fri	27-Mar		
Sat	28-Mar		Holiday
Sun	29-Mar		Holiday
Mon	30-Mar		Last day for conducting institution level and practical examination of S4 and S6.

A variety of instructional planning and delivery methods are employed to strengthen the teaching-learning process within the department. For instructional planning, each faculty member prepares a detailed course plan in line with the academic calendar prepared prior to the commencement of the semester and is duly approved by the Head of the Department. The course plan specifies the topics to be covered in each lecture hour along with the planned date, based on the timetable. As the semester progresses, the Head of the Department monitors progress on an ongoing basis. Assignment questions and series examination question papers are framed so as to comprehensively cover all course outcomes of the respective course.

A course file is maintained by the concerned faculty member for every course offered. This file contains complete records of course coverage, question papers, assessment sheets, course outcome attainment, attendance, and internal marks. This is verified by the Head of the Department. At the end of each semester, the completed course file is submitted to the Head of the Department for record and review.

Table 2.27 Course file index approved by IQAC (Theory Courses)

S.No	Table of Contents
1.	Class Time table – Approved Copy
2.	Faculty Workload – Approved Copy
3.	Student List – Approved Copy
4.	Course Syllabus with Recommended Books (As per SITTR)
5.	Institution Vision & Mission, Department Vision & Mission, PEOs, POs and PSO – Approved Copy
6.	CO – PO, PSO Mapping Matrix
7.	Course Plan (TEAMS)
8.	Course log (TEAMS)
9.	Course Attendance (TEAMS)
10.	Summative Assessment Test -I Question Paper with quality checking (2 Sets)
11.	Summative Assessment Test -I 3 Sample Answer Sheets
12.	Summative Assessment Test -I Remedial Class Statement & Sample Answer Sheets (Weaker Student Coaching Proof)
13.	Summative Assessment Test -II Question Paper with quality checking (2 Sets)
14.	Summative Assessment Test -II 3 Sample Answer Sheets
15.	Summative Assessment Test -II Remedial Class Statement & Sample Answer Sheets (Weaker Student Coaching Proof)

16.	Summative Assessment Test - Result Analysis (TEAMS)
17.	Formative Assessment-I Question Paper & 3 Sample Answer Sheets (Teaching and Learning Methods Proof)
18.	Formative Assessment-II Question Paper & 3 Sample Answer Sheets (Teaching and Learning Methods Proof)
19.	Formative Assessment-III Proof (Teaching and Learning Methods Proof)
20.	Assessments of Assignment (TEAMS)
21.	Continuous Evaluation Report obtained from TEAMS – Approved Copy
22.	Final Internal Report (TEAMS) – Approved Copy
23.	Final Internal Mark Report (SBTE) – Approved Copy
24.	Previous Year Board Exam Question Papers
25.	Institutional Level Examination Circular & Timetable
26.	Institutional Level Exam Valuation report – Approved Copy
27.	Institutional Level Exam Question paper with quality checking (2 sets)
28.	Institutional Level Exam Answer Sheets – Approved Copy
29.	Institutional Level Exam Mark List (SBTE) – Approved Copy
30.	Current External Exam Question Paper with CO mapping with Examination feedback form
31.	Result of External Exam (SBTE) – Approved Copy
32.	Attainment of Course Outcome (CO) – Approved Copy
33.	Attainment of PO/PSO – Approved Copy

Table 2.28 Course file index approved by IQAC (Practical Courses)

S.No	Table of Contents
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1.	Class Time table (Approved Copy)
2.	Faculty Workload (Approved Copy)
3.	Student List (Approved Copy)
4.	Course Syllabus with Recommended Books (As per SITTTR)
5.	Institution Vision & Mission, Department Vision & Mission, PEOs, POs and PSO – Approved Copy
6.	CO – PO, PSO Mapping matrix
7.	Course Plan (TEAMS)
8.	Course log (TEAMS)
9.	Course Attendance (TEAMS)
10.	Internal Exam I and II Question Papers (IQAC Approved)
11.	Internal exam I & II-Sample answer sheets (3 sets for each Internal exam)
12.	Internal Examination Result Analysis (TEAMS)
13.	Weaker student coaching schedule and proof
14.	Experimental methodology (Teaching and Learning Methods Proof)
15.	CE Mark Split up Report obtained from TEAMS
16.	Final Internal Mark Report (SBTE)
17.	Institutional Level Examination Circular & Timetable
18.	Institutional Level Exam Question paper with quality checking (IQAC Approved)
19.	Institutional Level Exam Answer Sheets
20.	Institutional Level Exam Mark List (SBTE)

21.	Lab log book
22.	Rough Record sample
23.	Fair record sample
24.	Result of External Exam (SBTE)
25.	Attainment of Course Outcome (CO)
26.	Attainment of PO/PSO

Regular Academic Activities

The departments regular academic activities encompass the following components:

1. Classroom lectures and discussions
2. Laboratory experiments / hands-on practice
3. Assignments
4. Seminars / presentations
5. Visiting faculty and finishing school programs
6. Technical visits / industrial training
7. Video lectures
8. Student projects
9. Library facilities
10. Internet facility
11. Feedback process
12. Regular assessment
13. Remedial measures
14. Moodle LMS
15. E-learning

1. Classroom Lecture and Discussion

Lecture hours are scheduled at the beginning of each semester in accordance with the academic calendar and timetable. Every course coordinator attends class well prepared, with a clear understanding of the specific learning outcomes expected from students before the class begins. Since traditional lecturing is inherently teacher-centric, the department emphasizes active lecturing that encourages student participation. Faculty pose prompting questions and provide constructive feedback to students.

2. Laboratory Experiment

Laboratory sessions play a key role in developing practical skills, allowing students to verify or implement the theoretical concepts learned in class through hands-on experimentation. Students are divided into two batches of approximately 25 students per session. A detailed procedure is provided to students prior to each session. Every experiment is first demonstrated in the laboratory to ensure clarity, following which students are expected to articulate the inference drawn from the experiment. Continuous assessment is carried out based on lab fair records.

3. Assignments

Assignments consisting of topics and related practical problems, mapped to one or more course outcomes, are given to students. Faculty provide appropriate guidance on accessing e-materials and relevant online resources, and student submit assignments on time.

4. Seminars / Presentations

Students research a given topic and present their findings to peers using PowerPoint, thereby enhancing both their own understanding and that of the audience. Each student subsequently prepares and submits a report to the department.

5. Visiting Faculty / Finishing School Programs

Qualified and experienced external faculty are periodically invited to share real-world industry experience and contemporary engineering practices, enriching students understanding and learning experience. Expert talks, seminars, training sessions are organized to provide students with exposure to the latest developments in the field of engineering.

6. Technical Visits / Industrial Training

Students are encouraged to visit industries relevant to Mechanical engineering to gain first-hand exposure to industrial practices, safety standards, and organizational structures, thereby enhancing their employability. In line with AICTE guidelines, the department facilitates meaningful training and industrial visit opportunities for students.

7. Video Lectures

Video presentations are used in classrooms to aid the visualization of concepts and improve topic comprehension. Students are also encouraged to engage with video lectures, animations, illustrative content, and open courseware to benefit from digital resources.

8. Student Projects

Minor-projects and final-year projects form an integral part of the diploma curriculum. Students work in groups under the guidance of faculty mentors, with the department placing particular emphasis on projects of social relevance. Projects are evaluated based on their technical merit and practical application.

9. Library Facilities

The college library maintains a well-curated collection of textbooks, reference books, technical journals, and magazines, systematically arranged according to course classification. A dedicated newspaper section is also available for day-to-day news and updates.

10. Internet Facility

Students have access to internet facilities that enable them to explore online content and prepare papers on emerging technologies for presentation at symposiums. The well-equipped computer laboratory offers high-speed connectivity, and Wi-Fi access for seamless online learning.

11. Feedback Process

Feedback is collected from students at the end of every semester and analyzed by the faculty coordinator, with necessary corrective actions implemented based on the outcomes.

12. Regular Assessment

Two series examinations and one model examination are conducted each semester, supplemented by continuous evaluation throughout the term. Marks from assignments, series examinations, and attendance across the three phases are consolidated to determine the final grade.

13. Remedial Measures

Students identified as academically weak, based on series test performance, are provided remedial support during additional hours, with their progress subsequently assessed.

14. Linways

The department has implemented a customized Learning Management System, with login credentials issued to all students and faculty. Since 2021, Linways has been actively used by faculty to conduct online tests and quizzes, administer assignments, and manage student records.

Mechanical Engineering						
Course: Automobile Engineering (4023) Sem: S4						
COURSE LESSON PLAN						
Sl. No	Planned Date	Topic Name	Hour	Module	CO	TLM Method
1	01-02-2023	Ignition system: Introduction to ignition system; Battery ignition systems	2	1	1	Live lecture, PPt
2	01-02-2023	Electronic ignition systems; Construction and working of lead acid battery	5	1	1	Live lecture, PPt
3	02-02-2023	Elements of charging system; Elements of starting system; Governing system: Types of governing system; Quantity, Quality, hit and miss	1	1	1	Live lecture, PPt
4	03-02-2023	Fuel system: Working of A.C mechanical pump; Working of simple carburettor	4	1	1	Live lecture, PPt
5	08-02-2023	Bosch Fuel Pump; Fuel Injector; Single point and multi point fuel injection systems	2	1	1	Live lecture, PPt
6	08-02-2023	Bosch Fuel Pump; Fuel Injector; Single point and multi point fuel injection systems	5	1	1	Live lecture, PPt
7	09-02-2023	Working of CRDI and MPFI; Fuel filters	1	1	1	Live lecture, PPt
8	10-02-2023	Lubrication system; Types of lubrication system – splash system; forced system and (mist)/petrol system	4	1	1	Video Lecturing
9	15-02-2023	Lubrication system; Types of lubrication system – splash system; forced system and (mist)/petrol system	2	1	1	Video Lecturing
10	15-02-2023	Types of cooling system – air cooling and liquid cooling; Air cooling system; Types of liquid-cooling system; Thermo-siphon system	5	1	1	Video Lecturing
11	16-02-2023	Pump circulation system; Components of water-cooling system: fan, radiator, pump and thermostat	1	1	1	Video Lecturing
12	17-02-2023	Basic engine components; Cylinder	4	1	1	Live lecture,

		block; Cylinder head; Gaskets; cylinder liners; piston and piston pin; piston rings; connecting rod; crank shaft				Ppt
13	22-02-2023	Cam shaft; Crankcase; Engine valves; Valve operating mechanism; overhead and side valve engines only; Flywheel and Governor	2	1	1	Live lecture, Ppt

31	23-03-2023	Brakes; Types; Mechanical brakes	1	3	3	Video Lecturing
32	24-03-2023	Hydraulic air brake; Master cylinder; Disc brake; Working of ABS and EBD	4	3	3	Live lecture, PPt
33	29-03-2023	Hydraulic air brake; Master cylinder; Disc brake; Working of ABS and EBD	2	3	3	Live lecture, PPt
34	30-03-2023	Hydraulic air brake; Master cylinder; Disc brake; Working of ABS and EBD	5	3	3	Live lecture, PPt
35	30-03-2023	Hydraulic air brake; Master cylinder; Disc brake; Working of ABS and EBD	1	3	3	Live lecture, PPt
36	31-03-2023	Electric Vehicles (EV); Introduction; Components; Precautions; Batteries and Energy Storage	4	4	4	Live lecture, PPt
37	05-04-2023	Batteries and Energy Storages Basics; Types; Lithium ion (Li-ion) and Nickel-Metal Hybrid (NiMH); Parameters; Capacity; Technical characteristics	2	4	4	Live lecture, PPt
38	05-04-2023	Nickel-Metal Hybrid (NiMH); Parameters; Capacity; Technical characteristics	5	4	4	Live lecture, PPt
39	06-04-2023	Properties of Batteries; Precautions; Fuel cells; Principles of operation	4	4	4	Live lecture, PPt
40	07-04-2023	Properties of Batteries; Precautions; Fuel cells; Principles of operation	1	4	4	Live lecture, PPt
41	12-04-2023	Properties of Batteries; Precautions; Fuel cells; Principles of operation	4	4	4	Live lecture, PPt
42	12-04-2023	Properties of Batteries; Precautions; Fuel cells; Principles of operation	2	4	4	Video Lecturing
43	13-04-2023	Properties of Batteries; Precautions; Fuel cells; Principles of operation	5	4	4	Video Lecturing
44	14-04-2023	Flywheel energy storage; Regenerative braking system	1	4	4	Video Lecturing

31	23-03-2023	Brakes; Types; Mechanical brakes
32	24-03-2023	Hydraulic air brake; Master cylinder; Disc brake; Working of ABS and EBD
33	29-03-2023	Hydraulic air brake; Master cylinder; Disc brake; Working of ABS and EBD
34	30-03-2023	Hydraulic air brake; Master cylinder; Disc brake; Working of ABS and EBD
35	30-03-2023	Hydraulic air brake; Master cylinder; Disc brake; Working of ABS and EBD
36	31-03-2023	Electric Vehicles (EV); Introduction; Components; Precautions; Batteries and Energy Storage
37	05-04-2023	Batteries and Energy Storages Basics; Types; Lithium ion (Li-ion) and Nickel-Metal Hybrid (NiMH); Parameters; Capacity; Technical characteristics
38	05-04-2023	Nickel-Metal Hybrid (NiMH); Parameters; Capacity; Technical characteristics
39	06-04-2023	Properties of Batteries; Precautions; Fuel cells; Principles of operation
40	07-04-2023	Properties of Batteries; Precautions; Fuel cells; Principles of operation
41	12-04-2023	Properties of Batteries; Precautions; Fuel cells; Principles of operation
42	12-04-2023	Properties of Batteries; Precautions; Fuel cells; Principles of operation
43	13-04-2023	Properties of Batteries; Precautions; Fuel cells; Principles of operation
44	14-04-2023	Flywheel energy storage; Regenerative braking system

		Learning system				Learning
45	19-04-2023	Flywheel energy storage; Regenerative braking system	4	4	4	Live lecture, PPt
46	19-04-2023	Flywheel energy storage; Regenerative braking system	2	4	4	Live lecture, PPt
47	20-04-2023	Hybrid Electric Vehicles (HEV); Types; Series, Parallel and Series-Parallel	5	4	4	Live lecture, PPt

		Learning system
45	19-04-2023	Flywheel energy storage; Regenerative braking system
46	19-04-2023	Flywheel energy storage; Regenerative braking system
47	20-04-2023	Hybrid Electric Vehicles (HEV); Types; Series, Parallel and Series-Parallel

31	23-03-2023	Brakes; Types; Mechanical brakes	1	3	3	Video Lecturing
32	24-03-2023	Hydraulic air brake; Master cylinder; Disc brake; Working of ABS and EBD	4	3	3	Live lecture, PPt
33	29-03-2023	Hydraulic air brake; Master cylinder; Disc brake; Working of ABS and EBD	2	3	3	Live lecture, PPt
34	30-03-2023	Hydraulic air brake; Master cylinder; Disc brake; Working of ABS and EBD	5	3	3	Live lecture, PPt
35	30-03-2023	Hydraulic air brake; Master cylinder; Disc brake; Working of ABS and EBD	1	3	3	Live lecture, PPt
36	31-03-2023	Electric Vehicles (EV); Introduction; Components; Precautions; Batteries and Energy Storage	4	4	4	Live lecture, PPt
37	05-04-2023	Batteries and Energy Storages Basics; Types; Lithium ion (Li-ion) and Nickel-Metal Hybrid (NiMH); Parameters; Capacity; Technical characteristics	2	4	4	Live lecture, PPt
38	05-04-2023	Nickel-Metal Hybrid (NiMH); Parameters; Capacity; Technical characteristics	5	4	4	Live lecture, PPt
39	06-04-2023	Properties of Batteries; Precautions; Fuel cells; Principles of operation	4	4	4	Live lecture, PPt
40	07-04-2023	Properties of Batteries; Precautions; Fuel cells; Principles of operation	1	4	4	Live lecture, PPt
41	12-04-2023	Properties of Batteries; Precautions; Fuel cells; Principles of operation	4	4	4	Live lecture, PPt
42	12-04-2023	Properties of Batteries; Precautions; Fuel cells; Principles of operation	2	4	4	Video Lecturing
43	13-04-2023	Properties of Batteries; Precautions; Fuel cells; Principles of operation	5	4	4	Video Lecturing

14	22-02-2023	Transmission systems in automobile – working; clutch functions; requirements of clutch; single plate and multi plate
15	23-02-2023	Diaphragm clutch; Centrifugal clutch; Fluid coupling
16	24-02-2023	Gear box – functions, working and types Sliding mesh; Constant mesh
17	01-03-2023	Synchromesh and epicyclic gear box
18	01-03-2023	CVT; Torque converter; Over drive
19	02-03-2023	Propeller shaft; Universal joint; Final drive; Differential
20	03-03-2023	Stub axle; Types of live rear axle; Semi floating; Three quarter floating and full floating axles
21	08-03-2023	Revision
22	08-03-2023	Elements of starting system; Types of lights used in the automobile
23	09-03-2023	Suspension systems – Types and components; Leaf spring; Coil spring; Spring shackle; Air suspension
24	10-03-2023	Suspension systems – Types and components; Leaf spring; Coil spring; Spring shackle; Air suspension
25	15-03-2023	Steering wheel; Steering column; Steering gears; Worm and worm sector
26	15-03-2023	Rack and pinion; Recirculating ball
27	16-03-2023	Power steering; Camber; Caster; King

44	14-04-2023	Flywheel energy storage; Regenerative braking system	1	4	4	Video Lecturing
45	19-04-2023	Flywheel energy storage; Regenerative braking system	4	4	4	Live lecture, PPt
46	19-04-2023	Flywheel energy storage; Regenerative braking system	2	4	4	Live lecture, PPt
47	20-04-2023	Hybrid Electric Vehicles (HEV); Types; Series, Parallel and Series-Parallel	5	4	4	Live lecture, PPt

		pin inclination; Toe in and toe out; Ackerman steering mechanism
28	17-03-2023	Power steering; Camber; Caster; King pin inclination; Toe in and toe out; Ackerman steering mechanism
29	22-03-2023	Wheels and tyres; Types of wheels; Disc wheels; Cast wheels; Size of wheel and tyre
30	22-03-2023	Wheels and tyres; Tubeless tyres and tube tyres; Tyre material

31	23-03-2023	Brakes; Types; Mechanical brakes	1	3	3	Video Lecturing
32	24-03-2023	Hydraulic air brake; Master cylinder; Disc brake; Working of ABS and EBD	4	3	3	Live lecture, PPt
33	29-03-2023	Hydraulic air brake; Master cylinder; Disc brake; Working of ABS and EBD	2	3	3	Live lecture, PPt
34	30-03-2023	Hydraulic air brake; Master cylinder; Disc brake; Working of ABS and EBD	5	3	3	Live lecture, PPt
35	30-03-2023	Hydraulic air brake; Master cylinder; Disc brake; Working of ABS and EBD	1	3	3	Live lecture, PPt
36	31-03-2023	Electric Vehicles (EV); Introduction; Components; Precautions; Batteries and Energy Storage	4	4	4	Live lecture, PPt
37	05-04-2023	Batteries and Energy Storages Basics; Types; Lithium ion (Li-ion) and Nickel-Metal Hybrid (NiMH); Parameters; Capacity; Technical characteristics	2	4	4	Live lecture, PPt
38	05-04-2023	Nickel-Metal Hybrid (NiMH); Parameters; Capacity; Technical characteristics	5	4	4	Live lecture, PPt
39	06-04-2023	Properties of Batteries; Precautions; Fuel cells; Principles of operation	4	4	4	Live lecture, PPt
40	07-04-2023	Properties of Batteries; Precautions; Fuel cells; Principles of operation	1	4	4	Live lecture, PPt
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42	12-04-2023	Properties of Batteries; Precautions; Fuel cells; Principles of operation	2	4	4	Video Lecturing
43	13-04-2023	Properties of Batteries; Precautions; Fuel cells; Principles of operation	5	4	4	Video Lecturing
44	14-04-2023	Flywheel energy storage; Regenerative braking system	1	4	4	Video Lecturing

		configuration; Drive train; Advanta and challenges in EV design
48	21-04-2023	Hybrid Electric Vehicles (HEV); Ty Series, Parallel and Series-Parallel configuration; Drive train; Advanta and challenges in EV design
49	26-04-2023	Plug-in Hybrid Electric Vehicles (PHEV); Configurations; Emission Control; BS IV & BS6; Review of Motor Vehicle Act
50	26-04-2023	Plug-in Hybrid Electric Vehicles (PHEV); Configurations; Emission Control; BS IV & BS6; Review of Motor Vehicle Act
51	27-04-2023	Revision
52	28-04-2023	Revision
53	28-04-2023	Revision

		Learning System				Learning
45	19-04-2023	Flywheel energy storage; Regenerative braking system	4	4	4	Live lecture, PPT
46	19-04-2023	Flywheel energy storage; Regenerative braking system	2	4	4	Live lecture, PPT
47	20-04-2023	Hybrid Electric Vehicles (HEV); Types; Series, Parallel and Series-Parallel	5	4	4	Live lecture, PPT

C. Methodologies to support weak students and encourage bright students (4)

The institute follows a structured, dual-track mechanism to identify and support academically weak students while simultaneously nurturing the potential of bright and advanced learners. This approach ensures inclusive academic growth and across all its programs.

A. Support Mechanisms for Weak Students

1. Mentoring System

A structured mentoring system is in place, wherein two mentors are allotted to each class. Students in the class are divided equally between the two mentors, ensuring a manageable mentee group size for personalized attention. Regular mento overall academic journey, with special focus and maximum support extended to weaker students to help them overcome their difficulties.

2. Conducting Internal Tests

Internal assessment tests and assignments are conducted strictly as per the schedule laid out in the academic calendar. These formative assessments serve as an early diagnostic tool, enabling faculty to identify students who are struggling with be initiated.

3. Teaching the Basics

For students identified as weak, faculty place additional emphasis on revisiting and reinforcing fundamental concepts. Repetition of basic principles helps such students build a clearer and more concentrated understanding, forming a stronger

4. Interaction with Parents

Parents are kept informed of their wards academic progress through regular intimation, and parent-teacher meetings are arranged whenever necessary. This ensures active parental involvement in creating a conducive study environment at ho

5. Remedial Classes

Dedicated remedial classes are conducted for students identified as academically weak based on their performance in internal tests. These classes are held outside regular teaching hours and focus specifically on the topics or concepts where th

6. Peer Support Programs

Peer-assisted learning is encouraged; wherein academically bright students mentor and coach their weaker classmates. This not only benefits the weaker students through relatable, peer-level explanation but also reinforces the understanding o

7. Scholar Support Programs

The institute conducts structured scholar support programs aimed specifically at students with backlog papers. Weak students identified across classes are provided focused academic support to help them clear their pending courses in the early semester.

8. Additional Laboratory Sessions

Extra laboratory sessions are arranged for weak students to give them additional hands-on practice, helping strengthen their practical skills and conceptual clarity alongside their theoretical learning.

9. Audio-Visual Aids

Slow learners are provided access to NPTEL online videos and PowerPoint presentations to help them grasp fundamental concepts in each domain through visual and repeatable learning aids, catering to different learning paces and styles.

10. Practice Questions and Periodic Testing

Shorter tests, oral testing, and makeup tests are conducted periodically to continuously evaluate and reinforce the learning of weak students, ensuring steady improvement is tracked and encouraged throughout the semester.

B. Encouragement Mechanisms for Bright/Advanced Students

1. Seminars, Certifications, and Online Courses

Bright and academically strong students are actively encouraged to participate in seminars, pursue certification courses, and enroll in online courses (such as NPTEL, Coursera, and similar platforms) to broaden their knowledge base beyond the curriculum.

2. Placement-Oriented Special Classes

Special placement-oriented classes are conducted for high-performing students to prepare them for campus recruitment, enabling them to secure job offers during the final year of the program itself.

3. Scholarships for Meritorious Students

The institute facilitates and encourages meritorious students, across all its programs, to avail of prestigious scholarships, including:

- Varghese Vattoly Memorial (VVM) Scholarship — a merit-based scholarship awarded to students pursuing undergraduate and postgraduate studies, aimed at encouraging economically backward students who are outstandingly meritorious.
- APJ Abdul Kalam Scholarship — awarded to recognize and support academically talented students, encouraging continued excellence in their field of study.

4. Institute-Level Awards for Semester Toppers

To motivate consistent academic excellence, the management institutes award for the top-performing student of each semester across all programs and departments of the institute, recognizing sustained academic performance throughout the semester.

5. Best Outgoing Student Award

In recognition of holistic excellence — encompassing academic performance, discipline, and overall contribution to the institute — the Best Outgoing Student Award is conferred at the institute level upon graduating students on two significant occasions:

- College Day, celebrated within the institute
- Convocation, marking the formal culmination of the students' academic journey

This recognition serves as a benchmark of excellence for students across the institute and reinforces a culture of aspiration and achievement across every batch and department.



All classrooms within the department are well furnished and equipped with Information and Communication Technology (ICT) facilities, providing an environment conducive to effective teaching and learning. The availability of internet con seamlessly and integrate digital resources into their regular coursework. This ICT-enabled infrastructure supports a wide range of instructional delivery formats — including projected multimedia content, streamed video lectures, and real-tim confined to conventional methods alone but is enriched through continuous access to contemporary digital resources. Faculty members adopt a range of innovative teaching and learning methodologies to create the best possible learning envii lecturing, collaborative classroom sessions, and cooperative learning, among others, allowing faculty to tailor their instructional approach to the nature of the topic and the learning needs of students.

- Course Preamble: At the commencement of each course, students are given a detailed preamble outlining the course objectives, expected outcomes, and overall structure, ensuring clarity of purpose from the outset.
- LCD Projectors: LCD projectors are extensively used for classroom teaching to support visual explanation of concepts, diagrams, and multimedia content, enhancing comprehension of complex topics.
- Supplementary Learning Resources: Resources such as NPTEL video lectures and other internet-based sources are systematically incorporated into teaching to reinforce classroom instruction and provide students with additional perspe
- Expert Sessions: Regular classes are supplemented with sessions delivered by subject-matter experts, exposing students to industry practices, emerging technologies, and specialized knowledge that extends beyond the standard curricul
- Assignments and Attendance Monitoring: Assignments are regularly given to students to reinforce learning and improve academic performance, while student attendance is closely and continuously monitored to ensure consistent classr
- To provide practical industrial exposure and bridge the gap between industry requirements and institutional learning, students are taken for industrial visits and industrial training as an integral part of the curriculum. These interactions c workplace expectations, thereby strengthening their readiness for professional careers.

The table below presents a summary of the principal instructional delivery methods adopted within the department, together with the pedagogical justification for each, as reflected in Table 2.29.

Table 2.29 Details of Delivery Methods

Delivery Method	Justification
PowerPoint Presentations	Abstract concepts that are otherwise difficult to comprehend are presented through PowerPoint presentations and animation tools to provide students wi graphical form, thereby improving overall comprehension and retention.
Tutorials	Quality tutorial sheets are prepared, and effective tutorial classes are conducted for students. As part of this process, students gather knowledge related to before their peers.
Assignments	Written assignments prompt students to think more deeply about the concepts being taught and reinforce classroom learning. Group assignments, in part
Videos (NPTEL and Others)	Video presentations effectively communicate the working of real-world engineering solutions and their practical impact. Videos and e-learning materials the domain expertise of faculty from various leading institutions.

Laboratory instruction follows a structured, well-monitored process designed to ensure that students are adequately prepared before each session and that practical learning remains closely aligned with classroom teaching.

- Scheduled Conduct: Laboratory classes are conducted strictly in accordance with the schedule specified in the course plan, ensuring systematic coverage of all prescribed experiments within the semester timeframe.
- Pre-Lab Preparation: In the class session preceding each laboratory session, the concerned faculty provides students with an overview of the upcoming experiment and requires them to prepare and write the experimental procedure in a
- Dedicated Laboratory Manuals: Laboratory manuals are prepared separately for students and for staff. The student manual serves as a structured reference that supports consistent, high-quality practical learning, while the staff manual s experiment.

E. Conduct of experiments (3)

The conduct of practical experiments in the Mechanical Engineering laboratories follows a structured, faculty-supervised process designed to ensure both academic rigor and adherence to standard procedures, as illustrated in the process flow

Pre-Lab Preparation

Prior to each practical session, students are required to maintain a rough record in which they note down the relevant details of the experiment to be conducted. Based on this, students write the procedure for the experiment, including the aim

Verification of Procedure

Before proceeding with the actual experiment, the procedure written by the students is verified by the faculty in charge. This step ensures that students have correctly understood the experimental methodology, safety precautions, and the sequence of steps before hands-on work begins.

Execution of the Experiment

Once the procedure is verified, students proceed with the experiment under the direct supervision of the faculty/lab instructor. Students are typically organized into small groups of 4–5 members to carry out the experiment collaboratively, using adequate safety measures and standard operating practices are followed throughout.

Recording of Observations

During the course of the experiment, students record all relevant observations, readings, and measurements systematically in the tabular columns/observation sheets prepared beforehand, ensuring accuracy and traceability of data.

Analysis of Output

The recorded observations are then analyzed using the appropriate formulae, graphs, or calculations as applicable to the experiment, in order to arrive at the required results.

Verification of Output

The analyzed results/output are subsequently verified by the faculty in charge to check for correctness, consistency with expected theoretical values, and overall validity of the experimental outcome. Faculty guidance at this stage helps students.

This systematic cycle — from maintaining a rough record to final verification of output — ensures that students not only perform experiments correctly but also develop the ability to document, analyze, and interpret experimental data, thereby

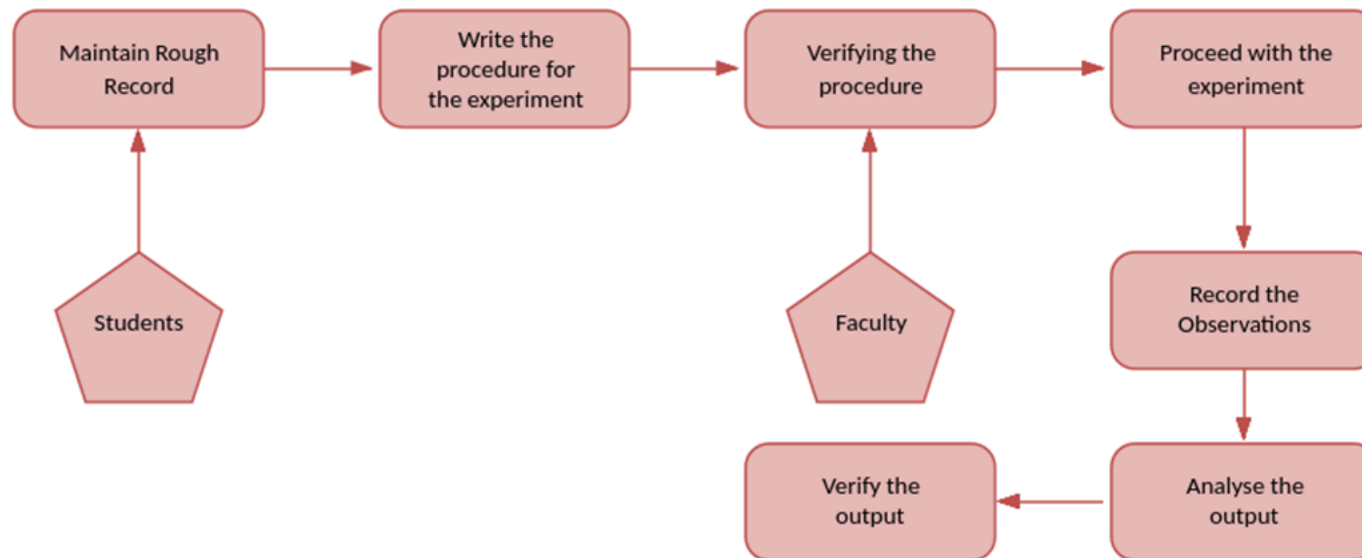


Figure 2.12: Process of conduct of experiments

Revision 2021

Under the 2021 revision, the total internal (continuous) assessment mark for a practical/lab course is distributed across four components: a summative lab examination, formative lab work, a formative open-ended experiment or micro project

Table 2.30 Continuous internal assessment of practical courses – Revision 2021

Type of Assessment	Tools	Marks	
Summative	Lab Examination	20% of the total internal mark	Two tests are mandatory
Formative	Lab Work	50% of the total internal mark	1. List of lab experiments must be given which may include some mandatory ones. 2. The faculty concerned may include additional experiments. 3. For each experiment, assessment may be made and marks should be awarded accordingly.
Formative	Open ended experiment / Micro projects	10% of the total internal mark	1. Time for Open ended experiments / Micro project must be included in the lab schedule. 2. For first and second year students, open ended experiments/Micro projects must be assigned as group work.
Attendance	—	20% of the total internal mark	This is only for CIA. Marks for attendance will not be considered for attainment.

Summative Assessment – Lab examination (20)

- This is exam-based, testing overall lab competence at set points in the semester.
- Two lab tests are mandatory and together make up this 20% share.

Formative Assessment – Lab work (50%)

- The largest single component, reflecting day-to-day performance across the semester.
- The department must issue a list of experiments, which may include mandatory ones.
- The faculty member teaching the course may add further experiments beyond this list.
- Every experiment is assessed individually and scored using a formal assessment rubric (covering knowledge, conduct, data recording, documentation, and safety/clean-up).

Formative Assessment – Open Ended Experiment (10%)

- Time for this activity must be scheduled within the regular lab hours, not as extra work.
- For first- and second-year students, it may be assigned as group work.

Attendance (20%)

- Counted only towards Continuous Internal Assessment (CIA) marks.
- Explicitly excluded from the calculation of course outcome attainment — i.e., it affects a student's internal score but not the outcome-based education (OBE) attainment metrics for the course.

Table 2.31 Sample Rubrics for the Assessment of Lab Work

Criteria	Max Marks	Excellent 100%	Good >60% to 90%	Average 40% to 60%
----------	-----------	-------------------	---------------------	-----------------------

Knowledge of the Experiment	10 marks	Thorough knowledge of the experiment and is able to correlate the objectives to the experiment.	Adequate knowledge, but not able to correlate the objectives to the experiment	Sufficient knowledge, but lacks clarity in understanding the objectives of the experiment
Conducting experiment	10 marks	Able to conduct the experiment as per the requirements. Optimum usage of tools/equipment with proper handling throughout the work	Able to conduct the experiment, but with some minor refinement. Proper handling of tools/equipments, but without optimal usage	Able to conduct the experiment, but violating some requirements. Some corrections needed. Improper handling of tools/equipment
Data Recording and Analysis	15 marks	Observations, measurements and inference are adequate with proper reasoning. Accurate results with reasonable precision.	Observations, measurements and inference are adequate and accurate, but with missing proper units, representations/illustrations	Observations, measurements and inference are adequate. But inaccurate results and without proper units, representations/illustrations
Documentation	10 marks	Well documented and submitted within the stipulated time	Documented and submitted in time, but with minor modifications	Documented, but requires modifications and not in an organized way
Safety and Clean-up	5 marks	Proper safety precautions are consistently used. Consistently uses proper clean-up procedures.	Safety precautions and clean-up procedures observed with minor deviations	Proper safety precautions are often missed. Needs to be reminded more than once during the lab to use proper clean-up procedures

Table 2.32 Sample Rubrics for the Assessment of Open-Ended Project

Criteria	Max Marks	Excellent 100%	Good >60% to 90%	Average 40% to 60%	Acceptable 10% to <40%	Unacceptable 0%
Problem Definition and Identification of Objectives	10 marks	Problem statement is clear and objectives are well defined	Problem statement is clear, but objectives are not well defined	Problem statement is clear but objectives are not in line with problem statement	Problem statement and objectives are defined, but lacks clarity	Problem statement is not defined and objectives are not identified
Development of appropriate procedures	10 marks	Relevant and appropriate development of procedures with proper reasoning	Satisfactory in development of procedures, but not well reasoned	Satisfactory in development of procedures, but without reasoning	Development of procedures in an incomplete form	No development of procedures
Selection of tools and techniques	10 marks	Relevant and appropriate selection of tools & techniques with proper reasoning	Satisfactory in the selection of tools & techniques, but with incomplete reasoning	Satisfactory in the selection of tools & techniques, but without reasoning	Selection of tools & techniques in an inappropriate way	No selection of tools, techniques

Implementation and Result	15 marks	Implemented, Accurate result	Implemented, but inaccurate result	Implemented, but partial result	Partial Implementation	No implementation
Documentation	5 marks	Well documented and submitted within the stipulated time	Documented and submitted in time, but not in an organized way	Documented, but without covering the entire aspect of the project and not submitted in time	Documented with partial contents and not submitted in time	No Documentation

Table 2.33 Sample Rubrics for the Assessment of Lab Exam

Criteria	Max Marks	Excellent 100%	Good >60% to 90%	Average 40% to 60%
Background Knowledge	10 marks	Thorough study and all the questions have been answered correctly	Adequate study and more than half of the questions have been answered correctly	Sufficient study and half of the questions have been answered correctly
Implementation, Data Recording and Result	15 marks	Implemented successfully. Observations, measurements and inference are adequate with proper reasoning. Accurate results with reasonable precision, proper units and representations/illustrations.	Implemented successfully. Observations, measurements and inference are adequate and accurate, but with missing proper units, representations/illustrations.	Implemented successfully. Observations, measurements and inference are adequate. But, inaccurate results and units, representations/illustrations.
Selection and usage of tools and equipments	10 marks	Relevant and appropriate selection and optimum usage of tools/equipments with proper handling throughout the work	Satisfactory in the selection of tools/equipments with proper handling, but without optimal usage	Satisfactory in the selection of tools/equipments, but improper way and without optimal usage
Development of appropriate Procedures, Diagrams	15 marks	Able to develop procedures for meeting the specified requirements with proper justification (diagrams, flowchart etc)	Able to develop procedures for meeting the specified requirements with incomplete justification	Able to develop procedures for meeting the specified requirements without justification

Revision 2015

Table 2.34 Weightage for Internal Continuous Assessment – Revision 2015

Sl. No	Criteria Component
1	Observation Note / Rough Record
2	Fair Record (Timely Submission, Accuracy and Neatness)

3	Attendance
4	Test

Observation Note / Rough Record — 20%

- Reflects the students real-time observations and rough working recorded during the lab session itself.

Fair Record (Timely Submission, Accuracy and Neatness) — 20%

- The formally written-up fair record is assessed on three criteria: whether it was submitted on time, the accuracy of the content, and the neatness of presentation.

Attendance — 20%

- A fixed weightage awarded purely on the basis of the students attendance in the lab sessions.

Test — 40%

- The single largest component, based on an internal practical test conducted during the semester.

G. Student feedback of teaching learning process and action taken (6)

The Department conducts a structured, module-wise student feedback exercise at the end of every semester to assess the effectiveness of the Teaching-Learning Method (TLM) adopted by faculty for each subject. The exercise is designed to (a) identify subjects and modules where the TLM needs strengthening, and (b) drive documented corrective action that is verified in the subsequent feedback cycle, thereby ensuring continuous improvement. Feedback is collected only after a subject has been substantially covered, so that students have a complete basis to rate the TLM follow-up action.

Module wise rating:

Each subject is divided into four modules (M1-M4), corresponding to the four modules defined in the course syllabus. Rather than asking students to rate a subject as a single whole, feedback is collected separately for each module. This module-wise rating system is designed to provide a more detailed and accurate assessment of the TLM, instead of only flagging the subject in general.

Rating Scale

Each module is rated by every student on a 3-point scale:

- 3 - High (TLM followed effectively for that module)
- 2 - Medium (TLM followed adequately, with scope for improvement)
- 1 - Low (TLM followed inadequately for that module)

A 3-point numeric scale was adopted to keep the form quick for students to complete across all subjects and modules of a semester, while still yielding a numeric score that can be directly aggregated into percentages.

Figure 2.13 Sample TLM Feedback from students

Theory subjects

Sl NoName of student Thermal EngineeringFluid Mechanics and Hydraulic MachinesAutomobile EngineeringCommunity Skills in Indian knowledge systemIndustrial Engineering

		CO																			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	AADHIN SHAJU	2	3	1	2	1	1	2	1	2	1	1	2	1	2	3	2	3	3		
2	ADHUL KRISHNA	2	1	3	3	2	3	2	1	1	3	2	3	3	3	2	1	3	1	1	3
3	ADITHYAKRISHNA K U	1	2	2	1	3	1	3	1	1	1	2	3	3	1	3	3	2	1	1	2
4	ADITHYAN K D	3	2	1	1	3	2	1	3	3	2	1	2	1	3	2	3	1	1	1	1
5	ADITHYAN K.G	1	1	1	3	2	1	1	1	2	3	1	2	3	2	3	2	2	2	1	1
6	AJAY K S	2	2	2	1	1	2	2	1	3	2	2	3	2	2	1	3	3	2	1	3
7	AJEX JOY	3	3	3	3	1	3	2	1	3	2	3	1	2	2	1	3	1	1	2	1
8	AJITH T.V.	1	2	2	2	1	3	1	3	2	1	1	2	2	2	3	1	2	2	2	1
9	AKSHAY V C	3	3	2	3	3	1	1	2	2	1	1	1	2	1	3	1	1	2	1	3
10	ALAN P J	1	2	1	1	2	1	1	3	1	1	1	3	2	3	1	3	3	3	2	1
11	ALBI SAJEEV K P	1	2	2	1	2	2	2	1	2	2	1	3	1	1	3	3	2	2	3	2
12	ALBIN ANTOO	2	1	1	2	2	1	1	2	2	1	3	2	3	2	3	1	1	3	1	2
13	AMAL K S	2	2	3	3	2	3	2	1	3	1	1	1	3	2	2	1	3	2	2	2
14	AMALKRISHNA N S	2	1	3	3	1	2	1	2	2	1	2	3	1	2	1	1	2	2	3	2
15	ARJUN RAMESH	1	3	3	1	3	3	3	2	1	1	2	1	3	1	2	3	3	2	2	2
16	ARJUN SHABU	1	3	1	3	3	2	3	2	3	1	3	1	3	2	3	1	1	2	1	2
17	ARUN E M	1	3	1	2	3	2	2	3	1	3	2	3	1	2	1	3	1	1	1	3
18	ARYAN SUBRAHMANIAN2	1	3	3	3	1	3	3	1	2	3	3	1	3	2	3	1	3	1	2	1
19	BLAIZE GEORGE	1	3	1	1	3	2	3	3	3	1	1	2	2	1	1	1	3	1	1	3

20	CHRISTO JOBY	1	2	1	1	3	2	3	2	3	2	3	3	3	1	3	1	1	3	3	
21	CLINTO JOY	3	3	3	2	1	1	3	3	2	1	3	2	3	3	2	1	1	1	2	3
22	EADRIN PLUTTAN	2	1	2	3	1	3	3	1	3	3	1	3	2	3	2	3	2	3	2	1
23	JILAN JOSEPH	1	2	3	2	2	2	2	3	1	1	3	3	2	3	1	1	3	2	3	3
24	JOYAL K V	2	3	2	3	1	1	3	1	3	3	3	3	1	2	1	3	1	3	2	3
25	KIRAN A U	2	3	2	2	1	2	1	2	3	3	1	2	2	3	1	3	3	2	2	3
26	MAHROOF.K.M	3	1	1	3	2	2	1	2	2	3	1	3	2	1	1	1	3	2	1	3
27	MISHAL SAPHY	2	1	3	1	3	2	1	2	2	3	1	1	3	2	1	3	1	2	3	2
28	NAVEEN C NISHANTH	1	3	2	2	1	1	2	2	2	3	2	3	2	1	3	1	3	1	2	3
29	NIVED T K	3	1	3	2	2	2	3	3	1	3	2	2	3	2	2	3	2	1	3	3
30	RAHUL S	3	3	1	2	3	1	1	1	2	2	3	1	2	3	3	3	2	3	1	2
31	SHAHIN P S	3	1	1	2	1	3	1	1	1	2	1	1	3	3	3	1	2	3	1	3
32	SOORAJ V S	2	3	2	2	2	1	2	2	2	1	2	1	1	3	2	3	2	3	3	2
33	SOUGAND K S	3	2	2	2	1	3	2	3	3	1	1	2	3	3	1	3	3	1	2	1
34	SREEKANTH . K	2	1	1	1	3	1	3	2	2	2	1	1	3	3	3	2	3	1	3	2
35	THOMAS P.SEBY	3	3	2	3	3	1	2	1	1	2	2	2	2	1	3	1	3	3	2	1
36	VAISHNAVU T S	2	2	3	1	3	1	2	3	1	2	1	2	3	2	3	1	2	3	3	2
37	YADHUKRISHNA SHAIJU	3	3	3	2	2	3	1	3	3	3	2	2	1	2	3	3	1	2	1	3
38	ABHIJITH SASEENDRAN	2	2	3	2	2	2	3	3	3	3	3	2	3	3	2	2	3	3	2	2
39	ADITHYAN K V	3	2	2	3	3	2	2	2	2	3	3	2	2	3	2	3	2	2	2	2
40	ALWIN CHERIYAN	2	2	2	2	2	2	2	2	2	2	3	3	3	2	2	2	2	3	2	3

41	AMAL DAVIS	3	2	2	2	3	2	3	2	3	2	2	2	2	3	2	3	2	3	3	3
42	ANTO SAMUEL JOY	3	3	3	3	2	3	3	2	2	2	2	3	2	2	2	3	2	2	2	3
43	DONN VARGHESE	2	2	2	3	2	2	2	3	3	2	3	2	2	3	2	2	2	3	2	3
44	JOYAL JOY	3	3	3	3	3	2	2	3	2	2	2	2	2	2	3	3	2	3	3	3
45	STEBIN GEORGE SIBY	3	3	3	2	2	2	3	2	3	3	2	3	3	3	3	3	2	3	3	3
46	VAISHNAV VIJAYAN	3	2	2	3	3	2	2	2	2	2	3	2	2	3	2	2	2	2	3	2
		2.1	2.2	2.1	2.1	2.1	1.9	2	2	2.1	2	1.9	2.1	2.2	2.2	2.1	2.2	2.1	2	2	2.3
		Thermal EngineeringFluid Mechanics and Hydraulic MachinesAutomobile EngineeringCommunity Skills in Indian knowledge systemIndustrial Engineering																			
		70.5%				67.0%				68.1%				72.5%				70.3%			

Practical subjects

		Thermal Engineering LabFluid Mechanics Lab (Mechanical)Mechanical Workshop IVMinor Project																				
SL NOS4		CO																				

		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4					
1	AADHIN SHAJU	3	2	3	2	1	3	1	3	2	3	3	2	1	1	2	1					
2	ADHUL KRISHNA	3	2	1	2	1	2	2	1	3	1	1	1	3	2	1	1					
3	ADITHYAKRISHNA K U	1	3	2	1	1	1	2	3	1	3	1	1	1	1	2	1					
4	ADITHYAN K D	2	1	1	1	2	1	2	1	2	2	3	1	1	2	2	1					
5	ADITHYAN K.G	3	2	1	2	2	3	2	3	2	3	2	2	1	1	3	2					
6	AJAY K S	1	1	3	2	2	1	1	3	3	2	3	1	2	2	2	1					
7	AJEX JOY	2	2	3	1	3	1	2	1	3	2	3	1	3	3	1	2					
8	AJITH T.V.	2	2	1	2	3	3	3	2	2	3	1	2	3	1	3	2					

9	AKSHAY V C	2	3	1	1	3	1	2	2	1	2	3	3	1	3	1	3
10	ALAN P J	3	2	1	1	1	2	3	2	3	1	3	3	2	2	2	2
11	ALBI SAJEEV K P	1	3	1	3	2	1	1	1	1	3	3	3	2	2	2	1
12	ALBIN ANTOO	3	1	2	2	2	2	3	1	2	2	3	1	2	2	2	2
13	AMAL K S	2	3	2	3	2	1	1	3	2	2	1	3	1	3	3	2
14	AMALKRISHNA N S	3	2	3	2	2	1	3	2	3	1	2	1	3	2	1	3
15	ARJUN RAMESH	2	2	3	3	1	2	2	1	2	1	2	3	2	2	3	2
16	ARJUN SHABU	3	1	1	1	2	1	1	3	3	2	1	1	2	1	1	1
17	ARUN E M	1	3	3	1	2	1	3	1	1	3	3	2	1	3	3	2
18	ARYAN SUBRAHMANIAN2	3	1	3	1		3	1	3	2	2	2	2	1	1	2	2
19	BLAIZE GEORGE	1	2	3	2	2	1	1	1	2	3	1	1	3	2	2	2
20	CHRISTO JOBY	1	2	2	2	1	2	2	1	3	1	2	2	1	3	1	3
21	CLINTO JOY	2	2	3	3	1	1	1	1	1	2	2	3	2	1	3	2
22	EADRIN PLUTTAN	2	2	2	2	1	2	2	2	1	1	2	1	3	1	3	2
23	JILAN JOSEPH	3	2	2	2	2	1	1	1	2	2	2	1	2	3	2	3
24	JOYAL K V	1	2	2	2	2	3	2	3	3	1	3	3	2	2	1	2
25	KIRAN A U	2	2	2	3	2	2	2	2	1	1	1	2	1	2	3	2
26	MAHROOF.K.M	3	2	3	2	2	2	2	3	2	1	1	1	3	3	3	1
27	MISHAL SAPHY	1	2	2	2	3	3	3	3	3	2	2	2	2	1	1	3
28	NAVEEN C NISHANTH	1	3	3	2	2	2	2	3	1	1	1	3	2	1	2	1
29	NIVED T K	2	2	3	2	2	3	3	2	1	2	1	2	1	1	3	3

30	RAHUL S	1	3	3	3	3	2	3	3	3	2	3	1	3	1	3	2
31	SHAHIN P S	3	2	2	2	2	2	3	3	3	1	1	3	1	3	2	2
32	SOORAJ V S	2	3	2	2	3	3	2	2	2	1	2	3	2	2	3	2
33	SOUGAND K S	3	2	2	2	3	3	3	2	2	3	1	3	3	1	3	3
34	SREEKANTH . K	2	2	2	3	3	2	3	3	1	2	2	2	1	1	2	2
35	THOMAS P.SEBY	2	2	2	2	2	3	3	3	3	2	3	1	3	2	1	2
36	VAISHNAVU T S	3	3	2	2	3	2	2	3	3	2	3	2	1	2	1	2
37	YADHUKRISHNA SHAIJU 1	3	3	3	3	3	3	3	2	1	3	3	3	2	2	1	2
38	ABHIJITH SASEENDRAN 2	3	3	2	3	2	2	2	3	3	3	1	3	3	3	1	3
39	ADITHYAN K V	3	3	3	3	2	2	2	3	1	3	2	3	3	3	2	1
40	ALWIN CHERIYAN	1	3	3	2	2	2	2	3	3	3	1	3	1	3	1	1
41	AMAL DAVIS	1	3	2	2	2	2	2	3	2	3	1	1	2	3	2	
42	ANTO SAMUEL JOY	1	2	2	3	2	2	2	3	3	2	3	1	2	2	2	2
43	DONN VARGHESE	1	3	2	2	2	2	2	3	1	3	1	3	2	2	3	3
44	JOYAL JOY	2	3	3	3	3	2	2	3	2	1	1	2	2	3	2	1
45	STEBIN GEORGE SIBY	2	3	2	3	3	2	2	3	3	3	3	2	3	3	2	3
46	VAISHNAV VIJAYAN	1	2	2	3	2	2	2	3	2	1	3	3	3	2	1	2
		1.9	2.3	2.2	2.2	2.1	2	2.1	2.3	2.1	2	2	2	2	2	2	2
		Thermal Engineering LabFluid Mechanics Lab (Mechanical)Mechanical Workshop IVMinor Project															
		71.4%				70.1%				67.8%				66.1%			

4. 5th Semester TLM/PLM Feedback Summary

Semester	SI No	Subject	TLM/ PLM Feedback %
S4	1	Thermal Engineering	70.5%
S4	2	Fluid Mechanics and Hydraulic Machines	67.0%
S4	3	Automobile Engineering	68.1%
S4	4	Community Skills in Indian knowledge system	72.5%
S4	5	Industrial Engineering	70.3%
S4	6	Thermal Engineering Lab	71.4%
S4	7	Fluid Mechanics Lab (Mechanical)	70.1%
S4	8	Mechanical Workshop IV	67.8%
S4	9	Minor Project	66.1%
Average			69.31%

5. Weakest Subjects (Below Overall Average)

1	Fluid Mechanics and Hydraulic Machines	67.00%
2	Automobile Engineering	68.10%
3	Mechanical Workshop IV	67.80%
4	Minor Project	66.10%

Feedback sheet format

The raw feedback sheet records, for every student: Serial Number, Student Name, and for each subject of the semester, four module scores (M1, M2, M3, M4). This gives a complete student x subject x module data matrix for the semester, fo

Administration of the feedback exercise

1. Feedback is administered once per semester, after sufficient coverage of the syllabus, to all students currently registered in that semester.
2. Each student fills in module-wise ratings (M1-M4) for every subject of the semester on the standard feedback sheet.
3. Completed responses are compiled subject-wise and semester-wise by the Department into a consolidated feedback register for analysis.
4. The exercise is repeated identically for every semester (S1-S6) so that data is available for the entire academic year in a uniform format.

Computation Methodology

The consolidated ratings are processed through a four-tier aggregation - module, subject, semester, and academic year - so that any dip at the year level can be traced back to the exact semester, subject, and module responsible.

For each module (M1-M4) of a subject, the scores given by all students are summed. This sum is expressed as a percentage of the maximum possible score (3 x number of students who responded):

$$\text{Module \%} = (\text{Sum of student scores for that module} / (3 \times \text{Number of students})) \times 100$$

A subjects overall TLM feedback percentage is the mean of its four module percentages (M1-M4). This reflects the average effectiveness of the TLM across the complete syllabus of that subject.

$$\text{Subject \%} = (M1\% + M2\% + M3\% + M4\%) / 4$$

The semester average is the mean of the TLM feedback percentages of all subjects taught in that semester. The overall academic year average is the mean of the six semester averages (S1-S6), giving a single consolidated figure representing 1 year together in a single summary table for the academic year, allowing quick comparison of TLM effectiveness across subjects and across semesters. Subjects whose TLM feedback percentage falls below the overall academic year average are identified rather than a fixed cut-off, so the standard automatically adapts to the institutions own current performance level each year rather than remaining static. The current years overall average is compared against the previous academic years overall average primarily responsible for a change in trend is specifically identified.

Action taken procedure

1. Subjects and modules falling below the overall academic year average are compiled into an Action Taken list.
2. This list, along with the relevant module-level scores, is shared with the concerned faculty members and the Head of the Department.
3. Faculty are advised on specific corrective measures targeted at the weak module(s) - such as revisiting the pace of delivery, and incorporating additional practical, case-based, or activity-based sessions for that module - rather than a general action.
4. The corrective measures adopted are documented against the concerned subject and semester for institutional record.

The effect of the corrective action is verified in the subsequent semester or academic years feedback cycle by checking whether the previously flagged subject/module has moved closer to, or above, the overall average. Where improvement is observed, the action-verification cycle operates continuously rather than as a one-time exercise.

2.2.2 Initiatives to improve the quality of semester tests and assignments (15)

A. Process for Internal semester question paper setting and evaluation and effective process implementation (5)

1. Basis of Question Paper Design

Internal semester question papers are designed by mapping each question to the appropriate cognitive level defined under Blooms Taxonomy Learning Levels (Remember, Understand, Apply, Analyse, Evaluate, Create) and to the specific Co-POs. Internal examinations are not merely tests of recall but are constructed to assess the intended depth of learning and outcome attainment defined for the course, rather than being set in an ad hoc manner by individual faculty discretion.

2. Setting of Question Papers

Based on this mapping, the concerned faculty member sets the question paper for internal examinations, ensuring balanced coverage across modules and an appropriate distribution of questions across the different Blooms levels, in proportion to the weightage assigned to each module.

3. Institutional Vetting through IQAC

The question paper, once set, is not directly used for examination. It is first submitted to the Internal Quality Assurance Cell (IQAC) for scrutiny. This is a critical quality-control checkpoint: it introduces an independent institutional review of the question paper setting faculty's own judgement.

4. Approval Loop

IQAC reviews the paper against the intended learning levels and course outcomes. If the paper is not approved, it is returned to the faculty for revision and re-submission — the process loops back to the setting stage rather than proceeding forward. This loop at the very first stage ensures that no internally inconsistent or poorly mapped question paper is ever administered to students, catching quality issues before the exam rather than after.

5. Printing and Distribution

Once approved, the finalized question paper is printed and prepared for distribution to students at the time of the internal examination, ensuring that only the IQAC-cleared version is used.

6. Conduct of Internal Examinations

The examination itself is conducted strictly as per the institutions Timetable and Academic Calendar. Anchoring the exam schedule to these two institutional documents ensures internal examinations are conducted in a planned, non-overlapping manner across individual faculty or sections.

7. Evaluation of Answer Scripts

Following the examination, answer scripts are evaluated by the concerned faculty. Evaluation is expected to be carried out against the same Blooms-level and CO mapping used while setting the paper, so that the marks awarded genuinely reflect the score.

8. Publication of Results

Evaluated results are published, making individual student performance available for both the student and the institutions academic records.

9. Calculation of CO Attainment

Using the published results, CO attainment is calculated for each course outcome targeted by that internal examination. This converts raw marks into a quantified, outcome-wise attainment figure, which is the basis for the next — and most in

10. Attainment Check and Corrective Action

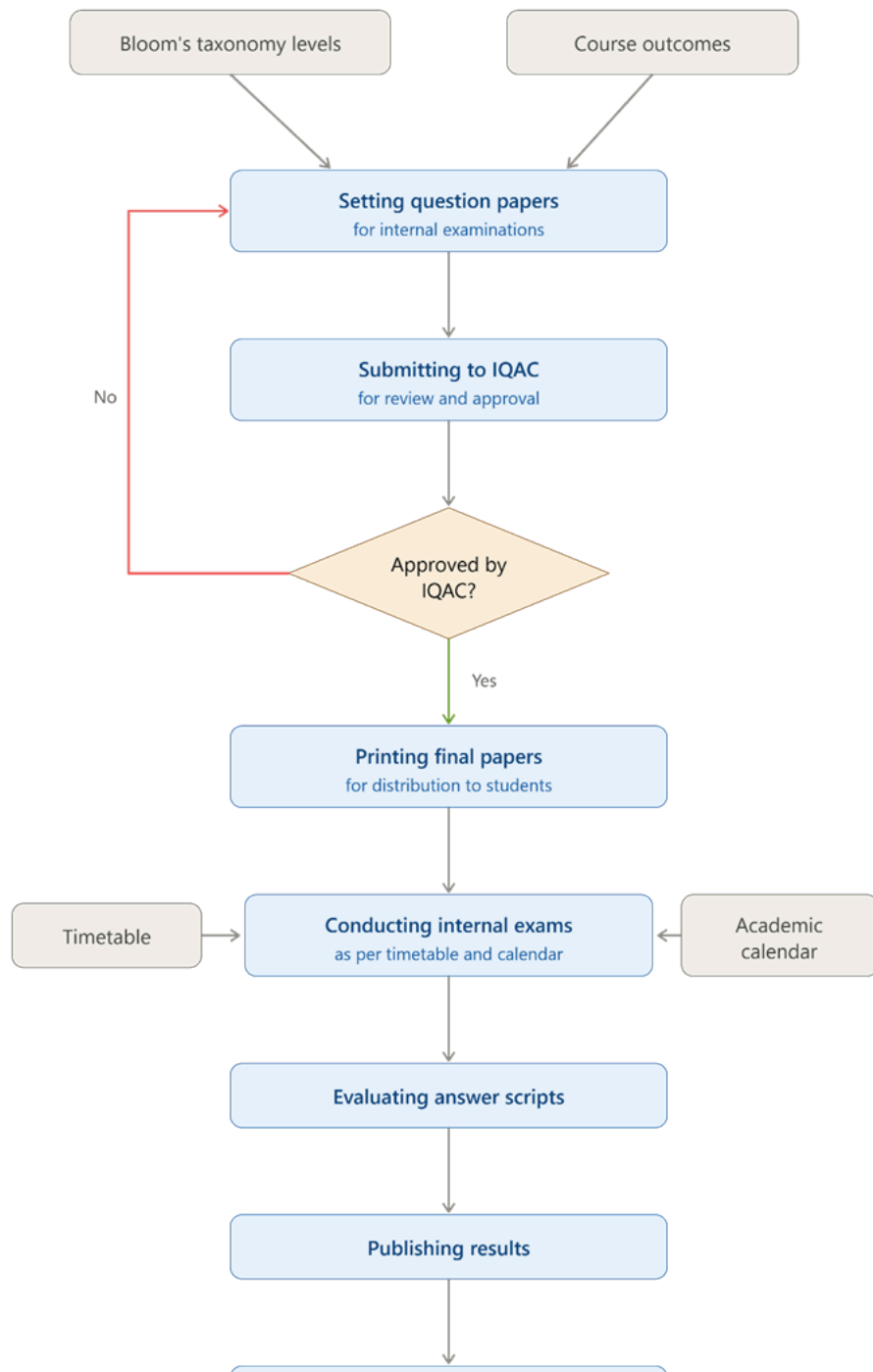
The calculated CO attainment is checked against the pre-defined target level for each CO:

- If the target level is not attained, the institution initiates specific steps to help reach the target attainment level — such as remedial teaching, revision of pedagogy for the concerned modules, additional tutorials, or realignment of questions.
- If the target level is attained, the institution does not treat this as a stopping point. Instead, it takes further steps to raise CO attainment even higher in subsequent cycles — reflecting a philosophy of continuous improvement rather than complacency.

11. Effective Process Implementation

The effectiveness of this process rests on four features built into its design:

- Outcome-driven design at the source — question papers originate from Blooms levels and COs, not from convenience or repetition of past papers, ensuring assessment validity from the first step.
- Independent quality checkpoint (IQAC approval loop) — no question paper bypasses institutional review; the explicit "No → revise and resubmit" loop guarantees this is enforced, not optional.
- Standardised, calendar-driven administration — tying exam conduct to the timetable and academic calendar removes scheduling inconsistency across departments.
- Closed-loop, data-driven follow-up — the process does not end at result publication. CO attainment is computed, checked against targets, and drives a defined corrective or enhancement action every single cycle, and this outcome feeds back into the next cycle, making the process cyclical and self-correcting rather than linear and one-time.



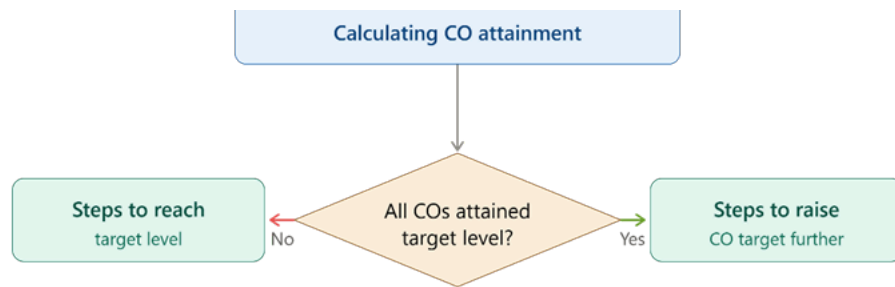


Figure 2.15 Process of conduction of internal assessment

B. Question paper setting taking into account outcomes/learning levels (5)



Nirmala College of Engineering Technology and Management

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Approved by AICTE, New Delhi and Affiliated to APJ Abdul Kalam Technological University, State Board of Technical Education, Kerala.

ASSESSMENT 2

Sem : S2	Program : DIPLOMA IN MECHANICAL ENGINEERING	Course Code: 2022	Total Marks : 40.00	Time: 2 Hrs
Course Name: Manufacturing Technology				

CO: Course Outcome, Level: Bloom's Taxonomy Level no (1-6)

PART A

Answer all questions in one word or one sentence

Q.no	Questions	Marks	CO	Level
1.	Define Pressure welding	1	CO3	1
2.	Name any two fluxes used in gas welding	1	CO3	1
3.	Name the types of flame used in oxy acetylene welding.	1	CO3	1
4.	Name the different types of welded joints.	1	CO3	1
5.	Define press working.	1	CO4	1
6.	Define Notching	1	CO4	1
7.	What are the types of hammer used in smithy?	1	CO4	1
8.	Name any two press working operations.	1	CO4	1

Section 2

Answer any six questions from the following .Each question carries 3 marks.

Q.no	Questions	Marks	CO	Level
9.	What is the difference between Soldering and Brazing?	3	CO3	1
10.	How welding process are classified?	3	CO3	2
11.	Describe spot welding process?	3	CO3	2
12.	Draw the schematic diagram of different oxy acetylene flames?	3	CO3	1
13.	Differentiate between hot chisel and cold chisel used in smithy shop?	3	CO4	2
14.	What are the advantages of press working operations?	3	CO4	1
15.	Explain three types of hammers used in smithy	3	CO4	1
16.	Name the different forging operations	3	CO4	2

PART C

Answer ALL questions. Each question carries 7 marks

Q.no	Questions	Marks	CO	Level
17.	Describe any three defects in welding.	7	CO3	2
	(OR)			
18.	Explain the following welding process? (a) TIG welding (b) MIG welding	7	CO3	2
19.	With the help of neat sketch explain any three press working operations?	7	CO4	2
	(OR)			
20.	Write short notes on (a) Forge welding (b) Swaging (c) Bending	7	CO4	2

Table 2.17 Sample question paper of formative assessment with Bloom’s Taxonomy Level

Blooms Taxonomy classifies learning into a hierarchy of cognitive levels — Remember, Understand, Apply, Analyse, Evaluate, and Create — progressing from lower-order thinking skills (recall and comprehension) to higher-order thinking skills. The assessment is consciously framed to target a specific Blooms level, ensuring that the assessment does not remain confined to testing memory alone but progressively evaluates a student’s ability to apply, analyse, and evaluate the concepts learnt. This taxonomy is mapped, before it is further mapped to the Course Outcomes (COs) it is intended to assess.

Mapping Questions to Course Outcomes

Each subject’s syllabus is structured into modules, and each module is mapped to one or more defined Course Outcomes. Internal assessment is distributed across two cycles to ensure complete and non-overlapping CO coverage over the semester.

- **First Summative Assessment Test (SAT-1) and First Formative Assessment Test (FAT-1)** — cover **CO1 and CO2**, corresponding to the modules taught in the first half of the semester.
- **Second Summative Assessment Test (SAT-2) and Second Formative Assessment Test (FAT-2)** — cover **CO3 and CO4**, corresponding to the modules taught in the second half of the semester.

This staged split ensures that by the end of the semester, all four course outcomes have been independently assessed at least once through both a summative and a formative instrument, rather than being bunched together in a single comprehensive assessment.

Combining the Two Dimensions — CO and Blooms Level

While setting the question paper for each test, questions are framed along two simultaneous dimensions:

1. **Outcome dimension** — every question is tagged to the specific CO (CO1/CO2 in the first cycle, CO3/CO4 in the second) it is intended to assess.
2. **Cognitive-level dimension** — every question is tagged to a Blooms level, with a deliberate mix ranging from lower-order levels (Remember, Understand) to higher-order levels (Apply, Analyse), so that the paper does not skew toward lower-order thinking skills.

This produces a two-way mapping — a CO × Blooms-level grid — used as the blueprint for setting the paper, ensuring that each CO being tested in that cycle is assessed across more than one cognitive level rather than through a single type of question.

Verification Before Finalization

The mapped question paper (CO-wise and Blooms-level-wise) is reviewed as part of the paper-setting and IQAC-approval process, confirming that: (a) only the COs assigned to that test are covered, (b) all assigned COs are adequately represented, and (c) the questions adequately assess learning for that stage of the course, before the paper is approved for use.

C. COs coverage in class test / mid-term tests and assignments (5)

The mandatory assessment methods for a course include two internal exams (Series Tests) and two assignments. While preparing the course plan, the faculty member decides the portions of the syllabus to be covered in each internal test and assignment, and the combination of internal tests and assignments across the semester. After each internal test and assignment, the question-wise marks are collected from every student. The mapping of each question number to the course outcome it addresses is maintained for record.

are noted against the corresponding CO on the facing sheet of the answer script. This question-wise, CO-tagged recording is what makes CO attainment calculation possible after every test and assignment, rather than only at the end of the co

Table 2.35 Assessment Criteria – Syllabus Revision 2015

Type		Weightage	Marks
Summative	Series Tests	50%	25
Formative	Assignments	30%	15
	Attendance	20%	10
Total		100%	50

Two Series Exams are conducted for 50 marks each, covering two COs each, with a duration of 90 minutes. It will convert into 25 Marks for attainment calculation and internal marks calculation. Two assignments are given, each of 15 marks wish to improve their assignment score, but this third assignment must cover all COs. For courses giving equal weightage to all COs, the mark distribution is as shown below, ensuring all COs are covered and equally weighted:

Table 2.36: Sample coverage of course outcomes in Rev 2015 Scheme

Type	CO1	CO2	CO3	
Series Test 1	ü	ü		
Series Test 2			ü	
Assignment 1	ü	ü		
Assignment 2			ü	

Table 2.37 Assessment Criteria – Syllabus Revision 2021

Type		Weightage	Marks
Summative	Series Tests	40%	20
Formative	Assignments	40%	20
	Attendance	20%	10

Total	100%	50
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Two Series Exams are conducted for 40 marks each, covering two COs each, with a duration of 2 hours. It will convert into 20 Marks for attainment calculation and internal marks calculation. Two assignments are given, each of 20 marks, co wish to improve their assignment score, but this third assignment must cover all COs. For courses giving equal weightage to all COs, the mark distribution is as shown below, ensuring all COs are covered and equally weighted:

Table 2.38: Sample coverage of course outcomes in Rev 2021 Scheme

Type	CO1	CO2	CO3	
Series Test 1	ü	ü		
Series Test 2			ü	
Assignment 1	ü	ü		
Assignment 2			ü	
Assignment 3	ü	ü	ü	

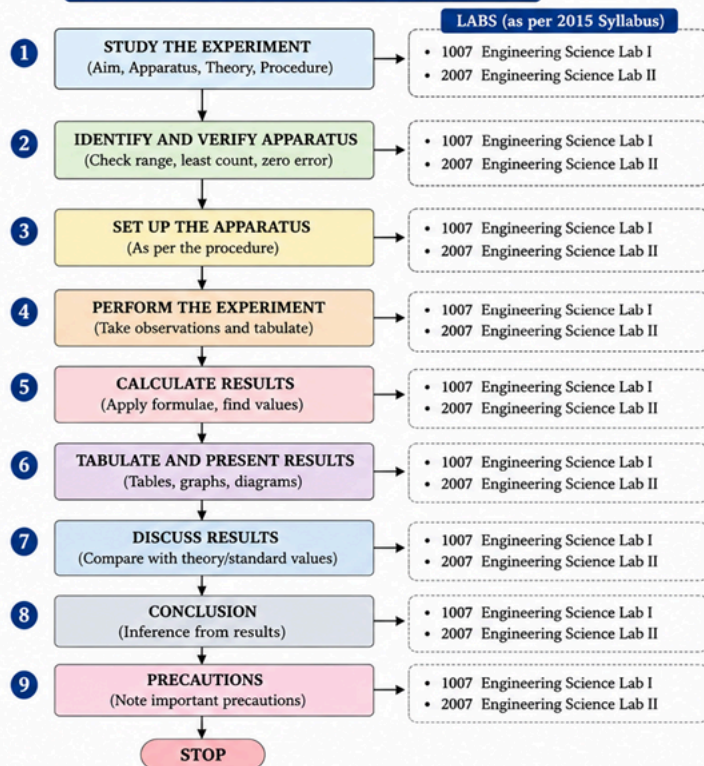
2.2.3 Quality of Experiments (15)

A. Experimental methodologies (5)

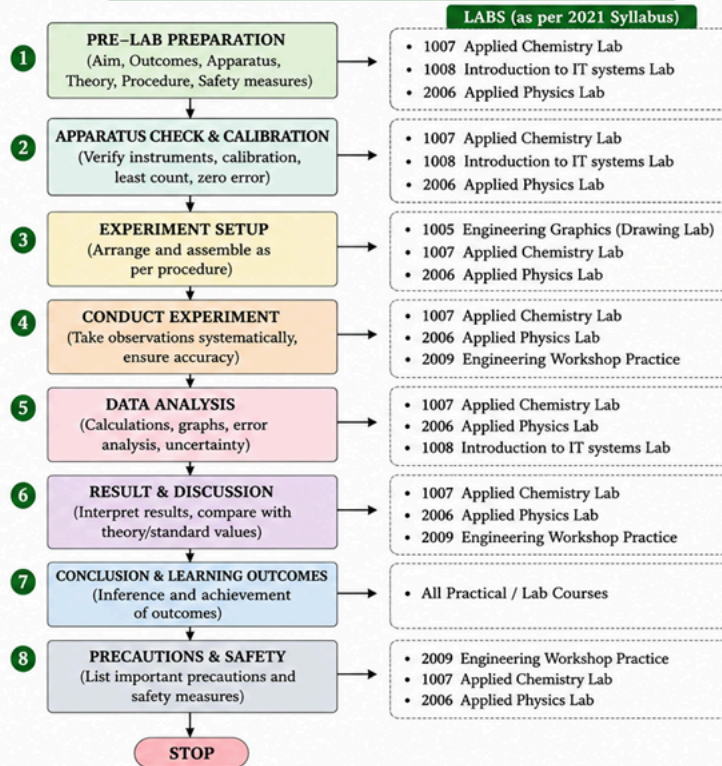
EXPERIMENT METHODOLOGY FLOW CHART

(Based on Syllabus)

2015 SYLLABUS



2021 SYLLABUS



Note: Labs listed are divided based on the syllabus.

All other theory steps are common to both syllabi. Actual experiments may vary as per individual lab manuals.

B. Innovative experiments including industry attached practices, virtual labs (5)

Table 2.41 Details of virtual labs

Details of Virtual Lab Courses			
Sl. No	Name of course	List of Experiment	Virtual Lab with link

1	Material Testing and Metallography Lab	1. Izod Impact test 2. Charpy Impact Test 3. Torsion test on Mild Steel	https://sm-nitk.vlabs.ac.in/exp/izod-impact-test/videos.html https://sm-nitk.vlabs.ac.in/exp/charpy-impact-test/ https://sm-nitk.vlabs.ac.in/exp/torsion-test-mild-steel/
2	Advanced Machine Tools Lab	1. CNC Turning 2. Simulation of Anatomy of 3D printer.	http://vlabs.iitkgp.ac.in/vmp/exp2/index.html https://3dp-dei.vlabs.ac.in/exp/simulation-anatomy-fdm/
3	Fluid Mechanics Lab	Coefficient of discharge of given venturimeter	https://fm-iitk.vlabs.ac.in/exp/venturi-meter/

C. Relevance to outcomes (5)

1009 – Health & Physical Education (Practical)

SAR COURSE CODE	COURSE OUTCOME
C105.1	To introduce the fundamentals of health, physical education, fitness and sports

C105.2	To provide knowledge and understanding regarding the scientific basis of fitness.
C105.3	To enable the students to lead a healthy lifestyle based on concepts of fitness and wellness.
C105.4	To impart knowledge regarding health and nutrition and to equip the students to provide first aid measures and manages common injuries.

Sl. No.	Practical Activity	CO	Relevant PO	Relevant PSO
1	Warming up and warming down exercises	CO1	PO5, PO6, PO7	
2	Aerobic dance and flexibility exercises	CO2	PO5, PO6, PO7	
3	Yoga and Pranayama practices	CO2	PO5, PO6, PO7	
4	Weight training exercises	CO2	PO5, PO6, PO7	
5	Physical fitness test	CO2	PO5, PO6, PO7	
6	Football / Basketball / Volleyball / Shuttle Badminton / Kabaddi etc.	CO2	PO5, PO6, PO7	

1008 – Computing Fundamentals

SAR COURSE CODE	COURSE OUTCOME
C106.1	Understand computer fundamentals, hardware & software, and computer networks.
C106.2	Apply office automation tools, e-mail and search engines for documentation and communication.
C106.3	Apply basic programming concepts to solve simple computational problems.
C106.4	Develop simple programs using Python for engineering applications.

Sl. No.	Experiment	CO	Relevant PO	Relevant PSO
1	Identify internal and external hardware components	CO1	PO1, PO4, PO6 PO7	PSO2
2	File management commands in operating system	CO1	PO1, PO4, PO6 PO7	PSO2
3	Bio-data preparation using word processor	CO2	PO1, PO4, PO6, PO7	PSO1, PSO2
4	Spreadsheet calculation of marks and grades	CO2	PO1, PO4, PO6, PO7	PSO1, PSO2
5	Optical disk burning	CO2	PO1, PO4, PO6, PO7	PSO1, PSO2
6	Presentation preparation	CO2	PO1, PO4, PO6, PO7	PSO1, PSO2
7	Email creation and communication	CO2	PO1, PO4, PO6, PO7	PSO1, PSO2
8	Python programs – average, area, volume, temperature conversion	CO4	PO1, PO2, PO3, PO4, PO7	PSO1, PSO2

SAR COURSE CODE	COURSE OUTCOME
C114.1	Measure physical quantities using instruments and determine focal length of lenses using optical methods.
C114.2	Determine spring constant, verify Ohm's law and calculate resistance of conductors.
C114.3	Perform volumetric analysis and standardize chemical solutions.
C114.4	Estimate chemical properties such as pH, metal content using EDTA and titration methods.

Sl No.	List of Experiments	CO	PO	PSO
1	Vernier calipers	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
2	Screw gauge	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
3	Convex lens	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
4	Hooke's law	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2

5	Simple pendulum	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
6	Moment bar	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
7	Concurrent forces(mass of the body)	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
8	Ohm's law	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
9	U tube	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
10	Standardisation of HCL	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
11	Standardisation of NaOH Double Titrations	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
12	Estimation of NaOH	CO 3	PO1, PO2, PO3,	PSO1, PSO2

			PO4, PO5, PO6, PO7	
13	Estimation of KOH	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
14	Estimation of K ₂ CO ₃	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
15	Estimation of HCl	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7 PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
16	Estimation of Fe ²⁺ ion	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
17	Determination of PH of Solution	CO4	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
18	Estimation of Zinc using EDTA	CO4	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2

19	Estimation of Magnesium Using EDTA	CO4	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
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2008 – Workshop Practice

SAR COURSE CODE	COURSE OUTCOME
C113.1	Perform various exercises on given drawings and specifications in the Carpentry and Foundry & Casting shops.
C113.2	Perform various exercises on given drawings and specifications in the Smithy, Forging and Fitting shops.
C113.3	Perform various exercises on given drawings and specifications in the Sheet Metal shop.
C113.4	Perform various exercises on given drawings and specifications in the Welding shop.

Sl. No.	Experiment / Practice	CO	Relevant PO	Relevant PSO
1	Carpentry tool familiarization	CO1	PO1, PO2, PO4,	, PSO1, PSO2
2	Marking, sawing, planning and chiselling exercises	CO1	PO1, PO2, PO4,	, PSO1, PSO2
3	Carpentry joint preparation	CO1	PO1, PO2, PO4,	, PSO1, PSO2
4	Foundry tool familiarization	CO1	PO1, PO2, PO4,	, PSO1, PSO2
5	Preparation of moulding sand	CO1	PO1, PO2, PO4,	, PSO1, PSO2

6	Mould preparation using patterns	CO1	PO1, PO2, PO4, , PSO1, PSO2
7	Ferrous and non-ferrous casting	CO1	PO1, PO2, PO4, , PSO1, PSO2
8	Smithy tool familiarization	CO2	PO1, PO2, PO3, PO4, , PSO1, PSO2
9	Upsetting, bending, drawing, cutting and welding in smithy	CO2	PO1, PO2, PO3, PO4, , PSO1, PSO2
10	Fitting tool familiarization	CO2	PO1, PO2, PO3, PO4, , PSO1, PSO2
11	Cutting, filing, scribing and fitting joints	CO2	PO1, PO2, PO3, PO4, , PSO1, PSO2
12	Sheet metal tool familiarization	CO3	PO1, PO2, PO4, , PSO1, PSO2
13	Sheet cutting, folding, bending and pipe bending	CO3	PO1, PO2, PO4, , PSO1, PSO2
14	Arc welding (DC)	CO4	PO1, PO2, PO3, PO4, , PSO1, PSO2
15	Arc welding (AC)	CO4	PO1, PO2, PO3, PO4, , PSO1, PSO2
16	Gas welding	CO4	PO1, PO2, PO3, PO4, , PSO1, PSO2
17	Edge preparation and welded joints	CO4	PO1, PO2, PO3, PO4, , PSO1, PSO2
18	Horizontal, flat and vertical welding joints	CO4	PO1, PO2, PO3, PO4, , PSO1, PSO2

2029 – Basic Mechanical Engineering Laboratory

Subject Code	CO Code	CO
2029	CO1	Perform measurements using precision instruments and carry out basic plumbing operations by selecting appropriate tools and equipment following standard workshop practices.
2029	CO2	Perform brazing and soldering operations using appropriate tools, equipment and safety procedures for simple engineering applications.

2029	CO3	Identify the constructional features and working principles of pumps and internal combustion engine components used in mechanical systems.
2029	CO4	Explain the construction, working principles and major components of refrigeration and air-conditioning systems for engineering applications.

Sl. No.	Experiment / Activity	CO	Relevant PO	PSO
1	Identification and use of workshop tools and equipment	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7,	PSO1, PSO2
2	Measurements using Vernier Caliper, Micrometer and Depth Gauge	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
3	Plumbing tools study and plumbing practice	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
4	Brazing practice	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
5	Soldering practice	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
6	Study of centrifugal pump parts	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
7	Study of reciprocating pump parts	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
8	Study of petrol engine components	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
9	Study of diesel engine components	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
10	Study of refrigerator components	CO4	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2

11	Study of air-conditioner components	CO4	PO1, PO2, PO3, PO4, PO5, PO6, PO7,	PSO1, PSO2
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3027 – Workshop Practice III

Subject Code	CO Code	CO	Blooms Level
3027	CO1	Apply machining operations using lathe, shaper and drilling machines to produce engineering components within the specified dimensional accuracy.	Apply
3027	CO2	Apply fitting practices and precision measuring techniques using gauges and hand tools to manufacture and inspect engineering joints.	Apply
3027	CO3	Apply sheet metal and aluminium fabrication techniques to prepare engineering components using appropriate tools and equipment.	Apply
3027	CO4	Apply arc welding and gas welding techniques to fabricate engineering joints by following standard welding procedures and safety practices.	Apply

Sl. No	Experiment / Practical	Mapped CO	PO Mapping	PSO Mapping
1	Lathe – Plain Turning	CO1	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
2	Lathe – Taper Turning	CO1	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
3	Lathe – Form Turning (Ball & Curve)	CO1	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
4	Combination Turning Operations	CO1	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2

5	Shaper Operations- Cube, Slot and V Groove cutting	CO1	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
6	Fitting Exercises V Joint	CO2	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
7	Sheet Metal Tool Practice Hollow pipe	CO3	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
8	Welding – Single V, Double V Pipe welding	CO4	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2

3028 – Electrical Technology Laboratory

Subject Code	CO Code	CO	Blooms Level
3028	CO1	Apply electrical circuit principles and standard measuring instruments to perform electrical wiring, circuit measurements and power measurements in AC and DC circuits.	Apply
3028	CO2	Apply appropriate starting methods and experimentally evaluate the performance characteristics of DC and AC motors.	Apply
3028	CO3	Analyze the performance of single-phase transformers using standard testing procedures and determine their operating characteristics.	Analyze
3028	CO4	Apply electronic testing techniques to construct and analyze rectifier circuits and verify basic logic gate operations using laboratory instruments.	Apply

Sl. No	Experiment	Mapped CO	PO Mapping	PSO Mapping
1	One Lamp & Plug Point Wiring	CO1	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
2	Staircase Wiring	CO1	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
3	Power Measurement in DC Circuit	CO1	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2

4	Power Measurement in AC	CO1	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
5	Power measurements 3 phase connection	CO1	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
6	Induction Motor using DOL Starter	CO2	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
7	Efficiency of AC Motor	CO2	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
8	Load Test of Single Phase Transformer	CO3	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
9	Half Wave Rectifier	CO4	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
10	Coding of resistor	CO4	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2

3029 – Fluid Mechanics Laboratory

Subject Code	CO Code	CO	Blooms Level
3029	CO1	Apply experimental methods to determine frictional losses and discharge characteristics of fluid flow measuring devices such as pipe friction apparatus, Venturimeter, Rotameter and water meter.	Apply
3029	CO2	Apply experimental techniques to determine the coefficient of discharge of orifices and evaluate the metacentric height of floating bodies.	Apply
3029	CO3	Analyze the performance of notches and experimentally verify Bernoullis theorem using standard laboratory procedures.	Analyze
3029	CO4	Apply standard engineering methods to identify pipe fittings, joints and valves, and determine minor losses in pipe flow systems.	Apply

Sl. No	Experiment	Mapped CO	PO Mapping	PSO Mapping
1	Pipe Friction Apparatus	CO1	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
2	Venturimeter Test	CO1	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2

3	Coefficient of Discharge of Orifice	CO1	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
4	Metacentric Height Determination	CO2	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
5	Rectangular Notch	CO3	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
6	Triangular Notch	CO3	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
7	Verification of Bernoulli's Theorem	CO3	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
8	Determination of Minor Losses in Pipes	CO4	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2

4027 – Heat Engines Laboratory

Subject Code	CO Code	CO	Blooms Level
4027	CO1	Perform performance tests on petrol and diesel engines and interpret the operating characteristics using standard laboratory procedures.	Apply
4027	CO2	Determine the properties of lubricants and fuels, and evaluate the performance of heat exchangers through standard laboratory experiments.	Apply
4027	CO3	Conduct performance tests on refrigeration systems and air compressors to determine their operating characteristics and efficiencies.	Apply
4027	CO4	Analyze experimental observations, plot characteristic curves and prepare technical laboratory reports for thermal engineering experiments.	Analyze

Sl. No.	Experiment	CO	PO	PSO

1	Study of petrol engine systems and components	CO1	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2
2	Load test on petrol engine	CO1	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2
3	Study of diesel engine systems	CO2	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2
4	Valve timing diagram of diesel engine	CO2	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2
5	Load test on diesel engine	CO2	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2
6	Viscosity test using Viscometer	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
7	Flash and Fire point test	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2

4028 – Material Testing Laboratory

Subject Code	CO Code	CO	Blooms Level
4028	CO1	Perform tensile, bending, shear and compression tests using standard material testing machines to determine the mechanical properties of engineering materials.	Apply
4028	CO2	Conduct impact, hardness and torsion tests to evaluate the behavior and strength characteristics of engineering materials.	Apply
4028	CO3	Evaluate the performance of springs and welded joints through standard laboratory testing procedures and interpret the test results.	Analyze
4028	CO4	Interpret experimental observations, plot characteristic graphs and prepare laboratory reports based on material testing results.	Understand

Sl. No.	Experiment	CO	PO	PSO

1	Tension test on UTM	CO1	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2
2	Izod Impact Test	CO2	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2
3	Charpy Impact Test	CO2	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2
4	Brinell Hardness Test	CO2	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2
5	Rockwell Hardness Test	CO2	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2
6	Ultra sonic flaw detection	CO2	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2
7	Magnetic Crack detection	CO2	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2
8	Dye Penetration	CO2	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2
9	Torsion Test	CO2	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2
10	Spring Test	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
11	Compression Test on Brittle Material	CO4	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2

4029 – Workshop Practice IV & Mini Project

Subject Code	CO Code	CO	Blooms Level
4029	CO1	Apply appropriate workshop practices and manufacturing techniques to fabricate simple mechanical components safely and accurately.	Apply
4029	CO2	Perform repair and maintenance of workshop machinery and mechanical systems using standard workshop procedures and tools.	Apply
4029	CO3	Execute a mini project by applying engineering knowledge, teamwork and systematic planning to develop a functional industrial product or maintenance solution.	Apply
4029	CO4	Prepare and present a technical report documenting the planning, execution, observations and outcomes of the mini project following standard engineering practices.	Understand

Sl. No.	Experiment / Activity	CO	PO	PSO
1	Workshop exercise based on industrial product	CO1	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2
2	Fabrication of industrial component (Nut, Bolt, Tray, Bucket etc.)	CO1	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2
3	Maintenance of workshop/laboratory machinery	CO2	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2
4	Mini Project	CO4	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2

5027 – CADD Lab I

Subject Code	CO Code	CO	Blooms Level
5027	CO1	Apply CAD software commands and drafting tools to create and modify engineering drawings.	Apply
5027	CO2	Prepare accurate two-dimensional orthographic drawings with dimensions, layers, text and sectional views using CAD software.	Apply
5027	CO3	Develop isometric drawings and shop floor drawings of machine components using computer-aided drafting techniques.	Apply
5027	CO4	Analyze engineering drawing requirements and produce CAD models that conform to standard drafting practices and industrial documentation.	Analyze

Sl. No.	Experiment	CO	PO	PSO
1	Drawing commands practice	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
2	Editing commands practice	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
3	2D Orthographic drawing	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
4	Sectional Views	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
5	Preparation of Machine Parts Drawing	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
6	Isometric Drawing	CO4	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
7	Shop Floor Drawing	CO4	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2

5028 - Industrial Maintenance and Servicing Laboratory

Subject Code	CO Code	CO	Blooms Level
5028	CO1	Apply appropriate servicing tools and maintenance procedures for general-purpose mechanical equipment and water pumps.	Apply
5028	CO2	Perform dismantling, inspection, assembly and servicing of automobile systems and internal combustion engine components following standard maintenance practices.	Apply
5028	CO3	Apply servicing, fault diagnosis and maintenance procedures for air-conditioning and refrigeration systems using standard tools and techniques.	Apply
5028	CO4	Analyze maintenance requirements and evaluate the performance of serviced mechanical systems by following	Analyze

	safe and standard industrial maintenance practices.	
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Sl. No.	Experiment	CO	PO Mapped	PSO Mapped
1	Maintenance of Bench Vice	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
2	Servicing and Maintenance of Water Pump	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
3	Dismantling & Assembly of IC Engine	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
4	Distributor & Carburettor Overhauling	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
5	Differential	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
6	Crank Shaft Overhauling	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
7	Clutch Assembly Servicing	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
8	Gear Box Overhauling	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2

5029 – Machine Shop Practice

Subject Code	CO Code	CO	Blooms Level
5029	CO1	Perform turning and allied machining operations on a lathe to produce components according to given specifications and standard workshop practices.	Apply
5029	CO2	Perform shaping, planing and slotting operations to produce flat surfaces, keyways and splines with the required dimensional accuracy.	Apply
5029	CO3	Apply milling machine operations to manufacture simple engineering	Apply

		components using appropriate cutting tools and machining parameters.	
5029	CO4	Analyze machining requirements, select suitable machine tools and evaluate the quality of machined components by following standard workshop and safety practices.	Analyze

Sl. No.	Experiment	CO	PO	PSO
1	Lathe Drilling	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
2	Lathe Turning	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
3	Lathe Thread Cutting	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
4	Lathe Knurling	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
5	Grinding	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
6	Form Turning	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
7	Spur Gear Milling	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
8	Guide way cutting	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
9	Slotting Practice	CO4	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2

6027 – Hydraulic Machinery & Fluid Power Laboratory

Subject Code	CO Code	CO	Blooms Level
6027	CO1	Perform experiments on hydraulic turbines and analyze their performance characteristics and efficiencies under different operating conditions.	Apply

6027	CO2	Conduct performance tests on hydraulic pumps and evaluate their operating characteristics, efficiencies and applications.	Apply
6027	CO3	Perform experiments on hydraulic devices and analyze their operating characteristics using standard laboratory procedures.	Analyze
6027	CO4	Develop and test hydraulic and pneumatic circuits using standard symbols, control components and simulation tools for industrial fluid power applications.	Create

Sl. No.	Experiment	CO	PO	PSO
1	Pelton Turbine Performance Test	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
2	Francis Turbine Performance Test	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
3	Kaplan Turbine Performance Test	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
4	Centrifugal Pump Test	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
5	Reciprocating Pump Test	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
6	Gear Pump Study/Test	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
7	Hydraulic Ram Test	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2

6028 – CADD Lab II

Subject Code	CO Code	CO	Blooms Level
6028	CO1	Apply CAD tools to create, edit and manage engineering drawings using layers, blocks and standard drafting practices.	Apply

6028	CO2	Develop three-dimensional solid models of engineering components using solid primitives, Boolean operations and solid modelling techniques.	Create
6028	CO3	Assemble, edit and generate sectional views of engineering components using advanced 3D modelling and rendering tools.	Apply
6028	CO4	Develop engineering models and piping layouts using AutoCAD, Pro/ENGINEER (Pro/E), CATIA and SolidWorks for engineering design applications.	Create

Sl. No.	Experiment	CO	PO	PSO
1	Layer Property Manager & Blocks	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
2	Solid Primitive Modelling	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
3	Boolean Operations	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
4	Solid Modelling (Extrude, Revolve, Sweep, Loft)	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
5	Assembly of 3D Models	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
6	Section of Solids	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
7	SolidWorks Modelling	CO4	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2

Subject Code	CO Code	CO	Blooms Level
6029	CO1	Perform advanced lathe operations to manufacture engineering components by applying standard machining practices and safety procedures.	Apply
6029	CO2	Perform shaping, milling, planning, slotting and grinding operations to produce engineering components with the required dimensional accuracy.	Apply
6029	CO3	Apply machining techniques to produce machine elements such as keyways, T-slots, gears and splines using appropriate machine tools.	Apply
6029	CO4	Develop CNC part programs and perform machining operations on CNC machines for manufacturing engineering components.	Create

Sl. No.	Experiment	CO	PO	PSO
1	Advanced Lathe Operations	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
2	Machine Handle Manufacturing	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
3	Male-Female Assembly	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
4	Shaping Practice	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
5	Milling Practice	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2

6	V-Block Machining	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
7	Keyway Cutting	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
8	T-Slot Cutting	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
9	Gear Cutting	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
10	Grinding Practice	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
11	Planning Machine Practice	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
12	Slotting Practice	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
13	CNC Programming	CO4	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
14	CNC Machining Practice	CO4	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2

8. Lab experiments 2021

List of equipment mapping

1007: Applied Chemistry Lab

Subject Code	CO Code	Course Outcome	Blooms Level
1007	CO1	Determine the strength of the given acid by titrating against standard sodium hydroxide solution.	Apply
1007	CO2	Estimate the amount of iron in the given solution using standard potassium dichromate solution.	Apply

1007	CO3	Determine the pH and conductivity of the given sample using pH meter and conductometer.	Apply
1007	CO4	Verify the first law of electrolysis and measure the EMF of an electrochemical cell.	Apply

Sl No.	List of Experiments	CO	PO, PSO Mapping	PSO
1	Preparation of standard solution of oxalic acid.	CO1	PO-1,2,3,4,5,6,7	PSO-1,2
2	Standardisation of hydrochloric acid using standard sodium carbonate solution.	CO1	PO-1,2,3,4,5,6,7	PSO-1,2
3	Standardisation of EDTA using zinc sulphate.	CO2	PO-1,2,3,4,5,6,7	PSO-1,2
4	Volumetric estimation of total hardness of given water sample using standard edta solution.	CO2	PO-1,2,3,4,5,6,7	PSO-1,2
5	Determination of ph using ph meter	CO3	PO-1,2,3,4,5,6,7	PSO-1,2
6	Determination of ph using ph paper	CO3	PO-1,2,3,4,5,6,7	PSO-1,2
7	Determine the conductivity of a given water sample using conductometer.	CO4	PO-1,2,3,4,5,6,7	PSO-1,2

1008 - Introduction to IT systems Lab

Subject Code	CO Code	Course Outcome	Blooms Level
1008	CO1	Utilize the basic functions and features of computer, Operating System and Internet applications.	Apply
1008	CO2	Make use of Stand-alone and Cloud-based office	Apply

		tools to prepare documents, spreadsheets and presentations.	
1008	CO3	Develop algorithms and flowcharts for solving simple problems.	Apply
1008	CO4	Develop Python programs to solve simple problems.	Apply

Sl No.	List of Experiments	CO	PO,	PSO
1	Demonstrate basic functions of Computer, hardware, ports/interfaces	1	PO1, PO4	
2	Operating system functions, file & directory management	1	PO1, PO2, PO4	
3	Use web browsers, search engines, email	1	PO1, PO2, PO4, PO5, PO7	
4	Features of OpenOffice	2	PO1, PO4	
5	OpenOffice Writer	2	PO1, PO3, PO4, PO6	
6	OpenOffice Calc	2	PO1, PO2, PO3, PO4, PO6	
7	OpenOffice Impress	2	PO1, PO3, PO4, PO6	
8	Cloud office tools	2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	
9	Algorithms and flowcharts	3	PO1, PO2, PO3, PO7	
10	Python I/O and arithmetic	4	PO1, PO2, PO3, PO4, PO7	

11	if/else programs	4	PO1, PO2, PO3, PO4, PO7	
12	Iterative constructs	4	PO1, PO2, PO3, PO4, PO7	
13	Open-ended project	4	PO1, PO2, PO3, PO4, PO5, PO6, PO7	

1009 – Sports & Yoga

Subject Code	CO Code	Course Outcome	Blooms Level
1009	CO1	Apply warming up and warming down exercises in daily physical fitness activities.	Apply
1009	CO2	Apply stretching, rotation and flexibility exercises in daily physical fitness activities.	Apply
1009	CO3	Make use of acquired yoga asanas skill and pranayama method in daily lifestyle.	Apply
1009	CO4	Utilize the acquired weight training skills for the development of muscular strength and development. Utilize the acquired skills in playing sports and games.	Apply

Sl. No.	Practical Work	CO	PO PSO Mapping	PSO
1	Warming-up exercises	CO1	PO1, PO2, PO5, PO6, PO7,	
2	Warming-down exercises	CO1	PO1, PO2, PO5, PO6, PO7,	

3	Stretching exercises	CO2	PO1, PO2, PO5, PO6, PO7,	
4	Rotation and flexibility exercises	CO2	PO1, PO2, PO5, PO6, PO7,	
5	Practice of Yoga Asanas	CO3	PO1, PO2, PO5, PO6, PO7,	
6	Practice of Pranayama techniques	CO3	PO1, PO2, PO5, PO6, PO7,	
7	Weight training exercises	CO4	PO1, PO2, PO3, PO5, PO6, PO7,	PSO1,PSO2
8	Muscular strength development exercises	CO4	PO1, PO2, PO3, PO5, PO6, PO7,	PSO1,PSO2
9	Muscular endurance exercises	CO4	PO1, PO2, PO3, PO5, PO6, PO7,	PSO1,PSO2
10	Practice of sports skills and games	CO4	PO1, PO2, PO3, PO5, PO6, PO7,	PSO1,PSO2
11	Participation in team games	CO4	PO1, PO2, PO3, PO5, PO6, PO7,	PSO1,PSO2
12	Activities for leadership, cooperation and fair play	CO4	PO1, PO2, PO3, PO5, PO6, PO7,	PSO1,PSO2

2006: Applied Physics Lab

Subject Code	CO Code	Course Outcome	Blooms Level
2006	CO1	Select appropriate measuring tools and make measurements with accuracy and precision.	Applying
2006	CO2	Apply and illustrate the concepts of mechanics and properties of matter through experiments.	Applying
2006	CO3	Experiment with lens, prism and glass slab to realize the basic laws of ray optics.	Applying

2006	CO4	Make use of V–I characteristics of conductors and semiconductors to determine the resistance of materials.	Applying
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Sl No.	List of Experiments	CO	PO,	PSO
1	Vernier calipers	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
2	Screw gauge	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
3	Spherometer	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
4	Parallelogram law of forces	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
5	Convex lens	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
6	Ohm's law- verification	CO4	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
7	Hook's Law	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
8	Moment Bar	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
9	Simple Pendulum	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
10	U-Tube Apparatus	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
11	Snell's Law	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2

12	Semiconductor Diode	CO4	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
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2008 - Communication Skills in English Lab

Subject Code	CO Code	CO	Blooms Level
2008	CO1	Use words, phrases and sentences accurately and with correct pronunciation in real life situations.	Apply
2008	CO2	Listens to and comprehends the substance and central idea of simple narratives and descriptions.	Analyze
2008	CO3	Use apt language functions while making statements, asking questions, giving instructions, and reporting events.	Create
2008	CO4	Narrate simple experiences and series of events to convey its essence and intention and present ideas coherently, confidently and with clarity in debates, discussions and interviews.	Create

Sl No.	List of Experiments	CO	PO, Mapping
1	Listen to the correct pronunciation of words including stress and accent	1	PO6, PO7
2	Comprehend the meaning of words, phrases and sentences and use them in real-life situations	1	PO2, PO6, PO7

3	Listen to simple narratives, conversations and descriptions	2	PO2, PO6, PO7
4	Understand the gist/central idea of narratives and descriptions and convert them into various discourses	2	PO2, PO3, PO6, PO7
5	Role-play a typical workplace situation using proper language functions	3	PO3, PO5, PO6, PO7
6	Speak with ease using the language functions needed for different situations	3	PO3, PO5, PO6, PO7
7	Speak about simple experiences and events with correct grammar	4	PO3, PO6, PO7
8	Take part in debates and discussions confidently and convey the intended meaning effectively	4	PO3, PO5, PO6, PO7

2009 – Engineering Workshop Practice

Subject Code	CO Code	Course Outcome	Blooms Level
2009	CO1	Identify the safety precautions, tools and devices required to make carpentry joints.	Applying
2009	CO2	Make use of various tools, machines, instruments and power tools used in the Fitting shop to make fitting joints.	Applying

2009	CO3	Make use of various tools, machines, instruments and power tools used in the Welding shop to make welding joint.	Applying
2009	CO4	Utilize different sheet metal tools and measuring instruments to make sheet metal joints.	Applying
2009	CO5	Make use of various tools and accessories to practice electrical wiring, motor connection and soldering.	Applying

Sl No.	List of Experiments	CO	PO	PSO
1	Carpentry – T Halved Joint	CO1	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
2	Fitting – L - Joint	CO2	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
3	Welding - Straight line welding	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
4	Welding - Butt joint Welding.	CO3	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
5	Sheet metal - locked grooved joint-	CO4	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
6	Sheet metal - Paned down	CO4	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
7	one lamp by one switch in conduit wiring	CO5	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
8	stair case for one lamp by two switches	CO5	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2

9	Connection of single phase or three phase induction motor with DOL starter	CO5	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
10	Soldering & desoldering	CO5	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2

2028 - Basic CAD Lab

Subject Code	CO Code	CO	Blooms Level
2028	CO1	Illustrate the use of computer aided drafting software.	Understand
2028	CO2	Identify various commands used in CAD.	Understand
2028	CO3	Apply knowledge to draw simple two-dimensional drawings and sections using CAD.	Apply
2028	CO4	Construct Isometric drawing of simple objects.	Apply

Sl No.	List of Experiments	CO	PO	PSO
1	Components of AutoCAD software window	CO1	PO1, PO2, PO3, PO4, PO7	PSO1

2	CAD basics	CO1	PO1, PO2, PO3, PO4, PO7,	PSO1
3	Setting up new drawing	CO2	PO1, PO2, PO3, PO4, PO7	PSO1
4	Draw and modifying commands	CO2	PO1, PO2, PO3, PO4, PO7	PSO1
5	orthographic views of simple engineering objects like C-block, Stepped block, Cylindrical block	CO3	PO1, PO2, PO3, PO4, PO5, PO7	PSO1, PSO1
6	Isometric views of simple objects such as cube, step block, cylinder	CO4	PO1, PO2, PO3, PO4, PO7	PSO1, PSO1

2029: Engineering Mechanics Lab

Subject Code	CO Code	CO	Blooms Level
2029	CO1	Identify the force systems for given conditions by applying the basics of mechanics.	Apply
2029	CO2	Determine unknown forces of different engineering systems.	Apply
2029	CO3	Infer centre of gravity and mass moment of inertia.	Apply

2029	CO4	Determine strains in mutually perpendicular directions under axial tension. Determine the coefficient of friction on a plane through experimentation.	Apply
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Sl No.	List of Experiments	CO	PO	PSO
1	Determination of resultant of concurrent force system graphically	CO1	PO1, PO2, PO3, PO4, PO5	PSO1,
2	Verify Lami's theorem by finding forces in various members of Jib crane.	CO1	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
3	Determine support reactions for simply supported beam.	CO2	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
4	Determination of centroid of different laminae.	CO3	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
5	Verify the law of moments by using a bell crank lever	CO3	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
6	Determination of Coefficient of Friction between two surfaces on horizontal plane.	CO4	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
7	Determination of Coefficient of Friction between two surfaces on inclined plane	CO4	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2

3026 Material Testing and Metallography Lab

SAR COURSE CODE	COURSE OUTCOME	
3026	Apply theoretical knowledge of material testing to conduct tension test on UTM for ductile and brittle material.	
3026	Apply theoretical knowledge of material testing to find out the hardness of various treated and untreated steels using Vickers hardness tester & Brinell hardness tester.	
3026	Apply theoretical knowledge of material testing to conduct Impact test and torsion test.	
3026	To study the microstructure of low, medium & high carbon steels by sample preparation using disc polishing (fine polishing) and to find cracks in casting by conducting visual inspection, dye penetrant test and magnetic particle test (NDT).	

3026 Material Testing and Metallography Lab

SL.NO	Practical Activity	Relevant PO	Relevant PSO
1	BRINELL HARDNESS TEST	PO1, PO2,PO3,PO4,PO5	PSO1, PSO2
2	CHARPY IMPACT TEST	PO1, PO2,PO3,PO4,PO5	PSO1, PSO2
3	TENSION TEST ON MILD STEEL PLANE BAR	PO1, PO2,PO3,PO4,PO5	PSO1, PSO2
4	TENSION TEST ON CLOSED COILED SPRING	PO1, PO2,PO3,PO4,PO5	PSO1, PSO2

5	COMPRESSION STRENGTH OF CONCRETE CUBE		
6	TORSION TEST ON MILD STEEL ROD	PO1, PO2,PO3,PO4,PO5,	PSO1, PSO2
7	IZOD IMPACT TEST	PO1, PO2,PO3,PO4,PO5	PSO1, PSO2
8	ROCKWELL HARDNESS TEST	PO1, PO2,PO3,PO4,PO5	PSO1, PSO2
9	COMPRESSION TEST ON OPEN COILED SPRING	PO1, PO2,PO3,PO4,PO5	PSO1, PSO2
10	NON DESTRUCTIVE TEST	PO1, PO2,PO3,PO4,PO5,PO7	PSO1, PSO2
	(A) ULTRASONIC FLAW DETECTION TEST	PO1, PO2,PO3,PO4,PO5,PO7	PSO1, PSO2
	(B) MAGNETIC CRACK DETECTION TEST	PO1, PO2,PO3,PO4,PO5,PO7	PSO1, PSO2
	(C)DYE PENETRATION TEST	PO1, PO2,PO3,PO4,PO5,PO7	PSO1, PSO2

3027 Workshop III

SAR COURSE CODE	COURSE OUTCOME
3027	Perform machining operations on lathe and shaper.
3027	Apply technical skill to practice fitting operations and use of various gauges.
3027	Perform fabrication works by making semi-permanent joints in metal sheets and practice welding operations.

3027	Apply technical skill to perform smithy and foundry work.
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SL.NO	Practical Activity	Relevant PO	Relevant PSO
1	PLAIN TURNING	PO1,PO2,PO3,PO4,PO5,PO6	PSO1, PSO2
2	TAPER TURNING	PO1,PO2,PO3,PO4,PO5,PO6	PSO1, PSO2
3	BALL AND CURVE TURNING	PO1,PO2,PO3,PO4,PO5,PO6	PSO1, PSO2
4	CUBE SHAPING	PO1,PO2,PO3,PO4,PO5,PO6	PSO1, PSO2
5	SLOT CUTTING	PO1,PO2,PO3,PO4,PO5,PO6	PSO1, PSO2
6	CURVE TURNING	PO1,PO2,PO3,PO4,PO5,PO6	PSO1, PSO2
7	BALL TURNING	PO1,PO2,PO3,PO4,PO5,PO6	PSO1, PSO2

3028 Electrical and Electronics Lab

SAR COURSE CODE	COURSE OUTCOME
3028	Select appropriate instruments and methods for measuring voltage, current, resistance and power in a given circuit.
3028	Develop simple circuits in open conduit system for domestic and motor wiring.
3028	Compute performance characteristics of AC motor and single-phase transformer using direct loading method.

3028	Construct rectifier circuits using the knowledge of various electronic components.
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SL.NO	Practical Activity	Relevant PO	Relevant PSO
1	ONE LAMP ONE PLUG SOCKET OUTLET	PO1,PO2,PO3,PO4,PO5,PO6	PSO1, PSO2
2	STAIRCASE WIRING	PO1,PO2,PO3,PO4,PO5,PO6	PSO1, PSO2
3	MEASURING OF POWER INDC CIRCUIT	PO1,PO2,PO3,PO4,PO5	PSO1, PSO2
4	AC POWER MEASUREMENTS	PO1,PO2,PO3,PO4,PO5	PSO1, PSO2
5	POWER MEASUREMENTS 3 PHASE CONNECTION	PO1,PO2,PO3,PO4,PO5	PSO1, PSO2
6	LOAD TEST ON SINGLE PHASE TRANSFORMER	PO1,PO2,PO3,PO4,PO5,PO6	PSO1, PSO2
7	EFFIENCY OF AC MOTOR	PO1,PO2,PO3,PO4,PO5,PO6	PSO1, PSO2
8	COADING OF RESISTOR	PO1,PO2,PO3,PO4,PO5,PO7	PSO1, PSO2
9	HALFWAVE RECTIFIER	PO1,PO2,PO3,PO4,PO5,PO7	PSO1, PSO2

3029 Advanced CADD Lab

SAR COURSE CODE	COURSE OUTCOME
3029	Draw various fastening devices by choosing proper tools in the software.

3029	Prepare detailed drawing of a complex component in a fast and effective manner.
3029	Implement GD&T symbols and surface finish symbols in a CAD drawing.
3029	Identify the basic concepts of 3D modeling in a software environment.

SL.NO	Practical Activity	Relevant PO	Relevant PSO
1	DOUBLE REVET LAP JOINT	PO1,PO2,PO3,PO4,PO5	PSO1, PSO2
2	DOUBLE REVET BUT JOINT	PO1,PO2,PO3,PO4,PO5	PSO1, PSO2
3	HEXAGONAL HEADED BOLT AND NUT A WASHER	PO1,PO2,PO3,PO4,PO5	PSO1, PSO2
4	PROTECTED FLANGE COUPLING	PO1,PO2,PO3,PO4,PO5,PO6	PSO1, PSO2
5	FOOT STEP BEARING	PO1,PO2,PO3,PO4,PO5,PO6	PSO1, PSO2
6	SHAFT BEARING	PO1,PO2,PO3,PO4,PO5,PO6	PSO1, PSO2
7	LEVER	PO1,PO2,PO3,PO4,PO5,PO7	PSO1, PSO2

4027 Thermal Engineering Lab

SAR COURSE CODE	COURSE OUTCOME
4027	Apply theoretical knowledge in evaluating the performance of IC engines

4027	Determination of viscosity, calorific value, flash point and fire point of fuels.
4027	Demonstrate performance test on Heat exchangers
4027	Conduct performance test on air compressors

SL.NO	Practical Activity	Relevant PO	Relevant PSO
1	VALVE TIMING OF 4-STROKE SINGLE CYLINDER DIESEL ENGINE	PO1,PO2,PO3,PO4,PO5	PSO2
2	TWIN CLINDET TWO STAGE AIR COMPRESSOR	PO1,PO2,PO3,PO4,PO5	PSO2
3	PARALLEL FLOW HEAT EXCHANGER	PO1,PO2,PO3,PO4,PO5	PSO2
4	COUNTER FLOW HEAT EXCHANGER	PO1,PO2,PO3,PO4,PO5	PSO2
5	FLASH AND FIRE POINT	PO1,PO2,PO4,PO5	PSO2
6	SHELL AND TUBE HEAT EXCHANGER	PO1,PO2,PO3,PO4,PO5	PSO2
7	LOAD TEST ON SINGLE CYLINDER 4-STROKE DIESEL ENGINE	PO1,PO2,PO3,PO4,PO5	PSO2
8	MEASURING OF VISCOSITY REDWOOD VISCOMETER	PO1,PO2,PO4,PO5	PSO2

4028 Fluid Mechanics Lab

SAR COURSE CODE	COURSE OUTCOME
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4028	Describe the methods for pressure measurement and determine the metacentric height of floating body.
4028	Measure various properties such as pressure, velocity, flow rate using various instruments and perform the experiments to understand Bernoullis theorem and its applications.
4028	Distinguish various pipe fittings and determine co-efficient of friction and minor losses in pipe flow.
4028	Determine the co-efficient of discharge of Notches and Hydraulic co-efficients of orifice based on experiments.

SL.NO	Practical Activity	Relevant PO	Relevant PSO
1	VENTURIMETER TEST	PO1,PO2,PO3,PO4,PO5	PSO1, PSO2
2	BERNOULLIS THEOREM APPARATUS	PO1,PO2,PO3,PO4,PO5	PSO1, PSO2
3	METACENTRIC HEIGHT OF FLOATING BODY	PO1,PO2,PO3,PO4,PO5	PSO1, PSO2
4	PIPE FRICTION APPARATUS	PO1,PO2,PO3,PO4,PO5	PSO1, PSO2
5	COEFFICIENT OF DISCHARGE AT RECTANGULAR NOTCH	PO1,PO2,PO3,PO4,PO5	PSO1, PSO2
6	COEFFICIENT OF DISCHARGE AT TRIANGULAR NOTCH	PO1,PO2,PO3,PO4,PO5	PSO1, PSO2
7	HYDRAULIC COEFFICIENTS OF ORIFICE	PO1,PO2,PO3,PO4,PO5	PSO1, PSO2
8	DETERMINATION OF MINOR LOSSES IN FLOW THROUGH PIPES	PO1,PO2,PO3,PO4,PO5	PSO1, PSO2

4029 Mechanical Workshop IV

SAR COURSE CODE	COURSE OUTCOME
4029	Perform machining operations on lathe and shaper
4029	Apply technical skill to practice fitting operations and use of various gauges
4029	Perform fabrication works by making semi-permanent joints in metal sheets and practice welding operations
4029	Apply technical skill to perform smithy and foundry work

SL.NO	Practical Activity	Relevant PO	Relevant PSO
1	LATHE	PO1,PO2,PO3,PO4,PO5,PO6	PSO1, PSO2
2	SHAPER	PO1,PO2,PO3,PO4,PO5,PO6	PSO1, PSO2
3	WELDING	PO1,PO2,PO3,PO4,PO5,PO6,PO7	PSO1, PSO2
4	SMITHY	PO1,PO2,PO3,PO4,PO5,PO6,PO7	PSO1, PSO2
5	FITTING	PO1,PO2,PO3,PO4,PO5,PO6,PO7	PSO1, PSO2
6	FOUNDRIYING	PO1,PO2,PO3,PO4,PO5,PO6,PO7	PSO1, PSO2
7	SHEET METAL	PO1,PO2,PO3,PO4,PO5,PO6	PSO1, PSO2

SAR COURSE CODE	COURSE OUTCOME
5027	Perform various operations on Production type Lathes.
5027	Practice gear cutting and drilling operations on Milling machines and Drilling machines respectively.
5027	Demonstrate planing and slotting operations on planing and slotting machines.
5027	Apply theoretical knowledge to perform grinding operations in cylindrical/surface/centerless Grinding machines.

Sl. No.	Practical Activity	Relevant PO	Relevant PSO
1	TAPER TURNING	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
2	THREAD CUTTING	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
3	FORM TURNING	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
4	DRILLING	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
5	GRINDING	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
6	SLOTING	PO1, PO2,PO3,PO4,PO5,PO6	PSO1,PSO2
7	GUIDE WAY CUTTING	PO1, PO2,PO3,PO4,PO5,PO6	PSO1,PSO2
8	SPUR GEAR MILLING	PO1, PO2,PO3,PO4,PO5,PO6	PSO1,PSO2
9	KNURLING	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2

SAR COURSE CODE	COURSE OUTCOME
5029	Aware of safety precautions to be followed in an automobile workshop and familiarize the use of tools, gauges and equipments in automotive servicing.
5029	Demonstrate the dismantling and assembling of two stroke and four stroke Petrol engines and their components.
5029	Demonstrate the dismantling and assembling of two stroke and four stroke Diesel engines and their components.
5029	Apply the technical knowledge in dismantling and assembling of automobile transmission system.

Sl. No.	Practical Activity	Relevant PO	Relevant PSO
1	DISMANTLING ASSEMBLING OF TWO STROKE ENGINE	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
2	DISMANTLING ASSEMBLING OF 4 STROKE ENGINE	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
3	DISMANTLING ASSEMBLING OF SINGLE PLATE CLUTCH	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
4	OVERHAULING OF SYNCHRONIZED GEAR BOX	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
5	DISMANTLING ASSEMBLING OF FUEL FEED PUMP	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
6	DISMANTLING ASSEMBLING OF DIFFERENTIAL ASSEMBLY	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2

7	DISMANTLING ASSEMBLING OF RECICULATOR BALL BEARING TYPE STEERING GEAR BOX	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
8	OVERHAULING OF TANDEM MASTER CYLINDER	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
9	DISMANTLING ASSEMBLING OF FULLY FLOATING TYPE REAR AXLE	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2

5028 Hydraulic Machine Lab

SAR COURSE CODE	COURSE OUTCOME
5028	Apply the theoretical knowledge of hydraulic turbines to perform the constant speed load test on impulse turbines and plot the characteristic curves.
5028	Apply the theoretical knowledge of hydraulic turbines to perform the constant speed load test on reaction turbines and plot the characteristic curves.
5028	Apply the theoretical knowledge of hydraulic pumps to conduct the performance tests of various pumps and plot the characteristic curves.
5028	Describe the construction and working of Hydraulic Ram, Hydraulic Lift, Hydraulic Jack, Hydraulic Press and test the performance of Hydraulic Ram.

Sl. No.	Practical Activity	Relevant PO	Relevant PSO
1	PERFORMANCE CHARACTERISTICS ON FRANCIS TURBINE	PO1, PO2,PO3,PO4,PO5,PO7	PSO1,PSO2

2	PERFORMANCE CHARACTERISTICS ON CENTRIFUGAL PUMP	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
3	PERFORMANCE CHARACTERISTICS ON PELTON WHEEL TURBINE	PO1, PO2,PO3,PO4,PO5,PO7	PSO1,PSO2
4	PERFORMANCE CHARACTERISTICS ON RECIPROCATING PUMP	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
5	PERFORMANCE TEST ON GEAR PUMP	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
6	PERFORMANCE TEST ON HYDRAULIC RAM	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2

6028 Refrigeration and Airconditioning Lab

SAR COURSE CODE	COURSE OUTCOME
6028	Identify the parts of a Vapour Compression Refrigeration system and perform general servicing and maintenance.
6028	Apply technical skills in dismantling, servicing and assembling of various types of compressor, condenser, expansion device and evaporator including evacuation, gas charging etc.
6028	Familiarize with different refrigeration test rigs and conduct various performance tests.
6028	Apply technical skills in dismantling, servicing and assembling of various refrigeration equipment like the air conditioner, water cooler, deep freezer etc.

Sl. No.	Practical Activity	Relevant PO	Relevant PSO
1	STUDY PARTS AND FUNCTION OF SIMPLE VAPOUR COMPRESSION REFRIGERATION SYSTEM	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
2	GENERAL OF AIR CONDITIONER	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
3	DISMANTLING ASSEMBLING OF COMPRESSOR	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
4	DISMANTLING ASSEMBLING OF EXPANSION DEVICES	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
5	DISMANTLING ASSEMBLING OF CONDENSOR	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
6	DISMANTLING ASSEMBLING OF EVAPORATOR	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
7	PERFORMANCE TEST ON REFRIGERATION TEST	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
8	DISMANTLING ASSEMBLING OF AIR CONDITIONER	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2

6027 Production Software Lab

SAR COURSE CODE	COURSE OUTCOME
6027	Demonstrate the key characteristics and Interface of SOLIDWORKS software.

6027	Explain about Design tools and essentials of SOLIDWORKS software.	
6027	Illustrate the Assembly concept and build the virtual components.	
6027	Build the 2D Drawings with industry Standards and annotation.	

Sl. No.	Practical Activity	Relevant PO	Relevant PSO
1	STUDY ABOUT INTERFACE OF SOFTWARE	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
2	2D PROFILE IN SKETCHER MODE	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
3	3D MODELLING OF SOLID 1	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
4	3D MODELLING OF SOLID 2	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
5	3D MODELLING OF UNIVERSAL COUPLING	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
6	UNIVERSAL COUPLING ASSEMBLY DRAWING	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
7	3D MODELLING TO 2D DRAWING PRACTICE	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
8	DRAWING PRACTICE WITH WELDING SYMBOLS	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2

6029 Advanced Machine Tools Lab

SAR COURSE CODE	COURSE OUTCOME	
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6029	Perform various operations in CNC Machines (lathe/milling).
6029	Demonstrate simple part programming operations (turning/milling).
6029	Apply technical skill to operate sophisticated machines in manufacturing industry (Non-conventional machining).
6029	Perform simple works on 3D printing Machine and develop elementary ideas on robotics and applications.

Sl. No.	Practical Activity	Relevant PO	Relevant PSO
1	STUDY OF CNC MACHINE	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
2	STUDY OF CNC TURNING PROGRAMME	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
3	STUDY OF CNC MILLING PROGRAMME	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
4	STUDY OF ULTRASONIC MACHINE	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
5	3D PRINTING	PO1, PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2

2.2.4 Quality of Students Projects and Report Writing (35)

A. Identification of projects and allocation methodology (3)

As per the curriculum, project work is for a duration of two semesters spanning in fifth and sixth semesters. Each student group consisting of about six to eight members is expected to plan, design and estimate a complete system technical project or a combination of both. The project work may be undertaken in any allied area of Mechanical engineering and must have relevance to project identification, approval, review and monitoring is controlled by a Project coordinator, Head of projects fulfilling the requirements listed in PO/PSO

The objectives of the project are to give the students: -

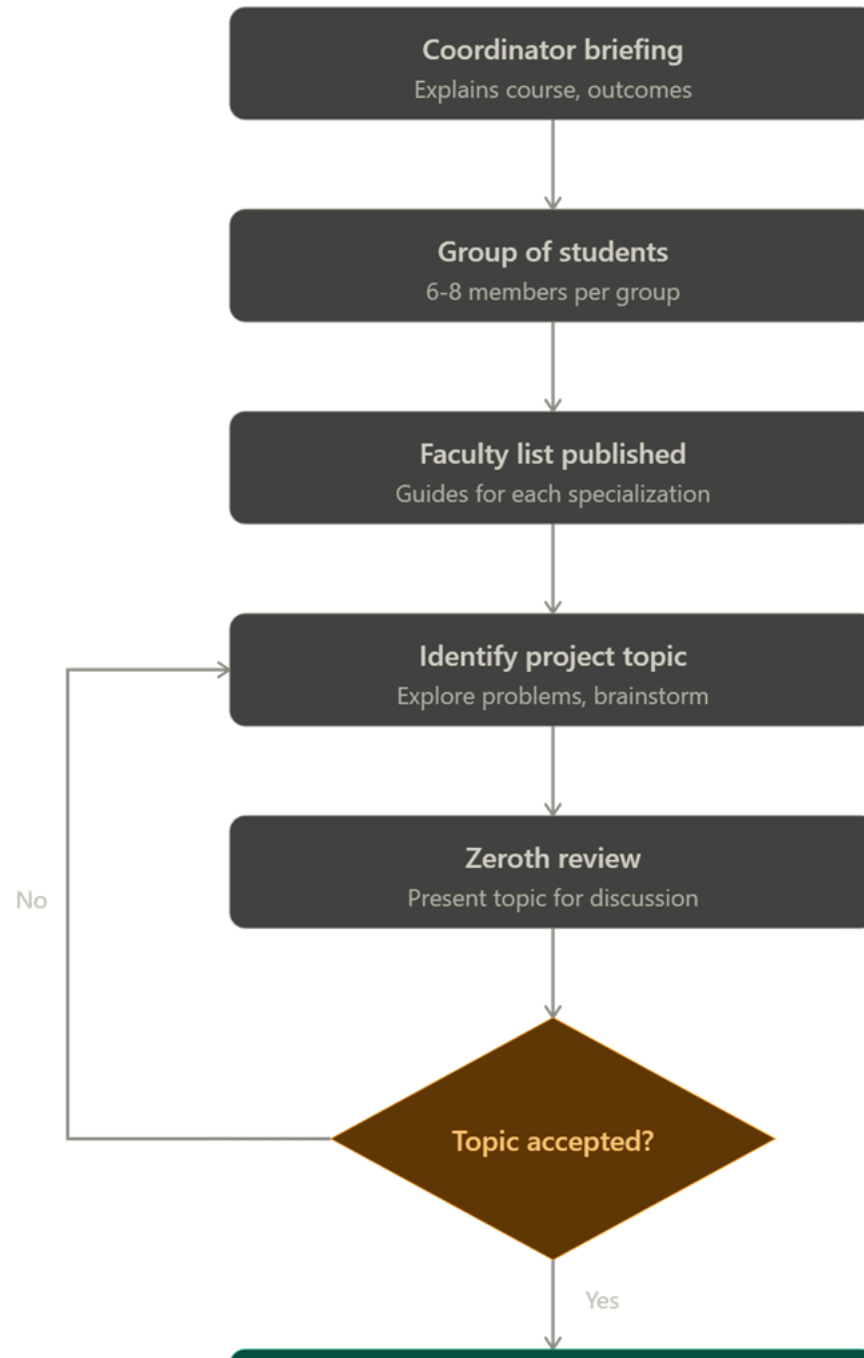
- An introduction into doing a project work and to inculcate a research mind in them
- Ability to review state of the art of their project topic and get training on systematic and methodological approach of solving a problem using their theoretical background of their program.
- An exposure to various data collection methods like inventory survey and total station survey.
- An experience in data preparation, sorting, data checking and data exploration.
- Competency in exploring, understanding and developing solutions from the collected data
- Knowledge of writing a technical report
- Special skills and abilities like interpersonal skills, communication skills, attitudes and values.
- Opportunities to develop leadership quality and ability to work as a team.
- A confidence in taking up a new project and completing it successfully

A. Identification of projects and allocation methodology (3)

- A coordinator is designated to oversee and coordinate the project work of students.
- At the start of the course, students are given a briefing and general orientation through interactive sessions conducted by internal and external resource persons. These sessions cover:
 - The importance and need for project work
 - The expected outcomes of the project and seminar
 - How to search for and select project topics
 - How to define a problem statement
 - How to conduct a literature survey and design a methodology
 - How to draw inferences using various assessment tools and methods
 - How to document the study
 - The importance of publishing the work
- In the 5th semester, students are divided into groups of maximum 8 to 10 members.
- Grouping is done based on students capabilities, involvement, academic history, and place of residence.
- Students are informed about the faculty's areas of expertise across various specializations to guide project work.
- A list of faculty members along with their areas of expertise in different fields of mechanical engineering is shared with students.
- Students search for socially relevant topics.
- Students are encouraged to interact with Local Self-Government Departments, Panchayats, local bodies, etc.
- Problems identified through these interactions and other sources are compiled into a list.
- Students brainstorm topics with peers and faculty.
- A "Zeroth Presentation" is conducted, in which students present their identified topics. An open discussion follows to explore the scope of each topic, the challenges involved, and its practical feasibility within the available timeframe.
- A project guide and topic are allotted to each project group.
- The project coordinator, in consultation with the Head of Section, allocates the project topic and guide to each group.

Faculty expertise is a key consideration in this allocation process

Figure 2.18 Identification of projects and allocation methodology



Guide assigned
Project guide allotted to group

Table 2.43 Details of project guides and suggested titles (2020 – 2023 Batch)

Sl.No	Faculty Name	Designation	Qualification	Specialization
1	Arun N R	HOD	MTech	Industrial Engineering
2	Sreejith P S	Lecturer	BTech	Mechanical Engineering
3	Midhun K M	Lecturer	BTech	Mechanical Engineering
4	Sojan O Thomas	Lecturer	BTech	Mechanical Engineering
5	Derin David	Lecturer	BTech	Mechanical Engineering
6				
Sl No	Name of Faculty	Titles		
1	Midhun K M	1. Wheel Sprayer 2. Battery Operated Pesticide Sprayer 3. Seed Sowing Machine		
2	Sreejith P S	1. Pneumatic Vice 2. Pneumatic Sheet Metal Cutting Machine 3 Pneumatic Pick and Place System		
3	Midhun K M	1. Hydraulic Manhole Cover Lifter 2. Hydraulic Scissor Lift 3 Hydraulic Drum Lifter		
4	Arun N R	1. Sanitary Napkin Dispensing Unit 2. Automatic Hand Sanitizer Dispenser 3Smart Medicine Dispenser		

5	Sojan O Thomas	1. Three Axis Pneumatic Trailer 2. Hydraulic Tipper Trailer 3. Multi-Directional Loading Trailer
6	Derin David	1. Waste Plastic into Plastic Brick Making Machine 2. Plastic Shredding Machine 3. PET Bottle Crushing Machine

Table 2.44 Details of project guides and suggested titles (2021 – 2024 Batch)

Sl. No	Faculty Name	Designation	Qualification	Specialization
1	Jaison P Paul	HOD	MTech	
2	Nikhil C N	Lecturer	BTech	Mechanical Engineering
3	Anil Omanakuttan	Lecturer	BTech	Mechanical Engineering
4	C A Kiran	Lecturer	BTech	Mechanical Engineering

Sl No	Name of Faculty	Titles
1	Jaison P Paul/Leo Lewis	1. Go-Kart 2. Electric Go-Kart ATV (All-Terrain Vehicle)
2	Nikhil C N	1. Ball Throwing Machine 2. Automatic Cricket Bowling Machine 3. Tennis Ball Serving Machine
3	Anil Omanakuttan	1. Automatic Handbrake System 2. Automatic Emergency Braking System 3. Hill Hold Assist System
4	C A Kiran	1. Coconut Dehusking Machine 2. Coconut Scraping Machine 3. Coconut Shell Cutting Machine

Table 2.45 Details of project guides and suggested titles (2022 – 2025 Batch)

Sl. No	Faculty Name	Designation	Qualification	Speciali
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1	Harikrishnan T K	HOD	ME	CAD C
2	Nikhil C N	Lecturer	BTech	Mechanical E
3	Sini Mary Lona	Lecturer	BE	Mechanical E
4	Kiran C A	Lecturer	BTech	Mechanical E
5	Achuthan R	Lecturer	BTech	Mechanical E
6	Leo Lewis	Lecturer	BTech	Mechanical E

Sl No	Name of Faculty	Titles		
1	Harikrishnan T K/Leo Lewis	1. EFFICYCLE 2. Electric Bicycle 3. Solar Assisted Electric Vehicle		
2	Nikhil C N	1. Electric Load Carrier 2. Battery Operated Goods Carrier 3. Electric Platform Trolley		
3	Sini Mary Lona	1. Pyrolysis of Plastic Waste 2. Plastic to Fuel Conversion System 3. Waste Tyre Pyrolysis Unit		
4	Kiran C A	1. Automatic Sand Filter 2. Automatic Water Purification System 3. Multi-Stage Water Filtration Unit		
5	Achuthan R	1. Forklift Using Hand Winch 2. Manual Hydraulic Forklift 3. Hand Operated Pallet Truck		

Table 2.46 Details of project guides and suggested titles (2023 – 2026 Batch)

Sl.No	Faculty Name	Designation	Qualification	Specialization
1	Harikrishnan T K	HOD	ME	CAD CAM

2	Sangeeth Martin	Lecturer	BTech	Mechanical Engineering
3	Leo Lewis	Lecturer	BTech	Mechanical Engineering
4	Sini Mary Lona	Lecturer	BE	Mechanical Engineering
5	Ashish M Pillai	Lecturer	BTech	Mechanical Engineering
Sl No.	Name of Faculty	Suggested Project Topics		
1	Harikrishnan T K & Sangeeth Martin	1. Coffin Lowering Machine 2. Hydraulic Casket Lowering Device 3. Manual Load Lowering Mechanism		
2	Leo Lewis	1. All Terrain Vehicle (ATV) 2. Off-Road Go-Kart 3. Utility Terrain Vehicle (UTV)		
3	Sini Mary Lona	1. Trolley Weed Cutter 2. Power Weeder 3. Battery Operated Grass Cutting Machine		
4	Ashish M Pillai	1. BLDC Electric Car 2. BLDC Electric Go-Kart 3. Battery Electric Vehicle (BEV) Prototype		

B. Types and relevance of the projects and their contribution towards attainment of POs and PSOs (5)

Table 2.47 Details of student projects and their relevance to POs and PSOs (2020 – 2023 Batch)

Group No.	Project Guide	Project Topic	List of Students	Relevant PO & PSO	Type of project
Group 1	Midhun K M	Wheel Sprayer	ABHAI DAVIS	PO1, PO2, PO3, PO4, PO5, PO6, PSO1, PSO2	Design & prototype
			ABHINAV M S		
			ABINAV P B		

			ADARSH P A		
			ADARSH V B		
			AJIN PRAVEEN		
			AJIRAJ.T.A		
			AKSHAY T M		
			ADARSH V R		
Group 2	Sreejith P S	Pneumatic Vice	SAGAL E S	PO1, PO2, PO3, PO4, PO6, PSO1, PSO2	Design & prototype
			SAIKRISHNA P V		
			SEBI P J		
			SREERAG K S		
			SUDHEESH K S		
			SUSHANTH V S		
			SWARAN P RAJAN		
			T S SHARON		
			THARUN JOJU		
Group 3	Midhun K M	Hydraulic Manhole Cover Lifter	ALIN K S	PO1, PO2, PO3, PO4, PO5, PO6, PSO1, PSO2	Design & prototype
			ALIN SHIBU		
			ALWIN A V		
			ALWIN MAJO		

			ALWIN VARGHESE		
			AMALKRISHNA K A		
			ANAND DAS .V .S		
			ANEX BABU		
			ANTONY JOSE		
Group 4	Arun N R	Sanitary Napkin Dispensing Unit	VISHNU M A	PO1, PO2, PO3, PO4, PO5, PO6, PSO1	Design & prototype
			ZEEON SANJOSE		
			ABIN C JOSHY		
			AKASH BIJU		
			ALVIN ANTONY XAVIER		
			CHINMAY.E.C.		
			JOHN GRACIOUS		
			KEVIN GEORGE		
			SAVIO VARGHESE WILSON		
Group 5	Sojan O Thomas	Three Axis Pneumatic Trailer	ARAVIND UNNIKRISHNAN	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO1, PSO2	Design & prototype
			ARUN SHAJAN V		

			BIMAL KRISHNA P B		
			CHRISTY JOHN P.D		
			DALBIN DANI M		
			DENIL DAVIS		
			DIBIN VARGHESE		
			EBY T A		
			EDWIN BABU		
Group 6	Derin David	Waste Plastic into Plastic Brick Making Machine	MANUKRISHNA P M	PO1, PO2, PO3, PO4, PO5, PO6, PSO1, PSO2	Design & prototype
			MIDHUN M R		
			MUHAMMED DILSHAN		
			NAVANEETH P SURESH		
			NAVEEN VARGHESE		
			NEVIN VARGHESE K.J		
			NIMAL DAVIS V		
			NOEL BABU		
			PRINCE THOMAS		

Group 7	Sreejith P S	Acetylene Powered Engine	EDWIN K O	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO1, PSO2	Design & prototype
			HARIKRISHNA HARIHARAN		
			HARIKRISHNA P K		
			JEWEL TITUS		
			JINESH P J		
			JISSU JOHNSON		
			JOHNUS K.SHAJU		
			KIRANDAS K		
			KRISHNARAJ M R		

Table 2.47 Details of student projects and their relevance to POs and PSOs (2021 – 2024 Batch)

Group No.	Project Guide	Project Topic	List of Students	Relevant PO & PSO	Type of project
Group 1	Nikhil C N	Go-Kart	YADUKRISHNAN P.K	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO1, PSO2	Design & prototype
			ABHISHEK K T		
			AJAY VENU		
			AKHIL P S		
			ANSIL T V		
			ASWIN BIJI		
			ASWIN P S		

			ATHUL C R		
			CHRISTO JOHN		
			EDWIN DAVIS		
			JOMON DAVIS		
			MAJO JOHNY		
			MARTIN KURIAN		
			RENJITH SADANANDAN		
Group 2	Anil Omanakuttan	Ball Throwing Machine	DOMINIC BENNY MALPAN	PO1, PO2, PO3, PO4, PO5, PO6, PSO1, PSO2	Design & prototype
			GEOSHEL GEORGE		
			JEBIN K J		
			JENAX P.J		
			JITHIN A V		
			JOMITH ANTONY		
			JOSHUAL JOSEPH		
			JOYAL JOY		
			JOYAL WILSON		
			JOYEL K D		
			JUSTIN DAVIS		
			JUVAL JOSHY		
			NIBIL K B		

			NIBIN K L		
Group 3	Jaison P Paul	Automatic Handbrake System	ABHAY JOSEPH	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO1	Design & prototype
			AJILKRISHNAN K U		
			AJIN LOUIS		
			AJITH P S		
			AJITH R		
			ALAN ALBY		
			ALAN NARAYANA K.AJU		
			ALBIN GEORGE		
			ALJO JOHN N		
			ALFIN RAPHY		
			ALTHAF V A		
			NIHAL BABY		
			RAHUL M R		
			ROSHAN ROY		
Group 4	C A Kiran	Coconut Dehusking Machine	ALWIN PAUL	PO1, PO2, PO3, PO4, PO5, PO6, PSO1, PSO2	Design & prototype
			AMITH KRISHNA K S		
			ANANTHUKRISHNA C S		
			ANDRIN E A		

			ANOLD VARGHESE		
			ASHIK A S		
			ASHIQ BABU		
			ATHUL BIJU		
			ATHUL KRISHNA K M		
			BOBIN BENNY		
			DANISH A P		
			SANJEEV K S		
			SARATH K B		
			VENKITESWAR GOPI		

Group No.	Project Guide	Project Topic	List of Students	Relevant PO & PSO	Type of project
Group 1	Nikhil C N	EFFICYCLE	ANTONY THOMAS	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO1, PSO2	Design & prototype
			NIGIL P J		
			A.A MOHAMMED ADHIL		
			ABHINAV		
			ABIN T J		
			ABIRAG K S		
			ADARSH J		

			ADHARSH M V		
			ADIL B PAVITHRAN		
			AJAY KRISHNA N M		
Group 2	Sini Mary Lona	Electric Load Carrier	AKASH P. SATHEESH	PO1, PO2, PO3, PO4, PO5, PO6, PSO1, PSO2	Design & prototype
			ALDRINOE ROCKEY		
			ALFRED JOY		
			AMAL C.J		
			AMAL SURESH		
			AMANANDH P S		
			AMEEN ABDUL JABBAR		
			ASHWIN U.S		
			AUSTIN N L		
			BAHUL JITH P B		
Group 3	Kiran C A	Pyrolysis of Plastic Waste	BRISTO BABY	PO1, PO2, PO3, PO4, PO5, PO6, PSO1, PSO2	Design & prototype
			EMMANUVEL E B		
			JITHIN K JAISON		
			JOSE JOHNSON		
			JOYAL JIMMY		
			LAVISH VARGHESE		
			MELVIN C B		

			MIDHUL MARTIN		
			PRATHUSH N P		
			SACHIN M R		
Group 4	Achuthan R	Automatic Sand Filter	SALAHUDHEEN AYYOobi	PO1, PO2, PO3, PO4, PO5, PO6, PSO1, PSO2	Design & prototype
			SHARUN K C		
			SHITHIN M S		
			SREEHARI A.R		
			SUHAIL A .A		
			THOMSON THOMAS P		
			AKHIL SHIJON		
			ARJUN K R		
			ATHUL KRISHNA M A		
			JES JOVET		
Group 5	Harikrishnan T K	Forklift Using Hand Winch	JOHN PAUL JOGI	PO1, PO2, PO3, PO4, PO5, PO6, PSO1	Design & prototype
			JOYEL JOSE		
			MIDHUN RAJAN		
			RINSHAN V R		
			SIDHARTH K DAS		
			SREEJITH SURESH		

			VIDHUKRISHNA P S	
			DANIEL BABY	
			VAISHNAV K THILAK	
			VINAYAK K S	

			Harikrishnan A S	
			Stephen N V	
			Mirash K J	
			Aswindas T P	

Table 2.47 Details of student projects and their relevance to POs and PSOs (2022 – 2025 Batch)

Group No.	Project Guide	Project Topic	List of Students	Relevant PO & PSO	Type of project
Group 1	Harikrishnan T K & Sangeeth Martin	Coffin Lowering Machine	AJAY K S	PO1, PO2, PO3, PO4, PO5, PO6, PSO1, PSO2	Design & prototype
			AJITH T.V.		
			ALBIN ANTOO		
			THOMAS P.SEBY		
			VAISHNAVU T S		
			AMAL DAVIS		
			ANTO SAMUEL JOY		
			DONN VARGHESE		

			JOYAL JOY		
			VAISHNAV VIJAYAN		
Group 2	Kiran C A	All Terrain Vehicle	AJEX JOY	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO1, PSO2	Design & prototype
			AMAL K S		
			AMALKRISHNA N S		
			BLAIZE GEORGE		
			CHRISTO JOBY		
			CLINTO JOY		
			EADRIN PLUTTAN		
			NAVEEN C NISHANTH		
			SOORAJ V S		
			SOUGAND K S		
Group 3	Sini Mary Lona	Trolley Weed Cutter	AADHIN SHAJU	PO1, PO2, PO3, PO4, PO5, PO6, PSO1, PSO2	Design & prototype
			ADITHYAKRISHNA K U		
			ADITHYAN K D		
			ARUN E M		
			JILAN JOSEPH		
			MAHROOF.K.M		
			SHAHIN P S		
			SREEKANTH . K		

Group 4	Ashish M Pillai	BLDC Electric Car	ADHUL KRISHNA	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO1, PSO2	Design & prototype
			AKSHAY V C		
			ALAN P J		
			ARJUN RAMESH		
			ARJUN SHABU		
			ARYAN SUBRAHMANIAN		
			JOYAL K V		
			KIRAN A U		
			MISHAL SAPHY		
			RAHUL S		

C. Process for monitoring and evaluation (5)

Revision 2021

The Major Project undertaken by students is monitored and evaluated through a structured, two-tier mechanism comprising Continuous Internal Assessment (CIA) and End Semester Examination (ESE). This dual process ensures that the student is also being subjected to a rigorous, criteria-based summative evaluation at the end of the project (ESE). Together, these mechanisms provide a holistic assessment of the student's technical competence, consistency of effort, and overall performance.

Continuous Internal Assessment (CIA) — Monitoring Process

As per clause 11.2.5 of SITTTT curriculum of 2021 revision, the CIA of the Major Project is computed out of 75 marks distributed across three components:

Table 2.48 Continuous Internal Assessment (CIA) – Major Project

Component	Tool Used	Weightage	Guideline

Summative	Major project evaluation by the department	40%	As per the format specified in the handbook
Formative	Weekly activity report (diary)	40%	Weekly diary maintained and submitted to the concerned faculty in-charge; signed diary submitted to the department at project completion
Attendance & Punctuality	—	20%	As per the concerned organizations norms

Formative Monitoring (Weekly Tracking)

- Each student is assigned a Faculty Guide/Mentor who is responsible for tracking day-to-day progress.
- Students are required to maintain a project diary, recording the tasks performed, technical challenges faced, and learning outcomes achieved during each week.
- The diary is reviewed and signed weekly by the faculty in-charge to authenticate the entries and provide continuous feedback.
- At periodic intervals (e.g., fortnightly or monthly), the faculty in-charge assesses the diary for regularity, depth of work recorded, and adherence to the proposed project timeline.
- On completion of the project, the duly signed diary is submitted to the department as documentary evidence of continuous engagement, which is used to award the formative component of marks.

Summative Internal Evaluation

- A departmental evaluation committee (comprising the Head of Department, project coordinator, and guide) reviews the overall major project work.
- Evaluation is conducted as per the format prescribed in the handbook, typically covering the projects technical content, methodology, and progress against the defined milestones.
- This evaluation is conducted at a scheduled internal review (mid-semester and/or pre-final review) to assess whether the project is progressing satisfactorily.

Attendance & Punctuality Monitoring

- Attendance is monitored as per the norms of the organization where the project is being carried out (in-house department lab or industry/external organization).
- Punctuality in reporting, adherence to working hours, and regularity of presence are recorded by the supervising authority (faculty guide or organizational mentor) and communicated to the department.

End Semester Evaluation (ESE) — Evaluation Process

As per clause 11.3.4 of SITTTTR curriculum of 2021 revision, the ESE of the Major Project is jointly conducted by an Internal Examiner and an External Examiner.

Table 2.49 Evaluation Criteria and Weightage – Major Project

Sl. No.	Criteria Evaluated
1	Development of Prototype/Model
2	Usage of Modern Tool/Technology
3	Presentation (slides, delivery)
4	Innovativeness
5	Viva Voce
6	Individual Contribution
7	Group Activity

8	Project Report
Total	

Process Flow of ESE

1. Demonstration of Prototype/Model: Students demonstrate the working prototype/model developed, which is jointly assessed for functionality, completeness, and alignment with the proposed objectives (20%).
2. Assessment of Tools/Technology Used: Examiners evaluate the appropriateness and currency of the tools, platforms, or technologies employed in executing the project (10%).
3. Presentation: Each student/team presents the project through structured slides, assessed on clarity, organization, and quality of delivery (15%).
4. Innovativeness: The originality and novelty of the approach or solution is evaluated (5%).
5. Viva Voce: An oral examination is conducted to test the students conceptual understanding, technical depth, and ability to defend design choices (15%).
6. Individual Contribution: In team-based projects, each members specific contribution is assessed separately to ensure fair, individualized grading (15%).
7. Group Activity/Teamwork: Coordination, collaboration, and division of work among team members is evaluated (10%).
8. Project Report: The written project report is assessed for technical content, structure, documentation quality, and adherence to the prescribed format (10%).
9. Consolidation of Marks: Marks awarded independently by the Internal and External Examiners across all criteria are consolidated (typically averaged) to arrive at the final ESE score.

Table 2.50 Rubrics for first review presentation – Revision 2021

Criteria	Very Good	Good	Satisfactory	
1. Clear Introduction, and Scope of Study (5)	A highly engaging and crystal-clear introduction that effectively communicates the projects purpose and context, capturing the audiences attention from the start. Clearly defines and articulates the projects scope, outlining both what will be covered and what will not be covered. The boundaries are explicitly and effectively communicated. (5)	A very good introduction that clearly states the purpose and context of the project, setting a strong foundation for the presentation. Defines the scope of the study, covering the key aspects to be addressed in the project. The boundaries are well-established, with minor room for improvement. (4)	A satisfactory introduction that provides basic information about the projects purpose and context, though lacking some engagement. Partially defines the scope, with some important aspects not clearly outlined. The boundaries are somewhat unclear, leading to potential confusion. (3)	An introduction that engagement, making grasp the projects pu of the scope is uncle for the audience to u boundaries. (2)
2. Clarity in problem statement and conciseness of objectives (5)	Excellent clarity in problem statement, precise and concise objectives and advancing scientific knowledge (5)	Excellent clarity in problem statement, precise and concise objectives (4)	Clarity in problem statement, objective are defined but not precise (3)	Problem definition i clearly defined (2)
3. Cites good quality literature (5)	Min 7 references, of which 50% are published later than 2020 (5)	Min 5 references, of which 50% are published later than 2020 (4)	Min 4 references, of which 50% are published later than 2020 (3)	Min 3 references, of than 2020 (2)
4. Very clear methodology, articulated using technical terms indicating all steps and tools (5)	Excellent description of methodology with all steps and required tools mentioned (5)	Very good description of methodology with steps and required tools mentioned (4)	Good description of methodology with steps and required tools mentioned (3)	Description of methc identified, but not ab
5. Progress of work (5)	According to the completion of work			
6. Logical Presentation slides (5)	Slides are error-free and logically presented and uses sufficient number diagrams and illustrations (5)	Slides are error-free and logically present with some amount of diagram and illustrations. (4)	Slides contain a few errors and logical presentation to some extent (3)	Slides contain a lot c progression (2)
7. Question and Answer Sessions (5)	Speakers respond accurately and appropriately to audience questions and comments. (5)	Speakers respond to most questions accurately and appropriately (4)	Speakers have difficulty responding clearly and accurately to audience questions (3)	Answers only a few
8. Fluency, audibility and body language (5)	Speakers are fluent on their topic, audible and appropriate gestures (5)	fluent on their topic, and require minimal referral to notes and audible .(4)	Often rely on referral material and audible (3)	often speaking in inc on notes, and with di

9. Overall presentation impact (5)	Leaves a lasting and highly positive impression, making the presentation memorable and impactful (5)	Leaves a positive impression, with the presentation being memorable. (4)	Leaves a neutral impression; the presentation lacks strong memorability (3)	Leaves a somewhat less memorable impression (2)
10. Project report (5)	Exceptional depth, insight, and thoroughness in presenting content. Demonstrates an outstanding understanding of the subject matter. Exceptional organization, structure, and coherence. Information flows logically, and the report is exceptionally easy to follow. Exceptional clarity in expression, with concise and precise language. Ideas are articulated exceptionally well. (5)	Proficient depth and insight in presenting content. Demonstrates a solid understanding of the subject matter. Proficient organization and structure, making the report easy to follow. Information flows logically. Proficient clarity in expression, using clear and precise language. Ideas are articulated well. (4)	Competent depth and understanding in presenting content. Provides a satisfactory grasp of the subject matter. Competent organization and structure, with some improvements needed for better flow. Competent clarity in expression, with some areas (3)	Limited depth and understanding of the subject matter. Demonstrates a basic grasp of the subject matter. Limited organization and structure, making the report somewhat difficult to follow. (2)

Table 2.51 Rubrics for second review presentation – Revision 2021

Criteria	Very Good	Good	Satisfactory	Needs Improvement
1. Assessment of appropriateness of chosen tools and techniques (experimental/analytical) in addressing the objectives of study based on preliminary results (6)	Novel experimental/ analytical tools or techniques (own contribution to its development) is being employed and the tools and techniques adopted is seen to be the most appropriate and efficient in addressing the stated objectives completely.(6)	Tools and techniques used are the appropriate ones and development in the form of in-house experimental setup / computational tool, though the technique is already available. The tools/ technique adequate to address the stated objectives completely (5)	The state-of-the-art tools and techniques (though already available i.e. no contribution to tools or techniques) which is observed to be the appropriate ones, being used and is expected to fully address all the stated objectives (4)	A well-established scientific research, with at least 80% of objectives addressed (3)
2. Progress in Experimental / analytical investigations consistent with the articulated problem statement and objectives of study (10)	Substantial progress, consistent with the problem statement and objectives made and Approx. 60% of overall work completed (10)	Good progress, consistent with the problem statement and objectives made and Approx. 50% of overall work completed (8)	Progress, consistent with the problem statement and objectives made but progress is satisfactory only i.e. Approx. 35% (1/3rd) of overall work completed (6)	Work progress statement, but progress is slow (2)
3. Sustained interaction with outside world for acquiring additional and relevant data, or additional literature, leading to improved research attending conferences, site visit, data addition, literature addition, interaction with local bodies/state level and national level organizations (4)	Recent interactions with outside world resulted in inclusion of improved / additional data and (or) improvement in methodology / tools and techniques through review of more recent literature- with a possibility of knowledge addition. Or presentation in conferences (4)	Recent interactions with outside world in the form of certain field visits or inclusion of recent literature which led to a visible improvement in problem statement and refined methodology or participation in conference(s) (3)	Recent interactions with outside world in the form of certain field visits or inclusion of recent literature which led to a slight improvement in problem statement and methodology (2)	Recent interactions with outside world in the form of certain field visits or inclusion of recent literature which led to a slight improvement in problem statement and methodology (2)
4. Progress of work (5)	According to the completion of work			
5. Logical Presentation slides (5)	Slides are error-free and logically presented and uses sufficient number diagrams and illustrations (5)	Slides are error-free and logically present with some amount of diagram and illustrations.(4)	Slides contain a few errors and logical presentation to some extent (3)	Slides contain many errors and logical presentation to some extent (2)
6. Question and Answer Sessions (5)	Speakers respond accurately and appropriately to audience questions and comments.(5)	Speakers respond to most questions accurately and appropriately(4)	Speakers have difficulty responding clearly and accurately to audience questions (3)	Answers or responses are not clear and accurate (2)
7. Fluency, audibility and body language (5)	Speakers are fluent on their topic, audible and appropriate gestures (5)	Speakers are fluent on their topic, and require minimal referral to notes and audible .(4)	Speakers often rely on referral material and audible(3)	Speakers often rely on referral material and audible (2)

8. Overall presentation impact (5)	Leaves a lasting and highly positive impression, making the presentation memorable and impactful (5)	Leaves a positive impression, with the presentation being memorable. (4)	Leaves a neutral impression; the presentation lacks strong memorability (3)	Leaves a so lacking me
9. Project report (5)	Exceptional depth, insight, and thoroughness in presenting content. Demonstrates an outstanding understanding of the subject matter. Exceptional organization, structure, and coherence. Information flows logically, and the report is exceptionally easy to follow. Exceptional clarity in expression, with concise and precise language. Ideas are articulated exceptionally well. (5)	Proficient depth and insight in presenting content. Demonstrates a solid understanding of the subject matter. Proficient organization and structure, making the report easy to follow. Information flows logically. Proficient clarity in expression, using clear and precise language. Ideas are articulated well. (4)	Competent depth and understanding in presenting content. Provides a satisfactory grasp of the subject matter. Competent organization and structure, with some improvements needed for better flow. Competent clarity in expression, with some areas (3)	Limited de content. De the subject structure, r to follow. (

Table 2.52 Rubrics for final review presentation – Revision 2021

Criteria	Very Good	Good	Satisfactory	
1. work resulted in scientific advancement in the state of the art (scientific information or experimental / analytical/numerical technique or research data of substantial use to peers) (15)	Research resulted in improvement in current scientific knowledge or work resulted in development of a novel methodology/ technique (experimental / computational) and can lead to publication of international standards (15)	Using well established tools a systematic research work carried out by approaching the problem from a different perspective but did not resulted in any new scientific knowledge and can lead to publication of national standards (12)	Using established tools and techniques the work resulting in reliable data which could be of substantial use to peers. Possible publication in proceedings of a reputed international conference. (8)	Using establish redid a reported same (4)
2. The articulated problem statement and objectives were properly addressed and the quantum of work was sufficient for the award of diploma in mechanical engineering (15)	Total addressal of the problem statement initially articulated and full achievement of defined objectives observed in thesis report. Also the quantum of work sufficient enough for the award of diploma in mechanical engineering (12-15)	The initial problem statement addressed but all the objectives stated initially (Review I and II) could not be achieved. (Say > 85 % achieved). But quantum of work sufficient enough for the award of diploma in mechanical engineering (10)	Curtailment initial problem statement observed. But the research work could do enough justice to the revised problem statement, but could not achieve the revised objectives to a full extent. Quantum of work still sufficient for the award of diploma in mechanical engineering (8)	Work couldnt d statement and a objectives too is satisfactory onl
3. The tools and techniques (experimental/analytical) used in the present study were appropriate enough for the complete addressal of the problem statement and objectives (15)	Original contribution to the tools or techniques used for addressing the problem and the same was totally adequate for addressing the problem statement and objectives (12-15)	No original contribution to techniques but tools (experimental or computational tools developed inhouse) which were adequate enough, used for carrying out research work. (10)	No original contribution to neither tools nor techniques but used the existing ones which was adequate enough for complete addressal of the problem. (8)	The chosen too address the prot partially (> 60%
4. Contribution of the outcome of work in addressing a problem of social relevance (at international/national / local) (15)	The research addressed a problem of social relevance and came up with a total or partial solution to the problem (12-15)	The research addressed a problem of social relevance, but could not suggest a solution, but developed adequate tools and techniques (or relevant test results) which could contribute to finding of a solution in future (10)	The research addressed a problem of social relevance, but now new contribution to tools techniques of solutions achieved. Still work validated some of earlier findings (8)	Problem of soci outcome not of
5. Logical Presentation slides (10)	Slides are error-free and logically presented and uses sufficient number diagrams and illustrations (10)	Slides are error-free and logically present with some amount of diagram and illustrations.(7)	Slides contain a few errors and logical presentation to some extent (5)	Slides contain a progression(3)
6. Question and Answer Sessions (10)	Speakers respond accurately and appropriately to audience questions and comments.(10)	Speakers respond to most questions accurately and appropriately(7)	Speakers have difficulty responding clearly and accurately to audience questions (5)	Answers only a (3)

7. Fluency, audibility and body language (5)	Speakers are fluent on their topic, audible and appropriate gestures (5)	fluent on their topic, and require minimal referral to notes and audible .(4)	Often rely on referral material and audible(3)	often speaking rely on notes, at
8. Overall presentation impact (5)	Leaves a lasting and highly positive impression, making the presentation memorable and impactful (5)	Leaves a positive impression, with the presentation being memorable. (4)	Leaves a neutral impression; the presentation lacks strong memorability (3)	Leaves a somev memorability at
9. Project report (10)	Exceptional depth, insight, and thoroughness in presenting content. Demonstrates an outstanding understanding of the subject matter. Exceptional organization, structure, and coherence. Information flows logically, and the report is exceptionally easy to follow. Exceptional clarity in expression, with concise and precise language. Ideas are articulated exceptionally well. (10)	Proficient depth and insight in presenting content. Demonstrates a solid understanding of the subject matter. Proficient organization and structure, making the report easy to follow. Information flows logically. Proficient clarity in expression, using clear and precise language. Ideas are articulated well. (7)	Competent depth and understanding in presenting content. Provides a satisfactory grasp of the subject matter. Competent organization and structure, with some improvements needed for better flow. Competent clarity in expression, with some areas (5)	Limited depth a content. Demon subject matter. I making the repc

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- Project work is continuously monitored by the supervisor from fifth semester onwards who regulates them to attain the correct project outcome.
- Project work involves six reviews. Each review consists of presentation and viva sessions
- The project review is arranged by the project coordinator and the progress of the work is assessed by the project committee comprising of project coordinator, project guide and Head of Section.

The review evaluation is done according to the following pattern:

- Zeroth evaluation is the project proposal evaluation. It is done in fifth semester. Topic and guide allocation is done based on the zero presentation (R00) and no marks are awarded for it.
- First Interim evaluation (R01) is done at the end of the fifth semester in which the title of project, literature review, Objectives and preliminary data collection and work plan are evaluated.
- Second Interim evaluation (R02) is done in the sixth semester and it evaluates the methodology, project execution and involvement of group members.
- An end semester evaluation (R03) is done in sixth semester. Individual contribution, final results or solution, , preparation of prototypes if any, inferences from the project are evaluated. The status of the project dissemination is also evalu
- Project Report Evaluation (R04) evaluates the report based on compliance to the format, logical organization of the technical content and level completion of the document with references.
- Final Project Evaluation is done by an external faculty assigned by the Controllor of technical examinations. It is done through the course viva.

Table 2.52 Rubrics for Project Evaluation

Rubric	Activity	Evaluation Marks	Weig
R01	Interim Evaluation of project	50	
R02	End Semester Project Evaluation	50	
R03	Project Report Evaluation	50	
R04	Final Project Evaluation	50	

Table 2.53 Rubrics for Interim Project Evaluation

Category	A	B	C
Regular and systematic working culture (5)	Timely submission with updated project diary and regular interaction with project guide. (4-5)	Timely submission with updated project diary and irregular interaction with project guide. (2-3)	Late submissions with project diary not proper interaction with project guide (1)
Study of the existing system and feasibility of project proposal (10)	Submission of interim report in time with more than 8 quality journals/ articles to support the topic (8-10)	Submission of interim report in time with 6-8 quality journals/articles to support the topic (5-7)	Late Submission of interim report with 4-6 quality journals/articles to support the topic (2-4)
Problem definition and analysis (5)	Detailed explanation of the purpose and need of the project. Clearly defined objectives with well listed specific objectives (4-5)	Detailed explanation of the purpose and need of project. Objectives moderately defined and moderately listed specific objectives (2-3)	Moderate explanation of the purpose and need of project. Objectives moderately defined and incomplete objectives (1)
Methodology of problem design (10)	Appropriate Division of problem into modules. Proper selection of tools and design methodology (8-10)	Division of problem into modules and Selection of tools and design methodology are somewhat appropriate (5-7)	Division of problem into modules not in a proper manner. Tools and design methodology not clearly defined (1-4)
Planning of project execution & involvement in group (10)	Time framework properly defined and executed. Sufficient and effective communication among peers (8-10)	Time framework properly defined but execution lags. Sufficient and effective communication among peers (5-7)	Time framework properly defined but execution lags. Sufficient and effective communication among peers (1-4)
Presentation (10)	Excellent Clarity in presentation. Excellent understanding of subject. Excellent use of visual and communication facilities. Excellent defending of questions. (8-10)	Good Clarity in presentation. Good understanding of subject. Good use of visual and communication facilities. Good defending of questions. (5-7)	Average Clarity in presentation. Average understanding of subject. Average use of visual and communication facilities. Average defending of questions. (2-4)

Table 2.54 Rubrics for End Semester Project Evaluation

Category	A	B	C
Regular and systematic working culture (10)	Timely submission with updated project diary and regular interaction with project guide. Regular corrections and updates (8-10)	Timely submission with updated project diary and irregular interaction with project guide. Corrections and updates lack sometimes (5-7)	Late submissions with project diary not proper interaction with the project guide. Corrections and updates lack sometimes (2-4)
Project Demonstration and completion level (10)	Project demonstrated very well. Well defined output achieved (8-10)	Project demonstration and completion is to moderate level (5-7)	Project demonstration and completion is to average level (1-4)
Presentation with Technical knowledge and awareness (20)	Excellent Clarity in presentation. Excellent understanding of subject. Excellent use of visual and communication facilities. Excellent defending of questions. (16-20)	Good Clarity in presentation. Good understanding of subject. Good use of visual and communication facilities. Good defending of questions. (10-15)	Average Clarity in presentation. Average understanding of subject. Average use of visual and communication facilities. Average defending of questions. (4-9)
Outreach of the project through contests or paper presentation (10)	Preparation of a good durable project model and Submission of the paper/ project for conference or for any contest and won meritorious prizes (10)	Preparation of a good durable project model and Submission of the paper/ project for conference or for any contest and participation in it. (7-9)	Preparation of a good durable project model and Submission of the paper/ project for conference or for any contest and participation in it. (1-6)

Table 2.55 Rubrics for Project Report Evaluation

Category	A	B	C
Report format and logical organization (10)	Project Report is adhering to the specified format. Writing is logical and well organized. No spelling and grammar mistakes. (8-10)	Project Report is not fully adhering to the specified format. Writing is logical and well organized. Less spelling and grammar mistakes. (5-7)	Project Report is not well adhering to the specified format. Writing is logical and well organized. A lot of spelling mistakes. (2-4)
Description of concepts and technical details (20)	Complete explanation of key concepts, strong description of technical requirements of the project. (16-20)	Explanations and descriptions of key concepts and technical knowledge of the project need some more elaborations and supports. (10-15)	Insufficient explanations of key concepts and description of technical details (4-9)
Level of completion and references (20)	Results are presented in good manner, well summarized and concluded. Future extension is included. Sufficient references are included. (16-20)	Results are presented in satisfactorily, summarized and concluded. Future extension is included. References are included. (10-15)	Average presentation of results and conclusions are not conclusive. References are not included. (4-9)

Table 2.56: Rubrics for Final Project Evaluation

Category	A	B	C
Consistent self-motivation and self-determination (10)	Student is continuously self-driven and has high degree of determination (8-10)	Student is mostly self-driven and has good determination (5-7)	Student lacks self-motivation and determination in work. (2-4)
Implementation of project (20)	Project satisfies all the initially defined objectives to highest degree of satisfaction (16-20)	Project satisfies the objectives to lesser degree of satisfaction (10-15)	Project is completed but do not satisfy all the objectives (4-9)
Future Scope and relevant contribution to society or environment (20)	Outcome of the project is highly relevant and is able to solve a social or environment problem (16-20)	Outcome of the project is relevant and is able to solve a social or environment problem to some extent. (10-15)	Outcome of the project is not fully helpful to solve social or environmental issues. (4-9)

D. Process to assess individual and team performance (5)

Individual and collective contributions of project group members are assessed separately by the project guide and the project evaluation committee. The guide evaluates each student's contribution through continuous interaction with the group in turn, assesses individual and collective contribution during project reviews, where each group member presents the project's progress followed by a technical discussion. Based on this presentation and discussion, every student's involvement and individual contribution as per the rubrics defined for project evaluation

E. Quality of deliverable, working prototypes (12)

2020-2023

Sl No.	Faculty Name	Designation	Qualification	Specialization	Area of interest
1	Arun N R	HOD	MTech	Industrial Engineering	Industrial Engineering, Operations Research, Quality Control
2	Sreejith P S	Lecturer	BTech	Mechanical Engineering	Design Engineering
3	Midhun K M	Lecturer	BTech	Mechanical Engineering	Fluid Mechanics, Hydraulic Machines, Renewable Energy
4	Sojan O Thomas	Lecturer	BTech	Mechanical Engineering	Manufacturing Technology, CNC Machines, Automation
5	Derin David	Lecturer	BTech	Mechanical Engineering	Thermal Engineering

Sl No.	Name of Faculty	Suggested Project Topics
1	Midhun K M	1. Wheel Sprayer 2. Battery Operated Pesticide Sprayer 3. Seed Sowing Machine
2	Sreejith P S	1. Pneumatic Vice 2. Pneumatic Sheet Metal Cutting Machine 3. Pneumatic Pick and Place System
3	Midhun K M	1. Hydraulic Manhole Cover Lifter 2. Hydraulic Scissor Lift 3. Hydraulic Drum Lifter
4	Arun N R	1. Sanitary Napkin Dispensing Unit 2. Automatic Hand Sanitizer Dispenser 3. Smart Medicine Dispenser

5	Sojan O Thomas	1. Three Axis Pneumatic Trailer 2. Hydraulic Tipper Trailer 3. Multi-Directional Loading Trailer
6	Derin David	1. Waste Plastic into Plastic Brick Making Machine 2. Plastic Shredding Machine 3. PET Bottle Crushing Machine
7	Sreejith P S	1. Acetylene Powered Engine 2. Hydrogen Powered IC Engine 3. Biogas Fueled IC Engine

Group No.	Project Guide	Project Topic	List of Students	Relevant PO & PSO	Type of project
Group 1	Midhun K M	Wheel Sprayer	ABHAI DAVIS	PO1, PO2, PO3, PO4, PO5, PO6, PSO1, PSO2	Design & prototype
			ABHINAV M S		
			ABINAV P B		
			ADARSH P A		
			ADARSH V B		
			AJIN PRAVEEN		
			AJIRAJ.T.A		
			AKSHAY T M		
			ADARSH V R		
Group 2	Sreejith P S	Pneumatic Vice	SAGAL E S	PO1, PO2, PO3, PO4, PO6, PSO1, PSO2	Design & prototype
			SAIKRISHNA P V		
			SEBI P J		

			SREERAG K S		
			SUDHEESH K S		
			SUSHANTH V S		
			SWARAN P RAJAN		
			T S SHARON		
			THARUN JOJU		
Group 3	Midhun K M	Hydraulic Manhole Cover Lifter	ALIN K S	PO1, PO2, PO3, PO4, PO5, PO6, PSO1, PSO2	Design & prototype
			ALIN SHIBU		
			ALWIN A V		
			ALWIN MAJO		
			ALWIN VARGHESE		
			AMALKRISHNA K A		
			ANAND DAS .V .S		
			ANEX BABU		
			ANTONY JOSE		
Group 4	Arun N R	Sanitary Napkin Dispensing Unit	VISHNU M A	PO1, PO2, PO3, PO4, PO5, PO6, PSO1	Design & prototype
			ZEEON SANJOSE		
			ABIN C JOSH Y		
			AKASH BIJU		
			ALVIN ANTONY XAVIER		

			CHINMAY.E.C.		
			JOHN GRACIOUS		
			KEVIN GEORGE		
			SAVIO VARGHESE WILSON		
Group 5	Sojan O Thomas	Three Axis Pneumatic Trailer	ARAVIND UNNIKRISHNAN	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO1, PSO2	Design & prototype
			ARUN SHAJAN V		
			BIMAL KRISHNA P B		
			CHRISTY JOHN P.D		
			DALBIN DANI M		
			DENIL DAVIS		
			DIBIN VARGHESE		
			EBY T A		
			EDWIN BABU		
Group 6	Derin David	Waste Plastic into Plastic Brick Making Machine	MANUKRISHNA P M	PO1, PO2, PO3, PO4, PO5, PO6, PSO1, PSO2	Design & prototype
			MIDHUN M R		
			MUHAMMED DILSHAN		
			NAVANEETH P SURESH		
			NAVEEN VARGHESE		
			NEVIN VARGHESE K.J		

			NIMAL DAVIS V		
			NOEL BABU		
			PRINCE THOMAS		
Group 7	Sreejith P S	Acetylene Powered Engine	EDWIN K O	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO1, PSO2	Design & prototype
			HARIKRISHNA HARIHARAN		
			HARIKRISHNA P K		
			JEWEL TITUS		
			JINESH P J		
			JISSU JOHNSON		
			JOHNUS K.SHAJU		
			KIRANDAS K		
			KRISHNARAJ M R		

2021-2024					
Sl No.	Faculty Name	Designation	Qualification	Specialization	Area of interest
1	Jaison P Paul/Leo Lewis	HOD	MTech		Design Engineering
2	Nikhil C N	Lecturer	BTech	Mechanical Engineering	Fluid Mechanics, Hydraulic Machines, Renewable Energy

3	Anil Omanakuttan	Lecturer	BTech	Mechanical Engineering	Manufacturing Technology, CNC Machines, Automation
4	C A Kiran	Lecturer	BTech	Mechanical Engineering	Thermal Engineering

Sl No.	Name of Faculty	Suggested Project Topics
1	Jaison P Paul	1. Go-Kart 2. Electric Go-Kart 3. ATV (All-Terrain Vehicle)
2	Nikhil C N	1. Ball Throwing Machine 2. Automatic Cricket Bowling Machine 3. Tennis Ball Serving Machine
3	Anil Omanakuttan	1. Automatic Handbrake System 2. Automatic Emergency Braking System 3. Hill Hold Assist System
4	C A Kiran	1. Coconut Dehusking Machine 2. Coconut Scraping Machine 3. Coconut Shell Cutting Machine

Group No.	Project Guide	Project Topic	List of Students	Relevant PO & PSO	Type of project
Group 1	Nikhil C N	Go-Kart	YADUKRISHNAN P.K	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO1, PSO2	Design & prototype
			ABHISHEK K T		
			AJAY VENU		
			AKHIL P S		
			ANSIL T V		

			ASWIN BIJI		
			ASWIN P S		
			ATHUL C R		
			CHRISTO JOHN		
			EDWIN DAVIS		
			JOMON DAVIS		
			MAJO JOHNY		
			MARTIN KURIAN		
			RENJITH SADANANDAN		
Group 2	Anil Omanakuttan	Ball Throwing Machine	DOMINIC BENNY MALPAN	PO1, PO2, PO3, PO4, PO5, PO6,	Design & prototype
			GEOSHEL GEORGE	PSO1, PSO2	
			JEBIN K J		
			JENAX P.J		
			JITHIN A V		
			JOMITH ANTONY		
			JOSHUAL JOSEPH		
			JOYAL JOY		
			JOYAL WILSON		
			JOYEL K D		
			JUSTIN DAVIS		

			JUVAL JOSHY		
			NIBIL K B		
			NIBIN K L		
Group 3	Jaison P Paul	Automatic Handbrake System	ABHAY JOSEPH	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO1	Design & prototype
			AJILKRISHNAN K U		
			AJIN LOUIS		
			AJITH P S		
			AJITH R		
			ALAN ALBY		
			ALAN NARAYANA K.AJU		
			ALBIN GEORGE		
			ALJO JOHN N		
			ALFIN RAPHY		
			ALTHAF V A		
			NIHAL BABY		
			RAHUL M R		
			ROSHAN ROY		
Group 4	C A Kiran	Coconut Dehusking Machine	ALWIN PAUL	PO1, PO2, PO3, PO4, PO5, PO6, PSO1, PSO2	Design & prototype
			AMITH KRISHNA K S		
			ANANTHUKRISHNA C S		

			ANDRIN E A		
			ANOLD VARGHESE		
			ASHIK A S		
			ASHIQ BABU		
			ATHUL BIJU		
			ATHUL KRISHNA K M		
			BOBIN BENNY		
			DANISH A P		
			SANJEEV K S		
			SARATH K B		
			VENKITESWAR GOPI		

2022-2025					
Sl No.	Faculty Name	Designation	Qualification	Specialization	Area of interest
1	Harikrishnan T K	HOD	ME	CAD CAM	Design Engineering
2	Nikhil C N	Lecturer	BTech	Mechanical Engineering	Fluid Mechanics, Hydraulic Machines, Renewable Energy
3	Sini Mary Lona	Lecturer	BE	Mechanical Engineering	Manufacturing Technology, CNC Machines, Automation

4	Kiran C A	Lecturer	BTech	Mechanical Engineering	Thermal Engineering
5	Achuthan R	Lecturer	BTech	Mechanical Engineering	Design Engineering
6	Leo Lewis	Lecturer	B.Tech	Mechanical Engineering	Design Engineering

Sl No.	Name of Faculty	Suggested Project Topics
1	Harikrishnan T K	1. EFFICYCLE 2. Electric Bicycle 3. Solar Assisted Electric Vehicle
2	Nikhil C N	1. Electric Load Carrier 2. Battery Operated Goods Carrier 3. Electric Platform Trolley
3	Sini Mary Lona	1. Pyrolysis of Plastic Waste 2. Plastic to Fuel Conversion System 3. Waste Tyre Pyrolysis Unit
4	Kiran C A/Leo Lewis	1. Automatic Sand Filter 2. Automatic Water Purification System 3. Multi-Stage Water Filtration Unit
5	Achuthan R	1. Forklift Using Hand Winch 2. Manual Hydraulic Forklift 3. Hand Operated Pallet Truck

Group No.	Project Guide	Project Topic	List of Students	Relevant PO & PSO	Type of project
Group 1	Nikhil C N	EFFICYCLE	ANTONY THOMAS	PO1, PO2, PO3, PO4,	Design & prototype
			NIGIL P J	PO5, PO6, PO7, PSO1,	
				PSO2	

			A.A MOHAMMED ADHIL		
			ABHINAV		
			ABIN T J		
			ABIRAG K S		
			ADARSH J		
			ADHARSH M V		
			ADIL B PAVITHRAN		
			AJAY KRISHNA N M		
Group 2	Sini Mary Lona	Electric Load Carrier	AKASH P. SATHEESH	PO1, PO2, PO3, PO4, PO5, PO6, PSO1, PSO2	Design & prototype
			ALDRINOE ROCKEY		
			ALFRED JOY		
			AMAL C.J		
			AMAL SURESH		
			AMANANDH P S		
			AMEEN ABDUL JABBAR		
			ASHWIN U.S		
			AUSTIN N L		
			BAHUL JITH P B		
Group 3	Kiran C A/Leo Lewis	Pyrolysis of Plastic Waste	BRISTO BABY	PO1, PO2, PO3, PO4, PO5, PO6,	Design & prototype

			EMMANUVEL E B	PSO1, PSO2	
			JITHIN K JAISON		
			JOSE JOHNSON		
			JOYAL JIMMY		
			LAVISH VARGHESE		
			MELVIN C B		
			MIDHUL MARTIN		
			PRATHUSH N P		
			SACHIN M R		
Group 4	Achuthan R	Automatic Sand Filter	SALAHUDHEEN AYYOOBI	PO1, PO2, PO3, PO4, PO5, PO6, PSO1, PSO2	Design & prototype
			SHARUN K C		
			SHITHIN M S		
			SREEHARI A.R		
			SUHAIL A .A		
			THOMSON THOMAS P		
			AKHIL SHIJON		
			ARJUN K R		
			ATHUL KRISHNA M A		
			JEES JOVET		

Group 5	Harikrishnan T K	Forklift Using Hand Winch	JOHN PAUL JOGI	PO1, PO2, PO3, PO4, PO5, PO6, PSO1	Design & prototype
			JOYEL JOSE		
			MIDHUN RAJAN		
			RINSHAN V R		
			SIDHARTH K DAS		
			SREEJITH SURESH		
			VIDHUKRISHNA P S		
			DANIEL BABY		
			VAISHNAV K THILAK		
			VINAYAK K S		

2022-2025					
Sl No.	Faculty Name	Designation	Qualification	Specialization	Area of interest
1	Harikrishnan T K/Leo Lewis	HOD	ME	CAD CAM	Design Engineering
2	Sangeeth Martin	Lecturer	BTech	Mechanical Engineering	Design Engineering
3	Kiran C A	Lecturer	BTech	Mechanical Engineering	Thermal Engineering
4	Sini Mary Lona	Lecturer	BE	Mechanical Engineering	Manufacturing Technology, CNC Machines, Automation

5	Ashish M Pillai	Lecturer	BTech	Mechanical Engineering	Fluid Mechanics, Hydraulic Machines, Renewable Energy
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Sl No.	Name of Faculty	Suggested Project Topics
1	Harikrishnan T K & Sangeeth Martin	1. Coffin Lowering Machine 2. Hydraulic Casket Lowering Device 3. Manual Load Lowering Mechanism
2	Leo Lewis	1. All Terrain Vehicle (ATV) 2. Off-Road Go-Kart 3. Utility Terrain Vehicle (UTV)
3	Sini Mary Lona	1. Trolley Weed Cutter 2. Power Weeder 3. Battery Operated Grass Cutting Machine
4	Ashish M Pillai	1. BLDC Electric Car 2. BLDC Electric Go-Kart 3. Battery Electric Vehicle (BEV) Prototype

Group No.	Project Guide	Project Topic	List of Students	Relevant PO & PSO	Type of project
Group 1	Harikrishnan T K & Sangeeth Martin	Coffin Lowering Machine	AJAY K S	PO1, PO2, PO3, PO4, PO5, PO6, PSO1, PSO2	Design & prototype
			AJITH T.V.		
			ALBIN ANTOO		
			THOMAS P.SEBY		
			VAISHNAVU T S		

			AMAL DAVIS		
			ANTO SAMUEL JOY		
			DONN VARGHESE		
			JOYAL JOY		
			VAISHNAV VIJAYAN		
Group 2	Leo Lewis	All Terrain Vehicle	AJEX JOY	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO1, PSO2	Design & prototype
			AMAL K S		
			AMALKRISHNA N S		
			BLAIZE GEORGE		
			CHRISTO JOBY		
			CLINTO JOY		
			EADRIN PLUTTAN		
			NAVEEN C NISHANTH		
			SOORAJ V S		
			SOUGAND K S		
Group 3	Sini Mary Lona	Trolley Weed Cutter	AADHIN SHAJU	PO1, PO2, PO3, PO4, PO5, PO6, PSO1, PSO2	Design & prototype
			ADITHYAKRISHNA K U		
			ADITHYAN K D		
			ARUN E M		
			JILAN JOSEPH		

			MAHROOF.K.M		
			SHAHIN P S		
			SREEKANTH . K		
Group 4	Ashish M Pillai	BLDC Electric Car	ADHUL KRISHNA	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO1, PSO2	Design & prototype
			AKSHAY V C		
			ALAN P J		
			ARJUN RAMESH		
			ARJUN SHABU		
			ARYAN SUBRAHMANIAN		
			JOYAL K V		
			KIRAN A U		
			MISHAL SAPHY		
			RAHUL S		

F. Papers published /Awards/ Recognition received by projects at State/ National level (5)

Sl No.	Name	Link

1	BLDC Electric Car	https://www.scribd.com/document/1059025182/BLDC-Electric-Car-Formal-Research-Paper
2	ATV – All terrain Vehicle	https://www.scribd.com/document/1059033730/Blaize-George-ATV-Official-Research-Paper
3	Coffin Lowering Machine	https://www.scribd.com/document/1059035822/Coffin-Lowering-Machine-Research-Paper
4	Trolley weed cutter	https://www.scribd.com/document/1059054727/Trolley-Weed-Cutter-Research-Paper
5	Electric sand filter machine	https://www.scribd.com/document/1059461890/Electric-Sand-Filter-Machine-Research-Paper
6	Metal swarf and gas eliminator	https://www.scribd.com/document/1059463940/Metal-Swarf-and-Gas-Eliminator-Research-Paper
7	Non-contact voltage tester	https://www.scribd.com/document/1059465844/Non-Contact-Voltage-Tester-Research-Paper
8	Stair climbing trolley	https://www.scribd.com/document/1059467020/Stair-Climbing-Trolley-Report
9	Temperature sensor fan circuit	https://www.scribd.com/document/1059468063/Temperature-Sensor-Fan-Circuit-Research-Paper
10	Coconut husk peeler	https://www.scribd.com/document/1059469245/Hand-Coconut-Husk-Peeler-Research-Paper
11	Mini Belt grinder	https://www.scribd.com/document/1059471502/Mini-Belt-Grinder-Research-Paper

Recognition received by project at state



2.2.5 Industry Interaction and Industry Internship/Training (30)

A. Industry supported Labs (2)

SL.NO	Name of Course	List of Experiment	Virtual Lab with link	PO/PSO mapping
1	Material Testing and	1. Izod Impact test	https://sm-nitk.vlabs.ac.in/exp/izod-impact-test/videos.html	PO1,2,3,4,5 PSO1,2

	Metallography Lab	2. Charpy Impact Test	https://sm-nitk.vlabs.ac.in/exp/charpy-impact-test/	PO1,2,3,4,5 PSO1,PSO2
		3. Torsion test on Mild Steel	https://sm-nitk.vlabs.ac.in/exp/torsion-test-mild-steel/	PO1,2,3,4,5 PSO1,PSO2
2	Advanced Machine Tools Lab	1. CNC Turning	http://vlabs.iitkgp.ac.in/vmp/exp2/index.html	PO1,2,3,4,5,6,7 PSO1,2
		2. Simulation of Anatomy of 3D printer.	https://3dp-dei.vlabs.ac.in/exp/simulation-anatomy-fdm/	PO1,2,3,4,5,6,7 PSO1,2
3	Fluid Mechanics Lab	1.Coefficient of discharge of given venturimeter	https://fm-iitk.vlabs.ac.in/exp/venturi-meter/	PO1,2,3,4,5 PSO1,2

B. Delivery of appropriate Course work by Industry experts (5)

Sl No	Date – Month– Year	Name of the Event	
CAY 2025-2026			
1	15/07/2025	Workshop on: PROJECT COOLDOW	
2	20/09/2025	Seminar on Diagnostic Techniques in Automotive Systems	
3	17/01/2026	Introduction to Manufacturing	
4	13/02/2026	Solid works -workshop (3 D drawing)	
CAYm1 2024-2025			
1	6/09/2024,7/09/2024	Workshop on 3D Printing Technology	
2	10/01/2025	Marine Engine Technology	
2	24/ 01/ 2025	Skill Enhancement Program on Hyundai Service Standards	
3	03/02/2026	Skill to Build-Workshop on Design and Manufacturing	
CAYm2 2023-2024			
1	18/09/2023	Seminar on Automobile service	
2	5/01/2024	Seminar on CNC Machine	
3	16/02/2024	Maintenance Training	
4	8/03/2024	Workshop on: Design – AutoCAD Software	

C. Industrial visits/tours for students (3)

Industrial Visit

Sl No	Academic Year	Total Number of Industrial Visit
1	2025-26	3
2	2024-25	3
3	2023-22	2
4	2022-23	2

Sl No	Year/Sem	Date	No. of Students	Companies Visited
		2025-26		
1	III	29- 09- 2025	46	Pilotsmith India Pvt. Ltd
2	II	14- 03- 2026	52	Malabar Cements Limited
3	I		50	Autocast, Cherthala
2024-25				
1	III	07- 09- 2024	44	Tolins Tyre
2	II	07- 09- 2024	46	Spinner Plastic Industries limited
3	I	01- 02- 2025	50	HMT Machine Tools Limited
2023-24				
1	II	26-08-2023	50	Porsche Service Centre Kochi
2	III	19-08-2023	44	KAMCO
2022-23				
1	II	16- 07- 2022	50	Bharat Benz Service Centre
2	III	09- 06- 2022	49	Ripple tea factory Munnar

D. Industrial training/ internship (5)

2023-2026 Internship I

S.NO	Year	<u>No.of</u> students	Name of company	Period
1	II	9	BRD Car World, Thrissur	23.05.2024-08.06.2024
2	II	7	KSRTC, Guruvayoor	25.05.2024-10.06.2024
3	II	4	Apollo Tyres, Perambra	25.05.2024-10.06.2024
4	II	10	INTWAY Inspection Technology and NDT	24.05.2024-10.06.2024
5	II	5	Pilotsmith, Kalletumkara	25.05.2024-10.06.2024
6	II	5	Indus Motors	25.05.2024-10.06.2024
7	II	6	Focus Motors	25.05.2024-10.06.2024

2023-2026 Internship II

S.NO	Year	<u>No.of</u> students	Name of company	Period
1	III	27	Archon Engineers, Ernakulam	12. 05. 2025 – 09.06.2025
2	III	19	SMEC Automation pvt ltd Kochi	12. 05. 2025 – 09.06.2025
3	III	27	Archon Engineers, Ernakulam	12. 05. 2025 – 09.06.2025

S.NO	Year	<u>No.of</u> students	Name of company	Period
1	III	7	Brakes India Pvt Ltd	08-12-2025 to 31 -03- 2026

2022-2025 Internship I

S.NO	Year	<u>No.of</u> students	Name of company	Period
1	II	16	KSE Limited	20.07.2023-10.08.2023
2	II	11	KSRTC Garage Thrissur	29.05.2023-20.07.2023
3	II	2	M/s Kerala Feeds	24.05.2023-21.06.2023
4	II	6	SONEX Machines Combines India	20.05.2023-14.06.2023
5	II	3	Pioneer Auto Garage	29.05.2023-20.07.2023

2022-2025 Internship II

S.NO	Year	<u>No.of</u> students	Name of company	Period
1	III	22	SMEC Automation	06.05.2024-31.05.2024
2	III	19	GENZEE Technology	06.05.2024-31.05.2024
3	III	7	Pilotsmith, Kalletumkara	06.05.2024-31.05.2024
4	III	3	BENZ Marathakara	06.05.2024-31.05.2024
5	III	3	TVS Trichur Kuriachira	06.05.2024-31.05.2024

2021-2024 Internship I

S.NO	Year	<u>No.of</u> students	Name of company	Period
1	II	3	INDUS Motors	04.05.2022- 28.05.2022
2	II	3	KSRTC Chalakudy Depot	12.05.2022- 28.05.2022
3	II	2	SUZUKI MOTO WORLD	03.05.2022- 28.05.2022
4	II	3	Steel and Industrial Forgings	04.05.2022- 31.05.2022
5	II	4	Kerala Agro Machinery Corporation, Athani	03.05.2022- 25.05.2022
6	II	2	Indraprastha Hero	03.05.2022- 28.05.2022
7	II	4	HYKON Powering the Nation	03.05.2022- 27.05.2022
8	II	6	SAI SERVICE Thrissur	03.05.2022- 28.05.2022
9	II	4	BRD Muringoor	
10	II	4	George Engineering	03.05.2022- 26.05.2022
11	II	4	HAILSTONE Kanjikode, Palakkad	04.05.2022- 25.05.2022

2021-2024 Internship II

S.NO	Year	<u>No.of</u> students	Name of company	Period
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1	III	21	TORQUE A complete car solution	12.05.2023-27.05.2023,19.06-2023-26.06.2023,22.07.2023-29.07.2023
2	III	28	KSE Limited	23.05.2023-21.06.2023
3	III	8	St. Antonys Engineering Workshop	12.05.2023-27.05.2023,19.06-2023-26.06.2023,22.07.2023-29.07.2023

2020-2023 Batch

SL.NO	Year/Sem	Date	<u>No.of</u> students	Companies visited
1	III	09.06.2022	49	Ripple tea factory Munnar

E. Post training/ internship Assessment (10)

After completing the industrial training, students have to submit a report about the functioning of the industry they visited and their learning experience. Viva voce is conducted for each student as part of evaluation. The internships as per syll mentioned in AICTE INTERNSHIP POLICY: GUIDELINES & PROCEDURES. The main purpose of writing daily is to cultivate the habit of documenting and to encourage the students to search for details. It develops the students' thought day-to-day account of the observations, impressions, information gathered and suggestions given, if any. It should contain the sketches & drawings related to the observations made by the students. The daily training diary should be signed af working. The diary should also be shown to the Faculty Mentor visiting the industry from time to time and got ratified on the day of his visit. Student's Diary and Internship Report should be submitted by the students along with attendance r immediately after the completion of the training. It will be evaluated on the basis of the following criteria:

- Regularity in maintenance of the diary.
- Adequacy & quality of information recorded.
- Drawings, sketches and data recorded.
- Thought process and recording techniques used.
- Organization of the information.

Internship Report

After completion of Internship, the student should prepare a comprehensive report to indicate what he has observed and learnt in the training period. The student may contact Industrial Supervisor/ Faculty Mentor/TPO for assigning special to will also help to a great extent in writing the industrial report since much of the information has already been incorporated by the student into the daily diary. The training report should be signed by the Internship Supervisor, TPO and Faculty

1. Originality.
2. Adequacy and purposeful write-up.

3. Organization, format, drawings, sketches, style, language etc.
4. Variety and relevance of learning experience.
5. Practical applications, relationships with basic theory and concepts taught in the course.

Assessment of Internship I and Internship II

Internship I & II shall be assessed by ESE only. The ESE shall be conducted by the concerned faculty. Award of marks for Internship for a maximum mark of 75, shall be based on criteria as follows:

Table 2.65 Marking criteria of Internship

Sl. No.	Criteria	Weightage (%)
1	Presentation by the student at the end of the internship	20%
2	Daily Activity Report	10%
3	Comprehensive report on Internship	30%
4	Relevant Internship Certificate from the concerned department	30%
5	Attendance and Punctuality	10%

F. Contribution to Community related projects/activities (5)

Sl. No.	Academic Year	Name of Students	Project Title	Community Effectiveness	Related PO	Related PSO
1	2020–2023	ABHAI DAVIS, ABHINAV M S, ABINAV P B, ADARSH P A, ADARSH V B, AJIN PRAVEEN, AJIRAJ T A, AKSHAY T M, ADARSH V R	Wheel Sprayer	Reduces farmers effort and improves the efficiency of pesticide spraying, leading to better agricultural productivity.	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2
2	2020–2023	ALIN K S, ALIN SHIBU, ALWIN A V, ALWIN MAJO, ALWIN VARGHESE, AMALKRISHNA K A, ANAND DAS V S, ANEX BABU, ANTONY JOSE	Hydraulic Manhole Cover Lifter	Improves the safety of sanitation workers by reducing manual handling of heavy manhole covers and minimizing injury risks.	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2

3	2020–2023	VISHNU M A, ZEEON SANJOSE, ABIN C JOSHY, AKASH BIJU, ALVIN ANTONY XAVIER, CHINMAY E C, JOHN GRACIOUS, KEVIN GEORGE, SAVIO VARGHESE WILSON	Sanitary Napkin Dispensing Unit	Promotes menstrual hygiene by ensuring easy and affordable access to sanitary napkins in schools and public institutions.	PO1, PO2, PO3, PO4, PO5, PO6	PSO1
4	2020–2023	MANUKRISHNA P M, MIDHUN M R, MUHAMMED DILSHAN, NAVANEETH P SURESH, NAVEEN VARGHESE, NEVIN VARGHESE K J, NIMAL DAVIS V, NOEL BABU, PRINCE THOMAS	Waste Plastic into Plastic Brick Making Machine	Helps manage plastic waste by converting it into useful construction materials, reducing environmental pollution.	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2
5	2021–2024	ALWIN PAUL, AMITH KRISHNA K S, ANANTHUKRISHNA C S, ANDRIN E A, ANOLD VARGHESE, ASHIK A S, ASHIQ BABU, ATHUL BIJU, ATHUL KRISHNA K M, BOBIN BENNY, DANISH A P, SANJEEV K S, SARATH K B, VENKITESWAR GOPI	Coconut Dehusking Machine	Assists coconut farmers by reducing manual labour, improving productivity, and enhancing worker safety.	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2
6	2022–2025	ANTONY THOMAS, NIGIL P J, A.A. MOHAMMED ADHIL, ABHINAV, ABIN T J, ABIRAG K S, ADARSH J, ADHARSH M V, ADIL B PAVITHRAN, AJAY KRISHNA N M	EFFICYCLE	Encourages sustainable transportation through a low-cost, eco-friendly human-powered/electric vehicle concept.	PO1, PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2
7	2022–2025	AKASH P SATHEESH, ALDRINOE ROCKEY, ALFRED JOY, AMAL C J, AMAL SURESH, AMANANDH P S, AMEEN ABDUL JABBAR, ASHWIN U S, AUSTIN N L, BAHUL JITH P B	Electric Load Carrier	Provides an eco-friendly solution for transporting goods in industries, campuses, and local markets while reducing fuel consumption.	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2
8	2022–2025	BRISTO BABY, EMMANUVEL E B, JITHIN K JAISON, JOSE JOHNSON, JOYAL JIMMY, LAVISH	Pyrolysis of Plastic Waste	Addresses plastic waste disposal by converting plastic into useful fuel,	PO1, PO2, PO3, PO4,	PSO1, PSO2

		VARGHESE, MELVIN C B, MIDHUL MARTIN, PRATHUSH N P, SACHIN M R		supporting environmental sustainability.	PO5, PO6	
9	2022– 2025	SALAHUDHEEN AYYOOBI, SHARUN K C, SHITHIN M S, SREEHARI A R, SUHAIL A A, THOMSON THOMAS P, AKHIL SHIJON, ARJUN K R, ATHUL KRISHNA M A, JEES JOVET	Automatic Sand Filter	Provides an efficient water filtration solution for households and rural communities, improving access to clean water.	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2
10	2022– 2025	JOHN PAUL JOGI, JOYEL JOSE, MIDHUN RAJAN, RINSHAN V R, SIDHARTH K DAS, SREEJITH SURESH, VIDHUKRISHNA P S, DANIEL BABY, VAISHNAV K THILAK, VINAYAK K S	Forklift Using Hand Winch	Enables safe and economical material handling for small workshops and warehouses without the need for powered equipment.	PO1, PO2, PO3, PO4, PO5, PO6	PSO1
11	2022– 2025	AJAY K S, AJITH T V, ALBIN ANTOO, THOMAS P SEBY, VAISHNAVU T S, AMAL DAVIS, ANTO SAMUEL JOY, DONN VARGHESE, JOYAL JOY, VAISHNAV VIJAYAN	Coffin Lowering Machine	Improves safety, dignity, and ease during burial ceremonies by reducing manual effort in lowering coffins.	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2
12	2022– 2025	AADHIN SHAJU, ADITHYAKRISHNA K U, ADITHYAN K D, ARUN E M, JILAN JOSEPH, MAHROOF K M, SHAHIN P S, SREEKANTH K	Trolley Weed Cutter	Supports farmers by reducing manual weeding effort, increasing agricultural productivity, and lowering labour costs.	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2

2.2.6 Information Access Facilities and Student Centric Learning Initiatives (15)

A. Availability of facilities & Effective Utilization; *specify the facilities, materials and scope for self-learning, Webinars, NPTEL Podcast, MOOCs etc* (10)

Lecture Methods

The traditional lecture method continues to form the foundation of classroom instruction, wherein faculty members deliver structured content through explanation, illustration, and discussion. To make this method more effective, faculty support interactive questioning to ensure two-way communication rather than passive listening. Lecture plans are typically mapped to course outcomes (COs), and faculty maintain lecture schedules and coverage records, which can be cited as evidence.

Digital Library:A digital library for student-centric learning is an online hub that gives learners 24/7 access to interactive e-books, videos, and self-paced tools. It lets students choose their own learning path, explore subjects at their own speed,

Information and Communication Technology is integrated across the teaching-learning process to enhance comprehension and engagement. Faculty use LCD projectors, digital content, simulations, animations, and subject-specific software/tools and repositories (SWAYAM, NPTEL, MOOCs), and digital assignment submission, thereby making learning more flexible and learner-centric. Percentage of ICT-enabled classrooms and faculty participation in ICT-based teaching can be quantified.

Collaborative Learning

Collaborative learning strategies such as group discussions, peer teaching, think-pair-share activities, and team-based projects are employed to develop critical thinking, communication, and interpersonal skills among students. This method also helps to construct knowledge together, resolve problems collectively, and learn from diverse perspectives.

Induction Program for Freshers (Teachers)

A structured induction/orientation program is conducted for newly recruited faculty to familiarize them with the institution's vision, mission, academic policies, teaching-learning frameworks, examination systems, and use of ICT tools.

Google Classroom

Google Classroom is used as a Learning Management System (LMS) to streamline communication between faculty and students. It facilitates sharing of study materials, assignment distribution and submission, announcements, and online assessments.

Project-Based Learning

Students are engaged in mini and major projects that require them to apply theoretical knowledge to solve real-world or industry-relevant problems. This method fosters research aptitude, teamwork, time management, and practical skill development through presentations, and viva-voce, and can be linked to employability and outcome-based education (OBE) frameworks.

Seminar

Seminars are conducted where students research a topic independently and present their findings before peers and faculty. This method builds presentation skills, subject depth, confidence, and the ability to handle questions/discussion. Seminar reports are documented as supporting evidence.

Self-Learning Resources

Institutions provide access to e-books, digital libraries (e.g., NDLI, DELNET), recorded lectures, and open educational resources (OERs) to promote autonomous learning beyond classroom hours. This method nurtures self-directed learning based on individual capability and interest.

ICT-Enabled Delivery Methods

This encompasses the systematic utilization of technology-enhanced tools such as Learning Management Systems, virtual classrooms (Zoom/Google Meet/MS Teams), multimedia content, and online assessment platforms to deliver curriculum content accessibly, and richer, more engaging pedagogy compared to conventional chalk-and-talk methods.

Smart Classrooms

Smart classrooms are equipped with interactive whiteboards/smart boards, LCD projectors, audio-visual systems, and internet connectivity to create an immersive and technology-enabled learning environment. These facilities allow faculty to make making abstract or complex topics easier to visualize and understand.

Webinars and Online Sessions

The institution organizes webinars, guest lectures, and online sessions featuring industry experts, alumni, and academicians to expose students to current industry trends, emerging technologies, and career guidance beyond the regular curriculum.

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B. Student Centric Learning Initiatives & Effective Implementation (5)

1. Departmental Library

The department maintains a dedicated library housing a comprehensive collection of textbooks, reference books, and subject-specific resources aligned with the curriculum across all semesters. In addition to prescribed textbooks, the library s explore advanced concepts, competitive examination preparation material, and topics of personal academic interest. This localized library within the department reduces dependency on the central library, offers easier and quicker access to su students. Books are issued to students through a systematic register/log maintained by the department, ensuring accountability and traceability of resources. This initiative is particularly effective for students who need quick reference materia

2. Videos (Multimedia-Based Learning)

Recognizing that different students grasp concepts better through different modes of learning, the department incorporates multimedia resources — including text, audio, images, animations, videos, and interactive content — as a complemen effective for demonstrating processes, mechanisms, and abstract concepts that are difficult to convey through lecture alone. This blended approach caters to diverse learning styles (visual, auditory, and kinaesthetic learners), improves retentio videos as part of course delivery, either during class or through platforms like Google Classroom for self-paced viewing.

3. NPTEL Videos

The department actively encourages students to access NPTEL (National Programme on Technology Enhanced Learning) video lectures as part of its online and blended learning strategy. NPTEL, being a joint initiative of IITs and IISc, offer disciplines, giving students exposure to teaching styles and depth of content beyond the classroom. This is considered one of the most significant developments in contemporary education, democratizing access to premier institutional content directed to specific playlists relevant to their curriculum, such as:

- https://youtu.be/CsKddkqgwVk?list=PLyqSpQzTE6M_SM0Lrnzk2dJFwElh0EBhu
- <https://youtu.be/89Ck2QkwTX4>

Faculty may also integrate NPTEL certification courses as add-on credit options, further strengthening students subject expertise and resume value.

4. Wi-Fi Campus

The entire campus is Wi-Fi enabled with high-speed internet connectivity, ensuring students have seamless access to online resources, digital libraries, e-content, and learning platforms from anywhere within the campus — classrooms, library, other ICT-based and student-centric initiatives (NPTEL access, Google Classroom, online assessments, multimedia learning, and self-learning resources), as it removes connectivity as a barrier to digital learning. Uninterrupted internet access communication with faculty outside class hours

2.2.7 New Initiatives for embedding Professional Skills (15)

A. Employability skill enhancement Initiatives and effective implementation (8)

Innovation and Entrepreneurship Development Cell (IEDC)

The institute has established a well-functioning Innovation and Entrepreneurship Development Cell (IEDC) with the objective of fostering an entrepreneurial mindset and innovative thinking among students. The cell regularly organizes work interprofessional and cross-functional skills that go beyond the boundaries of a single discipline, preparing students to collaborate effectively in diverse, real-world professional environments.

In addition to knowledge-based sessions, the IEDC places strong emphasis on experiential learning by conducting hands-on sessions, where students are given a dedicated platform to learn, practice, and refine new skills under expert guidance business model development, pitching techniques, and startup fundamentals, thereby nurturing an innovation-driven culture on campus.

Through structured mentoring, exposure to industry practices, and opportunities for practical application, the IEDC plays a pivotal role in encouraging students to think beyond conventional career paths and consider entrepreneurship and inn invited, student participation numbers, and outcomes (such as student startups, prototypes, or business plans developed) serve as strong evidence for this initiative.

Career Guidance Training Program

To support students in making informed career decisions, the institute organizes a structured Career Guidance Training Program for every batch of students, typically conducted during the second year or final year of their studies. This timing the job market or pursuing higher education.

The program is designed to equip students with essential career-readiness skills, including resume/CV building, interview techniques, group discussion strategies, aptitude and reasoning preparation, and awareness of industry expectations and counselors, or industry professionals, helping students identify suitable career paths based on their individual strengths, interests, and academic background.

SI No	Date – Month– Year	Name of the Event	
CAY 2025-2026			
1	15/07/2025	Workshop on: PROJECT COOLDOW	
2	20/09/2025	Seminar on Diagnostic Techniques in Automotive Systems	
3	17/01/2026	Introduction to Manufacturing	
4	13/02/2026	Solid works -workshop (3 D drawing)	
CAYm1 2024-2025			
1	6/09/2024,7/09/2024	Workshop on 3D Printing Technology	
2	10/01/2025	Marine Engine Technology	
2	24/ 01/ 2025	Skill Enhancement Program on Hyundai Service Standards	
3	03/02/2026	Skill to Build-Workshop on Design and Manufacturing	
CAYm2 2023-2024			
1	18/09/2023	Seminar on Automobile service	
2	05/01/2024	Seminar on CNC Machine	
3	16/2/2024	Maintenance Training	
4	08/03/2024	Workshop on: Design – AutoCAD Software	

B. Personality development related Initiatives & effective implementation (7)

Sl. No.	Academic Year	Total Personality Development Sessions Conducted		
1	2025–26	4		
2	2024–25	4		
3	2023–24	2		
4	2022–23	2		
Sl. No.	Academic Year	Date	Name of Personality Development Programme	Resource Person
2025–26				
1	2025–26	June - September	Communication Skills	Mr. James Thazhathu
2	2025–26	June - September	Aptitude Training	Mr. Jojo T Antony
3	2025–26	June - September	Soft Skills & Group Discussion Mock	Mr. Jojo T Antony
4	2025–26	23/08/2025	Personality Development and Motivation	Mr. Poulose T. O.
5	2025-26	03/12/2026	MIJARC -Asian, Solidarity economic commission coordinator	Mr. Ebin Kanivayalil
2024–25				
1	2024–25	June - September	Aptitude Training	Mr. Jojo T Antony

2	2024–25	June - September	Soft Skills & Group Discussion Mock	Mr. Jojo T Antony
3	2024–25	June - September	Communication Skills	Mr. Minoor Manmadhan
4	2024–25	June- september	Personality Development and Motivation	Mr. Poulose T. O.
2023–24				
1	2023–24	June - September	Aptitude Training	Mr. Jojo T Antony
2	2023–24	June - September	Soft Skills & Group Discussion Mock	Mr. Jojo T Antony
2022–23				
1	2022–23	June - September	Aptitude Training	Mr. Jojo T Antony
2	2022–23	June - September	Soft Skills & Group Discussion Mock	Mr. Jojo T Antony

2.2.8 Co-curricular & Extra Curricular Activities (10)

S. No.	Academic year	No. of students Participated (Co- Curricular)	No. of students Participated (Extra- Curricular)
1	2025-2026	50	19
2	2024-2025	61	44
3	2023-2024	68	21
4	2022-2023	72	49
5	2021-2022	3	11

Sl. No.	Academic year	No. of students Participated (Co- Curricular)	No. of students Participated (Extra- Curricular)
1	2025-2026	50	
2	2024-2025	61	
3	2023-2024	68	
4	2022-2023	72	
5	2021-2022	3	

CAY 2025-2026

Co - Curricular:

S. No	Name of the Student	Event Description	Event Level (Inter- institute / State/National)	College Name	Awards
1	NAVIN C NISHANTH	CADD MANIYA	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	FIRST
2	SOORAJ VS	CADD MANIYA	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	second
3	ALEX JOY	CADD MANIYA	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	THIRD

THOMAS P.SEBY							ALAN P J
VAISHNAVU T S				ADITHYAN K D			ARJUN RAMESH
AMAL DAVIS				ARUN E M			ARJUN SHABU
ANTO SAMUEL JOY	TEXPO, PROJECT	INTER HACKATHON INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	1 ST PRIZE	JILAN JOSEPH	TEXPO, PROJECT	ARYAN SUBRAHMANIAN
DONN VARGHESE					MAHROOF.K.M	INTER HACKATHON INSTITUTE	JOYAL K V T P
JOYAL JOY					SHAHIN P S		KIRAN A U
VAISHNAV VIJAYAN					SREEKANTH . K		MISHAL SAPHY
AJEX JOY							KIRAN A U
AMAL K S							
AMALKRISHNA N S							
BLAIZE GEORGE							
CHRISTO JOBY							
CLINTO JOY							
EADRIN PLUTTAN							
NAVEEN C NISHANTH	TEXPO, PROJECT	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	3	JOYAL JOSE	INTER INSTITUTE	THIRD
SOORAJ V S	HACKATHON						
SOUGAND K S					THOMAS P.SEBY	seminar INTER INSTITUTE	Third NIRMALA INSTITUTE OF TECHNOLOGY

CAY M1 2024-2025

Co - Curricular:

S. No .	Name of the Student	Event Description	Event Level (Inter-institute / State/Nationa l)	College Name	Awards
1	ABIN TJ	CADD MANIYA	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	FIRST
2	SACHIN MR	CADD MANIYA	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	second
3	JOYAL JOSE	CADD MANIYA	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	THIRD
	THOMAS P.SEBY	seminar	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	Third

[illegible]

S. No	Name of the Student	Event Description	Event Level (Inter- institute / State/National)	College Name	Awards
1	YADHUKRISHNAN PK	CADD MANIYA	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	FIRST
2	JOYAL JOY	CADD MANIYA	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	second
3	NIBIL KB	CADD MANIYA	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	THIRD
4	BAHUL JITH P B	seminar	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	second
	ALFRED JOY				
	EMMANUVEL E B				
	MELVIN C B				
5	SHARUN K C	Model making	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	FIRST
	JOYAL JIMMY				
	ANOOP A G				
6	KAILAS P M	Model making	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	second
7	BEBETTO BABU	Model making	INTER INSTITUTE	NIRMALA INSTITUTE OF	THIRD

[illegible]

10

5

1ST PRIZE

ABHAI DAVIS

ABHINAV M S

ABINAV P B

ADARSH P A

ADARSH V B

AJIN PRAVEEN

AJIRAJ.T.A

INTER INSTITUTE NIRMALA INSTITUTE OF PARTICIPATION TECHNOLOGY TEXPO, PROJECT HACKATHON

ADARSH V R

SAGAL E S

SAIKRISHNA P V

SEBI P J

SREERAG K S

SREERAG K S

SREERAG K S

ALTHAF V A

NIHAL BABY

RAHUL M R

ROSHAN ROY

SUDHEESH K S

SUSHANTH V S

SWARAN P
RAJAN

T S SHARON

THARUN JOJU

ALIN K S

ALIN SHIBU

ALWIN A V

ALWIN MAJO

ALWIN
VARGHESE

AMALKRISHNA
K A

ANAND DAS .V
.S

ANEX BABU

ANTONY JOSE

VISHNU M A

ZEEON SANJOSE

7

8

TEXPO,
PROJECT

HACKATHON

INTER
INSTITUTE

NIRMALA
INSTITUTE OF
TECHNOLOGY
PARTICIPATION

NIRMALA
INSTITUTE OF
TECHNOLOGY
PARTICIPATION

ABIN C JOSH Y

AKASH BIJU

ALVIN ANTONY
XAVIER

CHINMAY.E.C.

JOHN GRACIOUS **TEXPO,
PROJECT** **INTER** **NIRMALA** **PARTICIPATION**
HACKATHON INSTITUTE **INSTITUTE OF** **TECHNOLOGY**

KEVIN GEORGE

SAVIO
VARGHESE
WILSON

9

ARAVIND
UNNIKRISHNAN

ARUN SHAJAN V

BIMAL KRISHNA
P B

CHRISTY JOHN
P.D

DALBIN DANI M

DENIL DAVIS **TEXPO,
PROJECT** **INTER** **NIRMALA** **PARTICIPATION**
HACKATHON INSTITUTE **INSTITUTE OF** **TECHNOLOGY**
DIBIN
VARGHESE

EBY T A

	EDWIN BABU				
	MANUKRISHNA P M				
	MIDHUN M R				
	MUHAMMED DILSHAN				
	NAVANEETH P SURESH				
10	NAVEEN VARGHESE				
	NEVIN VARGHESE K.J				
	NIMAL DAVIS V	INTER INSTITUTE			
	NOEL BABU	TEXPO, PROJECT HACKATHON	NIRMALA INSTITUTE OF TECHNOLOGY	2 ND PRIZE	
	PRINCE THOMAS				
11	EDWIN K O				
	HARIKRISHNA HARIHARAN				
	HARIKRISHNA P K				
	JEWEL TITUS				
	JINESH P J				
	JISSU JOHNSON				

KIRANDAS K

KRISHNARAJ M
R

3 COURSE OUTCOMES AND PROGRAM OUTCOMES (100)

Define the Program specific outcomes

PSO1	Able to design and produce engineering componen
PSO2	Able to manage maintenance system and attain qu

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

3.1.1 Course Outcomes (SAR should include course outcomes of one course from each semester of study, however, should be prepared for all courses) (5)

Note : Number of Outcomes for a Course is expected to be 3 to 5.

Course Name :

C1 01

Course Year :

2022-25

Course Name	Statements
C1 01.1	The learners listen to, identify and comprehend the main idea and supporting details of the listening passage.
C1 01.2	The learners apply different language functions and communicate effectively in the work place and daily life.
C1 01.3	The learners read, comprehend and analyze the ideas and cocepts contained in articles, technical writing and narrative and express them in their own words.
C1 01.4	The learners apply different techniques of writing and compose technical, documents like reports, email and so on.

Course Name :

C1 12

Course Year :

2022-25

Course Name	Statements
C1 12.1	Identify the force system for given conditions by applying the basics of mechanics.
C1 12.2	Apply conditions of static equilibrium to determine unknown forces of different structural elements.
C1 12.3	Solve problems involving rigid bodies by applying the properties of distributed areas and mass
C1 12.4	Determine structural behaviour of loading material under various loading conditions.

Course Name :

C2 04

Course Year :

2022-25

Course Name	Statements
C2 04.1	Describe the concept of mechanics of metal cutting in manufacturing operation and explain lathe machinery, its parts with various operations performed in it.
C2 04.2	Summarize drilling, shaper, planer and slotting machines including its parts, various operations performed in each and specifications of each machine tool.
C2 04.3	Describe the significance of milling, grinding machines (types, parts, cutting tools, operations performed) and other super finishing operations
C2 04.4	Explain the principle of NC and CNC machines and significance of lubricants/cutting fluids used in machining process

Course Name :

C2 12

Course Year :

2022-25

Course Name	Statements
C2 12.1	Explain fluid properties and pressure measurement techniques.
C2 12.2	Apply conservation laws to fluid flow over notches and, through pipes and orifices.
C2 12.3	Describe the construction, working and performance testing of hydraulic turbines.
C2 12.4	Describe the construction, working and performance testing of hydraulic pumps

Course Name :

C3 03

Course Year :

2022-25

Course Name	Statements
C3 03.1	Explain types of mechanisms, fasteners and welded joints and identify them for specific applications
C3 03.2	Apply the basic theory of design of shafts and keys for mechanical power transmission.
C3 03.3	Explain the applicability of cams, flywheels and governors in the design of mechanical systems
C3 03.4	Describe the various types of mechanical power transmission devices and their selection on specific applications

Course Name :

C3 13

Course Year :

2022-25

Course Name	Statements
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C3 13.1	Describe various types of sensors and their applications.
C3 13.2	Explain the various mechanical, hydraulic, pneumatic, and electrical actuation systems.
C3 13.3	Explain the basic PLC architecture and PLC programming concepts
C3 13.4	Describe automation & and robotics systems with specific emphasis on robotic design factors

3.1.2 CO-PO matrices of courses selected in 3.1.1(Six matrices to be mentioned; one per semester from 1st to 6th semester) (5)

1 . course name : C201

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7
C101.1	3 ▾	3 ▾	1 ▾	1 ▾	- ▾	- ▾	1 ▾
C101.2	3 ▾	3 ▾	1 ▾	1 ▾	- ▾	- ▾	1 ▾
C101.3	3 ▾	3 ▾	2 ▾	2 ▾	- ▾	- ▾	1 ▾
C101.4	3 ▾	3 ▾	2 ▾	2 ▾	- ▾	- ▾	1 ▾
Average	3.00	3.00	1.50	1.50	0.00	0.00	1.00

2 . course name : C212

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7
C112.1	3 ▾	2 ▾	1 ▾	1 ▾	- ▾	- ▾	1 ▾
C112.2	3 ▾	3 ▾	2 ▾	2 ▾	1 ▾	- ▾	1 ▾
C112.3	3 ▾	3 ▾	2 ▾	2 ▾	- ▾	- ▾	1 ▾
C112.4	3 ▾	2 ▾	3 ▾	2 ▾	2 ▾	- ▾	1 ▾
Average	3.00	2.50	2.00	1.75	1.50	0.00	1.00

3 . course name : C304

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7
C204.1	3 ▾	2 ▾	1 ▾	1 ▾	2 ▾	- ▾	- ▾
C204.2	3 ▾	3 ▾	2 ▾	2 ▾	2 ▾	- ▾	- ▾
C204.3	3 ▾	3 ▾	2 ▾	3 ▾	1 ▾	- ▾	- ▾
C204.4	3 ▾	3 ▾	3 ▾	3 ▾	2 ▾	- ▾	- ▾
Average	3.00	2.75	2.00	2.25	1.75	0.00	0.00

4 . course name : C312

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7
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C212.1	3 ▾	2 ▾	1 ▾	2 ▾	1 ▾	- ▾	- ▾
C212.2	3 ▾	3 ▾	3 ▾	2 ▾	2 ▾	- ▾	- ▾
C212.3	3 ▾	3 ▾	3 ▾	2 ▾	2 ▾	- ▾	- ▾
C212.4	3 ▾	3 ▾	3 ▾	2 ▾	2 ▾	- ▾	1 ▾
Average	3.00	2.75	2.50	2.00	1.75	0.00	1.00

5 . course name : C403

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7
C303.1	3 ▾	3 ▾	3 ▾	2 ▾	2 ▾	1 ▾	2 ▾
C303.2	3 ▾	3 ▾	3 ▾	3 ▾	2 ▾	2 ▾	2 ▾
C303.3	3 ▾	3 ▾	3 ▾	2 ▾	2 ▾	2 ▾	2 ▾
C303.4	3 ▾	3 ▾	3 ▾	3 ▾	2 ▾	2 ▾	2 ▾
Average	3.00	3.00	3.00	2.50	2.00	1.75	2.00

6 . course name : C413

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7
C313.1	3 ▾	2 ▾	2 ▾	3 ▾	2 ▾	1 ▾	2 ▾
C313.2	3 ▾	3 ▾	3 ▾	3 ▾	2 ▾	1 ▾	2 ▾
C313.3	3 ▾	3 ▾	2 ▾	3 ▾	2 ▾	2 ▾	2 ▾
C313.4	3 ▾	3 ▾	3 ▾	3 ▾	2 ▾	2 ▾	3 ▾
Average	3.00	2.75	2.50	3.00	2.00	1.50	2.25

1 . Course Name : C201

Course	PSO1	PSO2
C101.1	2 ▾	- ▾
C101.2	2 ▾	- ▾
C101.3	3 ▾	1 ▾
C101.4	3 ▾	1 ▾
Average	2.50	1.00

2 . Course Name : C212

Course	PSO1	PSO2
C112.1	2 ▾	- ▾
C112.2	3 ▾	1 ▾

C112.3	3 ▾	1 ▾
C112.4	3 ▾	2 ▾
Average	2.75	1.33

3 . Course Name : C304

Course	PSO1	PSO2
C204.1	3 ▾	1 ▾
C204.2	3 ▾	3 ▾
C204.3	2 ▾	3 ▾
C204.4	3 ▾	3 ▾
Average	2.75	2.50

4 . Course Name : C312

Course	PSO1	PSO2
C212.1	3 ▾	1 ▾
C212.2	3 ▾	2 ▾
C212.3	3 ▾	3 ▾
C212.4	3 ▾	3 ▾
Average	3.00	2.25

5 . Course Name : C403

Course	PSO1	PSO2
C303.1	3 ▾	1 ▾
C303.2	3 ▾	3 ▾
C303.3	2 ▾	2 ▾
C303.4	3 ▾	2 ▾
Average	2.75	2.00

6 . Course Name : C413

Course	PSO1	PSO2
C313.1	2 ▾	1 ▾
C313.2	3 ▾	2 ▾
C313.3	2 ▾	2 ▾
C313.4	3 ▾	2 ▾
Average	2.50	1.75

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

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7
C101	1.50	2.25	1.00	1.25	1.00	2.50	2.25
C102	3.00	3.00	1.50	1.50	0.00	0.00	1.00
C103	3.00	3.00	1.75	2.00	2.00	0.00	1.00
C104	3.00	2.50	1.75	1.50	2.67	1.00	1.00
C105	3.00	2.50	2.25	2.25	1.00	0.00	1.00
C106	3.00	3.00	1.75	3.00	2.50	1.00	1.00
C107	2.50	2.50	1.75	2.75	1.00	1.75	2.00
C108	1.00	1.25	1.00	0.00	3.00	2.25	3.00
C109	3.00	2.75	1.75	1.00	0.00	0.00	1.00
C110	3.00	2.75	1.50	1.25	1.50	0.00	1.67
C111	3.00	2.00	1.67	1.00	3.00	2.50	2.67
C112	3.00	2.50	2.00	1.75	1.50	0.00	1.00
C113	3.00	2.00	2.75	1.25	1.00	0.00	0.00
C114	1.00	1.75	1.00	0.00	1.00	2.50	2.25
C115	3.00	3.00	1.75	3.00	1.25	1.00	1.00
C116	3.00	3.00	2.00	3.00	1.25	0.00	0.00
C117	2.50	2.00	2.00	3.00	1.00	0.00	1.00
C118	3.00	2.80	2.80	3.00	2.60	2.00	1.00
C201	1.75	2.00	1.75	1.25	2.25	2.25	2.25
C202	3.00	2.75	2.25	2.00	1.50	0.00	0.00
C203	3.00	2.75	2.25	2.00	1.50	0.00	0.00
C204	3.00	2.50	2.50	2.25	1.75	0.00	1.00
C205	3.00	2.50	2.50	2.25	1.75	0.00	1.00
C206	3.00	2.50	3.00	2.50	1.75	1.00	1.00
C207	3.00	3.00	2.25	3.00	2.25	0.00	1.00
C208	3.00	3.00	3.00	3.00	2.50	1.50	1.00
C209	3.00	3.00	2.75	3.00	2.00	1.00	1.00
C210	3.00	2.75	3.00	3.00	1.75	1.00	1.00

C211	3.00	2.75	2.00	2.00	2.00	1.00	1.00
C212	3.00	2.75	2.50	2.00	1.75	0.00	1.00
C213	3.00	2.25	2.00	2.00	2.00	1.25	1.25
C214	1.75	2.50	2.25	1.50	3.00	2.00	2.25
C215	3.00	2.75	2.75	2.50	2.25	2.75	1.75
C216	3.00	3.00	2.00	3.00	2.00	0.00	0.00
C217	3.00	3.00	2.00	3.00	2.00	0.00	0.00
C218	3.00	3.00	2.50	3.00	2.00	0.00	0.00
C219	3.00	2.75	2.25	2.75	2.75	2.75	2.25
C301	2.00	2.20	1.40	1.60	2.00	2.00	1.80
C302	2.25	2.25	1.50	1.75	2.00	3.00	2.00
C303	3.00	3.00	3.00	2.50	2.00	1.75	2.00
C304	3.00	2.50	2.25	2.50	2.00	0.00	1.00
C305	3.00	2.50	2.75	2.75	1.75	1.00	1.50
C306	3.00	2.25	2.75	2.50	3.00	1.00	1.00
C307	3.00	2.00	2.25	2.00	2.50	1.00	2.00
C308	3.00	2.75	3.00	3.00	2.25	1.00	1.00
C309	3.00	2.75	2.50	3.00	2.50	1.00	1.00
C310	3.00	2.75	2.50	3.00	2.50	1.00	1.00
C311	1.67	1.67	1.00	2.33	2.00	2.33	3.00
C312	2.25	2.25	2.25	1.50	2.25	2.50	2.75
C313	3.00	2.75	2.50	3.00	2.25	1.50	2.00
C314	3.00	2.50	2.50	3.00	2.00	1.50	2.25
C315	3.00	2.75	2.25	2.75	2.75	1.75	2.75
C316	3.00	2.75	2.25	2.75	2.75	1.75	2.75
C317	3.00	2.75	3.00	3.00	2.00	1.75	2.00
C318	3.00	3.00	2.25	2.00	1.50	3.00	2.00
C319	3.00	2.50	2.25	2.00	3.00	1.25	2.50
C320	3.00	2.75	3.00	2.25	2.25	2.00	2.25
C321	1.00	1.67	1.00	0.00	2.67	2.25	2.00
C322	2.75	2.00	2.75	3.00	1.50	1.50	2.00
C323	3.00	2.75	2.25	3.00	2.50	1.75	2.25

C324	3.00	2.75	2.75	3.00	2.00	1.75	2.25
C325	2.00	2.17	2.17	2.20	2.00	2.67	2.33
C326	2.00	2.17	2.00	1.83	1.83	2.17	2.17

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

Course	PSO1	PSO2
C101	1.67	1
C102	2.5	1
C103	2.5	1.67
C104	2.5	2.33
C105	2.75	1
C106	2.5	2.5
C107	1.5	1.33
C108	1	1
C109	1.75	1
C110	1.5	1
C111	1	2
C112	2.75	1.33
C113	3	1.25
C114	0	0
C115	2.5	1.5
C116	2.25	1.33
C117	2.5	1
C118	2.8	2
C201	1.75	1.5
C202	3	2
C203	2.75	2.5
C204	3	2.5
C205	2.75	2.25
C206	3	2.25
C207	3	2.75

C208	3	2.75
C209	2.75	2.5
C210	3	2.5
C211	3	2.75
C212	3	2.25
C213	2.75	3
C214	1.75	1.5
C215	2.75	2.75
C216	0	2.75
C217	3	2
C218	3	2
C219	2.75	2.75
C301	1.8	1.8
C302	1	1.75
C303	3	2.5
C304	2.75	1.75
C305	3	2
C306	2.75	3
C307	2	2.25
C308	3	2.25
C309	3	2.5
C310	2.75	3
C311	1.67	1.5
C312	1.33	1.67
C313	2.5	1.75
C314	2.5	1.75
C315	2.25	2
C316	2.5	2.25
C317	3	1.75
C318	1.25	2.5
C319	1.5	2
C320	3	1.75

C321	0	0
C322	2.75	1.5
C323	2.25	3
C324	2.75	2.75
C325	2.2	1.83
C326	2	1.83

3.2 Attainment of Course Outcomes (40)

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

Course Outcome (CO) attainment in the Diploma in Mechanical Engineering program is evaluated through two complementary routes: a Direct Attainment method, based on students academic performance, and an Indirect Attainment method. A combination of both routes, calculated as summarized below and detailed in the sections that follow

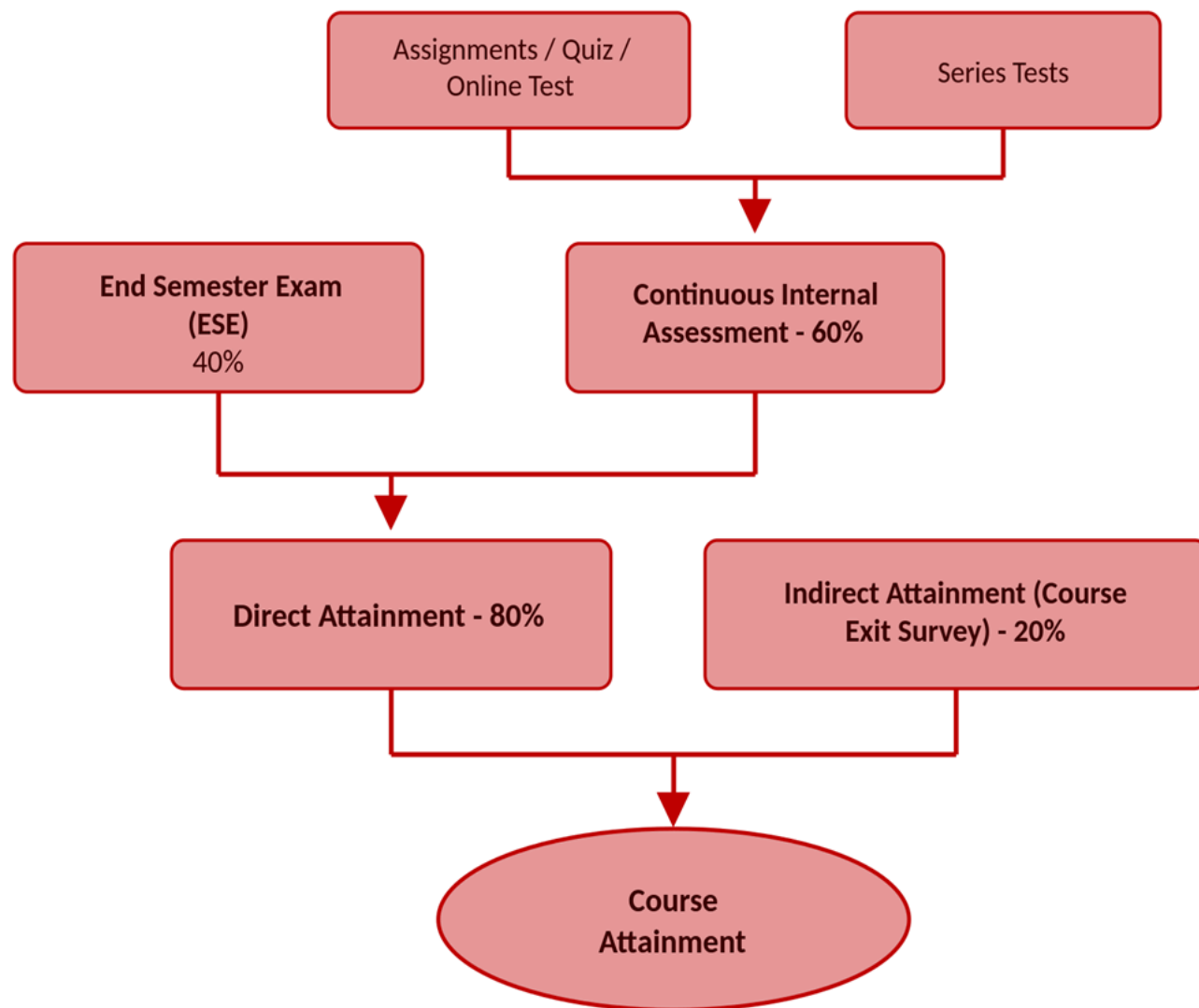


Figure 3.1 Flow chart for explaining the process to calculate course attainment

Assessment flow

The attainment of a Course Outcome is built up in the following stages:

- Continuous Internal Assessment (CIA) is derived from Series Tests (minimum two) and Assignments (minimum two), supplemented by tools such as quizzes, online tests and technical discussions. Threshold: 50% for Series Tests and /
- The End Semester Examination (ESE) is conducted by the State Board of Technical Education as per the prescribed curriculum.
- CIA and ESE together constitute Direct Attainment, weighted 60% and 40% respectively.
- A Course Exit Survey, administered for every course facilitator, constitutes Indirect Attainment.
- Direct Attainment (80%) and Indirect Attainment (20%) are combined to give the final Course Attainment.

Table 3.7 CO attainment – Weightage Criteria

Component	Basis
Direct Attainment (X)	End Semester Examination (A1) + Continuous Internal Assessment (A2)
• End Semester Examination (A1)	Conducted by State Board of Technical Education
• Continuous Internal Assessment (A2)	Series Tests, Assignments, Lab work, Open ended project
Indirect Attainment (Y)	Course Exit Survey (A3)
Total CO Attainment	X (80%) + Y (20%)

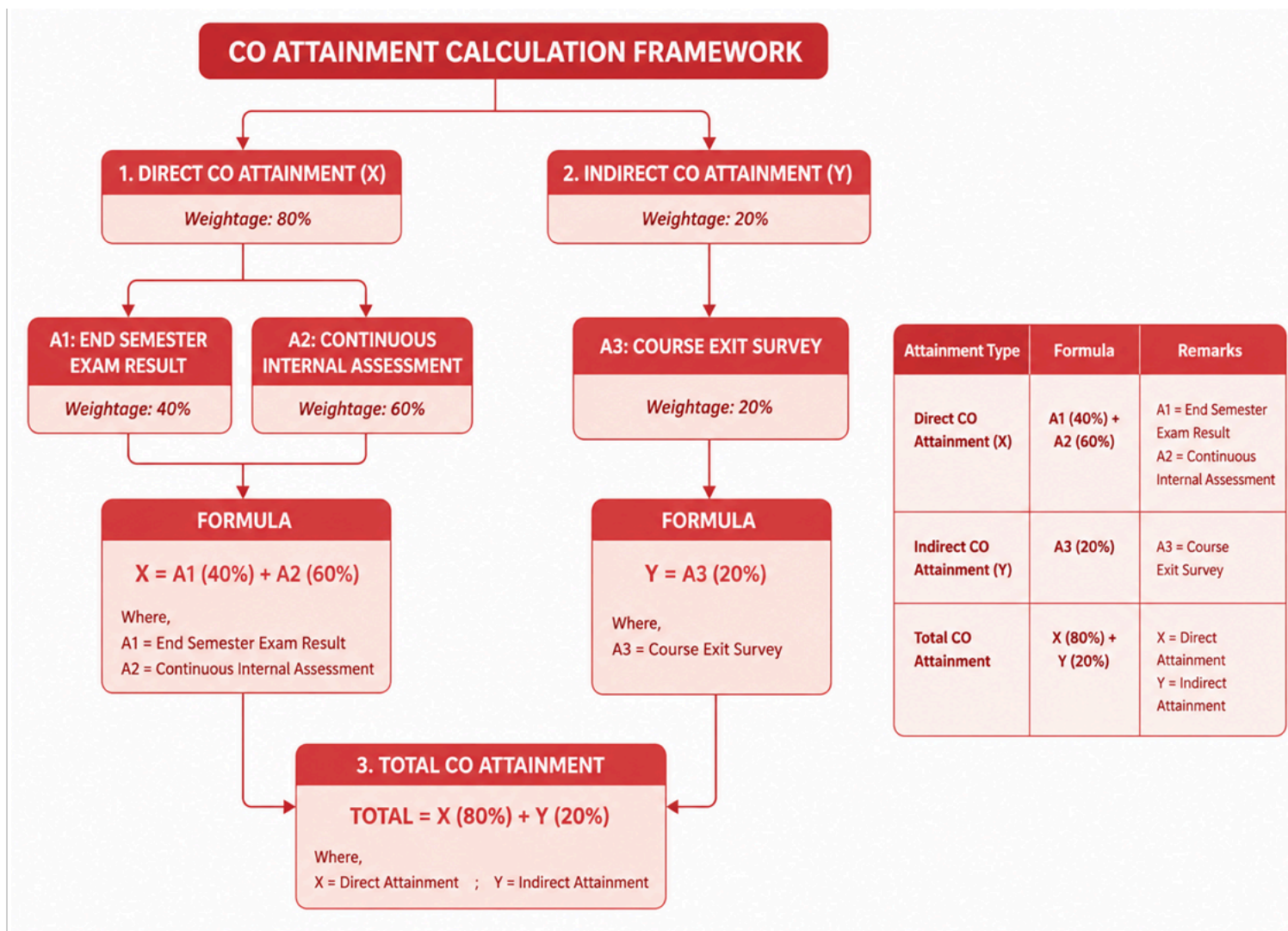


Figure 3.2 CO Attainment calculation framework

Attainment level criteria

Attainment levels (1, 2 or 3) are assigned to each course based on the percentage of students crossing the defined threshold, as tabulated below:

Table 3.8 Direct attainment level criteria – End semester examination

Attainment Level	Criterion
Level 3	60% or more of the total students score more than E grade in the ESE

Level 2	50% – 60% of the total students score more than E grade in the ESE
Level 1	40% – 50% of the total students score more than E grade in the ESE

Table 3.9 Direct attainment level criteria – Continuous internal assessment

Attainment Level	Criterion
Level 3	60% or more of the total students score more than 50% marks in the CIA (Excluding the weightage for internal assessment)
Level 2	50% – 60% of the total students score more than 50% marks in the CIA (Excluding the weightage for internal assessment)
Level 1	40% – 50% of the total students score more than 50% marks in the CIA (Excluding the weightage for internal assessment)

Table 3.10 Indirect attainment level criteria – Course Exit Survey

Attainment Level	Criterion
Level 3	60% or more of the total students score more than 50% rating in the Course Exit Survey
Level 2	50% – 60% of the total students score more than 50% rating in the Course Exit Survey
Level 1	40% – 50% of the total students score more than 50% rating in the Course Exit Survey

Revision 2015

Weightage for internal assessment of different courses are mentioned below:

Internal assessment for theory courses

The maximum marks awarded for internal continuous assessment and end of semester examinations shall be 50 and 100 respectively, totaling to 150. The weightage awarded for internal assessment marks shall be as follows:

Table 3.10 Internal assessment for theory courses – Revision 2015

Sl. No.	Component	Weightage (%)
1	Test Papers	50
2	Assignments	30
3	Attendance	20

Internal assessment for practical courses

Internal continuous assessment and end of semester practical examinations have 1:1 weightage, with 50 marks allotted for internal continuous assessment and 50 marks for End of Semester examinations. The weightage for internal continuous

Table 3.11 Internal assessment for theory courses – Revision 2015

Sl. No.	Component	Weightage (%)
1	Observation Note / Rough Record	20
2	Fair Record (timely submission, accuracy, neatness)	20
3	Attendance	20
4	Test	40

Internal assessment for drawing courses

Table 3.12 Internal assessment for drawing courses – Revision 2015

Sl. No.	Component	Weightage (%)
1	Submission of completed drawing sheets	40
2	Test	40
3	Attendance	20

Assessment of end semester examinations

Assessment of theory courses

The theory courses shall be assessed through end of semester examinations, conducted by the State Board of Technical Education, Kerala. The Duration of the end of semester examination shall be 3 hours

Table 3.13 Grading system of end semester examination – Revision 2015

Sl. No.	Range of Marks (%)	Grades	Description
1	90 and above	S	Outstanding
2	[80 – 90)	A	Excellent
3	[70 – 80)	B	Very Good
4	[60 – 70)	C	Good

5	[50 – 60)	D	As
6	[40 – 50)	E	Satisfactory
7	Below 40	F	Unsatisfactory

Assessment of practical courses

- An external examiner and an internal examiner, appointed by the State Board of Technical Education, shall conduct the End of Semester examinations of practical courses.
- No candidate shall be allowed to attend the End of Semester Practical Examinations unless he/she produces certified record of the laboratory/workshop/Project.
- Award of marks in the End of Semester practical examinations (except Project) shall be as follows:

Table 3.14 End semester assessment of practical courses – Revision 2015

Sl. No.	Component	Weightage (%)
1	Fair Record	10
2	Viva Voce	20
3	Procedure & Tabulation	30
4	Conduct of Experiment	20
5	Result & Inference	20

Assessment of seminar

Table 3.15 End semester assessment of seminar– Revision 2015

Sl. No.	Component	Weightage (%)
1	Relevance of Topic	10
2	Collection of Materials	20
3	Presentation (slides, delivery)	40
4	Question / Answer / Discussion	10
5	Seminar Report	10
6	Attendance	10

Assessment of project work

Table 3.16 End semester assessment of project work – Revision 2015

Sl. No.	Component	Weightage (%)
1	Development of Prototype / Model	20
2	Usage of Modern Tool / Technology	10
3	Presentation (slides, delivery)	15
4	Innovativeness	5
5	Viva	15
6	Individual Contribution	15
7	Group Activity	10
8	Project Report	10

Revision 2021**Internal assessment**

Table 3.17 Continuous internal assessment of theory courses – Revision 2021

Assessment Type	Tool	Weightage (%)
Summative	Series Test	
Formative	Assignments / Class Work	
Formative	Attendance	

Table 3.18 Continuous internal assessment of practical courses – Revision 2021

Assessment Type	Tool	Weightage (%)
Summative	Lab Examination	
Formative	Lab Work	

Formative	Open-Ended Experiment / Micro-Project	
Formative	Attendance	

Table 3.19 Continuous internal assessment of minor project– Revision 2021

Sl. No.	Criteria	Weightage (%)
1	Applying 5S concept of lean manufacturing in laboratories	10
2	Involvement in maintenance of tools / equipment	10
3	Applying calibration procedures for measuring / test instruments	10
4	Open-ended project solving problems of social significance / daily tasks	40
5	Report	20
6	Viva	10

Table 3.20 Continuous internal assessment of major project– Revision 2021

Types of assessment	Tools	
Summative	Major project evaluation by the department	
Formative	Weekly activity report	
Attendance		

Table 3.21 Continuous internal assessment of seminar– Revision 2021

Sl. No.	Criteria	Weightage (%)
1	Relevance of Topic	10
2	Literature Survey	10
3	Presentation (slides, delivery)	50

4	Interaction / Discussion	10
5	Seminar Report	10
6	Attendance	10

Table 3.22 Continuous internal assessment of Internship I & II – Revision 2021

Sl. No.	Criteria	Weightage (%)
1	Presentation at the End of Internship	20
2	Daily Activity Report	10
3	Comprehensive Report on Internship	30
4	Relevant Internship Certificate from Concerned Department	30
5	Attendance and Punctuality	10

Assessment of End Semester Examination (ESE)

Assessment for Theory Courses

The theory courses shall be assessed through ESE conducted by the CTE/Institution. The duration of the examination shall be 3 hours unless otherwise specified in the scheme. Question paper shall be prepared based on all modules of the syllabus of the Exam is 3 hours.

Table 3.23 Grading system of end semester examination – Revision 2021

Sl. No.	Range of Marks (%)	Grades	Description
1	90 and above	S	Outstanding
2	[80 – 90)	A	Excellent
3	[70 – 80)	B	Very Good
4	[60 – 70)	C	Good
5	[50 – 60)	D	Average
6	[40 – 50)	E	Satisfactory

7	Below 40	F	Unsa
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Assessment for Practical Courses

An internal examiner and external examiner shall conduct ESE of practical courses. The external examiner shall be appointed by the CTE.

Table 3.24 Assessment for practical course – Revision 2021

Sl. No.	Component	Weightage (%)
1	Fair Record	10
2	Viva Voce	20
3	Procedure & Tabulation	30
4	Conduct of Experiment	20
5	Result & Inference	20

Assessment for Major Project

Table 3.25 Assessment for major project course – Revision 2021

Sl. No.	Component	Weightage (%)
1	Development of Prototype / Model	20
2	Usage of Modern Tool / Technology	10
3	Presentation (slides, delivery)	15
4	Innovativeness	5
5	Viva	15
6	Individual Contribution	15
7	Group Activity	10
8	Project Report	10

3.2.2 Record the attainment of Course Outcome of all courses with respect to set attainment levels (30)

Table 3.26 CO- Attainment for All subjects (2022-2025 Batch)

Si No	Dte Course Code	Sar Course Code	Course Name	Direct		Co Attainment Direct (80%)
				Internal (60%)	External (40%)	
1	1001	C101	Communication Skills in English	2.5	2	2.3
2	1002	C102	Mathematics I	3	0	1.8
3	1003	C103	Applied Physics I	3	0	1.8
4	1004	C104	Applied Chemistry	3	0	1.8
5	1005	C105	Engineering Graphics	3	3	3
6	1007	C106	Applied Chemistry Lab	3	3	3
7	1008	C107	Introduction to IT systems Lab	3	3	3
8	1009	C108	Sports and Yoga	3	3	3
9	2002	C109	Mathematics II	3	3	3
10	2003	C110	Applied Physics II	3	3	3
11	2001	C111	Environmental Science	3	3	3
12	2021	C112	Engineering Mechanics	3	3	3
13	2022	C113	Manufacturing Technology	3	3	3
14	2008	C114	Communication Skills in English Lab	3	3	3

15	2006	C115	Applied Physics Lab	3	3	3
16	2029	C116	Engineering Mechanics Lab	3	3	3
17	2028	C117	Basic CAD Lab	3	3	3
18	2009	C118	Engineering Workshop Practice	3	3	3
19	3009	C201	Internship I	-	3	3
20	3021	C202	Strength of Materials	2	1	1.6
21	3022	C203	Material Science and Metrology	2.75	3	2.85
22	3023	C204	Machine Tools	3	2	2.6
23	3024	C205	Fundamentals of Electrical Engineering	2.75	2	2.45
24	3025	C206	Machine Drawing	1.25	2	1.55
25	3026	C207	Material Testing and Metallography Lab	3	3	3
26	3027	C208	Mechanical Workshop III	3	3	3
27	3028	C209	Electrical and Electronics Lab	3	3	3
28	3029	C210	Advanced CADD Lab	3	3	3
29	4021	C211	Thermal Engineering	2	0	1.2
30	4022	C212	Fluid Mechanics and Hydraulic Machines	1.75	0	1.05
31	4023	C213	Automobile Engineering	3	1	2.2
32	4001	C214	Community Skills in Indian knowledge system	3	3	3
33	4024	C215	Industrial Engineering	2.5	3	2.7
34	4027	C216	Thermal Engineering Lab	0.75	3	1.65
35	4028	C217	Fluid Mechanics Lab (Mechanical)	2.25	3	2.55

36	4029	C218	Mechanical Workshop IV	3	3	3
37	4009	C219	Minor Project	-	3	3
38	5009	C301	Internship II	-	3	3
39	5001	C302	Industrial Management and Safety	3	3	3
40	5021	C303	Design Of Machine Elements	3	2	2.6
41	5022	C304	Refrigeration and Air conditioning	3	2	2.6
42	5023C	C307	Power Plant Engineering	3	3	3
43	5027	C308	Machine Shop Practice	2.5	3	2.7
44	5028	C309	Hydraulic Machines Lab	3	3	3
45	5029	C310	Automotive Lab	3	3	3
46	5008	C311	Seminar	-	3	3
47	6001	C312	Entrepreneurship and Startup	3	3	3
48	6021A	C313	Mechatronics	2.75	3	2.85
49	6002	C321	Indian Constitution	3	3	3
50	6027	C322	Production Software Lab	3	3	3
51	6028	C323	Refrigeration and Airconditioning Lab	3	3	3
52	6029	C324	Advanced Machine Tools Lab	3	3	3
53	6052C	C325	Automotive Safety	3	3	3
54	6009	C326	Major Project	3	3	3

3.3 Attainment of Program Outcomes and Program Specific Outcomes (40)

3.3.1 Describe assessment tools and processes used for assessing the attainment of each POs and PSOs as mentioned in Annexure 1 (10)

The assessment methods for PO/PSO attainment of POs and PSOs are:

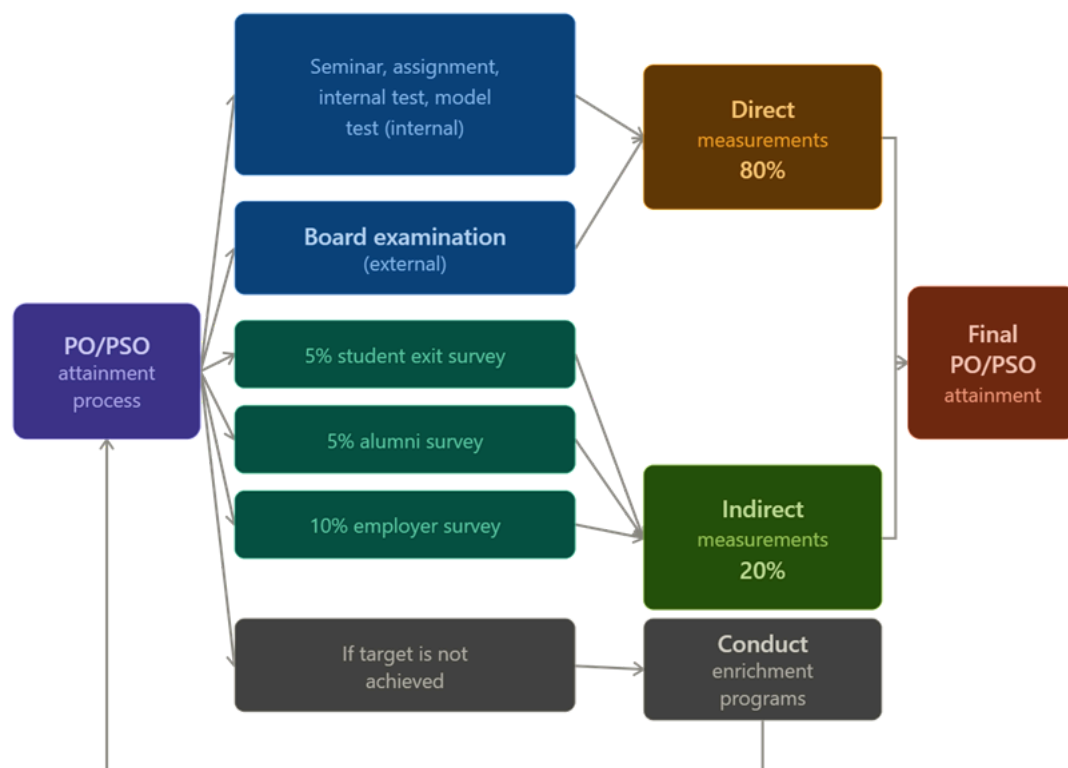
- Direct method
- Indirect method

Direct Method

For all courses, direct attainment method involves the assessment of students through examinations (Both Internal and Board).

Indirect Method

Indirect attainment method is determined based on survey among Employer, Alumni and Students Exit Survey.



3.3.2 Provide results of evaluation of each PO & PSO (30)

PO Attainment

Course	PO1	PO2	PO3	PO4	PO5
C101	1.5	2.25	1	1.25	1
C102	3	3	1.5	1.5	0
C103	3	3	1.75	2	2
C104	3	2.5	1.75	1.5	2.67
C105	3	2.5	2.25	2.25	1
C106	3	3	1.75	3	2.5
C107	2.5	2.5	1.75	2.75	1
C108	1	1.25	1	0	3
C109	3	2.75	1.75	1	0
C110	3	2.75	1.5	1.25	1.5
C111	3	2	1.67	1	3
C112	3	2.5	2	1.75	1.5
C113	3	2	2.75	1.25	1
C114	1	1.75	1	0	1
C115	3	3	1.75	3	1.25
C116	3	3	2	3	1.25
C117	2.5	2	2	3	1
C118	3	2.8	2.8	3	2.6
C201	1.75	2	1.75	1.25	2.25
C202	3	2.75	2	2.25	1.75
C203	3	2.75	2	2.25	1.75
C204	3	2.5	2.5	2.25	1.5
C205	3	2.5	2.5	2.25	1.75
C206	3	2.5	3	2.5	1.75

C207	3	3	2.25	3	2.25
C208	3	3	3	3	2.5
C209	3	3	2.75	3	2
C210	3	2.75	3	3	1.75
C211	3	2.75	3	3	1.75
C212	3	2.75	2.5	2	1.75
C213	3	2.25	2	2	2
C214	1.75	2.5	2.25	1.5	3
C215	3	2.75	2.75	2.5	2.25
C216	3	3	2	3	2
C217	3	3	2	3	2
C218	3	3	2.5	3	2
C219	3	2.75	2.25	2.75	2.75
C301	2	2.2	1.4	1.6	2
C302	2.25	2.25	1.5	1.75	2
C303	3	3	3	2.5	2
C304	3	2.5	2.25	2.5	2
C307	3	2	2.25	2	2.5
C308	3	2.75	3	3	2.25
C309	3	2.75	2.25	3	1.75
C310	3	2.75	2.5	3	2.5
C311	1.67	1.67	1	2.33	2
C312	2.25	2.25	2.25	1.5	2.25
C313	3	2.75	2.5	3	2
C321	1	1.67	1	0	2.67
C322	2.75	2	2.75	3	1.5
C323	3	2.75	2.25	3	2.5
C324	3	2.75	2.75	3	2
C325	3	2.5	1.75	2.5	2.5
C326	2	2.17	2.17	2.2	2

PO Attainment Level

Course	PO1	PO2	PO3	PO4	PO5
Direct Attainment	2.70	2.53	2.12	2.35	1.97
InDirect Attainment	2.26	2.12	2.28	2.31	2.30
PO Attainment	2.61	2.45	2.15	2.34	2.04

PSO Attainment

Course	PSO1	
C101	1.67	1
C102	2.5	1
C103	2.5	1.67
C104	2.5	2.33
C105	2.75	1
C106	2.5	2.5
C107	1.5	1.33
C108	1	1
C109	1.75	1
C110	1.5	1
C111	1	2
C112	2.75	1.33
C113	3	1.25
C114	0	0
C115	2.5	1.5
C116	2.5	1.33
C117	2.5	1
C118	2.8	2
C201	1.75	1.5
C202	3	2
C203	2.75	2.5
C204	3	2.5

C205	2.75	2.25
C206	3	2.25
C207	3	2.75
C208	3	2.75
C209	2.75	2.5
C210	3	2.5
C211	3	2.75
C212	3	2.25
C213	2.75	3
C214	1.75	1.5
C215	2.75	2.75
C216	0	2.75
C217	3	2
C218	3	2
C219	2.75	2.75
C301	1.8	1.8
C302	1	1.75
C303	3	2.5
C304	2.75	1.75
C307	2	2.25
C308	3	2.25
C309	3	2.5
C310	2.75	3
C311	1.67	1.5
C312	1.33	1.67
C313	2.5	1.75
C321	0	0
C322	2.75	1.5
C323	2.25	3
C324	2.75	2.75
C325	2.75	2.25
C326	2.2	1.83

PSO Attainment Level

Course	PSO1	
Direct Attainment	2.45	1.99
InDirect Attainment	2.26	2.38
PSO Attainment	2.41	2.07

4 STUDENTS' PERFORMANCE (200)

Intake Information:

Table 4.1

Item	2025-26 (CAY)	2024-25 (CAYm1)	2023-24 (CAYm2)	2022-23
Sanctioned intake strength of the program((N)	60	60	60	60
Total number of students, admitted through state level counseling (N1)	31	29	21	15
Number of students, admitted through Institute level quota (N2)	23	22	36	36
Number of students, admitted through Lateral Entry (N3)	0	12	10	11
Total number of students admitted in the programme(N1 + N2 + N3)	54	63	67	62

Table 4.2

Year of entry	Total No of students admitted in the program (N1 + N2 + N3)	Number of students who have successful	
		I year	
2025-26	54	0	0
2024-25	63	5	0
2023-24	67	9	15
2022-23 (LYG)	62	1	8
2021-22 (LYGm1)	66	12	4
2020-21 (LYGm2)	68	14	13

Table 4.3

Year of entry	Total No of students admitted in the program(N1 + N2 + N3)	Number of students who have succes [Total of with B:	
		I year	
2025-26	54	0	0
2024-25	63	43	0
2023-24	67	44	46
2022-23 (LYG)	62	41	48
2021-22 (LYGm1)	66	53	57
2020-21 (LYGm2)	68	60	64

4.1 Enrolment Ratio (20)

	N (From Table 4.1)	N1 + N2 (From Table 4.1)	
2025-26	60	54	90.00
2024-25	60	51	85.00
2023-24	60	57	95.00

Average [(ER1 + ER2 + ER3) / 3] : 90.00

Assessment : 20.00

4.2 Success Rate in the stipulated period of the program (60)

4.2.1 Success rate without backlogs in any year of study (40)

Item	Last Year Graduate (2022-23)	Last Year Graduate Minus 1 Batch (2021-22)
Total Number of students (X) (admitted through state level counseling + admitted through Institute on Level quota + admitted through Lateral entry) (N1 + N2 + N3)	62.00	66.00

Number of students who have graduated without backlogs in the stipulated period (Y)	8.00	4.00
Success Index [$SI = Y / X$]	0.13	0.06

Average SI [$(SI1 + SI2 + SI3) / 3$] : 0.13

Assessment [$40 * \text{Average SI}$] : 5.20

4.2.2 Success rate in stipulated period (20)

Item	Latest Year of Graduation, LYG (2022-23)	Latest Year of Graduation minus 1, LYGm1 (2021-22)
Total Number of students (X) (admitted through state level counseling + admitted through Institute on Level quota + admitted through Lateral entry) (N1 + N2 + N3)	62.00	66.00
Number of students who have passed in the stipulated period (Y)	17.00	20.00
Success Index [$SI = Y / X$]	0.27	0.30

Average SI [$(SI1 + SI2 + SI3) / 3$]: 0.33

Assessment [$20 * \text{Average SI}$] : 6.53

4.3 Academic Performance in First Year (25)

Academic Performance	2024-25 (CAYm1)	2023-24 (CAYm1)
Mean of CGPA or mean percentage of all successful students(X)	3.11	3.79
Total number of successful students(Y)	43.00	44.00
Totalnumber of students appeared in the examination(Z)	51.00	57.00
API [$X*(Y/Z)$]:	2.62	2.93

Average API [$(AP1 + AP2 + AP3)/3$] : 2.80

Assessment [$2.5 * \text{AverageAPI}$] : 7.01

4.4 Academic Performance in Second Year (20)

Academic Performance	2023-24(CAYm2)	2022-23(CAYm1)
Mean of CGPA or mean percentage of all successful students(X)	3.90	4.48
Total number of successful students (Y)	46.00	48.00
Total number of students appeared in the examination (Z)	54.00	52.00
API [$X * (Y/Z)$]	3.32	4.14

Average API [$(AP1 + AP2 + AP3)/3$] : 4.09

Assessment [$2.0 * \text{AverageAPI}$] : 8.17

4.5 Academic Performance in Final Year (15)

Academic Performance	2022-23 (LYG)	2021-22 (LYG)
Mean of CGPA or mean percentage of all successful students(X)	7.56	7.19
Total number of successful students(Y)	17.00	20.00
Totalnumber of students appeared in the examination(Z)	48.00	57.00
API [$X*(Y/Z)$]:	2.68	2.52

Average API [(AP1 + AP2 + AP3)/3] : 2.83

Assessment [1.5 * AverageAPI] : 4.24

4.6 Placement and Higher Studies (40)

Item	2022-23 (Last Year Graduate,LYG)	2021-22 (Last Year Graduate Minus 1 Batch,LYGm1)
Total No of Final Year Students(N)	48.00	57.00
No of students placed in the companies or government sector(X)	40.00	51.00
No of students admitted to higher studies (Y)	2.00	1.00
No. of students turned entrepreneur in the respective field of engineering/technology (Z)	0.00	0.00
Placement Index [((1.25 * X) + Y + Z) / N] :	1.04	1.12

Average Placement [(P1 + P2 + P3)/3] : 1.03

Assessment [40 * Average Placement] : 41.20

Provide the placement data in the below mentioned format with the name of the program and the assessment year (separately for CAYm1, CAYm2 and CAYm3):

Program Name : Mechanical Engineering

Assessment Year : 2024-25 (CAYm1)

S.No	Student Name	Enrollment No	Employee Name	Appointment No
1	ANTONY THOMAS	2101020675	MRF	
2	AA MUHAMMED ADHIL	2201022612	LG BRO's	
3	ABHINAV	2201022613	MRF	
4	ABIN T J	2201022615	GABRIEL INDIA LTD	
5	ABIRAG K S	2201022616	MRF	
6	ADHARSH M V	2201022618	LG BRO's	
7	ADIL B PAVITHRAN	2201022619	MRF	
8	AKASH P SATHEESH	2201022621	RESMI INDUSTRIES	
9	AMAL C J	2201022624	MRF	
10	AMANANDH P S	2201022626	MRF	
11	ALDRINOE ROCKEY	2201022622	RESMI INDUSTRIES	

12	AMEEN ABDUL JABBAR	2201022627	LG BRO's	
13	ASHWIN U S	2201022629	MRF	
14	AUSTIN N L	2201022630	LG BRO's	
15	JITHIN K JAISON	2201022640	MRF	
16	BAHULJITH P B	2201022632	MRF	
17	JOYAL JIMMY	2201022642	NSK BEARINGS	
18	LAVISH VARGHESE	2201022643	LG BRO's	
19	MELVIN C B	2201022645	MRF	
20	MIDHUL MARTIN	2201022646	GABRIEL INDIA LTD	
21	PRATHUSH N P	2201022650	RESMI INDUSTRIES	
22	SACHIN M R	2201022651	SUZLON INDIA LTD	
23	SALAHUDEEN AYYOBI	2201022653	MRF	
24	JOSE JOHNSON	2201022641	LG BRO's	
25	SHARUN K C	2201022654	RESMI INDUSTRIES	
26	SHITHIN M S	2201022655	LG BRO's	
27	SUHAIL A A	2201022657	PAVIZHAM RICE	
28	SREEHARI A R	2201022656	NSK BEARINGS	
29	THOMSON P THOMAS	2201022658	NSK BEARINGS	
30	AKHIL SHIJON	2201024044	RESMI INDUSTRIES	
31	ATHULKRISHNA M A	2201024046	MRF	
32	ARJUN K R	2201024045	SUZLON INDIA LTD	
33	JEES JOVET	2201024047	LG BRO's	
34	JOYAL JOSE	2201024049	RESMI INDUSTRIES	
35	SIDHARTH K DAS	2201024052	LG BRO's	
36	RINSHAN V R	2201024051	MRF	
37	VIDHUKRISHNA P S	2201024054	MRF	
38	VAISHNAV K THILAK	2201024275	LG BRO's	
39	VINAYAK K S	2201024435	MRF	
40	AMAL SURESH	2201022625	RESMI INDUSTRIES	

Assessment Year : 2023-24 (CAYm2)

S.No	Student Name	Enrollment No	Employee Name	Appointment No
1	ABHAY JOSEPH	2101020655	WIPRO	

2	AJIL KRISHNAN K U	2101020658	WIPRO	
3	AJIN LEWIS	2101020659	J K TYRE	
4	AJITH P S	2101020661	WIPRO	
5	AJITH R	2101020662	LG BRO's	
6	ALAN ALBY	2101020663	WIPRO	
7	ALAN NARAYANA K AJU	2101020664	J K TYRE	
8	ALBIN GEORGE	2101020665	CUMMINS	
9	ALJO JOHN N	2101020666	WIPRO	
10	ALFIN RAPHY	2101020667	J K TYRE	
11	ALTHAF V A	2101020668	WIPRO	
12	AMIT KRISHNA K S	2101020670	WIPRO	
13	ANANDHUKRISHNA C S	2101020672	WIPRO	
14	ANOLD VARGHESE	2101020674	WIPRO	
15	ASHIK A S	2101020676	WIPRO	
16	ASHIQUE BABU	2101020677	WIPRO	
17	ATHUL BIJU	2101020678	WIPRO	
18	ATHULKRISHNA K L	2101020679	WIPRO	
19	BOBIN BENNY	2101020682	WIPRO	
20	DANISH A P	2101020683	MANDO ANAND INDIA PVT	
21	DOMINIC BENNY MALPAN	2101020684	WIPRO	
22	GEOSHEL GEORGE	2101020685	WIPRO	
23	JEBIN K J	2101020687	WIPRO	
24	JENAX P J	2101020688	WIPRO	
25	JITHIN A V	2101020689	WIPRO	
26	JOMITH ANTONY	2101020690	JK TYRE	
27	JOSHUAL JOSEPH	2101020691	JK TYRE	
28	JOYAL JOY	2101020692	WIPRO	
29	JOYAL WILSON	2101020693	WIPRO	
30	JOYEL K D	2101020694	NIPPON	
31	JUSTIN DAVIS	2101020695	WIPRO	
32	JUVAL JOSHY	2101020696	WIPRO	
33	NIBIL K B	2101020697	JK TYRE	
34	NIHAL BABY	2101020700	MANDO ANAND INDIA PVT	

35	RAHUL M R	2101020701	WIPRO	
36	ROSHAN ROY	2101020702	WIPRO	
37	SARATH K B	2101020704	WIPRO	
38	YADUKRISHNAN P K	2101020707	WIPRO	
39	ABHISHEK K T	2101024095	WIPRO	
40	AJAY VENU	2101024096	JK TYRE	
41	AKHIL P S	2101024097	WIPRO	
42	ANSIL T V	2101024098	WIPRO	
43	ASWIN BIJI	2101024099	JK TYRE	
44	ASWIN P S	2101024100	JK TYRE	
45	ATHUL C R	2101024101	WIPRO	
46	CHRISTO JOHN	2101024102	JK TYRE	
47	EDWIN DAVIS	2101024103	JK TYRE	
48	JOMON DAVIS	2101024104	WIPRO	
49	MAJO JOHNY	2101024105	WIPRO	
50	MARTIN KURIAN	2101024106	JK TYRE	
51	RENJITH SADANANDAN	2101024107	NIPPON	

Assessment Year : 2022-23 (CAYm3)

S.No	Student Name	Enrollment No	Employee Name	Appointment No
1	ABHAI DAVIS	20020230	POPULAR JCB	
2	ABHINAV M S	20020231	POPULAR JCB	
3	ABHINAV P B	20020233	DECATHLON	
4	ADARSH P A	20020234	POPULAR JCB	
5	ADARSH V B	20020236	JOHNS HONDA	
6	AJIN PRAVEEN	20020237	TVS	
7	AJIRAJ T A	20020238	TVS	
8	ALIN K S	20020241	JOHNS HONDA	
9	ALIN SHIBU	20020242	CUMMINS	
10	ALWIN A V	20020243	POPULAR JCB	
11	ALWIN MAJO	20020244	TVS	
12	ALWIN VARGHESE	20020245	JOHNS HONDA	
13	AMAL KRISHNA K A	20020246	JOHNS HONDA	

14	ANEX BABU	20020250	JOHNS HONDA	
15	ANTONY JOSE	20020251	TVS	
16	ARAVIND UNNIKRISHNAN	20020252	J & D AUTOCRAFT	
17	ARUN SHAJAN V	20020253	TVS	
18	BIMAL KRISHNA P B	20020254	TVS	
19	CHRISTY JOHN P D	20020255	WEBOND (ZODIZ)	
20	DALBIN DANI M	20020256	TVS	
21	DENIL DAVIS	20020257	CUMMINS	
22	DIBIN VARGHESE	20020260	TVS	
23	EDWIN BABU	20020262	CUMMINS	
24	HARIKRISHNA HARIHARAN	20020265	TVS	
25	HARIKRISHNA P K	20020266	NIPPON TOYOTA	
26	JEWEL TITUS	20020267	JOHNS HONDA	
27	JISSU JOHNSON	20020269	TVS	
28	JOHNUS K SHAJU	20020270	TVS	
29	KIRAN DAS K	20020271	JOHNS HONDA	
30	MIDHUN M R	20020274	JOHNS HONDA	
31	MUHAMMED DILSHAN	20020275	TVS	
32	NAVANEETH P SURESH	20020276	TVS	
33	NAVEEN VARGHESE	20020277	CUMMINS	
34	NIMAL DAVIS V	20020279	JOHNS HONDA	
35	NOYEL BABU	20020280	TVS	
36	PRINCE THOMAS	20020281	TVS	
37	SAI KRISHNA P V	20020283	TVS	
38	SEBI P J	20020285	TVS	
39	SUDEESH K S	20020287	TVS	
40	SUSHANTH V S	20020288	TVS	
41	SWARAN P RAJAN	20020289	TVS	
42	THARUN JOJU	20020291	TVS	
43	VISHNU M A	20020292	JOHNS HONDA	
44	ABIN C JOSHY	20024455	POPULAR JCB	
45	ALVIN ANTONY XAVIER	20024457	JOHNS HONDA	
46	CHINMAY E C	20024459	NIPPON TOYOTA	

47	JOHN GRACIOUS	20024460	DECATHLON	
48	KEVIN GEORGE	20024461	JOHNS HONDA	

4.7 Professional Activities (20)

4.7.1 Professional societies/ student chapters and organizing technical events (10)

A. Availability of Professional Societies/Chapters & Relevant activities (5)

The International Association of Engineers (IAENG) is a non-profit, international, learned society for engineers and computer scientists, founded in 1968. Originally established as a private-club network for its founding members, IAENG has grown to include engineers and computer science professionals worldwide. Its Secretariat Office is based in Hong Kong, and it serves a global community with well over 140,000 members spanning more than 100 countries.

IAENG's core mission is to promote cooperation among professionals across engineering disciplines and to cultivate an environment conducive to advancing technology through the free exchange of information and ideas. In line with this mission, IAENG publishes a widely referenced journal, Engineering Letters, and cooperates with established academic publishers such as Springer, the American Institute of Physics, and World Scientific Publishing on the IAENG Transactions on Engineering Technology. IAENG also provides membership coverage for its entire student body. Every student is enrolled as an IAENG Member, giving the whole student community free and continuous access to IAENG's journals, conference publications, and IAENG News, along with other resources.

This blanket membership ensures that professional-society engagement is not limited to a select few but is available uniformly across all departments and batches, supporting the institution's broader objective of exposing students to professional societies and activities.

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THE INDIAN SOCIETY FOR TECHNICAL EDUCATION

By this Certificate warrants that

NIRMALA INSTITUTE OF TECHNOLOGY

CHALAKUDY

was duly admitted by the Executive Council as

INSTITUTIONAL MEMBER

*of the Society and is fully entitled to all the privileges
granted by the constitution and bye-laws*

2023



Wadgi
EXECUTIVE SECRETARY

IAENG INTERNATIONAL ASSOCIATION OF ENGINEERS

Date: 18 July 2024

To Whom It May Concern:

Official Letter for the IAENG Membership

Member Name: AJAYKRISHNAN. P.K

Member Number: 2201011852 (since 18 July 2024)

IAENG is a non-profit international association for the engineers and the computer scientists. IAENG has been found by a group of engineers and computer scientists from over thirty different countries. Our goals are to promote the co-operation between the professionals in various fields of the engineering and to cultivate an environment for the advance and development of the technology. Our objectives include:

- Promoting the interactions between the engineers;
- Advancing the application of engineering techniques from the academics to the industry;
- Facilitating the exchange of information and ideas among the engineers and scientists freely.

This letter is to certify that the above person is an IAENG member. For the information about IAENG Membership, please visit our website
<http://www.iaeng.org/membership.html>

If you have any question, you are very welcome to contact us at any time.

Best regards,
IAENG Secretariat
International Association of Engineers (IAENG)
<http://www.iaeng.org>
Email: member@iaeng.org





B. Number, quality of engineering events (5)

SI No	Date – Month– Year	Name of the Event	
CAY 2025-2026			
1	15/07/2025	Workshop on: PROJECT COOLDOW	
2	20/09/2025	Seminar on Diagnostic Techniques in Automotive Systems	
3	17/01/2026	Introduction to Manufacturing	
4	13/02/2026	Solid works -workshop (3 D drawing)	
CAYm1 2024-2025			
1	6/09/2024,7/09/2024	Workshop on 3D Printing Technology	
2	10/01/2025	Marine Engine Technology	
2	24/ 01/ 2025	Skill Enhancement Program on Hyundai Service Standards	
3	03/02/2026	Skill to Build-Workshop on Design and Manufacturing	
CAYm2 2023-2024			
1	18/09/2023	Seminar on Automobile service	

2	05/01/2024	Seminar on CNC Machine	
3	16/02/2024	Maintenance Training	
4	08/03/2024	Workshop on: Design – AutoCAD Software	

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

A. Quality & Relevance of the contents and Print Material (3)

At the institution level, the college maintains a structured print communication system covering all departments, comprising a Newsletter published twice a year and a Technical Magazine published annually, both curated to ensure quality, relevance and timeliness.

Newsletter (Bi-annual)

Published twice a year, the institutional newsletter compiles activities and highlights from across all departments for that semester — guest lectures, workshops, seminars, industrial visits, student achievements, faculty accomplishments, placements, etc. By consolidating updates from every department into a single publication, it gives students, faculty, parents, and visitors a unified view of institutional progress each semester, keeping content timely and broadly relevant to the entire campus community.

Technical Magazine (Annual)

Published once a year, the technical magazine draws contributions from students and faculty across all departments — technical articles, project and research summaries, papers on emerging technologies, and industry-trend write-ups. It showcases the research output of the whole college rather than a single department, and gives students across disciplines a common platform to develop technical writing and research communication skills.

Quality Assurance

Content submitted by individual departments is routed through an institution-level editorial/advisory committee (typically comprising faculty coordinators from each department) before printing. This central review checks for technical accuracy, relevance, and readability across all departments rather than varying quality issue to issue or department to department.

Relevance

Topics are aligned with the institutions overall academic calendar, ongoing student projects, placement/industry activity, and current technology trends across disciplines — so the material stays meaningful to a cross-departmental readership and reflects the current state of the institution.

Together, the bi-annual newsletter and annual technical magazine give the institution a consistent, college-wide print presence that documents activity across all departments, showcases combined student and faculty output, and reinforces an institutional identity.

B. Participation of Students from the program (2)

Table 4.13 Participation of students from the program

Sl. No.	Name of the Student	Participation Details	Newsletter / Technical Magazine
1.	ARUN SHAJAN V	Editorial Board Members	Newsletter – Vol.1; Issue.1
2.	BIMAL KRISHNA P B	Editorial Board Members	Newsletter – Vol.1; Issue.1
3.	CHRISTY JOHN P.D	Editorial Board Members	Newsletter – Vol.1; Issue.1
4.	DALBIN DANI M	Editorial Board Members	Newsletter – Vol.1; Issue.1
5.	DENIL DAVIS		Newsletter – Vol.1; Issue.1
6.	NEVIN VARGHESE K.J		Newsletter – Vol.1; Issue.1
7.	NIMAL DAVIS V		Newsletter – Vol.1; Issue.1
8.	NOEL BABU		Newsletter – Vol.1; Issue.1
9.	PRINCE THOMAS		Newsletter – Vol.1; Issue.1
10.	CHRISTO JOHN		Newsletter – Vol.1; Issue.1
11.	EDWIN DAVIS		Newsletter – Vol.1; Issue.1
12	JOMON DAVIS		Newsletter – Vol.1; Issue.1

13.	MAJO JOHNY		Newsletter – Vol.1; Issue.1
14	ASHIQ BABU	Editorial Board Members	Newsletter – Vol.2; Issue.1
15	ATHUL BIJU	Editorial Board Members	Newsletter – Vol.2; Issue.1
16	ATHUL KRISHNA K M	Editorial Board Members	Newsletter – Vol.2; Issue.1
17	BOBIN BENNY	Editorial Board Members	Newsletter – Vol.2; Issue.1
18	DANISH A P		Newsletter – Vol.2; Issue.1
19	DOMINIC BENNY MALPAN		Newsletter – Vol.2; Issue.1
20	GEOSHEL GEORGE		Newsletter – Vol.2; Issue.1
21	JOSE JOHNSON		Newsletter – Vol.2; Issue.1
22	JOYAL JIMMY		Newsletter – Vol.2; Issue.1
23	LAVISH VARGHESE		Newsletter – Vol.2; Issue.1
24	MELVIN C B		Newsletter – Vol.2; Issue.1
25	MIDHUL MARTIN		Newsletter – Vol.2; Issue.1
26	ARJUN K R	Editorial Board Members	Newsletter – Vol.3; Issue.1
27	ATHUL KRISHNA M A	Editorial Board Members	Newsletter – Vol.3; Issue.1
28	JEES JOVET	Editorial Board Members	Newsletter – Vol.3; Issue.1
29	JOHN PAUL JOGI	Editorial Board Members	Newsletter – Vol.3; Issue.1
30	JOYEL JOSE		Newsletter – Vol.3;

			Issue.1
31	MIDHUN RAJAN		Newsletter – Vol.3; Issue.1
32	ADITHYAN K V		Newsletter – Vol.3; Issue.1
33	ALWIN CHERIYAN		Newsletter – Vol.3; Issue.1
34.	AMAL DAVIS		Newsletter – Vol.3; Issue.1
35	ANTO SAMUEL JOY		Newsletter – Vol.3; Issue.1
36	SREEKANTH . K	Editorial Board Members	Newsletter – Vol.4; Issue.1
37	THOMAS P.SEBY	Editorial Board Members	Newsletter – Vol.4; Issue.1
38	VAISHNAVU T S	Editorial Board Members	Newsletter – Vol.4; Issue.1
39	STEBIN GEORGE SIBY	Editorial Board Members	Newsletter – Vol.4; Issue.1
40	VAISHNAV VIJAYAN		Newsletter – Vol.4; Issue.1
41	ALBIN JOSE		Newsletter – Vol.4; Issue.1
42	ALDHO M L		Newsletter – Vol.4; Issue.1

43	ALEX VARGHESE		Newsletter – Vol.4; Issue.1
44	SANJU KRISHNAN S	Editorial Board Members	Newsletter – Vol.5; Issue.1
45	SREJIL A B	Editorial Board Members	Newsletter – Vol.5; Issue.1
46	YEDHUKRISHNA C R	Editorial Board Members	Newsletter – Vol.5; Issue.1
47	AKASH N S	Editorial Board Members	Newsletter – Vol.5; Issue.1
48	AMNON JOSE		Newsletter – Vol.5; Issue.1
49	ANANTHAKRISHNAN P J		Newsletter – Vol.5; Issue.1
50	ANANTHASAMBHUDAS S J		Newsletter – Vol.5; Issue.1
51	ANET JOSE		Newsletter – Vol.5; Issue.1

4.7.3 Participation in inter-institute / state/national events by students of the program of study (5)

S. No.	Academic year	No. of students Participated (Co- Curricular)	No. of students Participated (Extra- Curricular)
--------	---------------	---	--

1	2025-2026	50	19
2	2024-2025	61	44
3	2023-2024	68	21
4	2022-2023	72	49
5	2021-2022	3	11

Sl. No.	Academic year	No. of students Participated (Co-Curricular)	No. of students Participated (Extra-Curricular)
1	2025-2026	50	
2	2024-2025	61	
3	2023-2024	68	
4	2022-2023	72	
5	2021-2022	3	

CAY 2025-2026

Co - Curricular:

S. No.	Name of the Student	Event Description	Event Level (Inter-institute / State/National)	College Name	Awards
.					

1	NAVIN C NISHANTH	CADD MANIYA	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	FIRST
2	SOORAJ VS	CADD MANIYA	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	second
3	ALEX JOY	CADD MANIYA	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	THIRD
	NIKHIL M S				
	MUHAMMED NUHAIN				
4	PINUCHRISTY K P	seminar	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	second
	DEVKRISHNA A S				
	ABHINAV P V				
	SREJIL A B				
	AMNON JOSE				
5		Model making	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	FIRST
	ANANTHAKRISHNAN P J				
6		Model making	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	second
7	NIHAL E N	Model making	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	THIRD

ADHIL			JITHIN K JAISON	SALAHUDHEEN AYYOOBI
ABHINAV				
ABIN T J			JOSE JOHNSON	SHARUN K C
ABIRAG K S			JOYAL JIMMY	SHITHIN M S
ADARSH J	TEXPO, PROJECT	NIRMALA INSTITUTE OF TECHNOLOGY	LAVISH VARGHESE	SREEHARI A.R
ADHARSH M V	HACKATHON INTER INSTITUTE PARTICIPATION		MELVIN C B	SUHAIL A .A
ADIL B PAVITHRAN				THOMSON THOMAS P
AJAY KRISHNA N M			PRATHUSH N P	
AKASH P. SATHEESH			SACHIN M R	AKHIL SHIJON
ALDRINOE ROCKEY			MIDHUL MARTIN	ARJUN K R
ALFRED JOY				ATHUL KRISHNA M A
AMAL C.J				JES JOVET
AMAL SURESH				JOHN PAUL JOGI
AMANANDH P S				JOYEL JOSE
AMEEN ABDUL JABBAR				MIDHUN RAJAN
ASHWIN U.S	TEXPO, PROJECT	INTER INSTITUTE		RINSHAN V R
AUSTIN N L	HACKATHON	NIRMALA INSTITUTE OF TECHNOLOGY		SIDHARTH K DAS
BAHUL JITH P B				SREEJITH SURESH
				VIDHUKRISHNA T P S

DANIEL BABY

VAISHNAV K
THILAK

VINAYAK K S

PARTICIPATION

CAY M2 2023-2024

Co - Curricular:

S. No	Name of the Student	Event Description	Event Level (Inter- institute / State/National)	College Name	Awards
1	YADHUKRISHNAN PK	CADD MANIYA	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	FIRST
2	JOYAL JOY	CADD MANIYA	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	second
3	NIBIL KB	CADD MANIYA	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	THIRD
	BAHUL JITH P B				
	ALFRED JOY				
	EMMANUVEL E B				
4	MELVIN C B	seminar	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	second
	SHARUN K C				
	JOYAL JIMMY				
5	ANOOP A G	Model making	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	FIRST
6	KAILAS P M	Model making	INTER INSTITUTE	NIRMALA INSTITUTE OF TECHNOLOGY	second

[illegible]

[illegible]

ALFIN RAPHY		SREERAG K S				. Name of the Student Event Descr
ALTHAF V A						
NIHAL BABY		SUDHEESH K S				ANANDHU M SURESH m
RAHUL M R		SUSHANTH V S				
ROSHAN ROY			TEXPO, PROJECT	NIRMALA INSTITUTE OF TECHNOLOGY	PARTICIPATION	
		SWARAN P RAJAN	INTER HACKATHON INSTITUTE			BOBIN BENNY
		T S SHARON				
		THARUN JOJU				
		ALIN K S				
		ALIN SHIBU				
		ALWIN A V				S. No.
		ALWIN MAJO				Academic
		ALWIN VARGHESE				
		AMALKRISHNA K A				
		ANAND DAS .V .S	INTER INSTITUTE			
		ANEX BABU	TEXPO, PROJECT	NIRMALA INSTITUTE OF TECHNOLOGY	PARTICIPATION	
		ANTONY JOSE	HACKATHON			
		VISHNU M A				

ZEEON SANJOSE

ABIN C JOSHY

AKASH BIJU

ALVIN ANTONY
XAVIER

CHINMAY.E.C.

JOHN GRACIOUS
TEXPO,
PROJECT
HACKATHON INTER
INSTITUTE NIRMALA
INSTITUTE OF
TECHNOLOGY PARTICIPATION

KEVIN GEORGE

SAVIO
VARGHESE
WILSON

9

ARAVIND
UNNIKRISHNAN

ARUN SHAJAN V

BIMAL KRISHNA
P B

CHRISTY JOHN
P.D

DALBIN DANI M

DENIL DAVIS
DIBIN
VARGHESE
TEXPO,
PROJECT
HACKATHON INTER
INSTITUTE NIRMALA
INSTITUTE OF
TECHNOLOGY PARTICIPATION

	EBY T A				
	EDWIN BABU				
	MANUKRISHNA P M				
	MIDHUN M R				
	MUHAMMED DILSHAN				
	NAVANEETH P SURESH				
10	NAVEEN VARGHESE				
	NEVIN VARGHESE K.J				
		INTER INSTITUTE			
	NIMAL DAVIS V	TEXPO, PROJECT		NIRMALA INSTITUTE OF TECHNOLOGY	2 ND PRIZE
	NOEL BABU	HACKATHON			
	PRINCE THOMAS				
11	EDWIN K O				
	HARIKRISHNA HARIHARAN				
	HARIKRISHNA P K				
	JEWEL TITUS				
	JINESH P J				

JISSU JOHNSON
TEXPO,
PROJECT
NIRMALA
INSTITUTE OF
TECHNOLOGY
JOHNUS
K.SHAJU
HACKATHON
INTER
INSTITUTE

KIRANDAS K

KRISHNARAJ M
R

5 FACULTY INFORMATION AND CONTRIBUTIONS (150)

Name	University Degree	Area of Specialization	Contribution to the program(% load)			Research Paper Publications	Faculty receiving Ph.D/M.Tech during the Assessment year	Current Designation	Initial Date of Joining	Associate Type
			CAY (2025-26)	CAYm1 (2024-25)	CAYm2 (2023-24)					
JULIEN JOSEPH E	M.E.	Computer Aided Design	50	50	50			Principal	12/06/2023	Regular
HARIKRISHNAN T K	M.E.	CAD/CAM	100	100	0			HOD	01/06/2024	Regular
M SINY MARY LONA	B.E.	Mechanical Engineering	75	75	0			Lecturer	10/06/2024	Regular
SANGEETH MARTIN	B.Tech	Mechanical Engineering	100	0	0			Lecturer	02/06/2025	Regular
ASHISH M PILLAI	B.Tech	Mechanical Engineering	88	0	0			Lecturer	02/06/2025	Regular
LEO LOUIS	B.Tech	Mechanical Engineering	100	100	100			Lecturer	21/02/2023	Regular
ACHUTHAN R	B.Tech	Mechanical Engineering	0	88	0			Lecturer	10/06/2024	Regular
NIKHIL C N	B.Tech	Mechanical Engineering	0	100	0			Lecturer	23/01/2024	Regular
ARUN N R	M.Tech	Industrial Engineering and Management	0	0	100			HOD	04/06/2020	Regular
ANILAL OMANAKUTTAN	B.Tech	Mechanical Engineering	0	0	88			Lecturer	01/06/2023	Regular
SREEJITH P S	B.Tech	Mechanical Engineering	0	0	100			Lecturer	12/06/2020	Regular

MIDHUN K M	B.Tech	Mechanical Engineering	0	0	75			Lecturer	01/06/2022	Regula
ABHIJITH JACOB	M.Tech	Production and Industrial Engineering	12	0	0			HOD	02/06/2025	Regula
SREEJA SREERAM	M.Tech	Power Electronics	25	25	0			Lecturer	03/07/2023	Regula
ABIN P B	B.Tech	Mechanical Engineering (Automobile)	0	12	0			Lecturer	10/06/2024	Regula
BINOY P	B.Tech	Automobile Engineering	0	0	12			Lecturer	05/06/2023	Regula
JEETHU JOSE	B.Tech	Electrical and Electronics Engineering	0	0	25			Lecturer	12/09/2022	Regula
SEETHAL C R	M.Tech	Computer Science	50	50	0			HOD	05/06/2024	Regula
GIMSHY JOJO	M.Sc (Maths)	Mathematics	50	50	50			Lecturer	01/07/2019	Regula
NAVYA T G	M.Sc. (Chemistry)	Chemistry	50	50	50			Lecturer	05/06/2023	Regula
SANTHI S NATH	M.Sc	Physics	50	50	50			HOD	25/05/2023	Regula
JESBIN JOSEPH	MA (English)	English Language and Literature	50	0	0			Lecturer	02/06/2025	Regula
HRIDYA K J	MA (English)	English Language and Literature	0	50	0			Lecturer	11/09/2023	Regula
VINEESH T S	M.Phil	Physical Education	17	17	17			Lecturer	05/06/2023	Regula
JISHU JOHN	MA (English)	English Language and Literature	0	0	50			Lecturer	17/07/2019	Regula
ANN MERIN P JAMES	B.Tech	Computer Engineering	0	0	17			Lecturer	06/02/2023	Regula

5.1 Student-Faculty Ratio (SFR) (25)

Year	N	F
2025-26(CAY)	192	8.17
2024-25(CAYm1)	192	8.17
2023-24(CAYm2)	192	7.84

Average SFR : 23.83

Assesement SFR : 25

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

	Total number of regular faculty in the department	Total numb
2025-26(CAY)	12	0
2024-25(CAYm1)	12	0
2023-24(CAYm2)	12	0

5.2 Faculty Qualification (25)

5.2.1 Faculty Qualification Index (20)

	X	Y	F	FQ = 2 x [(10X +
2025-26	3	6	8.00	18.00
2024-25	2	6	8.00	15.50
2023-24	2	6	8.00	15.50

Average Assessment : 16.33

5.2.2 Availability of Faculty/principal of that discipline with PhD. Qualification (5)

Availability of Faculty/principal of that discipline with PhD. Qualification ? : NO

5.3 Faculty Retention (20)

Description	2024-25 (CAYm1)
No of Faculty Retained	7
Total No. of Required Faculty	9
% of Faculty Retained	78

Average : 66.67

Assessment Marks : 10.00

5.4 Faculty as participants in Faculty development/training activities conducted by other organizations (30)

Name of the faculty	Max 5 Per Faculty		
	2022-23 (CAYm3)	2023-24 (CAYm2)	2024-25 (CAYm1)
ACHUTHAN R	0.00	0.00	0.00
ANILAL OMANAKUTTAN	5.00	2.00	0.00
ARUN N R	5.00	5.00	0.00
ASHISH M PILLAI	0.00	0.00	0.00
HARIKRISHNAN T K	0.00	0.00	5.00
JULIEN JOSEPH E	0.00	2.00	5.00
LEO LOUIS	0.00	2.00	5.00
M SINY MARY LONA	0.00	0.00	5.00
MIDHUN K M	5.00	5.00	0.00
NIKHIL C N	0.00	0.00	5.00
SANGEETH MARTIN	0.00	0.00	1.00
SREEJITH P S	5.00	5.00	0.00
Sum	20.00	21.00	26.00
RF = Number of Faculty required to comply with 25:1 SFR as per 5.	7.68	7.68	7.68

Assessment [6*(Sum / 0.5RF)](Marks limited to 30)	30.00	30.00	30.00
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Average assessment over 3 years (Marks limited to 30): 30.00

5.4. a. Organized/ Conducted FDPs and STTP by this department at State / National Level (12)

Academic Year	FDP Topic	Date	No. of Days	Resource Person	No. Of Faculty Participated
CAY 2023-2024	Fundamentals of Smart Manufacturing & Industry 4.0	17/10/2023 to 18/10/2023	2	Harikrishnan B, Assistant Professor, SNGCE, Kolenchery	12
	Advanced CAD/CAM and Product Design	21/05/2024 to 22/05/2024	2	Yadhu M J, Assistant Professor CUSAT	12
CAY 2024-2025	Sustainable Energy Systems & Green Manufacturing	22/10/2024 to 24/10/2024	2	Sankaran Namboothiri, Assistant professor, CUCEK Sarika E P, Assistant Engineer, KSEB	10
	Robotics, Automation & Industrial Applications	16/05/2025 to 17/05/2025	2	Dr. Shiyas C R, HOD& Associate Professor, Fire and safety CUSAT	10
	OBE (Outcome Based Education)WORKSHOP	2/5/2025 to 3/5/2025	2	Dr. Anil Kumar K K, Associate Professor, CUCEK Dr. Jayaprabha P, Associate Professor, CUCEK	25
CAY 2025-2026	Technology Advancement in marine technology	9/12/2025 to 11/12/2025	2	Mr. Arun Sankar, Chief Engineer, Fleet Management Ltd.,Hongkong	8
	Electric Vehicles, Future Mobility & Advanced	14/05/2026 to	3	Dr. Priya R Krishna, Associate Professor,	12

	Thermal Systems	16/05/2026		CUCEK	
				Dr. Salaji S, Associate Professor,CUSAT	

5.5 Product development, Consultancy, Manufacturing contracts, testing contracts (8)

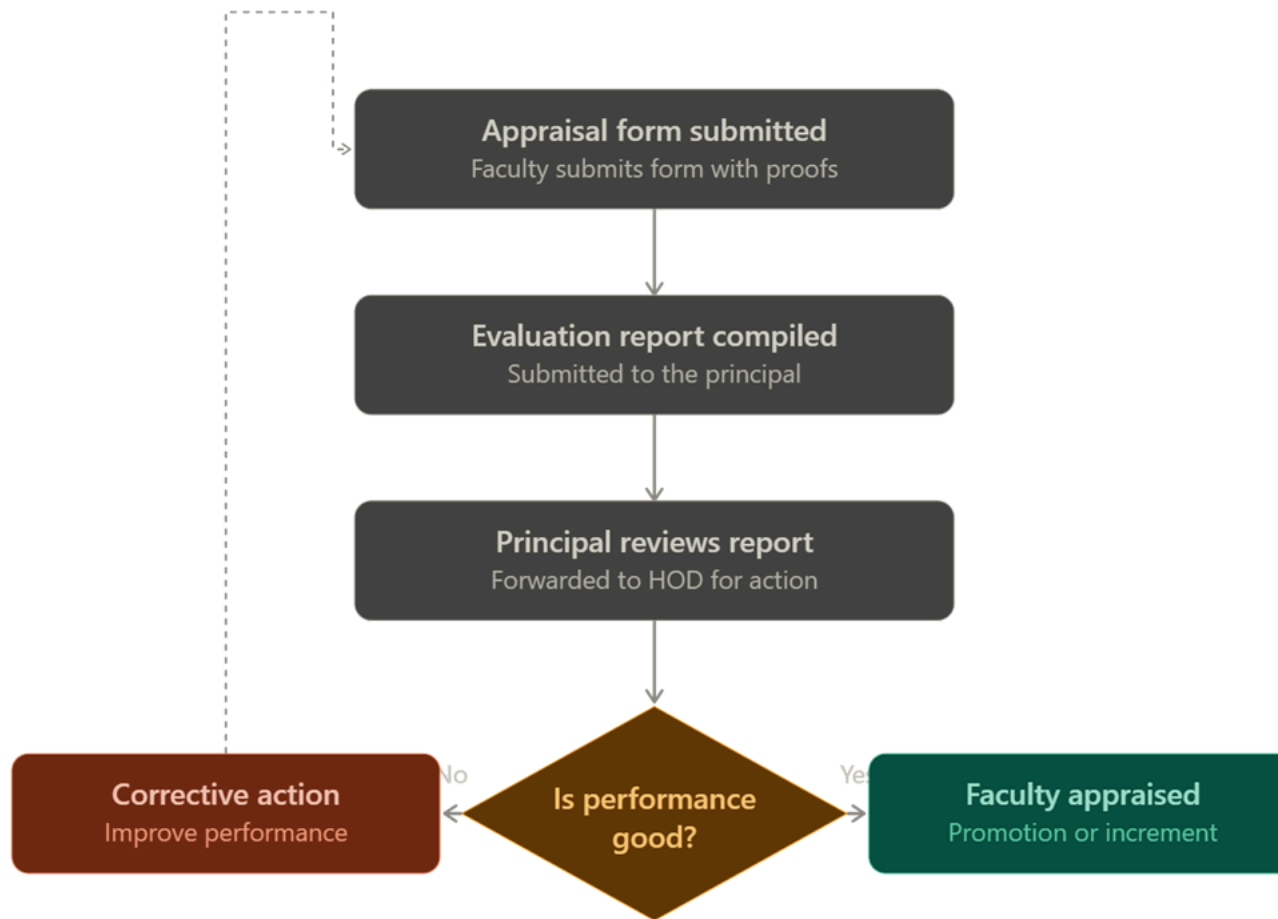
A. Product Development (2)						
Sl. No	Assessment Year	Date	Company Name	Product Development	Total Amount (₹)	
1	CAY (2025-26)	05-06-2025	BRD Car World, Konikkara, Thrissur	Trolley Weed Cutter	10000	1
2	CAY (2025-26)	10-10-2025	Nirmala Trust	Coffin Lowering Machine	8000	
4	CAY M1 (2024-25)	30-07-2024	Popular Motor World Pvt Ltd (Popular Hyundai), Kochi	Electric Load Carrier	14000	
5	CAY M1 (2024-25)	24-10-2024	Popular Motor World Pvt Ltd (Popular Hyundai), Kochi	Pyrolysis of Plastic Waste	13000	
6	CAY M2 (2023-24)	21-08-2023	J&D Autocraft, Karukutty, Angamaly	Coconut Dehusking Machine	9000	
7	CAY M2 (2023-24)	18-12-2023	J&D Autocraft, Karukutty, Angamaly	Efficycle	13000	
8	CAY M3 (2022-23)	20-09-2022	J&D Autocraft, Karukutty, Angamaly	Wheel Sprayer	12000	
9	CAY M3 (2022-23)	12-01-2023	J&D Autocraft, Karukutty, Angamaly	Hydraulic Manhole Cover Lifter	12500	
B. Consultancy (2)						
Sl. No	Assessment Year	Date	Company Name	Consultancy Details	Total Amount (₹)	
1	CAY (2025-26)	14-08-2025	BRD Car World, Konikkara, Thrissur	Sample Test	40000	

2	CAY M1 (2024-25)	15-05-2024	Popular Motor World Pvt Ltd (Popular Hyundai), Kochi	Calculation and Modification	40000
3	CAY M2 (2023-24)	08-06-2023	J&D Autocraft, Karukutty, Angamaly	Design Review	1600
4	CAY M3 (2022-23)	16-06-2022	J&D Autocraft, Karukutty, Angamaly	Stress analysis	1800
C. Manufacturing Contracts (2)					
Sl. No	Assessment Year	Date	Company Name	Manufacturing Contract	Total Amount
1	CAY (2025-26)	23-04-2026	BRD Car World, Konikkara, Thrissur	Shaft couplings	20000
2	CAY (2025-26)	18-08-2025	BRD Car World, Konikkara, Thrissur	Motor operated trolley	20000
3	CAY M1 (2024-25)	13-09-2024	Popular Motor World Pvt Ltd (Popular Hyundai), Kochi	Concret Moulding box	20000
5	CAY M1 (2024-25)	19-11-2024	Popular Motor World Pvt Ltd (Popular Hyundai), Kochi	Shaft components	20000
6	CAY M2 (2023-24)	23-08-2023	J&D Autocraft, Karukutty, Angamaly	Hand rail	20000
7	CAY M2 (2023-24)	14-12-2023	J&D Autocraft, Karukutty, Angamaly	Precision turning	20000
	CAY M3 (2022-23)	12-09-2022	J&D Autocraft, Karukutty, Angamaly	Mirror stand	20000
8	CAY M3 (2022-23)	20-11-2022	J&D Autocraft, Karukutty, Angamaly	Interlocking Paver Blocks	20000
A. Testing Contracts (2)					

SI No	Assessment Year	Date	Company Name	Testing Details	Total Amount
1	CAY (2025-26)	28-07-2026	J&D Autocraft, Karukutty, Angamaly	Emission Test	10000
2	CAY (2024-25)	18-8-2025	Popular Motor World Pvt Ltd (Popular Hyundai), Kochi	Chasis dynamometer test	10000
3	CAY M1 (2023-24)	15-03-2024	J&D Autocraft, Karukutty, Angamaly	Chassis Dynamometer + Emission Test	45000
4	CAY M1 (2022-23)	12-09-2023	J&D Autocraft, Karukutty, Angamaly	Emission Test	1700
5	CAY M2 (2022-23)	08-06-2022	J&D Autocraft, Karukutty, Angamaly	Chassis Dynamometer Test	800

5.6 Faculty Performance Appraisal and Development System (FPADS) (30)

A. A well-defined FPADS instituted for all the assessment years (5)



1. Purpose

This report documents the faculty appraisal process followed by the institution. The process defines how appraisal information moves from the faculty member through the Head of Department (HOD) and the principal, and how the outcome

2. Process Overview

The process follows a linear review sequence culminating in a single decision point, with a feedback loop that returns underperforming cases to the start of the cycle. The stages are summarized below.



NIRMALA COLLEGE OF ENGINEERING TECHNOLOGY AND MANAGEMENT

Chalakudy

FACULTY APPRAISAL FORM

A.GENERAL INFORMATION

Sl. No.	Particulars	DETAILS
1	Academic Year	
2	Name of Faculty Member	
3	Employee ID	
4	Designation	
5	Department	
6	Date of Joining the Institution	
7	Highest Qualification	
8	Specialization	
9	Nature of Appointment (Regular/Contract/Guest)	
10	Aadhaar Number (Optional, if applicable)	
11	Mobile Number	
12	Official Email ID	
13	Total Teaching Experience	
14	Experience in the Present Institution	
15	Industrial Experience	

16	No.s of Subjects/Courses Handled During the Academic Year	
17	Additional Responsibilities Assigned	
18	Mentor Batch/Class Assigned	
19	Reporting Officer (HoD)	
20	Reviewing Officer (Principal)	

	Advanced Learner Support	mentoring, enrichment activities				
12	Academic Mentoring	Regular mentoring and counselling of assigned students	5	3		
13	Question Paper Setting & Evaluation	Quality of question papers, valuation, and timely submission of marks	5	4		
14	Academic Discipline	Punctuality, regularity, attendance, and adherence to academic calendar	5 , >90%=5,>80%=4,>70%=3, <70%=0, (need action taken)	3		
Total			100	75		

C STUDENT DEVELOPMENT

Sl. No.	Activity	Maximum Score	Self Score	HoD Score	Remarks
1	Course Planning & Lesson Plan	5	4		
2	Syllabus Coverage	5	5		
3	Teaching Methodology & ICT Tools	10	8		
4	Laboratory Instruction	5	5		
5	Course File Maintenance	5	4		
6	Student Performance/Result Analysis	10	6		
7	Student Feedback	10, >90%=10,>80%=8,>70%=5, <70%=0, (need action taken)	0		

	Total	50	32 (64%)		
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D. RESEARCH ,INNOVATION AND PROFESSIONAL DEVELOPMENT DEVELOPMENT

Activity	Maximum Score	5		Remarks
Research Publications	5	3		
Patents/Consultancy		0		
FDPs/Workshops Attended	5	4		
NPTEL/MOOCs/Certifications	5	3		
Industrial Training	5	5		

B TEACHING LEARNING ACTIVITIES

Sl. No.	Performance Indicator	Assessment Criteria	Maximum Marks	Self-Assessment	HoD Assessment	Remarks
1	Course Allocation	Number of theory/laboratory courses handled	5	3		
2	Lesson Planning	Preparation and timely submission of lesson plans/course plans	5	4		
3	Syllabus Coverage	Completion of syllabus as per academic schedule	10	10		
4	Teaching Methodology	Use of innovative teaching methods, active learning, OBE practices	10	5		
5	ICT Integration	Use of LMS, smart classroom, simulations, multimedia, online resources	5	3		
6	Laboratory Instruction	Effective conduct of laboratory classes and practical demonstrations	5	5		
7	Course File Maintenance	Maintenance of course file, attendance, assessments, and records	5	5		
8	Continuous Internal Evaluation	Timely conduct of tests, assignments, quizzes, and evaluation	10	8		
9	Result	Analysis of	10	8		

	Analysis	student performance and implementation of remedial measures				
10	Student Feedback	Performance based on student feedback analysis	15 >90%=15,>80%=10,>70%=5 , <70%=0, (need action taken)	10		
11	Slow Learner &	Conduct of remedial classes,	5	4		

Total	25	15 (60%)		
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E .INSTITUTIONAL RESPONSIBILITIES

Activity	Maximum Score	Self Score	HoD Score	Remarks
Committee Responsibilities	5	5		
NBA/NAAC Activities	5	5		
Examination Duties	5	5		
Admission/Extension Activities	5	3		
Professional Ethics & Discipline	5	4		
Total	25	22 (88%)		

F.SUMMARY OF SCORES

Section	Maximum Marks	Self Score	HoD Recommendation
Teaching–Learning	100	75	
Student Development	50	32	
Research & Professional Development	25	15	
Institutional Responsibilities	25	22	
Grand Total	200	144(72%)	

Training Need Identified	Recommended Programme	Timeline

Score (%)	Performance Rating
90 – 100	Outstanding
80 – 89	Excellent
70 – 79	Good

60 – 69	Satisfactory
50 – 59	Fair
Below 50	Needs Improvement

Faculty Member	Head of Department	Principal
Signature: _____	Signature: _____	Signature: _____
Date: _____	Date: _____	Date: _____

Nirmala College of Engineering Technology and Management, Chalakudy, has implemented a structured Faculty Appraisal System to assess the performance, contribution, professional development, and institutional involvement of faculty n information and evaluating faculty performance across multiple dimensions of academic and institutional responsibilities.

The appraisal framework is designed to assess faculty performance through four major areas:

1. Teaching–Learning Activities – 100 marks
2. Student Development – 50 marks
3. Research, Innovation and Professional Development – 25 marks
4. Institutional Responsibilities – 25 marks

Thus, the appraisal system has a total weightage of 200 marks. The final score is intended to provide an overall indication of faculty performance and to identify areas requiring further development and training. The form also provides for sel Department, and review by the Principal.

The major objectives of implementing the Faculty Appraisal System are:

- To assess the effectiveness of faculty members in teaching and learning activities.
- To monitor timely lesson planning and syllabus completion.
- To encourage innovative teaching methodologies and Outcome-Based Education practices.
- To evaluate the effective use of ICT and digital learning resources.
- To assess laboratory instruction and practical teaching.
- To ensure proper maintenance of academic and course-related records.
- To monitor continuous internal evaluation and student assessment practices.
- To analyse student performance and encourage remedial measures.
- To obtain and utilize student feedback for improving teaching effectiveness.
- To assess academic mentoring and student-support activities.
- To encourage research, publications, professional development, certifications, and industrial exposure.
- To assess faculty participation in institutional responsibilities such as NBA/NAAC activities, examination duties, admission-related activities, and committees.
- To identify individual training and professional development needs.
- To provide a structured basis for continuous improvement in faculty performance.

The form therefore goes beyond merely evaluating classroom teaching and incorporates academic, student-development, research, professional, and institutional contributions.

Structure of the Appraisal System

The first section of the form captures essential faculty information, including academic year, name, employee ID, designation, department, date of joining, qualification, specialization, nature of appointment, teaching experience, industrial ex officer, and reviewing officer.

This information establishes the professional profile of the faculty member and provides the context required for interpreting the appraisal results. The form specifically identifies the Head of Department as the Reporting Officer and the Princ

Teaching–Learning Activities

Teaching–Learning Activities constitute the largest component of the appraisal system, with a maximum of 100 marks. This indicates that the institution gives primary importance to the quality and effectiveness of teaching.

The appraisal covers:

- Course allocation
- Lesson planning
- Syllabus coverage
- Teaching methodology
- ICT integration
- Laboratory instruction
- Course file maintenance
- Continuous internal evaluation
- Result analysis
- Student feedback
- Slow learner and advanced learner support
- Academic mentoring
- Question paper setting and evaluation
- Academic discipline

The assessment criteria are generally linked to observable academic activities such as timely preparation, completion of syllabus according to schedule, use of innovative teaching methods, ICT integration, maintenance of records, conduct of

This makes the teaching component relatively comprehensive because it considers both the process of teaching and the outcomes of teaching.

Student Development Component

The Student Development section carries 50 marks and evaluates the faculty members contribution to student learning and academic development.

The indicators include:

- Course planning and lesson planning
- Syllabus coverage
- Teaching methodology and ICT tools
- Laboratory instruction
- Course file maintenance
- Student performance/result analysis
- Student feedback

The inclusion of student performance and student feedback makes this component particularly important because it attempts to assess the effect of faculty practices from the learners perspective and through measurable academic outcomes.

The appraisal form also establishes performance thresholds for student feedback. For example, the student feedback score is linked to percentage performance, with higher feedback levels receiving higher marks and lower performance requiring an input for corrective action.

Research, Innovation and Professional Development

The third component carries 25 marks and encourages faculty members to continuously improve their professional and academic capabilities.

The areas considered are:

- Research publications
- Patents/consultancy
- FDPs and workshops
- NPTEL/MOOCs/certifications
- Industrial training

This section promotes a culture of continuous professional development and encourages faculty members to remain academically and professionally updated.

The inclusion of industrial training and online certifications alongside publications and patents provides scope for recognizing different forms of professional development.

Institutional Responsibilities

Institutional contribution is evaluated separately for a maximum of 25 marks.

The appraisal covers:

- Committee responsibilities
- NBA/NAAC activities
- Examination duties
- Admission/extension activities
- Professional ethics and discipline

This ensures that faculty contributions outside direct classroom teaching are also recognized. The section therefore supports a broader institutional perspective of faculty performance.

Implementation Mechanism

The appraisal system can be implemented as an annual performance review process linked to the academic year.

Step 1 – Collection of Faculty Information

At the beginning of the appraisal cycle, faculty members provide general information concerning their designation, experience, courses handled, mentoring responsibilities, and additional duties.

Step 2 – Self-Assessment

Faculty members review their performance against the specified indicators and enter their self-assessment scores.

This encourages faculty members to critically reflect on their own teaching, student-development activities, research and professional development, and institutional contributions.

Step 3 – Verification and Assessment by HoD

The Head of the Department reviews the self-assessment and evaluates the faculty member against the prescribed criteria.

The form specifically provides a separate column for HoD Assessment and Remarks. This provides an opportunity to validate the self-assessment and provide constructive observations.

Step 4 – Review by Principal

The Principal acts as the reviewing authority. The form identifies the Principal as the Reviewing Officer and provides space for final review/signature.

Step 5 – Consolidation of Scores

Scores from the four major components are consolidated to obtain the overall performance score out of 200.

Step 6 – Identification of Training Needs

The form provides a specific section for:

- Training Need Identified
- Recommended Programme
- Timeline

This creates a direct link between appraisal findings and faculty development planning.

Step 7 – Follow-up and Improvement

Identified deficiencies should be converted into specific improvement activities such as FDP participation, mentoring support, peer observation, training in ICT/innovative pedagogy, research guidance, or improvement of student-support practices.

A subsequent appraisal cycle can then be used to determine whether improvement has occurred.

Effectiveness from the Appraisal Form

The filled portion of the appraisal form provides an example of how the system can generate a performance profile.

The sample self-assessment records:

Appraisal Component	Maximum Marks	
Teaching–Learning Activities	100	
Student Development	50	
Research & Professional Development	25	
Institutional Responsibilities	25	
Grand Total	200	

The overall self-assessment score is 144 out of 200, equivalent to 72%. According to the rating scale provided in the form, a score between 70% and 79% falls under the “Good” performance category.

This demonstrates that the appraisal system is capable of producing a consolidated performance rating while simultaneously identifying strengths and areas requiring improvement.

Analysis of Teaching–Learning Effectiveness

The Teaching–Learning component has a self-assessment score of 75/100, or 75%.

Several indicators received relatively strong scores. Syllabus coverage received 10/10, laboratory instruction received 5/5, and course file maintenance received 5/5. Continuous internal evaluation and result analysis received 8/10 each.

These scores indicate satisfactory implementation of basic academic processes such as syllabus completion, laboratory instruction, record maintenance, student assessment, and result analysis.

However, teaching methodology received 5/10 and ICT integration received 3/5. These scores indicate scope for further strengthening innovative teaching practices, active learning, OBE practices, ICT-enabled teaching, simulations, multime

The appraisal mechanism is therefore effective in identifying not only whether teaching duties are being performed but also areas in which teaching practices can be improved.

Analysis of Student Development Effectiveness

The Student Development score is 32/50, or 64%.

The faculty member has recorded full or high scores in several academic-support activities, including syllabus coverage and laboratory instruction. However, student performance/result analysis received 6/10 and student feedback received 0/

The student feedback score is particularly significant because the appraisal framework explicitly links feedback performance with required action when the feedback level is below the prescribed threshold.

Therefore, the appraisal system effectively identifies student feedback as an area requiring attention and provides a basis for initiating corrective or developmental measures.

At the same time, the available form does not document the actual corrective action taken after the low feedback score. Hence, while the appraisal system successfully identifies the area for improvement, the available document alone does not

Analysis of Research and Professional Development

The Research, Innovation and Professional Development component has a score of 15/25, or 60%.

The sample assessment shows:

- Research Publications – 3/5
- Patents/Consultancy – 0
- FDPs/Workshops – 4/5
- NPTEL/MOOCs/Certifications – 3/5
- Industrial Training – 5/5

This indicates reasonable participation in professional development and industrial exposure. Industrial training has received the maximum score, while FDP/workshop participation is also relatively strong. However, the absence of a score unc areas for further development.

The appraisal system is therefore useful for highlighting gaps in research and innovation activities and can support targeted faculty-development planning.

Analysis of Institutional Contribution

The Institutional Responsibilities component has the highest performance level among the four major sections, with a score of 22/25, or 88%.

The faculty member received:

- Committee Responsibilities – 5/5
- NBA/NAAC Activities – 5/5
- Examination Duties – 5/5
- Admission/Extension Activities – 3/5
- Professional Ethics and Discipline – 4/5

The score indicates strong involvement in institutional activities, particularly quality-assurance activities such as NBA/NAAC work and examination responsibilities.

This demonstrates that the appraisal system recognizes and records contributions that may not be reflected in classroom teaching alone.

The appraisal system has several significant strengths.

Comprehensive Evaluation

The system evaluates faculty performance from multiple dimensions rather than relying solely on teaching performance. Teaching, student development, research/professional development, and institutional responsibilities are all included.

Outcome-Oriented Assessment

Indicators such as syllabus coverage, result analysis, student feedback, and academic discipline introduce measurable outcomes into the assessment.

Recognition of Institutional Contribution

Faculty participation in NBA/NAAC activities, examinations, committees, and admission/extension activities is explicitly recognized.

Self-Reflection

The self-assessment component encourages faculty members to critically examine their own performance.

Supervisory Review

The inclusion of HoD assessment and Principal review provides a hierarchical verification mechanism.

Identification of Training Needs

The form provides a dedicated space for identifying training needs, recommending programmes, and specifying timelines. This is an important feature because it creates the possibility of converting appraisal results into faculty-development :

Defined Performance Rating

The system provides a clear rating scale:

- 90–100 – Outstanding
- 80–89 – Excellent
- 70–79 – Good
- 60–69 – Satisfactory
- 50–59 – Fair
- Below 50 – Needs Improvement

This facilitates interpretation of the final appraisal score.

14. Effectiveness of the Appraisal System

Based on the structure and the sample completed scores, the Faculty Appraisal System can be considered effective as a structured mechanism for performance assessment and identification of improvement areas.

Its effectiveness is evident in the following ways:

1. It covers the major dimensions of faculty performance.
2. It uses measurable indicators and maximum marks.
3. It enables individual performance to be quantified.
4. It identifies strengths and weaknesses at the activity level.
5. It incorporates student feedback and student performance.
6. It recognizes professional development and research activities.
7. It recognizes institutional contributions.
8. It provides for review by the HoD and Principal.
9. It provides a mechanism for identifying training needs.
10. It provides a performance rating that can be used for academic review and development planning.

C. Details of qualification up-gradation of faculty (10)

The institution encourages faculty members to upgrade their academic qualifications through the Quality Improvement Programme (QIP) and other recognized higher-education pathways. QIP, implemented by AICTE, is aimed at upgrading technical institutions to pursue higher qualifications, including M.E./M.Tech. and Ph.D. programmes. The institution facilitates faculty participation by providing necessary institutional support, permission/NOC, academic flexibility, etc. Faculty members with higher qualifications are encouraged to utilize their enhanced expertise in teaching, research, curriculum development, mentoring, consultancy, innovation, and other academic activities. The effectiveness of the qualification-upgradation initiative is measured by the number of faculty members who have upgraded their qualifications, improvement in research and publication activities, enhanced teaching practices, and greater contribution to institutional academic development.

6 FACILITIES AND TECHNICAL SUPPORT (100)

6.1 Availability of adequate, well equipped classrooms to meet the curriculum requirements (10)

Nirmala Institute of Technology is committed to creating a dynamic learning environment by providing modern infrastructure and reliable technical support that enrich the educational experience of its students. The institute emphasizes learning, and the practical application of knowledge.

To ensure that diploma engineering students develop the required technical competencies and professional skills, the institute continuously plans, implements, and evaluates its academic support systems. The key facilities available include:

- **Smart Classrooms:** Spacious and well-equipped classrooms fitted with LCD projectors, audio-visual aids, and other digital teaching resources to promote interactive and effective learning.
- **Engineering Drawing Halls:** Dedicated drawing halls designed to provide students with hands-on training in engineering graphics, technical drawing, and drafting techniques.
- **Tutorial Rooms:** Comfortable tutorial spaces that facilitate personalized mentoring, remedial coaching, and small-group academic discussions.
- **Multipurpose Hall:** A versatile hall used for seminars, technical workshops, guest lectures, cultural programs, and student development activities, fostering both academic and professional growth.

Nirmala Institute of Technology provides a comprehensive range of academic and student support services to foster intellectual growth, personal well-being, and overall development. The institute maintains a well-equipped library with an learning resources authored by renowned Indian and international scholars, ensuring easy access to quality academic materials.

Each academic department is equipped with dedicated faculty rooms and discussion spaces where students, parents, and other stakeholders can interact with faculty members for academic guidance, mentoring, and counselling. The institute a development, and academic success.

To provide a healthy and sustainable learning atmosphere, **Nirmala Institute of Technology** maintains a clean, eco-friendly campus with abundant greenery, well-maintained surroundings, and access to safe drinking water. The institutes con conducive environment for teaching, learning, and holistic development.

6. Availability of adequate, well-equipped classrooms to meet the curriculum requirements (10)

Room Description	Usage	Shared/ Exclusive	Area (Sq.m)	Required Adequacy as per norms (Sq. m)	Available facility
Classroom	III ME	Exclusive	80	66	ICT Facility, Black board, Chalk, Benches, Desk, Fans, Lights Dust Bin
	II ME	Exclusive	80	66	ICT Facility, Black board, Chalk, Benches, Desk, Fans, Lights Dust Bin
	I ME	Exclusive	80	66	Black board, Notice board, Benches, Fans, Lights, Charts, Dust Bin
Drawing Hall	MECH	Shared	160	140	Blackboard, Drawing Tables with drawing board, Stools, Fans, Lights, Dust Bin
	All departments	Shared	133		Computer, Audio System, LCD

Seminar Hall				74	Projectors, Chairs, Fans, lights
Auditorium	All departments	Shared	430	400	Computer, LAN Connectivity Audio System, LCD Projectors, Chairs, Fans, lights

6.2 Availability of adequate and well-equipped workshops, Laboratories and Technical manpower to meet the curriculum requirements (40)

A. Adequacy (10)

Nirmala Institute of Technology has well-established and adequately equipped laboratories that effectively support the practical requirements of the entire academic curriculum.

- The laboratories are provided with sufficient instruments, equipment, and resources to enable students to carry out practical sessions during:
 - Regular laboratory hours as per the academic timetable
 - Extended hours for additional practice, project development, and self-learning
- All practical experiments prescribed by the DTE curriculum are conducted according to the scheduled laboratory plan. In addition, advanced and application-oriented experiments are demonstrated to strengthen students practical knowl
- Laboratory equipment, tools, and consumable materials are systematically arranged in designated storage racks to ensure easy access for faculty members, laboratory staff, and students.
- Each laboratory is furnished with:
 - Informative display boards containing laboratory rules, safety instructions, and experiment details
 - Adequate furniture and infrastructure to provide a safe, organized, and comfortable working environment
- The laboratories remain accessible beyond regular working hours, encouraging students to undertake project work, innovation activities, and research-oriented learning under faculty guidance.

A.Adequacy of laboratory

S. No	Name of the Laboratory	No. of students per setup (Batch size)	Name of the Important Equipment (Costing More than Rs.30,000 /-)	Weekly utilization Status (All the course For which the lab is utilized)	Technical Man power support		
					Name of the Technical Staff	Designation	Qualification
1	Refrigeration and Air Conditioning Lab	4	Split A/C ,Window A/C, Refrigeration Test rig,Fridge	3	V D Antony	Lab Instructor	ITI

2	Advanced Machine Tools Lab	4	3D Printer , Computer	3	Manoj K R, Davis V P	Lab Instructor	Diploma
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3	Fluid Mechanics & Hydraulic Machines lab	4	Rectangular Notch, orifice meter, Venturi meter, Pipe Friction Major loss, Pipe friction minor loss, Determination of hydraulic co-efficient orifices, metacentric height, Bernoullis apparatus, Reciprocating pump, Centrifugal pump, Gear oil pump test rig, Francis Turbine, Pelton wheel, Kaplan turbine.	3	V D Antony, E D Vargheese	Lab Instructor, Workshop Superintendent	ITI, Diploma
4	Machine Shop Practice	4	Lathe, Shaper, Power Hacksaw, Grinding machine, Milling machine, Slotting machine, Tool and cutter grinder, Surface grinder	3	Manoj K R, Davis V P	Lab Instructor	Diploma

	Mechanical Workshop III and IV	4	Arc Welding machine, DC Welding machine, Shearing machine, Blower, Vernier Height Gauge, Surface Plate,	3	V D Antony, Sebastian K V,	Lab Instructor	ITI, Diploma
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5			Grinding machine, Chop saw, Power Hacksaw, Drilling machine, wooden lathe		Darly C D		
6	Engineering Mechanics Lab	4		3	Manoj K R	Lab Instructor	Diploma
7	Production Software Lab		Desktop computers(61 nos), Software : Solidworks	3	Sandra K S, Grace Mary	Lab Instructor	B.tech, MCA

Table 6.2.1 Adequacy of laboratory

B. Quality of Labs/workshop (20)

Quality of Laboratories, workshops

All laboratories and workshops are fully equipped with the required machinery, tools, software, furniture, display charts, and notice boards to support effective learning.

Training kits, interfacing devices, computers, and other laboratory equipment are inspected, serviced, and calibrated periodically in accordance with applicable standards and operational requirements.

A preventive maintenance schedule is strictly followed to ensure that all equipment remains in good working condition and performs efficiently.

Regular housekeeping activities are carried out to maintain a clean, organized, and safe laboratory environment, with adequate lighting and uninterrupted power supply.

Informative display boards, including safety instructions (Dos and Donts), lists of practical experiments, equipment specifications, and laboratory guidelines, are prominently displayed to enhance students technical knowledge and awareness.

Essential safety provisions such as first-aid kits, fire extinguishers, drinking water facilities, and mandatory use of uniforms and safety shoes are ensured, with continuous monitoring to maintain a safe and disciplined working environment.

a Quality of laboratories, workshop

S. No	Name of the Laboratory	No. of students per setup (Batch size)	Name of the Important Equipmen t (Costing More than Rs.30,000 /-)	Weekly utilization Status (All the course For which the lab is utilized)

1	Refrigeration and Air Conditioning Lab	4	1.Split A/C 2.Window A/C 3.Refrigeration Test rig 4.Fridge	3
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2	Advanced Machine Tools Lab	4	1.3D Printer 2.Computer	3
3	Hydraulics and Fluid mechanics Lab	4	1.Rectangular Notch 2.orifice meter 3. Venturi meter 4.Pipe Friction Major loss 5.Pipe friction minor loss 6. Determination of hydraulic co-efficient orifices 7. Metacentric height 8.Bernoullis apparatus 9.Reciprocating pump 10. Centrifugal pump 11.Gear oil pump test rig 12.Francis Turbine	3

			13. Pelton wheel 14. Kaplan turbine 15. Adjustable Channel Apparatus	
4	Machine Shop Practice	4	1. Lathe 2. Shape 3. Power Hacksaw 4. Grinding machine 5. Milling machine 6. Slotting machine 7. Tool and cutter grinder 8. Surface grinder	3

5	Mechanical Workshop III and IV	4	1. Arc Welding machine 2. DC Welding machine 3. Shearing machine 4. Blower 5. Vernier Height Gauge 6. Surface Plate 7. Grinding machine 8. Chop saw 9. Power Hacksaw 10. Drilling machine 11. wooden lathe	3
	Engineering Mechanics Lab	4	1. Linear variable differential Transformer 2. Calibration of load cell 3. Calibration of Temperature measuring instruments	3

6		4.Calibration of Strain gauge 5.Calibration of Bourdon tube pressure gauge 6.Level measurement using capacitive probe 7.Water meter Trainer 8.Rotameter Trainer 9. Pitot tube trainer 10.Stroboscope 11.Gauge block 12. Planimeter 13.1Vernier height gauge 14. Mechanical Comparator Stand 15.Dead weight tester 16.Sound level meter 17.Laser Interferometer 18.Vibrometer sensor gauge tester 19.Industrial Stroboscope 20.Tool makers microscope 21. Auto collimator 22.Orsat gas apparatus 23.Motorised gyroscope 24.Universal governor 25. Free and Force vibration approach 26.3d printer with accessories 27.Temperature training module 28.Temperature training NT module kit 29.Strain measurement trainer module 30.LVDT trainer kit	
7	Production Software Lab	1.Desktop computers(61 nos) 2.Software : Solidworks	3

Table 6.2.2 Quality of Labs

C. Technical Manpower support –Eligible and Adequate (10)

The department has adequate and qualified technical manpower to support all laboratory courses offered under the R-2021 Scheme. The technical staff possess relevant qualifications such as Diploma, ITI, and Degree, and they effectively a safety compliance.

ODD SEMESTER (R-2021 Scheme)

Table 6.2.3 Technical Man Power Support – Eligible And Adequate

Sl. No.	Name of the Laboratory	Name of Technical Staff	Designation	Qualification
1	Material Testing and Metallography Lab	Mridula	Lab Instructor	diploma
2	Mechanical Workshop III	V D Antony , Sebastian K V, Darly C D	Lab Instructor	ITI , Diploma
3	Electrical and Electronics Lab	Babu T Abraham	Lab Instructor	Diploma
4	Advanced CADD Lab	Grace Mary, Sandhra K S	Lab Instructor	MCA, BTech

5	Machine Shop Practice	Manoj K R, Davis V P	Lab Instructor	B.Tech
6	Hydraulic Machines Lab	E D Vargheese	Workshop Superintendent	Diploma
7	Automotive Lab	Mohanlal M V	Lab Instructor	Diploma

EVEN SEMESTER (R-2021 Scheme)				
Sl. No.	Name of the Laboratory	Name of Technical Staff	Designation	Qualification
1	Thermal Engineering Lab	E D Vargheese	Workshop Superintendent	Diploma
2	Fluid Mechanics Lab	E D Vargheese	Workshop Superintendent	Diploma
3	Mechanical Workshop IV	V D Antony , Sebastian K V, Darly C D	Lab Instructor	ITI, Diploma
4	Production Software Lab	Grace Mary, Sandhra K S	Lab Instructor	MCA, BTech
5	Refrigeration and Airconditioning Lab	E D Vargheese	Workshop Superintendent	Diploma
6	Advanced Machine Tools Lab	Manoj K R	Lab Instructor	Diploma

Conclusion:

The available technical manpower is eligible, adequate, and effectively deployed, ensuring smooth conduct of laboratory sessions and achievement of intended course outcomes as per NBA requirements.

Sr. No	Name of the Laboratory	Number of students per set up(Batch Size)	Name of the Important Equipment(Costing more than Rs.30,000)	Weekly utilization status(all the courses for which the lab is used)
1	Refrigeration and Air Conditioning	25	Split A/C , Window	3 hours per semester
2	Advanced Machineries	25	3D Printer , Computer	3 HOURS/WEEK
3	Machine Shop	25	LATHE	3 HOURS/WEEK
4	MACHINE SHOP	25	SHAPER	3 HOURS/WEEK
5	MACHINE SHOP	25	MILLING MACHINE	3 HOURS/WEEK
6	THERMAL ENGINE	25	FRANCIS TURBINE	3 HOURS/WEEK
7	THERMAL LAB	25	FOUR STROKE	3 HOURS/WEEK

6.3 Additional facilities created for improving the quality of learning experience in laboratories (20)

A. Facilities (10)

S. No.	Facility Name	Details (Capacity/Specification)	Reason(s) for Creating Facility	Utilization	Areas in Which Students Are Expected to Have Enhanced Learning
1	Calibration of Bourdon Tube Pressure Gauge	Capacity: 0–10 bar	To calibrate Bourdon tube pressure gauges using a standard pressure source.	Used for pressure gauge calibration and pressure measurement experiments.	Metrology & Measurements / Instrumentation

S. No.	Facility Name	Details (Capacity/Specification)	Reason(s) for Creating Facility	Utilization	Areas in Which Students Are Expected to Have Enhanced Learning
2	Vernier Height Gauge	Measuring Range: 0–300 mm ; Least Count: 0.02 mm	To measure vertical dimensions and mark workpieces accurately.	Used for precision measurement and layout work in metrology laboratory.	Metrology & Measurements
3	Auto Collimator	Angular Measurement Range: ±30 minutes ; Least Count: 1 second	To measure small angular deviations and alignment errors.	Used for checking straightness, flatness, parallelism and angular alignment.	Metrology & Measurements
4	Universal Governor Apparatus	Speed Range: 300–1500 RPM	To study the characteristics and performance of different governors.	Used to determine governor sensitivity, stability and controlling force.	Theory of Machines
5	Strain Measurement Trainer Module	Measurement Range: ±2000 $\mu\epsilon$	To study strain measurement using resistance strain gauges and Wheatstone bridge.	Used for conducting strain analysis and stress measurement experiments.	Instrumentation / Strength of Materials
6	Adjustable Channel Apparatus	Channel Length: 2 m ; Bed Slope: Adjustable (0–5%)	To study flow characteristics in open channels.	Used for experiments on uniform flow, critical flow and hydraulic phenomena.	Fluid Mechanics / Hydraulics

S. No.	Facility Name	Details (Capacity/Specification)	Reason(s) for Creating Facility	Utilization	Areas in Which Students Are Expected to Have Enhanced Learning
7	Calibration of Temperature Measuring Instruments	Temperature Range: 0–300°C	To calibrate thermometers, RTDs and thermocouples using standard temperature sources.	Used for calibration and comparison of temperature measuring instruments.	Metrology & Measurements / Instrumentation
8	Pitot Tube Trainer	Air Velocity Range: 5–40 m/s	To determine fluid velocity using the Pitot tube principle.	Used for velocity measurement and verification of Bernoulli's theorem.	Fluid Mechanics
9	Tool Makers Microscope	Magnification: 30×; Least Count: 0.001 mm	To perform precision measurement of small components, threads and tool profiles.	Used for measuring angles, pitch, tool geometry and precision components.	Metrology & Measurements
10	Level Measuring using Capacitive Probe	Range: 0–200 mm; Output: 0–1 VDC	To study capacitive level measurement and sensor calibration.	Used for level measurement experiments, sensor calibration, and process instrumentation studies.	Instrumentation / Process Control

B. Effective Utilization (5)

No. Facility Effective Utilization

- 1 Calibration of Bourdon Tube Pressure Gauge Used by students to perform pressure measurement and gauge calibration, improving practical understanding of pressure measurement and instrumentation.
- 2 Vernier Height Gauge Used for precision measurement, marking, and dimensional inspection of components, developing students' metrology and measurement skills.
- 3 Auto Collimator Used to measure small angular deviations and alignment errors, enhancing students' understanding of precision measurement and alignment techniques.
- 4 Universal Governor Apparatus Used to conduct governor experiments and determine sensitivity, stability, and controlling force, strengthening practical understanding of speed regulation.

- 5 Strain Measurement Trainer Module Used to measure strain and calculate stress using strain gauges and a Wheatstone bridge, developing practical skills in instrumentation and strength analysis.
- 6 Adjustable Channel Apparatus Used to conduct open-channel flow experiments and study uniform and critical flow, improving students' understanding of hydraulic behaviour.
- 7 Calibration of Temperature Measuring Instruments Used to calibrate and compare thermometers, RTDs, and thermocouples, developing practical skills in temperature measurement and instrumentation.
- 8 Pitot Tube Trainer Used to measure fluid velocity and verify Bernoulli's theorem, strengthening students' understanding of fluid-flow measurement principles.
- 9 Tool Makers Microscope Used for precision measurement of tool geometry, threads, angles, and small components, enhancing students' skills in advanced dimensional inspection.
- 10 Level Measuring using Capacitive Probe Used for level measurement, sensor calibration, and process instrumentation experiments, providing practical exposure to capacitive sensing and industrial measurement systems

C. Relevance to POs/PSOs (5)

Program Outcomes (POs) and Program Specific Outcomes (PSOs) Mapping for Additional Facilities

S.No.	Facility Name	Details	Reason for Creating Facility	Areas in Which Students Are Expected to Have Enhanced Learning	POs / PSOs
1	Calibration of Bourdon Tube Pressure Gauge	Capacity: 0–10 bar	To calibrate Bourdon tube pressure gauges using a standard pressure source.	Metrology & Measurements / Instrumentation	PO1, PO2, PO4, PSO1
2	Vernier Height Gauge	Measuring Range: 0–300 mm; Least Count: 0.02 mm	To measure vertical dimensions and mark workpieces accurately.	Metrology & Measurements	PO1, PO2, PO4, PSO1
3	Auto Collimator	Angular Measurement Range: ± 30 minutes; Least Count: 1 second	To measure small angular deviations and alignment errors.	Metrology & Measurements	PO1, PO2, PO4, PSO1

4	Universal Governor Apparatus	Speed Range: 300–1500 RPM	To study the characteristics and performance of different governors.	Theory of Machines	PO1, PO2, PO4, PSO1
5	Strain Measurement Trainer Module	Measurement Range: $\pm 2000 \mu\epsilon$	To study strain measurement using resistance strain gauges and Wheatstone bridge.	Instrumentation / Strength of Materials	PO1, PO2, PO4, PSO2
6	Adjustable Channel Apparatus	Channel Length: 2 m; Bed Slope: Adjustable (0–5%)	To study flow characteristics in open channels.	Fluid Mechanics / Hydraulics	PO1, PO2, PO4, PO5, PSO2
7	Calibration of Temperature Measuring Instruments	Temperature Range: 0–300°C	To calibrate thermometers, RTDs and thermocouples using standard temperature sources.	Metrology & Measurements / Instrumentation	PO1, PO2, PO4, PSO1
8	Pitot Tube Trainer	Air Velocity Range: 5–40 m/s	To determine fluid velocity using the Pitot tube principle.	Fluid Mechanics	PO1, PO2, PO4, PO5, PSO2
9	Tool Makers Microscope	Magnification: 30×; Least Count: 0.001 mm	To perform precision measurement of small components, threads and tool profiles.	Metrology & Measurements	PO1, PO2, PO4, PSO1
10	Level Measuring using Capacitive Probe	Range: 0–200 mm; Output: 0–1 VDC	To study capacitive level measurement and sensor calibration.	Instrumentation / Process Control	PO1, PO2, PO4, PSO2

Sr. No	Facility Name	Details	Reason(s) for creating facility	Utilization	Areas in which students are expected to have e
1	Calibration of Bo	Capacity: 0–10 b	To calibrate Bour	open ended proje	Metrology
2	vernier height ga	Measuring range	to measure vertic	project and open	metrology
3	AUTO COLLIME	ANGULAR MEAS	TO MEASURE S	Projects and mea	metrology
4	UNIVERSAL GO	SPEED RANGE	TO STUDY THE	DESIGN ENGINE	THEORY OF MACHINES
5	STRAIN MEASU	MEASUREMENT	Strain measurem	projects	instrumentations
6	Adjustable chanr	Channel length 2	Flow characterist	open ended proje	Fluid mechanics
7	Calibration of ten	temp range 0-30l	To calibrate them	Open ended	Metrology
8	Pitot Tube Traine	Air velocity 5-40	to measure fluid v	open ended	Fluid mechanics
9	Tool Makers micr	Magnification len	Precision measur	Project	Metrology
10	Level measurem	range 0-200 mm	sensor calibration	project	instrumentation

6.4 Laboratories: Maintenance and overall ambience (10)

Maintenance

Preventive maintenance

- Scheduled servicing of machines (lathes, milling machines, drilling machines, CNC units, engines, compressors) as per manufacturer guidelines — lubrication, alignment checks, belt/chain tension, calibration of gauges and instruments
- Daily/weekly/monthly/annual maintenance logs maintained by lab technicians
- Preventive checks reduce breakdown frequency and extend equipment life

Corrective maintenance

- Prompt repair of faulty equipment, with a clear reporting and requisition system for spare parts
- A dedicated maintenance register/log book recording faults, repairs, and downtime

Calibration and safety checks

- Regular calibration of measuring instruments (micrometers, vernier calipers, pressure gauges, thermometers) against standards
- Periodic testing of electrical systems, safety interlocks, emergency stops, and fire extinguishers

Housekeeping

- Daily cleaning of workbenches, machines, and floors — especially removal of metal chips, coolant spillage, and oil residue

- Proper storage of tools, jigs, fixtures, and raw materials in designated racks/cabinets
- Waste disposal protocol for scrap metal, used oil, and coolant (often requiring environmentally compliant disposal)

Documentation

- Equipment inventory register
- Standard Operating Procedures (SOPs) displayed near each machine
- Maintenance history cards for major equipment

Overall Ambiance

Physical environment

- Adequate ventilation and exhaust systems (especially important in labs with welding, foundry, or IC engine testing)
- Proper lighting — both natural and artificial — to ensure precision work is done safely
- Noise control measures near machining/engine test areas (acoustic enclosures, ear protection zones)
- Temperature and humidity control where precision instruments are used

Layout and organization

- Logical machine layout following process flow to minimize material movement and congestion
- Clear walkways, marked safety zones, and adequate spacing between machines
- Color-coded floor markings for safe zones, hazard zones, and pathways

Safety and ergonomics

- Personal Protective Equipment (PPE) — safety goggles, gloves, aprons, safety shoes — mandatorily available and enforced
- First-aid kits, fire extinguishers, and emergency exits clearly marked and accessible
- Ergonomically designed workstations to reduce operator fatigue

Aesthetic and psychological factors

- Clean, well-organized labs improve student focus and professional discipline
- Safety posters, instructional charts, and machine specification boards enhance the learning environment
- A well-maintained lab reflects institutional standards

6.5 Availability of computing facility in the department (10)

Sr. No	No Of Computer terminals	Students Computer Ratio	Details of Legal Software	Details of Networking
1	60	2:1	AutoCadSolid W	Systems are con

6.6 Language lab (10)

The **Language Laboratory at Nirmala Institute of Technology** provides a modern, technology-enabled environment for developing effective communication skills.

- ☐ It supports the **DTE curriculum** by conducting **Communicative English Practical** sessions for second-semester students.
- ☐ The laboratory uses audio-visual aids and interactive language learning tools to improve listening, speaking, reading, and writing skills.
- ☐ Students develop pronunciation, vocabulary, fluency, and overall communication competence through regular practice.
- ☐ The Language Laboratory also enhances personality development, presentation skills, confidence, and professional etiquette, preparing students for higher studies and career opportunities.

Room description	Name of lab	Usage	Shared / exclusive	Available facilities
Language Lab	Communication Lab	To improve the communication skill & LSRW skills	Shared	Projector, Microphones, Computers with Internet facility

Table 6.6.1 Language lab facilities

Sl.No	Skills	Description	No. of CDs
1	Vocabulary	Power Vocabulary	01
2	Spoken English	Spoken English, conversation and interview techniques practice	01
3	Speaking English	Basic and literary conservation better accent tutor	01
4	Presentation	B.B.C. Beginner's English units	05

	Skills		
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Table 6.6.2 Activities of Language Lab Facilities

UTILIZATION (Activities conducted)

1. Audio Comprehension Exercises

Students listen to audio passages and complete comprehension exercises to improve listening and understanding.

2. Public Speaking Practice

Impromptu speeches are conducted to build confidence, fluency, and spontaneous communication skills.

3. Speech Enhancement

Activities focus on pronunciation, voice modulation, intonation, and clear articulation for effective communication.

4. Communication Practice

Students practice describing technical topics, departments, products, processes, and real-life situations.

5. Collaborative Learning Activities

Group discussions, role plays, presentations, and mock interviews are conducted to enhance teamwork and professional communication.

6. Language Development

Exercises include sentence construction, question framing, paragraph writing, and comprehension-based writing activities.

7. Employability Skill Development

Students receive training in resume preparation, interview etiquette, and workplace communication to improve employability.

7 CONTINUOUS IMPROVEMENT (75)

7.1 Actions taken based on the resultsof evaluation of each of the POs and PSOs (25)

POs	Target Level	Attainment Level	Observations
PO 1 : Basic and Discipline specific knowledge			
PO 1	2.1	2.61	he higher attainment may be attributed to effective practical/laboratory activities, continuous assessment and better achievement of P02 (Problem Analysis).
1.Continue the existing effective teaching-learning practices. 2.Incorporate more problem-solving, numerical, case-study and application-oriented activities. 3.Maintain regular CO-PO assessment and attainment monitoring.			
PO 2 : Problem analysis			
PO 2	2.1	2.45	Higher attainment is due to effective teaching-learning practices, regular problem-solving activities, and improved performance.
1.Continue the effective practices, strengthen application-oriented and problem-solving activities 2.share good practices among faculty 3.set an appropriately higher target in the next assessment cycle for continuous improvement.			
PO 3 : Design/ development of solutions			
PO 3	2.1	2.15	Effective teaching-learning practices, regular assessment and continuous feedback contributed to the attainment being slightly above target.
1.Improved student performance in COs mapped to P02 through regular assessments. 2.Increased use of problem-solving and application-oriented activities during classroom and laboratory sessions. 3.Effective academic support and continuous feedback provided to students, helping them improve their analytical skills.			
PO 4 : Engineering Tools, Experimentation and Testing			
PO 4	2.1	2.34	Effective teaching-learning practices, regular assessment and continuous feedback contributed to the attainment being slightly above target.
1.Better student performance in COs mapped to P02. 2.Increased practice through numerical and problem-solving exercises. 3.Effective continuous assessment and timely academic feedback.			
PO 5 : Engineering practices for society, sustainability and environment			
PO 5	2.1	2.04	Difficulty in applying theoretical concepts to practical problem-solving activities.
1.Some students had difficulty in applying theoretical concepts to engineering problems. 2.Variation in student performance affected the overall P02 attainment. 3.Limited exposure to complex and application-oriented problem-solving activities contributed to the lower attainment.			
PO 6 : Project Management			
PO 6	2.1	1.90	Inadequate understanding of key concepts required for solving engineering problems.
1.Students faced difficulty in analysing and interpreting engineering problems. 2.Limited practice with application-based and higher-order problem-solving questions. 3.Variation in students' conceptual understanding and performance affected the overall P02 attainment.			

PO 7 : Life-long learning

PO 7	2.1	1.73	Weak conceptual understanding among some students ; difficulty in applying concepts to engineering problems.
1.Limited understanding of fundamental concepts related to problem analysis. 2.Difficulty in applying learned concepts to numerical and practical engineering problems. 3.Inadequate performance in assessments involving analytical and problem-solving skills.			

PSOs Attainment Levels and Actions for Improvement- (2024-25)

PSOs	Target Level	Attainment Level	Observations
PSO 1 : Able to design and produce engineering components with the acquired knowledge			
PSO 1	2.1	2.41	ood student performance in design, manufacturing, ; Effective laboratory and workshop-based learning in Project work and application of mechanical engineering
1.Students demonstrated good ability to apply acquired mechanical engineering knowledge in design and production-related activities. 2.Practical and laboratory-based learning improved students' ability to apply engineering concepts. 3. Project work, assignments, and application-oriented activities enhanced students' technical skills.			
PSO 2 : Able to manage maintenance system and attain quality of products in industry			
PSO 2	2.1	2.07	Limited practical exposure to industrial maintenance Difficulty in applying maintenance concepts in real Variation in student performance in quality and ma
1.Limited practical exposure to industrial maintenance systems among some students. 2.Difficulty in applying maintenance concepts to real industrial situations. 3.Insufficient exposure to quality-control and maintenance-related problem-solving activities.			

7.2 Improvement in Success Index of Students without the backlog (10)

Items	Latest Passed out Batch (2022-23)	Latest Passed out Batch minus 1 (2021-22)	
Success Index (from 4.2.1)	0.13	0.06	0.19

7.3 Improvement in Placement and Higher Studies (10)

Items	Latest Passed out Batch (2022-23)	Latest Passed out Batch minus 1 (2021-22)	
Placement Index (from 4.6)	1.04	1.12	0.94

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7.4 Improvement in Academic Performance in Final year (10)

Items	Latest Passed out Batch (2022-23)	Latest Passed out Batch minus 1 (2021-22)
Academic Performance Index (from 4.3)	2.68	2.52

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7.5 Internal Academic Audits to Review Complete Academics & to Implement Corrective Actions on Continous Basis (10)

Items	2024-25 (CAYm1)	2023-24 (CAYm2)	2022-23 (CAYm3)
Internal Academic Audits	2	2	2

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7.6 New Facility created in the Program (10)

Items	2024-25 (CAYm1)	2023-24 (CAYm2)	2022-23 (CAYm3)
New Facility Created	1.Parallelogram /	1.Sine Bar 2.Micr	1.Universal Force

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8 STUDENT SUPPORT SYSTEMS (50)

8.1 Mentoring system to help at individual level (10)

A structured mentoring system has been implemented in the department to provide academic, personal and professional support to students. Mentoring encourages students to take ownership of their own learning, helps them maximize their personal and professional goals. It also provides a channel through which personal difficulties can be shared in confidence, giving students psychological and emotional support alongside academic guidance, and helps them work towards a clear future.

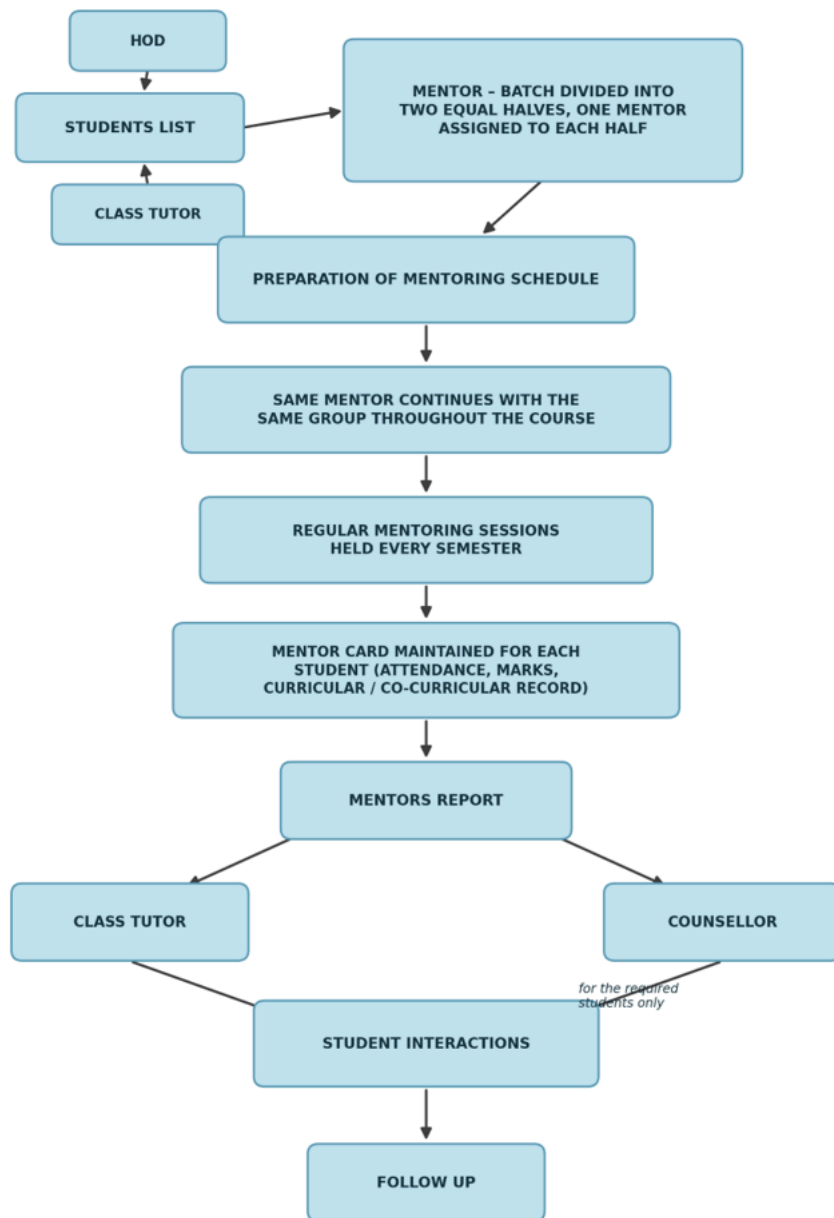
At the beginning of the course, the batch of students admitted to the department is divided into two equal halves, and one mentor is assigned to each half by the Head of the Department in consultation with the Class Tutor. The same mentor continues to guide the students throughout the course. This continuity allows the mentor to build a sustained understanding of each mentee's academic trajectory, strengths and areas needing support, rather than having to reassess the student afresh each semester.

A Mentor Card is maintained for every student, in which the mentor records academic performance, attendance, and participation in curricular, co-curricular and extra-curricular activities over the course of the programme. Any behavioural issues are noted with sensitivity, so that appropriate support can be extended. In the event a mentor is transferred or otherwise unavailable, the Head of the Department appoints a replacement mentor and hands over the mentee's mentor card, ensuring continuity of support.

Mentoring is carried out on a regular basis throughout every semester, generally scheduled so as not to interfere with regular class hours. During these sessions, the mentor reviews the mentee's attendance and academic performance, discusses any concerns, and provides guidance. Students are encouraged to approach their mentor freely, at any time, to report grievances or seek guidance.

Based on the mentor card records, the mentor prepares a periodic report on each mentee, which is shared with the Class Tutor. Where a student's attendance, academic performance or general conduct requires additional attention, the matter is discussed with the Class Tutor. This ensures that students requiring extra support are identified early and receive timely, individual attention rather than being addressed only through the general mentoring cycle.

Outcomes of the mentoring interactions are followed up over subsequent sessions to verify that corrective measures have had the intended effect, and the mentor card is updated accordingly, closing the loop between identification of a concern and its resolution.



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

Feedback collected for all courses: YES/NO; Specify the feedback collection process; Average Percentage of students who participate; Specify the feedback analysis process; Basis of reward/ corrective measures, if any; Indices used for measurement and summary of the index values for all courses/teachers; Number of corrective actions taken.

A. Methodology being followed for feedback collection, analysis and its effectiveness (5)

Feedback Collection Procedure

- 1. Feedback is collected once every semester, towards the end of the semester, from all students of the class for every subject/faculty member handling the class.
- 2. The Student Feedback Form is used, capturing the Department, Year/Semester, Academic Year, Register Number and Name of the student, along with the list of subjects and the corresponding faculty for that semester.
- 3. Each student rates every subject/faculty member on 11 defined parameters:
 - o Punctuality and Regularity
 - o Accessibility and Availability
 - o Encouragement of Student Interaction
 - o Maintaining Discipline
 - o Subject Knowledge
 - o Teaching Methodology
 - o Completion of Syllabus on Time
 - o Tests and Evaluation
 - o Professionalism
 - o Extracurricular Activities
 - o Overall Feedback
- 4. Each parameter is rated on a 5-point scale: 5 – Excellent, 4 – Very Good, 3 – Good, 2 – Satisfactory, 1 – Not Satisfactory.
- 5. Forms are filled and signed by students individually and collected by the Department / Class Tutor / Mentor for consolidation.

Scoring and Consolidation Methodology

Per-student subject score

For a given subject/faculty, the maximum obtainable score per student is 11 parameters × 5 = 55. The students total score is the sum of the ratings awarded across all 11 parameters.

Consolidated subject/faculty score

The consolidated score for a subject/faculty is obtained by averaging the total scores given by all students of the class who submitted feedback for that subject:

$$\text{Average Score} = (\text{Sum of total scores given by all students}) \div (\text{Number of students who responded})$$

Feedback percentage

The consolidated score is converted to a percentage against the maximum possible score of 55:

$$Feedback\ (%) = (Average\ Score \div 55) \times 100$$

Parameter-wise analysis

In addition to the overall percentage, the average rating obtained on each of the 11 individual parameters is computed separately. This parameter-wise break-up is used to pinpoint the specific areas of concern for a faculty member, rather than

Threshold and Identification of Concerned Cases

1. A subject/faculty whose consolidated feedback percentage (Section 3.3) is below 80% is flagged as a case requiring corrective action.
2. Within a flagged case, individual parameters scoring below 80% of their own maximum (i.e., an average rating below 4 out of 5) are identified as the specific areas needing improvement.
3. The consolidated feedback report, along with the list of flagged faculty/subjects and the corresponding weak parameters, is compiled by the Class Tutor/Mentor and submitted to the Head of the Department.

Action Taken Procedure

1. The Head of the Department reviews the consolidated feedback report and the list of flagged cases.
2. The concerned faculty member is informed of the feedback results and called for a one-to-one discussion with the HoD.
3. The specific parameters found weak are discussed, and the faculty members own inputs on the possible reasons are noted.
4. Corrective measures are jointly identified, drawing from the following standard set as applicable to the flagged parameters:
 - Improving interaction and communication with students
 - Adopting more student-centred and effective teaching methods
 - Conducting regular doubt-clearing sessions and additional academic support
 - Proper planning to ensure timely completion of the syllabus
 - Conducting regular tests, assignments and evaluations
 - Greater availability and accessibility to students outside regular class hours
5. A reasonable implementation period (typically the following semester/cycle) is set for the corrective measures to take effect.
6. The Head of the Department carries out continuous monitoring and follow-up of the improvement measures during the implementation period.
7. The outcome is verified against the feedback percentage obtained in the next feedback cycle for the same faculty member, and the case is closed only when the score is sustained at or above 80%.
8. Every case — the discussion, measures suggested, and follow-up outcome — is logged in the Record of Corrective Measures (Section 6) for audit and accreditation purposes.

B. Record of corrective measures taken (5)

Record of Corrective Measures on Student Feedback

Sl. No.	Academic Year / Sem	Faculty Name	Subject	Feedback (%)	Parameters Below Threshold	Corrective Measures Suggested	Date of Discussion	Follow-up Feedback (%)	Status / HoD Remarks
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									

A detailed report will prepare using this table format.

8.3 Feedback on facilities (5)

A. Student feedback on facilities, analysis and corrective action taken (5)

Methodology (Feedback Collection Process)

- Feedback form circulated to all students of the batch at the end of every semester, covering 9 standard facility criteria (Lab/infrastructure, Department resource, Computer & Internet, Sports, Soft-skill development, Library, Placement &

- Each criterion rated on a 5-point scale: 5 – Excellent, 4 – Good, 3 – Average, 2 – Below Average, 1 – Poor. A reason column is filled by the student wherever a rating below 3 is given.
- Forms are collected through the class mentor/class committee representative and handed over to the department feedback coordinator.
- Responses are consolidated criterion-wise into a master sheet (number of students choosing each rating, per criterion).
- The consolidated sheet is placed before the Department Advisory Committee / IQAC for review along with the analysis and proposed corrective actions.

Weighted Average Score (WAS) Method

For each criterion, a single representative score is computed from the distribution of responses using the formula:

$$WAS = \Sigma (\text{Rating} \times \text{No. of students who gave that rating}) \div \text{Total no. of respondents (N)}$$

This is repeated for every criterion, giving a WAS out of 5 per facility. Illustration:

Criterion	No. rated 5	No. rated 4	No. rated 3	No. rated 2	No. rated 1	Total Responses (N)	WAS = $\Sigma(\text{rating} \times \text{freq})/N$
e.g. Computer & Internet	18	10	2	0	0	30	$(18 \times 5 + 10 \times 4 + 2 \times 3)/30$ $= 4.53$

Each criterion's WAS is compared against a threshold to decide whether corrective action is required:

WAS Range	Interpretation	Action Level
4.50 – 5.00	Excellent	No action needed; maintain current standard.
3.50 – 4.49	Good	Minor improvement; include in annual upgrade plan.
2.50 – 3.49	Average	Corrective action required within the semester.
Below 2.50	Poor / Unsatisfactory	Urgent corrective action; report to management/IQAC immediately.

Once a criterion is flagged (WAS below 3.50, or a significant %age of low ratings), the department selects from the following category-wise corrective actions and records the action taken, responsible person, and target date:

Facility Category	Common Gaps Reported	Possible Corrective Actions
College Infrastructure – Lab & other facilities	Outdated equipment; inadequate seating/working space; poor maintenance.	Prepare equipment upgradation proposal; raise maintenance requisition to Estate/Maintenance section; schedule periodic lab audits.
Department Resource	Shortage of reference material, tools, or consumables.	Departmental budget reallocation; procurement request through HOD; annual resource-need survey before budgeting.

Facility Category	Common Gaps Reported	Possible Corrective Actions
Computer & Internet	Low bandwidth, insufficient systems, frequent downtime.	Bandwidth upgrade with ISP; add systems/access points; AMC for hardware; dedicated IT support slot.
Sports Facilities	Limited equipment, ground/court maintenance, timing constraints.	Sports equipment replenishment; coordinate with Physical Education dept. for ground upkeep; flexible slot scheduling.
Soft Skill Development	Low frequency of sessions, limited trainer exposure.	Increase frequency of soft-skill/personality development sessions; invite external trainers; tie sessions to placement calendar.
Library – Books & Access	Insufficient copies, outdated editions, limited access hours.	Procure additional titles/editions based on syllabus; extend library hours during exams; digital/e-book access.
Placement Assistance	Fewer companies visiting, inadequate pre-placement training.	Strengthen T&P cell outreach; add mock interview/aptitude sessions; industry-institute interaction.
Transport Facility	Route coverage, timing, overcrowding.	Review routes with transport committee; add/adjust bus timings; feedback-based route rationalisation.
Drinking Water	Insufficient water points, purifier maintenance.	Install additional purifier-cum-cooler units; AMC for filter replacement; periodic water-quality testing.

Feedback of facilities

Department: Civil Engineering

Batch: 2023 - 2025

Academic Year: 2023 – 24

Semester / year: 3rd/2023

Dear student,

We request to kindly provide your valuable feedback related to facilities which are available to you in our college. This will be helpful to us in enhancing the existing facilities in necessary.

Please (✓) in the relevant cell

Criteria	5	4	3	2	1	Give reason if less than 3
College infrastructure – Lab & other facilities	✓					
Department Resource	✓					
Computer & internet		✓				
Sports Facilities	✓					
Soft skill development	✓					
Adequacy of books in library and easier access	✓					
Providing assistance for placements	✓					
Adequacy of transport facility provided by college	✓					
Drinking water provided		✓				
Any other comments & suggestions:						
1. NIL						
2. .						
3.						

8.4 Career Guidance, Training, Placement (20)

The facility is managed jointly at two levels — the Institution level (Training & Placement Cell) and the Department level (Department Placement Coordinator and Career Guidance Coordinator) — to ensure that department-specific requirements and higher-studies drives. A Faculty Coordinator for Placement & Training and a Faculty Coordinator for Career Guidance/Higher Studies are nominated within the department every academic year. They work as the interface between the T&P

The following placement-support activities are conducted for final-year and pre-final-year students:

1. Registration and profiling of eligible students with the T&P Cell, including academic record and skill-set details.
2. Pre-placement training covering quantitative aptitude, logical reasoning, verbal ability, and group discussion practice.
3. Resume/CV preparation workshops and mock interview sessions conducted by faculty and invited industry professionals.
4. Soft-skills and personality development sessions, including communication skills and workplace etiquette.
5. Coordination of on-campus and off-campus placement drives, technical/HR interview scheduling, and offer-letter tracking.
6. Maintenance of a placement database recording company-wise participation, offers, and packages for every batch.

The Department maintains active interaction with industry to strengthen practical exposure and placement readiness of students:

1. Memoranda of Understanding (MoUs) with construction, infrastructure, and consultancy organisations for training, internship and collaborative activities.
2. Mandatory/optional internships and in-plant training arranged with construction sites, consultancy firms, government departments (PWD, Irrigation, etc.) and material-testing laboratories.
3. Industrial visits to construction sites, ready-mix concrete plants, treatment plants, and infrastructure projects as part of the curriculum.
4. Guest lectures and expert talks by practising engineers and industry professionals on current practices, codes, and emerging technologies.
5. Industry-sponsored/industry-defined projects and problem statements offered to final-year students.
6. Participation of industry representatives in curriculum feedback, guest evaluation of project work, and value-added certificate courses.

Career Guidance and Placement Training Sessions - Civil Engineering

No.	Date	Topic	Name of Resource Person	Semester
1	25-11-2022	Overview of the Placement Cell	Mr. Jojo Antony	Civil S5
2	12-02-2022	Guidelines for Placement Process	Mr. Jojo Antony	Civil S5
3	12-09-2022	How to Create a Resume	Mr. Jojo Antony	Civil S5
4	16-12-2022	Improving Your Resume	Mr. Jojo Antony	Civil S5
5	22-12-2022	Verbal and Numerical Aptitude Practice	Mr. Jojo Antony	Civil S5
6	01-09-2023	Thinking and Reasoning Skills	Mr. Jojo Antony	Civil S5
7	16-01-2023	Group Discussion Practice	Mr. Jojo Antony	Civil S5
8	21-01-2023	JAM (Just a Minute) Practice	Ms. Remadevi Ramakrishnan	Civil S5
9	23-01-2023	Guidance and Motivation for a Successful Career after Diploma	Dr. Brijesh George John	Civil S5
10	30-01-2023	Interview Preparation Tips	Mr. Jojo Antony	Civil S6
11	02-09-2023	Mock Interview Practice	Placement Team	Civil S6
No.	Date	Topic	Name of Resource Person	Semester
1	18-10-2023	Induction Program for 1st Year students	Mr. Jojo Antony	Civil S1
2	11-01-2023	Goal-Oriented Thinking and Introduction of Placement cell	Mr. Jojo Antony	Civil S5

3	11-08-2023	Enhancing Aptitude and Logical Reasoning Skills	Ms. Remadevi Ramakrishnan	Civil S5
4	15-11-2023	Realizing the Importance of Education	Mr. Polouse T.O.	Civil S5
5	22-11-2023	Leadership Qualities and Strategic Thinking	Mr. Jojo Antony	Civil S5
6	27-11-2023	Motivational Boost & Exam Stress Management (Half Day)	Dr. Sanju Dhamodharan	Civil S1
7	29-11-2023	Positive Mind set and Goal-Driven Approach	Dr. Sanju Dhamodharan	Civil S5
8	12-04-2023	Effective Resume Writing and Career Profiling	Mr. Jojo Antony	Civil S5
9	12-11-2023	Group Discussion -Practice	Mr. Jojo Antony	Civil S5
10	15-12-2023	Exploring Career Paths After Diploma	Ms. Remadevi Ramakrishnan	Civil S5
11	19-12-2023	Empowerment and Professional Pathways Guidance	Dr. Brijesh George John	Civil S5
12	01-03-2024	Interview Skills and Face-to-Face Preparation	Mr. Jojo Antony	Civil S5
13	01-10-2024	Your Role in Building a Sustainable Future	Ms. Tessa Lawrence	Civil S5
14	17-01-2024	Mock Interview Practice Sessions	Mr. Jojo Antony	Civil S5
15	24-01-2024	Mock Interview Practice Sessions	All placement Team	Civil S5
No.	Date	Topic	Name of Resource Person	Semester
1	19-11-2024	How to think to achieve your goals and a brief session about NCSS	Mr. Jojo Antony	Civil S1
2	25-11-2024	Application Development Training	Mr. Minoor Manmadhan	Civil S5
3	25-11-2024	Know yourself	Ms. Neethu Balakrishnan	Civil S5
4	25-11-2024	Mind power and goal setting	Ms. Thara Mathew	Civil S5
5	25-11-2024	Build and brand your personality	Mr. Minoor Manmadhan	Civil S5
6	29-11-2024	Value of education	Dr. Sanju Dhamodharan	Civil S5
7	29-11-2024	Aptitude test skills	Mr. Akhilesh A.	Civil S5
8	30-11-2024	Inspiration & Exam Relief (Half Day)	Dr. Sanju Dhamodharan	Civil S1
9	12-04-2024	Empowerment of personal skills	Mr. Minoor Manmadhan	Civil S5
10	12-04-2024	Leadership and insight	Ms. Neethu Balakrishnan	Civil S5
11	12-04-2024	Attitude and goal setting	Mr. Jojo Antony	Civil S5
12	12-07-2024	Resume Building	Mr. Jojo Antony	Civil S5
13	12-11-2024	Personality development	Mr. Minoor Manmadhan	Civil S5
14	12-11-2024	Relationship	Ms. Thara Mathew	Civil S5
15	12-11-2024	Self esteem	Ms. Neethu Balakrishnan	Civil S5
16	18-12-2024	Go beyond the limit	Mr. Minoor Manmadhan	Civil S5
17	18-12-2024	Job opportunities after diploma	Mr. Jojo Antony	Civil S5
18	18-12-2024	Personal Interview	Ms. Neethu Balakrishnan	Civil S5
19	01-03-2025	Goal setting and motivation	Dr. Brijesh George	Civil S5
20	01-07-2025	Your Contribution to Sustainable Industries	Ms. Radha Unikrishnan	Civil S5
21	14-01-2025	Mock Interview	NCSS Team	Civil S5

No.	Date	Topic	Name of Resource Person
1	23-01-2023	Guidance and Motivation for a Successful Career after Diploma	Dr. Brijesh George John
No.	Date	Topic	Name of Resource Person
1	27-11-2023	Motivational Boost & Exam Stress Management (Half Day)	Dr. Sanju Dhamodharan
2	19-12-2023	Empowerment and Professional Pathways Guidance	Dr. Brijesh George John
No.	Date	Topic	Name of Resource Person
1	30-11-2024	Inspiration & Exam Relief (Half Day)	Dr. Sanju Dhamodharan
Career Guidance and Placement Training Sessions (2024 – 2025):			
No.	Date	Topic	Name of Resource Person
1	19-11-2024	How to think to achieve your goals and a brief session about NCSS	Mr. Jojo Antony
2	26-11-2024	Application Development Training	Mr. Minoor Manmadhan
3	26-11-2024	Know yourself	Ms. Neethu Balakrishnan
4	26-11-2024	Mind power and goal setting	Ms. Thara Mathew
5	26-11-2024	Build and brand your personality	Mr. Minoor Manmadhan
6	29-11-2024	Value of education	Dr. Sanju Dhamodharan
7	29-11-2024	Aptitude test skills	Mr. Akhilesh A.
8	30-11-2024	Inspiration & Exam Relief (Half Day)	Dr. Sanju Dhamodharan
9	12-05-2024	Empowerment of personal skills	Mr. Minoor Manmadhan
10	12-05-2024	Leadership and insight	Ms. Neethu Balakrishnan
11	12-05-2024	Attitude and goal setting	Mr. Jojo Antony
12	12-09-2024	Resume Building	Mr. Jojo Antony
13	12-12-2024	Personality development	Mr. Minoor Manmadhan
14	12-12-2024	Relationship	Ms. Thara Mathew
15	12-12-2024	Self esteem	Ms. Neethu Balakrishnan
16	19-12-2024	Go beyond the limit	Mr. Minoor Manmadhan
17	19-12-2024	Job opportunities after diploma	Mr. Jojo Antony
18	19-12-2024	Personal Interview	Ms. Neethu Balakrishnan
19	01-03-2025	Goal setting and motivation	Dr. Brijesh George
20	01-06-2025	Your Contribution to Sustainable Industries	Mr. Radhakrishnan G.(FACT)

21	14-01-2025	Mock Interview	NCSS Team	Chemical S5
No.	Date	Topic	Name of Resource Person	Semester
1	18-11-2024	How to think to achieve your goals and a brief session about NCSS	Mr. Jojo Antony	Electrical & Electronics S1
2	22-11-2024	Application Development Training	Mr. Minoor Manmadhan	Electrical & Electronics S5
3	22-11-2024	Know yourself	Ms. Neethu Balakrishnan	Electrical & Electronics S5
4	22-11-2024	Mind power and goal setting	Ms. Thara Mathew	Electrical & Electronics S5
5	22-11-2024	Build and brand your personality	Mr. Minoor Manmadhan	Electrical & Electronics S5
6	28-11-2024	Value of education	Dr. Sanju Dhamodharan	Electrical & Electronics S5
7	28-11-2024	Aptitude test skills	Mr. Akhilesh A.	Electrical & Electronics S5
8	30-11-2024	Inspiration & Exam Relief (Half Day)	Dr. Sanju Dhamodharan	Electrical & Electronics S1
9	12-03-2024	Empowerment of personal skills	Mr. Minoor Manmadhan	Electrical & Electronics S5
10	12-03-2024	Leadership and insight	Ms. Neethu Balakrishnan	Electrical & Electronics S5
11	12-07-2024	Resume Building	Mr. Jojo Antony	Electrical & Electronics S5
12	12-10-2024	Personality development	Mr. Minoor Manmadhan	Electrical & Electronics S5
13	12-10-2024	Relationship	Ms. Thara Mathew	Electrical & Electronics S5
14	12-10-2024	Self esteem	Ms. Neethu Balakrishnan	Electrical & Electronics S5
15	17-12-2024	Go beyond the limit	Mr. Minoor Manmadhan	Electrical & Electronics S5
16	17-12-2024	Job opportunities after diploma	Mr. Jojo Antony	Electrical & Electronics S5
17	17-12-2024	Personal Interview	Ms. Neethu Balakrishnan	Electrical & Electronics S5
18	01-02-2025	Goal setting and motivation	Dr. Brijesh George	Electrical & Electronics S5
19	01-03-2025	Goal setting and motivation	Dr. Brijesh George	Electrical & Electronics S5
20	01-07-2025	Your Contribution to Sustainable Industries	Mr. Sunil Joseph (Sark Cables)	Electrical & Electronics S5
21	14-01-2025	Mock Interview	NCSS Team	Electrical & Electronics S5
No.	Date	Topic	Name of Resource Person	Semester
1	20-11-2024	How to think to achieve your goals and a brief session about NCSS	Mr. Jojo Antony	Automobile S1
2	27-11-2024	Application Development Training	Mr. Minoor Manmadhan	Automobile S5
3	27-11-2024	Know yourself	Ms. Neethu Balakrishnan	Automobile S5
4	27-11-2024	Mind power and goal setting	Ms. Thara Mathew	Automobile S5
5	27-11-2024	Build and brand your personality	Mr. Minoor Manmadhan	Automobile S5
6	29-11-2024	Aptitude test skills	Mr. Akhilesh A.	Automobile S5
7	30-11-2024	Value of education	Dr. Sanju Dhamodharan	Automobile S5
8	30-11-2024	Inspiration & Exam Relief (Half Day)	Dr. Sanju Dhamodharan	Automobile S1

9	12-06-2024	Empowerment of personal skills	Mr. Minoor Manmadhan	Automobile S5
10	12-06-2024	Leadership and insight	Ms. Neethu Balakrishnan	Automobile S5
11	12-06-2024	Attitude and goal setting	Mr. Jojo Antony	Automobile S5
12	12-09-2024	Resume Building	Mr. Jojo Antony	Automobile S5
13	13-12-2024	Personality development	Mr. Minoor Manmadhan	Automobile S5
14	13-12-2024	Relationship	Ms. Thara Mathew	Automobile S5
15	13-12-2024	Self esteem	Ms. Neethu Balakrishnan	Automobile S5
16	20-12-2024	Go beyond the limit	Mr. Minoor Manmadhan	Automobile S5
17	20-12-2024	Job opportunities after diploma	Mr. Jojo Antony	Automobile S5
18	20-12-2024	Personal Interview	Ms. Neethu Balakrishnan	Automobile S5
19	01-02-2025	Goal setting and motivation	Dr. Brijesh George	Automobile S5
20	01-06-2025	Your Contribution to Sustainable Industries	Dr.Davis George (Eddy Current)	Automobile S5
21	14-01-2025	Mock Interview	NCSS Team	Automobile S5

No.	Date	Topic	Name of Resource Person	Semester
	130-11-2024	Inspiration & Exam Relief (Half Day)	Dr. Sanju Dhamodharan	Computer Engineering S1
No.	Date	Topic	Name of Resource Person	Semester
	127-11-2023	Motivational Boost & Exam Stress Management (Half Day)	Dr. Sanju Dhamodharan	Computer Engineering S1
	219-12-2023	Empowerment and Professional Pathways Guidance	Dr. Brijesh George John	Computer Engineering S5
No.	Date	Topic	Name of Resource Person	Semester
1	23-01-2023	Guidance and Motivation for a Successful Career after Diploma	Dr. Brijesh George John	Computer Engineering S5

Placement Data:

Chemical Engineering 2022-25

S.no.	Name of the student placed	Enrollment no.	Employer
1	LAVIN VARGHESESE	2201070079	MAHLE ANAND
2	ASHMITH T R	2201070072	MAHLE ANAND
3	JEROM N B	2201070076	DEVI INDUSTRIES
4	KRISHNAROOP A D	2201070203	DEVI INDUSTRIES
5	JERIN JAMES	2201070075	MAHLE ANAND
6	KIRAN SHJO	2201070077	MAHLE ANAND
7	SAYANTH C K	2201070085	MAHLE ANAND

8	AKSHAY A S	2201070067	MAHLE ANAND
9	ABHIKRISHNA C S	2201070062	MAHLE ANAND

Chemical Engineering 2023-26

S.no.	Name of the student placed	Enrollment no.	Employer1	Employer2
1	Abhiram K J	2301070002	Arjuna Naturals	MRF
2	Austin V. Paul	2301070008	Arjuna Naturals	Nil
3	Avnish T. S	2301070009	Arjuna Naturals	MRF
4	E. J. Soorya	2301070011	Arjuna Naturals	Nil
5	Edwin Lalu	2301070012	MRF	Nil
6	Gautham Anand	2301070013	Arjuna Naturals	Nil
7	Jerin Varghese	2301070017	MRF	Nil
8	Joyal P. J	2301070018	Arjuna Naturals	Nil
9	Mikhil Kumar	2301070019	Arjuna Naturals	Nil
10	Muhammed Irfan	2301070024	Anand Group	Nil
11	Muhammed Swalih	2301070025	MRF	Arjuna Naturals
12	Nandana	2301070026	Mahle Anand	Nil
13	Neeraj	2301070027	MRF	Arjuna Naturals
14	Sony Cheriakutty	2301070030	MRF	Arjuna Naturals
15	Suryakrishnan	2301070031	Arjuna Naturals	Nil
16	Fathima B.	2301070100	Joyson Anand	Nil
17	Adwaith Jayason	2301070246	Arjuna Naturals	Nil
18	Aquilin Lincon	2301070247	Anand	Nil
19	Godwin	2301070248	Arjuna Naturals	Nil

Chemical Engineering 2021-24

S.no.	Name of the student placed	Enrollment no.	Employer
1	ABHINAV K B	2101070002	WIPRO
2	ASIRVADH P	2101070013	WIPRO
3	SREERAM K G	2101070025	WIPRO
4	SUDEV K SUDHAKARAN	2101070026	WIPRO
5	AMEYA CRISTO	2101070240	WIPRO

Electrical and Electronics Engineering 2021-24

S.no.	Name of the student placed	Enrollment no.	Employer
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1	DENCIL	2101033251JK TYRE
2	JOYAL	2101030670JK TYRE
3	SOURAV	2101033259JK TYRE
4	DEENAS DAVIS	2101033250JK TYRE
5	ARJUN KRISHNA	2101033249JK TYRE
6	SREERAM	2101033260JK TYRE
7	AMAL P JOY	2101033247WIPRO
8	SIVAJITH K RAMESH	2101033258WIPRO
9	ANAL ANTONY	2101030649WIPRO
10	ALEX M VARGHESE	2101033245WIPRO
11	MELWIN CM	2101030673WIPRO
12	EBIN SHYJAN	2101033242JK TYRE
13	FERNANDO JOBY	2101033252JK TYRE
14	AKSHAY	2101033244JK TYRE
15	ABHISHEK JIJO	2101033241JK TYRE
16	STEEVO POLY	2101030684JK TYRE
17	JEROME K J	2101030667JK TYRE
18	ELJO OPPEN	2101030661JK TYRE
19	AJITH	2101030643JK TYRE
20	ADARSH	2101030642JK TYRE

Electrical and Electronics Engineering 2022-25

S.no.	Name of the student placed	Enrollment no.	Employer1	Employer2
1	DHEERAJ CM	2201032032	GABRIEL	Nil
2	Nithin KM	2201032041	Suzlon India Ltd.	RESMI INDUSTRIES
3	ANEESH MA	2201032023	Suzlon India Ltd.	RESMI INDUSTRIES
4	RIGWED AS	2201033264	Suzlon India Ltd.	RESMI INDUSTRIES
5	KAILAS TA	2201033263	Suzlon India Ltd.	RESMI INDUSTRIES
6	ATHUL TJ	2201033258	Suzlon India Ltd.	RESMI INDUSTRIES
7	GOKUL SAJEEV	2201033260	GABRIEL	RESMI INDUSTRIES
8	JOBIN PS	2201033262	RESMI INDUSTRIES	LG BROS
9	ADHITH V A	2201032015	Ceetel Technologies	Nil
10	ADHI KS	2201032014	Ceetel Technologies	LG BROS
11	JOJI JOHNY	2201032039	LG BROS	Nil
12	ABHINAV	2201032013	LG BROS	Nil
13	AABEL JOSE	2201032010	LG BROS	Nil
14	ALBIN BIJU	2201032019	LG BROS	Nil
15	GOWTHU KRISHNA	2201032035	LG BROS	Nil
16	ASHIN SHAJI	2201032028	LG BROS	Nil

Electrical and Electronics Engineering 2023-26

S.no.	Name of the student placed	Enrollment no.	Employer1	Employer2	Employer3
1	EDWIN SHOJAN	2301030293	MRF	ANAND GROUP	PAVIZHAM RICE
2	DIBIN SHIBU	2301030292	MRF	ANAND GROUP	ASOK LEYLAND
3	GOUTHAMKRISHNA K S	2301033344	ANAND GROUP	INDOMIM	Nil
4	ATHUL P RAJU	2301030286	MRF	ANAND GROUP	Nil

5	ATHUL KRISHNAN C A	2301030285MRF	ANAND GROUP	Nil
6	AMARNATH K R	2301030282MRF	ANAND GROUP	Nil
7	JESWIN T J	2301030296MRF	ANAND GROUP	Nil
8	FRAJO E J	2301030294MRF	Nil	Nil
9	JIBIN JOISON	2301030297ANAND GROUP	Nil	Nil
10	SANANTH P S	2301033348ANAND GROUP	INDOMIM	PAVIZHAM RICE
11	TIKSON VARGHESE	2301033350ANAND GROUP	INDOMIM	PAVIZHAM RICE
12	ABHINAND C M	2301030273ANAND GROUP	INDOMIM	Nil
13	SHELVIN BABU	2301033349ANAND GROUP	INDOMIM	PAVIZHAM RICE
14	SACHU P S	2301030305ANAND GROUP	INDOMIM	Nil
15	JESTIN TENSON	2301030295ANAND GROUP	INDOMIM	Nil
16	ADHIL P G	2301030277ANAND GROUP	INDOMIM	Nil
17	ATHULKRISHNA M A	2301033343ANAND GROUP	INDOMIM	Nil
18	AASHJO JOSEPH	2301030271TAFE	Nil	Nil
19	ABINAV M M	2301030274TAFE	Nil	Nil
20	CHRISTY JOSH Y	2301030288TAFE	Nil	Nil
21	SREEBHUVANESH P R	2301030308TAFE	Nil	Nil
22	ABIN K P	2301033338TAFE	Nil	Nil
23	ALEX VARGHESE	2301033340TAFE	Nil	Nil
24	ANANDHU KRISHNAN E S	2301033341TAFE	Nil	Nil
25	ROSHIK KISHORE	2301033347TAFE	Nil	Nil
26	VIMALKRISHNA C B	2301033351TAFE	PAVIZHAM RICE	Nil

Automobile Engineering 2022-2025

S.no.	Name of the student placed	Enrollment no.	Name of the Employer
1	MUHAMMED AJMAL	2201051257	GABRIEL
2	ANANDU HARIDAS	2201051228	Suzlon India Ltd.
3	MUHAMMED ISMAIL	2201051255	Suzlon India Ltd.
4	LEON BENNY	2201051253	Suzlon India Ltd.
5	EBIN JOY	2201051240	Suzlon India Ltd.

6	JOYAL JOSE	2201051250	Suzlon India Ltd.
7	JAKSON J PULLEN	2201051245	Suzlon India Ltd.
8	SANJO P SAJAN	2201051264	Suzlon India Ltd.
9	HAREESH KRISHNA	2201051241	Suzlon India Ltd.
10	AMRITHAKRISHNA P M	2201051227	Suzlon India Ltd.
11	DELVIN DAVY	2101050287	LG BROS
Automobile Engineering 2021-2024			
S.no.	Name of the student placed	Enrollment no.	Name of the Employer
1	Aibel Seby	2101050274	WIPRO
2	Alan Polachan	2101050276	WIPRO
3	Anjo Peter	2101050280	WIPRO
4	Anson K R	2101050281	Nippon Toyota
5	Athul P A	2101050283	WIPRO
6	Ahtulkrishna A R	2101050284	WIPRO
7	Dean Davis Chirakkal	2101050286	WIPRO
8	Ganeshkumar KB	2101050289	WIPRO
9	Issac Davis	2101050290	WIPRO
10	Jeevan Joshy	2101050291	POPULAR JCB
11	Joshwel Joy	2101050293	WIPRO
12	Kochuvarkey C S	2101050294	WIPRO
13	Manu VM	2101050296	TATA
14	Mijo Jose	2101050297	WIPRO
15	Muhammed Aslam Japhar	2101050298	WIPRO
16	Muahmmmed Midhlaj TM	2101050303	WIPRO
17	Nijo John	2101050304	HYUNDAI
18	Noel Anto Kattukaran	2101050305	WIPRO
19	Rohin Shaju	2101050307	WIPRO

20	Shamij PM	2101050311	WIPRO
21	Sherin K Santhosh	2101050312	WIPRO
22	Ujwal Ram PS	2101050315	WIPRO
23	Ullas KU	2101050316	WIPRO
24	Vimal PV	2101050317	WIPRO
25	Viswajith PJ	2101050320	WIPRO
26	Vivek Ts	2101050321	WIPRO
27	Akhil VA	2101051745	J K TYRES
28	Bharathkrishna CB	2101051746	WIPRO
29	Delson KD	2101051748	LG BROS
30	Dibin Varghese	2101051749	JK TYRES
31	Muahmmmed Farhan	2101051751	TATA
32	Sreerag KS	2101051753	JK TYRES
33	Gokul PV	2101051754	POPULAR JCB

Computer Engineering 2023-2026

S.no.	Name of the student placed	Enrollment no.	Name of the Employer
1	NELEN MATHEW	2301133606	INDO MIM, GJ INFO TECH
2	JISMON CS	2301133605	GJ INFO TECH
3	MUHAMMED SALIH P S	2301132980	MRF
4	DHEERAJ JAYAN	2301132972	GJ INFO TECH
5	FARZEEN AHAMED T.S I	2301132973	NDO MIM
6	AJO JOSHY	2301132962	INDO MIM

The placement for the Civil Engineeirng and Mechanical Engineering programmes were mentioned in Criteria 4.

8.5 Entrepreneurship Cell/Technology Business Incubator (5)

The Innovation and Entrepreneurship Development Cell (IEDC) of Nirmala Institution was constituted following a formal notice circulated among all the affiliated colleges. Students were selected from each campus, based on demonstration from all the colleges were subsequently consolidated to officially constitute a unified IEDC panel for the entire institution.

The IEDC functions under the guidance of Industrial Extension Officers/Nodal Officers nominated in coordination with the Kerala Startup Mission, along with the institutions IEDC Coordinator and faculty team

Sl. No.	Date	Programme / Activity	Venue	Academic Year
1	6 January 2025	IEDC Panel Formation – college-level selection of panelists and constitution of the unified institution panel	Across affiliated colleges	2024-2025
2	14 January 2025	Planning meeting for the common IEDC inauguration; panelists briefed on IEDC activities	Nirmala Institute of Technology	2024-2025
3	28 January 2025	Seminar, Inaugural and Orientation Programme – “Innovation Ecosystem, IEDC Opportunities and Industrial Safety” (Resource Person: Mr. Radhakrishnan G.)	Seminar Hall, NIT	2024-2025

IEDC Road Map for the Year 2025 - 2026

Stage	Activity	Details	Outcome
1	Orientation	- To all Second Year students - Batch size maximum 100 - Should be over in two days	All students are aware of the innovation ecosystem, way to take part in that, needs and benefit of participating.
2	Ideation	- Batch size maximum 50 to 60 - Two batches (total count 100 to 120)	- Team formation - Teams with potential innovations

Stage	Activity	Details	Outcome
		- Form a team of maximum 4 in a batch - Assist the teams to innovate	
3	Structuring and Design	- Select 25 teams based on idea, teamwork, innovation, feasibility and social relevance - Assist them in completing design - Assist them in preparing project proposal	- Innovators ready with proposals to apply for funding - Target – 10 funded projects
4	Intellectual Property Rights Session	- Orientation on patenting process - Encouraging students to apply for patents	Target – five patent applications
5	Prototyping & Market Readiness	- Identification of products with market potential - Market readiness - Product launch	Target – two market-ready products
6	Legal Process	- Session given to targeted teams - Startup company registration	Target – two startup companies

Anticipated Benefits

To Students

- Soft Skill Development
- Communication enhancement
- Team Work
- Improved presentation skills
- Improvement in Engineering Skills
- Funded Projects
- Patents
- Elevated CV

To Institution

- Funded Projects
- Innovation Ecosystem
- Societal interaction
- Patents
- Better position in NIRF, ARIIA and accreditation, including Autonomy application

9 GOVERNANCE, INSTITUTIONAL SUPPORT AND FINANCIAL RESOURCES (75)

9.1 Organization, Governance and Transparency (25)

9.1.1 State the Vission and Mission of the Institute (5)

Vision :

To be a premier polytechnic, moulding technically skilled and ethically driven learners making impactful contributions to the sustainable development of society

Mission :

M1: To foster technical skills and creativity by embracing innovative practices in the teaching learning process M2: To support the overall personality development of students through the promotion of holistic education M3: To attain optimum shape individuals into ethical professionals and responsible citizens with a dedication to lifelong learning

9.1.2 Governing body, administrative setup, functions of various bodies, define rules procedures, recruitment and promotional policies (5)

Nirmala Institute of Technology (NIT) is a constituent institution of the Nirmala Institutions, one of the pioneering educational groups in Kerala. Nirmala Institutions began their journey in 1954 with the vision of moulding responsible citizens. Over the decades, the management has expanded into various domains of higher education and currently serves thousands of students through its institutions offering globally recognized undergraduate and postgraduate programmes in Engineering, Management, and Law. In 2021, the institution established Nirmala College of International Studies to provide guidance and professional support for students aspiring to pursue higher education abroad.

Nirmala Institute of Technology was established in 2018 as a self-financing Polytechnic College with the objective of providing quality technical education to students, particularly those from rural and economically weaker sections of society. The institute offers programmes in Mechanical Engineering, Civil Engineering, and Chemical Engineering—with an approved intake of 60 students in each programme. To meet the growing demand for technical education and industry requirements, the institute introduced Electrical and Electronics Engineering in 2023. At present, the institution offers six Diploma programmes, each with an approved intake of 60 students, catering to the diverse needs of aspiring diploma engineers.

The institute is situated at Kunnappilly, Chalakudy, Thrissur District, in a serene and eco-friendly environment surrounded by lush green nutmeg plantations. The peaceful campus provides an ideal atmosphere for academic excellence, and the institution primarily serves students from nearby villages, many of whom belong to economically disadvantaged families and are first-generation learners. By charging only the fee prescribed by the Government of Kerala, the institute ensures accessibility for all students.

The institution follows a student-centric approach by adopting Outcome-Based Education (OBE), innovative teaching-learning practices, modern laboratory facilities, industrial interaction, internships, project-based learning, and continuous assessment. It also focuses on personality development, communication skills, leadership qualities, professional ethics, environmental awareness, and community service through various co-curricular and extracurricular activities.

Since its establishment, Nirmala Institute of Technology has successfully produced 6 batches of diploma graduates, many of whom are employed in reputed industries, government organizations, and multinational companies, while several others have pursued higher education. In line with its Vision and Mission, the institution continues to strive for academic excellence, industry relevance, innovation, and continuous quality improvement, thereby producing technically competent, ethically responsible, and socially committed diploma engineers.

Composition and Functioning of the Board of Governors (BOG)

The Board of Governors (BOG) of the institution is constituted in accordance with the norms prescribed by the All India Council for Technical Education (AICTE) and the Directorate of Technical Education (DTE), and in line with the Memo governing and policy-making body of the institution, entrusted with the overall responsibility of academic governance, administrative oversight, financial management, and infrastructure development.

The Board comprises a balanced mix of representatives from the management, academia, industry, and regulatory bodies, ensuring that institutional decision-making benefits from diverse perspectives and domain expertise. The **Chairman**, the overall strategic direction to the institution. The **Vice-Chairperson**, drawn from the management, assists the Chairman in policy formulation and institutional planning. The **Principal**, functioning as the ex-officio Member Secretary of the Board, is responsible for implementing Board decisions, and maintains records of proceedings.

Recognizing the importance of regulatory alignment, a **nominee of the DTE** is included as a member to ensure that institutional policies and practices conform to statutory and regulatory requirements laid down by the government. To bridge the gap between academia and industry, **industrial experts**, senior professionals drawn from core sectors relevant to the institutions programmes, who provide valuable inputs on curriculum relevance, emerging technology trends, and employability requirements, and who often face challenges in the industry.

The Board also inducts **eminent personalities** from academia and society, such as retired professors, distinguished alumni, or professionals of repute, whose experience contributes to strengthening institutional vision, academic quality, and credibility.

The BOG typically meets at prescribed intervals (usually twice a year or as mandated by the affiliating/regulatory authority) to review academic performance, approve budgets and development plans, oversee compliance with accreditation requirements, and ensure the institution's vision. This diverse and structured composition ensures a system of checks and balances, transparent governance, and continuous improvement, thereby strengthening institutional accountability and quality assurance mechanisms.

Functions & Responsibilities of BOG:

- Take all policy decisions with regard to smooth, cost effective and timely implementation of the institutional sub project
- Form, supervise and guide various committees required for project implementation and internal project monitoring
- Ensure overall faculty development
- Enable implementation of all academic and non-academic institutional reforms
- Ensure proper utilization of project fund and timely submission of Financial Management Reports (FMR) and Utilization Certificates
- Ensure compliance with the agreed procedures for procurement of goods, works and services and financial management
- Monitor progress in the carrying out of all the proposed project activities, resolve bottlenecks, and enable the institution to achieve targets for all key indicators
- The Board of Governor’s sittings will be convened by the secretary as often as necessary but, not less than once in a year

Organizational Structure

Chairman:

The Chairman is the highest authority of the Institution and represents the Management / Trust/ Society. The Chairman provides visionary leadership, policy direction, and strategic oversight for the institution to ensure academic excellence, financial soundness, and institutional growth.

I. Policy Planning and Governance

- 1.The Chairman shall define the vision, mission, and long-term strategic goals of the institution in alignment with national educational policies and societal needs.
- 2.He/she shall ensure that the institution functions in accordance with the rules and regulations of AICTE, NBA, affiliating Board/University, Government authorities, and statutory bodies.
- 3.The Chairman shall appoint the Principal and key administrative positions as per norms and monitor their performance periodically.
- 4.He/she shall provide policy-level guidance for the introduction of new programs, expansion of existing programs, and infrastructural development.
- 5.The Chairman shall preside over Governing Body / Trust meetings and approve major academic, administrative, and financial decisions.
- 6.He/she shall ensure the availability of adequate financial resources for academic activities, infrastructure, faculty development, and student welfare.
- 7.The Chairman shall approve institutional policies, including academic regulations, service rules, financial policies, and quality assurance frameworks.
- 8.He/she shall promote a culture of quality, accountability, transparency, and ethical governance.

II. Monitoring and Review

- 1.The Chairman shall periodically review the overall performance of the institution, including academic results, accreditation status, admissions, placements, and financial health.
- 2.He/she shall review reports submitted by the Principal regarding institutional development, compliance, and achievements.
- 3.The Chairman shall monitor the progress of NBA accreditation, AICTE approvals, and other statutory inspections and provide necessary support.
- 4.He/she shall ensure corrective measures are initiated based on inspection reports, audit findings, and accreditation feedback.

III. Financial Responsibilities

1.The Chairman shall approve the annual institutional budget and major capital expenditures.

2.He/she shall ensure proper financial planning and resource mobilization for sustainable institutional growth.

3.The Chairman shall oversee audit compliance, statutory financial reporting, and utilization of funds.

4.He/she shall authorize major procurements, construction projects, and infrastructural investments.

IV. Academic and Institutional Development

1.The Chairman shall encourage academic excellence, innovation, research culture, and industry collaboration.

2.He/she shall support initiatives related to faculty development programs, student scholarships, training, placement, and entrepreneurship.

3.The Chairman shall facilitate collaboration with industry, professional bodies, and external agencies.

4.He/she shall ensure that the institution maintains a student-centric and inclusive academic environment.

V. General Responsibilities

1.The Chairman shall represent the institution in official, legal, and statutory matters.

2.He/she shall ensure that the institution upholds discipline, ethical standards, and social responsibility.

3.The Chairman shall provide guidance and support to the Principal and Management team for effective administration.

Vice-Chairperson

The Vice-Chairperson functions as a senior member of the management, working closely with the Chairman and the Principal to ensure smooth institutional functioning across administrative, academic, and human resource domains.

Administrative Responsibilities

- Oversees the day-to-day administrative functioning of the institution and ensures implementation of Board decisions and policies.
- Reviews and approves administrative budgets, procurement proposals, and expenditure within delegated financial powers.
- Monitors compliance with statutory and regulatory requirements (AICTE, DTE, university/board affiliation norms) and ensures timely submission of returns, applications for approval/renewal, and accreditation documentation.
- Coordinates between various departments and administrative offices to streamline institutional processes and resolve inter-departmental issues.
- Represents the institution, in coordination with the Chairman, in interactions with regulatory bodies, government departments, and external agencies.

Academic Responsibilities

- Supports the Principal in monitoring academic planning, including academic calendar preparation, curriculum implementation, and examination schedules.
- Reviews academic performance indicators (pass percentage, attainment levels, feedback outcomes) and guides corrective action planning in consultation with department heads.
- Facilitates resource allocation for academic development activities such as faculty development programmes, workshops, seminars, and research initiatives.
- Promotes and monitors industry-institute interaction, guest lectures, value-added courses, and other initiatives that enhance academic quality and employability.
- Reviews accreditation (NBA/NAAC) preparedness and provides guidance on institutional quality assurance processes.

Employee-Related Responsibilities

- Oversees recruitment, appointment, and service matters of teaching and non-teaching staff in line with regulatory norms and management policy.
- Reviews staff performance appraisal systems, service records, and career advancement/promotion matters.
- Addresses employee grievances escalated beyond departmental level and ensures a fair and transparent redressal mechanism.
- Approves leave, service conditions, and welfare measures for employees, ensuring compliance with applicable labour and service regulations.
- Guides policies related to staff training, capacity building, and professional development to strengthen institutional human resources.

Director (Student Experience)

The Director (Student Experience) is entrusted with the overall responsibility of ensuring a safe, well-equipped, and conducive campus environment that supports student learning, wellbeing, and holistic development, with specific focus on i

Infrastructure Responsibilities

- Oversees planning, development, and maintenance of physical infrastructure, including classrooms, laboratories, workshops, library, hostels, and common amenities.

- Coordinates with the administration for timely upgradation of infrastructure in line with regulatory (AICTE/DTE) norms and accreditation requirements.
- Monitors upkeep of civil, electrical, and mechanical utilities, ensuring uninterrupted availability of essential services (power, water, internet, sanitation).
- Reviews infrastructure utilization and recommends expansion or modernization based on academic and co-curricular needs.
- Ensures compliance with building safety codes, fire safety norms, and accessibility provisions (including facilities for differently-abled students).

Student Experience Responsibilities

- Oversees initiatives aimed at enhancing overall student life on campus, including hostel facilities, canteen/cafeteria services, sports and recreational facilities, and common student spaces.
- Coordinates student support services such as counselling, mentoring facilitation, grievance redressal, and welfare schemes.
- Works with student affairs/cultural committees to promote extracurricular, co-curricular, and sports activities that contribute to holistic student development.
- Monitors and acts on student feedback related to campus facilities and quality of life, ensuring corrective measures are implemented.
- Liaises with academic departments and placement cells to ensure infrastructure and support services align with student academic and career needs.

Security Responsibilities

- Oversees campus security arrangements, including deployment and supervision of security personnel, CCTV surveillance systems, and access control mechanisms.
- Develops and implements protocols for visitor management, vehicle/parking regulation, and emergency response (fire, medical, disaster situations).
- Ensures a safe environment for students, particularly women students, in line with statutory requirements (such as Internal Complaints Committee/anti-ragging measures).
- Coordinates periodic safety audits, mock drills, and awareness programmes on campus safety and emergency preparedness.
- Maintains liaison with local law enforcement and civic authorities for coordinated security management as required.

Principal

The Principal is the Chief Academic and Administrative Officer of the Institution and is responsible for the overall planning, organization, coordination, supervision, and development of all academic, administrative, and support activities of the Institution, ensuring compliance with AICTE, NBA, State Board of Technical Education, and Government norms, and shall be accountable to the Management/Trust.

I. Planning and Administration

1. The Principal shall be responsible for the overall administration, academic governance, and day-to-day functioning of the Institution.
2. He/she shall act as the link between the Management, regulatory bodies, affiliating authorities, staff, students, and stakeholders.
3. The Principal shall ensure effective implementation of institutional vision, mission, and strategic plans.
4. He/she shall convene meetings of Heads of Departments, IQAC, statutory committees, and other academic bodies at regular intervals and ensure proper documentation of minutes and action taken reports.
5. The Principal shall plan academic calendars, monitor their implementation, and ensure adherence to the same.
6. He/she shall ensure the availability and optimal utilization of infrastructure, laboratories, library, ICT facilities, and learning resources.
7. The Principal shall supervise the preparation of teaching schedules, workload distribution, and timetables as per AICTE norms.
8. He/she shall approve faculty recruitment requirements and forward proposals to the Management as per statutory norms.
9. The Principal shall ensure maintenance of discipline, decorum, and academic ambience within the campus.
10. He/she shall coordinate with external agencies for industry interaction, MoUs, training, internships, and placements.
11. The Principal shall ensure that co-curricular and extra-curricular activities are planned and conducted regularly.
12. He/she shall guide and monitor research, consultancy, innovation, and extension activities of the Institution.
13. The Principal shall supervise the preparation and submission of reports required by AICTE, NBA, DTE, and other authorities.
14. He/she shall ensure the effective functioning of all statutory and non-statutory committees of the Institution.
15. The Principal shall issue necessary administrative instructions, circulars, and orders for smooth institutional functioning.

II. Academic Leadership and Monitoring

1. The Principal shall ensure effective curriculum delivery and compliance with the prescribed syllabus of the affiliating body.
2. He/she shall monitor teaching–learning processes, academic performance, and outcome attainment.
3. The Principal shall review syllabus coverage, lesson plans, and instructional practices periodically through H.O.Ds.
4. He/she shall ensure conduct of internal assessments, model examinations, and Board/University examinations as per norms.
5. The Principal shall analyze academic results department-wise and initiate corrective and preventive actions for improvement.
6. He/she shall promote student-centric learning practices, mentoring, counseling, and remedial coaching.
7. The Principal shall ensure faculty development programs, workshops, seminars, and training programs are conducted regularly.
8. He/she shall encourage innovative teaching practices, ICT usage, and continuous academic improvement.

III. Review and Follow-Up Action

(a) Daily Review

1. The Principal shall monitor attendance of students and staff and ensure continuity of academic activities.
2. He/she shall ensure alternate arrangements for classes in case of faculty absence.
3. The Principal shall address grievances and issues escalated by H.O.Ds at the institutional level.

(b) Periodical Review

1. The Principal shall conduct monthly and semester-wise academic reviews with H.O.Ds.
2. He/she shall review internal assessment performance, attendance trends, and mentoring outcomes.
3. The Principal shall evaluate faculty performance and recommend improvement measures where necessary.
4. He/she shall ensure parent–teacher interaction mechanisms are in place for academic monitoring.

IV. Financial and Resource Management

1. The Principal shall prepare and submit the Institutional Budget to the Management for approval.
2. He/she shall ensure optimal and transparent utilization of financial resources as per approved budget.
3. The Principal shall oversee procurement, maintenance, and utilization of equipment and consumables.
4. He/she shall monitor sponsored projects, grants, and funded programs and ensure compliance with agency norms.
5. The Principal shall authorize financial transactions as per institutional policy.

V. Personal Management and Discipline

1. The Principal shall be the appointing and recommending authority for staff as per Management policies.

2. He/she shall ensure performance appraisal, counseling, and professional development of faculty and staff.
3. The Principal shall enforce service rules, conduct rules, and disciplinary procedures for staff and students.
4. He/she shall issue warnings, memos, or disciplinary actions as required in consultation with Management.
5. The Principal shall ensure grievance redressal mechanisms for students and staff functions effectively.

VI. Accreditation, Compliance, and Quality Assurance

1. The Principal shall act as the Chairperson/Head of IQAC and ensure continuous quality improvement.
2. He/she shall oversee NBA, NAAC, AICTE, and DOTE accreditation and compliance activities.
3. The Principal shall ensure systematic documentation, data maintenance, and record verification for audits and inspections.
4. He/she shall coordinate inspection visits, accreditation peer team visits, and statutory audits.

VII. Student Welfare and Development

1. The Principal shall ensure effective functioning of mentoring, counseling, career guidance, and placement cells.
2. He/she shall promote student discipline, ethics, and holistic development.
3. The Principal shall oversee hostel administration, sports, NSS, NCC, and cultural activities.
4. He/she shall ensure equal opportunity, inclusiveness, and student safety on campus.

VIII. Preparation Before the Commencement of the Academic Year/Semester

Before the start of every academic year/semester, the Principal shall ensure that:

The Head of the Department (H.O.D) plays a crucial role in the academic, administrative, and developmental activities of the department. The H.O.D is responsible for the overall planning, coordination, and smooth functioning of all departm

I. Planning And Administration

1. The H.O.D shall report to the Principal on all academic and administrative matters concerning the department.
2. He/she shall ensure the smooth and effective functioning of the department and act as the
controlling officer for all staff and students within the department.
3. The H.O.D shall conduct meetings with faculty and non-teaching staff at least once a fortnight. The minutes, discussions, and resolutions of such meetings shall be properly recorded, and a copy of the report shall be submitted to the P
4. The H.O.D shall obtain the goals and action plans from all staff members at least one week before the commencement of each semester and monitor the implementation of the same.
5. He/she shall prepare and submit the details of faculty and staff requirements for every academic year to the Principal on or before 31st March.
6. The H.O.D shall ensure the availability of all necessary infrastructural facilities for the effective functioning of teaching and non-teaching staff in the department.
7. He/she shall obtain the official copy of the syllabus from the Administrative Coordinator and communicate the same to the faculty members concerned.

8. The H.O.D shall convene a meeting on the day following the last working day of the semester to allocate subjects to staff members for the upcoming semester.
9. He/she shall arrange for the repair and maintenance of furniture and other equipment in the department through the Administrative Officer and make necessary arrangements for the purchase of additional items as required.
10. The H.O.D shall ensure that the class timetable is prepared within one week after the last working day of the semester and communicated to the faculty members promptly.
11. He/she shall ensure that all subjects and laboratory courses are allotted to faculty members and that no subject remains untaught.
12. The H.O.D shall appoint senior faculty members as Class Advisors for every class under the department.
13. He/she shall prepare brochures, leaflets, and other promotional materials to facilitate campus interviews and placement activities for students.
14. The H.O.D shall ensure that meaningful co-curricular activities such as seminars, guest lectures, workshops, and industrial visits are regularly organized.
15. The H.O.D shall plan and coordinate all educational tour programs of the department. The number of days for such tours shall be restricted as per the following norms:

Year of Study Number of Working Days Permitted

First Year	1 Day
Second Year	2 Days
Third Year	3 Days

Only final-year students may be permitted to prefix or suffix holidays, but the total number of tour days (including holidays) shall not exceed six days.

16. The H.O.D shall fix suitable dates to conduct periodical tests for the students of the department.
17. He/she shall recommend students of the department for hostel accommodation and monitor the discipline and behavior of the hostel students belonging to the department.
18. The H.O.D shall prepare in advance all documents, reports, and write-ups required for submission to inspection commissions or visiting accreditation teams.
19. He/she shall prepare a monthly report of departmental activities and submit the same to the Principal before the 2nd of every month.
20. The H.O.D shall ensure that at least two faculty members are available in the department during vacation periods to attend to departmental work.
21. The H.O.D shall arrange department-level in-service programs and training sessions for faculty and non-teaching staff to enhance their skills, including computer literacy.
22. All important departmental documents shall be handed over personally to the Principal's office to avoid loss or misplacement.
23. The H.O.D shall convene meetings of Class Advisors once a fortnight to discuss common issues related to students and evolve strategies to address them effectively.
24. The H.O.D shall provide effective leadership by setting clear objectives and targets at the beginning of each semester and ensuring that these goals are successfully achieved by the end of the term.
25. The H.O.D shall foster a positive academic environment, encourage teamwork, and ensure that all departmental activities align with the institution's vision and mission.

II. Review and Follow-Up Action

The Head of the Department (H.O.D) shall be responsible for the continuous review, monitoring, and follow-up of all academic and administrative activities of the department. The review shall be carried out on a daily and periodical basis as

(a) Daily Review

1. The H.O.D shall ensure 100% attendance of students every day and immediately review any cases of absenteeism.
2. The H.O.D shall ensure that alternate arrangements are made for classes when staff members are on leave or official duty (O.D.).
3. He/she shall resolve any issues or grievances raised by staff or students at the departmental level, if possible. If required, the matter shall be referred to the Director or Principal for appropriate action and resolution at the earliest.

(b) Periodical Review

1. The H.O.D shall periodically monitor and review the syllabus coverage of each faculty member as recorded in the syllabus coverage register.
2. He/she shall announce in advance the schedule for periodical tests for the students of the department.
3. The H.O.D shall ensure that all monthly, model, and assessment tests are properly conducted and that answer scripts are evaluated and returned to students within three days of the last examination. The marks shall be entered in the de
4. He/she shall ensure that progress reports are sent to parents, along with remarks from the class advisors, after every monthly or model test.
5. The H.O.D shall identify weak and bright students and take appropriate remedial or enrichment measures to ensure better academic performance.
6. He/she shall hold discussions with the Class Advisors regarding the performance of students immediately after each periodical test.
7. The H.O.D shall take necessary action to correct irregularities in student attendance and motivate students to maintain consistent attendance.
8. He/she shall monitor the weekly attendance percentage of all students in the department.
9. The H.O.D shall evaluate the performance of the faculty members at the end of every semester and arrange suitable improvement or training programs when necessary.

III. Academic Responsibilities

1. The H.O.D is authorized to sanction all types of leave for students.
2. He/she is authorized to sanction leave up to three days for faculty members and up to six days for non-teaching staff. Leave exceeding this limit shall be recommended to the Principal for approval.
3. The H.O.D may sanction On-Duty (O.D.) leave for one day for faculty members for official or academic purposes.
4. He/she shall analyze the results of all University and Board examinations to ensure 100% pass percentage and take corrective actions wherever required.
5. The H.O.D shall nominate student and staff representatives for various departmental committees.
6. He/she shall monitor the behavior and discipline of students belonging to the department in the hostel.
7. The H.O.D is authorized to issue memos or disciplinary notices to students or staff members within the department whenever necessary.

IV. Monetary Responsibilities

1. The H.O.D shall prepare and submit a draft departmental budget (including requirements for equipment, consumables, and library books) for the upcoming financial year to the Principal by 31st January each year for approval and sanction.
2. He/she shall ensure that the allocated budget is utilized effectively and only for the approved purposes.
3. The H.O.D shall periodically inform funding agencies about the progress of any ongoing sponsored or funded projects in the department.
4. The H.O.D is authorized to operate the imprest account of the department. The imprest amount shall be determined periodically by the Principal.

V. General Responsibilities

1. The H.O.D shall attend all college functions and official programs, as the overall accountability of the department—its personnel, functioning, and performance—rests with him/her.
2. The H.O.D shall maintain a Departmental Grievance Committee to resolve student and staff grievances objectively and promptly.
3. He/she must obtain a written explanation from staff members arriving late and forward it to the Principal. Three such instances shall be treated as equivalent to a half-day of Casual Leave (C.L.).
4. The H.O.D is responsible for the overall development and performance of all staff members through continuous counseling, evaluation, and performance appraisal.

VI. Preparation before the Commencement of the Academic Year/Semester

Before the start of every academic year or semester, the H.O.D shall ensure that the following activities are completed:

- a. All subjects are allotted to faculty members, ensuring that no subject is left untaught.
 - b. Lesson and instruction plans are prepared for every subject, clearly indicating chapters, tutorials, seminars, and tests as per the timetable.
 - c. Verify that all textbooks and reference books required as per the University syllabus are available in the library and certified by faculty.
 - d. Semester tasks and objectives are assigned to each staff member.
 - e. Class Teachers are assigned responsibility for infrastructure, materials, and the proper conduct of classes.
 - f. Mentor appointments are finalized, and the list of mentors with their allotted students is submitted to the Director/Principal.
 - g. A class-wise seating and mentoring plan is displayed on notice boards, and individual student files with background information are maintained both in the department and office.
 - h. Class Teachers shall have personal files maintained under the supervision of the H.O.D.
 - i. A proper review pattern shall be designed for evaluating staff performance, and records shall be maintained in departmental files.
 - j. The H.O.D shall finalize departmental tasks for the semester, including result analysis, extra coaching, industrial visits, association activities, seminars, workshops, mentoring, counseling, publication efforts, and staff recruitment details.
 - k. Lab manuals (in bound form) shall be prepared for all laboratories. The H.O.D shall ensure that all concerned faculty members are familiar with the experiments.
 - l. All laboratory equipment shall be installed, checked, and maintained in good working condition.
 - m. The Administrative Manual with institutional policies shall be kept updated and accessible to all staff members. Each faculty member should be familiar with its contents.
 - n. The College Calendar shall be distributed to all students before the commencement of the semester.
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- a) Academic calendar and institutional action plans are finalized and circulated.
 - b) Faculty deployment, workload distribution, and subject allocation are approved.
 - c) Infrastructure, laboratories, library resources, and ICT facilities are ready for use.
 - d) Committees are reconstituted and roles are clearly defined.
 - e) Mentoring and counseling structures are finalized.

f) Institutional targets, KPIs, and quality benchmarks are communicated to all departments.

g) Compliance requirements of AICTE, NBA, and affiliating bodies are verified.

E. Responsibilities of the Faculty

I. General

Faculty members are expected to be role models to students in all aspects, including punctuality, discipline, conduct and dress code. They must uphold the dignity of the teaching profession and set a high standard of integrity and commitment.

II. Academic Responsibilities

1. After subject allotment, every faculty member shall obtain the official copy of the syllabus for the assigned subject(s) from the Head of the Department (H.O.D) in person.

2. Each faculty member shall prepare a detailed lecture schedule, considering the number of actual working days available in the semester, and submit it to the H.O.D for approval at least ten (10) days prior to the commencement of class.

3. Faculty members shall complete the entire prescribed syllabus within the allotted working days.

4. Attendance for each class handled must be maintained in the personal attendance register of the faculty member, and the attendance slip must be submitted to the department office on the same day.

5. The syllabus for all periodical tests (monthly and model) shall be announced in advance. Question papers must be prepared accordingly and submitted to the H.O.D within one day after completion of the test. Evaluated answer sheets requiring improvement.

6. Faculty members shall make regular entries in the Syllabus Coverage Register every week.

7. They shall attend to any duties assigned by the H.O.D or the Principal from time to time.

8. Faculty members shall actively participate in internal and university examinations as assigned by the H.O.D.

9. They must enter the following particulars in the Assessment Register immediately after each class:

a. Attendance of students

b. Topics covered on that day

10. Faculty members must also maintain individual attendance registers accurately and consistently.

11. They are expected to voluntarily participate in all department and institutional activities that contribute to their personal and professional growth.

12. Faculty members shall assist the H.O.D in the overall development of the department, including:

a) Framing of timetables

b) Preparation of the departmental budget

c) Ordering of equipment and consumables

d) Development and maintenance of laboratories

e) Organizing student industrial visits, seminars, and other academic programs

III. Powers of the Faculty

1. Faculty members are empowered to issue warning letters or memos to students in consultation with the Class Advisor and with the approval of the H.O.D, whenever necessary.
2. A faculty member shall mark a student absent in the following cases:
 - a. If the student arrives late to class
 - b. If the student fails to follow the prescribed dress code
 - c. If the student does not bring the required materials such as observation/record books, manuals, calculators, or drawing instruments
 - d. If the student disturbs the class or behaves in an undisciplined manner
3. Faculty members shall also issue memos to students who remain absent for examinations without prior permission from the H.O.D.

IV. Technical and Professional Responsibilities

1. Every faculty member must present at least one paper at a National Seminar or Conference, or publish a research article in a reputed journal each academic year to be eligible for an annual increment. They are also encouraged to write
2. Faculty members who are Lab In-charges shall prepare and maintain Lab Manuals for the practical subjects they handle.
3. Faculty members shall strictly adhere to college working hours and must not leave their classes free under any circumstances.
4. They shall not leave the department without making proper entries in the Movement Register
5. Personal visitors shall not be entertained during college hours. In exceptional cases, visitors may be met in the Visitors' Lounge near the Principal's office.
6. Faculty members must sign the attendance register maintained in the department office every day.
7. They shall participate in all college functions and activities and take an active role in counseling and guiding students to achieve academic excellence and personal discipline.

F. Responsibilities of the Class Teacher

I. Academic Responsibilities

1. The Class Teacher shall also serve as one of the mentors for the class.
2. He/She shall monitor the proper engagement of all periods allotted to their respective classes.
3. He/She shall ensure the upkeep and cleanliness of the physical facilities in the classroom.
4. He/She shall arrange for the distribution of University mark statements to students as and when they are received.
5. He/She shall organize and supervise the conduct of monthly and model tests for the class.

6. He/She shall assist the Head of Department (H.O.D) in preparing the result analysis after each semester examination.
7. He/She shall plan industrial visits or study tours well in advance, obtain necessary permission from appropriate authorities, and make arrangements for transportation and accommodation.
8. He/She shall obtain written undertakings from students, accompanying staff, and parents before finalizing any tour arrangements or granting permission to leave for the tour.
9. He/She shall maintain the Master Register of the class and keep it safely in his/her custody.
10. The Class Teacher shall arrange for the distribution of student feedback forms twice per semester — once at the beginning and once at the end. The feedback shall cover the performance of faculty members teaching them and identify

Based on the feedback, the Class Teacher shall take remedial measures such as arranging extra classes, providing library support, offering individual guidance, and motivating students for better performance.

II. Powers of the Class Teacher

1. Upon receiving a complaint from any source regarding the misconduct or indiscipline of a student in his/her class, the Class Teacher shall personally investigate the matter and take necessary disciplinary action in consultation with the
2. He/She is empowered to issue warning letters or memos to students in consultation with the H.O.D, wherever applicable. A copy of such communication should be forwarded to the H.O.D for record.
3. The Class Teacher is authorized to sanction leave for students up to two days, provided the leave is not prefixed or suffixed with declared Institute holidays. For any other type of leave, he/she shall be the recommending authority to th

III. General Responsibilities

1. For every 20 students, one Class Teacher shall be nominated to guide and monitor the class for all three years of their study in the Institute.
2. The Class Teacher shall interact with the students at least once a week to understand their academic and personal concerns.
3. The Class Teacher must address and resolve student problems at his/her level wherever possible. If an issue requires higher-level attention, it shall be immediately referred to the H.O.D.
4. Students are encouraged to approach their Class Teacher at any time during working hours to discuss academic or personal issues requiring guidance.

G. Roles and Responsibilities of the Class Representative

Each class shall have a Class Representative (CR) chosen through consensus among the students, with the approval of the Class Advisor, Head of the Department (H.O.D), and the Principal.

1. The Class Representative shall act responsibly and bring due honor to the position entrusted to him/her by the fellow students, the Class Advisor, H.O.D, and the Principal
2. He/she shall represent the requirements, suggestions, and any other matters concerning the entire class related to academics, training, placement programs, and other student-related issues to the respective H.O.D.
3. The H.O.D shall review the issues presented in light of the institutional policies and previous decisions made by the Principal, and take appropriate action wherever necessary.
- a) If a matter requires a policy decision that affects the entire college, the Principal may discuss it in the Administrative Committee for further advice and then communicate the final decision to the concerned class.
4. Periodic meetings between the Class Representatives and the H.O.D shall be conducted. The agenda of these meetings shall be approved by the H.O.D, and only relevant matters and academic year plans shall be discussed.
5. The Class Representative shall guide the students of his/her class to follow the policies of the institute to ensure maximum benefit from the facilities and opportunities provided by the institution.
6. He/she shall assist in planning and organizing all institutional and departmental programs, functions, and visits of dignitaries.

H. Responsibilities of Hostel Officials and Staff Responsibilities of the Chief Warden

1. The Director/Principal shall appoint a Chief Warden to assist in the administration of the hostels.
2. The Director/Principal, as Chief Warden of Hostels, shall appoint one of the senior faculty members of the Institute or any other suitable person as Joint Chief Warden, who shall assist in the administration of both the Men's and Women's hostels.
3. The Chief Warden shall have supervisory powers over all hostel staff mentioned in the Hostel Administration Chart.
4. The Chief Warden shall coordinate the work of the Wardens by convening wardens' meetings twice a month and submitting the minutes of the meeting or any other report whenever required.
5. The Chief Warden shall recommend admission or dismissal of students in consultation with, or based on the reports submitted by, the H.O.Ds, Wardens, or the Hostel Administration Committee.
6. The Chief Warden shall recommend all hostel maintenance bills to the Chairman Warden for payment, subject to budget provisions.
7. The Chief Warden shall forward all monthly mess bills signed by the Resident Warden or Wardens in charge of the hostel messes.
8. The Chief Warden shall be responsible for preparing and submitting the monthly mess bills/statements to the Administrative Officer before the end of every month.
9. The Chief Warden shall arrange for the collection of mess fee arrears, whenever intimated by the Principal's office, with the help of the Resident Wardens or Wardens in charge of the messes.
10. The Chief Warden shall forward reports on the work of hostel staff under the control of the Resident Warden or Wardens of the hostel for necessary action.
11. The Chief Warden shall be responsible for sending reports on the work of hostel office staff whenever necessary.
12. The Chief Warden shall form Student Welfare Committees under the chairmanship of the Wardens of the hostels. He/She shall also convene sub-committees of students for various welfare activities and establish a cordial and harmonious relationship between the students and the staff.

Chief Warden is Responsible for:

1. Hostel admissions/rejection of students, staff, etc.
2. Hostel budget operations.
3. Hostel accounts and payments (bills and certifications) in coordination with the Accounts Officer, Bursar, and other concerned authorities.
4. Room allocation through Wardens.
5. Discipline matters through Wardens/Hostel Administration Committee.
6. Services provided through officials and Wardens.

Responsibilities of the Warden

1. He/She shall frequently visit the hostel and interact with the students.
2. He/She shall ensure disciplined conduct among the inmates.
3. He/She shall promptly address any grievance or complaint from the inmates and take remedial steps in consultation with the Joint Chief Warden.
4. He/She shall initiate disciplinary proceedings against misbehaving students according to the standard procedures.
5. He/She shall occasionally dine along with the students in the hostel mess and offer suggestions to the Mess Authorities/Joint Chief Warden for improving food quality.

I. Responsibilities of the Librarian

The Librarian is responsible for the planning, organization, development, and effective utilization of library and information resources of the institution. The Librarian shall support teaching, learning, and research activities in accordance with

I. Planning and Administration

1. The Librarian shall plan, organize, and administer the Central Library and departmental libraries to support academic programs.
2. He/she shall ensure the availability of prescribed textbooks, reference books, journals, e-resources, and digital learning materials as per syllabus requirements.
3. The Librarian shall prepare and submit the annual library development plan to the Principal.
4. He/she shall maintain proper accession, classification, cataloguing, and circulation systems as per standard library practices.
5. The Librarian shall ensure library automation and effective use of library management software.
6. He/she shall ensure that the library remains open during prescribed working hours, including extended hours during examinations.
7. The Librarian shall coordinate with Heads of Departments for collection development based on faculty recommendations.
8. He/she shall ensure proper maintenance of library infrastructure, reading halls, furniture, and ICT facilities.
9. The Librarian shall maintain records of library usage statistics and submit periodic reports to the Principal.
10. He/she shall display library rules, usage guidelines, and operating hours prominently.

II. Review and Monitoring

1. The Librarian shall periodically review the adequacy and relevance of library resources.
2. He/she shall monitor issue–return records, overdue materials, and stock verification.
3. The Librarian shall conduct annual stock verification and submit reports to the Principal.
4. He/she shall ensure timely binding and preservation of books, journals, and documents.
5. The Librarian shall address user grievances related to library services.

III. Academic and Support Responsibilities

1. The Librarian shall assist faculty and students in identifying and accessing learning resources.
2. He/she shall organize library orientation programs for newly admitted students and faculty.
3. The Librarian shall promote reading habits, information literacy, and digital resource usage.
4. He/she shall support NBA / AICTE / accreditation documentation related to library facilities and usage.
5. The Librarian shall maintain records of question papers, project reports, and institutional publications.

IV. Financial Responsibilities

1. The Librarian shall prepare and submit the library budget annually to the Principal.
2. He/she shall ensure effective utilization of allocated funds for procurement of books, journals, and e-resources.
3. The Librarian shall maintain purchase records, invoices, and audit-ready documentation.

V. General Responsibilities

1. The Librarian shall be responsible for discipline and decorum within the library.
2. He/she shall supervise library support staff and ensure efficient service delivery.
3. The Librarian shall attend institutional meetings, inspections, and accreditation visits when required.
4. He/she shall continuously update knowledge through professional development programs.

VI. Preparation before the Commencement of the Academic Year / Semester

Before the commencement of every academic year or semester, the Librarian shall ensure that:

- a) Required textbooks and reference books as per the syllabus are available in adequate numbers.
- b) Faculty recommendations for books and journals are collected and processed.
- c) Library records, automation systems, and databases are updated.
- d) Library orientation schedules are prepared and communicated.
- e) Usage statistics and previous year reports are compiled and submitted.
- f) Library infrastructure and reading spaces are inspected and certified ready.

J. Responsibilities of the Physical Director

The Physical Director is responsible for the planning, organization, and promotion of physical education, sports, and fitness activities of the institution. The Physical Director shall ensure holistic student development in accordance with AICTE

I. Planning and Administration

1. The Physical Director shall plan and organize sports, games, physical training, and fitness programs for students.

2. He/she shall ensure the proper utilization and maintenance of playgrounds, gymnasiums, courts, and sports equipment.
3. The Physical Director shall prepare an annual sports activity calendar and submit it to the Principal for approval.
4. He/she shall coordinate inter-collegiate, zonal, district, state, and university-level sports events.
5. The Physical Director shall encourage maximum student participation in sports and physical activities.
6. He/she shall maintain records of sports achievements, participation, and awards.
7. The Physical Director shall ensure safety measures and discipline during sports activities.

II. Review and Monitoring

1. The Physical Director shall periodically review the performance and fitness levels of students.
2. He/she shall identify talented sportspersons and provide specialized coaching.
3. The Physical Director shall monitor the condition of sports facilities and equipment and recommend repairs or replacements.
4. He/she shall submit periodical activity and achievement reports to the Principal.

III. Academic and Co-Curricular Responsibilities

1. The Physical Director shall integrate physical education activities into the institutional co-curricular framework.
2. He/she shall organize intramural and extramural sports competitions.
3. The Physical Director shall promote health, wellness, yoga, and fitness awareness programs.
4. He/she shall support NBA / AICTE documentation related to sports and physical education activities.

IV. Financial Responsibilities

1. The Physical Director shall prepare and submit the sports budget annually to the Principal.
2. He/she shall ensure judicious utilization of sports funds.
3. The Physical Director shall maintain purchase, stock, and audit records for sports equipment.

V. General Responsibilities

1. The Physical Director shall ensure discipline, sportsmanship, and ethical conduct among students.
2. He/she shall supervise sports assistants and support staff.
3. The Physical Director shall accompany student teams for official sports events when required.
4. He/she shall attend institutional functions, inspections, and accreditation visits.

VI. Preparation before the Commencement of the Academic Year / Semester

Before the commencement of every academic year or semester, the Physical Director shall ensure that:

- a) Sports facilities and equipment are inspected, repaired, and certified fit for use.
- b) The sports calendar is finalized and communicated.
- c) Student teams and training schedules are planned.
- d) Records of previous achievements and participation are updated.
- e) Safety and first-aid arrangements are in place.

K. Responsibilities of the Laboratory Instructor

The Laboratory Instructor is responsible for the effective conduct, maintenance, safety, and support of laboratory classes in the department. The Laboratory Instructor shall assist faculty members in delivering practical instruction and shall en affiliating Board/University, and institutional norms. The Laboratory Instructor shall report to the Head of the Department.

I. Planning and Administration

- 1. The Laboratory Instructor shall assist the Head of the Department and concerned faculty members in the planning and execution of laboratory courses.
- 2. He/she shall ensure that laboratory classes are conducted as per the approved timetable and syllabus.
- 3. The Laboratory Instructor shall prepare the laboratory for each session by ensuring the availability of equipment, components, tools, consumables, and software.
- 4. He/she shall maintain laboratory manuals, experiment instructions, and demonstration materials.
- 5. The Laboratory Instructor shall ensure proper issue and return of tools, instruments, and components to students.
- 6. He/she shall maintain laboratory stock registers, equipment registers, and consumable records.
- 7. The Laboratory Instructor shall assist in the installation, calibration, and commissioning of laboratory equipment.
- 8. He/she shall ensure that the laboratory is kept clean, organized, and operational at all times.
- 9. The Laboratory Instructor shall support the faculty in conducting internal practical assessments and examinations.

II. Review and Monitoring

- 1. The Laboratory Instructor shall monitor the proper functioning of laboratory equipment and report faults or breakdowns immediately to the H.O.D.

2. He/she shall periodically verify the condition of tools, instruments, and safety equipment.
3. The Laboratory Instructor shall assist in periodical stock verification and submit reports to the H.O.D.
4. He/she shall ensure that damaged or obsolete equipment is reported for repair, replacement, or condemnation.
5. The Laboratory Instructor shall maintain records of laboratory usage and maintenance activities.

III. Academic and Technical Responsibilities

1. The Laboratory Instructor shall assist faculty members in demonstrating experiments and practical procedures.
2. He/she shall guide students in the proper handling of equipment and execution of experiments.
3. The Laboratory Instructor shall ensure that students follow laboratory discipline, safety rules, and standard operating procedures.
4. He/she shall verify that laboratory records, observation notes, and manuals are properly maintained by students.
5. The Laboratory Instructor shall assist in the evaluation of laboratory performance as directed by the faculty.
6. He/she shall support Outcome-Based Education (OBE) by maintaining relevant laboratory records and evidence.

IV. Safety and Maintenance Responsibilities

1. The Laboratory Instructor shall ensure strict adherence to laboratory safety norms, including the use of personal protective equipment (PPE).
2. He/she shall maintain first-aid kits, fire extinguishers, and emergency safety equipment in working condition.
3. The Laboratory Instructor shall report accidents or safety incidents immediately to the H.O.D and Principal.
4. He/she shall ensure proper shutdown procedures for electrical, mechanical, and electronic equipment after laboratory sessions.
5. The Laboratory Instructor shall assist in preventive maintenance schedules for laboratory equipment.

V. Financial and Record Responsibilities

1. The Laboratory Instructor shall assist the H.O.D in preparing requirements for laboratory equipment, consumables, and maintenance.
2. He/she shall ensure economical and judicious use of consumables.
3. The Laboratory Instructor shall maintain purchase records, stock issue registers, and audit-related documents.

VI. General Responsibilities

1. The Laboratory Instructor shall maintain discipline and decorum in the laboratory.
2. He/she shall assist during inspection visits, NBA / AICTE accreditation processes, and audits by providing required records and demonstrations.
- L. Responsibilities of the Office Superintendent / Office Administration

The Office Superintendent is responsible for the efficient functioning of the administrative office, maintenance of records, correspondence, and statutory compliance of the institution. He/she shall work under the guidance of the Principal / C

I. Planning and Administration

1. The Office Superintendent shall supervise the day-to-day functioning of the administrative office.
2. He/she shall ensure proper maintenance of academic, administrative, and statutory records of the institution.
3. The Office Superintendent shall coordinate with departments for collection, verification, and submission of reports and data.
4. He/she shall ensure timely dispatch and receipt of official correspondence.
5. The Office Superintendent shall maintain service registers, attendance registers, leave records, and personal files of staff.
6. He/she shall assist the Principal in AICTE, NBA, DOTE, Board/University correspondence and submissions.
7. The Office Superintendent shall supervise office staff and attend to work allocation and discipline.

II. Review and Monitoring

1. He/she shall periodically review record maintenance and filing systems.
2. The Office Superintendent shall monitor timely completion of office work, including certificates, reports, and statements.
3. He/she shall ensure confidentiality and accuracy of official documents.

III. Academic and Examination Support

1. The Office Superintendent shall assist in admission procedures, examination registrations, and results processing.
2. He/she shall coordinate with the Examination Cell for Board / University examination-related activities.
3. The Office Superintendent shall ensure safe custody of question papers, answer scripts, and certificates.

IV. Financial and Record Responsibilities

1. He/she shall assist in salary preparation, bill processing, and financial documentation.
2. The Office Superintendent shall maintain audit-ready records and assist during inspections and audits.

V. General Responsibilities

1. He/she shall attend institutional inspections, accreditation visits, and audits.
2. The Office Superintendent shall ensure discipline, punctuality, and professionalism among office staff.

VI. Preparation before the Commencement of the Academic Year / Semester

- a) Update student and staff records
- b) Prepare admission and examination documentation
- c) Verify statutory compliance documents
- d) Ensure readiness of office systems and registers

M. Responsibilities of the Maintenance Supervisor

The Maintenance Supervisor is responsible for the upkeep, safety, and functionality of institutional infrastructure and utilities. He/she shall report to the Principal / Correspondent.

I. Planning and Administration

1. The Maintenance Supervisor shall ensure regular maintenance of buildings, classrooms, laboratories, hostels, and common facilities.
2. He/she shall oversee electrical, plumbing, water supply, sanitation, and civil maintenance works.
3. The Maintenance Supervisor shall maintain maintenance schedules and logs.
4. He/she shall coordinate with external agencies for repairs and servicing.
5. He/she shall ensure cleanliness and hygiene across the campus.

II. Review and Monitoring

1. The Maintenance Supervisor shall inspect facilities periodically
2. He/she shall report damages, safety hazards, or infrastructure issues to the Principal.
3. The Maintenance Supervisor shall ensure timely rectification of faults.

III. Safety and Compliance Responsibilities

1. He/she shall ensure fire safety, electrical safety, and structural safety measures.
2. The Maintenance Supervisor shall maintain first-aid kits, fire extinguishers, and emergency systems.
3. He/she shall support NBA / AICTE inspections related to infrastructure.

IV. Financial and Record Responsibilities

1. He/she shall assist in preparing maintenance-related budget estimates.
2. The Maintenance Supervisor shall maintain records of repairs, purchases, and service contracts.

V. General Responsibilities

1. He/she shall supervise maintenance staff and housekeeping personnel.
2. The Maintenance Supervisor shall ensure campus readiness during inspections and events.

VI. Preparation before the Commencement of the Academic Year / Semester

- a) Inspect buildings and utilities
- b) Complete repairs and painting
- c) Verify safety equipment
- d) Ensure cleanliness and sanitation

N. Responsibilities of the Transport In-charge

The Transport In-charge is responsible for the safe, efficient, and disciplined operation of institutional transport services. He/she shall report to the Principal / Correspondent.

I. Planning and Administration

1. The Transport In-charge shall plan and manage daily operation of college buses and vehicles.
2. He/she shall prepare transport routes, schedules, and student allocation lists.
3. The Transport In-charge shall ensure timely arrival and departure of vehicles.
4. He/she shall supervise drivers, conductors, and transport staff.
5. He/she shall ensure discipline and safety of students during travel.

II. Review and Monitoring

1. The Transport In-charge shall monitor vehicle condition and performance.
2. He/she shall maintain vehicle logbooks, fuel records, and attendance of transport staff.
3. The Transport In-charge shall report accidents, breakdowns, or violations immediately.

III. Safety and Compliance Responsibilities

1. He/she shall ensure that all vehicles have valid registration, insurance, fitness certificates, and permits.
2. The Transport In-charge shall ensure adherence to traffic rules and safety norms.
3. He/she shall conduct periodic safety awareness programs for drivers.

IV. Financial and Record Responsibilities

1. He/she shall assist in preparing transport budget estimates.
2. The Transport In-charge shall maintain repair, fuel, and service expense records.

V. General Responsibilities

1. He/she shall coordinate transport arrangements for industrial visits, tours, and sports events.
2. The Transport In-charge shall support inspection and accreditation documentation related to transport facilities.

VI. Preparation before the Commencement of the Academic Year / Semester

- a) Verify vehicle fitness and documents
- b) Finalize routes and schedules

- c) Assign drivers and staff
- d) Ensure safety and emergency readiness

College Committees:

For the effective administration of the Institute and hostel affairs, the following committees have been instituted in Nirmala Institute of Technology Polytechnic College:

1. Counseling and Career Guidance Committee
2. SC/ST Committee
3. Training and Placement Committee
4. Entrepreneurship Development Committee
5. Grievance Redressal Committee
6. Anti-Ragging Committee
7. Internal Compliance Committee (ICC)
8. Examination Committee
9. Library Advisory Committee
10. Alumni Association Committee
11. Hostel Committee
12. Sports Committee
13. Cultural Committee
14. NSS Activities Committee

15. IQAC (Internal Quality Assurance Cell) Committee

A) Committees' Objectives and Structure

1) Counselling and Career Guidance Committee

Objectives:

1. Provide Academic and Personal Counseling

Guide students in academic planning, study habits, and course selection.

Offer support for personal issues affecting learning.

2. Career Development Support

Conduct career awareness programs, seminars, and workshops.

Help students understand emerging career opportunities in various fields.

3. Higher Education Guidance

Provide information and support for admission into higher studies.

Organize sessions on entrance exams, scholarships, and application procedures.

4. Placement Orientation

Prepare students with resume writing, interview skills, and communication training.

Coordinate with the Training & Placement Cell.

5. Industry Interaction

Arrange guest lectures, industrial visits, and internships through industry experts.

Build strong industry–institution linkages.

6. Student Monitoring and Mentoring

Implement mentor–mentee system.

Track academic progress and counsel slow/fast learners.

7. Skill Development

Organize soft skills, leadership, teamwork, and personality development sessions.

Encourage students to take value-added courses.

8. Maintain Confidential Records

Keep records of counseling sessions, student issues, follow-ups, and action taken.

9. Promote Student Well-being

Create an emotionally supportive environment.

Identify students under stress and refer them to professional counseling when required.

10. Plan and Review Activities

Prepare annual action plan for counseling and career guidance activities.

Review activities periodically and improve the support system.

2) SC/ST Committee

Objectives:

The SC/ST Committee shall function to ensure the welfare of SC/ST students and staff and to maintain an inclusive, discrimination-free environment. The committee shall focus on the following areas:

1. Preventing any form of discrimination against SC/ST students and staff on campus.
2. Creating awareness about the rights and welfare schemes available for SC/ST communities.
3. Providing support, guidance, and grievance redressal for SC/ST students.
4. Monitoring and ensuring implementation of reservation policies as per government norms.
5. Organizing workshops, seminars, and orientation programs related to SC/ST welfare and empowerment.

Structure of the Committee:

The SC/ST Committee shall consist of the following members:

1. Convenor – A senior faculty member
2. Principal – Ex-officio Chairman
3. One Senior Faculty Member
4. One Female Faculty Member
5. One Non-teaching Staff Member
6. One Representative from Each Department (optional, based on institution policy)

The Principal shall nominate the Convenor of the SC/ST Committee. The Principal shall also nominate the remaining committee members for a period of three years.

Frequency of Meetings: Twice a year

3) Training and Placement Committee

Objectives:

1. To prepare final-year diploma students for interviews, group discussions, and job placements.
2. To arrange opportunities for students to face competitive examinations.
3. To organize special lectures on personality development and leadership skills.

4. To arrange the printing and distribution of placement brochures.

Structure:

1. Convenor – Training & Placement Officer
2. Members – One nominee from each department
3. Student Members – One nominee from each department

The Convenor will be nominated by the Principal for a period of six semesters.

The H.O.Ds will nominate faculty and student members (students for one year).

Frequency of Meetings: Twice a year

- 4) The Entrepreneurship Development Committee

Objectives:

The Entrepreneurship Development Committee shall periodically organize programs and activities to promote entrepreneurial skills among students in the following areas:

1. Creating awareness on entrepreneurship, startup culture, and innovation.
2. Conducting training programs on business planning, financial literacy, and marketing strategies.
3. Organizing workshops, seminars, and guest lectures by successful entrepreneurs and industry experts.
4. Providing guidance for idea development, incubation support, and startup registration.
5. Encouraging students to participate in state-level and national-level entrepreneurship competitions.
6. Coordinating with external agencies such as MSME, DIC, EDII, and incubation centers for student benefit.

Structure of the Committee:

The Entrepreneurship Development Committee shall consist of the following members:

1. IEDC Coordinator – A faculty member at Lecturer/Senior Lecturer level
2. Chairman (Entrepreneurship & Skill Development) – Ex-officio member
3. Placement Officer / Training Officer – Ex-officio member
4. One Male Faculty Member

5. One Female Faculty Member
6. One Non-teaching Staff Member
7. One Industry Expert (optional, based on availability)

The Principal shall nominate the EDC Coordinator. The nominated faculty member may attend entrepreneurship orientation or training programs conducted by agencies. The Principal shall also nominate the remaining committee members for

Frequency of Meetings: Twice a year

- 5) Grievance Redressal Committee

Objectives:

The Grievance Redressal Committee shall function to maintain a healthy, harmonious, and supportive environment in the college. Its objectives are:

1. To receive, address, and resolve grievances submitted by students, faculty, and staff.
2. To ensure transparency and fairness in handling complaints.
3. To prevent harassment, discrimination, and injustice within the campus.
4. To provide guidance and counseling for individuals seeking redressal.
5. To create awareness about the grievance redressal mechanism and encourage students to report issues without fear.
6. To recommend corrective actions to the Principal in cases requiring administrative intervention.

Structure of the Committee:

The Grievance Redressal Committee shall consist of the following members:

1. Convenor – A senior faculty member
2. Principal – Ex-officio Chairman
3. One Senior Faculty Member
4. One Female Faculty Member
5. One Non-teaching Staff Member
6. One Student Representative (if required and approved by Principal)

The Principal shall nominate the Convenor and other committee members. All members shall serve for a period of three years as per institutional norms.

Frequency of Meetings: Twice a year

- 6) Anti-Ragging Committee Objectives:

The Anti-Ragging Committee shall work to ensure a safe and ragging-free campus environment. Its objectives are:

1. To prevent, prohibit, and eliminate any form of ragging on campus.
2. To create awareness among students about the ill effects and legal consequences of ragging.
3. To monitor, supervise, and ensure strict compliance with anti-ragging regulations issued by AICTE/DoTE.
4. To take prompt action on any ragging complaint received from students, parents, or staff.
5. To maintain discipline and ensure a friendly academic atmosphere.
6. To coordinate with local authorities such as police and district administration when required.

Structure of the Committee:

The Anti-Ragging Committee shall consist of the following members:

1. Chairman – Principal
2. Convenor – Senior Faculty Member
3. One Senior Faculty Member
4. One Female Faculty Member
5. One Non-teaching Staff Member
6. One Parent Representative
7. One Student Representative (Final Year)
8. One Local Community Representative (optional)

The Principal shall nominate all members for a period of three years and shall ensure compliance with anti-ragging guidelines.

Frequency of Meetings: Twice a year

7. Internal Complaints Committee (ICC)

(As per POSH Act – Prevention of Sexual Harassment Act, 2013)

Objectives:

The Internal Complaints Committee shall function to ensure the safety and dignity of women on campus. Its objectives are:

1. To prevent and address sexual harassment in the workplace and campus environment.

2. To provide a confidential, accessible, and fair grievance mechanism for complainants.
3. To conduct inquiries and recommend appropriate actions on complaints received
4. To organize awareness programs for students and staff on gender sensitization and women's safety.
5. To ensure compliance with the POSH Act, 2013, and institutional policies.
6. To promote a secure, respectful, and inclusive environment for women.

Structure of the Committee:

The Internal Complaints Committee shall consist of the following members:

1. Presiding Officer – A senior woman faculty member
2. One Woman Faculty Member
3. One Male Faculty Member
4. One Non-teaching Staff Member
5. One External Member from NGO or legal field (as per POSH Act)

The Principal shall constitute the ICC for a period of three years. The Presiding Officer shall undergo training programs conducted by recognized agencies on women safety and the POSH Act.

Frequency of Meetings: Twice a year

8. Examination Committee Objectives:

The Examination Committee ensures the smooth and fair conduct of all internal and external examinations. Its objectives are:

1. To plan, schedule, and organize all examinations as per DoTE/Institution norms.
2. To ensure confidentiality and security of question papers and examination materials.
3. To prepare seating arrangements, invigilation charts, and hall supervision plans.
4. To monitor the examination process and prevent malpractice.
5. To coordinate with departments for proper conduct of practical and theory exams.
6. To maintain examination records, mark statements, and submit reports to the Principal.

Structure of the Committee:

1. Chief Superintendent – Principal

2. Examination Convenor – Senior Faculty Member
3. Hall Superintendent – One Senior Lecturer
4. Two Faculty Members (Male & Female)
5. One Non-teaching Staff Member

Frequency of Meetings: Twice a year

9. Library Advisory Committee Objectives:

1. To recommend books, journals, e-resources, and digital learning tools.
2. To ensure efficient library operations and student access.
3. To plan library development, modernization, and resource upgradation.
4. To frame rules for library usage and maintain discipline.
5. To support academic excellence through improved library services.

Structure of the Committee:

1. Chairman – Principal
2. Convenor – Librarian
3. One Senior Faculty Member
4. One Faculty Member from Each Department (optional)
5. One Student Representative
6. One Non-teaching Staff Member

Frequency of Meetings: Twice a year

10. Alumni Association Committee Objectives:

1. To strengthen the relationship between the institution and its alumni.
2. To collect alumni feedback for institutional development.
3. To organize alumni meets and networking events.
4. To encourage alumni contribution in training, placement, and guest lectures.
5. To maintain an updated alumni database.

Structure of the Committee:

1. Chairman – Principal
2. Convenor – Senior Faculty Member
3. One Faculty Member from Each Department
4. One Non-teaching Staff Member
5. Two Alumni Representatives

Frequency of Meetings: Twice a year

11. Hostel Committee Objectives:
 1. To ensure safe, hygienic, and disciplined hostel functioning.
 2. To monitor accommodation, food quality, and daily activities.
 3. To resolve grievances of hostel students.
 4. To maintain discipline and prevent misconduct.
 5. To supervise wardens, mess staff, and hostel maintenance.

Structure of the Committee:

1. Chairman – Principal
2. Hostel Warden – Convenor
3. Deputy Warden – One Faculty Member
4. One Female Faculty Member
5. One Non-teaching Staff Member
6. Two Student Representatives

Frequency of Meetings: Twice a year

12. Sports Committee Objectives:
 1. To promote sports and physical fitness among students.
 2. To plan, organize, and supervise sports events and tournaments.
 3. To maintain sports equipment and playground facilities.
 4. To encourage student participation in inter-collegiate and district-level events.
 5. To identify and train talented sports students.

Structure of the Committee:

1. Chairman – Principal
2. Convenor – Physical Director
3. One Senior Faculty Member
4. One Female Faculty Member
5. One Non-teaching Staff Member
6. Student Sports Representatives

Frequency of Meetings: Twice a year

13. Cultural Committee Objectives:
 1. To plan and organize cultural programs, festivals, and college day events.
 2. To identify and encourage student talents in music, dance, drama, and fine arts.
 3. To promote cultural harmony and student engagement.
 4. To coordinate with external cultural organizations for participation.
 5. To maintain discipline and proper conduct during cultural activities.

Structure of the Committee:

1. Chairman – Principal
2. Convenor – Senior Faculty Member
3. One Male Faculty Member
4. One Female Faculty Member
5. One Non-teaching Staff Member
6. Student Cultural Representatives

Frequency of Meetings: Twice a year

14. NSS Activities Committee Objectives:

The NSS Officer shall periodically organize NSS programs to train students in the following areas:

1. Adult education
2. Creating public awareness on issues such as AIDS, health problems, family planning, etc.

3. Conducting ten-day camp programs to improve the living conditions of underprivileged people.

Structure of the Committee:

The NSS Committee shall consist of the following members:

1. NSS Officer – A faculty member at Lecturer level
2. Chairman (Extra-Curricular Activities) – Ex-officio member
3. Physical Director – Ex-officio member
4. One Male Faculty Member
5. One Female Faculty Member
6. One Non-teaching Staff Member

The Principal shall nominate the NSS Officer. The nominated faculty member shall apply to the NSS Coordinator, DTE, for an orientation program. The Principal shall also nominate other committee members for a period

Frequency of Meetings: Twice a year

15. IQAC (Internal Quality Assurance Cell) Committee Objectives:

1. To develop a system for consistent, conscious, and catalytic improvement in academic and administrative performance.
2. To ensure continuous internal quality monitoring in all departments.
3. To coordinate and document quality assurance initiatives across the institution.
4. To prepare and submit AQAR reports to statutory bodies.
5. To promote best practices for enhancing teaching–learning processes.
6. To organize seminars, workshops, and training programs related to quality improvement.

Structure of the Committee:

1. Chairman – Principal
 2. Coordinator – Senior Faculty Member
 3. Faculty Members from All Departments
 4. Administrative Representative
 5. Industry/Academia Expert (External Member)
 6. One Student Representative
- Frequency of Meetings: Twice a year

9.1.3 Decentralization in working and grievance redressal mechanism (5)

Clubs / Committees and Members – Academic Year 2025–2026

Sl. No.	Name of the Club/Committee	Name of Member	Designation
1	Academic/Advisory Committee	Julien Joseph E	Principal
2		Shajil K Vijayan	HOD, EEE
3		Lalitha P K	HOD, Civil
4		Harikrishnan T K	HOD, Mechanical
5		Santhi S Nath	HOD, Applied Science
6		Athira Mohan	Lecturer, EEE
7		Rahul R	Lecturer, Automobile
8	Internal Quality Assurance Cell (IQAC)	Julien Joseph E	Principal
9		Hrikishnan T K	HOD, ME / IQAC Co-Ordinator
10		Silpa Mohan K	IQAC Advisor

Sl. No.	Name of the Club/Committee	Name of Member	Designation
11		Shaijil K Vijayan	HOD, EEE
12		Savin CP	HOD, CHE
13		Seethal C R	HOD, CT
14	Examination Monitoring Committee	Julien Joseph E	Principal / Chief Superintendent
15		Lalitha P K	HOD, Civil Engineering / Convenor
16		Hrkrishnan T K	HOD, Mechanical Engineering
17		Seethal C R	HOD, Computer Science
18		Savin C P	HOD, Chemical Engineering
19	Library Committee	Julien Joseph E	Principal / Chairman
20		Antoo K D	Librarian / Convenor
21		Shajil K Vijayan	HOD, Electrical & Electronics Engineering
22		Harikrishnan T K	HOD, Mechanical Engineering
23		Arya S	Lecturer, Chemical Engineering
24		Naveen Pradeep	Lecturer, Civil Engineering
25	PTA Executive Committee	Julien Joseph E	Principal
26		Riju P D	PTA President (Parent)
27		Annie Shaju	PTA Vice President (Parent)
28		Harikrishnan	Treasurer / HOD, ME
29		Jini	Parent

Sl. No.	Name of the Club/Committee	Name of Member	Designation
30		Suma K	Parent
31		Shajil K Vijayan	HOD, Electrical Engineering
32		Simi Varghese	Parent
33		Denny C D	Parent
34	Innovation and Entrepreneurship Development Cell (IEDC)	Harikrishnan T K	HOD, Mechanical Engineering / Nodal Officer
35		Athira Mohan	Lecturer, Electrical Engineering
36		Sini Mary Lona	Lecturer, Mechanical Engineering
37		Aiswarya P S	Lecturer, Chemical Engineering
38	Women Cell/SHE	Julien Joseph E	Principal / Chairperson
39		Lalitha	HOD, Civil / Co-ordinator
40		Asha Thankappan	Lecturer, Civil Engineering
41		Siny Mary Lona	Lecturer, Mechanical Engineering
42		Devika	Student Representative, Chemical Engineering
43		Saniya	Student Representative, Chemical
44		Lincy	Student Representative, Civil
45		Aishani	Student Representative, Civil
46	Anti-Ragging Committee	Julien Joseph E	Principal / Chairman
47		Harikrishnan T K	HOD, ME / Convenor
48		Gimshy Jojo	Lecturer, General Department

Sl. No.	Name of the Club/Committee	Name of Member	Designation
49		Naveen Pradeep	Lecturer, Civil Engineering
50		C A Kiran	Lecturer, Mechanical Engineering
51	SC/ST Committee	Seethal C R	HOD, CT / Convenor
52		Arya S	Lecturer, Chemical Engineering
53		Asha Thankappan	Lecturer, Civil Engineering
54		Sreeja Sreeram	Lecturer, Electronics Engineering
55		C A Kiran	Lecturer, Mechanical Engineering
56	Sexual Harassment / Internal Complaints Committee	Asha Thankappan	Lecturer, Chemical Engineering / Presiding Officer
57		Seethal C R	HOD, CT
58		Ancy	Lecturer, Applied Science
59		Siny Mary Lona	Lecturer, Mechanical Engineering
60		Gimshy Jojo	Lecturer, Applied Science
61	Grievance Redressal Cell	Shajil K Vijayan	HOD, Electronics / Co-ordinator
62		Santhi S Nath	HOD, Applied Science
63		Arya S	Lecturer, Chemical Engineering
64		Jeethu Jose	Lecturer, Electrical Engineering
65		E J Soorya	Student Representative, S3 Chemical
66		Kailas P M	Student Representative, S3 Mechanical

Sl. No.	Name of the Club/Committee	Name of Member	Designation
67		Prithwik P S	Student Representative, S3 Automobile
68	Alumni Association	Julien Joseph E	Principal
69		Lalitha P K	HOD, Civil
70		Gimshy Jojo	Lecturer, Applied Science
71		Sumi Sunil	Accountant
72		Harikrishnan T K	HOD, ME
73		Thomson	Student Representative, Mechanical
74		Don Joseph	Student Representative, Automobile
75		Akshay K S	Student Representative, Automobile
76		Omar	Student Representative, Civil
77		Alfred Joy	Student Representative, Mechanical
78	Governing Council	Sajeev Vattoly	Chairman
79		Daly Sajeev	Secretary
80		Julien Joseph E	Nominee – Principal, NIT
81		Prof. Dr. Shaju Nalkara Ouseph	Nominee – Principal, NCAS
82		Prof. Dr. Biju C V	Nominee – Principal, Engineering
83		SJD	Department of DTE, Polytechnic Stream
84		JD SITTR	Nominee

Sl. No.	Name of the Club/Committee	Name of Member	Designation
85		—	Industrial Expert

1. Introduction

The institution is committed to providing a safe, fair, and harassment-free environment for all students and employees. Towards this, it has constituted dedicated statutory and institutional bodies — the Grievance Redressal Cell, the Anti-Rag address specific categories of concerns through defined, transparent, and time-bound mechanisms. These committees function in accordance with the guidelines issued by AICTE, the University Grants Commission (UGC), the affiliating univ Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 and the UGC Regulations on Curbing the Menace of Ragging in Higher Educational Institutions, 2009.

2. Grievance Redressal Cell (GRC)

2.1 Objective

The Grievance Redressal Cell is constituted to provide students, faculty, and staff with an accessible and impartial platform to raise academic, administrative, and personal grievances, and to ensure their fair and timely resolution, thereby fost

2.2 Composition

Sl. No.	Designation on Committee	Representing
1	Chairperson	Principal / Senior faculty nominated by Principal
2	Convenor / Coordinator	Senior faculty member responsible for coordination and record-keeping
3	Faculty Members (2–3)	Representing different departments, ensuring broad representation
4	Student Representatives (2)	One from each stream/senior batch, nominated or elected
5	Administrative Staff Representative	Represents grievances related to administrative/non-teaching matters
6	External Member (optional)	Person of standing from outside the institution, for impartiality

2.3 Mechanism of Redressal

- Grievances may be submitted in writing (through a prescribed form/register) or through a dedicated grievance box/online portal maintained at accessible locations within the campus.
- Every grievance received is logged with a unique reference number and date of receipt for tracking purposes.
- The Convenor places the grievance before the Committee within a stipulated period (typically 3–7 working days) for preliminary review.
- The Committee examines the grievance, calls for clarifications or evidence if required, and may hear the concerned parties before arriving at a decision.
- Minor/routine grievances are resolved at the departmental level in the first instance; unresolved or serious grievances are escalated to the institutional-level Committee.

- A written resolution/response is communicated to the complainant within a defined timeframe (typically within 15 days of receipt).
- Strict confidentiality is maintained throughout the process, and no complainant is subjected to victimisation for raising a grievance in good faith.
- Records of all grievances, proceedings, and resolutions are maintained by the Convenor for institutional audit and accreditation purposes.
- An appeal mechanism is available to the Principal/Chairperson of the Board in cases where the complainant is not satisfied with the Committees resolution.

3. Anti-Ragging Committee and Anti-Ragging Squad

3.1 Objective

In compliance with UGC/AICTE Anti-Ragging Regulations, the institution has constituted an Anti-Ragging Committee and an Anti-Ragging Squad to prevent, monitor, and take strict action against any form of ragging within the campus, ho particularly freshers.

3.2 Composition

Sl. No.	Designation on Committee	Representing
1	Chairperson	Principal / Head of Institution
2	Anti-Ragging Squad Coordinator	Senior faculty member responsible for surprise checks and vigilance
3	Faculty Members	Representatives from each department/branch
4	Hostel Warden(s)	Representing hostel/residential student welfare
5	Representative of Local Police / Civil Administration	As mandated under UGC/AICTE Anti-Ragging Regulations
6	Parent Representatives (2)	Representing parents of students, as per regulatory norms
7	Student Representatives (Senior & Fresher)	One senior and one fresher student representative
8	Representative of Non-Teaching Staff	Representing support staff perspective
9	Representative of Media / NGO (optional)	For transparency, as recommended under regulatory guidelines

3.3 Mechanism of Redressal

- An anti-ragging affidavit is obtained from every student and parent/guardian at the time of admission, as mandated by regulatory authorities.
- The Anti-Ragging Squad conducts regular and surprise inspections of classrooms, hostels, canteens, and other common areas, particularly during the initial months of the academic year.
- Anti-ragging helpline numbers, complaint boxes, and notices displaying the provisions of law and disciplinary consequences are prominently displayed across the campus.
- Complaints of ragging may be reported directly to the Squad, Committee, or through the national anti-ragging helpline, and are treated as time-critical.
- On receipt of a complaint, the Squad conducts an immediate preliminary inquiry and reports findings to the Committee without delay.
- The Committee, upon verification, initiates disciplinary action as per institutional rules and applicable regulatory provisions, which may include suspension, expulsion, or reporting to law enforcement authorities in serious cases.

- Sensitisation and orientation programmes on anti-ragging policies are conducted for all new entrants at the commencement of every academic year.
- Compliance reports are periodically submitted to the affiliating university/DTE/AICTE as per regulatory reporting requirements.

4. Sexual Harassment (Internal) Committee

4.1 Objective

In accordance with the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013, the institution has constituted an Internal Committee (IC) to prevent and address complaints of sexual harassment involving women on campus.

4.2 Composition

Sl. No.	Designation on Committee	Representing
1	Presiding Officer (Chairperson)	Senior woman faculty member, as mandated under the POSH Act, 2013
2	Faculty Members (2–3, majority women)	Representing different departments
3	Non-Teaching Staff Representative	Representing administrative/support staff
4	Student Representatives (Women)	Nominated/elected representatives from the student body
5	External Member	From an NGO or association committed to the cause of women, or a person familiar with issues of sexual harassment, as mandated under the POSH Act

4.3 Mechanism of Redressal

- Complaints may be submitted in writing to the Presiding Officer or any member of the Committee, within the statutory period prescribed under the Act (ordinarily within 3 months of the incident, extendable at the Committee's discretion).
- On receipt of a complaint, the Committee may attempt conciliation at the request of the complainant before proceeding to a formal inquiry, provided no monetary settlement is made the basis of such conciliation.
- Where a formal inquiry is warranted, the Committee conducts proceedings in a time-bound manner (inquiry to be completed within 90 days), ensuring principles of natural justice, confidentiality, and protection of the complainant from retaliation.
- Both parties are given a fair opportunity to be heard, and evidence/witnesses may be examined as necessary.
- On conclusion of the inquiry, the Committee submits its findings and recommendations to the management/Principal, who is required to act on the recommendations within the prescribed period.
- An annual report on the number and nature of complaints received and their disposal is compiled and submitted as per statutory requirements.
- Awareness programmes, workshops, and display of the institution's policy against sexual harassment are conducted periodically to promote a safe and informed campus environment.

9.1.4 Delegation of financial powers (5)

1. Decentralization of Financial and Administrative Powers

To ensure timely execution of academic and infrastructural requirements, financial powers stand delegated to two levels of authority within the institution, each with a defined monthly sanctioning ceiling:

Authority	Monthly Ceiling	Annual Ceiling	Scope of Sanction
Principal	Rs. 1,00,000/-	Rs. 12,00,000/-	Day-to-day departmental needs: laboratory consumables, minor repairs, stationery, student activity support, contingencies
Finance Manager	Rs. 5,00,000/-	Rs. 60,00,000/-	Larger institutional/departmental needs: major equipment procurement, infrastructure works, AMC's, faculty development, library resources

Proposals within the Principals ceiling are approved directly at the Principals level on recommendation of the HOD; proposals exceeding this limit, or falling under capital/infrastructure heads, are routed to the Finance Manager for sanction v

2. Year-wise Utilization of Delegated Financial Powers

2.1 Assessment Year 2022-23

(a) Principals Fund (Ceiling: Rs. 12,00,000/- per annum)

Head of Expenditure	Amount Utilized	% of Ceiling
Laboratory consumables & minor equipment repair	Rs. 3,20,000/-	26.67%
Stationery & office supplies	Rs. 1,10,000/-	9.17%
Minor civil/electrical maintenance	Rs. 2,40,000/-	20.00%
Student activities & co-curricular support	Rs. 1,70,000/-	14.17%
Contingency / emergency purchases	Rs. 1,00,000/-	8.33%
Total Utilized	Rs. 9,40,000/-	78.33%

(b) Finance Managers Fund (Ceiling: Rs. 60,00,000/- per annum)

Head of Expenditure	Amount Utilized	% of Ceiling
Major equipment procurement	Rs. 18,00,000/-	30.00%
Infrastructure development / renovation	Rs. 10,50,000/-	17.50%
Annual Maintenance Contracts (AMC)	Rs. 6,00,000/-	10.00%
Faculty development & training programmes	Rs. 4,50,000/-	7.50%
Library & digital resources	Rs. 5,00,000/-	8.33%
Contingency / miscellaneous	Rs. 2,50,000/-	4.17%
Total Utilized	Rs. 46,50,000/-	77.50%

2.2 Assessment Year 2023-24

(a) Principals Fund (Ceiling: Rs. 12,00,000/- per annum)

Head of Expenditure	Amount Utilized	% of Ceiling
Laboratory consumables & minor equipment repair	Rs. 3,60,000/-	30.00%
Stationery & office supplies	Rs. 1,20,000/-	10.00%
Minor civil/electrical maintenance	Rs. 2,70,000/-	22.50%
Student activities & co-curricular support	Rs. 2,00,000/-	16.67%
Contingency / emergency purchases	Rs. 1,10,000/-	9.17%
Total Utilized	Rs. 10,60,000/-	88.33%

(b) Finance Managers Fund (Ceiling: Rs. 60,00,000/- per annum)

Head of Expenditure	Amount Utilized	% of Ceiling
Major equipment procurement	Rs. 20,50,000/-	34.17%
Infrastructure development / renovation	Rs. 12,00,000/-	20.00%
Annual Maintenance Contracts (AMC)	Rs. 6,80,000/-	11.33%
Faculty development & training programmes	Rs. 5,20,000/-	8.67%
Library & digital resources	Rs. 5,20,000/-	8.67%
Contingency / miscellaneous	Rs. 2,50,000/-	4.17%
Total Utilized	Rs. 52,20,000/-	87.00%

2.3 Assessment Year 2024-25

(a) Principals Fund (Ceiling: Rs. 12,00,000/- per annum)

Head of Expenditure	Amount Utilized	% of Ceiling
Laboratory consumables & minor equipment repair	Rs. 3,85,000/-	32.08%
Stationery & office supplies	Rs. 1,25,000/-	10.42%
Minor civil/electrical maintenance	Rs. 2,90,000/-	24.17%
Student activities & co-curricular support	Rs. 2,15,000/-	17.92%
Contingency / emergency purchases	Rs. 1,10,000/-	9.17%
Total Utilized	Rs. 11,25,000/-	93.75%

(b) Finance Managers Fund (Ceiling: Rs. 60,00,000/- per annum)

Head of Expenditure	Amount Utilized	% of Ceiling
Major equipment procurement	Rs. 22,00,000/-	36.67%
Infrastructure development / renovation	Rs. 13,00,000/-	21.67%
Annual Maintenance Contracts (AMC)	Rs. 7,20,000/-	12.00%
Faculty development & training programmes	Rs. 5,80,000/-	9.67%
Library & digital resources	Rs. 5,30,000/-	8.83%
Contingency / miscellaneous	Rs. 2,50,000/-	4.17%
Total Utilized	Rs. 55,80,000/-	93.00%

3. Consolidated Summary — Trend Across Assessment Years

Assessment Year	Principal: Utilized	Principal: % Ceiling	FM: Utilized	FM: % Ceiling	Overall % Utilization
2022-23	Rs. 9,40,000/-	78.33%	Rs. 46,50,000/-	77.50%	77.64%
2023-24	Rs. 10,60,000/-	88.33%	Rs. 52,20,000/-	87.00%	87.22%
2024-25	Rs. 11,25,000/-	93.75%	Rs. 55,80,000/-	93.00%	93.13%

4. Observations

- Utilization of both the Principals and the Finance Managers delegated funds shows a consistent upward trend over the three assessment years, indicating improved financial planning and timely absorption of sanctioned funds.
- The largest share of the Finance Managers fund is consistently directed toward major equipment procurement and infrastructure development, reflecting sustained investment in laboratory and academic infrastructure.
- The Principals fund is utilized predominantly for laboratory consumables and minor maintenance, ensuring uninterrupted day-to-day functioning of the department.
- Overall utilization has risen from the earliest to the latest assessment year, demonstrating effective decentralization of financial powers and accountable fund management at both levels of sanctioning authority.

9.1.5 Transparency and availability of correct/unambiguous information in public domain (5)

A. Information on Policies, Rules, and Processes Available on the Website

The institution is committed to maintaining transparency in its academic and administrative functioning by ensuring that all relevant policies, rules, and procedures are made available in the public domain through its official website. This ensures that information is up-to-date without the need for direct institutional correspondence.

The following categories of information are hosted on the institutions website and updated periodically:

- **Academic policies and regulations** — admission procedures, eligibility criteria, fee structure, examination rules, attendance requirements, and academic calendar.
- **Institutional governance documents** — composition of the Board of Governors, organizational structure, and details of statutory approvals (AICTE, DTE, university affiliation).
- **Grievance and welfare mechanisms** — policies and procedures relating to the Grievance Redressal Cell, Anti-Ragging Committee, and Sexual Harassment (Internal) Committee, along with contact details of members.
- **Service rules and HR policies** — recruitment procedures, service conditions, and code of conduct applicable to faculty and staff.
- **Infrastructure and facility details** — information on laboratories, library resources, hostel facilities, and other campus amenities.
- **Placement and academic outcomes** — details of career guidance, industry interaction, and placement support services.

The website is maintained and periodically updated by a designated web administrator/IT cell in coordination with respective departments, ensuring that the information hosted remains current, accurate, and easily navigable. This proactive approach addresses individual inquiries for routine information.

B. Dissemination of Information about Students, Faculty, and Staff

In addition to policy-level disclosures, the institution ensures dissemination of specific information pertaining to its stakeholders through appropriate and accessible channels:

- **Student-related information** — admission status, academic performance, attendance records, and examination results are communicated through the website, notice boards, and individual student login portals wherever applicable.
- **Faculty-related information** — qualifications, designations, and departmental affiliations of faculty members are published on the website to ensure transparency in academic staffing.
- **Staff-related information** — organizational hierarchy and contact details of administrative staff are made available to facilitate ease of access for students and visitors.
- **Circulars and notifications** — relevant to students, faculty, and staff are displayed on notice boards and uploaded to the website/institutional communication portals in a timely manner.

This ensures that all stakeholders remain informed of matters directly affecting them, fostering an environment of openness and accountability within the institution.

9.2 Budget Allocation, Utilization, and Public Accounting at Institute level (10)

Summary of current financial year’s budget and actual expenditure incurred(for the institution exclusively)in the three previous financial years

Table 1 - CFYm1 2024-25

Total Income 22696982				Actual expenditure(till...): 19418804		
Fee	Govt.	Grants	Other sources(specify) Others	Recurring including salaries	Non Recurring	Special Projects/Anyothe
22178681	0	0	518301	16802427	2616377	

Table 2 - CFYm2 2023-24

Total Income 19405750.25				Actual expenditure(till...): 27211906.22		
Fee	Govt.	Grants	Other sources(specify)	Recurring including salaries	Non Recurring	Special Projects/Anyothe
19405750.25	0	0	0	22491027.22	4720879	

Table 3 - CFYm3 2022-23

Total Income 27170827.11				Actual expenditure(till...): 21327744		
Fee	Govt.	Grants	Other sources(specify)	Recurring including salaries	Non Recurring	Special Projects/Anyothe
26502617.11	0	0	668210	21327744	0	

9.2.1 Adequacy of Budget Allocation (4)

9.2.1 Adequacy of budget allocation (4)

S. No.	Items	Budgeted in 2025-2026	Actual exp 2025 -2026	Adequacy%	Budgeted in 2024-2025	Actual exp 2024 -2025	Adequacy%	Budgeted in 2023-2024 (Rounded)	Actual exp 2023 -2024
1	Infra structure (NR)	₹ 54,02,629.00	₹ 19,06,024.00	16.57%	₹ 28,78,014.00	₹ 26,16,377.00	13.90%	₹ 51,92,966.00	47,20,879.00
2	Mintenance Cost	₹ 5,10,855.00	₹ 4,25,713.00	1.57%	₹ 13,70,241.60	₹ 11,41,868.00	6.62%	₹ 98,79,126.82	82,32,605.68
3	Consumable materials	₹ 10,56,818.70	₹ 10,06,494.00	3.24%	₹ 15,29,464.65	₹ 14,56,633.00	7.39%	₹ 10,70,791.05	10,19,801.00
4	Salaries & Honorarium	₹ 1,40,87,393.25	₹ 1,34,16,565.00	43.20%	₹ 1,39,05,062.85	₹ 1,32,42,917.00	67.18%	₹ 1,21,12,105.95	1,15,35,339.00
5	Expenses on Seminar/Training Programs/Faculty development programs	₹ 1,00,556.50	₹ 91,415.00	0.31%	₹ 1,58,845.50	₹ 1,44,405.00	0.77%	₹ 44,111.10	40,101.00
6	Annual Events expenses	₹ 96,75,403.10	₹ 87,95,821.00	29.67%	₹ 31,284.00	₹ 28,440.00	0.15%	₹ 2,62,122.30	2,38,293.00
7	Travel expenses	₹ 25,222.05	₹ 24,021.00	0.08%	₹ 0.00	₹ 0.00	0.00%	₹ 0.00	0.00
8	Advertisement & Printing expenses	₹ 7,61,400.15	₹ 7,25,143.00	2.34%	₹ 7,34,175.75	₹ 6,99,215.00	3.55%	₹ 5,53,531.65	5,27,173.00
9	Annual Registration cost/Taxes	₹ 2,57,514.30	₹ 2,52,465.00	0.79%	₹ 33,607.98	₹ 32,949.00	0.16%	₹ 66,730.05	65,421.62
10	Water expenses	₹ 2,790.90	₹ 2,658.00	0.01%	₹ 0.00	₹ 0.00	0.00%	₹ 78,143.10	74,422.00
11	Power expenses	₹ 6,25,306.92	₹ 6,13,046.00	1.92%	₹ 0.00	₹ 0.00	0.00%	₹ 3,42,842.40	3,36,120.00
12	Security expenses	₹ 58,800.00	₹ 56,000.00	0.18%	₹ 58,800.00	₹ 56,000.00	0.28%	₹ 36,540.00	34,800.00
13	Others	₹ 42,421.50	₹ 38,565.00	0.13%	₹ 0.00	₹ 0.00	0.00%	₹ 4,25,646.10	3,86,951.00
	TOTAL AMOUNT	₹ 3,26,07,111.37	₹ 2,73,53,930.00	100%	₹ 2,06,99,496.33	₹ 1,94,18,804.00	100%	₹ 3,00,64,656.52	₹ 2,72,11,906.30

9.2.2 Utilization of allocated funds (4)

9.2.2 Utilization of allocated funds (4)

S. No.	Items	Budgeted in 2025-2026	Actual Expenses in 2025 -2026	Budgeted in 2024-2025	Actual Expenses in 2024 -2025	Budgeted in 2023-2024 (Rounded)	Actual Expenses in 2023 -2024	Budgeted in 2022-2023
1	Infra structure (Non Recuring)	₹ 20,96,626.00	₹ 19,06,024.00	₹ 28,78,014.00	₹ 26,16,377.00	₹ 51,92,966.00	47,20,879.00	0
1	Mintenance Cost	₹ 5,10,855.60	₹ 4,25,713.00	₹ 13,70,241.60	₹ 11,41,868.00	₹ 98,79,126.82	82,32,605.68	₹ 65,93,086.80
2	Consumable materials	₹ 10,56,818.70	₹ 10,06,494.00	₹ 15,29,464.65	₹ 14,56,633.00	₹ 10,70,791.05	10,19,801.00	₹ 30,96,579.47
3	Salaries & Honorarium	₹ 1,40,87,393.25	₹ 1,34,16,565.00	₹ 1,39,05,062.85	₹ 1,32,42,917.00	₹ 1,21,12,105.95	1,15,35,339.00	₹ 1,01,30,633.12
4	Expenses on Seminar/Training Programs/Faculty development programs	₹ 1,00,556.50	₹ 91,415.00	₹ 1,58,845.50	₹ 1,44,405.00	₹ 44,111.10	40,101.00	₹ 0.00

5	Annual Events expenses	₹ 96,75,403.10	₹ 87,95,821.00	₹ 31,284.00	₹ 28,440.00	₹ 2,62,122.30	2,38,293.00	₹ 0.00
6	Travel expenses	₹ 25,222.05	₹ 24,021.00	₹ 0.00	₹ 0.00	₹ 0.00	0.00	₹ 0.00
7	Advertisement & Printing expenses	₹ 7,61,400.15	₹ 7,25,143.00	₹ 7,34,175.75	₹ 6,99,215.00	₹ 5,53,531.65	5,27,173.00	₹ 21,39,618.60
8	Annual Registration cost/Taxes	₹ 2,57,514.30	₹ 2,52,465.00	₹ 33,607.98	₹ 32,949.00	₹ 66,730.05	65,421.62	₹ 0.00
9	Water expenses	₹ 2,790.90	₹ 2,658.00	₹ 0.00	₹ 0.00	₹ 78,143.10	74,422.00	₹ 2,04,100.05
10	Power expenses	₹ 6,25,306.92	₹ 6,13,046.00	₹ 0.00	₹ 0.00	₹ 3,42,842.40	3,36,120.00	₹ 6,65,497.35
11	Security expenses	₹ 58,800.00	₹ 56,000.00	₹ 58,800.00	₹ 56,000.00	₹ 36,540.00	34,800.00	₹ 0.00
12	Others	₹ 42,421.50	₹ 38,565.00	₹ 0.00	₹ 0.00	₹ 4,25,646.10	₹ 3,86,951.00	₹ 4,44,287.71
	TOTAL AMOUNT	₹ 2,72,04,482.97	₹ 2,54,47,906.00	₹ 1,78,21,482.33	₹ 1,68,02,427.00	₹ 2,48,71,690.52	₹ 2,24,91,027.30	₹ 2,32,73,803.10
	Utilization		93.54%	Utilization		94.28%	Utilization	90.43%

9.2.3 Availability of the audited statements on the institute's website (2)

The institute ensures transparency and accountability in its financial administration by making the **audited financial statements/audit reports** available on the official institute website. The audit statements are periodically updated and made available to interested parties.

The availability of audit statements on the website demonstrates the institute's commitment to **financial transparency, proper utilization of funds, accountability, and compliance with statutory requirements**. It also enables stakeholders to monitor the institution's financial management practices.

The relevant audit statements can be accessed through the institute website under the appropriate section related to **Financial Statements/Audit Reports**.

9.3 Department Specific Budget Allocation, Utilization (5)

Table 1 :: CFY 2025-26

Total Budget 3599772		Actual expenditure (till...): 3350457	
Non Recurring	Recurring	Non Recurring	R
542036	3057736	492760	2

Table 2 :: CFYm1 2024-25

Total Budget 1792499			Actual expenditure (till...): 1200053	
Non Recurring	Recurring	Non Recurring	R	
1133567	658932	576773	6	

Table 3 :: CFYm2 2023-24

Total Budget 3621933			Actual expenditure (till...): 3292666	
Non Recurring	Recurring	Non Recurring	R	
1133567	2488366	1030516	2	

Table 4 :: CFYm3 2022-23

Total Budget 2393264			Actual expenditure (till...): 2195655	
Non Recurring	Recurring	Non Recurring	R	
0	2393264	0	2	

9.3.1 Adequacy of Budget Allocation (2)

INSTITUTE BUDGET UTILIZATION FOR FINANCIAL YEAR 2025-26									
			CIVIL				MECH		
S.NO	PARTICULARS	ACTUAL EXPENSES INST. LEVEL	ACTUAL	Budget	utilization%	Adequacy %	ACTUAL	Budget	utilization
1	No.of Students	557	65				144		
	Mintenance Cost	₹ 4,25,713.00	₹ 49,679.25	₹53,156.80	93%	3.85%	₹ 1,10,058.66	₹1,17,762.76	93%
2	Consumable materials	₹ 10,06,494.00	₹ 1,17,454.42	₹1,25,676.23	93%	9.11%	₹ 2,60,206.71	₹2,78,421.18	93%
3	Expenses on Seminar/Training Programs/Faculty development programs	₹ 91,415.00	₹ 10,667.82	₹11,414.57	93%	0.83%	₹ 23,633.32	₹25,287.65	93%
4	Annual Events expenses	₹ 87,95,821.00	₹ 10,26,442.31	₹10,98,293.27	93%	79.57%	₹ 22,73,964.50	₹24,33,142.01	93%
5	Travel expenses	₹ 24,021.00	₹ 2,803.17	₹2,999.39	93%	0.22%	₹ 6,210.10	₹6,644.80	93%
6	Water expenses	₹ 2,658.00	₹ 310.18	₹331.89	93%	0.02%	₹ 687.17	₹735.27	93%
7	Power expenses	₹ 6,13,046.00	₹ 71,540.38	₹76,548.20	93%	5.55%	₹ 1,58,489.45	₹1,69,583.71	93%
8	Security expenses	₹ 56,000.00	₹ 6,535.01	₹6,992.46	93%	0.51%	₹ 14,477.56	₹15,490.99	93%
9	Others	₹ 38,565.00	₹ 4,500.40	₹4,815.43	93%	0.35%	₹ 9,970.13	₹10,668.03	93%

Total			₹ 1,10,53,733.00	₹13,80,228.24	100%	₹28,57,697.58	₹30,57,736.41	₹0.93	
INSTITUTE BUDGET UTILIZATION FOR FINANCIAL YEAR 2024-25									
			CIVIL				MECH		
S.NO	PARTICULARS	ACTUAL EXPENSES	ACTUAL	Budget	utilization%	Adequacy %	ACTUAL	Budget	utilization
	No.of Students	626	72				138		
1	Mintenance Cost	₹ 11,41,868.00	₹ 1,31,333.06	₹1,38,845.31	95%	40.39%	₹ 2,51,721.70	₹2,66,120.18	95%
2	Consumable materials	₹ 14,56,633.00	₹ 1,67,536.06	₹1,77,119.13	95%	51.52%	₹ 3,21,110.79	₹3,39,478.33	95%
3	Expenses on Seminar/Training Programs/Faculty development programs	₹ 1,44,405.00	₹ 16,608.88	₹17,558.91	95%	5.11%	₹ 31,833.69	₹33,654.58	95%
4	Annual Events expenses	₹ 28,440.00	₹ 3,271.05	₹3,458.16	95%	1.01%	₹ 6,269.52	₹6,628.14	95%
5	Travel expenses	₹ 0.00	₹ 0.00	₹0.00	#DIV/0!	0.00%	₹ 0.00	₹0.00	#DIV/0!
6	Water expenses	₹ 0.00	₹ 0.00	₹0.00	#DIV/0!	0.00%	₹ 0.00	₹0.00	#DIV/0!
7	Power expenses	₹ 0.00	₹ 0.00	₹0.00	#DIV/0!	0.00%	₹ 0.00	₹0.00	#DIV/0!
8	Security expenses	₹ 56,000.00	₹ 6,440.89	₹6,809.31	95%	1.98%	₹ 12,345.05	₹13,051.18	95%
9	Others	₹ 0.00	₹ 0.00	₹0.00	#DIV/0!	0.00%	₹ 0.00	₹0.00	#DIV/0!
	Total	₹ 28,27,346.00		₹3,43,790.82		100%		₹6,58,932.41	
INSTITUTE BUDGET UTILIZATION FOR FINANCIAL YEAR 2023-24									
			CIVIL				MECH		
S.NO	PARTICULARS	ACTUAL EXPENSES	ACTUAL	Budget	utilization%	Adequacy %	ACTUAL	Budget	utilization
	No.of Students	678	90				148		
1	Mintenance Cost	82,32,605.68	₹ 10,92,823.76	₹12,02,106.14	91%	79%	₹ 17,97,087.97	₹19,76,796.76	91%
2	Consumable materials	10,19,801.00	₹ 1,35,371.81	₹1,48,909.00	91%	10%	₹ 2,22,611.43	₹2,44,872.57	91%
3	Expenses on Seminar/Training Programs/Faculty development programs	40,101.00	₹ 5,323.14	₹5,855.46	91%	0%	₹ 8,753.61	₹9,628.97	91%
4	Annual Events expenses	2,38,293.00	₹ 31,631.81	₹34,795.00	91%	2%	₹ 52,016.76	₹57,218.44	91%
5	Travel expenses	0.00	₹ 0.00	₹0.00	0%	0%	₹ 0.00	₹0.00	0%
6	Water expenses	74,422.00	₹ 9,879.03	₹10,866.93	91%	1%	₹ 16,245.51	₹17,870.06	91%
7	Power expenses	3,36,120.00	₹ 44,617.70	₹49,079.47	91%	3%	₹ 73,371.33	₹80,708.46	91%

8	Security expenses	34,800.00	₹ 4,619.47	₹5,081.42	91%	0%	₹ 7,596.46	₹8,356.11	91%
9	Others	₹ 3,86,951.00	₹ 51,365.18	₹56,501.69	91%	4%	₹ 84,467.18	₹92,913.90	91%
	Total	₹ 1,03,63,093.68	₹ 13,75,631.90	₹ 15,13,195.09		100%	₹ 22,62,150.24	₹ 24,88,365.27	
9.3.1. Adequacy of Budget Allocation									
INSTITUTE BUDGET UTILIZATION FOR FINANCIAL YEAR 2022-23									
			CIVIL				MECH		
S.NO	PARTICULARS	ACTUAL EXPENSES	ACTUAL	Budget	utilization%	Adequacy %	ACTUAL	Budget	utilization
	No.of Students	707	112				161		
1	Mintenance Cost	₹ 54,94,239.00	₹ 8,70,374.50	₹9,48,708.20	92%	57%	₹ 12,51,163.34	₹13,63,768.04	92%
2	Consumable materials	₹ 29,49,123.30	₹ 4,67,187.85	₹5,09,234.76	92%	31%	₹ 6,71,582.53	₹7,32,024.96	92%
3	Expenses on Seminar/Training Programs/Faculty development programs	₹ 0.00	₹ 0.00	₹0.00	0%	0%	₹ 0.00	₹0.00	0%
4	Annual Events expenses	₹ 0.00	₹ 0.00	₹0.00	0%	0%	₹ 0.00	₹0.00	0%
5	Travel expenses	₹ 0.00	₹ 0.00	₹0.00	0%	0%	₹ 0.00	₹0.00	0%
6	Water expenses	₹ 1,94,381.00	₹ 30,793.03	₹33,564.40	92%	2%	₹ 44,264.98	₹48,248.83	92%
7	Power expenses	₹ 6,33,807.00	₹ 1,00,405.07	₹1,09,441.53	92%	7%	₹ 1,44,332.29	₹1,57,322.19	92%
8	Security expenses	₹ 0.00	₹ 0.00	₹0.00	0%	0%	₹ 0.00	₹0.00	0%
9	Others	₹ 3,70,239.76	₹ 58,651.84	₹63,930.51	92%	4%	₹ 84,312.02	₹91,900.11	92%
	Total	₹ 96,41,790.06	₹ 15,27,412.29	₹ 16,64,879.39		100%	₹ 21,95,655.16	₹ 23,93,264.13	

9.3.2 Utilization of allocated funds (3)

INSTITUTE BUDGET UTILIZATION FOR FINANCIAL YEAR 2025-26								
			CIVIL				MECH	
S.NO	PARTICULARS	ACTUAL EXPENSES	ACTUAL	Budget	utilization%	ACTUAL	Budget	
	No.of Students	557	65			144		
1	Mintenance Cost	₹ 4,25,713.00	₹ 49,679.25	₹53,156.80	93%	₹ 1,10,058.66	₹1,17,762.76	
2	Consumable materials	₹ 10,06,494.00	₹ 1,17,454.42	₹1,25,676.23	93%	₹ 2,60,206.71	₹2,78,421.18	

S.NO	PARTICULARS	ACTUAL EXPENSES	CIVIL			MECH	
			ACTUAL	Budget	utilization%	ACTUAL	Budget
	No.of Students	678	90			148	
1	Mintenance Cost	82,32,605.68	₹ 10,92,823.76	₹12,02,106.14	91%	₹ 17,97,087.97	₹19,76,796.76
2	Consumable materials	10,19,801.00	₹ 1,35,371.81	₹1,48,909.00	91%	₹ 2,22,611.43	₹2,44,872.57
3	Expenses on Seminar/Training Programs/Faculty development programs	40,101.00	₹ 5,323.14	₹5,855.46	91%	₹ 8,753.61	₹9,628.97
4	Annual Events expenses	2,38,293.00	₹ 31,631.81	₹34,795.00	91%	₹ 52,016.76	₹57,218.44
5	Travel expenses	0.00	₹ 0.00	₹0.00	0%	₹ 0.00	₹0.00
6	Water expenses	74,422.00	₹ 9,879.03	₹10,866.93	91%	₹ 16,245.51	₹17,870.06
7	Power expenses	3,36,120.00	₹ 44,617.70	₹49,079.47	91%	₹ 73,371.33	₹80,708.46
8	Security expenses	34,800.00	₹ 4,619.47	₹5,081.42	91%	₹ 7,596.46	₹8,356.11
9	Others	₹ 3,86,951.00	₹ 51,365.18	₹56,501.69	91%	₹ 84,467.18	₹92,913.90
	Total	₹ 1,03,63,093.68	₹ 13,75,631.90	₹ 15,13,195.09		₹ 22,62,150.24	₹ 24,88,365.27

INSTITUTE BUDGET UTILIZATION FOR FINANCIAL YEAR 2022-23

S.NO	PARTICULARS	ACTUAL EXPENSES	CIVIL			MECH	
			ACTUAL	Budget	utilization%	ACTUAL	Budget
	No.of Students	707	112			161	
1	Mintenance Cost	₹ 54,94,239.00	₹ 8,70,374.50	₹9,48,708.20	92%	₹ 12,51,163.34	₹13,63,768.04
2	Consumable materials	₹ 29,49,123.30	₹ 4,67,187.85	₹5,09,234.76	92%	₹ 6,71,582.53	₹7,32,024.96
3	Expenses on Seminar/Training Programs/Faculty development programs	₹ 0.00	₹ 0.00	₹0.00	0%	₹ 0.00	₹0.00
4	Annual Events expenses	₹ 0.00	₹ 0.00	₹0.00	0%	₹ 0.00	₹0.00
5	Travel expenses	₹ 0.00	₹ 0.00	₹0.00	0%	₹ 0.00	₹0.00
6	Water expenses	₹ 1,94,381.00	₹ 30,793.03	₹33,564.40	92%	₹ 44,264.98	₹48,248.83
7	Power expenses	₹ 6,33,807.00	₹ 1,00,405.07	₹1,09,441.53	92%	₹ 1,44,332.29	₹1,57,322.19
8	Security expenses	₹ 0.00	₹ 0.00	₹0.00	0%	₹ 0.00	₹0.00
9	Others	₹ 3,70,239.76	₹ 58,651.84	₹63,930.51	92%	₹ 84,312.02	₹91,900.11
	Total	₹ 96,41,790.06	₹ 15,27,412.29	₹ 16,64,879.39		₹ 21,95,655.16	₹ 23,93,264.13

9.4 Library and Internet (20)

(It is assumed that zero deficiency report was received by the institution, Effective availability and utilization to be demonstrated)

9.4.1 Quality of learning resources (hard/soft) (10)

The institution recognises the central role of a well-stocked and technologically equipped library in supporting teaching, learning, and research activities. The Central Library functions as the primary knowledge resource centre of the institution, providing access to a wide range of electronic learning resources. In keeping with the evolving needs of technical education, the library has progressively expanded its digital resource base, ensuring that learners have access not only to traditional print holdings but also to a wide range of electronic learning resources.

This report presents a consolidated account of the library's physical and digital holdings, its e-resource subscriptions and memberships, the internet and IT infrastructure available to support resource access, and the measures adopted to ensure the effective use of these resources.

The library maintains a substantial and continuously updated collection of print resources, catalogued and classified as per standard library classification norms to facilitate easy retrieval.

Sl. No.	Resource	Holdings / Details
1	Books	19,173 (Titles/Volumes)
2	Journals (Print, subscribed)	16
3	Classification System	Books classified and catalogued as per standard classification number/category code (list to be furnished separately)

A detailed list of books along with their classification number/category code, arranged subject-wise, is maintained separately by the library and is available for reference and verification.

In addition to its physical holdings, the institution has invested significantly in building a robust Digital Library, providing round-the-clock access to a vast repository of electronic learning material. The e-resource base includes e-books, e-journals, e-databases, theses and dissertations, as summarised in the table below.

Sl. No.	E-Resource	Quantum / Details
1	E-books	10,782
2	E-journals	911
3	E-databases	DELNET, NDLI, NPTEL (institutional membership)
4	CD-ROMs	70,802

Sl. No.	E-Resource	Quantum / Details
5	Thesis and Dissertations	1,57,507

- DELNET (Developing Library Network) — enabling inter-library resource sharing and access to a national network of libraries.
- NDLI (National Digital Library of India) — providing access to a large, curated repository of academic and educational content across disciplines.
- NPTEL (National Programme on Technology Enhanced Learning) — providing access to video lectures, e-content, and certification courses developed by IITs/IISc for engineering and technical education.

These memberships significantly expand the range and depth of learning material available to students, extending well beyond the institutions own physical and digital holdings, and providing exposure to nationally curated academic content

To ensure effective utilisation of digital and e-learning resources, the library and campus are supported by dedicated internet and computing infrastructure, as detailed below.

Sl. No.	Facility	Details
1	Computer Terminals	10 dedicated terminals for library/OPAC and internet access
2	Wi-Fi	Wi-Fi enabled library and campus network
3	Bandwidth	4 Mbps dedicated internet bandwidth

The availability of dedicated computer terminals, campus-wide Wi-Fi connectivity, and adequate internet bandwidth collectively ensure that students and faculty can access e-books, e-journals, online databases, and other digital resources wit

The institution has adopted a multi-pronged approach to ensure that the libraris resources — both physical and digital — remain readily accessible to the student community:

- The library functions on extended working hours during working days, and additional hours during examination periods, to maximise student access.
- Physical collections are organised and classified systematically, enabling students to independently locate resources with minimal assistance.
- Digital and e-resources (e-books, e-journals, DELNET, NDLI, NPTEL) are accessible through dedicated computer terminals within the library as well as via Wi-Fi-enabled personal devices across the campus.
- Remote/off-campus access to select e-resources and digital repositories is facilitated wherever subscription terms permit, extending accessibility beyond campus hours.
- Orientation and induction sessions are conducted for new students to familiarise them with library resources, cataloguing systems, and procedures for accessing e-resources and digital databases.
- Library staff provide reference assistance to help students locate relevant books, journals, and digital content pertinent to their coursework, projects, and research requirements.
- Reprographic and printing facilities are made available to support academic use of library and digital resources.

9.4.2 Internet (10)

Name of the Internet provider	Kerala Vision
Available band width	500 MbPS
WiFi availability	WiFi is available

Internet access in labs, classrooms, library and offices of all Departments

Provided

Security arrangements

Company - TP Link, Brand - Omada, Model - ER 8411. This device is a multifun

9.5 Institutional Contribution to the Community Development (5)

As a self-financing technical institution, the college recognises its responsibility not only towards imparting quality technical education but also towards contributing meaningfully to the development and well-being of the surrounding community. The college regularly organises outreach activities aimed at skill development, environmental sustainability, and awareness generation among local residents, school communities, and other stakeholders in the neighbourhood.

These initiatives are designed and executed by the departments in coordination with the institutions community outreach/extension activities cell, involving faculty coordinators and student volunteers. The activities are planned to address local environmental conservation — thereby extending the benefits of institutional expertise and infrastructure beyond the campus.

Objectives of Community Development Initiatives

- To extend the technical and professional expertise available within the institution for the benefit of the local community.
- To promote digital literacy and employable skills among unemployed youth and community members.
- To encourage sustainable livelihood practices through skill-based training programmes.
- To create awareness on renewable energy, water conservation, and environmental sustainability.
- To instil a sense of social responsibility and civic engagement among students through active participation in outreach activities.
- To strengthen institution–community relationships and position the institution as a resource centre for local development.

Methodology of Implementation

Community development activities are identified based on local needs assessment, feedback from community members, and inputs from faculty and student coordinators. Each programme is planned with a defined target group, resource persons. Activities are conducted either on the institutions premises or at accessible community locations such as panchayat halls, nearby schools, or residential areas, to maximise participation.

Publicity for each activity is carried out through local coordination channels (ward members, panchayat offices, resident associations, or school administrations), and attendance/participation records are maintained for institutional documentation to assess effectiveness and to guide the planning of future programmes.

Activities Conducted (Academic Year-wise)

The table below summarises the community development activities conducted by the institution over the last three academic years, indicating the dates on which each activity was held.

Sl. No.	Activity	2023-24	2024-25	2025-26
1	Skill Development Training Programme (Computer & IT Literacy)	28.12.2023	-	27.11.2025
2	Paper Bag & Envelope Making	-	24.08.2024	26.07.2025
3	Solar Panel Awareness Programme	-	11.07.2024	-

Sl. No.	Activity	2023-24	2024-25	2025-26
4	Rain Water Harvesting Awareness Class	-	-	12.07.2025
5	Tree Plantation Awareness Class	05.06.2023	-	05.06.2025

The community development activities undertaken span multiple focus areas — digital literacy, sustainable livelihood, renewable energy awareness, water conservation, and environmental sustainability — each targeting a specific segment o

Focus Area	Activity	Beneficiaries / Community Reached	Outcome / Impact
Digital Literacy	Skill Development Training Programme (Computer & IT Literacy)	Local unemployed youth and community members	Enhanced basic computer literacy and IT skills, improving employability and access to digital services among non-student community members.
Livelihood & Sustainability	Paper Bag & Envelope Making	Womens self-help groups / local residents	Introduced eco-friendly livelihood skills as an alternative to plastic use, supporting small-scale income generation and environmental awareness.
Renewable Energy Awareness	Solar Panel Awareness Programme	Nearby households and local public	Increased community awareness of solar energy adoption, benefits of renewable energy, and government incentive schemes.
Water Conservation	Rain Water Harvesting Awareness Class	Local households and school students	Promoted sustainable water management practices and rainwater harvesting techniques suited to the local terrain.
Environmental Sustainability	Tree Plantation Awareness Class	Institution neighbourhood and general public	Contributed to green cover enhancement and instilled environmental responsibility among students and local residents through hands-on plantation drives.

Skill Development Training Programme (Computer & IT Literacy)

Conducted on 28.12.2023 and again on 27.11.2025, this programme aimed at imparting basic computer and IT literacy skills to community members with limited or no prior exposure to digital tools. Sessions covered fundamental computer c bridging the digital divide and improving employability among local youth and adults.

Paper Bag & Envelope Making

Held on 24.08.2024 and 26.07.2025, this hands-on training session introduced participants to the making of paper bags and envelopes as an eco-friendly alternative to plastic products. The programme aimed at promoting sustainable practices could support small-scale income generation.

Solar Panel Awareness Programme

Organised on 11.07.2024, this awareness programme educated community members on the working principles, benefits, and installation aspects of solar photovoltaic systems. The session also covered available government subsidy schemes f

Rain Water Harvesting Awareness Class

Conducted on 12.07.2025, this session focused on educating participants about rainwater harvesting techniques suitable for local household and institutional settings. The programme emphasised the importance of groundwater recharge and v

Tree Plantation Awareness Class

Conducted on 05.06.2023 and 05.06.2025 (coinciding with World Environment Day), this activity combined an awareness class on the ecological importance of trees with an actual tree plantation drive involving students, faculty, and local re campus while reinforcing environmental consciousness among participants.

Outcomes and Institutional Significance

- Strengthened institution–community relationships through sustained, recurring engagement across three consecutive academic years.
- Enhanced digital and livelihood skills among community members, contributing to local employability and income-generation potential.
- Increased community awareness and adoption readiness for renewable energy and sustainable resource management practices.
- Measurable contribution to environmental sustainability through tree plantation and eco-friendly product-making initiatives.
- Provided students with opportunities for social engagement, developing civic responsibility, communication skills, and empathy alongside their technical education.
- Generated documented evidence of extension and outreach activities, supporting institutional accreditation (NBA/NAAC) requirements under community engagement and social responsibility criteria.

9.6 Alumni Performance and Connect (10)

The Alumni Association of the institution was formally established on 23.12.2023 with the objective of maintaining a close and continuing association between the institution and its former students. The Association serves as an important b alumni go on to inhabit, enabling the exchange of knowledge, experience, and opportunities that benefit both current students and the institution as a whole.

Aims and Objectives of the Alumni Association

- To provide a forum for alumni to exchange ideas on academic, cultural, and social issues of the day.
- To organise and coordinate reunion activities among alumni, and between faculty and alumni, as well as to facilitate networking between current students and alumni for mutual benefit in professional and career development.

The functioning of the Alumni Association is overseen by a duly constituted Administrative Committee, comprising office bearers drawn from the alumni body itself, ensuring that the Association remains alumni-led and responsive to the need

Sl. No.	Name	Position
1	Mr. Julien Joseph E	President
2	Mrs. Lalitha P K	Vice President
3	Mr. Pranav V J	Secretary
4	Mr. Aneeth	Joint Secretary
5	Ms. Sumi Sunil	Treasurer
6	Mr. Gimshy Jojo	Patron
7	Mr. Syam Prasad O T	Executive Member
8	Mr. Srinraj N M	Executive Member

The institution organises an Annual Alumni Meet every year on 23rd December, bringing together graduates from successive outgoing batches to reconnect with the institution, their former faculty, and fellow alumni. Since its inception in 2018, the meet has been a platform for strengthening bond between the institution and its alumni community.

Sl. No.	Batches Covered	Date of Meeting	No. of Alumni Participated
1	2018-21, 2019-22, 2020-23	23.12.2023	56
2	2018-21, 2019-22, 2020-23, 2021-24	23.12.2024	82
3	2018-21, 2019-22, 2020-23, 2021-24, 2022-25	23.12.2025	105

The Alumni Meet of 2023 brought together the 2018–21, 2019–22, and 2020–23 batches with 56 alumni in attendance. This was followed by the 2024 meet, which included the additional 2021–24 batch and recorded a marked increase in participation, including the 2022–25 batch across multiple disciplines (Civil, Mechanical, EEE, Chemical, and Automobile Engineering), drawing the highest participation recorded so far at 105 alumni. This consistent year-on-year growth in participation base

As part of documenting alumni performance, the Association maintains department-wise records of alumni career progression, capturing details of the organisations they are employed with, their designations, and work locations. These records contribute to producing industry-ready graduates and also inform current students about potential career pathways.

5.1 Illustrative Alumni Placement Records

Sl. No.	Batch	Alumnus	Designation	Company	Location
1	2018-21	Pranav V J	Sales Executive	Mahindra	—

Sl. No.	Batch	Alumnus	Designation	Company	Location
2	2018-21	Aneeth	Quality Engineer	NEST	Ernakulam
3	2018-21	Abhishek A S	Production Executive	Camlin Fine Science	Perambra

5.2 Electrical and Electronics Engineering (EEE) Department

Sl. No.	Batch	Alumnus	Designation	Company	Location
1	2019-22	Jesvin Palatty	Sales Executive	Maruthi	Angamaly
2	2020-23	K P S Prabhu	Technical Engineer	Ramco Cements Ltd	Kottayam
3	—	Sreerag P B	Technical Engineer	Ramco Cements Ltd	—
4	2021-24	Christo John	Mechanical Supervisor	KSE Limited	Irinjalakuda

These illustrative records demonstrate that alumni from the institution have secured placements across a diverse range of core and allied sectors — including automotive (Mahindra, Maruthi), quality and manufacturing (NEST, Camlin Fine S manufacturing (KSE Limited) — in roles spanning sales, quality assurance, production, and technical/mechanical engineering. This spread reflects the multidisciplinary employability of the institutions graduates across the Civil, Mechanical,

Annexure I
(A) PROGRAM OUTCOME (POs)

1. **Basic and Discipline specific knowledge:** Apply knowledge of basic mathematics, science and engineering fundamentals and engineering specialization to solve the engineering problems.
2. **Problem analysis:** Identify and analyse well-defined engineering problems using codified standard methods.
3. **Design/ development of solutions :** Design solutions for well-defined technical problems and assist with the design of systems components or processes to meet specified needs.
4. **Engineering Tools, Experimentation and Testing:**Apply modern engineering tools and appropriate technique to conduct standard tests and measurements.
5. **Engineering practices for society, sustainability and environment:**Apply appropriate technology in context of society, sustainability, environment and ethical practices.
6. **Project Management:** Use engineering management principles individually, as a team member or a leader to manage projects and effectively communicate about well-defined engineering activities.
7. **Life-long learning:**Ability to analyse individual needs and engage in updating in the context of technological changes.

(B) PROGRAM SPECIFIC OUTCOME (PSOs)

PSO1	Able to design and produce engineering components with the acquired knowledge
PSO2	Able to manage maintenance system and attain quality of products in industry

Declaration

The head of the institution needs to make a declaration as per the format given -

- I undertake that, the institution is well aware about the provisions in the NBA's accreditation manual concerned for this application, rules, regulations, notifications and NBA expert visit guidelines inforce as on date and the institutes hall 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 willbe initiated by the NBA. In case, any false statement/information is observed during pre-visit, visit, postvisit and subsequent to grant of accreditation.

Head of the Institute

Name : JULIEN JOSEPH E

Designation : PRINCIPAL

Signature :



Seal of The Institution :



Place : CHALAKUDI

Date : 24-08-2026 16:44:48