Hyderabad Institute of Technology and Management

SELF ASSESSMENT REPORT(TIER - I) FOR Mechanical Engineering

Part A : Institutional Information

1 Name and Address of the Institution

Hyderabad Institute of Technology and Management,
Gowdavelli Village Medchal Mandal Ranga Reddy District Telangana State PIN 501401

2 Type of the Institution:

○ Self-Supported Institute	◉ Autonomous
○ Deemed University	○ Non-Autonomous (Affiliated)
○ University	○ Any Other(Please Specify)
○ Institute of National Importance	

3 Year of establishment of the Institution:

2001

4 Ownership Status:

○ Central Government	
○ State Government	☐ Any Other(Please Specify)
○ Government Aided	
◉ Self financing	

5 Name and Address of Affiliating University(if any)

Jawaharlal Nehru Technological Univerity,

Kukatpally,

Hyderabad.

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

Name of Institutions	Year of Establishment	Programs of Study	Location

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

Name of Program	Program Applied level	Start of year	Year of AICTE approval	Initial Intake	Intake Increase	Current Intake	Accreditation status	From	To	Program for consideration	Program for Duration
Mechanical Engineering	UG	2002	2023	60	Yes	30	Granted accreditation for 3 years for the period (specify period)	2022	2025		4

Sanctioned Intake for Last Five Years for the Mechanical Engineering	
Academic Year	**Sanctioned Intake**
2024-25	30
2023-24	30
2022-23	60
2021-22	60
2020-21	60
2019-20	120

Electronics and Communication Engineering	UG	2001	2001	60	Yes	60	Granted accreditation for 3 years for the period (specify period)	2022	2025	No	4

Sanctioned Intake for Last Five Years for the Electronics and Communication Engineering	
Academic Year	**Sanctioned Intake**
2024-25	60
2023-24	60
2022-23	60

2021-22	60
2020-21	60
2019-20	120

Electrical and Electronics Engineering	UG	2001	2001	60	Yes	30	Granted accreditation for 3 years for the period (specify period)	2022	2025	0	4

Sanctioned Intake for Last Five Years for the Electrical and Electronics Engineering

Academic Year	Sanctioned Intake
2024-25	30
2023-24	30
2022-23	60
2021-22	60
2020-21	60
2019-20	60

8 Programs to be considered for Accreditation vide this application:

S No	Level	Discipline	Program
1	Under Graduate	Engineering & Technology	Computer Science and Engineering
2	Under Graduate	Engineering & Technology	Electrical & Electronics Engineering
3	Under Graduate	Engineering & Technology	Electronics & Communication Engineering
4	Under Graduate	Engineering & Technology	Mechanical Engineering

Table No. A8.2

S No	Name of the Department	Name of the Program	Name of Allied Departments/Cluster	Name of Allied Program
No record exist(s)				

9 Total Number of Faculty Members in Various Departments:

ID	Deparment Name	Number of faculty members in the Department (UG and PG)											
		2024-25 (CAY)				2023-24 (CAYm1)				2022-23 (CAYm2)			
			No. of	No. of	Total		No. of	No. of	Total		No. of	No. of	Total

		No. of Professors	Associate Professors	Assistant Professors	faculty members	No. of Professors	Associate Professors	Assistant Professors	faculty members	No. of Professors	Associate Professors	Assistant Professors	faculty members
1	Electronics and Communication Engineering	2	3	8	13	2	2	11	15	4	0	13	17
2	Electrical and Electronics Engineering	1	1	12	14	1	1	11	13	1	0	12	13
3	Mechanical Engineering	1	2	12	15	2	0	12	14	2	0	12	14

10 Total Number of Engineering Students in Various Departments:

ID	Deparment Name	Number of students in the Department (UG and PG)		
		2024-25 (CAY)	2023-24 (CAYm1)	2022-23 (CAYm2)
1	Electronics and Communication Engineering	198	198	264
2	Electrical and Electronics Engineering	165	198	198
3	Mechanical Engineering	165	198	264

11 Vision of the Institution:

To be a role model technological university of national repute that imparts research-based multi-disciplinary competencies in students to enable their career aspirations and contribute to society.

12 Mission of the Institution:

1. Build students' competencies through HITAM's 'Doing Engineering' approach with relevant curriculum, pedagogy and assessment.

2. Collaborate with industry and institutions for capacity building in research, innovation and real time knowledge.

3. Develop employability skills for emerging trends and societal needs

4. Excel by adopting NEP 2020 and improving Accreditations & national rankings.

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

Head of the Institution	
Name	Dr. Arvind Siddapuram
Designation	Principal
Mobile No.	9573714385
Email ID	principal@hitam.org

NBA Coordinator, If Designated	
Name	Dr. Devika SV
Designation	Professor
Mobile No.	9000448835
Email ID	associate.deanaccreditation@h

PART B: Criteria Summary

Critera No.	Criteria	Total Marks	Institute Marks
1	OUTCOME-BASED CURRICULUM	120	120.00
2	OUTCOME-BASED TEACHING LEARNING	120	120.00
3	OUTCOME-BASED ASSESSMENT	120	120.00
4	STUDENTS' PERFORMANCE	120	66.32
5	FACULTY INFORMATION	100	93.45
6	FACULTY CONTRIBUTIONS	120	104.00
7	FACILITIES AND TECHNICAL SUPPORT	100	100.00
8	CONTINUOUS IMPROVEMENT	80	80.00
9	STUDENT SUPPORT AND GOVERNANCE	120	117.00
	Total	**1000**	**920**

Part B : Criteria Summary

1 OUTCOME-BASED CURRICULUM (120)

Total Marks 120.00

1.1 Vision, Mission and Program Educational Objectives (PEOs) (35)

Total Marks 35.00

1.1.1 State the Vision and Mission of the Institute and the Department (5)

Institute Marks : 5.00

Vision of the institute	To be a role model technological university of national repute that imparts research-based multi-disciplinary competencies in students to enable their career aspirations and contribute to society.
Mission of the institute	1. Build students' competencies through HITAM's 'Doing Engineering' approach with relevant curriculum, pedagogy and assessment. 2. Collaborate with industry and institutions for capacity building in research, innovation and real time knowledge. 3. Develop employability skills for emerging trends and societal needs 4. Excel by adopting NEP 2020 and improving Accreditations & national rankings.

Vision of the Department	To develop skilled engineers through experiential learning and a multidisciplinary approach, enabling them to serve society and address global challenges.
Mission of the Department	

Mission No.	Mission Statements
M1	Promote technical excellence and practical problem-solving abilities through curriculum delivery rooted in problem-based learning.
M2	To facilitate multidisciplinary learning by engaging students in hands-on projects and collaborative initiatives with industry.
M3	Nurturing awareness of sustainability and societal needs to prepare students for addressing global and community challenges.

1.1.2 State PEOs of the Program (5) Institute Marks : 5.00

PEO No.	Program Educational Objectives Statements
PEO1	Graduates will apply technical knowledge and problem-solving skills to real-world mechanical engineering challenges.
PEO2	Graduates will work effectively in multidisciplinary and industry-linked projects.
PEO3	Graduates will address sustainability and global challenges with responsible engineering practices.

1.1.3 Process of Defining Vision, Mission and PEOs (10) Institute Marks : 10.00

The process of formulating the Vision and Mission of the department begins with referencing the Institute's Vision and Mission to ensure alignment. This alignment ensures that the department's aspirations and commitments contribute meaningfully to the broader goals of the institution. Inputs are also considered from regulatory bodies such as AICTE and NBA, which provide policy frameworks and educational standards to be reflected in the department's guiding statements. Figure 1 shows the process for brief understanding.

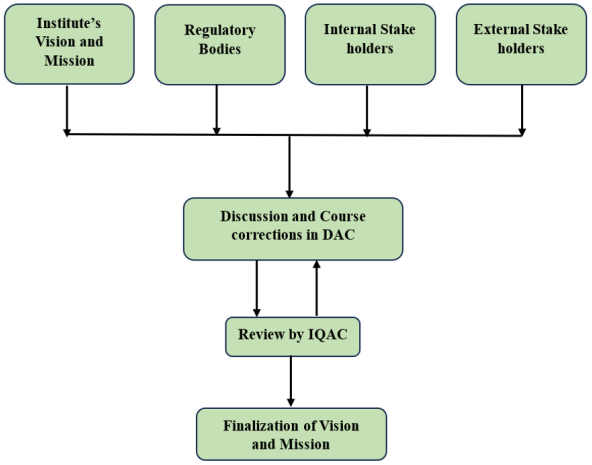


Figure 1: Process Flowchart of Framing Vision and Mission

In parallel, the department actively engages both internal stakeholders such as faculty members, administrative staff and current students and external stakeholders including alumni and industry professionals. These stakeholders offer critical perspectives and expectations that enrich the relevance and practicality of the Vision and Mission statements. The goal is to ensure that the statements are not only aspirational but also grounded in the realities and evolving demands of the academic and professional ecosystem.

Following the collection of these inputs, a draft version of the Vision and Mission is prepared and presented for discussion and revision by the Department Academic Committee (DAC). This committee evaluates the alignment of the draft with the institutional vision, stakeholder expectations and guidelines. The DAC proposes modifications and refinements if any.

After revisions, the updated Vision and Mission statements are submitted to the Internal Quality Assurance Cell (IQAC) for review. The IQAC validates the process, checks for consistency with quality benchmarks and ensures that the statements meet institutional and accreditation standards. Based on IQAC's approval or suggestions, final adjustments are made.

The final step involves the formalization of the Vision and Mission. These finalized statements are then communicated through official institutional channels such as websites, brochures, curriculum documents and public displays within the department.

Process flowchart for framing PEOs of the Department.

The process of defining Program Educational Objectives (PEOs) in the Mechanical Engineering (ME) department is initiated by gathering inputs from three primary sources: regulatory bodies, the departments vision and mission statements and key stakeholders. Regulatory bodies such as AICTE and NBA provide essential guidelines to ensure the PEOs align with national educational standards. Simultaneously, the department's vision and mission offer internal direction, ensuring the objectives are consistent with long-term institutional goals. Stakeholders comprising faculty, students, alumni, industry representatives and employers contribute valuable insights that reflect current trends, industry expectations and societal needs. Figure 2 shows the process of framing PEOs of ME Program.

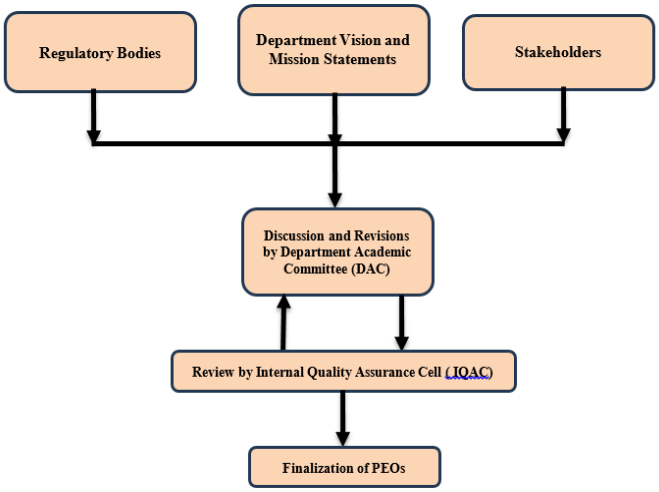


Figure 2: Process framework for framing PEOs

Using this collective input, a preliminary draft of the PEOs is developed. This draft aims to incorporate the essence of the department's strategic intentions while remaining grounded in practical relevance and future-readiness. The drafted PEOs are then presented to the Department Academic Committee (DAC) for further discussion. The DAC, comprising senior faculty, undertakes a critical review to validate the objectives. During this stage, revisions or course corrections may be recommended based on feedback, stakeholder perspectives, or evolving educational trends.

Following this internal deliberation, the revised PEOs are forwarded to the Internal Quality Assurance Cell (IQAC) for formal review. The IQAC ensures that the process followed is systematic, transparent and in line with institutional quality assurance practices. Their evaluation also confirms that the PEOs support broader academic and strategic goals, including compliance with Outcome-Based Education (OBE) principles.

Once receiving the endorsement from IQAC, the PEOs are finalized. These finalized PEOs are then published and disseminated.

1.1.4 Dissemination of Vision, Mission and PEOs (5) | Institute Marks : 5.00

The Vision, Mission, and Program Educational Objectives (PEOs) of the institution and department are disseminated through the platforms to ensure awareness among both internal and external stakeholders. These are published on the college website, displayed in departmental faculty rooms, classrooms, and laboratories and included in all official departmental documents. Faculty introduce and explain them to students at the beginning of each semester, reinforcing their relevance. The Learning Management System (MOODLE), accessed daily by faculty and students, hosts these elements on each course page. The institutional newsletter also carries the Vision, Mission and Values, further extending outreach to alumni, employers and other external stakeholders. This multi-channel approach ensures consistent communication and alignment with the institution's goals.

Sl. No.	Location	Description
1	College Website	https://hitam.org/mechanical-engineering/ (https://hitam.org/mechanical-engineering/)
2	Departmental Faculty Room	The Vision, Mission and PEOs of the department are displayed in the faculty room noticeboards.

3	Departmental Classrooms	The HOD briefs the Vision, Mission and PEOs of the department to the students at the beginning of every semester. The PEOs of the department are displayed in all classrooms.
4	Departmental Laboratories	The Vision, Mission and PEOs of the department are displayed in all labs.
5	Departmental Documents	Printed and attached in the files related to various documents in the department
6	LMS(MOODLE)	HITAM maintains MOODLE platform for sharing the course details and material with the students. All the faculty and students have access to MOODLE every day. Hence College vision, mission & values and Department vision, mission, PEOs are uploaded in the respective faculty course page of LMS.
7	Newsletter	Vision, Mission and Values of the institution are included in the Institutional News letter twice a year.

1.1.5 Mapping of PEOs with Mission (10)

Institute Marks : 10.00

PEO Statements	M1	M2	M3
Graduates will apply technical knowledge and problem-solving skills to real-world mechanical engineering challenges.	3	2	2
Graduates will work effectively in multidisciplinary and industry-linked projects.	3	3	2
Graduates will address sustainability and global challenges with responsible engineering practices.	2	2	3

There are three Mission statements and three PEOs for Mechanical Engineering program. The consistency between PEOs and Mission of the department was established by Department advisory committee in consultation with faculty members.

	Mission elements		

PEO Statements	M1: Practical problem solving	M2: Multi-Disciplinary approach	M3: Sustainability awareness
PEO1: Graduates will apply technical knowledge and problem-solving skills in mechanical engineering.	3	2	2
PEO 2: Graduates will work effectively in multidisciplinary and industry-linked projects.	3	3	2
PEO 3: Graduates will address sustainability and global challenges with responsible engineering practices.	2	2	3

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

PEO and mission element mapping Justi*fication*

PEO Statement/Mission element	Mission element	Mapping value	Justification
PEO1: Graduates will apply technical knowledge and problem-solving skills in mechanical engineering.	Practical Problem Solving	3	Developing skilled engineers is the core of this PEO. Strong technical knowledge directly contributes to producing industry-ready graduates.
	Multi-Disciplinary Approach	2	Multi-disciplinary exposure enhances adaptability and broader understanding, moderately contributing to engineering career readiness.
	Sustainability Awareness	2	Awareness of global challenges indirectly supports a broader perspective, though not central to this PEO.
	Practical Problem Solving	3	Problem-based learning and team-based hands-on projects replicate real-world engineering challenges and enhance solution-building capacity.

PEO2: Graduates will work effectively in multidisciplinary and industry-linked projects.	Multi-Disciplinary Approach	3	This PEO emphasizes cross-disciplinary teamwork, strongly aligning with the mission of multidisciplinary education.
	Sustainability Awareness	2	Solving practical problems in diverse teams often requires awareness of global and societal challenges.
Graduates will address sustainability and global challenges with responsible engineering practices.	Practical Problem Solving	2	Technical problem-solving skills support societal-focused solutions, though not always directly aimed at sustainability.
	Multi-Disciplinary Approach	2	Exposure to multiple disciplines fosters holistic thinking, moderately supporting responsible practices.
	Sustainability Awareness	3	This mission element directly aligns with the PEO's focus on global awareness and societal responsibility.

1.2 Curriculum Structure and Features (30) **Total Marks 30.00**

1.2.1 State the Process for Developing/Revising the Program Curriculum (10) Institute Marks : 10.00

The curriculum development or revision process begins with a Gap Analysis that considers existing course offerings considering expected Graduate Attributes, industry requirements, emerging technologies and accreditation standards such as those from NBA. This step identifies the gaps in the current curriculum and suggests directions for improvement. The outcome of the analysis informs the next stage of action.

Once gaps are identified, the proposed changes are reviewed by the Department Academic Committee (DAC). The DAC, comprising senior faculty members and subject experts, discusses the findings and provides direction for curriculum enhancement. Based on this input, the Detailed Course Structure is prepared, which outlines the number of credits, course distribution across semesters and integration of new modules if necessary.

Following this, a draft syllabus for each course is developed with the involvement of subject experts. These experts bring in domain-specific insights to ensure that the proposed syllabus is appropriate, up-to-date and relevant. Once the syllabus is drafted, it is presented in a Pre-Board of Studies (Pre-BoS) meeting for preliminary evaluation. This meeting provides an opportunity to suggest modifications or enhancements before the formal review.

If the Pre-BoS committee suggests changes, the draft undergoes modifications. Otherwise, if accepted, the curriculum progresses to the Board of Studies (BoS) for official review. The BoS, comprising internal and external academic and industry members, evaluates the curriculum thoroughly. If approved, the curriculum is forwarded to the Academic Council (AC) for final ratification.

After obtaining final approval by the Academic Council, the revised or newly developed curriculum is ready for implementation. The institution then proceeds to communicate these changes to faculty, update course documents and initiate delivery in the academic calendar.

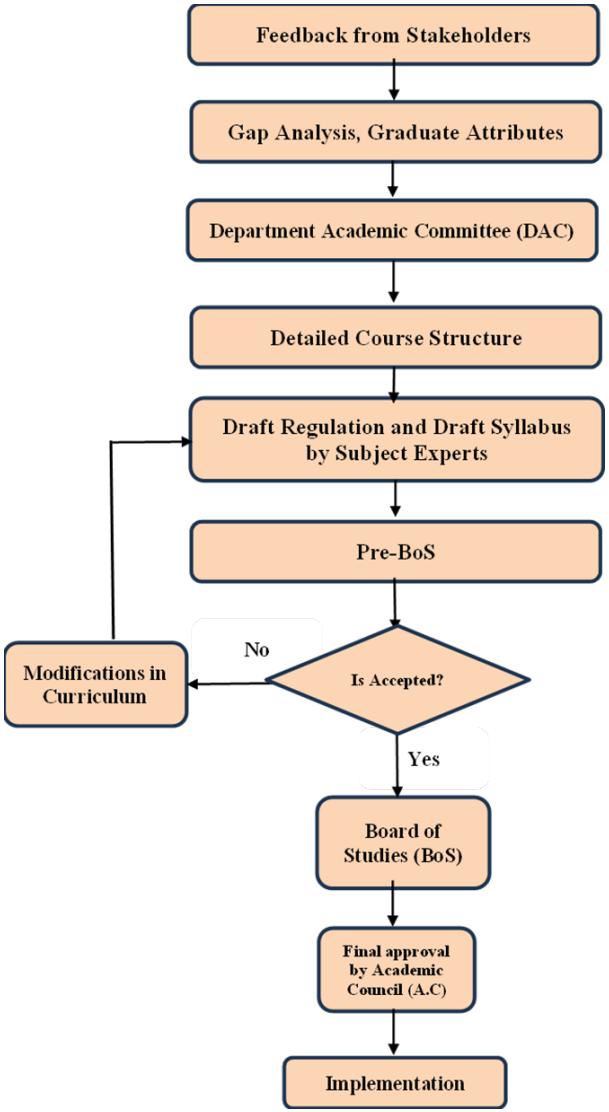


Figure. 3. Curriculum design process flow chart.

1.2.2 Curriculum Structure (10)	Institute Marks : 10.00

					Term Work (TW) and		

ID	Course Code	Course Title	Classroom Instruction (CI) (in hours per semester)		Lab Instruction (LI) (in hours per semester)	Self Learning (SL) (TW+ SL) (in hours per semester)	Total no. of Hours per semester	Total Credits (C)* (Total Hours/30)
			L	T	P	SL		
1	21BS1MT01	Matrix Algebra and Calculus	48	16	0	56	120	4.00

1.2.3 Components of Curriculum (5) Institute Marks : 5.00

Course Components	Curriculum Content (% of total number of credits of the program)	Total number of contact hours	Total number of credits
Basic Sciences	12.5	320.00	20.00
Basic Engineering	13.13	336.00	21.00
Humanities and Social Sc	6.25	160.00	10.00
Program Core	35.63	912.00	57.00
Program Electives	11.25	288.00	18.00
Open Electives	7.5	192.00	12.00
Project(s)	8.13	208.00	13.00
Internships/Seminars	5.63	144.00	9.00
Any other (Please specify	0	0.00	0.00
Total number of Credits			**160.00**

1.2.4 Strategies for Education Reforms (5) Institute Marks : 5.00

HITAM strives to offer engineering education by embedding experiential learning, interdisciplinary engagement and real-world relevance into its academic practices. The institute adopts strategies to ensure that students are equipped with domain-specific knowledge and develop the ability to work across disciplines, think critically and contribute meaningfully to society.

1. Unnat Bharat Abhiyan (UBA): Connecting Classroom with Community

Through its participation in Unnat Bharat Abhiyan, HITAM has adopted nearby villages and engages faculty and students in identifying local challenges during field visits. These interactions offer firsthand exposure to real-world problems, allowing students to explore technological and social interventions through interdisciplinary collaboration. The insights gained are translated into project-based learning, embedding relevance and responsibility into the academic journey.

2. APAAR and Academic Bank of Credits (ABC): Flexible and Connected Learning

To facilitate student mobility and academic flexibility, HITAM has implemented the APAAR ID system and enabled credit recording in alignment with the Academic Bank of Credits (ABC). Awareness sessions, detailed demonstrations, and faculty mentoring helped students complete their registration. These systems enhance student autonomy and support diverse learning pathways, encouraging participation in courses beyond traditional disciplinary boundaries.

3. Indian Knowledge Systems (IKS): Enriching the Curriculum with Cultural Insight

HITAM has introduced the Indian Knowledge Systems (IKS) course into the undergraduate curriculum to offer students a broader perspective on knowledge traditions. With themes spanning mathematics, metallurgy, architecture, linguistics, and environmental practices, IKS encourages interdisciplinary thinking and critical reflection. Faculty are encouraged to use experiential pedagogies such as case studies, mini-projects, and reflective assignments. A dedicated library section supports further inquiry into indigenous knowledge systems.

4. Grand Challenges Scholars Program (GCSP): Integrated Learning for Global Impact

As the first institution in Telangana recognized under the GCSP, HITAM integrates five key dimensions into the student experience: research, entrepreneurship, global exposure, interdisciplinary learning, and service. Students engage in long-term projects that require combining technical knowledge with an understanding of economic, social, and environmental factors. The program supports holistic development and prepares students to address contemporary challenges with creativity and purpose.

5. Aalborg-Inspired PBL Model: Faculty Empowerment for Pedagogical Change

To strengthen PBL practices, HITAM draws on the globally recognized Aalborg model of PBL, adapted to suit local needs. Faculty members receive structured training to implement PBL effectively, focusing on facilitation, problem design, and reflective assessment. This has led to a gradual shift in the teaching-learning culture—from instruction-led delivery to facilitated exploration and problem-solving.

HITAM has made Problem-Based Learning (PBL) a core instructional approach across its engineering programs. Students work in small teams to solve complex, real-world problems by integrating knowledge from multiple subjects. This model fosters self-directed learning, critical thinking, and collaboration, while enhancing students' ability to apply classroom knowledge to practical contexts. PBL is systematically embedded in course design, instructional methods, and assessment patterns across all years of study.

6. EPICS: Engineering for Social Impact

Through Engineering Projects in Community Service (EPICS), HITAM offers students an opportunity to work on interdisciplinary, socially relevant projects. Teams of students design solutions for challenges in areas like sanitation, education, healthcare, and sustainability. EPICS reinforces the importance of empathetic engineering, while also building skills in project management, teamwork, and ethical decision-making.

HITAM's educational strategy focuses on preparing students to thrive in real-world environments. Through initiatives like UBA, APAAR, IKS, GCSP, PBL, and EPICS, the institute integrates experiential and interdisciplinary learning into its curriculum and pedagogy. These efforts reflect HITAM's commitment to producing engineers who are technically proficient, socially responsible, globally aware and capable of innovating for meaningful impact.

1.3 PO, PSO and their Mapping with Courses (20) — **Total Marks 20.00**

1.3.1 POs and PSOs (5) :

PSO1	Identify, construct and translate engineering problems in design, thermal and production streams.
PSO2	Design and develop an energy efficient system in all engineering and interdisciplinary fields to meet the present challenges of industry and society.

1.3.2 Mapping between the Courses and POs/PSOs (15) — Institute Marks : 15.00

	PO:

PO Number	List of Courses
PO1	21BS1MT01 - Matrix Algebra and Calculus 21BS1PH03 - Engineering Physics 21ES1CS01 - Problem Solving using C 21BS1PH04 - Engineering Physics Lab 21ES1CS02 - Problem Solving using C-Lab 21AC1ME02 - Engineering Projects in Community Services 21BS2MT02 - Advanced Calculus for Engineers 21BS2CH01 - Engineering-Chemistry 21ES2ME01 - Engineering Graphics 21BS2CH02 - Engineering Chemistry Lab 21ES2ME02 - Engineering Prototyping Lab 21ES3EE01 - Basic Electrical & Electronics Engineering 21PC3ME01 - Mechanics of Solids 21PC3ME02 - Thermodynamics 21PC3ME03 - Material Science & Metallurgy 21PC3ME04 - Production Technology 21PC3ME05 - Material Science & Mechanics of Solids Lab 21PC3ME06 - Production Technology Lab 21ES3EE02 - Basic Electrical & Electronics Engineering Lab 21PC4ME07 - Kinematics of Machinery 21PC4ME08 - Thermal Engineering-I 21PC4ME09 - Fluid Mechanics & Hydraulic Machinery 21PC4ME10 - Machine Drawing Practice 21PC4ME11 - Fluid Mechanics & Hydraulic Machinery Lab 21PR4ME01 - Doing Engineering-1 21PC5ME12 - Dynamics of Machinery 21PC5ME13 - Thermal Engineering-II 21PC5ME14 - Metrology & Machine Tools 21PC5ME15 - Design of Machine Members-I 21PE5ME11 - Operations Research 21OE5ME01 - Hybrid&ElectricVehicles 21PC5ME16 - Thermal Engineering Lab 21PC5ME17 - Metrology & Machine Tools Lab 21PC5ME18 - Kinematics & Dynamics Lab 21PR5IN02 - Internship-2 21PC6ME19 - Design of Machine Members-II 21PC6ME20 - Heat Transfer 21PC6ME21 - CAD/CAM 21PC6ME22 - Machining Science 21PE6ME21 - Unconventional Machining Processes 21OE6ME02 - TOTAL QUALITY MANAGEMENT & SIX SIGMA APPLICATIONS 21PC6ME23 - Heat Transfer Lab 21PC6ME24 - Computer Aided Engineering and Manufacturing Lab 21PR5ME02 - Doing Engineering-2 21PE7ME32 - Automation in Manufacturing 21HS7MB02 - Fundamentals of Engineering Management 21PE7ME41 - Power Plant Engineering 21PC7ME25 - Instrumentation & Control Systems 21OE7HS03 - Smart Materials 21PC7ME26 - Instrumentation & Control Systems Lab 21PR7IN03 - Doing Engineering-3 (MINI PROJ/Internship) 21PE8ME52 - Turbo Machinery 21PE8ME61 - Production Operations and Management 21OE8EE04 - Fundamentals of Additive Manufacturing
PO2	21BS1MT01 - Matrix Algebra and Calculus 21ES1CS01 - Problem Solving using C 21AC1ME02 - Engineering Projects in Community Services 21BS2MT02 - Advanced Calculus for Engineers 21ES2ME01 - Engineering Graphics 21ES2ME02 - Engineering Prototyping Lab 21ES3EE01 - Basic Electrical & Electronics Engineering 21PC3ME01 - Mechanics of Solids 21PC3ME02 - Thermodynamics 21PC3ME03 - Material Science & Metallurgy 21PC3ME04 - Production Technology 21HS3EG04 - English for Employability-Lab 21PC3ME05 - Material Science & Mechanics of Solids Lab 21PC3ME06 - Production Technology Lab 21ES3EE02 - Basic Electrical & Electronics Engineering Lab 21PC4ME07 - Kinematics of Machinery 21PC4ME08 - Thermal Engineering-I 21PC4ME09 - Fluid Mechanics & Hydraulic Machinery 21PC4ME11 - Fluid Mechanics & Hydraulic Machinery Lab 21ES4CS04 - Python Programming Lab 21PR4ME01 - Doing Engineering-1 21PC5ME12 - Dynamics of Machinery 21PC5ME13 - Thermal Engineering-II 21PC5ME14 - Metrology & Machine Tools 21PC5ME15 - Design of Machine Members-I 21PE5ME11 - Operations Research 21OE5ME01 - Hybrid&ElectricVehicles 21PC5ME16 - Thermal Engineering Lab 21PC5ME17 - Metrology & Machine Tools Lab 21PC5ME18 - Kinematics & Dynamics Lab 21PR5IN02 - Internship-2 21PC6ME19 - Design of Machine Members-II 21PC6ME20 - Heat Transfer 21PC6ME21 - CAD/CAM 21PC6ME22 - Machining Science 21PE6ME21 - Unconventional Machining Processes 21OE6ME02 - TOTAL QUALITY MANAGEMENT & SIX SIGMA APPLICATIONS 21PC6ME23 - Heat Transfer Lab 21PC6ME24 - Computer Aided Engineering and Manufacturing Lab 21PR5ME02 - Doing Engineering-2 21PE7ME32 - Automation in Manufacturing 21PE7ME41 - Power Plant Engineering 21PC7ME25 - Instrumentation & Control Systems 21OE7HS03 - Smart Materials 21PC7ME26 - Instrumentation & Control Systems Lab 21PR7IN03 - Doing Engineering-3 (MINI PROJ/Internship) 21PE8ME52 - Turbo Machinery 21PE8ME61 - Production Operations and Management 21OE8EE04 - Fundamentals of Additive Manufacturing
PO3	21ES1CS01 - Problem Solving using C 21ES1CS02 - Problem Solving using C-Lab 21AC1ME02 - Engineering Projects in Community Services 21ES2ME02 - Engineering Prototyping Lab 21PC3ME01 - Mechanics of Solids 21PC3ME03 - Material Science & Metallurgy 21PC3ME05 - Material Science & Mechanics of Solids Lab 21PC4ME07 - Kinematics of Machinery 21PC4ME08 - Thermal Engineering-I 21ES4CS03 - Python Programming 21ES4CS04 - Python Programming Lab 21PC5ME12 - Dynamics of Machinery 21PC5ME13 - Thermal Engineering-II 21PC5ME15 - Design of Machine Members-I 21PE5ME11 - Operations Research 21PC5ME16 - Thermal Engineering Lab 21PR5IN02 - Internship-2 21PC6ME19 - Design of Machine Members-II 21PC6ME20 - Heat Transfer 21PC6ME21 - CAD/CAM 21PC6ME22 - Machining Science 21OE6ME02 - TOTAL QUALITY MANAGEMENT & SIX SIGMA APPLICATIONS 21PC6ME23 - Heat Transfer Lab 21PE7ME32 - Automation in Manufacturing 21OE7HS03 - Smart Materials 21OE8EE04 - Fundamentals of Additive Manufacturing

PO4	21AC1ME02 - Engineering Projects in Community Services 21ES2ME02 - Engineering Prototyping Lab 21PC3ME02 - Thermodynamics 21PC5ME13 - Thermal Engineering-II 21PE5ME11 - Operations Research 21PC5ME16 - Thermal Engineering Lab 21PC6ME20 - Heat Transfer 21PC6ME22 - Machining Science 21PC6ME23 - Heat Transfer Lab 21PE7ME32 - Automation in Manufacturing 21PC7ME25 - Instrumentation & Control Systems 21OE7HS03 - Smart Materials 21PC7ME26 - Instrumentation & Control Systems Lab 21PE8ME52 - Turbo Machinery
PO5	21BS1MT01 - Matrix Algebra and Calculus 21ES1CS01 - Problem Solving using C 21ES1CS02 - Problem Solving using C-Lab 21BS2MT02 - Advanced Calculus for Engineers 21ES2ME02 - Engineering Prototyping Lab 21PC3ME04 - Production Technology 21PC3ME06 - Production Technology Lab 21ES4CS03 - Python Programming 21PC4ME10 - Machine Drawing Practice 21ES4CS04 - Python Programming Lab 21PR4ME01 - Doing Engineering-1 21PC5ME15 - Design of Machine Members-I 21PR5IN02 - Internship-2 21PC6ME19 - Design of Machine Members-II 21PC6ME21 - CAD/CAM 21PC6ME22 - Machining Science 21PC6ME23 - Heat Transfer Lab 21PC6ME24 - Computer Aided Engineering and Manufacturing Lab 21PR5ME02 - Doing Engineering-2 21PC7ME25 - Instrumentation & Control Systems 21PC7ME26 - Instrumentation & Control Systems Lab 21PR7IN03 - Doing Engineering-3 (MINI PROJ/Internship) 21OE8EE04 - Fundamentals of Additive Manufacturing
PO6	21AC1ME02 - Engineering Projects in Community Services 21PC3ME03 - Material Science & Metallurgy 21PC3ME04 - Production Technology 21PC3ME05 - Material Science & Mechanics of Solids Lab 21PC3ME06 - Production Technology Lab 21PC4ME07 - Kinematics of Machinery 21PC5ME17 - Metrology & Machine Tools Lab 21PC7ME25 - Instrumentation & Control Systems
PO7	21PC3ME03 - Material Science & Metallurgy 21PC3ME05 - Material Science & Mechanics of Solids Lab 21PC4ME07 - Kinematics of Machinery 21PC6ME22 - Machining Science 21PE8ME61 - Production Operations and Management
PO8	21AC1ME02 - Engineering Projects in Community Services 21HS3EG03 - English for Employability 21OE6ME02 - TOTAL QUALITY MANAGEMENT & SIX SIGMA APPLICATIONS
PO9	21HS1EG01 - English 21HS1EG02 - English Language Communication Skills Lab 21AC1ME02 - Engineering Projects in Community Services 21HS3EG03 - English for Employability 21HS3EG04 - English for Employability-Lab 21PC4ME10 - Machine Drawing Practice 21PR4ME01 - Doing Engineering-1 21OE6ME02 - TOTAL QUALITY MANAGEMENT & SIX SIGMA APPLICATIONS 21HS6EG05 - Advanced English Communication Skills-Lab 21PR5ME02 - Doing Engineering-2 21PR7IN03 - Doing Engineering-3 (MINI PROJ/Internship)
PO10	21HS1EG01 - English 21HS1EG02 - English Language Communication Skills Lab 21AC1ME02 - Engineering Projects in Community Services 21HS3EG03 - English for Employability 21HS3EG04 - English for Employability-Lab 21PR4ME01 - Doing Engineering-1 21OE6ME02 - TOTAL QUALITY MANAGEMENT & SIX SIGMA APPLICATIONS 21HS6EG05 - Advanced English Communication Skills-Lab 21PR5ME02 - Doing Engineering-2 21PR7IN03 - Doing Engineering-3 (MINI PROJ/Internship) 21PE8ME61 - Production Operations and Management
PO11	21HS1MB01 - Business Economics and Financial Analysis 21AC1ME02 - Engineering Projects in Community Services 21OE6ME02 - TOTAL QUALITY MANAGEMENT & SIX SIGMA APPLICATIONS 21PE8ME61 - Production Operations and Management

PSO:

PO Number	List of Courses

PSO1	21ES3EE01 - Basic Electrical & Electronics Engineering 21PC3ME01 - Mechanics of Solids 21PC3ME02 - Thermodynamics 21PC3ME03 - Material Science & Metallurgy 21PC3ME04 - Production Technology 21HS3EG03 - English for Employability 21HS3EG04 - English for Employability-Lab 21PC3ME05 - Material Science & Mechanics of Solids Lab 21PC3ME06 - Production Technology Lab 21ES3EE02 - Basic Electrical & Electronics Engineering Lab 21ES4MT07 - Statistical Methods and Complex Variables 21PC4ME07 - Kinematics of Machinery 21PC4ME08 - Thermal Engineering-I 21ES4CS03 - Python Programming 21PC4ME09 - Fluid Mechanics & Hydraulic Machinery 21PC4ME10 - Machine Drawing Practice 21PC4ME11 - Fluid Mechanics & Hydraulic Machinery Lab 21ES4CS04 - Python Programming Lab 21PR4ME01 - Doing Engineering-1 21PC5ME12 - Dynamics of Machinery 21PC5ME13 - Thermal Engineering-II 21PC5ME14 - Metrology & Machine Tools 21PC5ME15 - Design of Machine Members-I 21PE5ME11 - Operations Research 21OE5ME01 - Hybrid&ElectricVehicles 21PC5ME16 - Thermal Engineering Lab 21PC5ME17 - Metrology & Machine Tools Lab 21PC5ME18 - Kinematics & Dynamics Lab 21PR5IN02 - Internship-2 21PC6ME19 - Design of Machine Members-II 21PC6ME20 - Heat Transfer 21PC6ME21 - CAD/CAM 21PC6ME22 - Machining Science 21PE6ME21 - Unconventional Machining Processes 21OE6ME02 - TOTAL QUALITY MANAGEMENT & SIX SIGMA APPLICATIONS 21PC6ME23 - Heat Transfer Lab 21PC6ME24 - Computer Aided Engineering and Manufacturing Lab 21HS6EG05 - Advanced English Communication Skills-Lab 21PR5ME02 - Doing Engineering-2 21PE7ME32 - Automation in Manufacturing 21HS7MB02 - Fundamentals of Engineering Management 21PE7ME41 - Power Plant Engineering 21PC7ME25 - Instrumentation & Control Systems 21OE7HS03 - Smart Materials 21PC7ME26 - Instrumentation & Control Systems Lab 21PR7IN03 - Doing Engineering-3 (MINI PROJ/Internship) 21PE8ME52 - Turbo Machinery 21PE8ME61 - Production Operations and Management 21OE8EE04 - Fundamentals of Additive Manufacturing
PSO2	21ES3EE01 - Basic Electrical & Electronics Engineering 21PC3ME01 - Mechanics of Solids 21PC3ME02 - Thermodynamics 21PC3ME03 - Material Science & Metallurgy 21PC3ME04 - Production Technology 21HS3EG03 - English for Employability 21HS3EG04 - English for Employability-Lab 21PC3ME05 - Material Science & Mechanics of Solids Lab 21PC3ME06 - Production Technology Lab 21ES3EE02 - Basic Electrical & Electronics Engineering Lab 21ES4MT07 - Statistical Methods and Complex Variables 21PC4ME07 - Kinematics of Machinery 21PC4ME08 - Thermal Engineering-I 21ES4CS03 - Python Programming 21PC4ME09 - Fluid Mechanics & Hydraulic Machinery 21PC4ME10 - Machine Drawing Practice 21PC4ME11 - Fluid Mechanics & Hydraulic Machinery Lab 21ES4CS04 - Python Programming Lab 21PR4ME01 - Doing Engineering-1 21PC5ME12 - Dynamics of Machinery 21PC5ME13 - Thermal Engineering-II 21PC5ME14 - Metrology & Machine Tools 21PC5ME15 - Design of Machine Members-I 21PE5ME11 - Operations Research 21OE5ME01 - Hybrid&ElectricVehicles 21PC5ME16 - Thermal Engineering Lab 21PC5ME17 - Metrology & Machine Tools Lab 21PC5ME18 - Kinematics & Dynamics Lab 21PR5IN02 - Internship-2 21PC6ME19 - Design of Machine Members-II 21PC6ME20 - Heat Transfer 21PC6ME21 - CAD/CAM 21PC6ME22 - Machining Science 21PE6ME21 - Unconventional Machining Processes 21OE6ME02 - TOTAL QUALITY MANAGEMENT & SIX SIGMA APPLICATIONS 21PC6ME23 - Heat Transfer Lab 21PC6ME24 - Computer Aided Engineering and Manufacturing Lab 21HS6EG05 - Advanced English Communication Skills-Lab 21PR5ME02 - Doing Engineering-2 21PE7ME32 - Automation in Manufacturing 21HS7MB02 - Fundamentals of Engineering Management 21PE7ME41 - Power Plant Engineering 21PC7ME25 - Instrumentation & Control Systems 21OE7HS03 - Smart Materials 21PC7ME26 - Instrumentation & Control Systems Lab 21PR7IN03 - Doing Engineering-3 (MINI PROJ/Internship) 21PE8ME52 - Turbo Machinery 21PE8ME61 - Production Operations and Management 21OE8EE04 - Fundamentals of Additive Manufacturing

1.4 Course Outcomes and Course Articulation Matrix (30) — **Total Marks 30.00**

1.4.1 Course Outcome (Semester Wise) (15) — Institute Marks : 15.00

No. of Core Courses : 10	**C2 :** 4	**C3 :** 4	**C4 :** 2

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

Course Code :	**21PC3ME01**	**Semester :**	**3**

Course Outcome	Statements
21PC3ME01.1	Apply the concept of stress and strain to analyze various types of structures
21PC3ME01.2	Determine the distribution of shear force, bending moment and transverse shear stress along the loaded beam
21PC3ME01.3	Analyze shaft under torsional load and various structural elements subjected to combine stresses/combined loads
21PC3ME01.4	Determine the deflections and slope of loaded flexural members and columns

Course Code :	21PC3ME03	Semester :	3

Course Outcome	Statements
21PC3ME03.1	Explain basic concepts of crystal structures and their imperfections
21PC3ME03.2	Interpret various phases present in the binary phase diagrams of alloys and comment on the microstructural development
21PC3ME03.3	Recommend a heat treatment processes for the desired changes in properties
21PC3ME03.4	Differentiate ferrous and non-ferrous alloys

Course Code :	21PC4ME07	Semester :	4

Course Outcome	Statements
21PC4ME07.1	Designing a suitable mechanism depending on application
21PC4ME07.2	Analyze velocity and acceleration of different mechanisms using graphical methods
21PC4ME07.3	Analyze displacement diagrams and cam profile diagram for followers executing different types of motions and various configurations of followers
21PC4ME07.4	Analyze gear and gear train depending on application

Course Code :	21PC4ME08	Semester :	4

Course Outcome	Statements
21PC4ME08.1	Identify various types of flows and formulate their governing equations
21PC4ME08.2	Analyze the losses in pipe flows with the concepts of flow through pipes
21PC4ME08.3	Evaluate hydrodynamic forces of jet striking different vanes from various angles
21PC4ME08.4	Design the working proportions of hydraulic turbines and pumps

Course Code :	21PC5ME14	Semester :	5

Course Outcome	Statements
21PC5ME14.1	Identify techniques to minimize the errors in measurement
21PC5ME14.2	Identify methods and devices for measurement of length, angle, gear & thread parameters, surface roughness and geometric features of parts
21PC5ME14.3	Understand working of lathe, shaper, planer, drilling, milling and grinding machines.
21PC5ME14.4	Comprehend speed and feed mechanisms of machine tools.

Course Code :	21PC5ME15	Semester :	5

Course Outcome	Statements
21PC5ME15.1	Explain the principles of design, material selection, component behavior subjected to loads, and criteria of failure.
21PC5ME15.2	Apply the knowledge of principal stresses, machine members' stress concentration, and fatigue loading
21PC5ME15.3	Analyze the stresses produced in welded and riveted joints.
21PC5ME15.4	Design different fasteners, joints, keys, shafts and couplings

Course Code :	21PC6ME19	Semester :	6

Course Outcome	Statements
21PC6ME19.1	Design journal bearing by using different empirical relations
21PC6ME19.2	Optimize the life of rolling element bearings and their selection for given service conditions.
21PC6ME19.3	Design the connecting rod, piston and gears.
21PC6ME19.4	Solve the design problems on spring, belt and rope

Course Code :	21PC6ME20	Semester :	6

Course Outcome	Statements
21PC6ME20.1	Analyze the modes of heat transfer

21PC6ME20.2	Derive relation for different modes of heat transfer
21PC6ME20.3	Perform thermal circuit analysis for practical engineering problems by using heat transfer concepts.
21PC6ME20.4	Analyze and design heat exchangers.

Course Code :	**21PE7ME31**	**Semester :**	**7**

Course Outcome	**Statements**
21PE7ME31.1	Describe various cad issues for 3d printing and rapid prototyping and related operations for stl model manipulation
21PE7ME31.2	Solve typical problems on reverse engineering for surface reconstruction from physical prototype models through digitizing mesh models through topological modelling and spline-based surface fitting, subdivision surface fitting
21PE7ME31.3	Explain about the principles and key characteristics of additive manufacturing technologies and commonly used 3d printing and additive manufacturing systems
21PE7ME31.4	Summarize typical rapid tooling processes for quick batch production of plastic and metal parts

Course Code :	**21PC7ME25**	**Semester :**	**7**

Course Outcome	**Statements**
21PC7ME25.1	To explain various elements and their purpose in typical instruments.
21PC7ME25.2	To evaluate various errors and correction factor that would occur in instruments.
21PC7ME25.3	To classify static and dynamic characteristics of an instruments.
21PC7ME25.4	To identify the specific transducer as per loading response time for given range of displacement.

1.4.2 Course Articulation Matrix (15) :

1 . course name : C221PC3ME01

Course	**Statements**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
C221PC3ME0	Apply the c	3	2	2	-	-	-	-	-	-	-	-
C221PC3ME0	Determine t	3	2	2	-	-	-	-	-	-	-	-
C221PC3ME0	Analyze sha	3	2	2	-	-	-	-	-	-	-	-

C221PC3ME0	Determine t	3	2	2	-	-	-	-	-	-	-	-
Average		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2 . course name : C221PC3ME03

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C221PC3ME0:	Explain bas	3	2	2	-	-	2	2	-	-	-	-
C221PC3ME0:	Interpret va	3	2	2	-	-	2	2	-	-	-	-
C221PC3ME0:	Recommen	3	2	2	-	-	2	2	-	-	-	-
C221PC3ME0:	Differentiat	3	2	-	-	-	2	2	-	-	-	-
Average		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3 . course name : C221PC4ME07

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C221PC4ME0	Designing a	3	2	2	-	-	-	-	-	-	-	-
C221PC4ME0	Analyze vel	3	2	2	-	-	-	-	-	-	-	-
C221PC4ME0	Analyze dis	3	2	2	-	-	-	-	-	-	-	-
C221PC4ME0	Analyze gea	3	2	2	-	-	-	-	-	-	-	-
Average		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4 . course name : C221PC4ME08

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C221PC4ME0:	Identify vari	2	3	-	-	-	2	2	-	-	-	-
C221PC4ME0:	Analyze the	3	3	-	-	-	-	-	-	-	-	-
C221PC4ME0:	Evaluate hy	3	3	-	-	-	-	-	-	-	-	-
C221PC4ME0:	Design the	1	3	-	-	-	-	-	-	-	-	-
Average		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

5 . course name : C321PC5ME14

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C321PC5ME1	Identify tec	3	3	-	-	-	-	-	-	-	-	-
C321PC5ME1	Identify me	3	3	-	-	-	-	-	-	-	-	-
C321PC5ME1	Understanc	3	2	-	-	-	-	-	-	-	-	-
C321PC5ME1	Compreher	3	3	-	-	-	-	-	-	-	-	-
Average		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

6 . course name : C321PC5ME15

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C321PC5ME1	Explain the	3	2	2	-	-	-	-	-	-	-	-
C321PC5ME1	Apply the k	3	2	2	-	-	-	-	-	-	-	-
C321PC5ME1	Analyze the	3	2	2	-	1	-	-	-	-	-	-
C321PC5ME1	Design diffe	3	2	2	-	1	-	-	-	-	-	-
Average		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7 . course name : C321PC6ME19

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C321PC6ME1	Design jour	3	2	2	-	-	-	-	-	-	-	-
C321PC6ME1	Optimize th	3	2	2	-	-	-	-	-	-	-	-
C321PC6ME1	Design the	3	2	2	-	-	-	-	-	-	-	-
C321PC6ME1	Solve the d	3	2	2	-	-	-	-	-	-	-	-
Average		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

8 . course name : C321PC6ME20

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C321PC6ME2	Analyze the	3	3	-	-	-	-	-	-	-	-	-

C321PC6ME2(	Derive relat	3	3	-	-	-	-	-	-	-	-	-
C321PC6ME2(	Perform the	3	3	1	-	-	-	-	-	-	-	-
C321PC6ME2(	Analyze an(	3	3	1	-	-	-	-	-	-	-	-
Average		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

9 . course name : C421PE7ME31

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C421PE7ME3'	Describe va	2	2	-	-	-	-	-	-	-	-	-
C421PE7ME3'	Solve typic:	3	3	2	-	3	-	-	-	-	-	-
C421PE7ME3'	Explain abc	2	2	1	-	-	-	-	-	-	-	-
C421PE7ME3'	Summarize	1	2	-	-	-	-	-	-	-	-	-
Average		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

10 . course name : C421PC7ME25

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C421PC7ME2:	To explain \	3	-	-	2	-	1	-	-	-	-	-
C421PC7ME2:	To evaluate	-	3	-	1	2	-	-	-	-	-	-
C421PC7ME2:	To classify :	3	-	-	-	1	2	-	-	-	-	-
C421PC7ME2:	To identify t	3	-	-	2	-	1	-	-	-	-	-
Average		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

1 . Course Name : C221PC3ME01

Course	PSO1	PSO2
C221PC3ME0'	1	-
C221PC3ME0'	1	-
C221PC3ME0'	1	-
C221PC3ME0'	1	-
Average	**0.00**	**0.00**

2 . Course Name : C221PC3ME03

Course	PSO1	PSO2
C221PC3ME0	2	-
C221PC3ME0	2	-
C221PC3ME0	2	-
C221PC3ME0	2	-
Average	**0.00**	**0.00**

3 . Course Name : C221PC4ME07

Course	PSO1	PSO2
C221PC4ME0	2	-
C221PC4ME0	2	-
C221PC4ME0	2	-
C221PC4ME0	2	-
Average	**0.00**	**0.00**

4 . Course Name : C221PC4ME08

Course	PSO1	PSO2
C221PC4ME0	3	3
C221PC4ME0	3	-
C221PC4ME0	3	-
C221PC4ME0	3	-
Average	**0.00**	**0.00**

5 . Course Name : C321PC5ME14

Course	PSO1	PSO2

C321PC5ME1	3	2
C321PC5ME1	2	-
C321PC5ME1	3	3
C321PC5ME1	3	-
Average	**0.00**	**0.00**

6 . Course Name : C321PC5ME15

Course	PSO1	PSO2
C321PC5ME1	Select	Select
C321PC5ME1	Select	Select
C321PC5ME1	Select	Select
C321PC5ME1	Select	Select

7 . Course Name : C321PC6ME19

Course	PSO1	PSO2
C321PC6ME1	2	-
C321PC6ME1	2	-
C321PC6ME1	2	-
C321PC6ME1	2	-
Average	**0.00**	**0.00**

8 . Course Name : C321PC6ME20

Course	PSO1	PSO2
C321PC6ME2	3	-
C321PC6ME2	3	-
C321PC6ME2	3	1
C321PC6ME2	3	2

Average	**0.00**	**0.00**

9 . Course Name : C421PE7ME31

Course	PSO1	PSO2
C421PE7ME3	3	-
C421PE7ME3	3	3
C421PE7ME3	3	3
C421PE7ME3	3	3
Average	**0.00**	**0.00**

10 . Course Name : C421PC7ME25

Course	PSO1	PSO2
C421PC7ME2	1	2
C421PC7ME2	3	2
C421PC7ME2	1	2
C421PC7ME2	3	2
Average	**0.00**	**0.00**

1.5 Program Articulation Matrix (5) Total Marks 5.00

Program Articulation Matrix :

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
21BS1MT01	3	2			1						
21BS1PH03	3										
21HS1EG01									2	2	
21ES1CS01	3	1	2		2						
21HS1MB01											2

21BS1PH04	3										
21HS1EG02									2	2	
21ES1CS02	3		2		2						
21AC1ME02	2	2	2	2		3		3	3	2	1
21BS2MT02	3	2			1						
21BS2CH01	3										
21ES2ME01	3	2									
21ES2ME03	3	3	2	3							
21BS2CH02	3										
21ES2EE05	3	3			2						
21ES2ME02	3	1	1	1	3						
21ES3EE01	2	2									
21PC3ME01	3	3	2								
21PC3ME02	3	2		2							
21PC3ME03	3	2	2			2	2				
21PC3ME04	3	2			2	2					
21HS3EG03								3	2	3	
21HS3EG04		3							2	3	
21PC3ME05	3	2	2			2	2				
21PC3ME06	3	3			2	2					
21ES3EE02	2	3									
21ES4MT07	3	2	2			2	2				
21PC4ME07	3	2	2			2	2				
21PC4ME08	2	3	2								
21ES4CS03			2		2						
21PC4ME09	3	2									
21PC4ME10	3				3				3		
21PC4ME11	3	2									
21ES4CS04		1	1		2						

21PR4ME01	3	2			3				3	3	
21PC5ME12	3	3	3								
21PC5ME13	3	3	2	2							
21PC5ME14	3	3									
21PC5ME15	3	2	2								
21PE5ME11	3	3	3	3							
21OE5ME01	3	1									
21PC5ME16	3	3	1	2							
21PC5ME17	3	3				2					
21PC5ME18	3	2									
21PR5IN02	3	3	2		2						
21PC6ME19	3	2	2		1						
21PC6ME20	3	3	2	1							
21PC6ME21	3	3	2		3						
21PC6ME22	2	2	1	2	1		1				
21PE6ME21	3	2									
21OE6ME02	3	2	2					1	2	2	2
21PC6ME23	3	2	2	1	3						
21PC6ME24	3	2			3						
21HS6EG05									2	2	
21PR5ME02	3	2			3				3	3	
21PE7ME32	2	2	2	2							
21HS7MB02	2										
21PE7ME41	3	3									
21PC7ME25	3	3		2	2	1					
21OE7HS03	2	2	2	1							
21PC7ME26	3	2		2	2						
21PR7IN03	3	2			3				3	3	
21PE8ME52	3	3		2							

21PE8ME61	3	2					2			2	2
21OE8EE04	2	2	2		3						

Course Code	PSO1	PSO2
21AC1ME02		
21BS1MT01		
21BS1PH03		
21BS1PH04		
21BS2CH01		
21BS2CH02		
21BS2MT02		
21ES1CS01		
21ES1CS02		
21ES2EE05		
21ES2ME01	2	
21ES2ME02		
21ES2ME03	2	
21ES3EE01	1	1
21ES3EE02	2	2
21ES4CS03	1	1
21ES4CS04	1	1
21ES4MT07	2	2
21HS1EG01		
21HS1EG02		
21HS1MB01		
21HS3EG03	1	1
21HS3EG04	1	1
21HS6EG05	1	1
21HS7MB02	1	1

21OE5ME01	2	2
21OE6ME02	1	1
21OE7HS03	3	3
21OE8EE04	2	2
21PC3ME01	3	2
21PC3ME02	3	3
21PC3ME03	2	1
21PC3ME04	2	2
21PC3ME05	2	1
21PC3ME06	2	2
21PC4ME07	3	2
21PC4ME08	2	3
21PC4ME09	2	2
21PC4ME10	3	3
21PC4ME11	2	2
21PC5ME12	3	3
21PC5ME13	2	3
21PC5ME14	2	2
21PC5ME15	3	3
21PC5ME16	2	3
21PC5ME17	2	2
21PC5ME18	3	2
21PC6ME19	3	3
21PC6ME20	2	3
21PC6ME21	3	3
21PC6ME22	3	2
21PC6ME23	2	3
21PC6ME24	3	3
21PC7ME25	2	2

21PC7ME26	2	2
21PE5ME11	2	2
21PE6ME21	2	2
21PE7ME32	3	3
21PE7ME41	2	3
21PE8ME52	2	3
21PE8ME61	2	2
21PR4ME01	3	3
21PR5IN02	3	3
21PR5ME02	3	3
21PR7IN03	3	3

2 OUTCOME-BASED TEACHING LEARNING (120)

Total Marks 120.00

2.1 Describe Processes Followed to Ensure Quality of Teaching & Learning (20)

Total Marks 20.00

Institute Marks : 20.00

The Department of Mechanical ensures curriculum delivery through a process which enables us to deliver the quality teaching in line with the principles of Outcome-Based Education (OBE) that focuses on learning outcomes for every course. In order to implement OBE effectively we follow the below process. The process flow diagram is shown in figure 2.1.1.

An Academic Calendar is prepared before the commencement of the semester.

Each faculty is required to furnish their choice of courses to teach for the coming semester.

The course allocation will be done by considering:

a. Faculty Specialization.

b. No of times same course is taught by the faculty.

c. Previous performance in their teaching.

d. Faculty Presentation if course is allotted for the first time.

Once the subject is allotted, the faculty will prepare the following documentation for review by the DAC.

1. Lesson Plan (scheduling, TLOs, COs, CO-PO mapping, planned pedagogies).
2. Course File:

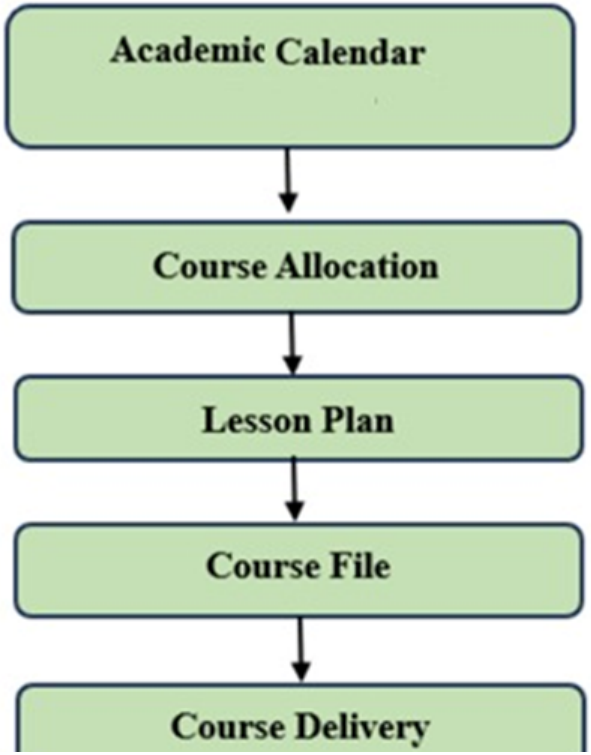
- Course Structure.
- Course Contents.

- Lesson Plan.
- Study Material/Lecture Notes.
- Course Applications.
- Assignments.
- Sample/Model Questions.
- Previous Question Papers if any.
- Sample Course Level Project Proposals if any.

3. Course Delivery.
4. CIE Assessments towards Theory Courses and Day to Day Evaluation for Laboratory Courses.
5. Identification of Fast and Slow Learners.
6. Supportive Actions towards the Slow Learners
7. Initiatives towards Fast Learners.
8. Once the course is completed the faculty will add the following information for later use in the next academic year.

- Observations from CIE and SEE
- Recommendations for Course Corrections if any.

9. Faculty Conclave to present the pedagogies implemented to achieve the OBE outcomes.
10. Attainment of Course Outcomes and CO-PO.



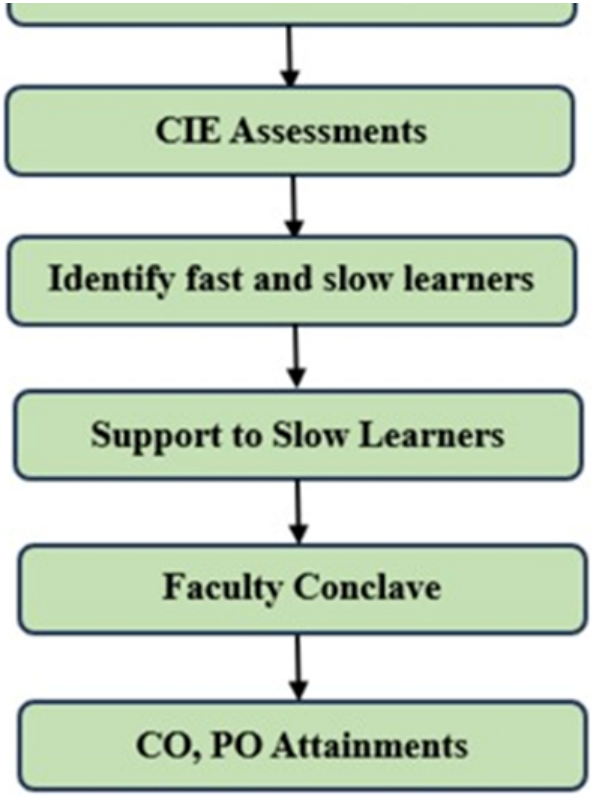


Figure.2.1.1 Teaching Learning Process Flowchart

A.Structured Academic Planning

The Department of Mechanical ensures adherence to the academic calendar which is prepared considering the guidelines from the affiliating university and state government. Being an Autonomous Institution we design the course structure and its contents based on the AICTE model curriculum and the local industry needs.

The academic calendar for the Academic Year 2024-25 as shown in figure 2.1.2.

HYDERABAD INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(AUTONOMOUS)
ACADEMIC CALENDAR 2024-25

B.TECH. I SEMESTER

S. No	Description	Duration	
		From	To
1	Commencement of Class work	**09.09.2024**	
2	1st Spell of Instructions (8 Weeks)	09.09.2024	09.11.2024
3	Dasara & Batukamma Holidays	10.10.2024	15.10.2024
4	First Mid Term Examinations	11.11.2024	13.11.2024
5	Submission of First Mid Term Exam Marks to the Examination branch on or before	15.11.2024	
6	Parents Teacher Meeting -1	16.11.2024	
7	2nd Spell of Instructions (8 Weeks)	18.11.2024	20.01.2025
8	Second Mid Term Examinations	21.01.2025	23.01.2025
9	Submission of Second Mid Term Exam Marks	25.01.2025	
10	Parents Teacher Meeting -2	26.01.2025	
11	Preparation Holidays & Practical Examinations	07.02.2025	15.02.2025
12	End Semester Examinations including HR21 Supply Exams	27.01.2025	06.02.2025
13	Commencement of Class work for II Semester	**17.02.2025**	

B.TECH. II SEMESTER

S. No	Description	Duration	
		From	To
1	Commencement of Class work	**17.02.2025**	
2	1st Spell of Instructions (8 Weeks)	17.02.2025	19.04.2025
3	First Mid Term Examinations	21.04.2025	23.04.2025
4	Submission of First Mid Term Exam Marks	28.04.2025	
5	Parents Teacher Meeting -3	3.05.2025	
6	2nd Spell of Instructions (8 Weeks)	24.04.2025	02.07.2025
7	Summer Vacation	15.05.2025	28.05.2025
8	Parents Teacher Meeting -4	29.06.2025	
9	Second Mid Term Examinations	03.07.2025	05.07.2025
10	Submission of Second Mid Term Exam Marks to the Examination branch on or before	10.07.2025	
11	Preparation Holidays & Practical Examinations	07.07.2025	12.07.2025
12	End Semester Examinations including Supply Exams	14.07.2025	26.07.2025
13	Submission of SEE marks	30-07-2025	
14	Commencement of Class work for 3 Semester AY 2025-2026	**04.08.2025**	

PRINCIPAL

HYDERABAD INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(AUTONOMOUS)
ACADEMIC CALENDAR 2024-25

B.TECH. III & VII SEMESTER

S. No	Description	Duration	
		From	To
1	Commencement of Class work	**29.07.2024**	
2	1st Spell of Instructions (09 Weeks)	29.07.2024	01.10.2024
3	First Mid Term Examinations	03.10.2024	05.10.2024
4	Intramural Sports	07.10.2024	09.10.2024
5	Dasara & Batukamma Holidays	10.10.2024	15.10.2024
6	Submission of First Mid Term Exam Marks to Exam Branch, ERP, IonCudos on or before	09.10.2024	
7	Parents Teacher Meeting -1	12.10.2024	
8	2nd Spell of Instructions (7 Weeks)	16.10.2024	07.12.2024
9	Second Mid Term Examinations	09.12.2024	11.12.2024
10	Submission of Second Mid Term Exam Marks to Exam Branch, ERP, IonCudos on or before	13.12.2024	
11	Parents Teacher Meeting -2	14.12.2024	
12	End Semester Examinations	16.12.2024	27.12.2024
13	Practical Examinations	28.12.2024	03.01.2025
14	Submission of SEE marks	04.01.2025	
15	Elysian-Sports &Cultural events	**8.1.2025 to 11.1.2025**	
16	Commencement of Class work for IV Semester	**17.01.2025**	

B.TECH. IV & VIII SEMESTER

S. No	Description	Duration	
		From	To
1	Commencement of Class work	**17.01.2025**	
2	1st Spell of Instructions (8 Weeks)	17.01.2025	15.03.2025
3	First Mid Term Examinations	17.03.2025	19.03.2025
4	Submission of First Mid Term Exam Marks to Exam Branch, ERP, IonCudos on or before	22.03.2025	
5	Parents Teacher Meeting -1	22.03.2025	
6	2nd Spell of Instructions	20.03.2025	28.05.2025

7	Second Mid Term Examinations (8 Weeks)	29.05.2025	31.05.2025
8	Submission of Second Mid Term Exam Marks to Exam Branch, ERP, IonCudos on or before	02.06.2025	
9	Summer Vacation	11.05.2024	24.05.2024
10	End Semester Examinations	02.06.2025	14.06.2025
11	Practical Examinations	17.06.2025	21.06.2025
12	Submission of SEE marks	20.06.2025	

27/7/2024

PRINCIPAL

HYDERABAD INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(AUTONOMOUS)
REVISED ACADEMIC CALENDAR 2024-25

B.TECH. V SEMESTER

S. No	Description	Duration	
		From	To
1	Commencement of Class work	28.08.2024	
2	1st Spell of Instructions	28.08.2024	28.10.2024
3	First Mid Term Examinations	29.10.2024	31.10.2024
4	Intramural Sports	07.10.2024	09.10.2024
5	Dasara & Bathukamma Holidays	10.10.2024	15.10.2024
6	Submission of First Mid Term Exam Marks to Exam Branch, ERP, IonCudos on or before	09.11.2024	
7	Parents Teacher Meeting -1	09.11.2024	
8	2nd Spell of Instructions	04.11.2024	31.12.2024
9	Second Mid Term Examinations	02.01.2025	04.01.2025
10	Submission of Second Mid Term Exam Marks to Exam Branch, ERP, IonCudos on or before	11.01.2025	
11	Parents Teacher Meeting -2	11.01.2025	
12	End Semester Examinations	17.01.2025	29.01.2025
13	Practical Examinations	06.01.2025	10.01.2025
14	Submission of SEE marks	15.02.2025	

15	Commencement of Class work for VI Semester	30.01.2025

B.TECH. VI SEMESTER

S. No	Description	Duration	
		From	To
1	Commencement of Class work	30.01.2025	
2	1st Spell of Instructions	30.01.2025	26.03.2025
3	Elysian-Sports &Cultural events	1st week of March 2025	
4	First Mid Term Examinations	27.03.2025	29.03.2025
5	Submission of First Mid Term Exam Marks to Exam Branch, ERP, IonCudos on or before	04.04.2025	
6	Parents Teacher Meeting -1	06.04.2025	
7	2nd Spell of Instructions	01.04.2025	06.06.2025
8	Second Mid Term Examinations	09.06.2025	11.06.2025
9	Submission of Second Mid Term Exam Marks to Exam Branch, ERP, IonCudos on or before	14.06.2025	
10	Parents Teacher Meeting -2	15.06.2025	
11	Summer Vacation	15.05.2025	28.05.2025
12	End Semester Examinations	19.06.2025	28.06.2025
13	Practical Examinations	12.06.2025	17.06.2025
14	Submission of SEE marks	05.07.2025	
15	Commencement of Class work for VII Semester	30.06.2025	

2.1.2025

PRINCIPAL

Figure 2.1.2. Academic Calendar for Academic year 2024-25

2. Innovative Pedagogical Initiatives

For an effective teaching we adopt various pedagogical approaches, these include

- One minute paper
- Flipped Classrooms
- Problem-Based Learning (PBL)
- Brainstorming sessions
- Poster Presentation
- Virtual labs to enhance conceptual clarity
- Peer learning strategies

These initiatives are strategically implemented to enhance critical thinking, problem-solving skills, and long-term retention, while also encouraging communication, collaboration, and leadership among students.

Sample Pedagogy implementation report of MECH Faculty:

Name of the Activity : Listed the activities

Course : Material Science & Metallurgy

Name Of Topic : All Modules

Year/Branch : II B. Tech I Semester MECH

Date of conduction : 26/12/2024

AY:2024-25

List of Pedagogies Implement:

1. Case Study Presentation
2. Poster Presentation
3. Hands on Practice Microstructural Analysis
4. Team Based Learning
5. One Minute Paper
6. PBL

Case Study Presentations: The Case Study Presentation shown in Figure 2.1.3 on Design and Application in Aerospace Material Science & Metallurgy aims to equip students with a deep understanding of material selection, advanced metallurgy, and manufacturing techniques relevant to aerospace engineering. By analyzing real-world case studies, students will evaluate the mechanical and thermal properties of aerospace materials, assess failure mechanisms, and explore innovative solutions such as additive manufacturing and composite materials. This approach fosters critical thinking, enhances technical communication, and integrates metallurgical principles with aerospace challenges, preparing students for industry advancements and research in high-performance materials. This activity also promotes public speaking skills, which are essential for academic and professional success. Rubrics were designed and evaluated.

Figure 2.1.3. Student Presentations

Poster Presentation: The Poster Presentation shown in Figure 2.1.4, on "Conversion of Non-Ferrous Waste Material into Useful Material" aims to explore sustainable material utilization by analyzing the microstructure and mechanical properties of various metals. Students will investigate the microstructural characteristics of bronze, aluminum, copper, and brass, including the effects of heat treatment on these materials. Additionally, they will design and analyze the mechanical properties of mild steel, gaining insights into

material behavior and performance. The expected outcomes include a deeper understanding of material recycling, microstructural evaluation, and mechanical analysis, fostering skills in metallurgical characterization and sustainable engineering solutions.

IMPLEMENTATION:

Analyse The microstructure of Bronze & Aluminium

K.Venkatesh goud
D.Sai Kiran
B.Sai Tharun
C.Vinay Kumar reddy
K.Amarnath
William carry sunny

Faculty Guide
Name:Mr. P. Praveen

College Name:
Hyderabad institute of technology management

Problem Description:

The phase diagrams and cooling curves of bronze and Aluminum (Al) alloys to understand their phase transformations and solidification behavior. This analysis involves interpreting the equilibrium phase diagram to identify key phases

This project aims to analyze the microstructure of Bronze & Aluminium and understand the formation of different phases as a function of composition and temperature. Additionally, it seeks to examine the cooling curves for various compositions of Bronze-Al alloys to gain insight into the solidification process and the kinetics of phase transformations.

To analyze binary phase diagrams and cooling curves for the Ni-Al (Nickel-Aluminum) system, the proposed solution involves several key steps:

1. **Understand the material system :** Identify the relevant alloy compositions (e.g., low-tin, medium-tin, or high-tin bronze). Understand key phases: α (solid solution), β (Cu3Sn), and eutectoid structures. Focus on important phases like α (solid solution) and θ (Al_2Cu precipitates).
2. **Study the phase diagrams :** Focus on important phases like α (solid solution) and θ (Al_2Cu precipitates).
3. **Cooling curves :** The cooling curves of bronze (copper-tin alloys) and aluminum (typically aluminum-copper alloys) illustrate phase transitions during solidification. For bronze, the curve shows a plateau at the liquidus temperature as solidification begins, followed by a second plateau or inflection at the eutectic point (for high-tin alloys), where the remaining liquid solidifies into α and β phases.

Lab Facilities:

- **Metallurgical Lab**: Equipped with furnaces for alloy melting and solidification experiments.
- **Microscopy Lab**: For microstructural analysis using optical microscopes.

Design Constraints:

Composition Range: Focus on Bronze-Al alloys with varying compositions, especially around critical phases like the eutectic point (Al_2Cu) and solid solution regions.

Temperature Range: Conduct analysis within the alloy's melting and solidification range (e.g., 600°C to 1500°C), considering phase transition temperatures.

Cooling Rate: Consider various cooling rates (e.g., slow, rapid) to observe different microstructures and phase transformations.

Test Plan:

Phase Diagram Determination: Use differential thermal analysis (DTA) and X-ray diffraction (XRD) to experimentally verify phase boundaries and transitions.

Cooling Curve Testing: Heat Bronze-Al samples to the liquid phase and cool them under controlled conditions, recording temperature vs. time data.

Literature :

https://docs.google.com/document/d/1HLs6_kCItVzrTIgh5EagGHPsMb5EHvDF62o3gGDV30Q/edit?usp=sharing

Methodology for Analyzing Binary Phase Diagrams and Cooling Curves for Ni-Al:

Phase Diagram Construction: Begin by reviewing the Bronze-Al binary phase diagram, identifying key phases (e.g., Al_2Cu, solid solutions) and phase boundaries (solidus, liquidus). This can be done through literature review or computational tools like CALPHAD.

Sample Preparation: Prepare Bronze-Al alloy samples with varying compositions, particularly near critical phases such as the eutectic point.

Cooling Curve Measurement: Heat the samples to the molten state and cool them at controlled rates. Record temperature vs. time data to capture the cooling curves.

Advanced Alloy Design: By refining the understanding of phase stability and solidification, new Bronze-Al-based alloys can be developed for high-performance applications like aerospace, automotive, and electronics, where superior thermal and mechanical properties are required.

BY the next week we will complete the project.

Figure 2.1.4. Students working on the problem statements

Hands on Practice Microstructural Analysis:

The Hands-on Practice in Microstructural Analysis shown in figure 2.1.5 aims to equip students with practical skills in examining the internal structure of materials using metallurgical techniques such as optical microscopy and etching. This activity focuses on analyzing the microstructure of various metals, including steel, aluminum, copper, brass, and bronze, to understand grain structure, phase composition, and the effects of heat treatment. The expected outcomes include the ability to interpret microstructural features, correlate them with material properties, and apply this knowledge to assess material performance and failure mechanisms, enhancing students expertise in materials characterization and metallurgical analysis.

Figure 2.1.5. Students observing microstructure of material

Team Based Learing: The Team-Based Learning (TBL) shown in figure 2.1.6. approach aims to enhance collaborative problem-solving and critical thinking skills by engaging students in active discussions and decision-making on complex engineering topics. Through structured team activities, students will work on real-world challenges, such as material selection, failure analysis, and manufacturing processes, fostering peer learning and deeper conceptual understanding. The expected outcomes include improved teamwork, communication, and analytical skills, along with the ability to apply theoretical knowledge to practical scenarios, preparing students for interdisciplinary problem-solving in both academic and industrial settings.

Figure 2.1.6. Students working on the given problem and brain storming

Moodle Quiz: The Moodle Quiz shown in figure 2.1.7, aims to assess students understanding of key concepts in Material Science & Metallurgy through an interactive and adaptive learning platform. By engaging in quizzes covering topics such as material properties, microstructural analysis, heat treatment, and failure mechanisms, students will reinforce their knowledge, identify areas for improvement, and develop problem-solving skills. The expected outcomes include enhanced conceptual clarity, improved retention of subject matter, and the ability to apply theoretical knowledge to practical scenarios, fostering self-paced learning and academic excellence.

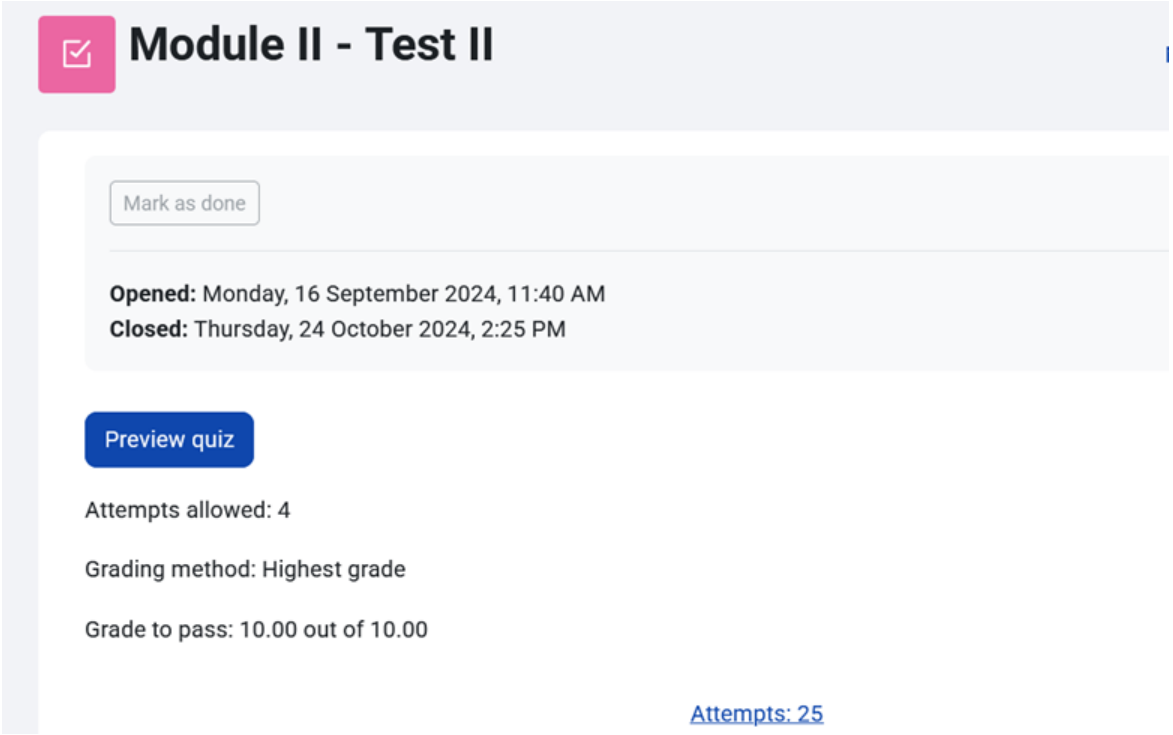


Figure 2.1.7. Test

One Minute paper: The One Minute Paper activity shown in figure 2.1.8, aims to encourage students reflection and critical thinking by summarizing key takeaways, identifying uncertainties, and expressing their understanding of a topic concisely. This quick assessment helps students reinforce learning, clarify doubts, and engage in self-evaluation, while also providing instructors with valuable feedback on student comprehension. The expected outcomes include improved retention of concepts, enhanced ability to articulate

thoughts concisely, and the development of metacognitive skills that foster deeper learning and continuous improvement in Material Science & Metallurgy.

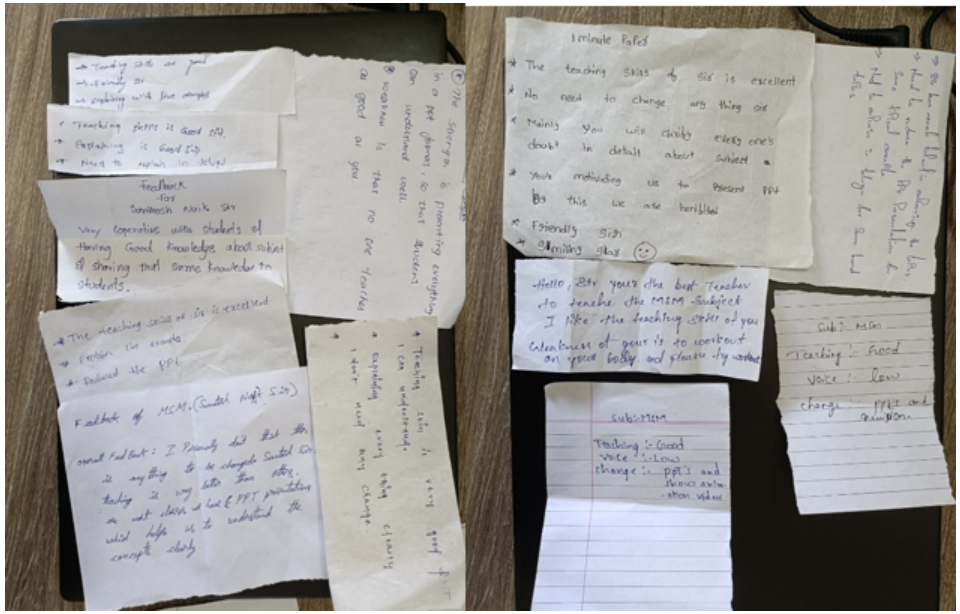


Figure 2.1.8. One Minute Paper

PBL: The Problem-Based Learning (PBL) approach aims to develop students critical thinking, problem-solving, and teamwork skills by engaging them in real-world challenges that require the application of Material Science & Metallurgy concepts. Through hands-on projects, students will analyze material properties, design solutions, and explore innovative manufacturing and sustainability practices. The expected outcomes include a deeper understanding of theoretical concepts, enhanced analytical and research abilities, improved collaboration and communication skills, and the ability to apply engineering principles to practical and interdisciplinary problems, preparing students for industry and research-based careers.

Reflections

The PBL process showcased strengths like effective problem identification, collaborative teamwork, thorough literature reviews, and hands-on learning, which enhanced students' problem-solving, research, and practical skills. Prototypes aligned well with objectives shown in figure 2.1.9, reinforcing theoretical knowledge through real-world applications. However, areas for improvement include ensuring problem relevance, managing testing timelines, addressing material handling challenges, and providing better access to resources.

Prototype Demonstration

Figure 2.1.9. Prototype

Outcomes:

1. Technical Knowledge on Course
2. Students very enthusiastic to work on problems
3. Students learnt design & analysis tool

Challenges:

Number of Students Participated:34

Student Feedback:

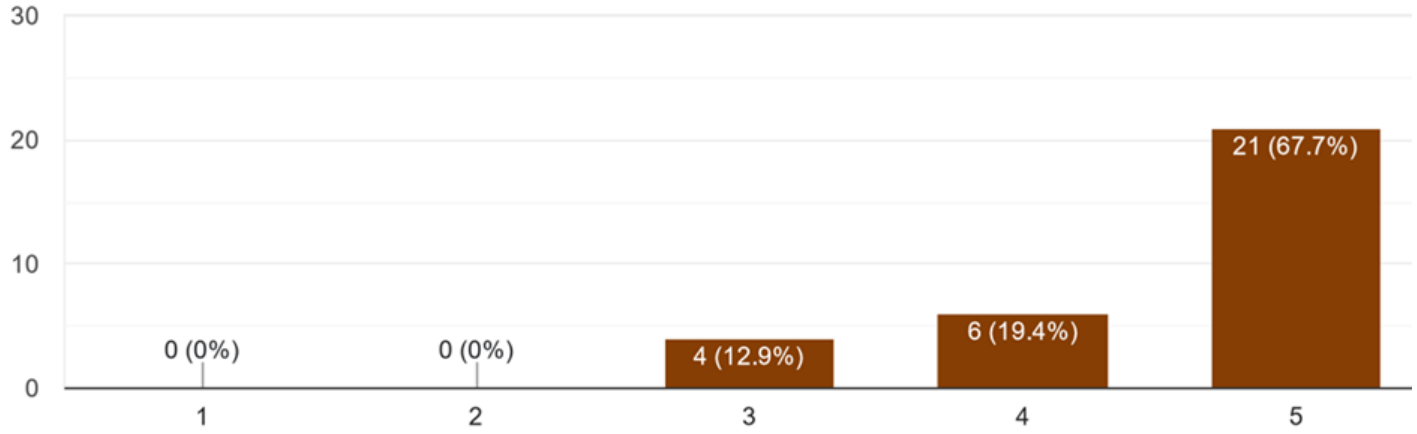
- Imbalance in workload distribution within groups.
- Communication issues and lack of coordination

Mode of Feedback: Google forms

Many students appreciate PBL for its engaging and interactive nature shown in figure 2.1.10. They often report improved critical thinking, problem-solving, and teamwork skills. They find it relevant and feel better prepared for real-world challenges. Some students found PBL initially uncomfortable, as it requires active participation and self-directed learning. They requested for clearer guidelines and expectations. Feedback is taken from the students to understand the students interests and suggestions for effective implementation for further semesters.

On a scale of 1 to 5, how confident are you in your understanding of the fundamentals of Material Science & Metallurgy?

31 responses



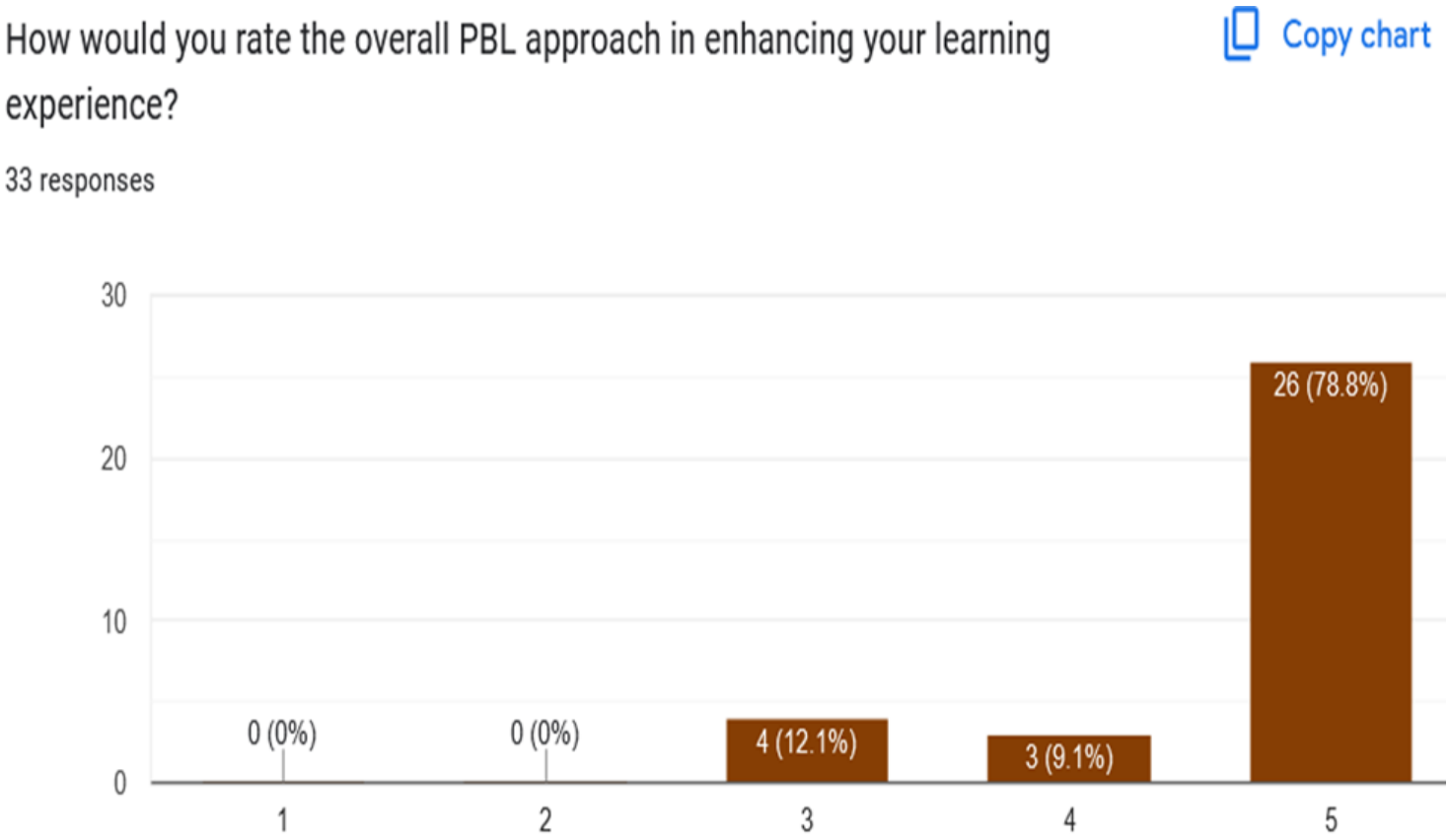


Figure 2.1.10. Feedback

Problem statement: Analyze the microstructure of bronze & aluminum material application using microscope.

Assessment Rubrics

MSM Project Review & Schedule for 2nd Year Mech Students				
Review – 1 (Team Presentation) Rubrics				
Assessment Parameter		Good	Average	Poor

Problem Statement (10 M) Week - 4	Objective (10 M)	Clearly defining the objective related to materials (10M)	Objective defined but not related to materials (5M)	Objective Not Defined (1M)
Gaps Identification (10 M) Week - 6	Literature - Gaps in existing solutions (10 M)	A clear explanation/ analysis of gaps with the documentation by using the appropriate case studies. (10 M)	A marginal explanation/ analysis of gaps by using the appropriate case studies. (5 M)	No appropriate case studies for justification of gaps. (1 M)
Poster Presentation (10 M) Week - 8	Team Presentation (Mandatorily) (10 M)	Team Presentation with Problem Statement, Objective & Specification (10 M)	Oral presentation with Problem Statement 5 M)	Neither PPT or oral presentation only Objective Defined (1 M)
Review – 2 (Porotype Presentation) Rubrics				
Assessment Parameter		Good	Average	Poor
Testing Materials in lab (10 M) Week 12	Material testing (10 M)	Selection of suitable material for testing and getting 95% accurate result (10 M)	Selection of suitable material for testing and getting 50% accurate result (5 M)	No Solutions (1 M)
Prototype Demonstration (10 M)	Prototype demonstration (10 M)	Porotype demonstration (10 M)	Without prototype demonstration only video presentation (5 M)	No video or prototype demonstration (1M)

Project Report Submission with Learning Outcome Video (10 M)	Project Report Submission (10 M)	Report with all proof & detail design, video (10 M)	Partially submitted report without any proof (5 M)	No Report submitted (1 M)

Outcomes:

1) PBL Implementation to give hands on experience to the students

2) Poster presentation gave confidence phase diagram

3) Research paper writing created excitement in students to know more about the subject

C. Quality of Classroom Teaching

Each class room is provided with Information and Communication Technology-ICT facilities so as to enable the faculty to make use of the same during their lecture delivery. As part of ICT each class room is provided with Internet, Audit-Visual equipment for make use of online presentations and communications. Each Faculty make of these digital resources for presentations, videos, simulations, and learning management systems to explain concepts and provide additional reference materials. These tools are also towards real-time interaction between faculty and students through quizzes. Online assessments and automated evaluation tools are used for monitoring progress. Communication between faculty and students is maintained through emails, forums, and messaging platforms. Overall, ICT facilities support the organization, delivery, and assessment of academic content in the classroom.

For certain quality improvement we will take regular Feedback collected from students at different stages through Class Representatives (CRs), the Student Self Governance (SSG) Cell, and HR feedback. These feedbacks will help us to redesign our method of teaching to ensure teaching quality.

Outcome-Based Education (OBE) Implementation:

Each of the faculty members are either certified in IIEECP, or PBL Certification from Aalborg, Denmark or enhance their teaching methodologies by participating in workshops on Outcome-Based Education (OBE). Each session in the class begins with a clear articulation of the objectives of the class and concludes with the topic-level outcomes, allowing students to assess their understanding and the value of the sessions. This active learning approach ensures continuous student engagement, promotes higher-order thinking, collaboration and critical thinking among learners.

D. Conduct of Laboratory Experiments

The curriculum includes experiments designed to understand the theoretical concepts through the practical applications. These experiments are developed and reviewed through discussions in the Board of Studies (BOS) meetings, which involve academic members and industry representatives. Inputs from the BOS help ensure that the experiments are relevant to current practices and technologies used in the industry. The content and structure of the experiments are mapped with industry requirements to provide students with exposure to tools, methods, and procedures.

If students perform all the experiments, they reach a stage where they can implement course-level projects. The experiments included in the curriculum, approved by the Board of Studies (BOS), form part of the process followed to support the implementation of course-level projects.

To ensure clarity and precision in execution, each experimental cycle begins with faculty-led demonstrations, providing students with a clear understanding of the underlying concepts and procedures. A comprehensive list of experiments is shared with students in two distinct phases:

- Cycle 1: Completed before Mid-Term 1
- Cycle 2: Completed before Mid-Term 2

Students are given detailed laboratory manuals and are required to attend each session with their observation books and a preliminary understanding of the assigned experiment. Faculty members verify these preparations and organize students into batches for systematic execution of the experiments. During lab sessions, students engage in performing the experiments, accurately record data, and draw graphs based on their observations. These results are reviewed and validated by the faculty.

A key element of the laboratory process is the day-to-day evaluation, which serves as an important criterion in assessing student performance. One typical day to day evaluation sheet shown in figure 2.1.4. It ensures that students remain consistent, engaged, and technically sound throughout the course. This continuous assessment approach allows faculty to monitor individual progress, identify learning gaps, and provide timely feedback for improvement. The corresponding rubrics for Day to Day Evolution is shown in table 2.1.1

Evaluation of Laboratory: Each Laboratory is evaluation for 40 marks towards CIE covering Day to Day Evaluation for 20 marks, and 20 marks towards the Mid assessments and 60 Marks towards SEE.

Rubrics for Day to Evaluation:

Criteria	Excellent (5 Marks)	Good (3–4 Marks)	Needs Improvement (1–2 Marks)
Observation (5M)	Actively engaged, follows instructions, attentive throughout	Generally attentive, minor distractions or prompting needed	Often distracted, uninterested, or needs constant guidance
Record Book(5M)	All entries complete, neat, well-organized, accurate	Most entries complete, legible, minor errors	Incomplete, untidy, or contains major errors
Experiment Execution and Team collaboration(5M)	Performs steps accurately and shows clear understanding among team members	Performs with minor help, small errors	Needs major help or makes critical mistakes
Viva Voce(5M)	Answers confidently with clear, accurate understanding	Answers most questions correctly, some hesitation or errors	Poor or incorrect answers, lack of understanding

Table 2.1.1 Rubrics for Day-to-Day Evaluation in Laboratory

E. Classification of Fast & Slow Learners

HITAM has instituted a Student Progression Framework (SPF) to provide personalized guidance and support to students across the academic spectrum. Students are classified into four performance bands—A, B, C, and D.

A & B category of students falls under fast learners and C & D category of students falls under slow learners based on key parameters. This classification enables targeted academic support, mentoring, and engagement strategies aligned with students learning needs and aspirations.

Students are classified using a Band Metric, calculated based on the following factors:

1. Attendance - considered for the period from the previous band classification to the current classification

2. Score in continuous internal examinations, including the mid examination - considered from the time of previous band classification
3. Active backlogs as on the date of band classification (Note: If the supplementary result for a subject is awaited as on date of the band classification, it will be considered as an active backlog for that cycle)

Frequency of SPF Bands classification:

- SPF band classification is done twice a semester, once after the performance evaluation after Mid-1 and second one after the announcement of Mid-2 and SEE performance.

'Band Metric' classification:

Band Metric is the total score achieved by a student based on their attendance, backlogs and

continuous internal examination score, and is used for band classification.

Band Classification based on Band Metric

Band Classification	
Band Metric (Range)	Band
75 to 100	A
60 to 75	B
45 to 60	C
Less than 45	D

Attendance weightage towards the Band Metric:

Maximum contribution of attendance towards the metric: 30

Attendance Percentage	Contribution Towards Band Metric
Less than 75	0
75 to 80	5
80 to 85	10
85 to 90	15
90 to 95	20
95 to 100	30

CIE contribution towards the Band Metric:

Maximum contribution of CIE towards the metric: 30

Average of Score in Continuous Internal Examinations and Mid Examination (Scaled to 100)	Contribution Towards Band Score
Less than 40%	0
40 to 50	5

50 to 60	10
60 to 75	20
75 to 100	30

Backlogs towards the Band Metric:

Maximum contribution of backlogs towards the metric: 40

Number of Active Backlogs (Theory and Lab Included)	Contribution Towards Band Score
More than 5	0
4	5
3	10
2	20
1	30
0	40

Initiatives for Fast Students: Department of Mechanical Engineering provides value-added opportunities for fast Learners to participate in the following events

1)Participating & organizing Hackathons: Every year, alumni from industry return to campus and provide real-world problem statements to conduct hackathons. These events serve as a platform for fast learners' students to apply theoretical knowledge to industry-relevant challenges

2)Participating in Industrial Visits: Industrial visit to the MEIL, T-Hub, CITD, CII-IGBC, and others. Fast learner students are taken on visits to these institutions for hands-on exposure to industry practices, sustainable technologies, and cutting-edge innovations. These visits often lead to internship opportunities and real-time learning.

3)Leadership Development: HITAM cultivates leadership through structured activities:

a. IUCEE EWB HITAM, mechanical students are taking part and organizing competitions.
b. TEDxHITAM
c. Student Skill Development Center (SSDC): SSDC empowers students with industry-relevant skills through hands-on training in areas like programming and IoT.
d. Grand Challengers Scholar Program (GCSP
e. Students taking part in NCC, FMAE & NSS.

Support towards C & D Band Students

Recognizing the academic and personal challenges faced by students in C and D categories, we offers a robust academic support system:

a)Remedial Classes: Scheduled into the official timetable, these sessions focus on:

- Reinforcing core concepts
- Solving previous examination papers
- Clarifying doubts in smaller groups

b. Mentor Hour: A dedicated Mentor Hour is built into the academic schedule

- Faculty mentors visit classrooms to discussions with students

- Mentors help identify and address both academic difficulties and personal challenges
- A Mentoring Policy guides this initiative

c. Counseling Support: Professional student counselors are available on campus to address

- Emotional or psychological stress
- Time management and concentration issues
- Career and personal development concerns

d. Peer Mentorship: Senior students are encouraged to mentor juniors, especially those in C & D bands, offering support in:

- Understanding complex topics
- Preparing for exams
- Adapting to the campus environment

Impact of Remedial class & Mentoring

- After conduction of Remedial classes & mentoring 10% of students improved their academic performance & more than 60% of the students clear their backlogs and migrate to the next level learners.

2.2 Quality of Student Capstone Project (25)	**Total Marks 25.00**
	Institute Marks : 25.00

Each student is required to implement the Capstone Project as per the course structure for those regulations.

General Procedure for Project Selection and implementation:

Each student submits the aspirations detailing the area of interest, domain/technology interested to the coordinator at the beginning of the semester. The aspirations of the students are mapped to the faculty who has the specialization and or interest in that domain.

Student Groups will be formulated based on the common aspirations based on their SPF bands, and a faculty mentor is assigned to each group for further necessary action.

The students group along with the faculty mentors arrive at the various problems statements leading towards employability, mapping to sustainable development goals, to be considered for implementation and the same will be submitted to the PRC committee for final approvals, shown in figure 2.2.1.

Faculty Specialization

2024-2025

Sl.No	Faculty Name	Specialization
1	Mr. SNS Santhosh	Design
2	Mr. PVN Saichandu	Thermal
3	Mr. Venugpoal	Design
4	Dr. K Siva Prasad	Design
5	Mr. Ramkrishna	Manufacturing
6	Mr. P. Praveen	Manufacturing

7	Mr. Santosh Naik	Design
8	Mr. Y Anil Reddy	Manufacturing
9	Mrs. Srilatha T	Thermal
10	Dr. Ruchir Srivastava	Design
11	Dr.. Motilal L	Manufacturing
12	Lt Col C S Pawan Kumar	Thermal
13	Mrs. Baby Theresa	Design
14	Mrs. Ambati Syamala	Thermal
15	Mr. Bhaskar Rao Palagani	Design

Table 2.2.1 Faculty Specialization

Implementation process

The project implementation process begins with students submitting a one-page abstract of their proposed project, formatted according to a predefined template shared by the department. This abstract provides a brief overview of the problem statement, objectives, proposed methodology, and expected outcomes. The initial project review is conducted by the Project Review Committee (PRC), where students present their ideas and receive constructive feedback and suggestions to refine their approach and solution strategy.

Following the initial review, students engage regularly with their assigned project guides, who mentor them throughout the development process. The guides play a crucial role in monitoring progress, providing technical guidance, and ensuring that the students remain aligned with the project goals and timelines.

A second review is scheduled mid-way through the project timeline, during which the PRC evaluates the progress made, including any prototypes or models developed. This stage is crucial for ensuring that the students are on track and any deviations or challenges are addressed in a timely manner.

The final review serves as the comprehensive evaluation of the completed project. At this stage, the PRC assesses the overall quality of the work, implementation of the proposed solution, technical innovation, and effectiveness in addressing the problem statement.

After the final review, students prepare a detailed dissertation following the sample template shared by the Project Coordinator. This dissertation is submitted to their respective guides for thorough verification and feedback. Once approved, students proceed with printing and formally submit their final thesis.

Before their external viva-voce, projects were demonstrated in Project Expo and best projects were selected and awarded by the organization through internal and external evaluators. In parallel, students are encouraged to prepare a research paper based on their project work and submit it to peer-reviewed journals, promoting a culture of research and publication.

A detailed project schedule as given below, including timelines, milestones, and review dates, was then communicated to the students to ensure a structured and goal-oriented project execution process.

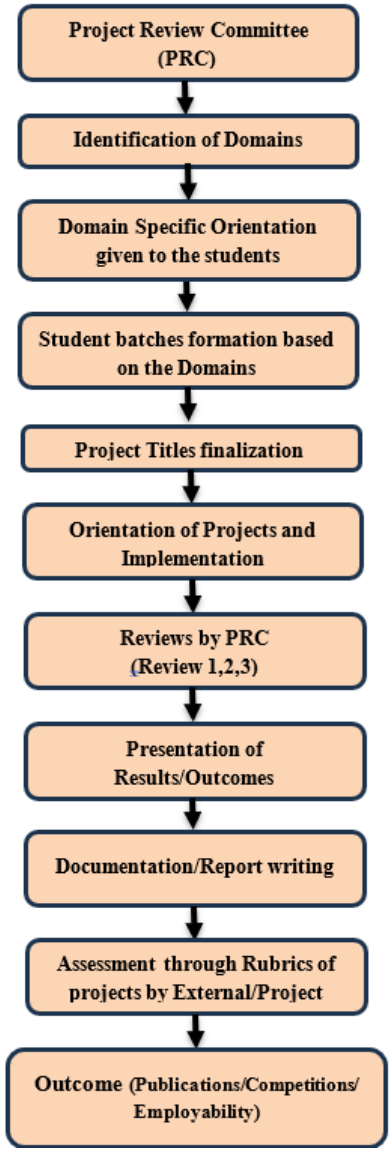
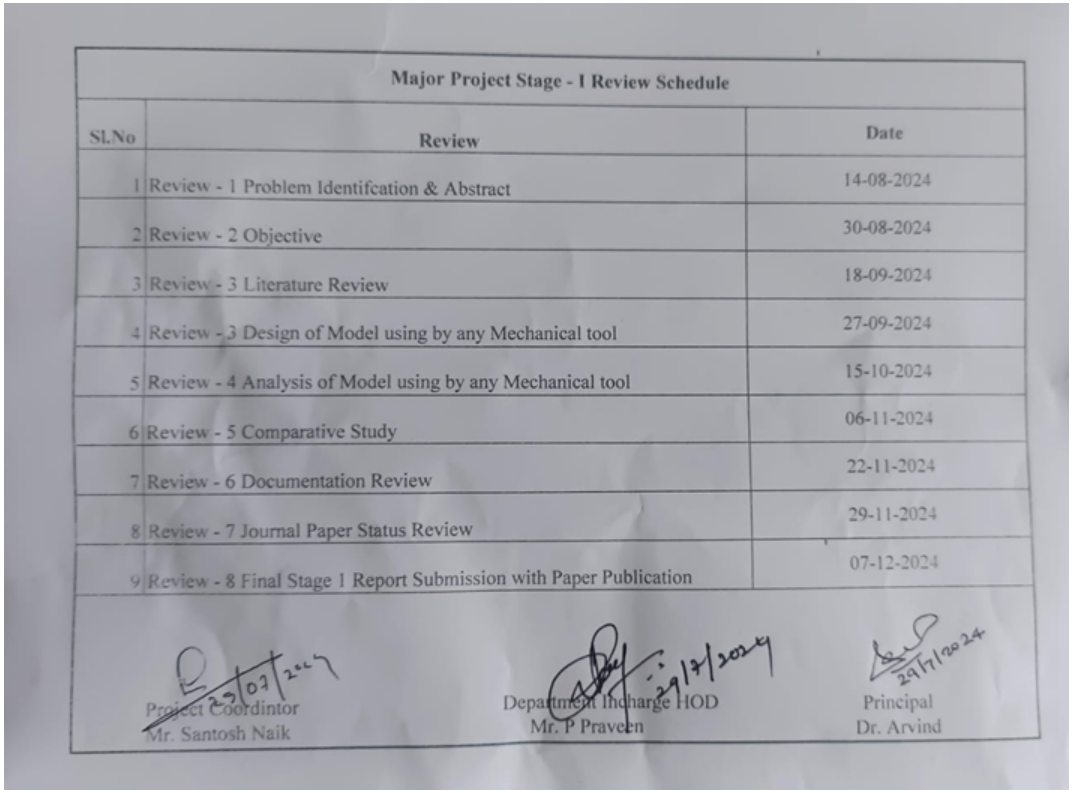


Fig.2.2.1 Flow Chart of Major Project Process

A detailed project schedule as given below, including timelines, milestones, and review dates, was then communicated to the students to ensure a structured and goal-oriented project execution process shown in figure 2.2.2.



Major Project Stage - I Review Schedule

Sl.No	Review	Date
1	Review - 1 Problem Identifcation & Abstract	14-08-2024
2	Review - 2 Objective	30-08-2024
3	Review - 3 Literature Review	18-09-2024
4	Review - 3 Design of Model using by any Mechanical tool	27-09-2024
5	Review - 4 Analysis of Model using by any Mechanical tool	15-10-2024
6	Review - 5 Comparative Study	06-11-2024
7	Review - 6 Documentation Review	22-11-2024
8	Review - 7 Journal Paper Status Review	29-11-2024
9	Review - 8 Final Stage 1 Report Submission with Paper Publication	07-12-2024

29/07/2024 — Project Coordintor, Mr. Santosh Naik

29/7/2024 — Department Incharge HOD, Mr. P Praveen

29/7/2024 — Principal, Dr. Arvind

Fig.2.2.2 Review Details

Project PRC committee A.Y 2023-24

1.Project committee chairman- Dr. Ruchir Srivastava

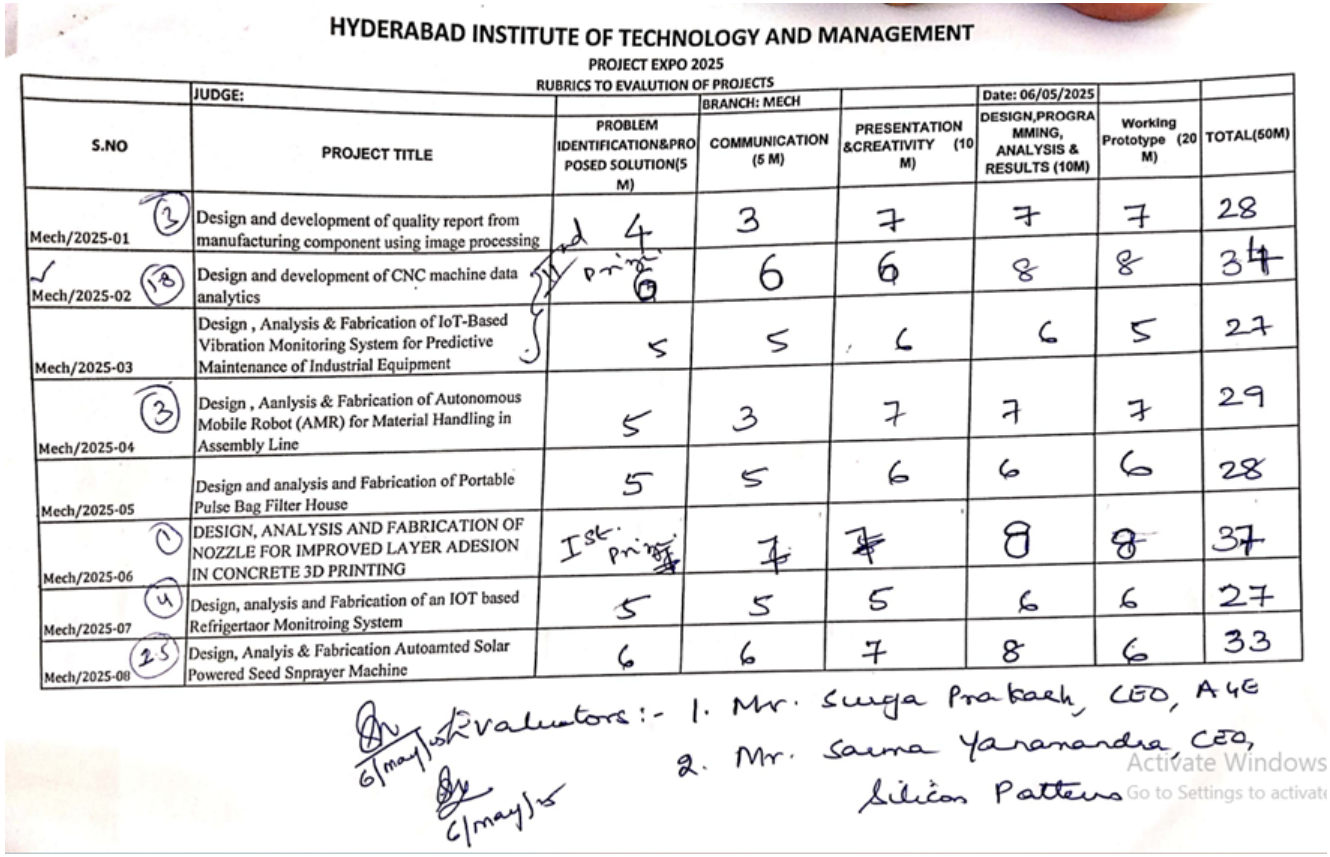
2.Project committee Member- Mr. P. Praveen

3.Project committee Member- Mr. Santosh Naik

PROJECT EXPO

Project expo is organized to display the proto types/ simulation to the Experts from Industry and academia is shown in figure 2.2.3.a. The Experts suggest the participants about the scope of the project for patent/start-up. And the Evaluation is shown in figure 2.2.3.b.

Fig. 2.2.3 a. Project Expo



HYDERABAD INSTITUTE OF TECHNOLOGY AND MANAGEMENT

PROJECT EXPO 2025

RUBRICS TO EVALUTION OF PROJECTS

JUDGE: BRANCH: MECH Date: 06/05/2025

S.NO	PROJECT TITLE	PROBLEM IDENTIFICATION&PROPOSED SOLUTION(5 M)	COMMUNICATION (5 M)	PRESENTATION &CREATIVITY (10 M)	DESIGN,PROGRAMMING, ANALYSIS & RESULTS (10M)	Working Prototype (20 M)	TOTAL(50M)
Mech/2025-01 (3)	Design and development of quality report from manufacturing component using image processing	4	3	7	7	7	28
Mech/2025-02 (18)	Design and development of CNC machine data analytics	6	6	6	8	8	34
Mech/2025-03	Design , Analysis & Fabrication of IoT-Based Vibration Monitoring System for Predictive Maintenance of Industrial Equipment	5	5	6	6	5	27
Mech/2025-04 (3)	Design , Aanlysis & Fabrication of Autonomous Mobile Robot (AMR) for Material Handling in Assembly Line	5	3	7	7	7	29
Mech/2025-05	Design and analysis and Fabrication of Portable Pulse Bag Filter House	5	5	6	6	6	28
Mech/2025-06 (1)	DESIGN, ANALYSIS AND FABRICATION OF NOZZLE FOR IMPROVED LAYER ADESION IN CONCRETE 3D PRINTING	1st print	7	7	8	8	37
Mech/2025-07 (4)	Design, analysis and Fabrication of an IOT based Refrigertaor Monitroing System	5	5	5	6	6	27
Mech/2025-08 (25)	Design, Analyis & Fabrication Autoamted Solar Powered Seed Snprayer Machine	6	6	7	8	6	33

Evaluators :- 1. Mr. Sujja Prakash, CEO, A4E
6/may/25
2. Mr. Saima Yaranandra, CEO, Silicon Patterns
6/may/25

Fig. 2.2.3 b. Project Expo Evalaution

Projects Classification, Implementation, Justification PO/PSOs Addressed

Major Project 2024-2025								
Batch	Student Name	Project Title	Domain	Classification	POs Mapped	PSOs Mapped	SDG	Justification
	KAPPERA MANOJ REDDY (22E55A0304)		Manufacturing					Applies image processing for quality analysis in manufacturing; requires engineering
	V.Rakesh (22E55A0312)		Manufacturing					

1	C.Nithin (21E51A0305)	Design and development of quality report from manufacturing component using image processing	Manufacturing	Application	PO1, PO2, PO3, PO5	PSO1	SDG 9	knowledge (PO1), problem analysis (PO2), solution design (PO3), and tool usage (PO5). Aligns with PSO1 through problem translation in manufacturing domain.
2	K.Siddeshwar(22E55A0305) P.Balaji (21E51A0302) K.Akshitha (21E51A0309)	Design and development of CNC machine data analytics	Automation Automation Automation	Research	PO1, PO2, PO4, PO5	PSO1	SDG 9	Focuses on data collection and analytics for CNC machines, linking PO1–PO5; PSO1 is addressed through automation and smart manufacturing context.
3	VADDEY PRIYANSHU (21E51A0317) S CHAITANYA (21E51A0314)	Design , Analysis & Fabrication of IoT-Based Vibration Monitoring System for Predictive Maintenan	Automation Automation	Product	PO1, PO2, PO3, PO5, PO10	PSO2	SDG 9	Integrates IoT and predictive maintenance; involves solution design, tool use and communication; aligns with PSO2 as a smart

		ce of Industrial Equipment						system for industrial maintenance .
4	I REKHA (22E55A0302) MOGULOZU SIRIZA (22E55A0308)	Design , Aanlysis & Fabrication of Autonomous Mobile Robot (AMR) for Material Handling in Assembly Line	Robotics Robotics	Product	PO1, PO2, PO3, PO5, PO10	PSO1, PSO2	SDG 9	Designs a mobile robot, requiring knowledge in robotics and control systems; supports PSO1 through design and PSO2 through efficient systems for industry.
5	LAKAVATH NAVEEN (22E55A0307) K SAI RAHUL (22E55A0303) KUKKALA JASWANTH (22E55A0306)	Design and analysis and Fabrication of Portable Pulse Bag Filter House	Thermal Thermal Thermal	Product	PO1, PO2, PO3, PO6, PO7	PSO2	SDG 13	Targets air quality improvement via thermal and fluid systems; aligns with environmental concerns (PO6, PO7) and PSO2 in developing sustainable systems.
6	BARIDABADE SATISH (21E51A0303) KAMARAJU CHAITANYA PRANITH (21E51A0307)	Design, Analysis and Fabrication of Nozzle for Improved	Design Design	Research	PO1, PO2, PO3,	PSO1, PSO2	SDG 11	Explores additive manufacturing design improvements; contributes to sustainable infrastructur

	SAGGURTHI SRI HARSHA (21E51A0315)	Layer Adhesion In Concrete 3D Printing	Design		PO4, PO5			e and supports PSO1 & PSO2 through interdisciplinary research.
7	MOHAN SAI CHARAN LINGAMSETTI (22E55A0309)	Design, analysis and Fabrication of an IOT based Refrigertaor Monitroing System	Automation	Application	PO1, PO2, PO3, PO5	PSO2	SDG 12	Smart monitoring promotes energy efficiency and reduced food loss; reflects automation and interdisciplinary system design (PSO2).
	NANDYALA SREEKARAN REDDY (21E51A0312)		Automation					
	DUSALI SRIKANTH GOUD (21E51A0306)		Automation					
	PYATA HARSHA VARDHAN GOUD (22E55A0313)		Automation					
8	ORUGANTI SIDDARTHA (22E55A0310)	Design, Analyis & Fabrication Autoamted Solar Powered Seed Snprayer Machine	Automation	Product	PO1, PO2, PO3, PO5, PO6	PSO2	SDG 7	Promotes precision farming and renewable energy use; aligns with PSO2 in addressing societal challenges through energy-efficient engineering.
	KATURI CHAITANYA (21E51A0308)		Automation					
	BOGAPARUPU MOULI (21E51A0304)		Automation					

Outcome:

- 2 project papers published in IJARESM Journal
- 3 project papers presented at International Conference on Mechanical & Industrial Technologies (ICMIT 2025)
- 23 out of 15 students placed in companies.

2.3 Internship/Industrial Training (10)	**Total Marks 10.00**
	Institute Marks : 10.00

An internship is a professional work experience where the student takes on responsibilities in that organization and participates in observing and learning while actively performing duties supporting the business endeavours. The importance of an internship is for the student to make a clear and distinct connection between their academic learning and the professional work place.

- An intern is someone who works in a temporary position with an emphasis on on-the-job training rather than merely employment, making it similar to an apprenticeship.
- A job taken by a student in order to learn a profession or trade.

In order to participate in any of the internships offered by various companies, a student will put up a requisition for permission to the institute through the Career Design Centre (CDC) upon getting selected for any of the company shown in figure 2.3.1.

The CDC verifies for the authenticity of the company and the standard of internships provided to the students then recommends the same for approval.

Once the internship requisition is approved then a student will be permitted to carry out the internship in the said company for not less than 2-4 weeks after every semester as per the company norms and selection criteria.

The assessment of the internship is carried out in the subsequent semester as per the evaluation guidelines provided in the Academic Regulations (HR21, HR22, HR24). During the assessments the learning outcomes from the internship is mapped suitably to the relevant POs/PSOs.

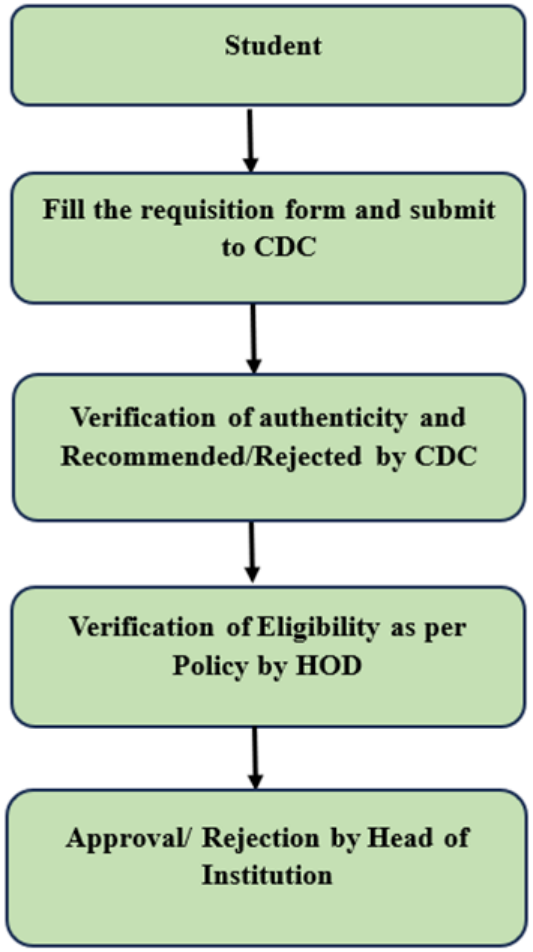


Fig.2.3.1 Internship Process

Efforts to collaborate with organizations such as CITD, IIIT-H, HBL, and BHEL provide opportunities for students to receive training and address industry-related problems. Students can explore internships through these collaborations, or they may apply on their own to companies, start-ups, or research institutes, in line with institutional procedures. A list of potential companies offering internships is shared with students by the CDC.

Ensuring the internship aligns with their academic program and contributes to Program Outcomes (POs) and Program Specific Outcomes (PSOs).

Some of the companies where our Students did Internship as listed in Table 2.3.1.

S.No	Name of Company
1	Megha Engineering Industry Limited-MEIL
2	HIEE Empowering Engineers PVT LTD

3	MSME-Tool Hyderabad
4	Advanced Engineering Studies
5	Eleation
6	CITD Hyderabad

Table 2.3.1 Company Details

Internship Details 2024-2025						
Sl.No	Name	Roll Number	Company Name	Duration	POs Addressed	PSOs Addressed
1	BARIDABADE SATISH	21E51A0303	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4, PO5, PO10	PSO1
2	KETHAVATH AKSHITHA	21E51A0309	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4, PO5, PO10	PSO1
3	NANDYALA SREEKARAN REDDY	21E51A0312	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4, PO5, PO10	PSO1
4	I REKHA	22E55A0302	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4, PO5, PO10	PSO1
5	K SAI RAHUL	22E55A0303	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4, PO5, PO10	PSO1
6	KAPPERA MANOJ REDDY	22E55A0304	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4,	PSO1

					PO5, PO10	
7	LAKAVATH NAVEEN	22E55A0307	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4, PO5, PO10	PSO1
8	MOGULOZU SIRIZA	22E55A0308	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4, PO5, PO10	PSO1
9	ORUGANTI SIDDARTHA	22E55A0310	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4, PO5, PO10	PSO1
10	VEMPALLY RAKESH	22E55A0312	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4, PO5, PO10	PSO1
11	KUKKALA JASWANTH	22E55A0306	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4, PO5, PO10	PSO1
12	Vemuri Vinay Raghava	23E55A0338	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4, PO5, PO10	PSO1
13	S.Lahari shashank tej	23E55A0331	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4, PO5, PO10	PSO1
14	Narayanam Chetan	22E51A0306	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4, PO5, PO10	PSO1

15	Karande Srinivas	23e55a0322	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4, PO5, PO10	PSO1
16	Katravath sidhu	23e55a0323	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4, PO5, PO10	PSO1
17	Uttaradi sukethan chari	23e55a0336	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4, PO5, PO10	PSO1
18	Devalla Koushik	23e55a0309	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4, PO5, PO10	PSO1
19	D.Vamshikrishna	23e55a0308	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4, PO5, PO10	PSO1
20	B. Sai Siddartha	23e55a0304	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4, PO5, PO10	PSO1
21	S. Vinod Kumar	23E55A0332	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4, PO5, PO10	PSO1
22	Songa Ramakrishna	23E55A0335	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4, PO5, PO10	PSO1

23	DUDAP MAHESH VAMSHI	23e55a0311	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4, PO5, PO10	PSO1
24	B.Eshwarasai	23e55a0305	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4, PO5, PO10	PSO1
25	GVPN Dhanasree	22E51A0304	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4, PO5, PO10	PSO1
26	LMS Charan	22E55A0309	Advanced Engineering Studies	12 Aug 2024 - 31 Aug 2024	PO1, PO2, PO4, PO5, PO10	PSO1
27	AKASH DWIVEDI	22E51A0301	MSME-Tool Hyderabad	19 Aug 2024-31 Aug 2024	PO1, PO2, PO3, PO5, PO9, PO10	PSO1, PSO2
28	R.P.RISHIKESH SAGAR	22E51A0309	MSME-Tool Hyderabad	19 Aug 2024-31 Aug 2024	PO1, PO2, PO3, PO5, PO9, PO10	PSO1, PSO2
29	MUDABBIRAHMED	22E51A0310	MSME-Tool Hyderabad	19 Aug 2024-31 Aug 2024	PO1, PO2, PO3, PO5, PO9, PO10	PSO1, PSO2
30	ZAMEER SHAIK	22E51A0311	MSME-Tool Hyderabad	19 Aug 2024-31 Aug 2024	PO1, PO2, PO3,	PSO1, PSO2

					PO5, PO9, PO10	
31	SAYAM GONARKAR	22E51A0312	MSME-Tool Hyderabad	19 Aug 2024-31 Aug 2024	PO1, PO2, PO3, PO5, PO9, PO10	PSO1, PSO2
32	KARTHIK AVULA	23E55A0301	MSME-Tool Hyderabad	19 Aug 2024-31 Aug 2024	PO1, PO2, PO3, PO5, PO9, PO10	PSO1, PSO2
33	BANGARU UDAY KUMAR	23E55A0303	MSME-Tool Hyderabad	19 Aug 2024-31 Aug 2024	PO1, PO2, PO3, PO5, PO9, PO10	PSO1, PSO2
34	ARJUN CHILUMULA	23E55A0306	MSME-Tool Hyderabad	19 Aug 2024-31 Aug 2024	PO1, PO2, PO3, PO5, PO9, PO10	PSO1, PSO2
35	AJAY KUMAR DASARI	23E55A0307	MSME-Tool Hyderabad	19 Aug 2024-31 Aug 2024	PO1, PO2, PO3, PO5, PO9, PO10	PSO1, PSO2
36	SHASHIDHAR DONTHI	23E55A0310	MSME-Tool Hyderabad	19 Aug 2024-31 Aug 2024	PO1, PO2, PO3, PO5, PO9, PO10	PSO1, PSO2
37	ANIL	23E55A0312		19 Aug 2024-31 Aug 2024	PO1, PO2, PO3,	

			MSME-Tool Hyderabad		PO5, PO9, PO10	PSO1, PSO2
38	GADDI DEEPAK	23E55A0314	MSME-Tool Hyderabad	19 Aug 2024-31 Aug 2024	PO1, PO2, PO3, PO5, PO9, PO10	PSO1, PSO2
39	GOLLA SRISAILAM	23E55A0315	MSME-Tool Hyderabad	19 Aug 2024-31 Aug 2024	PO1, PO2, PO3, PO5, PO9, PO10	PSO1, PSO2
40	G.MUKESH GOUD	23E55A0316	MSME-Tool Hyderabad	19 Aug 2024-31 Aug 2024	PO1, PO2, PO3, PO5, PO9, PO10	PSO1, PSO2
41	J RAJESH	23E55A0318	MSME-Tool Hyderabad	19 Aug 2024-31 Aug 2024	PO1, PO2, PO3, PO5, PO9, PO10	PSO1, PSO2
42	K.RAVALI	23E55A0319	MSME-Tool Hyderabad	19 Aug 2024-31 Aug 2024	PO1, PO2, PO3, PO5, PO9, PO10	PSO1, PSO2
43	ANANDCHARY	23E55A0320	MSME-Tool Hyderabad	19 Aug 2024-31 Aug 2024	PO1, PO2, PO3, PO5, PO9, PO10	PSO1, PSO2

44	KANDI ADITHYA VARDHAN	23E55A0321	MSME-Tool Hyderabad	19 Aug 2024-31 Aug 2024	PO1, PO2, PO3, PO5, PO9, PO10	PSO1, PSO2
45	MACHUKURI SRINIVAS	23E55A0324	MSME-Tool Hyderabad	19 Aug 2024-31 Aug 2024	PO1, PO2, PO3, PO5, PO9, PO10	PSO1, PSO2
46	MOHAMMAD IRFAN	23E55A0326	MSME-Tool Hyderabad	19 Aug 2024-31 Aug 2024	PO1, PO2, PO3, PO5, PO9, PO10	PSO1, PSO2
47	NEERADI DINESH	23E55A0327	MSME-Tool Hyderabad	19 Aug 2024-31 Aug 2024	PO1, PO2, PO3, PO5, PO9, PO10	PSO1, PSO2
48	PASULA SANDEEP	23E55A0328	MSME-Tool Hyderabad	19 Aug 2024-31 Aug 2024	PO1, PO2, PO3, PO5, PO9, PO10	PSO1, PSO2
49	P RAJESH	23E55A0329	MSME-Tool Hyderabad	19 Aug 2024-31 Aug 2024	PO1, PO2, PO3, PO5, PO9, PO10	PSO1, PSO2
50	RAPARTI ROHIT SRI SAI	23E55A0330	MSME-Tool Hyderabad	19 Aug 2024-31 Aug 2024	PO1, PO2, PO3,	PSO1, PSO2

					PO5, PO9, PO10	
51	S. TULASI PRASAD	23E55A0333	MSME-Tool Hyderabad	19 Aug 2024-31 Aug 2024	PO1, PO2, PO3, PO5, PO9, PO10	PSO1, PSO2
52	S.SATHISH KUMAR	23E55A0334	MSME-Tool Hyderabad	19 Aug 2024-31 Aug 2024	PO1, PO2, PO3, PO5, PO9, PO10	PSO1, PSO2

भारत सरकार
Government of India
सूक्ष्म, लघु एवं मध्यम उद्यम मंत्रालय
Ministry of Micro, Small & Medium Enterprises
विकास आयुक्त का कार्यालय
Office of Development Commissioner

Certificate No.: 55909/E-SDP/2024-25/6

प्रतिभागिता प्रमाण-पत्र
Certificate of Participation

प्रमाणित किया जाता है कि **श्री दुसाली श्रीकांत गौड़ सुपुत्र श्री दुसाली साया गौड़** ने संस्थान द्वारा आयोजित **उद्यमिता-सह-कौशल विकास कार्यक्रम (ई-एसडीपी)**, दिनांक **11/12/2024** से **21/01/2025** तक, विषय **सीएनसी प्रोग्रामिंग और मशीनिंग - लेथ और मिलिंग** स्थान **केंद्रीय उपकरण अभिकल्प संस्थान (सीआईटीडी),बालानगर,हैदराबाद** पर सफलतापूर्वक पूर्ण किया है।

This is to certify that **Mr. DUSALI SRIKANTH GOUD S/o. Mr. DUSALI SAYA GOUD** has successfully completed the **ENTREPRENEURSHIP-CUM-SKILL DEVELOPMENT PROGRAMME (E-SDP)** during the period from **11/12/2024** to **21/01/2025** on the topic **CNC PROGRAMMING AND MACHINING - LATHE AND MILLING** organized at **CENTRAL INSTITUTE OF TOOL DESIGN (CITD) ,BALANAGAR,HYDERABAD**.

स्थान / Place : **HYDERABAD**
दिनांक / Date : **21-01-2025**

K. MURALI
Principal Director
MSME Tool Room, Hyderabad
Central Institute of Tool Design
(Govt. of India Society-Ministry of MSME)
Balanagar, Hyderabad-500 037

नाम और हस्ताक्षर, कार्यक्रम समन्वयक
Name & Signature of Programme Coordinator
G SANATH KUMAR

हस्ताक्षर प्रभारी अधिकारी
एमएसएमई-विकास कार्यालय,शाखा डीएफओ,प्रौद्योगिकी केंद्र
Signature of Officer In-charge MSME DFO Branch
DFO/Technology Centre
MSME-TC - CITD, HYDERABAD
Seal with name and Designation

भारत सरकार
Government of India
सूक्ष्म, लघु एवं मध्यम उद्यम मंत्रालय
Ministry of Micro, Small & Medium Enterprises
विकास आयुक्त का कार्यालय
Office of Development Commissioner

Certificate No.: 55909/E-SDP/2024-25/5

प्रतिभागिता प्रमाण-पत्र
Certificate of Participation

प्रमाणित किया जाता है कि **श्री बारीदाबाद सतीश सुपुत्र श्री बारीदाबाद हनमंत** ने संस्थान द्वारा आयोजित **उद्यमिता-सह-कौशल विकास कार्यक्रम (ई-एसडीपी)**, दिनांक 11/12/2024 से 21/01/2025 तक, विषय **सीएनसी प्रोग्रामिंग और मशीनिंग - लेथ और मिलिंग** स्थान **केंद्रीय उपकरण अभिकल्प संस्थान (सीआईटीडी),बालानगर,हैदराबाद** पर सफलतापूर्वक पूर्ण किया है।

This is to certify that **Mr. BARIDABADE SATISH S/o. Mr. BARIDABADE HANMANTH** has successfully completed the **ENTREPRENEURSHIP-CUM-SKILL DEVELOPMENT PROGRAMME (E-SDP)** during the period from **11/12/2024** to **21/01/2025** on the topic **CNC PROGRAMMING AND MACHINING - LATHE AND MILLING** organized at **CENTRAL INSTITUTE OF TOOL DESIGN (CITD) ,BALANAGAR,HYDERABAD**

स्थान / Place : **HYDERABAD**
दिनांक / Date : **21-01-2025**

K. MURALI
Principal Director
MSME Tool Room, Hyderabad
Central Institute of Tool Design
(A Society-Ministry of MSME)
Hyderabad-500 037

नाम और हस्ताक्षर, कार्यक्रम समन्वयक
Name & Signature of Programme Coordinator
G SANATH KUMAR

हस्ताक्षर प्रभारी अधिकारी
एमएसएमई-विकास कार्यालय/डीव डीएफओ/प्रौद्योगिकी केंद्र
Signature of Officer In-charge MSME DFO/Branch DFO/Technology Centre
MSME-TC - CITD, HYDERABAD
Seal with name and Designation

भारत सरकार
Government of India
सूक्ष्म, लघु एवं मध्यम उद्यम मंत्रालय
Ministry of Micro, Small & Medium Enterprises
विकास आयुक्त का कार्यालय
Office of Development Commissioner

Certificate No.: 55909/E-SDP/2024-25/26

प्रतिभागिता प्रमाण-पत्र
Certificate of Participation

प्रमाणित किया जाता है कि श्री चेंचू नितिन कुमार सुपुत्र श्री चेंचू रविंदर ने संस्थान द्वारा आयोजित उद्यमिता-सह-कौशल विकास कार्यक्रम (ई-एसडीपी), दिनांक 11/12/2024 से 21/01/2025 तक, विषय सीएनसी प्रोग्रामिंग और मशीनिंग - लेथ और मिलिंग स्थान केंद्रीय उपकरण अभिकल्प संस्थान (सीआईटीडी),बालानगर,हैदराबाद पर सफलतापूर्वक पूर्ण किया है।

This is to certify that Mr. CHENCHU NITHIN KUMAR S/o. Mr. CHENCHU RAVINDER has successfully completed the ENTREPRENEURSHIP-CUM-SKILL DEVELOPMENT PROGRAMME (E-SDP) during the period from 11/12/2024 to 21/01/2025 on the topic CNC PROGRAMMING AND MACHINING - LATHE AND MILLING organized at CENTRAL INSTITUTE OF TOOL DESIGN (CITD), BALANAGAR,HYDERABAD.

स्थान / Place : HYDERABAD
दिनांक / Date : 21-01-2025

नाम और हस्ताक्षर, कार्यक्रम समन्वयक
Name & Signature of Programme Coordinator
G SANATH KUMAR

C. MURALI
Principal Director
Tool Room, Hyderabad
Central Institute of Tool Design
(An Autonomous Body of MSME)
An ISO 9001:2015 Certified Body

Signature of Officer in charge MSME DFO Branch
DFO/Technology Centre
MSME-TC - CITD, HYDERABAD
Seal with name and Designation

Fig.2.3.2 Sample Internship Certificates

Impact Analysis:

After the completion of the internship feedback will be collected from students. The students will submit a report of the internship as it will be evaluated by the Committee consisting of HOD & Senior faculty from the department. During the internships it is being observed that the students:

a) Students gained a better understanding of how theoretical concepts apply to real-world scenarios, which improved their ability to apply what they have learned in practical settings.

b) Industry experts provided valuable insights into the latest tools and technologies, ensuring that students gained a clear understanding of current industry standards and best practices.

c) students who were mentored by industry professionals gained skills that closely align with current job market demands, enhancing their employability and making them more attractive to potential employers. Additionally, the internship experience helped students in the following ways:

d) Identified the right career path based on real-world exposure and hands-on experience.
e) Established professional networks that may support future career opportunities.
f) Developed confidence through practical learning, teamwork, and problem-solving in an industry setting.

Real-world exposure gained through these internships in the form of hands-on training at companies like Advanced Engineering Studies, BALAJI CNC and CITD Hyderabad has provided the students to gain:

- Practical understanding of core engineering concepts.
- Improved technical and communication skills.
- Familiarity with corporate environments and expectations.

These internship have resulted in creating an impact in getting the placements in various companies. Out of 23 students, 100% secured internships, and more than 60% of those were successfully placed. This indicates a strong correlation between internship exposure and placement success.

Measures for Enhancing Internship-to-Placement Conversion

1. Skill Alignment with Industry Tools

Focus training on current industry tools such as:

- 3D CAD Software (SolidWorks, CATIA, Fusion 360)
- CNC Programming Platforms (Siemens NX, MasterCAM)
- Non-Destructive Testing Methods (UT, RT, PT with digital interpretation tools)
- 3D Printing using additive manufacturing platforms (FDM, SLA, DMLS)

2. Industry-Oriented Certification Programs

Collaborate with certified institutions to offer programs in:

- NDT Level I & II
- Autodesk Certified Professional (CAD tools)
- Additive Manufacturing Fundamentals

3. Mock Interview and Resume Preparation

- Organize placement-readiness sessions specific to mechanical engineering domains
- Conduct domain-wise mock interviews with external experts

4. Industry Collaboration and MoUs

Partner with companies in core mechanical domains for:

- Internships aligned with real-time projects
- Pre-placement offers based on performance

2.4 Seminar and Mini/Micro Projects (10)	**Total Marks 10.00**
	Institute Marks : 10.00

As part of the course structure students need to present a seminar on any of the technical topics relevant to the trends in the industry. An awareness session will be provided to the students about selection of Seminar topics. Students select topics related to current technologies, social issues, or their area of interest in consultation with faculty mentors. The Seminar Coordinator reviews and approves the topics based on relevance. Students then carry out a review of available literature, collect information, and study the selected topic.

Faculty mentors assist in improving the content and presentation. Students present their seminar to a panel that includes HOD, Seminar Coordinator and one senior faculty, and are assessed on the content, communication, and responses to questions. Coordinator share the sample report template to students as per that the seminar report will be prepared, verified by the respective guides before they submit the documentation.

The report should be well-formatted, original. The technical seminar process in JNTUH is designed to inculcate research aptitude, technical knowledge, communication skills, and professionalism among engineering students. By following a structured methodology—from topic selection to final presentation students are better prepared for industry challenges, higher education, and research opportunities

Evaluation Rubrics and Marks Allocation

The evaluation is typically based on a rubric-based scoring system, The seminar report and the seminar presentation shall be evaluated for 100 marks.

Hyderabad Institute of Technology and Management										
Department of Mechanical										
SEMINAR 2022-2023 Panel Members Marks										
S.NO (http://s.no/)	ROLL NUMBER	NAME OF THE STUDENT	Attair(5)	Introduction(5)	Content (10)	Slides Design (5)	Presentation (5)	Queries (10)	Total (40)	Signature
1										

Mini/Micro Project:

Mini and micro projects at Department of Mechanical Engineering are an essential component of the academic curriculum designed to foster hands-on learning, innovation, and application of theoretical knowledge. These projects are implemented under the umbrella of Problem-Based Learning (PBL) initiatives, promoting experiential learning and interdisciplinary problem-solving skills.

The following structured process is adopted for the effective implementation of mini/micro projects:

Ensuring the quality of mini projects at Department of Mechanical Engineering that align with students aspirations is crucial for fostering meaningful learning experiences. In the Project Review meeting, faculty research interests were gathered to identify key focus areas and as per student's aspirations to decide specific domains of expertise within the department. To further enrich this process, faculty members submitted open-ended problem statements aligned with their research interests.

These problem statements were then thoroughly reviewed and discussed in the Project Review Committee (PRC) meeting. Once validated, the finalized domains and associated problem statements were shared with students to help them explore and select areas that matched their interests and career aspirations. Student preferences were collected and analyzed in conjunction with their SPF (Student Performance Factor) bands to ensure balanced and effective batch formation. Based on this data-driven approach, student project groups were formed strategically to promote collaborative learning and domain-specific engagement. Following this, the Project Coordinator assigned appropriate faculty guides to each batch, ensuring that guidance aligned with the chosen domain and problem complexity.

A detailed project schedule as given below, including timelines, milestones, and review dates, was then communicated to the students to ensure a structured and goal-oriented project execution process.

Implementation process:

The mini project implementation process begins with students submitting a one-page abstract of their proposed project, formatted according to a predefined template shared by the department. This abstract provides a brief overview of the problem statement, objectives, proposed methodology, and expected outcomes. The initial project review is conducted by the Project Review Committee (PRC), where students present their ideas and receive constructive feedback and suggestions to refine their approach and solution strategy.

Following the initial review, students engage regularly with their assigned project guides, who mentor them throughout the development process. The guides play a crucial role in monitoring progress, providing technical guidance, and ensuring that the students remain aligned with the project goals and timelines.

A second review is scheduled mid-way through the project timeline, during which the PRC evaluates the progress made, including any prototypes or models developed. This stage is crucial for ensuring that the students are on track and any deviations or challenges are addressed in a timely manner.

The final review serves as the comprehensive evaluation of the completed project. At this stage, the PRC assesses the overall quality of the work, implementation of the proposed solution, technical innovation, and effectiveness in addressing the problem statement.

After the final review, students prepare a detailed dissertation following the sample template shared by the Project Coordinator. This dissertation is submitted to their respective guides for thorough verification and feedback. Once approved, students proceed with printing and formally submit their final thesis. The process flow diagram is given in figure 2.4.1.

In parallel, students are encouraged to prepare a research paper based on their mini project work and submit it to peer-reviewed journals, promoting a culture of research and publication. This structured process ensures academic rigor, continuous mentoring, and industry-relevant project outcomes.

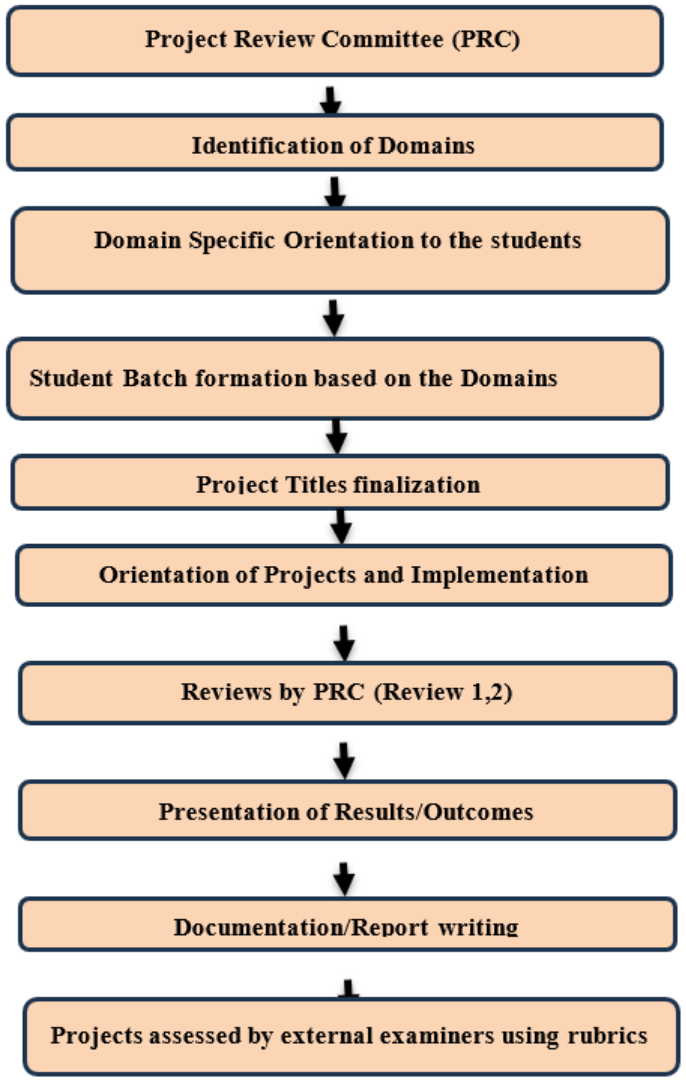


Figure 2.4.1. Mini Project process Flow Diagram

Mini Project 2024-2025				
BATCH	NAME OF THE STUDENT	Project Title	POs Addressed	PSOs Addressed
	KAPPERA MANOJ REDDY (22E55A0304)			

1	V.Rakesh (22E55A0312) C.Nithin (21E51A0305)	Extraction of the point cloud from manufacturing component from open cv	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
2	K.Siddeshwar (22E55A0305) P.Balaji (21E51A0302) K.Akshitha (21E51A0309)	To study on CNC machine to extract the sensors data	PO1, PO2, PO4, PO5, PO9	PSO1, PSO2
3	VADDEY PRIYANSHU (21E51A0317) KUMMARIPALLI VENKATA CHARY (20E51A0311) S CHAITANYA (21E51A0314)	Comprehensive review and development of Mahine Learning models for industrial equipment maintenance	PO1, PO2, PO3, PO4, PO5, PO9, PO10	PSO1, PSO2
4	I REKHA (22E55A0302) MOGULOZU SIRIZA (22E55A0308)	Design and development of "MAZESOLVER"	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO10	PSO1, PSO2
5	LAKAVATH NAVEEN (22E55A0307) K SAI RAHUL (22E55A0303) KUKKALA JASWANTH (22E55A0306)	To study on pollution control equipment	PO1, PO2, PO4, PO7, PO9	PSO1
6	BARIDABADE SATISH (21E51A0303) KAMARAJU CHAITANYA PRANITH (21E51A0307)	Design and development of training module for CNC maching using AR/VR.	PO1, PO2, PO3, PO4, PO5, PO9, PO10	PSO1, PSO2

	SAGGURTHI SRI HARSHA (21E51A0315)			
7	MOHAN SAI CHARAN LINGAMSETTI (22E55A0309) NANDYALA SREEKARAN REDDY (21E51A0312) DUSALI SRIKANTH GOUD (21E51A0306) PYATA HARSHA VARDHAN GOUD (22E55A0313)	Design and analysis of Agricultural Robot	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO10	PSO1, PSO2
8	ORUGANTI SIDDARTHA (22E55A0310) KATURI CHAITANYA (21E51A0308) MOHAMMED DURWESH MOHIUDDIN SUFI (21E51A0311)	Exploring concrete 3D Printing - An additive manufacturing technique in construction industry	PO1, PO2, PO3, PO4, PO5, PO7, PO9	PSO1, PSO2
	BOGAPARUPU MOULI (21E51A0304)			

II-I Mechanical Engineering
PBL
2024-2025

BATCH	NAME OF THE STUDENT	Project Title	POs Addressed	PSOs Addressed
1	K.PRANITH (24E55A0320) K.MANIDEEP (24E55A0315) K.SATHVIK (24E55A0317)	Conversion of nonferrous waste	PO1, PO2, PO6, PO7	PSO1, PSO2

	K.KARTHIK (24E55A0314) G.SHANKAR (24E55A0311) G.KARTHIK (24E55A0309)	material into useful material		
2	K.Venkatesh goud (24E55A0313) D.Sai Kiran (24E55A0307) B.Sai Tharun (24E55A0302) C.Vinay Kumar reddy (22E51A0303) K.Amarnath (22E51A0305) William carry sunny (22E51A0302)	Analyse the microstructure of bronze & aluminum material	PO1, PO2, PO4	PSO1, PSO2
3	Bipul Kumar Yadav (23e51a0301) Ruthekesh Reddy (23e51a0302) Poorna Chandra (23e51a0303) Mohammed Amaan (23e51a0304) Shaik.Aamir (23e51a0305) Pramod kumar (24E55A0312) Vamshi (24E55A0318)	Design and analyse the mild steel Mechanical Properties	PO1, PO2, PO3, PO5	PSO1
4	Narendar Reddy (24E55A0325) Sai Kiran (24E55A0324) G. Naveen (24E55A0308) G. shiva sai nikhil (24E55A0310) K Rahul (24E55A0316) K.Mahesh (24E55A0319) Teja (24E55A0304)	Analyse the microstructure of copper & aluminum	PO1, PO2, PO4	PSO1, PSO2
5	A.Chandrashekhar goud (24E55A0301) B.Vishnuvardhan (24E55A0303) CH.Nikhil (24E55A0305) P.Harish (24E55A0323) O.Himakanth (24E55A0322) M.Rakesh (24E55A0321) Karunakar (24E55A0306)	Analyze the microstructure of brass & Aluminum with heat treatment	PO1, PO2, PO4, PO5	PSO1, PSO2

III-I Mechanical Engineering
PBL
2024-2025

BATCH	NAME OF THE STUDENT	Project Title	POs Addressed	PSOs Addressed
1	GVPN Dhanasree (22E51A0304)	Design and Analysis of Go-Kart chassis in solidworks	PO1, PO2, PO3, PO5	PSO1, PSO2
	Arjun (23E55A0306)			
	Mahesh (23E55A0311)			
	Vinay (23E55A0338)			
	Siddarth (23E55A0304)			
2	Karthik (23E55A0301)	Design, Analysis of chassis frame for Dirt Cart	PO1, PO2, PO3, PO5	PSO1, PSO2
	Anand (23E55A0320)			
	Dinesh (23E55A0327)			
	Rajesh (23E55A0318)			
	Irfan (23E55A0326)			
3	Sunil Kumar (23E55A0313)	Design and Procurement of Transmission Components for Optimized Dirt -Kart Performance	PO1, PO2, PO3, PO7	PSO1, PSO2
	Ravali (23E55A0319)			
	Mokshith (23E55A0339)			
	Srisailam (23E55A0315)			
	Srinivas (23E55A0324)			
4	Akash (22E51A0301)	Design and Computational Analysis of the Steering System Design for Dirt Kart	PO1, PO2, PO3, PO5	PSO1, PSO2
	Chetan (22E51A0306)			
	Eshwar Sai (23E55A0305)			
	Srikanth (22E55A0337)			
5	Mukesh (23E55A0316)	Design & Fabrication of Jig for Drilling Machine	PO1, PO3, PO5, PO6	PSO1, PSO2
	Aditya Vardhan K (23E55A0321)			
	K Srinivas (23E55A0322)			
	P Sandeep (23E55A0328)			
	P Rajesh (23E55A0329)			
6	Rohit (23E55A0330)			

	Shashank (23E55A0331)	Develop a parametric design for an N x N array of riveted joints on a plate. Calculate the strength of the joints and convert the calculation into a parametric model.	PO1, PO2, PO3, PO4	PSO1
	Vinodkumar (23E55A0332)			
	Tulasiprasad (23E55A0333)			
	Satishkumar (23E55A0334)			
	D Vamshikumar (23E55A0308)			
7	D Koushik (23E55A0309)	Design & Fabrication of cutting tool shaped by using HSS	PO1, PO3, PO5, PO6	PSO1, PSO2
	D Shashidar (23E55A0310)			
	Shaik Zameer (23E55A0311)			
	Rishikesh Sagar (22E51A0309)			
	Shaik Imame Muzzamill (22E51A0311)			
8	Srinivas (23E55A0302)	Vibration Analysis & control of SI Engine Test Rig	PO1, PO2, PO4, PO5	PSO1
	Uday (23E55A0303)			
	Ajay (23E55A0307)			
	S RAMAKRISHNA (23E55A0335)			
9	G Deepak (23E55A0314)	Foundation support for Lathe Machining	PO1, PO3, PO5, PO6	PSO1, PSO2
	ANIL KUMAR (23E55A0312)			
	SIDHU . K (23E55A0323)			
	SUKETHAN CHARY (23E55A0336)			

2.5 Case Studies and Real-Life Examples (10) **Total Marks 10.00**

Institute Marks : 10.00

In the Department of Mechanical Engineering, the teaching methodology is centered on experiential and application-based learning, in alignment with Outcome-Based Education (OBE) principles. One of the key strategies adopted is the integration of case studies and real-life examples into the course content, which serves to bridge the gap between theoretical knowledge and practical applications. This approach ensures that students not only understand concepts but also develop the critical thinking, problem-solving, and

decision-making skills necessary for professional success in engineering domains.

Types of Case Studies and Real-Life Examples Used

Case studies are selected based on relevance, complexity, and alignment with course. They fall into the following categories:

1. Descriptive Case Studies

These case studies present well-documented real-world scenarios with a focus on understanding how and why certain technologies, systems, or policies work.

Key Features:

Emphasis on explanation rather than problem-solving.

Used for conceptual clarity and system understanding.

Often involve historical, industrial, or policy-based examples.

2. Application-Based Case Studies

These case studies present a real-world problem and require students to apply their technical knowledge to analyze, design, or improve a system.

Key Features:

Focused on problem identification and solution development.

Encourages collaborative teamwork and innovation.

Aligned with course-level problem-solving and design COs.

Some of the Case Studies and Real-Life Examples

Case Study							
Sl.No	Name of the Course	Year/Semester	Case Study / Real-Life Example	Description of Case Study / Real-Life Example	PO/PSO Addressed	Type	Complexity Level
1	MOS (Mechanics of Solids)	II-I	Analysis of a Bridge Truss Design	Evaluation of force distribution and failure points in a steel truss bridge.	PO1, PO2, PSO1	Real-Life Example	Medium
2	MSM (Material Science & Metallurgy)	II-I	Composite Material Testing	Case study on testing jute and graphene-reinforced epoxy	PO1, PO3, PSO2	Case Study	High

				composites for damping behavior.			
3	PT (Production Technology)	II-I	CNC Machining in Automotive Industry	Real-world application of CNC operations in mass production of engine components.	PO3, PO5, PSO1	Real-Life Example	Medium
4	DMM1 (Design of Machine Members - I)	III-I	Design & Analysis of Dirt Car	Involving the design and analysis of a dirt car, applying principles of mechanical design to components such as shafts, axles, frames, and suspensions	PO1, PO3, PSO1	Case Study	High
5	KOM (Kinematics of Machinery)	II-II	Geneva Mechanism in Packaging Machines	Analysis of intermittent motion mechanisms used in automated packaging lines.	PO2, PO3, PSO1	Real-Life Example	Medium
6	CM (Composite Materials)	III-II	Bicycle Frame Using Carbon Fiber	Study on the selection and application of composite materials in lightweight bicycle frame design.	PO1, PO2, PSO2	Case Study	Medium

In the Mechanics of Solids (MOS) course offered in the II Year – I Semester, students engage with a real-life example involving the analysis of a steel bridge truss design. This case focuses on evaluating force distribution and identifying potential failure points, addressing PO1, PO2, and PSO1, and is categorized as a medium complexity real-life example.

For Material Science & Metallurgy (MSM), also in the II Year – I Semester, students explore a case study on composite material testing, specifically on jute and graphene-reinforced epoxy composites to understand their damping behavior. This high-complexity study addresses PO1, PO3, and PSO2, offering insight into material performance and testing methodologies.

In the Production Technology (PT) course during the II Year – I Semester, a real-world example from the automotive industry is utilized to demonstrate the application of CNC machining in the mass production of engine components. This medium-complexity example helps students connect theoretical knowledge with practical industrial processes, addressing PO3, PO5, and PSO1.

In the Design of Machine Members – I (DMM1) course, taken in the III Year – I Semester, students analyze a case study involving the design and analysis of a dirt car. The project emphasizes the application of mechanical design principles to critical components such as shafts, axles, frames, and suspensions, mapping to PO1, PO3, and PSO1, and is classified as high complexity.

The Kinematics of Machinery (KOM) course in the II Year – II Semester incorporates a real-life example of the Geneva mechanism, commonly used in automated packaging machines. Students study the principles of intermittent motion and how such mechanisms enhance efficiency in automation, addressing PO2, PO3, and PSO1, with medium complexity.

Finally, in the Composite Materials (CM) course during the III Year – II Semester, students explore a case study focused on the use of carbon fiber in bicycle frame design. This medium-complexity study guides students in understanding material selection, structural requirements, and the benefits of lightweight composites, addressing PO1, PO2, and PSO2.

Impact on Student Learning

- Enhanced Problem-Solving Skills: Students apply engineering fundamentals to real-world scenarios such as, dirt car design & analysis
- Development of soft skills such as teamwork, communication, and leadership.
- Decision-Making Abilities: Students practice selecting appropriate materials, tools, and design parameters under constraints such as cost, sustainability, and safety.

2.6 SWAYAM/NPTEL/MOOC/Self Learning (10)	**Total Marks 10.00**
	Institute Marks : 10.00

The students are encouraged in different self-learning through various online platforms like SWAYAM, NPTEL, and other Massive Open Online Courses (MOOCs) which are integral parts of the learning ecosystem. These platforms provide students with the flexibility to enhance their knowledge in various subjects, including those not covered in the curriculum, and to acquire skills relevant to the rapidly evolving technological landscape. The courses opted through these platforms are aligned with industry standards and best practices, allowing the students to gain not only the additional knowledge but also the certifications which are recognized globally.

These courses cover a wide range of topics in engineering. Students can pursue these courses at their own pace and convenience, allowing them to learn beyond the prescribed curriculum and deepen their understanding in areas of interest.

Awareness and Motivation:

- Orientation sessions are organized to familiarize students with the benefits of SWAYAM, NPTEL, and other MOOCs.
- Students are encouraged to enroll in Infosys springboard courses that complement their curriculum or explore their areas of interest.

Outcomes of the SWAYAM/NPTEL/MOOC/Self-Learning Process:

- Students develop a deeper understanding of their core and elective subjects.
- Enhanced employability due to certifications in industry-relevant topics.
- Strengthened academic profile of students, making them competitive on a global stage.

Number of students Registered for MOOC, SWAYAM and self-Learning Courses are given in table

Certification					
NPTEL					
Sl.No	Student Name	Course	Year	PO	PSOs
1	Chetan Narayanam (22E51A0306)	Product Design & Development	2023	PO1	PSO1,PSO2
Self-Learning					
1	Vempally Rakesh (22E55A0312)	3D Printing	2024	PO1	PSO1,PSO2
2	Dusali Srikanth goud (21E51A0306)	3D Printing	2024	PO1	PSO1,PSO2
3	BOMMADENI ESHWARASAI (23E55A0305)	ELEATIONs CAD (CREO) Basic to Professional	2024	PO1	PSO1,PSO2
4	Satish Baridabade (21E51A0303)	Learning Python	2024	PO1, PO2	PSO2
5	Mohammed Amaan (23E51A0304)	Prompt Engineering for ChatGPT	2024	PO1, PO2	PSO2

6	Mohammed Amaan (23E51A0304)	Python for Begineers with Certification: Mastering the Essentials	2024	PO1, PO2	PSO2
7	Mohammed Amaan (23E51A0304)	Artificial Intelligence Fundamentals	2024	PO1, PO2	PSO2
8	Mohammed Amaan (23E51A0304)	Introduction to Deep Learning	2024	PO1, PO2	PSO2
9	Mohammed Amaan (23E51A0304)	Artificial Intelligence	2024	PO1, PO2	PSO2
10	Mohammed Amaan (23E51A0304)	Python Pandas	2024	PO1, PO2	PSO2
11	Mohammed Amaan (23E51A0304)	NumPy Tutorial	2024	PO1	PSO2
12	Mohammed Amaan (23E51A0304)	Python Matplotlib	2024	PO1, PO2	PSO2
13	Mohammed Amaan (23E51A0304)	Python Libraries for Data Science	2024	PO1, PO2	PSO2
14	Mohammed Amaan (23E51A0304)	Dataplus Overview	2024	PO1	PSO2
15	Shaik Aamir (23E51A0305)	Mechanical Product Design	2024	PO1, PO2	PSO1,PSO2

16	B. Pranav Balaji (21E51A0302)	ELEATIONs CAD (CREO) Basic to Professional	2025	PO1	PSO1,PSO2
17	Vempally Rakesh (22E55A0312)	ELEATIONs CAD (CREO) Basic to Professional	2025	PO1	PSO1,PSO2
18	Lakavath Naveen (22E55A0307)	ELEATIONs CAD (CREO) Basic to Professional	2025	PO1	PSO1,PSO2
19	Koshetty Siddeshwar (22E55A0305)	ELEATIONs CAD (CREO) Basic to Professional	2025	PO1	PSO1,PSO2
20	Nithin Kumar (21E51A0305)	ELEATIONs CAD (CREO) Basic to Professional	2025	PO1	PSO1,PSO2

LIFE | Foundation

Certificate of Completion

Vempally Rakesh

has successfully completed the HP LIFE online course

3D Printing

By completing this course, the above-named student has learned new skills including how to 3D print, the skills required, and the resources available.

Presented 8/23/2024

Stephanie Bormann
Deputy Director, HP Foundation

Infosys
Navigate your next

COURSE COMPLETION CERTIFICATE

The certificate is awarded to

NAVEEN LAKAVATH

for successfully completing the course

Python for Beginners: Learn Python Programming (Python 3)

on August 26, 2023

Infosys | Springboard

Congratulations! You make us proud!

Thirumala Arohi
Senior Vice President and Head
Education, Training and Assessment (ETA)
Infosys Limited

Issued on: Sunday, August 27, 2023
To verify, scan the QR code at https://verify.onwingspan.com

Elite

NPTEL Online Certification

(Funded by the MoE, Govt. of India)

This certificate is awarded to

CHETAN NARAYANAM

for successfully completing the course

Product Design and Development

with a consolidated score of 79 %

Online Assignments	20/25	Proctored Exam	58.5/75

Total number of candidates certified in this course: 951

Prof. Kaushik Ghosh,
Professor(Chemistry)
Coordinator CEC

Jul-Aug 2023
(4 week course)

Prof. Ranjana Pathania,
Professor (BSBE)
Coordinator (NPTEL)

Indian Institute of Technology Roorkee

swayam

Roll No: NPTEL23ME123S45702252 To verify the certificate No. of credits recommended: 1 or 2

Fig.2.6.1 Sample Certificate

2.7 Solving Complex Engineering Problems Incorporating Sustainability Goals (20)	**Total Marks 20.00**
	Institute Marks : 20.00

Solving complex engineering problems is not only a technical challenge but also a moral responsibility. The department encourages students to approach engineering challenges through the lens of sustainable development, integrating societal, environmental, and economic considerations aligned with the United Nations Sustainable Development Goals (SDGs). This is achieved through activity-based learning strategies including PBL, mini/micro projects, integrated design, capstone projects, and hackathons.

Complex Engineering Problems (CEPs) are those that require in-depth engineering knowledge, involve wide-ranging factors such as societal, environmental, ethical, and economic issues, and cannot be resolved with straightforward solutions. These problems typically require abstraction, interdisciplinary knowledge, simulation, prototyping, and decision-making under uncertainty.

Complexity and Technology Readiness Level (TRL)

Technology Readiness Level (TRL) is a measure used to assess the maturity level of a particular technology. Complexity increases with TRL, especially in the mid-range (TRL 4–7), where prototyping, integration, and validation become necessary.

- TRL 1-3: Conceptual stage with low complexity
- TRL 4-6: Prototype development with moderate complexity
- TRL 7-9: Full-scale deployment with high complexity

Problem-Based Learning (PBL)

Implementation in Core Courses:

- Courses like Material Science, Design of machine member, production technology, Machining science, and kinematics of machines integrate semester-long projects. Students identify real-life problems aligned with SDGs such as:
    - SDG 7: Affordable and Clean Energy
    - SDG 9: Industry, Innovation, and Infrastructure
    - SDG 11: Sustainable Cities and Communities

This aims to enhance students ability to visually communicate complex ideas in a concise and engaging manner. It helps in developing critical thinking, creativity, and effective presentation skills. The implementation involves students designing posters on a given topic, summarizing key concepts, findings, or innovations. These posters are displayed in a classroom, where students present their work to faculty and peers. The evaluation is based on clarity, content depth, creativity, and the ability to articulate ideas effectively.

Steps Involved:

1. Problem Identification:
    - Problems are chosen based on their real-world relevance and alignment with the United Nations Sustainable Development Goals (SDGs).
2. Requirement Analysis:
    - Students analyze the problem from multiple perspectives, including technical, social, and environmental dimensions.
3. Design and Development:
    - Innovative and eco-friendly solutions are designed, keeping resource optimization and minimal environmental impact in focus.
4. Implementation:
    - Solutions are implemented using modern tools, sustainable materials, and emerging technologies.

5. Evaluation and Validation:
    - Solutions are evaluated for their efficiency, feasibility, and long-term impact on sustainability.

Impact on POs:

- PO 1 (Engineering Knowledge): Application of fundamental engineering concepts to solve real-world sustainability challenges.
- PO 4 (Conduct Investigations of Complex Problems): Researching and analyzing complex issues related to sustainability and engineering solutions.
- PSO 3 (Sustainable Engineering Solutions): Design and develop an energy efficient system in all engineering and interdisciplinary fields to meet the present challenges of industry and society

Assessment Rubrics

Design Thinking Rubrics Review -1				
Assessment Parameter		**Good**	**Average**	**Poor**
Problem Identification (20 M)	Interaction with the Community (10 M)	Clear Documentation of Community interaction with visual proofs (10 M)	Clear Interaction with community with an appropriate document (5 M)	Oral representation of community interaction (no proof) (1 M)
	Problem identified (5 M)	Clearly addressing the problem by statistical representation of either human, educational, health or environmental community (5 M)	Mentioned without statistical representation. (3 M)	Does not mentioned the clear need of the community (1 M)
	Stakeholder Identification (5 M)	Clearly identifies a specific and real user or organization, by name, which can provide feedback/suggestion for the team and receive the project once completed. (5 M)	Mentioned the community but not a specific user who can provide suggestions or feedback over the project (3 M)	No clear details of community or specific user (1 M)
Specification Development (20 M)	Measurable requirements (5 M)	Clearly describes at least 5 measurable requirements depending on the project (5 M)	Less than 4 described specifications or the ones described are not measurable (3 M)	At least 2 specifications listed (1 M)
	Identification of existing solutions (5 M)	Identification of existing solutions addressing the similar problems with appropriate documentation (5 M)	Identification of existing solutions addressing the similar problems with no appropriate documentation.	No clear identification of existing solutions. 01 M)
	Gaps in existing solutions (5 M)	A clear explanation/ analysis of gaps with the documentation by using the appropriate case studies. (5 M)	A marginal explanation/ analysis of gaps by using the appropriate case studies. (3 M)	No appropriate case studies for justification of gaps. (0 M)
	Poster Presentation (Mandatorily) (5 M)	Creative poster presentation (5 M)	Good oral presentation (2 M)	Either Creative poster or good oral presentation (1M)

Design Thinking Rubrics Review -2				
Assessment Parameter		**Good**	**Average**	**Poor**
Design (40 M)	Prototype Design (20 M)	Prototype Design Using Decision Matrix (20 M)	Without Decision Matrix or only sketches done (10 M)	No Sketches (0 M)
	Design skills (20 M)	Providing proofs of number of Iterations covered (20 M)	Number of iterations without proofs (10 M)	Not covering number of Iteration directly jumping in to design (0 M)
Prototype Demonstration (20 M)	Prototype demonstration (10 M)	Prototype demonstration (10 M)	Without prototype demonstration only video presentation (5 M)	No video or prototype demonstration (0 M)
	Filed testing (10 M)	Efficiency and safety usability to community partner (10 M)	Not mentioned the safety and usability (5 M)	No safety and life span of prototype (0 M)

Design Thinking I-II Mechanical Engineering PBL 2022-2023						
BATCH	NAME OF THE STUDENT	Project Title	SDG	Justification	Complexity Elements	TRL
1	G V P N DHANASREE (22E51A0304)	Smart Helmet	SDG 3	Enhances worker safety by preventing head injuries and monitoring health conditions.	- Sensor selection (impact, temperature, heart rate) - Basic circuit design and integration - Preliminary ergonomic considerations	TRL 3
	NARAYANAM CHETAN (22E51A0306) RATAN PANDARINATH RISHIKESH SAGAR	360 DEGREE FIRE		Improves fire safety measures in	- Basic prototype of 360° rotating nozzle - Initial	

2	(22E51A0309) SHAIK MUDABBIR AHMED (22E51A0310) SHAIK ZAMEER (22E51A0311) AKASH DWIVEDI (22E51A0301)	PROTECTION SYSTEM	SDG 9	industries and urban spaces, reducing risks of disasters.	fire/smoke detection sensor logic - Control unit with manual or timer-based actuation	TRL 2

Mini Project 2023-2024						
BATCH	NAME OF THE STUDENT	Project Title	SDG	Justification	Complexity Elements	TRL
1	B.VINITH (21E55A0304) SREE GANESH (20E51A0317) P.VIVEK (20E51A0312) V.VIVEK (20E51A0323)	Design and Analysis of a Bicycle Frame	SDG 11	Promotes eco-friendly transportation, reducing carbon emissions and traffic congestion.	- Conceptual design of electric/green transport systems - Integration of energy-efficient components - Initial feasibility studies	TRL 2
2	K.Sridhar Reddy (20E51A0308) D.Karthik (20E51A0305) D.Akhil (20E51A0306) J.Vamshi (20E51A0307)	Structural Analysis of a Bridge Model	SDG 9	Ensures safe and resilient infrastructure, contributing to sustainable development.	- Basic analysis of structural materials - Simulation of load-bearing capacities - Safety factor estimation	TRL 2
3	MANIDEEP (21E55A0310) M.RANJITH (21E55A0323) P.SUMANTH (21E55A0328) P.RAVI KUMAR (21E55A0331)	Design and Stress Analysis of a Beam	SDG 9	Improves construction efficiency and material sustainability in infrastructure.	- Study of eco-friendly materials - Initial prototype of prefabricated or modular design - Cost-benefit analysis	TRL 3
	P.CHARAN (21E55A0326)					

4	P YESHWANTH (21E55A0327) VINAY (21E55A0317) Durga Prasad (20E51A0319)	Vibration Analysis of a Cantilever Beam	SDG 9	Helps in designing stable structures and machinery with minimal material usage.	- Structural optimization algorithms - CAD modeling and stress simulation - Comparative material analysis	TRL 3
5	U VIJAY KUMAR (21E55A0336) SAINATH (21E55A0324) SUSHANTH (21E55A0330) G CHANDRA SHEKAR (21E55A0314)	Design and Analysis of a Gearbox Casing	SDG 12	Enhances mechanical efficiency, reducing material waste and increasing durability.	- Friction/wear analysis - Initial testing of mechanical joints or bearings - Component redesign	TRL 3
6	B.PREETAM (21E55A0306) CH.VEERABABU (21E55A0306) K HARI PRASAD (21E55A0320) R VIJAY KUMAR (21E55A0333)	Thermal Analysis of a Heat Sink	SDG 7	Improves heat dissipation in electronic devices, leading to energy efficiency.	- Thermal simulation of heat sinks - Basic prototype using passive/active cooling methods - Use of composite materials	TRL 3
7	B. SHIVAJI (21E55A0305) G RAM PRASAD (21E55A0313) E . SHIVA PRASAD (21E55A0312) T. RAKESH (21E55A0312)	Design & Analysis of Windmill	SDG 7	Supports renewable energy development for a sustainable future.	- Feasibility study on solar/wind power modules - Circuit simulation for power systems - Conceptual design of hybrid systems	TRL 3
8	K.NIKHIL KUMAR (21E55A0312) G.SHIVRAJ (21E55A0315) NISHANTH (21E55A0302)	CFD Analysis on a	SDG 6	Optimizes hydroelectric energy production, promoting sustainable	- Turbine blade design concepts - Fluid flow simulation - Lab-scale model of hydro setup	TRL 3

	SWATHI (21E55A0309)	Water Turbine Blade		water resource utilization.		
9	NITHIN (21E55A0301) VISHNU (21E55A0321) DEVARAJ (21E55A0318) PRAVEEN (21E55A0311)	Design and Strength Analysis of a Leaf Spring	SDG 12	Enhances vehicle performance while reducing material usage and weight.	- Lightweight material selection - Structural simulation under load - Preliminary aerodynamic analysis	TRL 3
10	Keerthan (20E51A0309) Giridhar (20E51A0322)	Design and Analysis of a Drone Frame	SDG 9	Supports technological advancements in transportation, surveillance, and agriculture.	- Integration of sensors/cameras on UAVs or rovers - Conceptual control systems - Early-stage field mapping algorithms	TRL 2
11	R. Bhaskar (21E55A0332) Chandu kurla (21E55A0322) D. Prashanth (21E55A0308) Uday kiran (21E55A0308)	Impact Analysis of a Car Bumper	SDG 3	Improves vehicle safety, reducing injury risks in accidents.	- Crash simulation or energy absorption analysis - Smart alert systems (concept design) - Ergonomic safety gear design	TRL 3
12	N. SAI RAM GOUD (21E55A0325) BANDI TARUN (21E55A0325) S. Goutham (21E55A0334) P Vivek Reddy (20E51A0313)	Design and Analysis of a Connecting Rod	SDG 9	Enhances engine performance, leading to fuel-efficient vehicle designs.	- Simulation of combustion process - Design of intake/exhaust systems - Material impact analysis on performance	TRL 3

13	Ch. Muktheshwar (20E51A0304) A. Sai Sangameshwar (20E51A0301) T. Lokesh (20E51A0301) B. Pradeep (20E51A0303)	Stress Analysis of a Pressure Vessel	SDG 9	Ensures safe storage and transport of gases and liquids in various industries.	- Tank design based on pressure/temperature simulations - Selection of composite materials	TRL 3
14	KARANKI ASHOK (20E51A0310) RAGEER RUCHIT GOUD (20E51A0314) S SHIVANATH (20E51A0315) SYED REHAN (20E51A0318)	Design and Thermal Analysis of a Brake Disc	SDG 13	Enhances braking efficiency, reducing energy loss and emissions in transportation.	- Brake disc material study - Conceptual regenerative braking system	TRL 3

Mini Project
2024-2025

BATCH	NAME OF THE STUDENT	Project Title	SDG	Justification
1	KAPPERA MANOJ REDDY (22E55A0304) V.Rakesh (22E55A0312) C.Nithin (21E51A0305)	Extraction of the point cloud from manufacturing component from open cv	SDG 9	Enhancing manufacturing precision through computer vision contributes to industrial automation and smart manufacturing, improving efficiency.
2	K.Siddeshwar(22E55A0305) P.Balaji (21E51A0302) K.Akshitha (21E51A0309)	To study on CNC machine to extract the sensors data	SDG 9	Real-time sensor data extraction from CNC machines aids predictive maintenance and operational efficiency in smart manufacturing.
3	VADDEY PRIYANSHU (21E51A0317) S CHAITANYA (21E51A0314)	Comprehensive review and development of Mahine Learning models for	SDG 9	Developing ML models for equipment maintenance reduces downtime and

		industrial equipment maintenance		increases sustainability in industrial operations.
	I REKHA (22E55A0302)			
4	MOGULOZU SIRIZA (22E55A0308)	Design and development of "MAZESOLVER"	SDG 4	A maze-solving robot can be used in educational applications for robotics learning, enhancing STEM education and problem-solving skills.
	LAKAVATH NAVEEN (22E55A0307)			
5	K SAI RAHUL (22E55A0303)	To study on pollution control equipment	SDG 13	Understanding pollution control equipment helps in mitigating industrial emissions and improving environmental sustainability.
	KUKKALA JASWANTH (22E55A0306)			
	BARIDABADE SATISH (21E51A0303)			
6	KAMARAJU CHAITANYA PRANITH (21E51A0307)	Design and development of training module for CNC maching using AR/VR.	SDG 4	AR/VR-based training improves skill development in CNC machining, making technical education more interactive and effective.
	SAGGURTHI SRI HARSHA (21E51A0315)			
	MOHAN SAI CHARAN LINGAMSETTI (22E55A0309)			
7	NANDYALA SREEKARAN REDDY (21E51A0312)	Design and analysis of Agricultural Robot	SDG 2	Agricultural robots optimize farming processes, increasing productivity and promoting sustainable agriculture to ensure food security.
	DUSALI SRIKANTH GOUD (21E51A0306)			
	PYATA HARSHA VARDHAN GOUD (22E55A0313)			
	ORUGANTI SIDDARTHA (22E55A0310)			

8	KATURI CHAITANYA (21E51A0308) BOGAPARUPU MOULI (21E51A0304) KAPPERA MANOJ REDDY (22E55A0304) V.Rakesh (22E55A0312)	Exploring concrete 3D Printing - An additive manufacturing technique in construction industry	SDG 11	3D concrete printing reduces construction waste, enhances sustainability, and supports affordable housing initiatives.

II-I

PBL

2024-2025

1	NAME OF THE STUDENT	Project Title	SDG	Justification	Complexity Elements	TRL
1 2	K.PRANITH (24E55A0320) K.MANIDEEP (24E55A0315) K.SATHVIK (24E55A0317) K.KARTHIK (24E55A0314) G.SHANKAR (24E55A0311) G.KARTHIK (24E55A0309)	Conversion of nonferrous waste material into useful material	SDG 12	Promotes recycling and repurposing of waste materials, reducing environmental impact and supporting sustainable material use.	- Collection and categorization of nonferrous scrap - Selection of reprocessing methods (melting, casting, alloying)	TRL 3
2 3	K.Venkatesh goud (24E55A0313) D.Sai Kiran (24E55A0307) B.Sai Tharun (24E55A0302) C.Vinay Kumar reddy (22E51A0303) K.Amarnath (22E51A0305) William carry sunny (22E51A0302)	Analyse the microstructure of bronze & aluminium material	SDG 12	Analyzing material properties ensures efficient utilization, reducing material waste and improving performance.	Sample preparation (cutting, polishing, etching)	TRL 2
	Bipul Kumar Yadav (23E51A0301)					

3 4	Ruthekesh Reddy (23E51A0302) Poorna Chandra (23E51A0303) Mohammed Amaan (23E51A0304) Shaik.Aamir (23E51A0305) Pramod kumar (24E55A0312) Vamshi (24E55A0318)	Design and analyse the mild steel Mechanical Properties	SDG 12	Enhancing mechanical properties leads to better durability and resource efficiency in engineering applications.	- Tensile, hardness, and impact testing	TRL 3
4 5	Narendar Reddy (24E55A0325) Sai Kiran (24E55A0324) G. Naveen (24E55A0308) G. shiva sai nikhil (24E55A0310) K Rahul (24E55A0310) K.Mahesh (24E55A0319) Teja (24E55A0304)	Analyse the microstructure of copper & aluminium	SDG 12	Helps in optimizing material properties for sustainability, reducing unnecessary material loss and improving recyclability.	- Metallographic sample preparation	TRL 2
5	A.Chandrashekhar goud (24E55A0301) B.Vishnuvardhan (24E55A0303) CH.Nikhil (24E55A0305) P.Harish (24E55A0323) O.Himakanth (24E55A0322) M.Rakesh (24E55A0321) Karunakar (24E55A0306)	Analyse the microstructure of brass & Aluminium with heat treatment	SDG 12	Heat treatment enhances material longevity, reducing the need for frequent replacements and supporting sustainable industrial processes.	Heat treatment process design (annealing, quenching, aging)	TRL 3

III-I Mechanical Engineering
PBL
2024-2025

BATCH	NAME OF THE STUDENT	Project Title	SDG	Justification	Complexity Elements	TRL

1	GVPN Dhanasree (22E51A0304) Arjun (23E55A0306) Mahesh (23E55A0311) Vinay (23E55A0338) Siddarth (23E55A0304)	Design and Analysis of Go-Kart chassis in solidworks	SDG 9	Promotes innovation in vehicle design and enhances safety and performance through computational analysis.	- 3D CAD modelling of chassis	TRL 4
2	Karthik (23E55A0301) Anand (23E55A0320) Dinesh (23E55A0327) Rajesh (23E55A0318) Irfan (23E55A0326)	Design, Analysis of chassis frame for Dirt Cart	SDG 9	Develops efficient chassis designs that improve structural integrity and performance in off-road conditions.	- Frame geometry design for off-road conditions	TRL 4
3	Sunil Kumar (23E55A0313) Ravali (23E55A0319) Mokshith (23E55A0339) Srisailam (23E55A0315) Srinivas	Design and Procurement of Transmission Components for Optimized Dirt -Kart Performance	SDG 12	Focuses on optimizing transmission systems for better efficiency, reducing material waste, and ensuring resource optimization.	- Gear ratio calculation - Selection and specification of sprockets, chains, bearings	TRL 4
4	Akash (22E51A0301) Chetan (22E51A0306) Eshwar Sai (22E51A0306) Srikanth (22E55A0337)	Design and Computational Analysis of the Steering System Design for Dirt Kart	SDG 9	Enhances vehicle maneuverability, safety, and performance through computational analysis, leading to more efficient designs.	- Steering geometry (Ackermann, turning radius)	TRL 4

5	Mukesh (23E55A0316) Aditya Vardhan K (23E55A0321) K Srinivas (23E55A0322) P Sandeep (23E55A0328) P Rajesh (23E55A0329)	Design & Fabrication of Jig for Drilling Machine	SDG 8	Improves precision in manufacturing, reducing defects and increasing productivity in industrial applications.	- Design for fixture accuracy and repeatability	TRL 4
6	Rohit (23E55A0329) Shashank (23E55A0331) Vinodkumar (23E55A0332) Tulasiprasad (23E55A0333) Satishkumar (23E55A0334) D Vamshikumar (23E55A0308)	Develop a parametric design for an N x N array of riveted joints on a plate. Calculate the strength of the joints and convert the calculation into a parametric model.	SDG 9	Enhances structural reliability and efficiency in mechanical assemblies through advanced parametric modeling and strength optimization.	- Analytical modeling of joint strength	TRL 4
7	D Koushik (23E55A0309) D Shashidar (23E55A0310) Shaik Zameer (23E55A0311) Rishikesh Sagar (22E51A0309) Shaik Imame Muzzamill (22E51A0311)	Design & Fabricatiom of cutting tool shaped by using HSS	SDG 12	Develops durable and efficient cutting tools, optimizing material usage and reducing industrial waste.	- Tool profile design based on machining need - Heat treatment and grinding of HSS tool	TRL 4
8	Srinivas (23E55A0302) Uday (23E55A0303) Ajay (23E55A0307)	Vibration Analysis & control of	SDG 13	Helps in reducing vibrations in engine testing, leading to lower emissions, increased	- Measurement of vibration spectrum	TRL 4

	S RAMAKRISHNA (23E55A0335)	SI Engine Test Rig		efficiency, and enhanced sustainability in automotive testing.	(FFT, accelerometers)	
9	G Deepak (23E55A0314) ANIL KUMAR (23E55A0312) SIDHU . K(23E55A0323) SUKETHAN CHARY (23E55A0336)	Foundation support for Lathe Machining	SDG 9	Ensures machine stability and precision in manufacturing, contributing to industrial growth and technological advancements.	- Load calculation and vibration isolation	TRL 3

2.8 Steps Taken for Enhancing Industry Institute Partnerships (15) **Total Marks 15.00**

Institute Marks : 15.00

We always encourage and involve industry experts in delivery of few courses and has become an integral part of the academic process, where professionals from the industry are invited to co-deliver specific modules of few courses, especially in emerging and areas leading to employability like Non-Destructing Testing and solid works design analysis. This collaboration enables students to gain real-time insights into current industry practices, tools, and methodologies. Emphasizing experiential learning, the approach incorporates live case studies, problem-solving sessions, and interactive workshops. In parallel, we have partnered with industries to establish cutting-edge facilities which provide students with hands-on experience using the latest technologies and tools employed in the field. The SSDC (Students Skill Development Center) serves as collaborative spaces where students and faculty work closely with industry professionals on live projects, thereby fostering innovation, enhancing technical competence, and accelerating skill development in alignment with industry expectations.

Partial Delivery of Courses by Industry Experts:

- Industry Expert Engagement:

o Industry professionals are invited to co-deliver specific modules of core and elective courses.

Benefits:

o Students gain insights into current industry practices, tools, and methodologies.

o Hands-on experience is emphasized through live case studies, problem-solving sessions, and interactive workshops.

Industry-supported laboratories

Robotics Lab (in collaboration with industry partners)

Lab Highlights:

These labs provide hands-on experience with the latest technologies and tools used in the industry.

Students and faculty collaborate with industry professionals on live projects, fostering innovation and skill development.

Outcomes:

- Enhanced technical expertise and hands-on experience in state-of-the-art technologies.
- Exposure to research-driven environments, promoting innovation and creativity.
- Improved employability and global competitiveness in core and interdisciplinary domains.

Academic Year
2024-2025
Industry offered short-term programs/training

Name of the capability enhancement program	Date of implementation (DD-MM-YYYY)	Number of students enrolled	Name of the agencies/consultants involved with contact details (if any)
NDT Training 2021-2025 Batch	12/8/24 TO 31/8/24	12	Mr. Bhavani Prasad, NDT Trainer +91 90325 85485
NDT Training 2022-2026 Batch	12/8/24 TO 31/8/24	14	Mr. Bhavani Prasad, NDT Trainer +91 90325 85485
SOLID WORKS Training 2023-2027 Batch II-II	10/02/25 To 15/02/25	33	Educad, Mr. Nikhil - 9666552759

Academic Year 2023-2024
Partial delivery of courses

Sl.No	Subject	Year / Sem	Dept	External Faculty Name	Organisation Name	Content
1	Dynamics Of Machinery, DMM-I	III-I	MECH	Dr. Bhaskar Sharma- ,	BHEL	Module 1-3

2	Turbo Machinery	IV-I	MECH	Dr. Bhaskar Sharma- Retrd R&D ,BHEL	BHEL	Module 1-2

Academic Year 2024-2025
Partial delivery of courses

Sl.No	Subject	Year / Sem	Dept	External Faculty Name	Organisation Name	Content
1	ERP Implementations	IV -I	MECH	Mr. Alankar Achadian	Eunoia Innovation Pvt Ltd	Module 1-3
2	KOM	II-II	MECH	Mr. K Santhosh	TS-GENCO	Module 2-4
3	SMCV	II-II	MECH	Mr. Shivakumar	Envision Technologies	Module 3-5
4	SP&JP	III-I	MECH	Dr. M Gopi Krishna	BVRIT	Module 1-5
5	TD	II-I	MECH	Dr. M Gopi Krishna	BVRIT	Module 1-5

MOUs

S.No	Name of the Company	Year of Signing MOU	Activities under each MOU
1	Purdue University	2023	Twice in a year. Design Thinking Activity & Community oriented project
2	Balaji CNC	2024	Once in a year. Internship & 2 students placed
3	Waste Ventures India Pvt.Ltd	2024	Once in a year. Project under waste management

2022-2023

S.No	Date	Semester	Industry Interacted
1	15-06-2023	III-I	T HUB Startup Tour
2	8-12-2022	II-II	Quantum Energies
3	26-11-2022	III-II	ICRISAT Visit

2023-2024

S.No	Date	Semester	Industry Interacted
2	15-06-2024	II-I	IGBC Visit
3	4-04-2024	IV-I	NRSC Visit
4	20-03-2024	III-I	Smrithi Industries

2024-2025

S.No	Date	Semester	Industry Interacted

1	29-03-2025	III-I	Akshaya Patra
2	28-03-2025	II-I	NIT Warangal – Center of Excellence Visit

Impact analysis and actions taken

Impact Analysis

1. Partial Delivery of Courses by Industry Experts

- Students were exposed to real-time industry applications through delivered modules.
- Collaboration helped bridge the gap between curriculum and industry expectations.
- Enabled faculty to upgrade teaching content with practical inputs from industry partners.

2. Industry-Supported Laboratories

- Students and faculty worked on live projects, enhancing problem-solving and technical implementation skills.

3. Industry-Offered Short-Term Programs/Training

- NDT training enhanced skills for specialized domains
- SolidWorks training improved design competencies.

4. MOUs and Collaborative Activities

- Design Thinking/Engineering Project in Community Service collaboration with Purdue University led to community-based projects.
- Internship and placement outcomes were observed with Balaji CNC.

5. Industry Visits

- Students gained exposure to functioning of organizations such as NRSC, Akshaya Patra, T-Hub, and NIT Warangal Center of Excellence.
- Visits supported contextual learning and promoted industry relevance in academic discussions.

Actions Taken

1. Student Skill Development Center- SSDC

- Promoted capability enhancement programs based on industry trends (e.g., NDT, SolidWorks).
- Encouraged students to document learnings and link them with project/problem-solving requirements.

2. Placement Support

- Planned integration of placement-focused elements (mock interviews, resume reviews) during or after training programs.

3 OUTCOME-BASED ASSESSMENT (120) — Total Marks 120.00

3.1 Evaluation of Continuous Assessment: Assignments, Unit Tests, Mid-Term, etc. (10) — Total Marks 10.00

Institute Marks : 10.00

Department of Mechanical Engineering, the assessment methodology for theory courses is meticulously structured to ensure continuous and comprehensive evaluation of students learning outcomes. The total evaluation is for 100 marks, with 30 marks allotted for internal assessment and 70 marks for external assessment. This process is designed to align with the Course Outcomes (COs), facilitate constructive alignment with Program Outcomes (POs), and promote academic improvement throughout the semester.

Continuous Internal Evaluation: Each student undergoes two midterm evaluations (Mid 1 and Mid 2), and each midterm carries 30 marks. Each mid examination is carried out for 30 marks consisting of Subjective paper for 15 marks as Part-I and Presentations, Group Discussions, Quiz, PBL etc. for 10 marks as Part-II and 5 Marks for assignment. The final CIE Marks can be calculated by taking 80% weightage from best of the two mid examinations and 20% weightage from the least scored mid examination marks in each subject.

• The first mid-term examination shall be conducted for the first 50% of the syllabus, and the second mid-term examination shall be conducted for the remaining 50% of the syllabus.

As part of the Continuous Internal Evaluation (CIE) system a structured question bank is developed for the CIE-A component, which is the theory examination carrying 15 marks in each midterm. The question bank is meticulously prepared by course instructors in alignment with the Course Outcomes (COs) and mapped with appropriate Bloom's Taxonomy levels to ensure coverage of various cognitive domains such as understanding, application, and analysis. The questions are categorized based on difficulty levels and distributed uniformly across the syllabus. Each question is tagged with its corresponding CO and PO to ensure constructive alignment and outcome-based assessment.

Once the question bank is prepared by the faculty group, it is submitted to the Course Coordinator for review. The Course Coordinator ensures that the questions are relevant, clearly stated, and aligned with the intended course outcomes. After review, any necessary revisions are made, and the finalized version of the question bank is then submitted to the Examination Cell through the Program Head or the designated departmental representative.This process ensures standardization and fairness in the evaluation while enabling transparent measurement of student learning aligned with the program objectives.

HR21 (30M)	HR22 (40M)	HR24 (40M)
Subjective Paper-15M	Subjective Paper-25	Subjective Paper-25M
Activity Based Assessment-10M	Activity Based Assessment-10M	Activity Based Assessment-10M
Assignments-5M	Assignments-5M	Assignments-5M

First assignment should be submitted before the commencement of the first mid-term examinations, and the second assignment should be submitted before the commencement of the second mid-term examinations. The assignments shall be specified / given by the concerned subject teacher.

Laboratory Course Assessments:

- For practical subjects, there shall be a Continuous Internal Evaluation (CIE) during the Semester for 30 internal marks and 70 marks for Semester End Examination (SEE).
- Continuous Internal Evaluation (CIE): Out of the 30 marks, 20 marks are allocated for day-to-day work evaluation and the remaining 10 marks for midterm examinations.
- There shall be two mid-term examinations of 10 marks each conducted by the concerned laboratory teacher for a duration of 90 minutes and final CIE marks are calculated by taking 80% weightage from best of the two mid examinations and 20% weightage from the least scored mid examination marks in each practical subject and these are added to the marks obtained in day to day work evaluation.

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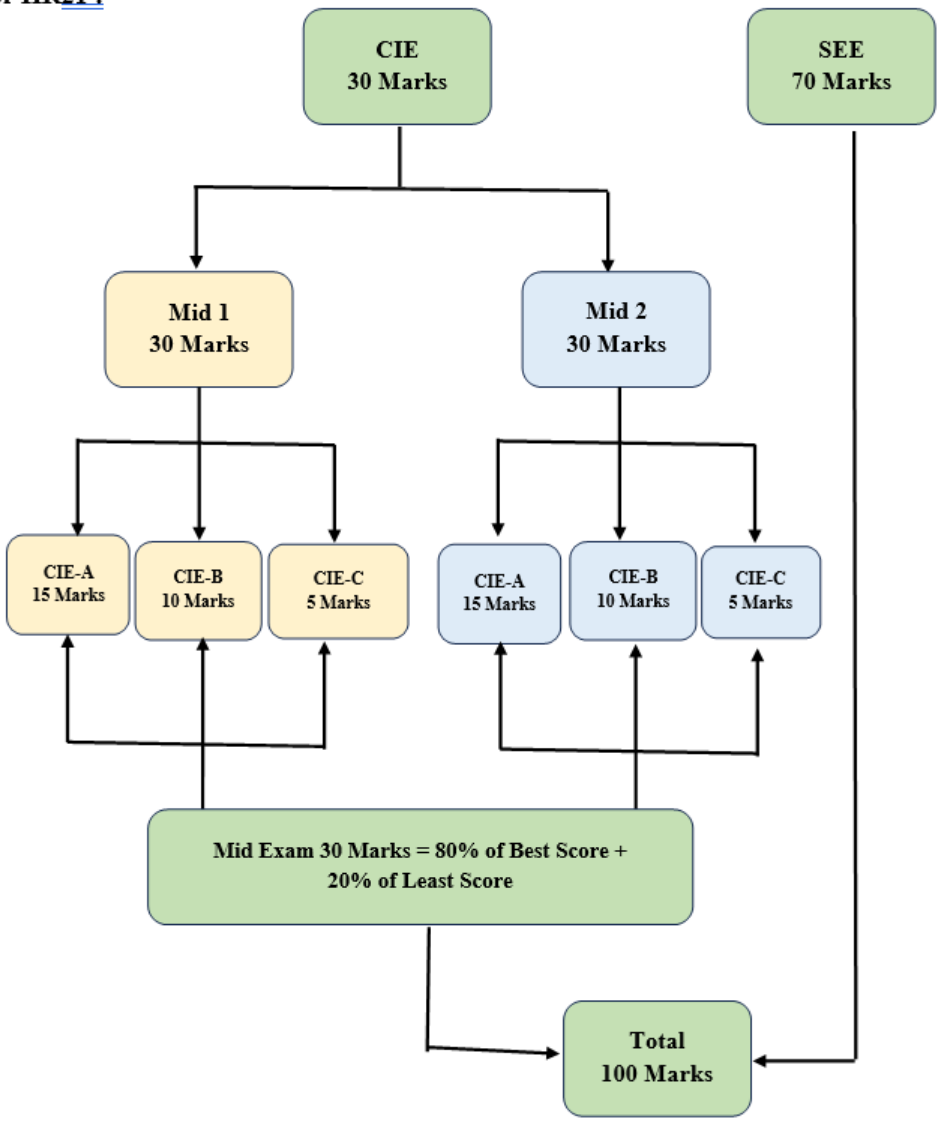
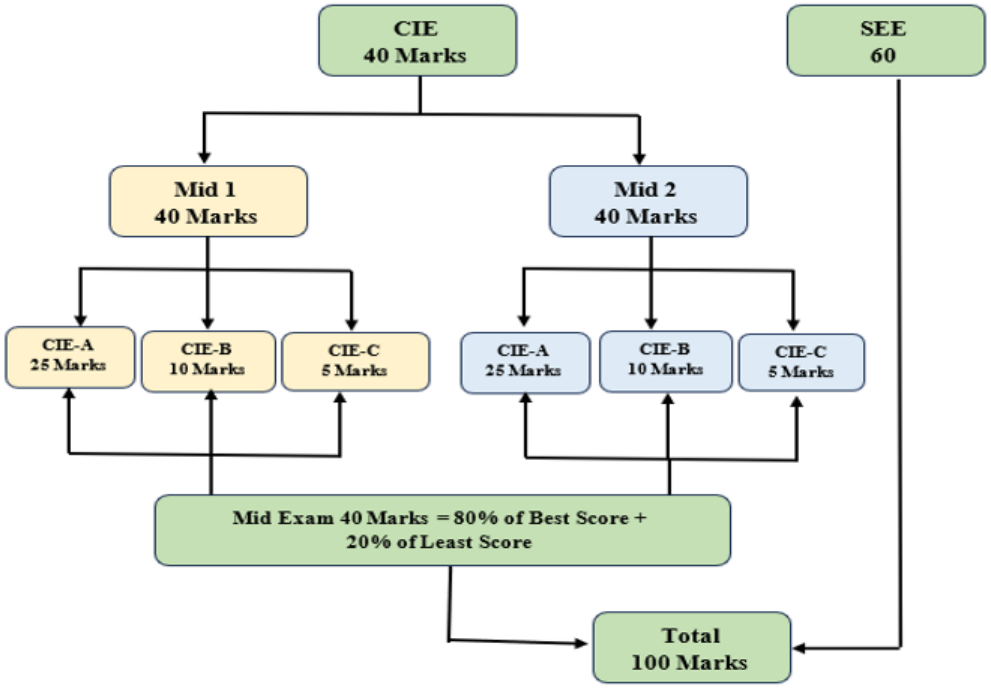
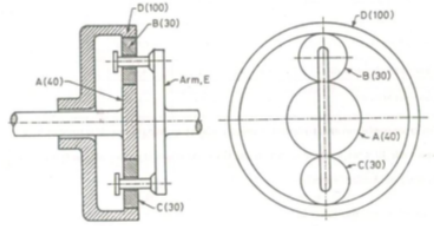
For HR21 :


CIE
30 Marks
SEE
70 Marks
Mid 1
30 Marks
Mid 2
30 Marks
CIE-A
15 Marks
CIE-B
10 Marks
CIE-C
5 Marks
CIE-A
15 Marks
CIE-B
10 Marks
CIE-C
5 Marks
Mid Exam 30 Marks = 80% of Best Score +
20% of Least Score
Total
100 Marks

For HR 22 & HR 24:



	descent period. Draw the profile of the CAM line of stoke is offset 15mm from axis of cam shaft. The				
8	Figure shows an epicyclic gear train. Two planet gears B and C	5	4	CO4	PO1,

CONTINUOUS INTERNAL EVALUATION MID-II Exam		EVEN Semester : 2024-25			
Faculty In-Charge :SNS Santhosh Kumar		**II Yr. II Sem / Branch**		MECH	
Subject Name: Kinematics of Machines **Subject Code : 21PE8EC53**		**Date :**		**Time : 1 Hour**	
Q. No	**PART-A (1 Mark Question) 1 x 5 = 5**	**Marks**	**Bloom's Level**	**COs**	**POs**
1	Differentiate between Davis and Ackermann steering gear mechanisms.	1	3	CO2	PO1, PO2, PO3
2	Why is a double Hooke's joint preferred over a single Hooke's joint?	1	3	CO2	PO1, PO2, PO3
3	What is meant by simple harmonic motion (SHM) in follower displacement?	1	3	CO3	PO1, PO2, PO3
4	Define cam and follower. Mention one application.	1	3	CO4	PO1, PO2, PO3
5	What are cycloidal and involute tooth profiles?	1	3	CO4	PO1, PO2, PO3
Q. No	**PART-B (5 Mark Question) Answer Any TWO Questions 2 x 5 = 10**	**Marks**	**Bloom's Level**	**COs**	**POs**
6	Two shafts are connected by a Hooke's joint. The driving shaft is rotating uniformly with a speed of 1000 rpm. Determine the greatest permissible angle between the two shafts so that total fluctuations of speed does not exceed 90 rpm.	5	4	CO3	PO1, PO2
7	A Cam with minimum reduis of 50mm to give following motion the Knife edge follower. 1. Outstroke through 40 mm during 100° Of cam Rotation 2. Dwell for the next 80 degree of CAM rotation 3. Return stroke of next 90 degree cam rottaion 4. Dwell for the remaining 90 degree of cam rotation. The follwer move with uniform acceleration and retardation at 900 rpm. Find the maximum accelereation & velocity during accent &	5	4	CO3	PO1, PO2, PO3
	having 30 teeth each are attached to the arm E and Gear A is having 40 teeth instead of 50, then find the number of revolutions made by the arm when: a) gear A makes one revolution Clockwise and D makes half a revolution anticlockwise and b) gear A makes one revolution clockwise and D is stationary. 				PO3

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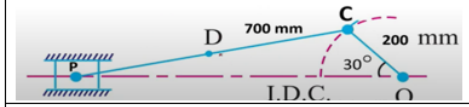
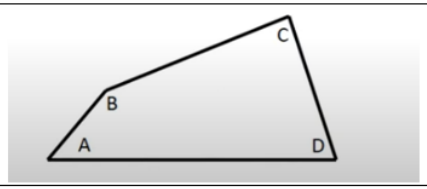
CONTINUOUS INTERNAL EVALUATION MID-I Exam	Even Semester : 2024-25	
Faculty In-Charge :Santosh Naik	**II Yr. II Sem / Branch**	MECH
Subject Name: Kinematics of Machines **Subject Code :** 22PC4ME07	**Date : 12-03-2025**	**Time : 1½ Hour**

Q. No	PART-A (2 Mark Question) 2 x 5 = 10	Marks	Bloom's Level	COs	POs
1	What is indexing mechanism? Where do we use it?	2	3	1	1
2	Write down the Grashof's law for a four bar mechanism?	2	3	1	1
3	Describe acceleration analysis	2	3	1	1
4	Explain Grubler's criteria?	2	3	2	1
5	What is the pantograph	2	3	2	1
	PART-B (5 Mark Question) **Answer All Questions 3 x 5 = 15**				
6	Sketch and demonstrate inversions of a single slider Rotary internal combustion engine	5	4	1	1
	OR				
7	Sketch and interpret the inversions of a Whitworth quick return motion mechanism	5	4	1	1
8	The crank and connecting rod of a reciprocating engine are 200mm & 700 mm respectively. The crank rotating in clockwise direction at 120 rad/s. Find with the help of Kleins construction velocity & acceleration of the mid point of the connecting rod 	5	4	1	1
9	**OR**				
	In a pin jointed four bar mechanism, as shown in fig. AB=45 mm, BC=98mm, CD=75 mm, & AD = 142 mm. The angle BAD =60 °. The crank AB rotates uniformly at 100 r.p.m. Locate all the instantaneous centers and find the angular velocity of the link BC.	5	4	1	1
					
10	Demonstrate Peaucelleir mechanism with neat sketch	5	4	2	1
	OR				
11	Demonstrate Scott Robert mechanism with neat sketch	5	4	2	1

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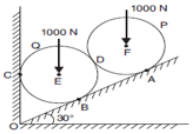
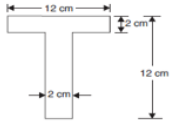
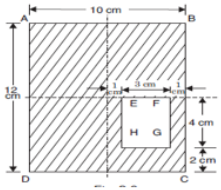
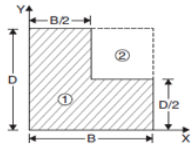
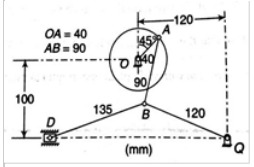
CONTINUOUS INTERNAL EVALUATION MID-I Exam		Even Semester : 2024-25			
Faculty In-Charge : P.BHASKAR RAO		I Yr. II Sem / Branch		MECH	
Subject Name: ENGINEERING MECHANICS Subject Code :24ES2ME04		Date : 22-04-2025		Time : 1½ Hour	
Q. No	PART-A (2 Mark Question) 2 x 5 = 10	Marks	Bloom's Level	COs	POs
1	State triangle law of forces and Lami's theorem	2	3	CO 1	1
2	What is the difference between collinear and concurrent forces	2	3	CO 1	1
3	What do you mean by 'angle of repose'? Prove that angle of repose is equal to the angle of friction.	2	3	CO 1	1
4	Compare centre of gravity and centroid	2	3	CO 1	1
5	Define the radius of gyration	2	3	CO 1	1
	PART-B (5 Mark Question) **Answer All Questions 3 x 5 = 15**				
6	Three forces of magnitude 30 kN, 10 kN and 15 kN are acting at a point O. The angles made by 30 kN force, 10 kN force and 15 kN force with x-axis are 60°, 120° and 240° respectively. Determine the magnitude and direction of the resultant force.	5	4	CO 2	2
	OR				
7	Two identical rollers, each of weight W = 1000 N, are supported by an inclined plane and a vertical wall as shown in Fig. Find the reactions at the points of supports A, B and C. Assume all the surfaces to be smooth. 	5	4	CO 2	2
8	Find the centre of gravity of the T-section shown in Fig 	5	4	CO 2	2
	OR				
9	Find the least force required to drag a body of weight W, placed on a rough inclined plane having inclination α to the horizontal. The force is applied to the body in such a way that it makes an angle θ to the inclined plane and the body is (a) on the point of motion up the plane and (b) on the point of motion down the plane.	5	4	CO 2	2
10	From a rectangular lamina ABCD 10 cm × 12 cm a rectangular hole of 3 cm × 4 cm is cut as shown in Fig. Find the centroid. of the remainder lamina 	5	4	CO 2	2
	OR				
11	Find the moments of inertia about the centroidal XX and YY axes of the section shown in Fig. 	5	4	CO 2	2

CIE Assessment Component (10 Marks):

To ensure continuous and holistic assessment of students understanding and engagement, the following components are integrated into the internal evaluation framework, collectively accounting for 10 marks:

- Presentations: Students deliver individual or group presentations on assigned topics relevant to the course curriculum, promoting communication skills and conceptual clarity.
- Group Discussions: Regularly conducted to foster collaborative learning, critical thinking, and articulation of ideas among students on subject-related or interdisciplinary themes.
- Quiz: Periodic quizzes are administered to assess conceptual understanding, retention, and application of knowledge in a time-bound manner.
- Open Book Examinations: These assessments encourage students to develop analytical and problem-solving skills by applying concepts in novel or complex scenarios, with access to textbooks and reference materials.
- Project-Based Learning (PBL): Students engage in mini-projects or problem-solving activities, focusing on real-world applications and interdisciplinary knowledge, enhancing experiential learning.

Assignment questions	Mapped CO	Mapping PO,PSO

Figure shows a toggle mechanism in which the crank OA rotates at 120 rpm. Find the velocity and the acceleration of the slider at D.  	CO 3	PO 1,2
Draw the profile of a cam to give the following motion to a flat-faced follower: a) Follower to rise through 36 mm during 120^0 of cam rotation with uniform velocity b) Follower to dwell for 50^0 of cam rotation c) Follower to return to its initial position during 90^0 of cam rotation with SHM d) Follower to dwell for the remaining period of cam rotation The minimum radius of cam is 50 mm. Also find the minimum width of the Follower from the cam profile diagram.	CO3	PO 1,2

3.2 Evaluation of the Semester End Exam (SEE) Question Paper (10) — **Total Marks 10.00**

Institute Marks : 10.00

The process of setting SEE (Semester End Examination) papers and their evaluation is carried out with a strong emphasis on maintaining transparency, quality, and alignment with Course Outcomes (COs) and Program Outcomes/Specific Outcomes (POs/PSOs). Question papers are designed using a standardized blueprint that ensures coverage of all COs at appropriate Bloom's Taxonomy levels, promoting constructive alignment between learning objectives and assessments. Each question is mapped to specific COs and POs/PSOs, and reviewed by subject experts and internal moderators to ensure clarity, relevance, and academic rigor. Evaluation is carried out using a detailed scheme of valuation to maintain uniformity and fairness. As part of our commitment to transparency, a script view option is provided to students, allowing them to review their evaluated answer scripts and seek clarifications if needed. All related documentation—including question paper blueprint, CO-PO mapping matrix, answer key, scheme of evaluation, sample scripts, and moderation records—is maintained in the course file as evidence of systematic assessment practices.

Semester End Examinations:

- The duration of SEE is 3 hours. The details of the question paper pattern are as follows: • The end semester examinations will be conducted for 70 marks consisting of two parts viz. i) Part- A for 20 marks, ii) Part - B for 50 marks. • Part-A is compulsory, which consists of ten questions (two from each unit) carrying 2 marks each.
- Part-B consists of five questions (numbered from 11 to 15) carrying 10 marks each. One question from each unit (may contain sub-questions) with internal choice.

Process for Preparing External Exam Question Paper Setting:

- Controller of Examinations (CoE) will prepare the list of experts for various courses from the identified institutions along with the internal experts.

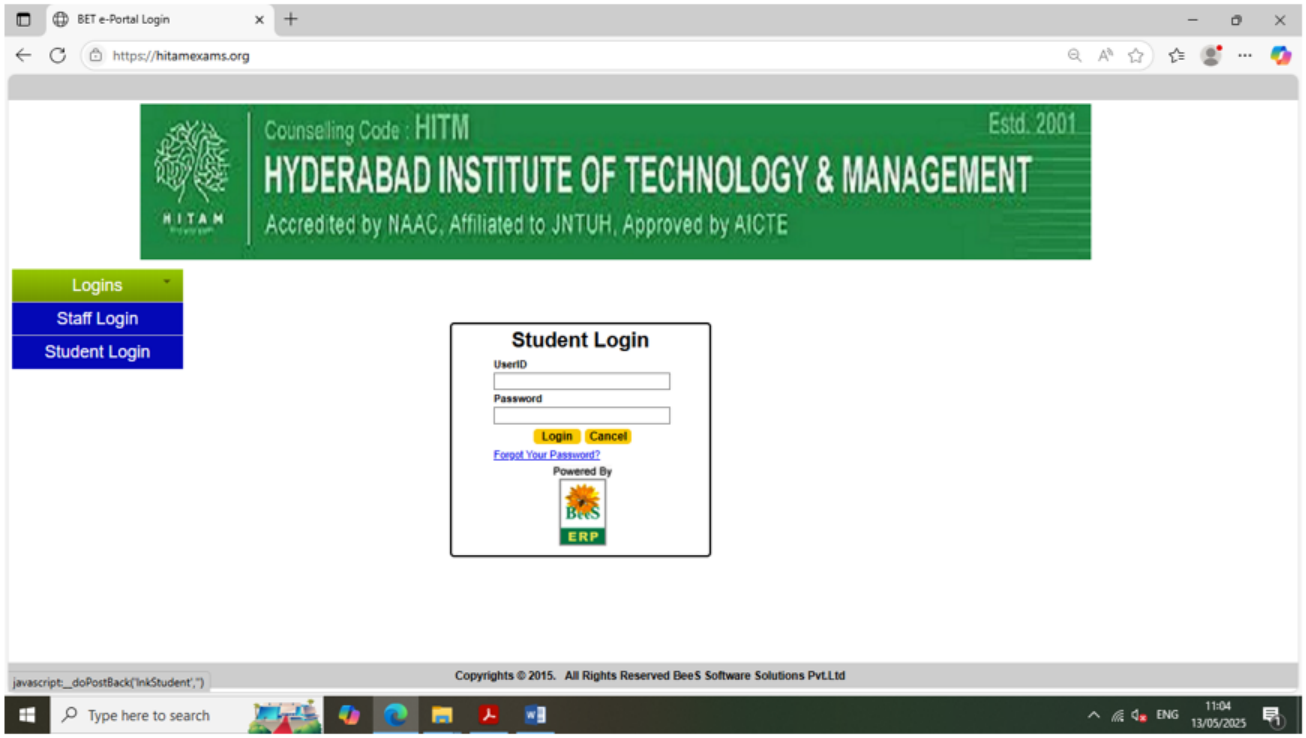
- The Controller of examination will share the Question paper template, Syllabus copy and Blooms Taxonomy along with the guidelines to the external experts for preparing the Question papers.
- For one course 4 sets of Question papers will be collected from different experts from the panel.
- Concerned internal subject faculty will be called for moderation of the paper 2 hours prior to the exam schedule for moderation of the paper if any.
- The Subject faculty will prepare the key and share to the Additional Controller of Examinations.
- Out of the 4 sets one set will be selected by Controller of examination.
- That set will be considered for conducting the exam on the said day.

Evaluation of the SEE answer scripts:

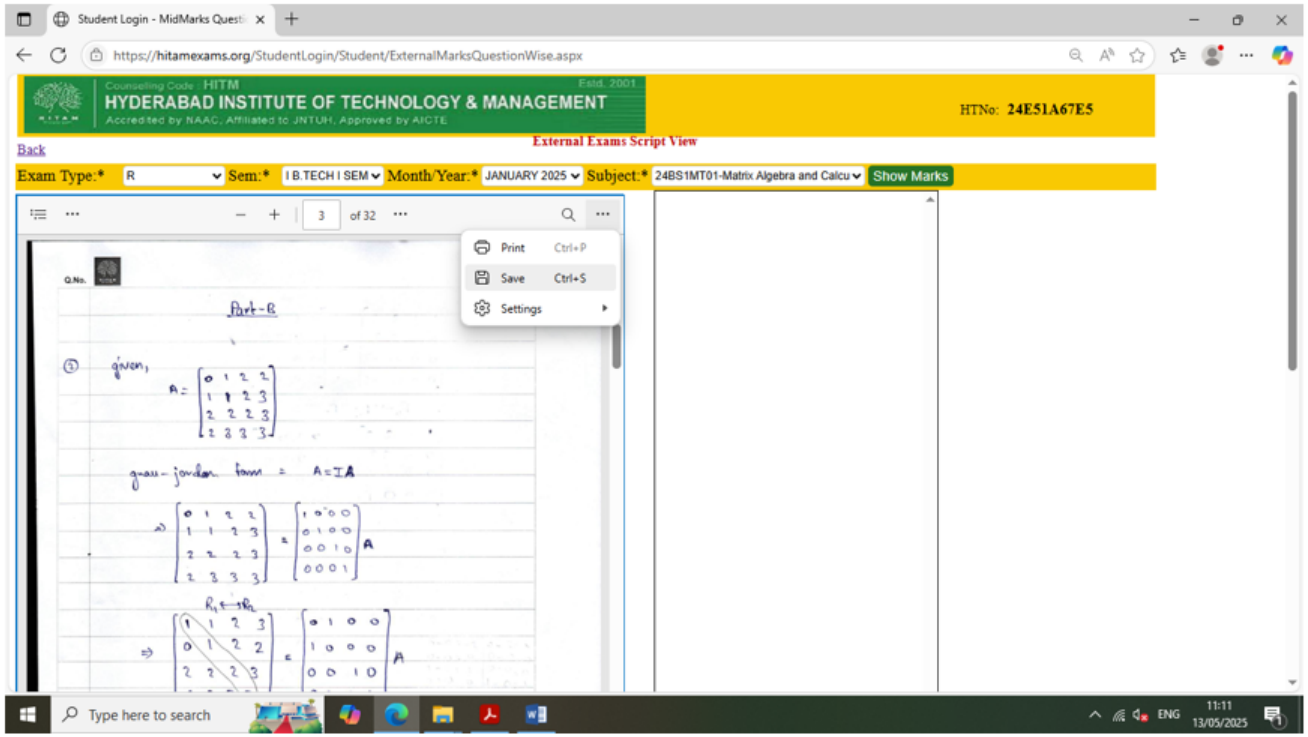
- The CoE will select the subject expert for each course from the panel and then earmark them for doing the evaluation of the answer scripts.
- All the SEE answer scripts are digitalized and uploaded onto the server for carryout out the digital evaluation by internal and external subject experts.
- Examiners should keep their appointment strictly confidential. This is a confidential assignment and he/she must maintain strict confidentiality.
- The evaluator shall access digital bundle scripts by using his/her login credentials provided by Controller of Examinations
- The evaluator shall value a maximum of 80 answer scripts per day- 40 scripts in each session by spending at least 3 to 4 hours per session. The Examiners should follow scrupulously the (Detailed Key) scheme of valuation, in awarding marks, and have to evaluate the answer scripts uniformly.
- The evaluator should evaluate all the questions answered by the student up to the last page of the booklet.
- The marks awarded for each question should be entered in the respective box given in marks awarding table.
- If any evaluator suspects the answer scripts for any reason (i.e. suspected case of Malpractice etc.) that should be brought to the notice of the controller of examinations
- If any evaluator notices that all answers in any answer book let have been struck off, the evaluator may award only zero for such answer book.
- Avoid erratic valuation such as allotting zero marks where the candidate deserves more marks and / or not valuing some questions.
- After complete valuation the evaluators should finalize bundle and generate marks reports and same should be sent to Controller of Examinations concerned
- All the evaluators are requested to submit their filled in remuneration form to the ACE- valuation and collect the remuneration from examination cell office.
- They will complete the valuation in online mode.
- After completion of each valuation Scrutiny will be done to check marks are allotted for all the questions or not.
- All the answer scripts scrutiny process has been carried out after evaluation of the answer scripts before finalizing the secured marks
- Double valuation is followed for evaluating answer scripts of end semester examinations. The following procedure is followed for scrutiny process of answer scripts
- Internal evaluators are identified well in advance for the scrutiny of answer scripts
- Subjects will be allotted to the evaluators with briefing of the procedure to be carried out for scrutiny, they will be provided a computer centre with all relevant documents
- After scrutiny they will be handing over all the scrutiny remarks report to ACE-2.
- ACE-2 will further verify and send the scrutiny remarks to the concerned valuator for rectification.

Transparency of post evaluation process :

Go to https://hitamexams.org/

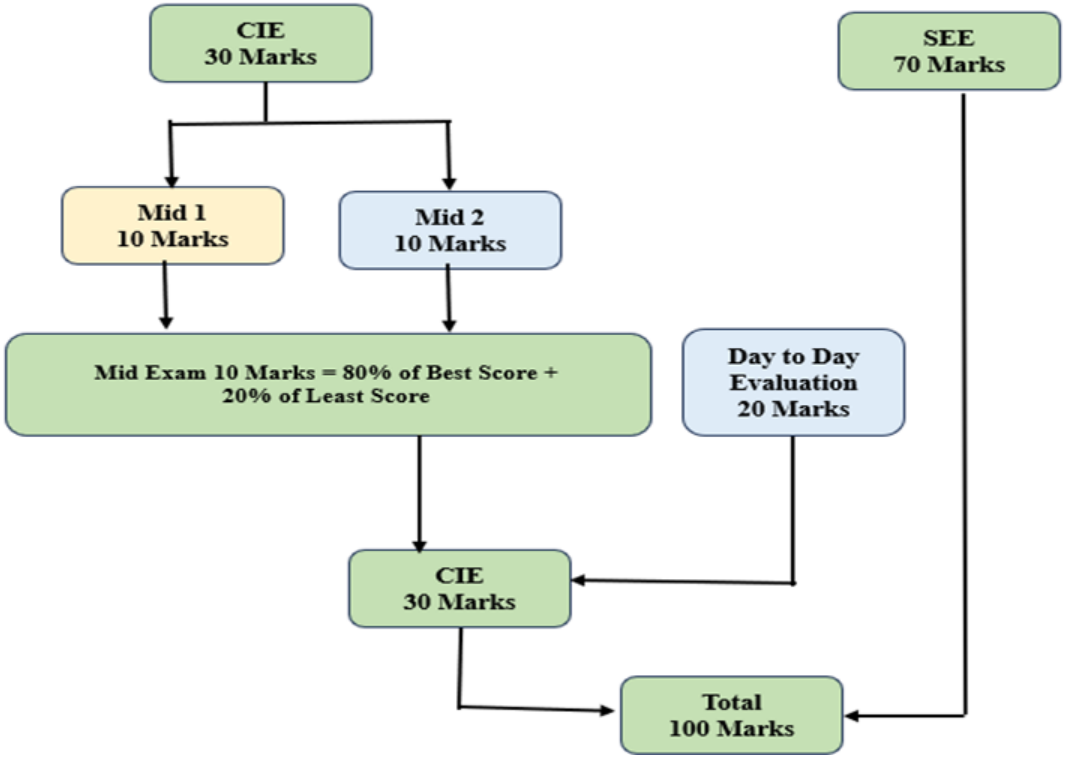


Click on student login
->Enter your credentials



3.3 Evaluation of Laboratory Work and Workshop (Continuous and SEE) (10)	Total Marks 10.00
	Institute Marks : 10.00

- The curriculum for the laboratory is designed to ensure effective attainment of the desired learning objectives and course outcomes.
- For practical subjects, there shall be a Continuous Internal Evaluation (CIE) during the Semester for 30 internal marks and 70 marks for Semester End Examination (SEE).



- Continuous Internal Evaluation (CIE): Out of the 30 marks, 20 marks are allocated for day-to-day work evaluation and the remaining 10 marks for midterm examinations.
- There shall be two mid-term examinations of 10 marks each conducted by the concerned laboratory teacher for a duration of 90 minutes and final CIE marks are calculated by taking 80% weightage from best of the two mid examinations and 20% weightage from the least scored mid examination marks in each practical subject and these are added to the marks obtained in day to day work evaluation.

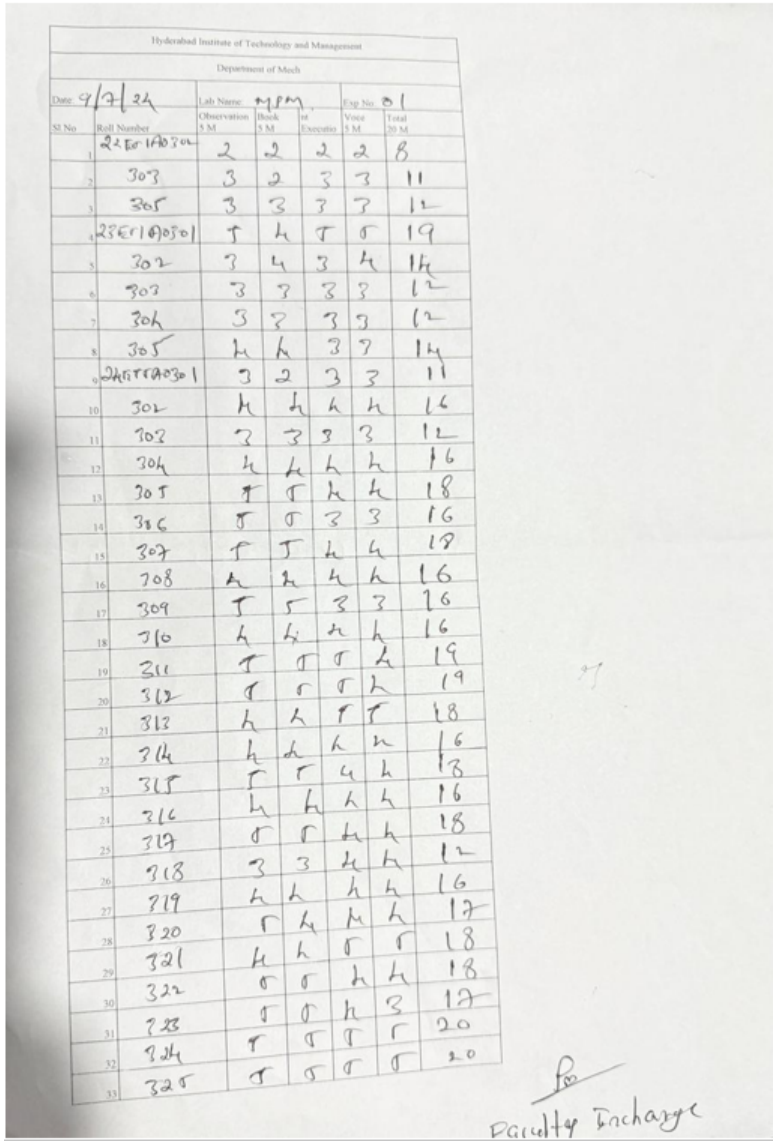
DAY TO DAY EVALUATION RUBRIC (20 Marks)

Criteria	Excellent (5 Marks)	Good (3–4 Marks)	Needs Improvement (1–2 Marks)
Observation (5M)	Actively engaged, follows instructions, attentive throughout	Generally attentive, minor distractions or prompting needed	Often distracted, uninterested, or needs constant guidance
Record Book (5M)	All entries complete, neat, well-organized, accurate	Most entries complete, legible, minor errors	Incomplete, untidy, or contains major errors

Experiment Execution and Team collaboration (5M)	Performs steps accurately and shows clear understanding among team members	Performs with minor help, small errors	Needs major help or makes critical mistakes
Viva Voce (5M)	Answers confidently with clear, accurate understanding	Answers most questions correctly, some hesitation or errors	Poor or incorrect answers, lack of understanding

Semester End Examination (SEE): The SEE for practical subject / course in two batches per section shall be conducted at the end of the semester with duration of 3 hours by one internal and one external examiner appointed by the Head of the Institution as per the recommendation of the concerned Head of the Department.

Criteria	Excellent	Good	Needs Improvement
Design / Code (Theory) (20)	Answers are accurate, complete, and demonstrate strong understanding of design principles and coding logic. Clear, well-organized, and precise. — 15-20 marks	Answers are mostly correct with minor errors or omissions; reasoning mostly clear. — 10-14 marks	Answers are incomplete, unclear, or contain significant errors in logic or design. — 0-9 marks
Execution (15)	Demonstrates flawless implementation of the written solution; follows correct procedures; error-free operation. —13- 15 marks	Implementation is mostly correct with minor issues; follows procedures with minimal errors. — 8-12 marks	Execution is incorrect, incomplete, or fails to follow procedures. — 0-7 marks
Output / Result (15)	Produces accurate and consistent output/results that fully match expected outcomes. — 13- 15 marks	Output is mostly accurate; minor inconsistencies present but overall acceptable. —8-12 marks	Output is incorrect, inconsistent, or irrelevant to the problem statement. — 0-7 marks
Viva Voce (20)	Shows thorough understanding of concepts; answers confidently and clearly; responds correctly to all questions. — 15-20 marks	Shows adequate understanding; answers most questions satisfactorily with minor hesitations. — 10-15 marks	Lacks clarity or understanding; unable to answer majority of questions accurately. — 0-10 marks



Hyderabad Institute of Technology and Management

Department of Mech

Date: 9/7/24 Lab Name: MBM Exp No: 01

Sl No	Roll Number	Observation 5 M	Book 5 M	nt Executio	Voce 5 M	Total 20 M
1	22ER1A0302	2	2	2	2	8
2	303	3	2	3	3	11
3	305	3	3	3	3	12
4	23ER1A0301	5	4	5	5	19
5	302	3	4	3	4	14
6	303	3	3	3	3	12
7	304	3	3	3	3	12
8	305	4	4	3	3	14
9	24ER5A0301	3	2	3	3	11
10	302	4	4	4	4	16
11	303	3	3	3	3	12
12	304	4	4	4	4	16
13	305	5	5	4	4	18
14	306	5	5	3	3	16
15	307	5	5	4	4	18
16	308	4	4	4	4	16
17	309	5	5	3	3	16
18	310	4	4	4	4	16
19	311	5	5	5	4	19
20	312	5	5	5	4	19
21	313	4	4	5	5	18
22	314	4	4	4	4	16
23	315	5	5	4	4	18
24	316	4	4	4	4	16
25	317	5	5	4	4	18
26	318	3	3	4	4	12
27	319	4	4	4	4	16
28	320	5	4	4	4	17
29	321	4	4	5	5	18
30	322	5	5	4	4	18
31	323	5	5	4	3	17
32	324	5	5	5	5	20
33	325	5	5	5	5	20

Faculty Incharge

SEE EVALUATION RUBRICS (70 MARKS)

Criteria	Excellent	Good	Needs Improvement

Design / Code (Theory) (20)	Answers are accurate, complete, and demonstrate strong understanding of design principles and coding logic. Clear, well-organized, and precise. — 15-20 marks	Answers are mostly correct with minor errors or omissions; reasoning mostly clear. — 10-14 marks	Answers are incomplete, unclear, or contain significant errors in logic or design. — 0-9 marks
Execution (15)	Demonstrates flawless implementation of the written solution; follows correct procedures; error-free operation. —13- 15 marks	Implementation is mostly correct with minor issues; follows procedures with minimal errors. — 8-12 marks	Execution is incorrect, incomplete, or fails to follow procedures. — 0-7 marks
Output / Result (15)	Produces accurate and consistent output/results that fully match expected outcomes. — 13- 15 marks	Output is mostly accurate; minor inconsistencies present but overall acceptable. —8-12 marks	Output is incorrect, inconsistent, or irrelevant to the problem statement. — 0-7 marks
Viva Voce (20)	Shows thorough understanding of concepts; answers confidently and clearly; responds correctly to all questions. — 15-20 marks	Shows adequate understanding; answers most questions satisfactorily with minor hesitations. — 10-15 marks	Lacks clarity or understanding; unable to answer majority of questions accurately. — 0-10 marks

3.4 Evaluation of Industrial Training/ Internship (Continuous and SEE) (10) **Total Marks 10.00**

Institute Marks : 10.00

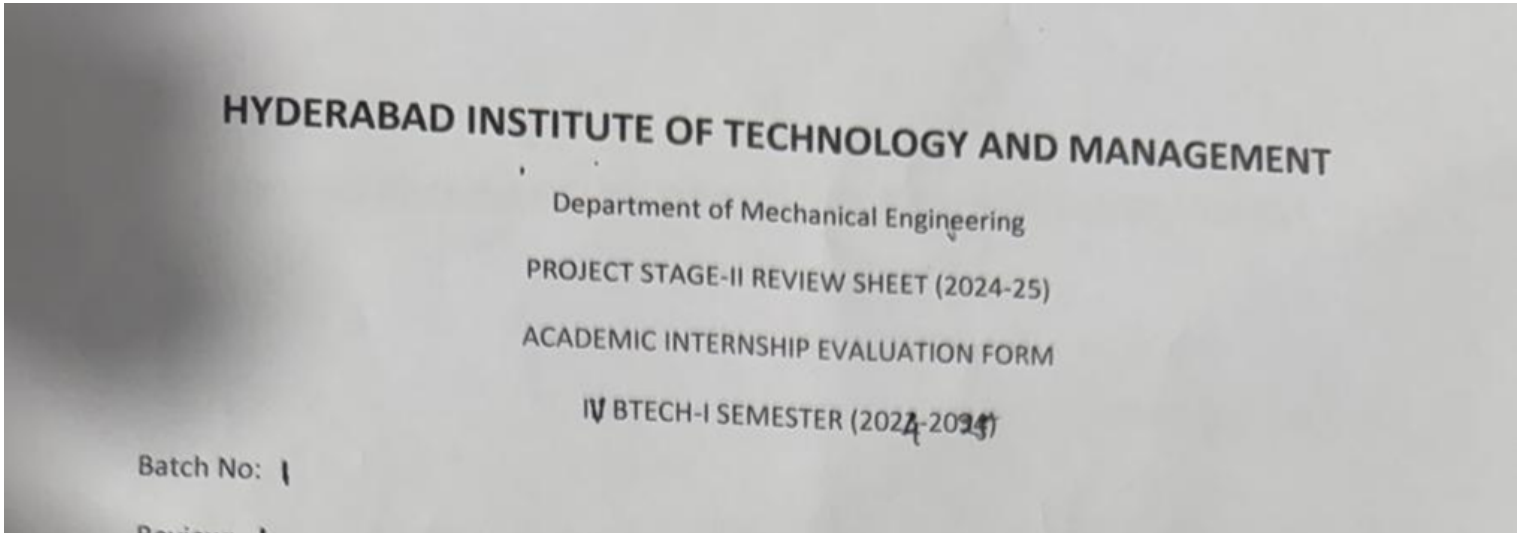
The summer Internship shall be registered by the student in consultation with the course coordinator as per their course structure.

Once the internship is completed they will submit a report covering their learnings and will present the same during the regular reviews conducted by the department committee (consisting of the Head of the Department, the concerned supervisor, and two senior faculty members) as per the schedule. In general minimum two reviews will be conducted for 25 marks each, and the fianal presentation along with report evaluation will be assessed for 50 marks by a committee..

.Rubrics for Evaluation of Internship:

Criteria	Excellent	Good	Needs Improvement	Max Marks
		Shows general understanding		

Understanding of Background and Topic (10 Marks)	Demonstrates clear and deep understanding of the topic with relevant context and background.	with minor gaps.	Limited or unclear understanding of the topic background.	10
Specific Project Goals (5 Marks)	Goals are well-defined, measurable, and aligned with the topic.	Goals are defined but may lack clarity or completeness.	Goals are vague or not clearly linked to the project.	5
Literature Survey (5 Marks)	Comprehensive review of relevant literature with critical insights.	Covers key literature with basic understanding.	Inadequate or poorly referenced literature.	5
Project Planning (10 Marks)	Well-structured plan with timelines, task allocation, and milestones.	Adequate planning with some clarity and structure.	Poorly planned or lacking clear structure.	10
5. Presentation Skills (10 Marks)	Confident, clear, engaging, and well-paced presentation with effective visuals.	Satisfactory delivery with minor issues in clarity or engagement.	Poorly delivered presentation lacking structure or clarity.	10
6. Question and Answer (10 Marks)	Responds confidently and accurately with in-depth understanding.	Responds adequately with minor errors or hesitation.	Unable to answer effectively or lacks conceptual clarity.	10


HYDERABAD INSTITUTE OF TECHNOLOGY AND MANAGEMENT

Department of Mechanical Engineering

PROJECT STAGE-II REVIEW SHEET (2024-25)

ACADEMIC INTERNSHIP EVALUATION FORM

IV BTECH-I SEMESTER (2024-2025)

Batch No: 1

Review: 1

Title: Non Destructive.

Candidate Details			
S.No	Roll No.	Candidate Name	Supervisor
1	21BRIA0303	B Satish	
2	21BRIA0309	K Akshitha	
3	21BRIA0312	N Sricharan	
4	22BRIF0302	I Anisha	
5	22BRIF0303	K Sai Rahul	

Subject Matter	Marks (50M)				
	Batch Members				
Understanding of Background and Topic (10 Marks)	1	2	3	4	5
Specific Project Goals (5 Marks)	4	3	4	4	4
Literature Survey (5 Marks)	4	4	4	4	4
Project Planning (10 Marks)	3	4	4	4	4
Presentation Skills (10 Marks)	8	8	7	8	8
Question and Answer (10 Marks)	7	6	7	6	6
TOTAL (50M)	26	25	26	30	26
COMMENTS					

SUPERVISOR

HOD

INTERNSHIP COOD

Need to should are Project related to NDT

Rubric Criteria and PO/PSO Mapping:

Rubric Criteria	Marks	Linked POs/PSOs
Understanding, Background, and Topic	5	PO1 (Engineering Knowledge), PO2 (Problem Analysis), PSO1, PSO2
Specific Project Goals	3	PO2, PO3 (Design/Development of Solutions), PSO1, PSO2
Literature Survey	2	PO2, PO4, PSO1, PSO2
Work Planning	5	PO5 (Modern Tool Usage), PO11 (Project Management and Finance), PSO1, PSO2
Presentation Skills	5	PO10 (Communication)
Question and Answers	5	PO2, PO10, PO12 (Lifelong Learning)

3.5 Evaluation of Projects (20)

Total Marks 20.00

Institute Marks : 20.00

- Student(s) shall start the Project Stage-1during the VII Semester (IV-B. Tech–I–Semester) in accordance with the regulations and under the supervision of the Project Guide/ Project Supervisor assigned by the Head of the Department. The topics for Mini Project, Summer Internship, Major Project and Technical seminar shall be different from one another.
- The Project Work shall be carried out in two stages: Project-I (Stage – I) during VII Semester (IV-B. Tech.–I–Semester), and Project-II (Stage – II) during VIII Semester (IV-B. Tech–II–Semester), and the student has to prepare two independent Project Work Reports – one each during each stage.
- First Report shall include the Project Work carried out under Stage – I, and the Second Report (Final Report) shall include the Project Work carried out under Stage – I and Stage – II put together. Stage – I and Stage – II of the Project Work shall be evaluated for 100 marks each.
- Out of the total 100 marks allotted for each stage of the Project Work, 30 marks shall be for the Continuous Internal Evaluation (CIE), and 70 marks shall be for the End Semester Viva-voce Examination (SEE).
- The marks earned under CIE for both the stages of the Project shall be awarded by the Project Guide / Supervisor (based on the continuous evaluation of student's performance during the two Project Work stages); and the marks earned under SEE shall be awarded by the Project Viva-voce Committee / Board (based on the work carried out, report prepared and the presentation made by the student at the time of Viva-voce Examination).
- For the Project Stage - I, the Viva-voce shall be conducted at the end of the VII Semester, before the commencement of the semester End Examinations, by the Department Evaluation Committee comprising of the Head of the Department or One Senior Faculty member and Supervisor and the Project Stage – II Viva-voce shall be conducted by the Committee comprising of an External Examiner appointed by the Head of the Institution, Head of the Department and Project Supervisor at the end of the VIII Semester, before the commencement of the semester End Examinations.
- If a student does not appear (or fails) for any of the two Viva-voce examinations at the scheduled times as specified above, he may be permitted to reappear for Project Stage - I and/or Project Stage - II Viva-voce examinations, as and when they are scheduled again in that semester; if he fails in such 'one reappearance' evaluation also, he has to reappear for the same in the next subsequent semester(s), as and when they are scheduled, as supplementary candidate.
- Marks will be awarded to indicate the performance of the student in Project work based on the percentage of marks obtained in Continuous Internal Evaluation plus Semester End Examination, both taken together and corresponding letter grades shall be given.
- As a measure of the student's performance, a 10-point Absolute Grading System using the following letter grades (UGC Guidelines) and corresponding percentage of marks shall be followed.

% of Marks Secured (Class Intervals)	**Letter Grade (UGC Guidelines)**	**Grade Points**
90% and above (≥ 90%, ≤ 100%)	O (Outstanding)	10
Below 90% but not less than 80% (≥ 80%, < 90%)	A^+ (Excellent)	9
Below 80% but not less than 70% (≥ 70%, < 80%)	A (Very Good)	8
Below 70% but not less than 60% (≥ 60%, < 70%)	B^+ (Good)	7
Below 60% but not less than 50% (≥ 50%, < 60%)	B (Above Average)	6
Below 50% but not less than 40% (≥ 40%, < 50%)	C (Average)	5
Below 40% (< 40%)	F (Fail)	0
Absent	Ab	0

A structured rubric-based assessment was developed and implemented for evaluating student performance in Project work (Reviews). This rubric evaluates multiple cognitive and professional competencies in accordance with the targeted Program Outcomes (POs) and Program Specific Outcomes (PSOs).

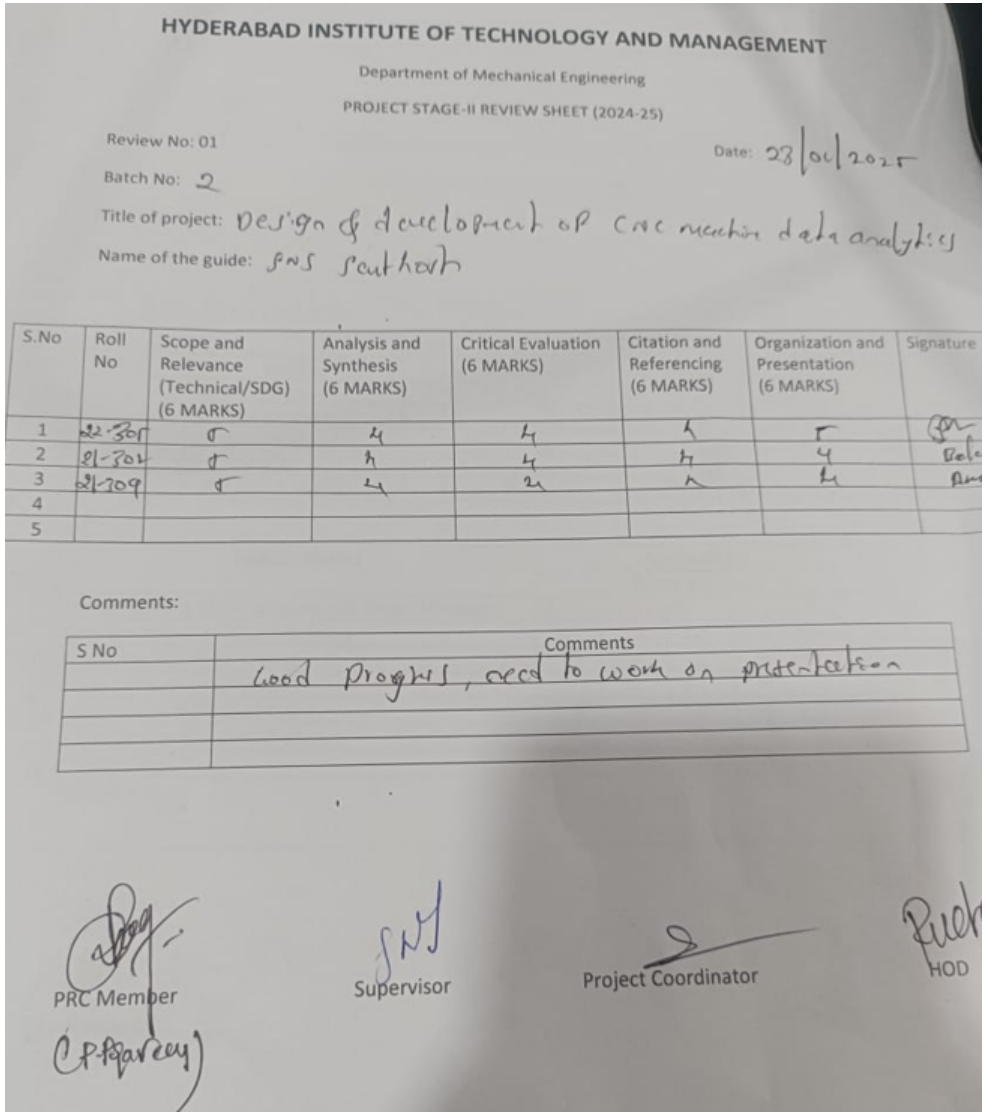
PROJECT WORK REVIEW1 RUBRICS :

Criteria	Excellent (6 marks)	Good (4-5 marks)	Needs Improvement (0-3 marks)
Scope and Relevance (Technical/SDG) (6 MARKS)	* Clearly defines the Problem and its significance. * Reviews a comprehensive range of relevant and up-to-date literature.	* Defines the research topic. * Reviews relevant literature, but may be limited in scope or outdated. * Shows some understanding of the field.	* Attempts to define the research topic. * Reviews some literature, but may not be directly relevant or current. * Limited understanding of the field.
Analysis and Synthesis (6 MARKS)	* Critically analyzes and synthesizes the reviewed literature. * Identifies key themes, trends, and gaps in research.	* Analyzes the reviewed literature. * Identifies some key themes and gaps in research. * Shows some ability to compare and contrast different perspectives.	* Attempts to analyze the reviewed literature. * May identify basic themes but lacks synthesis. * Limited ability to compare and contrast different perspectives.
Critical Evaluation (6 MARKS)	* Critically evaluates the strengths and weaknesses of the reviewed literature. * Identifies potential biases and limitations of different studies.	* Evaluates the reviewed literature. * Identifies some strengths and weaknesses of different studies. * Shows some ability to assess the credibility of sources.	* Attempts to evaluate the reviewed literature. * May identify basic strengths and weaknesses but lacks critical evaluation. * Limited

			ability to assess the credibility of sources.
Citation and Referencing (6 MARKS)	All sources are properly cited in the text and in a reference list.	* Uses a referencing style, but may have some inconsistencies. * Most sources are properly cited.	* Attempts to use a referencing style, but may be inconsistent or inaccurate. * Some sources may be missing citations.
Organization and Presentation (6 MARKS)	* Clear and logical organization. * Well-written and easy to understand. * Free of grammatical errors and typos.	* Generally well-organized. * Clear writing with few errors.	* Somewhat disorganized or unclear. * Writing may contain some errors.

Rubric Criteria and PO/PSO Mapping:

Rubric Criteria	**Marks**	**Description**	**Linked POs/PSOs**
Scope and Relevance	6	Assesses the ability to identify the research problem and review relevant, up-to-date literature.	PO1 (Engineering Knowledge), PO2 (Problem Analysis), PSO1
Analysis and Synthesis	6	Evaluates critical thinking, theme identification, and synthesis of literature.	PO2, PO4 (Conduct Investigations), PSO1,PSO2
Critical Evaluation	6	Assesses judgment in evaluating strengths, weaknesses, biases, and limitations in studies.	PO2, PO4, PO9 (Individual and Team Work), PSO1
Citation and Referencing	6	Checks for academic integrity and use of proper referencing standards.	PO8 (Ethics), PO10 , (Communication),PSO1,PSO2
Organization and Presentation	6	Evaluates clarity, coherence, grammar, and overall quality of presentation.	PO10, PO12 (Lifelong Learning)



HYDERABAD INSTITUTE OF TECHNOLOGY AND MANAGEMENT

Department of Mechanical Engineering

PROJECT STAGE-II REVIEW SHEET (2024-25)

Review No: 01 Date: 23/01/2025

Batch No: 2

Title of project: Design & development of CNC machine data analytics

Name of the guide: SNS Sasthosh

S.No	Roll No	Scope and Relevance (Technical/SDG) (6 MARKS)	Analysis and Synthesis (6 MARKS)	Critical Evaluation (6 MARKS)	Citation and Referencing (6 MARKS)	Organization and Presentation (6 MARKS)	Signature
1	22-305	5	4	4	4	5	
2	21-302	5	4	4	4	4	
3	21-309	5	4	4	4	4	
4							
5							

Comments:

S No	Comments
	Good Progress, need to work on presentation

PRC Member

Supervisor

Project Coordinator

HOD

Evidence of Student Assessment Through Rubrics:

- Individual student evaluation sheets, filled out by faculty evaluators during Reviews, are maintained in respective project files.
- Scores for each criterion are recorded along with qualitative feedback where applicable.

- Assessment outcomes are used to provide constructive feedback and guide students toward improvement in further project stages.

In line with the outcome-based education framework of NBA, a comprehensive rubric has been designed to assess students performance in Review 2 of Project Work. This rubric ensures structured evaluation, focusing on technical and managerial competencies while aligning with targeted Program Outcomes (POs) and Program Specific Outcomes (PSOs).

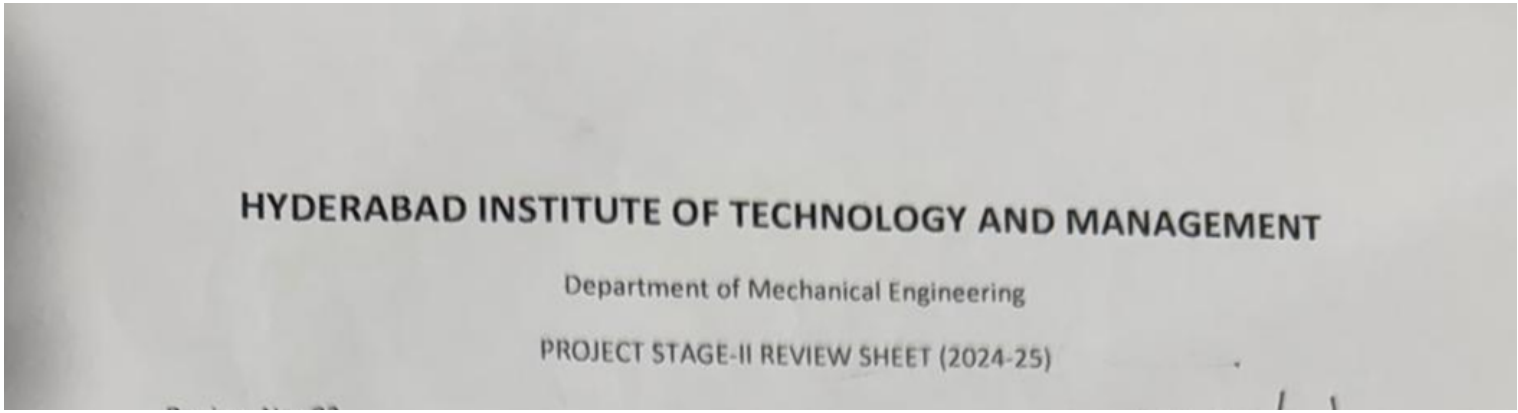
PROJECT WORK REVIEW2 RUBRICS :

Criteria	Excellent (6 marks)	Good (4-5 marks)	Average (2-3 marks)	Poor (0-1 marks)
Understanding of the Project (6 marks)	Demonstrates a clear and comprehensive understanding of the project objectives, scope, and technical challenges.	Has a good grasp of the project goals and can explain the key technical aspects.	Shows a basic understanding of the project but may lack clarity on specific technical details.	Limited understanding of the project goals and challenges.
Project Methodology (6 marks)	Clearly outlines the chosen methodology for research, design, implementation, and testing. Explains the rationale behind the approach and justifies its suitability for the project.	Describes a well-defined methodology but may lack detailed explanation for specific steps.	Presents a general approach but lacks details or may not be well-suited for the project.	Unclear or poorly defined methodology.
Progress on Work (6 marks)	Significant progress has been made on all project aspects (design, simulation, construction, etc.) as planned. Meets or exceeds expected milestones.	Demonstrates steady progress on the project with some completed tasks according to the plan.	Limited progress on the project. May be falling behind schedule.	Minimal or no progress made on the project tasks.
Technical Content (6 marks)	Demonstrates a strong understanding of relevant electrical engineering concepts and principles applied to the project. Uses appropriate technical language and terminology.	Shows a good understanding of technical concepts but may have minor inaccuracies.	Limited knowledge of technical concepts applied to the project. May exhibit significant errors.	Weak understanding of technical knowledge required for the project.
Project Management (6	Effectively manages project timelines, resources, and budget. Identifies and mitigates potential risks.	Shows a good effort in managing the project but may lack	Limited project management skills. Potential for delays or exceeding budget. Poor	Unorganized approach to project management. No clear

marks)	Demonstrates strong communication skills for project updates.	detailed planning or communication .	communication regarding project progress.	plan or communication.

Rubric Criteria and PO/PSO Mapping:

Rubric Criteria	Marks	Description	Linked POs/PSOs
Understanding of the Project	6	Evaluates depth of understanding of project objectives, scope, and technical challenges.	PO1 (Engineering Knowledge), PO2 (Problem Analysis), PSO1, PSO2
Project Methodology	6	Assesses clarity, rationale, and appropriateness of the chosen approach.	PO3 (Design/Development), PO4 (Investigation), PSO1, PSO2
Progression Work	6	Measures advancement in design, simulation, and construction as per milestones.	PO11 (Project Management), PSO1, PSO2
Technical Content	6	Examines the use of core engineering concepts and terminology.	PO1, PO5 (Modern Tool Usage), PSO1, PSO2
Project Management	6	Reviews planning, timeline, budget control, and communication efficiency.	PO9 (Individual and Team Work), PO10 (Communication), PO11



Review No: 02

Date: 13/02/2025

Batch No: 1

Title of project: Design & Development of quality report from manufacturing component using image processing

Name of the guide: Dr. Rachit Srivastava

S.No	Roll No	Understanding of the project (6 Marks)	Project Methodology (6 marks)	Progress on Work (6 marks)	Technical Content (6 marks)	Project Management (6 marks)	Signature
1	22-364	4	4	5	5	4	Manav
2	22-362	3	4	5	5	4	Rishi
3	21-205	3	4	5	5	4	Aditya
4							
5							

Comments:

S No	Comments
	Need to work on design part of project, related to topic need to be perfect

PRC Member (CP. Pipareey)

Supervisor

Project Coordinator

HOD

Evidence of Student Assessment Through Rubrics:

- Faculty evaluators conduct individual and team assessments using the rubric sheet.
- Evaluation records, scoring breakdowns, and reviewer comments are documented and stored in course files.
- These assessments are used to provide developmental feedback to students and to guide improvements in the subsequent project phases.

3.6 Evidence of Addressing Sustainable Development Goals (SDG) (10)	**Total Marks 10.00**
	Institute Marks : 10.00

As part of our commitment to Outcome-Based Education (OBE) and global sustainability efforts, the department actively encourages integration of United Nations Sustainable Development Goals (SDGs) into student activities, project work, and research initiatives.

To promote awareness and action on sustainability challenges, students are engaged through the following:

Project Work and Mini Projects:

Students undertake course projects and capstone projects aligned with specific SDGs such as clean energy (SDG 7), industry and innovation (SDG 9), sustainable cities (SDG 11), and climate action (SDG 13). These projects focus on real-world problems and propose feasible, innovative, and sustainable solutions.

Research and Internships:

Selected students are involved in research work and internships at reputed institutions like IIITH, NIT Warangal etc. that contribute to sustainability themes such as water conservation, smart grids, energy-efficient systems, waste management, and environmental monitoring using IoT.

Student Clubs and Activities:

Student-led initiatives and technical clubs organize awareness campaigns, sustainability workshops, clean-up drives, energy audits, and plantation activities promoting SDGs such as responsible consumption (SDG 12) and life on land (SDG 15).

A portfolio of evidence including project reports, photographs, posters, certificates, and documentation of student involvement is maintained. This integrated approach not only nurtures socially responsible graduates but also aligns institutional efforts with national and global development goals.

Sl. No.	Academic Year	Activity/Event Name	Organizing Body	Date	Brief Description	Linked SDG(s)	Type of Work	Outcome/Impact
1	2023–2024	Awareness on Pollution	IIC + Student Clubs	2 Dec 2023	Seminar on air and water pollution, its effects, and mitigation measures	SDG 3 (Good Health), SDG 13 (Climate Action)	Seminar/Activity	Increased awareness about pollution effects and strategies for environmental protection
2	2023–2024	Green Building Congress Conference – Chennai	IGBC	Nov 2023	Participation in a national-level conference to explore green technologies	SDG 9 (Industry Innovation), SDG 11 (Sustainable Cities)	Conference Participation	Exposure to industry experts and innovative green building practices
3	2023–2024	Tree Plantation Drive (Campus-wide)	IGBC + NSS	5 June 2023	Plantation drive on campus in celebration of World Environment Day	SDG 15 (Life on Land), SDG 13 (Climate Action)	Social/Green Activity	Improved green cover and greater student involvement in biodiversity protection
4	2023–2024	IGBC Sustainable Practices Field Visit	IGBC Student Chapter	14/06/2024	Field visit to observe sustainable practices in water, waste, and energy management	SDG 6 (Clean Water), SDG 12 (Responsible Consumption), SDG 13 (Climate Action)	Field Visit	Practical understanding of sustainable practices through real-world implementations
5	2024–2025	Tree Plantation Drive	IGBC + NSS	5 June 2025	Annual tree plantation drive to continue	SDG 15 (Life on Land)	Social/Green Activity	Reinforced eco-awareness and active participation

					the green initiative on campus			in campus biodiversity efforts

Sample Students Project works mapped to SDGs: 2022-2023

S.NO (http://s.no/)	ROLL NUMBER	NAME OF THE STUDENT	Project Title	SDG	Justification
1	19E51A0314	M.Rithwik Hanok	MEIL 50MW Concentrated Solar thermal Power Plant	SDG 2	A multi-purpose agricultural machine enhances farming efficiency, reduces labor, and increases food production, directly contributing to food security and sustainable agriculture.
	19E51A0302	A Yuvaraj Reddy			
	19E51A0316	M.Yogesh Sai			
	19E51A0309	M.Jeetendrakumar			
	19E51A0323	SkArbas			
2	19E51A0303	B.Venkata Rajesh	MEIL 50MW Concentrated Solar thermal Power Plant	SDG 2	A multi-purpose agricultural machine enhances farming efficiency, reduces labor, and increases food production, directly contributing to food security and
	19E51A0312	K. Sandeep			
	19E51A0321	M.puneeth			
	19E51A0322	P. Sahith Reddy			
	19E51A0306	C. Yajneshwar Ram			

					sustainable agriculture .
3	18E51A0309	Ch.Naveenvenkatsai	Design and Analysis of a Multi-Purpose Agricultural Machine	SDG 9	Developing innovative, multi-functional agricultural machinery fosters technological advancement, industrial growth, and resilient infrastructure, aligning with sustainable innovation in agriculture .
	20E55A0305	G.Sandeep			
	20E55A0306	G.Nithin			
	20E55A0318	T.Shilpa			
4	19E51A0318	N. Pavan Kumar Reddy	MEIL 50MW Concentrated Solar thermal Power Plant	SDG 2	A multi-purpose agricultural machine enhances farming efficiency, reduces labor, and increases food production, directly contributing to food security and
	19E51A0324	Masroof Hussain			
	19E51A0319	P. Surya Prakash			

					sustainable agriculture .
5	20E55A0310	K.Vijay Babu	CFD Analysis of Heat Exchangers for Optimized Performance	SDG 7	Optimizing heat exchangers improves energy efficiency in industrial and power generation systems, reducing fuel consumption and promoting cleaner energy solutions.
	20E55A0302	A.Arun			
	20E55A0304	E.Uday Kiran			
	20E55A0307	K.Sridhar			
	20E55A0309	K.Ajay			
6	20E55A0311	K. Sujith	MEIL 50MW Concentrated Solar thermal Power Plant	SDG 2	A multi-purpose agricultural machine enhances farming efficiency, reduces labor, and increases food production, directly contributing to food security and sustainable agriculture .
	20E55A0312	Mohd Ismail			
	20E55A0313	M. Haranath Narayan			
	20E55A0316	P. Prabhakar			
	20E55A0315	P. Sanjeev Reddy			
	20E55A0319	V Bhuvaneshwar			Using composite materials

7	20E55A0314	P Bhargav Reddy	Design and Analysis of a Composite Leaf Spring	SDG 12	in leaf springs reduces vehicle weight, enhances fuel efficiency, and minimizes material waste, promoting sustainable production practices.
8	20E55A0308	K. Swapna	Structural Analysis of a Car Chassis Using Finite Element Method (FEM)	SDG 13	Structural optimization of car chassis can lead to lighter, more fuel-efficient vehicles, reducing carbon emissions and supporting climate change mitigation.
	20E55A0317	T. Manaswini			
9	19E51A0330	V.Akshith	MEIL 50MW Concentrated Solar thermal Power Plant	SDG 2	A multi-purpose agricultural machine enhances farming efficiency, reduces labor, and increases food production, directly
	20E55A0301	Akash			
	20E55A0303	bandibharadwaj			
	19E51A0313	Sharath Goud			

	19E51A0320	Lokesh P			contributing to food security and sustainable agriculture.
10	19E51A0304	B.V.N. Sai Sharath	MEIL 50MW Concentrated Solar thermal Power Plant	SDG 2	A multi-purpose agricultural machine enhances farming efficiency, reduces labor, and increases food production, directly contributing to food security and sustainable agriculture.
	19E51A0305	B. Roshann Sagar			
	19E51A0310	K.Venkata Srikar			
	19E51A0326	Siddartha Rawlo			
	19E51A0329	T.Sheetal Kumar			
11	19E51A0307	D. Ganesh	MEIL 50MW Concentrated Solar thermal Power Plant	SDG 2	A multi-purpose agricultural machine enhances farming efficiency, reduces labor, and increases food production, directly contributing to food security and
	19E51A0311	K. Praveen			
	19E51A0315	Arbaz			
	19E51A0327	Syed Uman			

					sustainable agriculture .
12	19E51A0301	Aravind Siddharth	MEIL 50MW Concentrated Solar thermal Power Plant	SDG 2	A multi-purpose agricultural machine enhances farming efficiency, reduces labor, and increases food production , directly contributing to food security and sustainable agriculture .
	19E51A0308	G. vinay			
	19E51A0317	M. vikas			
	19E51A0328	T. Sai krishna			
13	18E51A0307	Shashank Reddy	MEIL 50MW Concentrated Solar thermal Power Plant	SDG 2	A multi-purpose agricultural machine enhances farming efficiency, reduces labor, and increases food production , directly contributing to food security and sustainable agriculture .
	18E51A0320	Shiva Sai			
	18E51A0322	Srinivas Lunavath			
	18E51A0327	Tadesh Naik			
	18E51A0332	Abhishek Sharma			

Design Thinking I-II ME PBL 2023-24

Design Thinking I-II Mechanical Engineering PBL 2022-2023						
BATCH	NAME OF THE STUDENT	Project Title	SDG	Justification	Complexity Elements	TRL
1	G V P N DHANASREE (22E51A0304)	Smart Helmet	SDG 3	Enhances worker safety by preventing head injuries and monitoring health conditions.	- Sensor selection (impact, temperature, heart rate) - Basic circuit design and integration - Preliminary ergonomic considerations	TRL 3 – Experimental proof of concept
2	NARAYANAM CHETAN (22E51A0306)	360 DEGREE FIRE PROTECTION SYSTEM	SDG 9	Improves fire safety measures in industries and urban spaces, reducing risks of disasters.	- Basic prototype of 360° rotating nozzle - Initial fire/smoke detection sensor logic - Control unit with manual or timer-based actuation	TRL 2 – Technology concept and/or application formulated
	RATAN PANDARINATH RISHIKESH SAGAR (22E51A0309)					
	SHAIK MUDABBIR AHMED (22E51A0310)					
	SHAIK ZAMEER (22E51A0311)					
	AKASH DWIVEDI (22E51A0301)					

Mini Project 2024-25

S.NO	ROLL NUMBER	NAME OF THE STUDENT	Project Title	SDG	Justification
	22E55A0304	KAPPERA MANOJ REDDY			

1	22E55A0312	V.Rakesh	Extraction of the point cloud from manufacturing component from open cv	SDG 9	Enhancing manufacturing precision through computer vision contributes to industrial automation and smart manufacturing, improving efficiency.
	21E51A0305	C.Nithin			
2	22E55A0305	K.Siddeshwar	To study on CNC machine to extract the sensors data	SDG 9	Real-time sensor data extraction from CNC machines aids predictive maintenance and operational efficiency in smart manufacturing.
	21E51A0302	P.Balaji			
	21E51A0309	K.Akshitha			
3	21E51A0317	VADDEY PRIYANSHU	Comprehensive review and development of Mahine Learning models for industrial equipment maintenance	SDG 9	Developing ML models for equipment maintenance reduces downtime and increases sustainability in industrial operations.
	20E51A0311	KUMMARIPALLI VENKATA CHARY			
	21E51A0314	S CHAITANYA			
4	22E55A0302	I REKHA	Design and development of "MAZESOLVER"	SDG 4	A maze-solving robot can be used in educational applications for robotics learning, enhancing STEM
	22E55A0308	MOGULOZU SIRIZA			

					education and problem-solving skills.
5	22E55A0307	LAKAVATH NAVEEN	To study on pollution control equipment	SDG 13	Understanding pollution control equipment helps in mitigating industrial emissions and improving environmental sustainability.
	22E55A0303	K SAI RAHUL			
	22E55A0306	KUKKALA JASWANTH			
6	21E51A0303	BARIDABADE SATISH	Design and development of training module for CNC maching using AR/VR.	SDG 4	AR/VR-based training improves skill development in CNC machining, making technical education more interactive and effective.
	21E51A0307	KAMARAJU CHAITANYA PRANITH			
	21E51A0315	SAGGURTHI SRI HARSHA			
7	22E55A0309	MOHAN SAI CHARAN LINGAMSETTI	Design and analysis of Agricultural Robot	SDG 2	Agricultural robots optimize farming processes, increasing productivity and promoting sustainable agriculture to ensure food security.
	21E51A0312	NANDYALA SREEKARAN REDDY			
	21E51A0306	DUSALI SRIKANTH GOUD			
	22E55A0313	PYATA HARSHA VARDHAN GOUD			
8	22E55A0310	ORUGANTI SIDDARTHA	Exploring concrete 3D Printing - An additive manufacturing		3D concrete printing reduces construction waste, enhances
	21E51A0308	KATURI CHAITANYA			

	21E51A0311	MOHAMMED DURWESH MOHIUDDIN SUFI	technique in construction industry	SDG 11	sustainability, and supports affordable housing initiatives.
	21E51A0304	BOGAPARUPU MOULI			

3.7 Attainment of Course Outcomes (25)	**Total Marks 25.00**
3.7.1. Describe the Assessment Tools and Processes Used to Gather the Data for the Evaluation of Course Outcome (5)	Institute Marks : 5.00

Course Outcome (CO) Attainment:

The assessment of the Course Outcomes attainment for each course is carried out through assessment consist of Continuous Internal Assessments-CIA including the Quiz, Assignments and Semester End Examinations-SEE. Each question in mid/semester end/assignment/quiz is tagged to the corresponding CO. The attainment of each CO is based on the marks scored for the assessment questions based on those Cos.

1. Mid Examinations

This type of performance assessment is carried out during the examination sessions which are held twice a semester. Each and every exam is focused in attaining the relevant course outcomes.

2.Semester End Examination

Semester End Examination is a metric for assessing whether all the COs are attained. Examination is more focused on attainment of course outcomes and program outcomes using a descriptive exam.

3.Rubrics for Laboratory and Project Assessments

Rubrics are formulated for the assessment of Laboratory, Mini Project, Major projects, Seminar, and Internship courses. The attainment of Course Outcomes of all courses with respect to set attainment levels is recorded.

The expected target level of course outcomes is set in the range of 50% based on the cognitive levels of the students by the course coordinator at the beginning of the semester. The performance of the students in the examinations during the semester in each course is used to compute the level of direct attainment of the COs. The questions of each examination are tagged to the course outcomes by the course coordinator.

Course Outcomes – Assessment Process

- The Mid Assessment papers are framed in accordance with course outcomes and the results are analyzed to evaluate the attainments of the mapped course outcomes.
- The analysis is interpreted to find the level of attainment of COs and compared with predefined targets.
- The average of results of CO attainment of all the courses in a semester mapping to a particular PO is compared with pre-defined target of PO. Program Outcomes and Program Specific Outcomes are mapped to Course Outcomes. A performance criterion is set for all the COs.

Target: Fixed based on previous 3 years pass percentage – 50%

Levels Assigned:

Level 1: 50% of students achieving a set attainment level of 50%

Level 2: 55% of students achieving a set attainment level of 50%

Level 3: 60% of students achieving a set attainment level of 50%

Weightage for CIE & SEE: 50% for CIE and 50% for SEE

Process:

1) Enter the marks of the students as per CO wise how we enter in our award sheets given by exam branch into excel sheet for Internal and External

Internal marks include: Mid1, Quiz1, Assignment 1, Mid2, Quiz2, Assignment2

2) Find the number of students attempted CO1, CO2, CO3, CO4

3) Find the number of students getting more than 50% marks for each CO

4) CO assessment = No. of students scored more than 50% marks/No. of students attempted respective CO

5) "Threshold based attainment" can be obtained through percentage weightage for each CO.

6) Step 1 to 5 is used for Internal Assessments and Attainments.

7) Similarly, external Assessments and attainments are obtained using the same process.

8) Enter SEE marks in the excel sheet and find out the average marks

9) CO assessment for external = Average of Marks/Total Marks, We call this as "Average based attainment"

10) Calculate Number of students scoring more than 50% marks. Calculate "Threshold based attainment" by dividing Number of students scoring more than 50% marks/ Total number of students attempted the exam

11) Both percentages of CIE and SEE. Take 50% weightage for both and calculate average for each CO

3.7.2 Record the Attainment of Course Outcomes of all Courses with Respect to Set Attainment Levels (20) | Institute Marks : 20.00

As part of the academic quality assurance process, course outcome (CO) attainment levels for each course are set at the beginning of the academic semester consider the course outcome and the curriculum mapping. These levels are established based on the expected outcomes from the students after deliver of the course by the concerned faculty. The attainment of COs is measured through both Continuous Internal Examinations (CIE) and the Semester End Examination (SEE). CIE includes various assessment components such as mid-term exams, assignments, quizzes, lab work, and project-based evaluations, all carefully mapped to specific COs. The SEE evaluates students' comprehensive understanding of the course and is also aligned with COs. The entire process, including mapping, evaluation metrics, attainment calculations, and action plans for non-attainment, is documented and maintained in the course file for academic reviews.

	CO1	CO2	CO3	CO4
PH105BS/ Engineering Physics Lab	3	3	3	3
ME104ES/ Engineering Graphics	1.5	1.5	1.5	1.5
PH102BS/ Engineering Physics	1	1	1.5	1.5

MA101BS/ Mathematics - I	1.16	0.5	1.5	1.5
CS103ES/ Programming for Problem Solving	1.5	1.5	1.5	1.5
CS106ES/ Programming for Problem Solving Lab	3	3	3	3
CH202BS/ Chemistry	1	0.9	0.9	0.6
ME205ES/ Engineering Workshop	2.5	2.5	2.5	2
CH206BS/ Engineering Chemistry Lab	3	3	3	3
ME203ES/ Engineering Mechanics	1	1	1	1
EN205HS/ English	2.5	2	2.2	1.5
EN207HS/ English Language and Communication Skills Lab	3	3	3	3
MA201BS/ Mathematics - II	0.75	0.67	1.38	1.5
ME307PC/ Machine Drawing Practice	2.75	2.75	2.75	2.75
ME308PC/ Material Science and Mechanics of Solids Lab	3	3	3	3
ME303PC/ Material Science and Metallurgy	2.84	3	2.84	3
ME302PC/ Mechanics of Solids	1.3	1.2	1.3	1.2
MA301BS/ Probability and Statistics & Complex Variables	2.5	2	2.5	2
ME304PC/ Production Technology	1.5	1.5	1.6	1.5
ME306PC/ Production Technology Lab	3	3	3	3
ME305PC/ Thermodynamics	3	3	3	3
EE401ES/ Basic Electrical and Electronics Engineering	1.17	0.5	2	2
EE409ES/ Basic Electrical and Electronics Engineering Lab	2.25	1.5	3	3

ME404PC/ Fluid Mechanics and Hydraulic Machines	3	3	3	3
ME407PC/ Fluid Mechanics and Hydraulic Machines Lab	3	3	3	3
ME405PC/ Instrumentation and Control Systems	3	3	3	3
ME408PC/ Instrumentation and Control Systems Lab	3	3	3	3
ME402PC/ Kinematics of Machinery	3	3	3	3
ME403PC/ Thermal Engineering - I	3	3	3	3
SM504MS/ Business Economics & Financial Analysis	3	3	3	3
ME502PC/ Design of Machine Members-I	3	3	3	3
ME501PC/ Dynamics of Machinery	3	3	3	3
ME509PC/ Kinematics & Dynamics Lab	3	3	3	3
ME508PC/ Metrology & Machine Tools Lab	3	3	3	3
ME503PC/ Metrology & Machine Tools	3	3	3	3
ME506PC/ Operations Research	3	3	3	3
ME505PC/ Thermal Engineering-II	3	3	3	3
ME507PC/ Thermal Engineering Lab	3	3	3	
EN608HS/ Advanced Communication Skills lab	3	3	3	
ME603PC/ CAD & CAM	3	3	3	3
ME606PC/ CAD & CAM Lab	3	3	3	3
ME601PC/ Design of Machine Members-II	3	3	3	3
	3	3	3	3

ME604PC/ Finite Element Methods				
ME602PC/ Heat Transfer	3	3	3	3
ME605PC/ Heat Transfer Lab	3	3	3	
ME612NC/Non-Conventional Sources of energy	3	3	3	3
ME611PE/ Unconventional Machining Processes	3	3	3	3
ME701PC/ Refrigeration & Air Conditioning	3	3	3	3
ME711PE/ Automation in Manufacturing	3	3	3	3
ME722PE/Engineering Materials	3	3	3	3
ME732PE/ Turbo Machinery	3	3	3	3
ME722PE/Automobile Engineering	3	3	3	3
ME702PC/ Industrial Oriented Mini Project/ Summer Internship	3	3	3	3
ME704PC/ Project Stage - I	3	3	3	3
ME703PC/ Seminar	3	3	3	3
MM813PE/ Composite Materials	3	3	3	3
MM815/ Green Fuel Technology	3	3	3	3
MM816/INDUSTRIAL MANAGEMENT (OEIM	3	3	3	3
PROJECT STAGE-II (EE801PC)	3	3	3	3

3.8 Attainment of Program Outcomes and Program Specific Outcomes (25) | **Total Marks 25.00**

Institute Marks : 25.00

PO Attainment

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

ENGINEERIIN	3											
ENGINEERIN	1.2	0.72	0.75	0.9	1.27	0.9	0.75		0.75	0.6	0.75	
ENGINEERIN	1.25											
MATHEMATIC	1.17				0.47							
PROGRAMM			1.5	0.9								
Programming			1	2.04								
CHEMISTRY	0.85	0.4										
ENGG WORK	2.14		0.9		1.5	0.87		0.93		1.73		0.93
ENGINEERIN	3											
ENGINEERIN	1	1	1	1	1							
ENGLISH (EN									1.57	1.99		
ENGLISH LAI									1.8	3		
MATHEMATIC	1.07											
Constitution	2.4	1.8										
MACHINE DF	2.8	2.8	1									
MATERIAL S(	3	1.2										
MATERIAL S(	1.75	1.75	1.75	1.7		1.75	1.75				1.75	
MECHANICS	1.25	1.25	0.75		1.25							
Probability ar	1.57											
Production Te	2.1	2	1.95	1.95								1.8
THERMODYN	2.2	2	2.4	2.6	2.4	1.8					1.95	2.4
ELECTRICAL	0.97	0.9			0.7							
ELECTRICAL	1.46	1.84			0.9							
FLUID MECH	3	3										3
FLUID MECH	2.1	1.8		2.1								
Gender Sens	3	3		1.8	1.2	1.4						
INSTRUMEN	3	3		1.8	1.2	1.4						
INSTRUMEN	1.8	2.1			3							
KINEMATICS	1.92	1.68	1.8	1.68	1.8	2.64	2.52	1.68	1.92	1.44	1.32	

THERMAL EN	3	3	1	3	2.4	2	1.8	3	2	2.4	1.8	
Business Ecc										1.95	1.8	1.8
DESIGN OF M	3	1.8	1.65									
DYNAMICS C	3	2.52	1	2.16		1.5						1.8
Kinematics &	3	1.8									3	1.8
MACHINE TC	2.1	2.4	1		1.8	1.8	1.2					
METROLOGY	2	2.4	1.8									
Operations R	1.8	2.2	1	1.8	3							3
THERMAL EN	3	1.8										3
Thermal Engi	2.4	2.6	1	2.2	1.8	2	1.6	2.6	2.2	2	2.6	
ADVANCED C	2.2	2.2							2.2	3		
CAD/CAM (M	3	3	1	2.2	1.8						1.8	
COMPUTER	3	2.2	2.2	2.2	3		1.8				3	3
DESIGN OF M	3	3	1.8			1.2						
FINITE ELEM	3	1.8	1.2									
HEAT TRANS	3	2.4	1	2.4								3
HEAT TRNSF	3	1.8						1.8	1.8	2	3	2.2
NON-CONVE	3	1.8										3
UNCONVENT	3		1.8									
Automation ir	2.76	2.28	1.6		2.28							3
Automobile E	3	1.35	1.35	1.5		3	1					1.8
ENGINEERIN	3								1.2	1.2		
Industry Orie	3	3	1.5	1.8	3	3	1.8	1.8	3	2.7	1.4	3
Project Stage	2.1	2.1	1.8	2.2	3	1.8		3	3	3	3	1.8
REFRIGERAT	3	2.7	1	2.55		1.8						
TECHNICAL	3		1.2									
TURBO MAC	3	3		2.1								
Composite M	3	1.2										
	3	1.2					1.2					

Green Fuel Te												
INDUSTRIAL	3	3		2.7								
PROJECT ST	2.1	2.1	1	2.2	3	1.8	0.1	3	3	3	3	1.8
Production Te	1.27	1.01	0.96	0.66	0.51	3	0.51	0.51	0.51	0.51	0.51	

PO Attainment Indirect

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
indirect surve	1.5	2	2	2	2.5	2	2	2	2	2.5	2	2

PO Attainment Level

> Note: The Institution can fix the weightage of the indirect attainment maximum up to 20%.

Define the Weightage for Indirect Attainment: 20.00

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Direct Attainment	2.39	2.04	1.33	1.93	1.84	1.87	1.34	2.04	1.92	2.03	2.05	2.34
InDirect Attainment	1.5	2	2	2	2.5	2	2	2	2	2.5	2	2
Overall Attainment	2.21	2.03	1.46	1.94	1.97	1.90	1.47	2.03	1.94	2.12	2.04	2.27

PSO Attainment

Course	PSO1	PSO2
ENGINEERIINGPHYSI(		
ENGINEERINGGRAPH		0.9
ENGINEERINGPHYSIC		
MATHEMATICSIMA101		
PROGRAMMINGFORF		
Programmingforproble		
CHEMISTRYCH202BS		
ENGGWORKSHOPME	1.38	1.38
ENGINEERINGCHEMI:		
ENGINEERINGMECHA	3	2
ENGLISHEN205HS		

ENGLISHLANGUAGEC	P4CO1	P4CO2
MATHEMATICSIIMA20	P4CO1	P4CO2
ConstitutionofIndiaMC:	P4CO1	P4CO2
MACHINEDRAWINGPF	P4CO1	P4CO2
MATERIALSCIENCEMI	1.2	P4CO2
MATERIALSCIENCEAI	1.75	P4CO2
MECHANICSOFSOLID	P4CO1	P4CO2
ProbabilityandStatistic:	P4CO1	P4CO2
ProductionTechnologyI	P4CO1	P4CO2
ProductionTechnologyI	P4CO1	P4CO2
THERMODYNAMICSM	3	P4CO2
ELECTRICALANDELEC	P4CO1	P4CO2
ELECTRICALANDELEC	P4CO1	P4CO2
FLUIDMECHANICSAN	P4CO1	1.68
FLUIDMECHANICSAN	P4CO1	1.8
GenderSensitizationMC	P4CO1	P4CO2
INSTRUMENTATIONAI	P4CO1	1.2
INSTRUMENTATIONAI	P4CO1	1.2
KINEMATICSOFMACH	P4CO1	1.8
THERMALENGINEERII	3	P4CO2
BusinessEconomicsFir	P4CO1	1.2
DESIGNOFMACHINEM	P4CO1	2.1
DYNAMICSOFMACHII	P4CO1	1.8
KinematicsDynamicsLa	P4CO1	1.8
MACHINETOOLSANDI	3	P4CO2
METROLOGYANDMAC	1.8	P4CO2
OperationsResearchA7	1.2	P4CO2
THERMALENGINEERII	3	P4CO2
ThermalEngineeringLal	3	P4CO2
ADVANCEDCOMMUNI	P4CO1	P4CO2

CADCAMME603PC		
COMPUTERAIDEDDES	1.8	1.2
DESIGNOFMACHINEM		3
FINITEELEMENTMETH		3
HEATTRANSFERA603	3	
HEATTRNSFERLABA6	3	
NONCONVENTIONALS	1.8	1.2
UNCONVENTIONALM/	1.8	
AutomationinManufact	3	1.2
AutomobileEngineering	1.8	1.2
ENGINEERINGMATERI		
IndustryOrientedMiniPr	1.2	3
ProjectStageIEE704PC	1.2	3
REFRIGERATIONAND/	3	1.2
TECHNICALSEMINARI		1.35
TURBOMACHINERYM	1.8	1.2
CompositeMaterialsPE		
GreenFuelTechnologyM	3	1.2
INDUSTRIALMANAGEI		1.8
PROJECTSTAGEIIEE8(	3	3

PSO Attainment Indirect

Survey	PSO1	PSO2
indirect survey	2.05	2

PSO Attainment Level

Course	PSO1	PSO2
Direct Attainment	2.28	1.75
InDirect Attainment	2.05	2
Overall Attainment	2.23	1.8

4 STUDENTS' PERFORMANCE (120)

Total Marks 66.32

Table No. 4A: Admission details for the program excluding those admitted through multiple entry and exit points.

Item (Information to be provided cumulatively for all the shifts with explicit headings, wherever applicable)	2024-25 (CAY)	2023-24 (CAYm1)	2022-23 (CAYm2)	2021-22 (CAYm3)	2020-21 (CAYm4)	2019-20 (CAYm5)	2018-19 (CAYm6)
N=Sanctioned intake of the program (as per AICTE /Competent authority)	30	30	60	60	60	120	120
N1=Total no. of students admitted in the 1st year minus the no. of students, who migrated to other programs/ institutions plus no. of students, who migrated to this program	30	6	12	17	23	30	41
N2=Number of students admitted in 2nd year in the same batch via lateral entry including leftover seats	0	25	41	12	36	19	38

N3=Separate division if any	0	0	0	0	0	0	0
N4=Total no. of students admitted in the 1st year via all supernumerary quotas	1	0	0	1	0	0	0
Total number of students admitted in the program (N1 + N2 + N3 + N4) - excluding those admitted through multiple entry and exit points.	31	31	53	30	59	49	79

Table No. 4B: Admission details for the program through multiple entry and exit points.

	Item (No. of students admitted/exited through multiple entry and exit points) in the respective batch	**2024-25 (CAY)**	**2023-24 (CAYm1)**	**2022-23 (CAYm2)**	**2021-22 (CAYm3)**	**2020-21 (LYG)**	**2019-20 (LYGm1)**	**2018-19 (LYGm2)**
N52=No. of students admitted in 2nd year via multiple entry and exit points in same batch	N52=No. of students admitted in 2nd year via multiple entry and exit points in same batch	0	0	0	0	0	0	0
N53=No. of students admitted in 3rd year via multiple entry and exit points in same batch	N53=No. of students admitted in 3rd year via multiple entry and exit points in same batch	0	0	0	0	0	0	0
N54=No. of students admitted in 4th year via multiple entry and exit points in same batch	N54=No. of students admitted in 4th year via multiple entry and exit points in same batch	0	0	0	0	0	0	0
N5=N52+N53+N54	N5=N52+N53+N54	0	0	0	0	0	0	0
N61=No. of students exits after 1st year via multiple entry and exit points in same batch	N61=No. of students exits after 1st year via multiple entry and exit points in same batch	0	0	0	0	0	0	0
N62=No. of students exit after 2nd year via multiple entry and exit points	N62=No. of students exit after 2nd year via multiple entry and exit points	0	0	0	0	0	0	0
N63=No. of students exit after 3rd year via multiple entry and exit points in same batch	N63=No. of students exit after 3rd year via multiple entry and exit points in same batch	0	0	0	0	0	0	0

N6=N61+N62+N63	N6=N61+N62+N63	0	0	0	0	0	0	0

Table No. 4C: No. of students graduated within the stipulated period of the program.

Year of entry	Total no. of students (N1 + N2 + N3+ N4 + N5 - N6 as defined above)	Number of students who have successfully graduated in stipulated period of study) [Total of with Backlog + without Backlog]			
		I year	II year	III year	IV year
2024-25 (CAY)	31				
2023-24 (CAYm1)	31	6			
2022-23 (CAYm2)	53	12	45		
2021-22 (CAYm3)	30	17	24	24	
2020-21 (LYG)	59	23	55	55	44
2019-20 (LYGm1)	49	30	49	49	39
2018-19 (LYGm2)	79	41	64	64	60

4.1 Enrolment Ratio (20) — **Total Marks 5.00**

Institute Marks : 5.00

Get Details from Table 4.1

Table No.4.1.1: Student enrolment ratio in the 1st year.

Year of entry	N (From Table 4.1)	N1 (From Table 4.1)	N4 (From Table 4.1)	Enrollment Ratio [(N1/N)*100]
2024-25 (CAY)	30	30	1	103.33
2023-24 (CAYm1)	30	6	0	20.00
2022-23 (CAYm2)	60	12	0	20.00

Average [(ER1 + ER2 + ER3) / 3] = 47.78 ≡ 5.00

Assessment : 5.00

4.2 Success Rate of the Students in the Stipulated Period of the Program (15) — **Total Marks 4.86**

Institute Marks : 4.86

Table No.4.2.1: The success rate in the stipulated period of a program.

	(2020-	(2019-	(2018-

Item	21) LYG	20) LYGm1	19) LYGm2
A*= (No. of students admitted in the 1st year of that batch and those actually admitted in the 2nd year via lateral entry, plus the number of students admitted through multiple entry (if any) and separate division if applicable, minus the number of students who exited through multiple entry (if any).	96.00	139.00	158.00
B=No. of students who graduated from the program in the stipulated course duration	34.00	33.00	60.00
Success Rate (SR)= (B/A) * 100	35.42	23.74	37.97

Average SR of three batches ((SR_1+ SR_2+ SR_3)/3): 32.38

SR Points : 4.86

Note *: If the value of A in Table No. 4.2.1 is less than the sum of the sanctioned intake (N) and the lateral entry including leftover seats (N2), then the value of A in Table No. 4.2.1 should be the sum of the sanctioned intake (N) and the lateral entry including leftover seats (N2).

4.3 Academic Performance of the First-Year Students of the Program (10) **Total Marks 6.00**

Institute Marks : 6.00

Table No.4.3.1: Academic Performance of the First-Year Students of the Program.

Academic Performance	CAYm1(2023-24)	CAYm2(2022-23)	CAYm3 (2021-22)
X=(Mean of 1st year grade point average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 1st year/10)	6.00	6.00	6.00
Y=Total no. of successful students	6.00	12.00	17.00
Z=Total no. of students appeared in the examination	6.00	12.00	17.00
API [X*(Y/Z)]	6.00	6.00	6.00

Average API[(AP1+AP2+AP3)/3] : 6.00

Assessment = Average API : 6.00

4.4 Academic Performance of the Second Year Students of the Program (10) **Total Marks 5.86**

Institute Marks : 5.86

Table No.4.4.1: Academic Performance of the Second Year Students of the Program.

Academic Performance	CAYm1 (2023-24)	CAYm2 (2022-23)	CAYm3 (2021-22)
X=(Mean of 2nd year grade point average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 2rd year/10)	6.50	6.90	6.80
Y=Total no. of successful students	45.00	24.00	55.00
Z=Total no. of students appeared in the examination	53.00	29.00	59.00

API [X * (Y/Z)]	5.52	5.71	6.34

Average API [(AP1 + AP2 + AP3)/3] : 5.86

Assessment [AverageAPI] : 5.86

4.5 Academic Performance of the Third Year Students of the Program (10) **Total Marks 6.53**

Institute Marks : 6.53

Table No.4.5.1: Academic Performance of the Third Year Students of the Program

Academic Performance	CAYm1 (2023-24)	CAYm2 (2022-23)	CAYm3 (2021-22)
X=(Mean of 3rd year grade point average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 3rd year/10)	6.20	6.80	6.60
Y=Total no. of successful students	24.00	55.00	49.00
Z=Total no. of students appeared in the examination	24.00	55.00	49.00

Average API [(AP1 + AP2 + AP3)/3] : 6.53

Assessment [1.5 * AverageAPI] : 6.53

4.6 Placement, Higher Studies and Entrepreneurship (30) **Total Marks 13.07**

Institute Marks : 13.07

Table No. 4.6.1: Placement, higher studies, and entrepreneurship details.

Item	LYG (2020-21)	LYGm1(2019-20)	LYGm2(2018-19)
FS*=Total no. of final year students	96.00	139.00	158.00
X=No. of students placed	42.00	40.00	60.00
Y=No. of students admitted to higher studies	9.00	5.00	6.00
Z= No. of students taking up entrepreneurship	2.00	1.00	1.00
Placement Index(P) = (((X + Y + Z)/FS) * 100):	55.21	33.09	42.41

Average Placement Index = (P_1 + P_2 + P_3)/3: 43.57

Placement Index Points: 13.07

4.7 Professional Activities (25) | **Total Marks 25.00**

4.7.1 Professional Societies/ Bodies, Chapters, Clubs, and Professional Engineering Events Organized (5) | Institute Marks : 5.00

Table No. 4.7.1.1: List of active professional societies/bodies/chapters/clubs.

S.No	Name of the Professional Societies/Bodies, Chapters, Clubs
1	Indian Society for Technical Education-ISTE
2	Indo Universal Collaboration for Engineering Education-Engineers Without Borders
3	Robotics
4	Indian Society for Non-Destructive Testing-ISNT
5	IEEE-Institute of Electrical and Electronics Engineers
6	IEOM-Industrial Engineering and Operations Management
7	IGBC -Indian Green Building Council
8	Grand Challenges Scholar Program

Table No. 4.7.1.2: List of events/programs organized.

(CAYm1) 2023-24

S.No	Name of the Professional Societies/Bodies, Chapters, Clubs	Name of the Event	National/International level	Date of Event (DD/MM/YYYY)
1	Robotic centre	India Drone Academy	National	06/04/2024
2	Robotic centre	Robotics & Automation	National	20/04/2024
3	BMC-BUSINESS MODEL CANVAS	VISULIZE DESIGNING ANALYSE AND PAINT A PICTURE OF SUCCESS IN YOUR BUSINESS ENDAVAORI	NATIONAL	14/01/2024
4	Indo Universal Collaboration for Engineering Education-Engineers Without Borders	FARM VISIT	NATIONAL	04/10/2023
5	Indo Universal Collaboration for Engineering Education-Engineers Without Borders	INNO FIESTA	NATIONAL	21/09/2024
6	Indo Universal Collaboration for Engineering Education-Engineers Without Borders	NGO Interaction Meet	NATIONAL	24/02/2024
7	Indo Universal Collaboration for Engineering Education-Engineers Without Borders	XPLORE	NATIONAL	25/10/2024
8	Indian Society for Non-Destructive Testing-ISNT	NDT Awareness Session	NATIONAL	02/05/2024
9	IEEE-Institute of Electrical and Electronics Engineers	Workshop on CAD/CAM	NATIONAL	10/01/2024
10	IGBC -Indian Green Building Council	Students Visit to IGBC Council	NATIONAL	15/06/2024
11	IGBC -Indian Green Building Council	Workshop on Sustainable Energy Systems	NATIONAL	20/03/2024
12	Grand Challenges Scholar Program- GCSP	Graduation Day 2024	NATIONAL	06/07/2024

(CAYm2) 2022-23

S.No	Name of the Professional Societies/Bodies, Chapters, Clubs	Name of the Event	National/International level	Date of Event (DD/MM/YYYY)
1	IGBC -Indian Green Building Council	IGBC GREEN EDUCATION CONCLAVES	National	22/11/2023
2	Indo Universal Collaboration for Engineering Education-Engineers Without Borders	Celebration of Interantional Day of Education by xplore	National	22/08/2023
3	Indo Universal Collaboration for Engineering Education-Engineers Without Borders	IIC Regional Meet	National	11/12/2023
4	Indo Universal Collaboration for Engineering Education-Engineers Without Borders	Visit to Palle Srujana for Problem Identification	National	07/12/2023
5	IEEE-Institute of Electrical and Electronics Engineers	Two Days Workshop	National	31/03/2023
6	Grand Challenges Scholar Program- GCSP	Graduation Day 2023	National	09/06/2023

(CAYm3) 2021-22

S.No	Name of the Professional Societies/Bodies, Chapters, Clubs	Name of the Event	National/International level	Date of Event (DD/MM/YYYY)
1	Indo Universal Collaboration for Engineering Education-Engineers Without Borders	Inno-Fiesta	National	21/06/2022
2	Indo Universal Collaboration for Engineering Education-Engineers Without Borders	Inno-Fiesta	National	22/06/2022

4.7.2 Student's Participations in Professional Events (10) Institute Marks : 10.00

Table No. 4.7.2.1: List of students participated in professional events.

(CAYm1) 2023-24

S.No	Name of the Student	Name of the Event	State /State /National/International level	Date of Event (DD/MM/YYYY)	Name of Award
1	K Jaswanth	IGBC Conference	International	22/12/2023	Participation
2	KAPARTHI KEERTHAN	Hackathon	National	07/10/2023	Participation
3	PATALY VIVEK	Hackathon	National	07/10/2023	Participation
4	VANAMAMALA GIRIDHAR	Hackathon	National	07/10/2023	Participation
5	DHARMARAPU SWATHI	Hackathon	National	07/10/2023	Participation
6	GAI RAM PRASAD	Hackathon	National	07/10/2023	Participation
7	S.yuvaraju	Hackathon	National	09/04/2023	Participation
8	D.Srikanth Goud	Hackathon	National	09/04/2023	Participation
9	V Rakesh	Hackathon	National	09/04/2023	Participation
10	K Sai Rahul	Hackathon	National	09/04/2023	Participation
11	P Harsha Vardhan Goud	Hackathon	National	09/04/2023	Participation

12	G V P N DHANASREE	Epicthon	National	18/12/2023	Participation
13	NARAYANAM CHETAN	Epicthon	National	18/12/2023	Participation
14	V SRIKANTH	Epicthon	National	18/12/2023	Participation
15	V. Vinay Raghava	INNO FIESTA	National	21/09/2023	Participation
16	B. ESHWARA SAI	INNO FIESTA	National	21/09/2023	Participation
17	C.Arjun	INNO FIESTA	National	22/09/2023	Participation

(CAYm2) 2022-23

S.No	Name of the Student	Name of the Event	State /National/International level	Date of Event (DD/MM/YYYY)	Name of Award
1	B Sathish	Hack your Path 4.0	National	19/12/2022	Participation
2	NANDYALA SREEKARAN REDDY	Hack your Path 4.0	National	19/12/2022	Participation
3	KAMARAJU CHAITANYA PRANITH	Hack your Path 4.0	National	19/12/2022	Participation
4	K.SANDEEP	Project Expo	National	07/04/2023	Participation
5	SK.ARBAZ	Project Expo	National	07/04/2023	Participation
6	A ARUN	Project Expo	National	07/04/2023	Participation
7	G SANDEEP	Project Expo	National	07/04/2023	Participation
8	K.SUJITH	Project Expo	National	07/04/2023	Participation
9	T.SHILPA	Project Expo	National	07/04/2023	Participation
10	G.VINAY	Project Expo	National	07/04/2023	Participation
11	M.VIKAS	Project Expo	National	07/04/2023	Participation

(CAYm3) 2021-22

S.No	Name of the Student	Name of the Event	State /National/International level	Date of Event (DD/MM/YYYY)	Name of Award
1	S.ASHISH	Hackathon	National	11/03/2022	Participation
2	C.MANOJ	Hackathon	National	11/03/2022	Participation
3	T.M.ARAVIND	Hackathon	National	11/03/2022	Participation
4	B.PAWAN KUMAR	Hackathon	National	11/03/2022	Participation
5	G.ANAND	Project Expo	National	26/03/2022	Participation
6	P.NIKHIL	Project Expo	National	26/03/2022	Participation
7	S.SALMAN	Project Expo	National	26/03/2022	Participation
8	T.GITA	Project Expo	National	26/03/2022	Participation
9	N.GANESH	Project Expo	National	26/03/2022	Participation

4.7.3 Publication of Journals, Magazines, Newsletters, etc. in the Department (5) | Institute Marks : 5.00

Table No. 4.7.3.1: List of students involved in publication of journals, magazines, and newsletters, etc. in the Department.

(CAYm1) 2023-24

S.No	Name of the Journal, Magazine, Newsletter	Name of the Editor	Name of the Student	Semester	No. of Issues	Hard copy/Soft copy
1	HITAM Mechanical Engineering Department Newsletter Volume 12	Ms N Krishnaveni	M Sai Nadh, P Charan Kumar	2	1	yes
2	HITAM Mechanical Engineering Department Newsletter Volume 13	Mr Santhosh Naik	V.Giridhar, G.Ram Prasad	2	1	yes
3	HITAM Mechanical Engineering Department Newsletter Volume 14	Mr P.Praveen	Sreeganesh,D.Praveen	2	1	yes

(CAYm2) 2022-23

S.No	Name of the Journal, Magazine, Newsletter	Name of the Editor	Name of the Student	Semester	No. of Issues	Hard copy/Soft copy
1	HITAM Mechanical Engineering Department Newsletter Volume 9	Mr Y Anil Reddy	K Ajay ,T Shilpa	2	1	yes
2	HITAM Mechanical Engineering Department Newsletter Volume 10	Mr P.Praveen	A.Arun,K.Swapna	2	1	yes
3	HITAM Mechanical Engineering Department Newsletter Volume 11	Mr Santosh Naik	K.Sandeep,G.Nithin	2	1	yes

(CAYm3) 2021-22

S.No	Name of the Journal, Magazine, Newsletter	Name of the Editor	Name of the Student	Semester	No. of Issues	Hard copy/Soft copy
1	HITAM Mechanical Engineering Department Newsletter Volume 7	Mr Y Anil Reddy	K Akshay Kumar ,C Manoj	2	1	Yes
2	HITAM Mechanical Engineering Department Newsletter Volume 8	Mr SNS Santhosh	M.Srinu,C.Manoj	2	1	Yes

4.7.4 Student Publications (5) | Institute Marks : 5.00

Table No. 4.7.4.1: List of student publications.

(CAYm1) 2023-24

S.No	Name of the Student	Semester	Name of the Publisher	Name of the Journal/ Conference, etc.	Volume No.	Issue No.	Name of the Award if any
1	Katta Nikhil Kumar, Gorlakadi Shivaraj, Bandi Nishanth, Dharmarapu Swathi	2	International Journal for Research in Applied Science & Engineering Technology	International Journal for Research in Applied Science & Engineering Technology	12	3	participation
2	Gai Ram Prasad, Thotameedi Rakesh, Bestha Shivaji, Eega Shiva Prasad	2	International Journal for Research in Applied Science & Engineering Technology	International Journal for Research in Applied Science & Engineering Technology	12	4	participation
3	Ch.Veerababu, B.Preetam, K.Hariprasad, R.Vijay Kumar,	2	International Journal for Modern Trends in Science and Technology	International Journal for Modern Trends in Science and Technology	10	3	participation

4	K Vishnu , J Devaraj Yadav, D Praveeen	2	International Journal for Modern Trends in Science and Technology	International Journal for Modern Trends in Science and Technology	10	3	participation
5	Dodla Manideep, Mettu Ranjith, Paka Sumanth, Pola Ravikumar, Chetla Venu Gopal, Dr. K. Siva Prasad	2	IJRASET	IJRASET	12	3	participation

(CAYm2) 2022-23

S.No	Name of the Student	Semester	Name of the Publisher	Name of the Journal/ Conference, etc.	Volume No.	Issue No.	Name of the Award if any
1	N. G. S. M. Durgesh, Siva Prasad Kowdodi	2	ASME 2022 International Mechanical Engineering Congress and Exposition	ASME 2022	7	9	participation
2	Sai Abhinav Chepuri	2	ASME 2022 International Mechanical Engineering Congress and Exposition	ASME 2022	7	9	participation
3	K.V.Srikar, B.Roshann Sagar, B.V.N.Sai Sharath, Siddharh Rawlo, T.Sheetal Kumar	2	Research Inventy	International Journal of Engineering And Science	13	7	participation

(CAYm3) 2021-22

S.No	Name of the Student	Semester	Name of the Publisher	Name of the Journal/ Conference, etc.	Volume No.	Issue No.	Name of the Award if any
1	Himanish Dutt, Aashish Sharma	2	IEEE xplore	2021 Third International Sustainability and Resilience Conference: Climate Change (ICSRC)	3	1	Participation

5 FACULTY INFORMATION (100)

Total Marks 93.45

Sr.No	Name of the Faculty	PAN No.	APAAR faculty ID*(if any)	Highest degree	University	Area of Specialization	Date of Joining in this Institution	Experience in years in current institute	Designation at Time Joining in this Institution	Present Designation	The date on which Designated as Professor/ Associate Professor if any	Nature of Association (Regular/ Contract/ Ad hoc)	Currently Associated (Y/N)	In case of NO, Date of Leaving	IS HOD?
1	Dr. Kowdadi Siva Prasad	ANNPK0934F	NA	Ph.D	IIT Kanpur	Solid Mechanics	01/08/2019	5.8	Professor	Professor		Regular	Yes		No
2	Dr. Ruchir Shrivastava	DBFPS3725B	NA	Ph.D	IIT ISM Dhanbad	Composite Materials	19/07/2024	0.8	Associate Professor	Associate Professor		Regular	Yes		Yes

3	Dr. Motilal Lakavat	ADDPL3342C	NA	Ph.D	Lincoln University	Material Science	12/08/2024	0.7	Associate Professor	Associate Professor		Regular	Yes		No
4	Lt. Col. CS Pawan Kumar	AETPC2704E	NA	M.E/M.Tech	IIT Kharagpur	Thermal Engineering	01/05/2024	0.11	Assistant Professor	Assistant Professor		Regular	Yes		No
5	Santosh Naik M	ALZPN5003A	NA	M.E/M.Tech	Reva University	Machine Design and Dynamics	29/08/2020	4.7	Assistant Professor	Assistant Professor		Regular	Yes		No
6	Seema Naga Sai Santhosh	CFCPS1269C	NA	M.E/M.Tech	JNTU Hyderabad	Engineering Design	16/10/2017	7.5	Assistant Professor	Assistant Professor		Regular	Yes		No
7	Pagidipalli Praveen	CUJPP4068C	NA	M.E/M.Tech	JNTU Hyderabad	Advanced Manufacturing Systems	07/02/2018	7.2	Assistant Professor	Assistant Professor		Regular	Yes		No
8	Srilatha T	BQEPG7370E	NA	M.E/M.Tech	JNTU Hyderabad	Thermal Engineering	25/07/2022	2.8	Assistant Professor	Assistant Professor		Regular	Yes		No
9	Ambati Syamala	BMGPA4097J	NA	M.E/M.Tech	JNTU Kakinada	Thermal Engineering	23/08/2022	2.7	Assistant Professor	Assistant Professor		Regular	Yes		No
10	MVA Ramakrishna	AVUPM2256P	NA	M.E/M.Tech	NIT Calicut	Manufacturing Technology	07/12/2023	1.4	Assistant Professor	Assistant Professor		Regular	Yes		No
11	Madhavaram Srinivasa Rao	CCJPM5050K	NA	M.E/M.Tech	Acharya Nagarjuna University	Machine Design	29/02/2024	1	Assistant Professor	Assistant Professor		Regular	No	28/03/2025	No
12	Bhaskar Rao Palagani	BQRPP6812K	NA	M.E/M.Tech	JNTU Hyderabad	Machine Design	02/08/2024	0.8	Assistant Professor	Assistant Professor		Regular	Yes		No
13	Mohammad Mainnodin	BRGPM2533N	NA	M.E/M.Tech	JNTU Hyderabad	Thermal Engineering	26/02/2022	3.1	Assistant Professor	Assistant Professor		Regular	No	31/03/2025	No
14	Chetla Venu Gopal	ATPPV7650K	NA	M.E/M.Tech	IIT Kharagpur	Mechanical Design	07/03/2022	3.1	Assistant Professor	Assistant Professor		Regular	Yes		No
15	Nalluri Krishnaveni	BEDPN9971B	NA	M.E/M.Tech	JNTU Kakinada	Thermal Engineering	02/08/2022	2.1	Assistant Professor	Assistant Professor		Regular	No	14/09/2024	No
16	Ponnekanti Sai Chandu	AKOPC4412E	NA	M.E/M.Tech	Hindustan University	Thermal Engineering	24/08/2015	9.7	Assistant Professor	Assistant Professor		Regular	Yes		No
17	Yedulla Anil Reddy	ACAPY1352R	NA	M.E/M.Tech	JNTU Hyderabad	Advanced Manufacturing Systems	19/11/2014	10.4	Assistant Professor	Assistant Professor		Regular	Yes		No
18	Baby Theresa	BNEPG7775A	NA	M.E/M.Tech	JNTU Kakinada	Machine Design	07/02/2014	11.2	Assistant Professor	Assistant Professor		Regular	Yes		No

19	Dr. Munagala Sreeramulu	ARNPM9285H	NA	Ph.D	JNTU Hyderabad	Thermal Engineering	24/12/2018	5.5	Professor	Professor		Regular	No	31/05/2024	No
20	Gali Singaiah	BIOPG5601E	NA	M.E/M.Tech	JNTU Kakinada	Machine Design	11/12/2014	9.5	Assistant Professor	Assistant Professor		Regular	No	31/05/2024	No

5.1 Student-Faculty Ratio (SFR) (30) **Total Marks 30.00**

Institute Marks : 30

No. of UG(Engineering) programs in Department including allied departments/ clusters (UGn):
UG1=1st UG program
UGn=nth UG program
B= No. of Students in UG 2nd year (ST)
C= No. of Students in UG 3rd year (ST)
D= No. of Students in UG 4th year (ST)
No. of PG (Engineering) programs in Department including allied departments/ clusters (PGm):
PG1=1st PG program.
PGm=mth PG program
A= No. of Students in PG 1st year
B= No. of Students in PG 2nd year
Student Faculty Ratio **(SFR)** = S/F
S= No. of students of all programs in the Department including all students of allied departments/clusters.
No. of students (ST)=Sanctioned Intake (SA)+ Actual admitted students via lateral entry including leftover seats (L) if any (limited to 10 % of SA)
Students who admitted under supernumerary quotas (SNQ, EWS, etc) will not be considered in calculating SFR value. Those students are exempted.
F=Total no. of regular or contractual faculty members (Full Time) in the Department, including allied departments/clusters (excluding first year faculty (The faculty members who have a 100% teaching load in the first-year courses)).

UG

No. of UG(Engineering) programs in Department including allied departments/clusters(UGn): 1

Mechanical Engineering						
Year of Study	**CAY**		**CAYm1**		**CAYm2**	
	(2024-25)		**(2023-24)**		**(2022-23)**	
	Sanction Intake	**Actual admitted through lateral entry students**	**Sanction Intake**	**Actual admitted through lateral entry students**	**Sanction Intake**	**Actual admitted through lateral entry students**
2nd Year	30	3	60	6	60	6
3rd Year	60	6	60	6	60	6
4th Year	60	6	60	6	120	12
Sub-Total	**150**	**15**	**180**	**18**	**240**	**24**

Total	**165**	**198**	**264**

Grand Total	165	198	264

PG

No. of PG Programs in the Department 0

Grand Total			

SFR

No. of UG Programs in the Department 1

No. of PG Programs in the Department 0

Mechanical Engineering

Description	**CAY(2024-25)**	**CAYm1 (2023-24)**	**CAYm2 (2022-23)**
UG1.B	33	66	66
UG1.C	66	66	66
UG1.D	66	66	132
UG1: Mechanical Engineering	**165**	**198**	**264**
DS=Total no. of students in all UG and PG programs in the Department	165	198	264
AS=Total no. of students of all UG and PG programs in allied departments	0	0	0
S=Total no. of students in the Department (DS) and allied departments (AS)	**S1=** 165	**S2=** 198	**S3=** 264
DF=Total no. of faculty members in the Department	15	14	14
AF= Total no. of faculty members in the allied Departments	0	0	0
F=Total no. of faculty members in the Department (DF) and allied Departments (AF)	**F1=** 15	**F2=** 14	**F3=** 14
FF=The faculty members in F who have a 100% teaching load in the first-year courses	0	0	0
Student Faculty Ratio (SFR)=S/(F-FF)	**SFR1= 11.00**	**SFR2= 14.14**	**SFR3= 18.86**
Average SFR for 3 years	**SFR= 14.67**		

Average SFR for three assessment years : 14.67

Assessment SFR : 30

5.2 Faculty Qualification (25) **Total Marks 18.78**

Institute Marks : 18.78

Year	X	Y	RF	FQ = 2.5 x [(10X + 4Y) / RF)]
2024-25(CAY)	3	12	8.00	24.38
2023-24(CAYm1)	2	12	9.00	18.89
2022-23(CAYm2)	2	12	13.00	13.08

Average Assessment : 18.78

5.3 Faculty Cadre Proportion (25) **Total Marks 25.00**

Institute Marks : 25.00

Year	Professors		Associate Professors		Assistant Professors	
	Required F1	Available	Required F2	Available	Required F3	Available
CAY(2024-25)	1.00	1.00	1.00	2.00	5.00	12.00
CAYm1(2023-24)	1.00	2.00	2.00	0.00	6.00	12.00
CAYm2(2022-23)	1.00	2.00	2.00	0.00	8.00	12.00
Average Numbers	1.00	1.67	1.67	0.67	6.33	12.00

Cadre Ratio Marks [(AF1 / RF1) + [(AF2 / RF2) * 0.6] + [(AF3 / RF3) * 0.4]] * 12.5 : 25.00

5.4 Visiting/Adjunct/Emeritus Faculty etc. (10) **Total Marks 10.00**

Institute Marks : 10.00

Table No. 5.4.1: List of visiting/adjunct faculty/professor of practice and their teaching and practical loads.

(CAYm1) 2023-24

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Mr K.Santosh	Assistant Professor	MGIT	Kinematics of Machinery & Dynamics of Machinery	54.00
2	Mr KRISHNA MURTHY KURUVA	Assistant Professor	VNRVJIET	ICGT & FM&HM	56.00
3	Dr. Bhaskar Sharma	Retrd R&D	BHEL	Dynamics Of Machinery, DMM-I	54.00

(CAYm2) 2022-23

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Dr.K.Deepak	Associate Professor	Vardhaman College	Turbo machinery and Engineering Gaphics	56.00
2	Mr K.Santosh	Assistant Professor	MGIT	Kinematics of Machinery & Dynamics of Machinery	54.00

(CAYm3) 2021-22

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Mr. Mala Kondaiah	Assistant Professor	ACE Engineering College	ICGT AND THERMODYNAMICS	52.00
2	Mr. K. Santhosh	Assistant Professor	MGIT	Kinematics of Machinery & Dynamics of Machinery	56.00
3	Dr.K.Deepak	Associate Professor	Vardhaman College	Turbo machinery , FM&HM	54.00

5.5 Faculty Retention (10) — **Total Marks 9.67**

Institute Marks : 9.67

Description	2023-24 (CAYm1)	2022-23 (CAYm2)	2021-22 (CAYm3)
RF=No. of required faculty in the Department including allied Departments to adhere to the 20:1 Student-Faculty ratio, with calculations based on both student numbers and faculty requirements as per section 5.1 of SAR; (RF=S/20).	9	13	16
AF=The no. of available faculty members in the Department including allied Departments	14	14	22
A= The no. of faculty members at the current institute with less than 1 year of experience (A in AF)	0	0	4
B= The no. of faculty members at the current institute with more than 1 year and less than 2 years of experience (B in AF)	0	0	1
C= The no. of faculty members at the current institute with more than 2 years and less than 3 years of experience (C in AF)	3	3	2
D= The no. of faculty members at the current institute with more than 3 years and less than 4 years of experience (D in AF)	2	2	4
E= The no. of faculty members at the current institute with more than 4 years of experience (E in AF)	9	9	11
FR=(((A*0) +(B*1)+(C*2)+(D*3)+(E*4))/RF) *2.50 (points limited to 10)	10	9	10

Average : 9.67

Assessment Marks : 9.67

6 FACULTY CONTRIBUTIONS (120) — Total Marks 104.00

6.1 Professional Development Activities (60) — **Total Marks 60.00**

6.1.1 Memberships in Profession Societies at National/International Levels (5)

Institute Marks : 5.00

Table No. 6.1.1.1: List of faculty members and their memberships.

S.No	Name of the Faculty	Name of the Professional Society /Body at National and International Level	Name of the Grade/ Level/Position
1	Dr.K.Shiva prasad	Society of Automotive Engineers (SAE)	PROFESSIONAL MEMBER
2	Dr.Mothilal lakavat	International Association of Engineers (IAENG)	MEMBER
3	Dr.Mothilal lakavat	International Society of Bionic Engineering (ISBE)	MEMBER
4	Dr.Mothilal lakavat	Indian Society for Technical Education (ISTE)	MEMBER
5	Dr.Ruchir Shrivastava	International Association of Engineers (IAENG)	MEMBER
6	Mr.Santosh naik	Indian Society for Technical Education (ISTE)	LIFE MEMBER
7	Mr.Santosh naik	Society of Mechanical and Automotive engineers (SMAE)	LIFE MEMBER
8	Mr.Santosh naik	International Association of Engineers (IAENG)	MEMBER
9	Mr.S.N.S.Santosh	Indian Society for Technical Education (ISTE)	MEMBER
10	Mr.P.Bhaskar rao	International Society of Bionic Engineering (ISBE)	MEMBER
11	Mrs.A.Syamala	International Association of Engineers (IAENG)	MEMBER
12	Mr.M.V.A.Rama Krishna	International Association of Engineers (IAENG)	MEMBER
13	Mrs.T.Srilatha	International Association of Engineers (IAENG)	MEMBER
14	Mr.P.Praveen	International Association of Engineers (IAENG)	MEMBER
15	Ponnekanti Sai Chandu	International Association of Engineers (IAENG)	MEMBER
16	Chetla Venugopal	International Association of Engineers (IAENG)	MEMBER
17	Lt Col C S Pawan Kumar	International Association of Engineers (IAENG)	MEMBER
18	Mrs.Baby Theresa	International Association of Engineers (IAENG)	MEMBER
19	Mr.YEDULLA ANIL REDDY	International Association of Engineers (IAENG)	MEMBER
20	Mr.P.Praveen	Industrial Engineering And Operations Management (IEOM)	Society member

6.1.2 Faculty as Resource Persons or Participants in STTPs/FDPs (10)

Institute Marks : 5.00

6.1.2.1 Faculty as Resource Persons in STTPs/FDPs (5)

Table No. 6.1.2.1: List of faculty members as resource person in STTP/FDP events.

(CAYm1) 2023-24

S.No	Name of the Faculty as Resource Person	Name of the STTP/FDP	Date (DD/MM/YYYY)	Location	Organized by

1	Dr.K.Siva Prasad	“Robotics and Industrial Automation”	4/3/2024	Hyderabad	Hyderabad Institute Of Technology And Management (HITAM)
2	Mr.P.Praveen	“Emerging Trends in Smart Manufacturing	12/9/2023	Hyderabad	Hyderabad Institute Of Technology And Management (HITAM)
3	Mr.Y.Anil Reddy	“Emerging Trends in Smart Manufacturing	12/9/2023	Hyderabad	Hyderabad Institute Of Technology And Management (HITAM)
4	Mr. Santhosh Naik	FDP on Quality improvement	14/09/2023	Gulbarga	Shetty college
5	Mr. Sns santosh	"Recent Trends in Sustainable Energy Systems and Smart Grids"	25/3/2024	karnataka	Basava Kalyan Engineering College

(CAYm2) 2022-23

S.No	Name of the Faculty as Resource Person	Name of the STTP/FDP	Date (DD/MM/YYYY)	Location	Organized by
1	Mr. G. Singaiah	“Expert Lecture On Design Software Tools”	24/8/2022	Hyderabad	B V Raju Institute of Technology (BVRIT)
2	Mr. P.Praveen	Workshop on Course outcomes and attainment process	21/3/2023	Gulbarga	Shetty college
3	Mr. P.Praveen	"Robotics and Automation: Design, Control, and Communication"	9/5/23	karnataka	Basava Kalyan Engineering College

(CAYm3) 2021-22

S.No	Name of the Faculty as Resource Person	Name of the STTP/FDP	Date (DD/MM/YYYY)	Location	Organized by
1	Mr. Santosh naik	“Pitching event for ideas scouted and linkage with innovation ambassador for mentorship support”	21/2/2022	Belagavi karnataka	Jain college of engineering
2	Mr.P.V.N. Sai Chandu	“Recent Advances In Heat Transfer and Fluid Mechanics”	10/3/2022	Hyderabad	Hyderabad Institute Of Technology And Management (HITAM)
3	Mr. SNS Santosh	"Multidisciplinary Approaches in Renewable Energy and Power Management Systems"	10/2/2022	Gulbarga	Shetty college
4	Mr. P.Praveen	"Emerging Trends in Electric Vehicles: Power Systems, Control, and Connectivity"	12/8/2021	karnataka	Basava Kalyan Engineering College

6.1.2.2 Faculty Members’ Participation in STTPs/FDPs (5) | Institute Marks : 5.00

Name of the faculty	Max 5 Per Faculty		
	2023-24(CAYm1)	2022-23(CAYm2)	2021-22(CAYm3)
Dr.M.Sreeramulu	5.00	5.00	5.00

Dr.Kowdodi Siva Prasad	5.00	5.00	5.00
Dr.Yedull. Anil Reddy	5.00	5.00	5.00
Mr.Gali Singaiah	5.00	5.00	5.00
Mr.Santosh Naik	5.00	5.00	5.00
Mr.Seema naga Sai Santhosh	5.00	5.00	5.00
Mr.Pagidipalli Praveen	5.00	5.00	5.00
Mr.Mohammad Mainoddin	5.00	5.00	0.00
Chetla Venugopal	5.00	5.00	0.00
Ms.Nalluri Krishnaveni	5.00	5.00	0.00
Mrs.Ambati Syamala	5.00	5.00	0.00
Mrs.Srilatha T	5.00	5.00	0.00
Mr.Ponnekanti Sai Chandu	5.00	5.00	5.00
Dr.S.Sudhakara Reddy	0.00	0.00	5.00
Dr.J.Shiva Kumar	0.00	0.00	5.00
Baby Gudavalli Theresa	5.00	5.00	5.00
Sai Sharat T	0.00	0.00	5.00
Pavani B	0.00	0.00	5.00
Hemalatha Ch	0.00	0.00	5.00
Ashish Kumar Singh	0.00	0.00	5.00
Rahul D	0.00	0.00	5.00
Govardhana V Reddy	0.00	0.00	5.00

K.Joel Ashirvadam	0.00	0.00	5.00
Hari Madhav Swami	0.00	0.00	5.00
G,Ramesh	0.00	0.00	5.00
Sum	70.00	70.00	100.00
RDF = Number of faculty required to comply with the 20:1 student - faculty ratio in the Department alone, as per section 5.1 of SAR(RDF= DS / 20).	8.25	9.90	13.20
Assessment Points (AP)= (Sum/(0.5* RDF)) (Points limited to 5 for each assessment year)	5.00	5.00	5.00

Average assessment over 3 years: 5.00

6.1.3 Faculty Contribution in Development of SWAYAM MOOCs and other E-Content (5) — Institute Marks : 5.00

Table No. 6.1.3.1: List of faculty members developed MOOC course for the past 3 years.

S.No	Name of the Faculty	Name of the Course Developed and available online on Swayam platform by your Department faculty
1	Mr.Santosh Naik	Research & Development Awareness and Workshop
2	Mrs.A.Syamala	Basics of Refrigeration and airconditioning
3	Mr.P.Praveen	Machine tools
4	Mr.P.Bhaskar rao	Mechanics of solids
5	Mrs.Srilatha T	Basics of Thermodynamics
6	Mr.M.V.A.Rama Krishna	Production Technology
7	Mr.S.N.S.Santosh	Engineering Graphics
8	Mr.Venu gopal	Mechanics of solids
9	Mr.P.Praveen	Engineering Graphics
10	Mr.Santosh Naik	Rnewable Energy sources
11	Mrs.A.Syamala	Production technology
12	Mr.P.Bhaskar rao	Design of machine members

6.1.4 Faculty Certification of MOOCs through SWAYAM, etc. (10) — Institute Marks : 10.00

Table No. 6.1.4.1: List of faculty members obtained certification of MOOCs for the past 3 years.

S.No	Name of the Faculty	Name of Course Passed	Course Offered by (agency)	Grade obtained if any
1	Dr.M.Sreeramulu	Python for Data science, RAC	NPTEL	Elite
2	Dr.M.Sreeramulu	Convective heat transfer	NPTEL	completed
3	Dr.M.Sreeramulu	The joy of computing using python	NPTEL	completed
4	Dr.Kowdodi Siva Prasad	Basics of Finite Element Analysis – II	NPTEL	completed
5	Dr.Kowdodi Siva Prasad	Introduction To Programming In C	NPTEL	completed
6	Dr.Kowdodi Siva Prasad	Modern Computer Vision	NPTEL	completed
7	Mr.Ashish Kumar Singh	Basics of Finite Element Analysis - II	NPTEL	completed
8	Mr. Yedulla Anil Reddy	The joy of computing using python.	NPTEL	completed
9	Dr.Ruchir Srivastava	AIML in materials engineering	NPTEL	completed
10	M V A Ramakrishna	C language	NPTEL	completed
11	Mr. Santosh Naik	The joy of computing using python	NPTEL	completed
12	Mr. Santosh Naik	Road map for patent creation	NPTEL	completed
13	P.Bhaskar Rao	Python	NPTEL	completed
14	P.Bhaskar Rao	Introduction to IOT	NPTEL	completed
15	Mr. Chetla Venugopal	Introduction To Machine Learning	NPTEL	completed
16	Mr. P.V.N.Sai Chandu	Thermal Engineering: Basic and Applied	NPTEL	completed
17	Mr. Santosh Naik	Mentor Based Training	AICTE	completed
18	Mr. Santosh Naik	Orientation towards technical education and curriculum aspects	AICTE	completed
19	Mr. Santosh Naik	Professional ethics and sustainability	AICTE	completed
20	Mr. Santosh Naik	Communication skills, modes and knowledge dissemination	AICTE	completed
21	Mr. Santosh Naik	Instructional planning and delivery	AICTE	completed
22	Mr. Santosh Naik	Technology enabled learning and life long self learning	AICTE	completed
23	Mr. Santosh Naik	Student assessment evaluation	AICTE	completed
24	Mr. Santosh Naik	Creative roblem solving innovation and meaningful R&D	AICTE	completed
25	Mr. Santosh Naik	Institutional management and administrative procedures	AICTE	completed

6.1.5 FDP/STTP Organized by the Department (10) | Institute Marks : 10.00

Table No. 6.1.5.1: List of FDPs/STPs organized by Department for the past 3 years.

(CAYm1) 2023-24

		Date of the			No. of People

S.No	Name of the Program	Program(DD/MM/YYYY)	Duration	Name of the Speaker & Designation and Organization	Attended
1	One-week FDP on “Robotics and Industrial Automation”	4/3/2024	1 WEEK	Dr. P.V.Ramana Professor MGIT Hyderabad	50
2	FDP on “ Emerging Trends in Smart Manufacturing “	12/9/2023	5 DAYS	1.G.S.R.K.Reddy Scientist DRDL 2. Dr. PAWAN KUMAR CHAUHAN Professor HITAM	30

(CAYm2) 2022-23

S.No	Name of the Program	Date of the Program(DD/MM/YYYY)	Duration	Name of the Speaker & Designation and Organization	No. of People Attended
1	A three Day FDP on Recent Developments in Renewable Energy Technologies	28/7/2022	3 Days	Dr. RAVIKUMAR BHIMASINGU IIT Hyderabad	30
2	FDP on Generative Design Using Autodesk- Fusion 360	30/10/23	5 days	Mr.Ajay Kumar Reddy Peram (Product Designer) Auto Desk	50

(CAYm3) 2021-22

S.No	Name of the Program	Date of the Program(DD/MM/YYYY)	Duration	Name of the Speaker & Designation and Organization	No. of People Attended
1	FDP on Recent Advances In Heat Transfer and Fluid Mechanics	10/2/22	7 days	Dr.Siva rama krishna reddy Industry Expert	40
2	FDP on "Advances in Computer-Aided Design and Product Innovation"	25/9/21	7 days	Dr. P.V.Ramana Professor MGIT Hyderabad	30

6.1.6 Faculty Support in Student Innovative Projects (10) | Institute Marks : 10.00

Table No. 6.1.6.1: List of faculty members involved in student innovative projects.

(CAYm1) 2023-24

S.No	Name of the Faculty	Name of the Event	Date of the Event(DD/MM/YYYY)	Place of Event	Website Link if any
1	Dr.K.Shiva Prasad	HACK YOUR PATH 5.0	08/12/2023	HITAM	-
2	Dr.K.Shiva Prasad	SMART INDIA HACAKATHON	07/10/2023	HITAM	-
3	Mr. Y. Anil Reddy	HACK YOUR PATH 5.0	08/12/2023	HITAM	-
4	Mr Santhosh Naik	ROBOTHON	21/09/2025	HITAM	-
5	Mr P.Praveen	Project Expo	9/6/2023	HITAM	-

6	Mr Santhosh Naik	Project Expo	9/6/2023	HITAM	-
7	Mr SNS Santhosh	Project Expo	9/6/2023	HITAM	-
8	Mr P.Praveen	Hackathon	21/12/2023	SHETTY COLLEGE	-
9	Mr.CHETLA VENUGOPAL	Design, Analysis and Fabrication of Pick and Place Robotic Arm with Multipurpose	30/07/2024	INSTITUTION'S INNOVATION COUNCIL MOE'S INNOVATION CELL	https://iic.mic.gov.in/institute/innovation-repository
10	Dr.K.Shiva Prasad	Agri bot	30/07/2024	INSTITUTION'S INNOVATION COUN	https://iic.mic.gov.in/institute/innovation-repository

(CAYm2) 2022-23

S.No	Name of the Faculty	Name of the Event	Date of the Event(DD/MM/YYYY)	Place of Event	Website Link if any
1	Dr.K.Shiva Prasad	HACAKATHON for KAVACH 2023	13/4/2023	HITAM	-
2	Mr Santhosh Naik	XPLORE-Project Expo	24/03/2023	HITAM	-
3	Mr Santosh Naik	Project Expo 2022	2/6/2022	HITAM	-
4	Mr SNS Santhosh	Project Expo 2022	2/6/2022	HITAM	-
5	Mr P.Praveen	Project Expo 2022	2/6/2022	HITAM	-
6	Dr.K.Shiva Prasad	DESIGN ANALYSIS AND FABRICATION OF AGRICULTURAL ROBOT	26/06/2023	INSTITUTION'S INNOVATION COUN	https://iic.mic.gov.in/institute/innovation-repository
7	Mr.CHETLA VENUGOPAL	IDETIFIED OBJECT PICK AND PLACE BY USING GRIPPER OF A MOBILE ROBOT	22/06/2023	INSTITUTION'S INNOVATION COUN	https://iic.mic.gov.in/institute/innov
8	Mr.P.Praveen	DESIGN AND ANALYSIS OF WASHLET	13/06/2023	INSTITUTION'S INNOVATION COUN	https://iic.mic.gov.in/institute/innov

(CAYm3) 2021-22

S.No	Name of the Faculty	Name of the Event	Date of the Event(DD/MM/YYYY)	Place of Event	Website Link if any
1	Dr.K.Shiva Prasad	ROBOTHON 2021	17/8/21	MILITARY COLLEGE OF ELECTRONICS AND MECHANICAL ENGINEERING	-
2	Dr.K.Shiva Prasad	Algae Based Sewage Treatment Plant	01/05/2023	INSTITUTION'S INNOVATION COUN	https://iic.mic.gov.in/institute/innovation-repository
3	Mr.P.Praveen	OCTACLEANER	08/09/2022	INSTITUTION'S INNOVATION COUN	https://iic.mic.gov.in/institute/innovation-repository

Institute Marks : 10.00

6.1.7 Faculty Internship/Training/Collaboration with Industry (10)

Table No. 6.1.7.1: Faculty internship/training/collaboration details.

S.No	Name of the Faculty	Name of the Internship/ Training/ Collaboration	Name of the Company & Place	Duration	Outcomes of Internship/ Training/ Collaboration
1	Mr.P.Praveen	PBL Training	Aalborg University, Denmark	12 MONTHS	"Curriculum updated with multidisciplinary in engineering."
2	Mr.Santosh Naik	PBL Training	Aalborg University, Denmark	12 MONTHS	""Curriculum updated with multidisciplinary in engineering"
3	Mr.M.Srinivasa Rao	3D printing	MSME Tool Room HYD CITD Balanagar	14 Days	“Developed prototypes using 3D printing”
4	Mr.M.V.A.Rama Krishna	IIEECP	IUCEE	6 months	“Implemented different pedagogies in teaching"
5	Chetla Venugopal	IIEECP	IUCEE	6 months	“Implemented different pedagogies in teaching"
6	Dr.Yedull. Anil Reddy	IIEECP	IUCEE	6 months	“Implemented different pedagogies in teaching"
7	Nalluri Krishnaveni	IIEECP	IUCEE	6 months	“Implemented different pedagogies in teaching"
8	Ponnekanti sai Chandu	IIEECP	IUCEE	6 months	“Implemented different pedagogies in teaching"
9	Gali Singaiah	IIEECP	IUCEE	6 months	“Implemented different pedagogies in teaching"
10	Mohammad Mainoddin	NDT	ADVANCED ENGINEERING STUDIES	14 days	"Used NDT methods to evaluate defects without causing damage."
11	Chetla Venugopal	My equation	ROBO AI	30days	“Developed pick and place robot”
12	Mr.P.Praveen	IA certificate	MOE'S innovation cell	60 hours	"Understand and promote basic innovation, design thinking, and IPR concepts."
13	Mr.Santosh Naik	IA certificate	MOE'S innovation cell	60 hours	"Understand and promote basic innovation, design thinking, and IPR concepts."
14	Chetla Venugopal	IA certificate	MOE'S innovation cell	60 hours	"Understand and promote basic innovation, design thinking, and IPR concepts."
15	Chetla Venugopal	Data base programming with SQL	ORACLE ACADEMY	45 DAYS	Data base programming with SQL desigend a project .

6.2 Research and Development Activities (60) **Total Marks 44.00**

6.2.1 Academic Research (10) Institute Marks : 10.00

Table No. 6.2.1.1: Faculty publication details.

S.No.	Item	2023-24 (CAYm1)	2022-23 (CAYm2)	2021-22 (CAYm3)
1	No. of peer reviewed journal papers published	10	10	4
2	No. of peer reviewed conference papers published	11	18	8
3	No. of books/book chapters published	0	0	2

6.2.2 Ph.D. Student Details (5) Institute Marks :

Table No. 6.2.2.1: Ph.D. details.

S.No.	Item	2023-24 (CAYm1)	2022-23 (CAYm2)	2021-22 (CAYm3)
1	No. of students enrolled for Ph.D. in the Department			
2	No. of Ph.D. students graduated in the Department			

6.2.3 Development Activities (10) Institute Marks : 10.00

S.NO.	Name of the Faculty	Department	Name of the patent Tittle	Date of publication	National/ International	Application No
CAY 2023-24 Patents Granted/Published						
1	P. Praveen	MECH	IOT Based Agriculture Robot for Farming	22/03/2024	National	202441016138

S.N.	Name of the Faculty	Department	Name of the patent Tittle	Date of publication	National/ International	Application No
CAY m1 2022-23 Patents Granted/Published						
1	Dr Kowdodi Siva Prasad & Mr Anil Reddy	MECH	IOT Based Photo Bio Reactor	06/01/2023	Indian Patent	202341000163
2	Dr Kowdodi Siva Prasad	MECH	Using Techniques Like Machine Learning And Artificial Intelligence To Improve The Power Quality Of Solar-Powered Microgrids	07/04/2023	Indian Patent	202321018328
3	Dr Kowdodi Siva Prasad	MECH	Internet Of Things (Iot) And Al Protocols For Context Aware Anonymity Authentication With An Emphasis On E-Health Applications	07/04/2023	Indian Patent	202321019256
4	Dr Kowdodi Siva Prasad & Mr Venu Gopal	MECH	ANN and fuzzy logic were used to figure out how well a joint in a mild steel pipe would weld using shielded metal arc welding	14/04/2023	International	202341024851
5	Dr Kowdodi Siva Prasad Dr Sreeramulu, Dr. Moghekar Rajeshwar, Mr. Singaiah Gali, Mr. Y Anil Reddy Mr. PVN Saichandu Mr. Chetla Venugopal	Mech + ET	Ai Based Smart Glasses For Determining Retinal Stress	24/ 04/ 2023	International	6275143

6	Dr Kowdodi Siva Prasad	Mech+ CSE	An Improved Version In Artificial Intelligence And Machine Learning Algorithm To Detect The Percentages Of Violence And Non-Violence From Real-Time Cctv Monitoring	05/05/ 2023	Indian Patent	202341029626
7	Mr.Pagidipalli Praveen Mr.Santosh Naik, Ms.Krishanveni Nalluri ,& Dr.Padmaja.Pulicherla	Mech CSE CSO ECE	Iot Based On Metereological Conditions Monitoring And Prediction System With Ann	05/05/2023	Indian Patent	202341026938
8	Dr Kowdodi Siva Prasad	Mech+ CSE	An Improved Version In Artificial Intelligence And Machine Learning Algorithm To Detect The Percentages Of Violence And Non-Violence From Real-Time Cctv Monitoring	05/05/ 2023	Indian Patent	202341029626
9	Dr K Satish Kumar, Dr K Siva Prasad& Dr Chandana Mr Anil Kumar	Mech CSE CSO ECE	Internet Of Things Based Intelligent Archery Scoring Automation System	23/ 06/ 2023	Indian Patent	202341032839
10	Dr. Kowdodi Siva Prasad Gali Singhaiah Yedulla Anil Reddy	MECH	Mechatronic Device For Monitoring Spine Wellness And Disc Slippage Due To Abdominal Fat	16/06/23	Indian Patent	202341031105
11	Dr. Kowdodi Siva Prasad & Yedulla Anil Reddy	Mech CSE CSM	Micro Algae Based Carbon Emission Neutraliser	23/ 06/ 2023	Indian Patent	202341032841

S.N.	Name of the Faculty	Department	Name of the patent Tittle	Date of publication	National/ International	Application No
			CAY m2 2021-22 Patents Granted/Published			
1	Dr K Siva Prasad	MECH	Gas Sensor Model For Sensitizing a selective Element in the mixture of Gases	04/02/2022	National	202141059123
2	Mr SIngaiah & Dr K Siva Prasad	MECH	Mechanical Characterization of Loam Sandy Soil Mixed Micro Silica For Structural Applications	04/02/2022	National	202241000201
3	Dr. B. Venkatesh Dr. K.V.P. Chakradhar Dr.K. Deepak Dr. Sreeramulu Munagala Dr. P.V. Durga Prasad	MECH	Advanced Robotic Controlled Land Vehicles	16/03/2022	National	202241014399
4	Aakula Anirudh Syed Khaleeluddin Anushka	MECH	SAMRAKHSHIKA	30/03/2022	National	202241018855

	Ozha Annie Spoorthi Gondi Santosh Naik					

S.No.	Name of the Faculty	Department	Name of the patent Tittle
CAY m1 2023-24 Prototypes developed			
1.	Mr.S.N.S.Santosh	MECH	Design, Analysis & Fabrication of Agrcutral Extraction Machine Using Solar
2.	Mr.S.N.S.Santosh	MECH	Design, Analysis & Fabrication of Garbage Collector Robot
3.	Dr.K.Siva Prasad	MECH	Development and Implementation of Robust Thin - Walled Open Section Beam Finite Element
4.	Dr.K.Siva Prasad	MECH	Algae Based Sewage Treatment Plant
5.	Mr.Venugopal	MECH	Design and anylasis pick and place industrial robot with multi functionality
6.	Mr.M.V.A.Ramkrishna	MECH	Design and Development of Glucose Measurement by 3D Printing
7.	P.V.N.Saichandu	MECH	Design, Aanlysis and Fabrication of Contactless Conveyor Using Air Pressure
8.	P.V.N.Saichandu	MECH	Design , Analysis & Fabrication of 360 Degree Rotating Fire Protection System
9.	Mr.Santosh Naik	MECH	Design, Analysis and Fabrication of Wind Mill for the application of Water Pumping
10.	Mr.Santosh Naik	MECH	Design, Analyis and Fabrication of Indirect Solar Dryer
11.	Mohammed.Mainoddin	MECH	Design, Analysis & Fabrication of Solar Tracking System
12.	Mr.P.Praveen	MECH	Study of Microstructure and Mechanical Propoerties of Magenium Metal Matrix Composites

S.No.	Name of the Faculty	Department	Name of the patent Tittle

CAY m1 **2022-23** Prototypes developed			
1.	Mr.G.Singaiah	MECH	Design, analysis and fabrication of solar based agriculture robot
2.	Dr.M.Sreeramulu	MECH	Experimental studies of cryogenic machining of EN-19 steel using carbide tool
3.	Santosh Naik	MECH	Experimental investigation and analysis of jute and bamboo fibre reinforced with epoxy resin
4.	Mr.P.Praveen	MECH	Experimental investigation on bamboo jute and coconut hybrid composite materials used in vehiclew frames

S.NO	Name of the Faculty	Department	Name of the patent Tittle
CAY m3 **2021-22** Prototypes developed			
1.	Mr.Singaiah.G	MECH	Experimental Setup For Stress And Strain Measurement Of Ss Beam(Health Monitoring Of Railway Bridges)
2.	Dr.K.Siva Prasad	MECH	Vertical Forming
3.	Mr.Singaiah.G	MECH	Design And Fabrication Of Stir Casting Machine For Metal Matrices Composite
4.	Mr.Ashish Kumar Singh	MECH	Structural And Vibrational Analysis Of A Conical Gearbox
5.	Mr.Ashish Kumar Singh	MECH	Water Level Controller
6.	Dr Sreeramulu Munagala	MECH	Design &Performance Analysis Of Wind Turbine
7.	Mr.Y.Anil Reddy	MECH	Design and development of Electrical Bike
8.	Mr.P.V.N.Saichandu	MECH	Design And Fabricaton Of Solar Grass Cutter
9.	Mr.P.V.N.Saichandu	MECH	Concrete Printing With Parametric Designing

10.	Mr.Santosh Naik	MECH	Hybrid Sewing Machine
11.	Mr.Mohammed.Main oddin	MECH	Modelling And Analysis Of Centrifugal Pump
12.	Mrs.Hemalatha Chengala	MECH	Pneumatic Air Engine
13.	Mr.P.Praveen	MECH	Pneumatic Vice

6.2.4 Sponsored Research Project (15) Institute Marks : 6.00

2023-24 (CAYm1)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25
Mr.Santosh Naik		Innovation cell	Mentor-Mentee program	AICTE	2023-2024	2.25
Dr.K.Siva prasad		Yukthi innovations	Aqua Skimmer	AICTE	2023-2024	6.00
						Amount received (Rs.):8.25

2022-23 (CAYm2)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25

2021-22 (CAYm3)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25
Mr Santosh Naik		UBA Cell HITAM	Perennial Fund Award	Unnat Bharath Abhiyan	2021-22	1.75

						Amount received (Rs.):1.75

Total Amount (Lacs) Received for the Past 3 Years: 10.00

Note*:

- Only sponsored research projects will be considered. Infrastructure-based projects will not be considered here.

6.2.5 Consultancy Work (15) Institute Marks : 15.00

2023-24 (CAYm1)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25
Mr. Santhosh Naik (PI)		Mechanical Engineering	Deep dive (underwater robot) using kria KR260 robotics starter kit	Technumen Systems Private Limited	1 year	2.00
Mr. Praveen (PI)		Mechanical Engineering	OCTACLEANER: An Underwater Drone	Apsuja Infratech Limited	1 year	7.00
Dr. Devika SV (PI)	Mr. Santhosh Naik (CO-PI)	Mechanical Engineering	Vertical Farming /Hydroponics for Urban spaces Based on Soilless farming	Technumen Systems Private Limited	2 years	15.75
						Amount received (Rs.):24.75

2022-23 (CAYm2)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25
Dr. Siva Prasad K (PI)		Mechanical Engineering	Agri bot	Khet Aadhar	6 months	1.75
Dr. Siva Prasad K (PI)		Mechanical Engineering	An autuomation system for HR operations	Technumen Systems Private Limited	3 months	3.75
						Amount received (Rs.):5.50

2021-22 (CAYm3)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25

Total amount (Lacs) received for the past 3 years:

Note*:

- Only consultancy projects will be considered. Infrastructure-based projects will not be considered here.

6.2.6 Institution Seed Money or Internal Research Grant to its Faculty for Research Work(5)
6.2.6 A Amount received (3)

Institute Marks : 1.00

2023-24 (CAYm1)

Faculty name	Project title/ Support for Activity	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25	Amount Utilized(Lacs) i.e. 15,25,000=15.25	Outcomes of the project
Mr. Santhosh Naik (PI)	Deep dive (underwater robot) using kria KR260 robotics starter kit	1 Year	0.20	0.20	Component Selection & Procurement Plan,Prototype Control Algorithm (dry run)
Mr. Praveen (PI)	OCTACLEANER: An Underwater Drone	1 Year	0.70	0.70	Procurement of Core Components for Prototype,Prototype Development (Dry Run Model)
Dr.Devika SV (PI),Mr. Santhosh Naik (CO-PI)	Vertical Farming /Hydroponics for Urban spaces Based on Soilless farming	2 years	1.57	1.57	System setup and maintenance
			Amount received (Rs.): 2.47		

2022-23 (CAYm2)

Faculty name	Project title/ Support for Activity	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25	Amount Utilized(Lacs) i.e. 15,25,000=15.25	Outcomes of the project
Dr. Siva Prasad K (PI)	Agri bot	6 months	0.17	0.17	Feasibility Study & Design Documentation,Initial Hardware Purchase,Dry Run Basic Bot
Dr. Siva Prasad K (PI)	An autuomation system for HR operations	3 months	0.37	0.37	MVP Design & Initial Development,Basic Workflow Automation
			Amount received (Rs.): 0.54		

2021-22 (CAYm3)

Faculty name	Project title/ Support for Activity	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25	Amount Utilized(Lacs) i.e. 15,25,000=15.25	Outcomes of the project

Total amount (Lacs) received for the past 3 years :

6.2.6 B Amount utilized (2) | Institute Marks : 2.00

S. No	Year	Project Tittle	Seed Money	Purpose of seed money
1	2023-24	• Deep dive (underwater robot) using kria KR260 robotics starter kit. • OCTACLEANER: An Underwater Drone • Vertical Farming /Hydroponics for Urban spaces Based on Soilless farming	1,90,000/-	• Component Selection & Procurement Plan, Prototype Control Algorithm (dry run) • Procurement of Core Components for Prototype, Prototype Development (Dry Run Model) • System setup and maintenance
2	2022-23	• Agri bot • An automation system for HR operations	54,000/-	• Feasibility Study & Design Documentation, Initial Hardware Purchase, Dry Run Basic Bot • MVP Design & Initial Development, Basic Workflow Automation
Total Amount			2,44,000/-	

7 FACILITIES AND TECHNICAL SUPPORT (100) | Total Marks 100.00

7.1 Adequate and well equipped laboratories, and technical manpower (40) | **Total Marks 40.00**

Institute Marks : 40.00

Sr. No	Name of the Laboratory	Number of students per set up(Batch Size)	Name of the Important Equipment	Weekly utilization status(all the courses for which the lab is utilized)	Technical Manpower Support		
					Name of the Technical staff	Designation	Qualification

1	Engineering W	30	Arc Welding, S	22	Mr. Durga Rao	Lab Instructor	ITI(Turner)
2	Metrology & M	30	Lathe machine	12	Mr. Muralidhar	Lab Instructor	ITI (Fitter)
3	Material Scienc	30	Universal Testi	16	Mr. Anjaneyulu	Lab Instructor	ITI (Diesel Mec
4	Fluid Mechanic	30	Pelton Wheel,	12	Mr. Kaleem	Lab Instructor	Diploma
5	Kinematics anc	30	CAM & Followe	12	Mr. Anjaneyulu	Lab Instructor	ITI (Diesel Mec
6	Computer Aide	30	Computer Syst	12	Mr. Muralidhar	Lab Instructor	ITI (Fitter)
7	CAEM (Compu	30	Auto CAD Soft	12	Mr. Ramaiah	Lab Instructor	ITI (Fitter)

7.2 Additional Facilities Created for Improving the Quality of Learning Experience in Laboratories (20) **Total Marks 20.00**

Institute Marks : 20.00

Sr. No	Name of the Facility	Details	Purpose for creating facility	Utilization	Relevance to POs/PSOs
1	3-D printing Virtual Simulation (CAEM-Lab)	AICTE offered link https://3dp-dei.vlabs.ac.in/Introduction.html	To enhance technical education and training by integrating advanced digital design and manufacturing technologies.	4	PO3, PO4, PO9, PO10
2	Virtual simulation for Instrumentation (ICS Lab)	AICTE offered link https://ic-coep.vlabs.ac.in/Objective.html	To provide students with practical, hands-on experience in modern measurement, monitoring, and automation technologies.	4	PO5
3	Plumbing (Engineering Workshop Lab)	External Threading and internal Threading for pipe	To provide students with practical knowledge and hands-on experience in basic plumbing operations such as pipe cutting, threading, joining, and installation. Which will help them in industry	8	PO3, PO4
4	Tool makers Microscope	Screw thread measurement	Students will gain hands-on experience in operating a Toolmaker's microscope, particularly in the context of industrial applications, which is essential when working in the production industry.	4	PO3, PO4, PO5
5					

7.3 Maintenance of laboratories and overall ambiance (10) **Total Marks 10.00**

Institute Marks : 10.00

Before Commencement of every semester the audit committee will inspect the department laboratories and submit a report to the department. The Head of the Department (HOD) will then forward the lab requirements to the principal. Upon receiving approval from the principal, the department will proceed with the purchase of the required components.

Maintenance of Laboratory Equipment:

1.All the laboratories are well equipped and maintained to conduct laboratory courses as per the norms of AICTE and JNTUH

2.Service and maintenance of equipment is carried out end of the Semester.

3.Breakdown registers are maintained in the laboratories.

4.Dead stock registers are maintained in laboratories.

5.Minor repairs are carried out by the technical staff of the department based on available resources and expertise.

6.Major repairs are outsourced by following the procedure of the institute.

7. Student's login is maintained in all laboratories.

8.First aid kits are available in all laboratories.

9.Fire extinguishers are available on all floors

10. All equipment, consumables and spare parts are recorded in a log

11. Damaged or outdated equipment is replaced in a timely

12. Daily cleaning of the laboratory will be ensured

Overall Ambiance:

1.Department has sufficient number of laboratories which is used throughout the year on a periodic time line basis to meet the curriculum requirements and based on requirements of the students.

2.Laboratory manuals contain information on safety precautions, equipment handling instructions along with the details of the experiments are distributed to students well in advance.

3.Laboratories are equipped with sufficient equipment to conduct the experiments.

4.All the laboratories are equipped with white/chalk board, computer, Internet, and other such teaching learning aids.

5.Every laboratory has a dedicated technical staff resource. It is ensured that the deputed technical staff has sufficient skills for handling the equipment and software pertaining to that particular laboratory.

6.All air circulation, big windows.

7.Lab Rooms are wide sitting capacity large.

7.4 Safety measures in laboratories (10)	**Total Marks 10.00**
	Institute Marks : 10.00

Sr. No	Laboratory Name	Safety Measures
1	Engineering Workshop & Production Technology	□ Students are required to wear Lab Apron and Shoe mandatorily. □ Damaged equipment's are identified and serviced at the earliest. □ First aid box are kept in laboratory. □ Specific Safety Rules like Do's and Don'ts are displayed and instructed for all students. □ Appropriate storage areas are available. □ Usage of cell phones is prohibited. □ Fire Extinguisher □ Do not touch/switch on equipment without reading complete instructions
2	Metrology & Machine Tool	□ Students are required to wear Lab Apron and Shoe mandatorily. □ Damaged equipment's are identified and serviced at the earliest. □ First aid box are kept in laboratory. □ Specific Safety Rules like Do's and Don'ts are displayed and instructed for all students. □ Appropriate storage areas are available. □ Usage of cell phones is prohibited. □ Fire Extinguisher □ Do not touch/switch on equipment without reading complete instructions
3	Metallurgy and Material Science &Mechanics of Solid &Thermal Engineering	□ Students are required to wear Lab Apron and Shoe mandatorily. □ Damaged equipment's are identified and serviced at the earliest. □ First aid box is kept in laboratory. □ Specific Safety Rules like Do's and Don'ts are displayed and instructed for all students. □ Appropriate storage areas are available. □ Usage of cell phones is prohibited. □ Fire Extinguisher □ Do not touch/switch on equipment without reading complete instructions
4	Fluid Mechanics and Hydraulic Machines & Heat Transfer	□ Students are required to wear Lab Apron and Shoe mandatorily. □ Damaged equipment's are identified and serviced at the earliest. □ First aid box is kept in laboratory. □ Specific Safety Rules like Do's and Don'ts are displayed and instructed for all students. □ Appropriate storage areas are available. □ Usage of cell phones is prohibited. □ Fire Extinguisher □ Do not touch/switch on equipment without reading complete instructions
5	Kinematics & Dynamics / Instrumentation & Control System	□ Students are required to wear Lab Apron and Shoe mandatorily. □ Damaged equipment's are identified and serviced at the earliest. □ First aid box are kept in laboratory. □ Specific Safety Rules like Do's and Don'ts are displayed and instructed for all students. □ Appropriate storage areas are available. □ Usage of cell phones is prohibited. □ Fire Extinguisher □ Do not touch/switch on equipment without reading complete instructions
6	Computer Aided Machine Drawing Practice	□ First aid box is kept in laboratory. □ Specific Safety Rules like Do's and Don'ts are displayed and instructed for all students. □ Usage of cell phones is prohibited. □ Fire Extinguisher
7	Computer Aided Engineering & Manufacturing	□ First aid box is kept in laboratory. □ Specific Safety Rules like Do's and Don'ts are displayed and instructed for all students. □ Appropriate storage areas are available. □ Usage of cell phones is prohibited. □ Fire Extinguisher

7.5 Project laboratory/research laboratory /centre of excellence (20) | **Total Marks 20.00**

Institute Marks : 20.00

The Department of Mechanical Engineering provides dedicated laboratories to support projects, research, and innovation. These specialized facilities encourage students and faculty to work on cutting-edge technologies, foster innovation, and facilitate collaboration with industry.

S.No	Name of the Laboratory
1	**Project Laboratory-Fraternity of Mechanical and Automotive Engineers (FMAE)**
2	**Research Laboratory- Skill Development Center**
3	**Centre of Excellence** **-Robotics Center**

7.5.1 Project Laboratory-Fraternity of Mechanical and Automotive Engineers (FMAE)

Objectives:

- **To promote academic excellence and technical proficiency** among members by organizing workshops, seminars, and hands-on projects related to mechanical and automotive engineering.
- **To cultivate leadership, teamwork, and professional growth** through community service, intercollegiate collaborations, and participation in engineering competitions and industry events.

Outcomes:

- Apply fundamental principles of mechanical and automotive engineering to analyze and solve real-world engineering problems through collaborative projects and technical activities.
- Demonstrate effective communication, leadership, and teamwork skills by participating in fraternity-led events, workshops, and industry engagements.

Fig7.5.1.1Workshop on FMAE

Fig7.5.1.2 Students Teams Prepared Kart for dirt kart design challenge competition organized by FMAE.

Fig7.5.1.3 3rd Year Mechanical Engineering Students Participated in SAEINDIA National Leve; Design 2024 Event .

Fig7.5.1.4 4th Year Mechanical Engineering Students Participated in SAEINDIA National Level Design won first prize.

7.5.2 Research Laboratory- (Skill Development Center)

Objectives:

- **To enhance students practical and research skills** by providing hands-on experience with advanced tools, technologies, and methodologies in engineering and applied sciences.
- **To motive innovation and critical thinking** by encouraging student-led research projects, interdisciplinary collaboration, and participation in technical publications and competitions.

Outcomes:

· **Students will be able to design and conduct experiments**, analyze data, and interpret results to develop innovative solutions to real-world problems.

· **Students will demonstrate improved technical, research, and communication skills** through active participation in projects, presentations, and technical documentation.

- 10 papers published in Scopus indexed Journals.
- Students participated in National level competitions and got prize.

Fig7.5.2.1 Problem Identification Kolanupaka Village on 14 Feb 2024

Fig7.5.2.2 3D Priting Equipment

Fig. 7.5.2.3 Visit to Palle Srujana for Problem Identification on 6 & 7December 2023

7.5.3 Centre of Excellence -Robotics Center

Objectives:

· **To provide students with advanced knowledge and hands-on training in robotics** by integrating theoretical learning with practical applications through labs, workshops, and real-time projects.

· **To promote innovation and interdisciplinary research** in robotics by encouraging student-led projects, participation in competitions, and collaboration with industry and academic institutions.

Outcomes:

· **Students will be able to design, program, and operate robotic systems** by applying principles of mechanical, electrical, and computer engineering.

· **Students will demonstrate the ability to work in multidisciplinary teams** and develop innovative robotic solutions for real-world challenges through project-based learning and research.

Fig.7.5.3.1 Robotics & Automation

Fig7.5.3.2 Workshop on Robotics & Automation

Fig.7.5.3.3 Workshop on Floating Waste Removal

Fig.7.5.3.4 Seminar on Robotics and Automation

8 CONTINUOUS IMPROVEMENT (80) — Total Marks 80.00

8.1 Actions taken based on the results of evaluation of each of the COs, POs & PSOs (40) — Total Marks 40.00

8.1.1 Actions Taken Based on the Results of Evaluation of the COs Attainment (20) — Institute Marks : 20.00

S. No	Course Name	Course Code	Course Outcome	CAYm2 (2019-23)		Reasons towards Attainment / Non Attainment	Actionable Items	CAYm1 (2020-24)		Reasons towards Attainment / Non Attainment	Remarks
				Target	Achieved			Target	Achieved		
1	Mathematics –I	MA101BS	CO1	1.5	2	Students responded well to visual learning and application-based problems in differential equations.	Weekly tutorials, diagram-based explanation, and relatable problem-solving were used.	1.5	1.16	Difficulty in applying equations to mechanical systems like motion and growth-decay models.	Introduced real-world engineering scenarios and used visual aids for conceptual clarity.
			CO2	1.5	2.75	High engagement observed with step-wise solving of higher-order ODEs.	Practice-focused sessions and progressive examples from engineering applications.	1.5	0.5	Limited grasp of non-homogeneous equations and operator methods.	Used worksheets with guided solutions and grouped peer activities to reinforce learning.
			CO3	1.5	3	Students actively participated in multivariable calculus problems with engineering relevance.	Concepts were taught using 3D plots and application in optimization problems.	1.5	1.5	Target Attained	Target was sustained by continuing real-time problem discussions and visualization techniques.
			CO4	1.5	3	Good understanding observed in multiple integrals and their practical use in geometry/volume.	Weekly applied problems and integral practice with mechanical context (e.g., area/volume).	1.5	1.5	Target Attained	Sustained through regular use of problem-based tasks linked to engineering design examples.
						Target exceeded due to high	Live demonstrations and			Difficulty in	Additional simulations and

			CO1	1.5	2	engagement in wave optics and interference topics.	virtual lab sessions were incorporated.	1.5	1	visualizing interference and wave propagation.	real-world examples were introduced for better conceptual clarity.
2	Engineering Physics	PH102BS	CO2	1.5	2	Strong understanding of quantum mechanics and semiconductors due to contextualized delivery.	Integrated analogies from electronics and visual content for better connection.	1.5	1	Abstract nature of quantum concepts made retention difficult.	Used simple derivations, animations, and low-stakes quizzes to build conceptual clarity.
			CO3	1.5	1	Moderate understanding in magnetic and dielectric properties topics.	Concept reinforcement through comparison charts and problem classification.	1.5	1.5	Target Attained	Target sustained through structured conceptual mapping and consistent revision.
			CO4	1.5	1.5	Target maintained with focused instruction on superconductivity and laser principles.	Group-based activities and summary sessions conducted.	1.5	1.5	Target Attained	Sustained through topic reinforcement and guided discussions.
3	Engineering Graphics	ME104ES	CO1	1.5	2.5	Better visualization of orthographic and isometric projections due to CAD-based learning.	Use of CAD tools and physical 3D models improved spatial understanding.	1.5	1.5	Target Attained	Target sustained through hands-on sessions and continued CAD practice.
			CO2	1.5	2.63	Students gained strong clarity in sectional views and true shapes with guided drawing tasks.	Regular practice worksheets and group assignments enhanced accuracy.	1.5	1.5	Target Attained	Reinforced with collaborative drawing reviews and peer corrections.
			CO3	1.5	3	Exceptional improvement seen in auxiliary views and projections due to task-based learning.	Applied multi-view assignments and timed drawing challenges.	1.5	1.5	Target Attained	Sustained through stepwise instruction and structured evaluations.
			CO4	1.5	3	Good performance in development of surfaces and intersection of solids.	Incorporated foldable paper models and interactive tasks.	1.5	1.5	Target Attained	Continued active-learning methods helped maintain attainment.
4	Programing for Problem Solving	SME104E	CO1	1.5	3	Excellent clarity in algorithm development and syntax basics achieved through step-by-step labs.	Daily practice with flowcharts and dry-run sessions for C programming.	1.5	1.5	Target Attained	Target sustained through structured logic-building activities and coding challenges.
			CO2	1.5	2.7	Students performed well in control structures due to real-time coding examples and hands-on tasks.	Included conditional logic tasks and debug-based learning exercises.	1.5	1.5	Target Attained	Continued use of mini coding assignments and error-analysis sessions maintained performance.
			CO3	1.5	2.7	Arrays and strings were well understood with visual trace tools and interactive examples.	Used memory diagrams and lab demos to explain data structures.	1.5	1.5	Target Attained	Sustained through concept visualization and guided practice worksheets.
			CO4	1.5	3	Strong grasp of functions and recursion supported by	Assigned real-life function-based problems	1.5	1.5	Target Attained	Maintained through project-based learning and step-wise

						real-world problems and modular programming.	and debug-trace challenges.				problem decomposition.
5	Mathematics-II	MA201BS	CO1	1.5	1.5	Target attained with better conceptual clarity in Laplace transforms and their engineering use.	Concept application tasks were included with step-by-step guided examples.	1.5	0.75	Students struggled with inverse Laplace problems and partial fraction decomposition.	Additional examples, short quizzes, and stepwise explanations were introduced to reinforce learning.
			CO2	1.5	1.5	Fourier series concepts were well absorbed due to real-time signal applications shown in class.	Periodic waveform analysis and graphical interpretation were implemented.	1.5	0.67	Limited understanding of convergence and piecewise functions.	Focused tutorials on convergence with visual aids and problem classification were introduced.
			CO3	1.5	1.5	Achieved target by engaging students with partial differential equations via real-world modeling.	Used mechanical system analogies and derivation mapping exercises.	1.5	1.38	Target Attained	Sustained through real-world applications in heat and wave equations with worksheet-based practice.
			CO4	1.5	1.5	Consistent performance in Z-transforms and discrete analysis observed.	Step-based tutorials and solved examples using time-series signals were used.	1.5	1.5	Target Attained	Maintained through problem-solving workshops and linkages to control system applications.
6	Engineering Chemistry	CH20BS	CO1	1.5	2	Students demonstrated improved clarity in water chemistry and hardness determination.	Hands-on lab experiments and concept mapping techniques were introduced.	1.5	1	Difficulty in applying titration principles and understanding water softening processes.	Lab simulation videos and repeated practicals helped reinforce basic concepts.
			CO2	1.5	2.1	Improved outcomes in electrochemistry and battery concepts through activity-based learning.	Used real-life battery case studies and demonstration experiments.	1.5	0.9	Challenges in understanding electrochemical series and Nernst equation.	Focused explanation of practical applications and problem-solving exercises were conducted.
			CO3	1.5	1.9	Good engagement in polymer chemistry with enhanced visualization of structural properties.	Included interactive models and classification-based learning tasks.	1.5	0.9	Students faced difficulty differentiating types and applications of polymers.	Worksheets and industry-based examples were used to explain application areas of different polymers.
			CO4	1.5	1.88	Improved performance in fuel and corrosion topics with practical problem-solving sessions.	Case-based assignments and diagrammatic flowcharts were used.	1.5	0.6	Confusion in corrosion mechanisms and preventive methods.	Used comparison tables and visuals to simplify the differences and solutions related to corrosion.
			CO1	1.5	1.5	Target sustained with consistent understanding of force systems and equilibrium.	Reinforced with diagram-based numerical problems and peer discussions.	1.5	1	Difficulty in visualizing free-body diagrams and resolving forces.	Conducted focused session on FBDs and force system applications using real-world examples.
			CO2	1.5	1.5	Achieved target by linking centroid and moment of inertia topics with physical	Used cut-out shapes and lab activities for better	1.5	1	Abstract understanding of centroid and area	Introduced physical models and assignments involving

						demonstrations.	spatial understanding.			moment applications.	geometry-based derivations.
7	Engineering Mechanics	ME203ES	CO3	1.5	1.5	Concepts of kinematics and kinetics were understood through motion simulation videos.	Included time-based motion analysis and group problem-solving.	1.5	1	Confusion in differentiating types of motion and applying Newton's laws.	Used animations and real-time motion analysis tools to explain concepts with clarity.
			CO4	1.5	1.5	Steady performance in concepts of work-energy and impulse-momentum methods.	Solved real-life mechanical system problems and reviewed previous question papers.	1.5	1	Inconsistent application of energy principles in solving numerical problems.	Step-by-step problem breakdowns and additional quizzes helped reinforce concepts.
8	Material Science and Metallurgy	ME303PC	CO1	1.5	2	Steady improvement noted in understanding atomic structure and crystal systems.	Used crystal models and interactive diagrams to explain unit cells and defects.	1.5	3	Target Attained	Target well exceeded due to continuity in active learning and visual representations.
			CO2	1.5	2.84	Clear conceptual grasp of phase diagrams and heat treatment methods.	Phase transformation case studies and Time-Temperature Transformation (TTT) charts used.	1.5	3	Target Attained	Sustained with reinforced thermodynamics concepts linked to metallurgical processes.
			CO3	1.5	3	Effective understanding of ferrous and non-ferrous materials and their applications.	Industrial case examples and comparison charts introduced to emphasize differences.	1.5	3	Target Attained	Target sustained through exposure to latest engineering materials and classification tasks.
			CO4	1.5	2.84	Good application-level understanding of corrosion mechanisms and prevention techniques.	Animated explanations and real-time case study presentations on material degradation.	1.5	3	Target Attained	Retained performance by using relatable examples and structured comparisons of corrosion types.
9	Production Technology	ME304PC	CO1	1.5	3	Students showed strong conceptual clarity in casting methods and mold design.	Industrial examples of casting defects and videos of foundry operations were used.	1.5	1.5	Basic understanding of gating system and types of casting needed reinforcement.	Supplemented theory with mold samples and casting simulations.
			CO2	1.5	3	High engagement in welding methods and heat-affected zones through practical demos.	Demonstrated arc welding and gas welding techniques using lab kits and safety briefings.	1.5	1.5	Required more clarity in distinguishing welding techniques and applications.	Used comparative videos and charts; focused on joint design and real-life welding applications.
			CO3	1.5	3	Effective grasp on rolling, extrusion, and drawing processes observed.	Animated visuals and real-world industry case studies enhanced conceptual understanding.	1.5	1.6	Slight difficulty in remembering process parameters and tool-work interaction.	Reinforced through worksheet-based revisions and group-based quizzes.
						Plastic processing methods and unconventional	Included video lectures on injection molding and			Students needed structured	Provided tabular summaries and real-life application

			CO4	1.5	3	manufacturing (EDM, ECM) well understood.	case-based questions on unconventional techniques.	1.5	1.5	comparison between traditional and advanced methods.	scenarios to highlight distinctions.
10	Thermodynamics	ME305PC	CO1	1.5	3	Students demonstrated strong grasp of thermodynamic systems, properties, and laws.	Reinforced concepts through cycle-based examples and process flow diagrams.	1.5	3	Target Attained	Target consistently achieved due to clear linkage of theory with mechanical applications.
			CO2	1.5	3	Good application of energy balance principles across control mass and control volume systems.	Problem-solving with stepwise application of energy equations and steady flow analysis.	1.5	3	Target Attained	Target maintained through weekly numerical practice and discussion-based derivations.
			CO3	1.5	3	Strong analytical understanding of reversible and irreversible processes, Carnot principles.	Visual demonstrations of entropy change and T-s diagrams supported conceptual clarity.	1.5	3	Target Attained	Retained high performance with graphical questions and simulation-based tasks.
			CO4	1.5	3	Clear understanding of availability, Gibb's and Helmholtz functions, and gas-vapor mixtures.	Used property charts and psychrometric problems to enhance topic retention.	1.5	3	Target Attained	Consistent results maintained using assignment-based approach and real-world thermodynamic cycles.
11	Kinematics of Machines	ME302ES	CO1	1.5	3	Concepts were effectively delivered through animations and models of mechanisms.	Demonstrated linkages and pairs using working models and videos.	1.5	3	Target Attained	Target sustained by maintaining model-based teaching and peer-solving sessions.
			CO2	1.5	3	Effective problem-solving achieved via velocity and acceleration diagram practice.	Regular tutorial sessions with stepwise numerical breakdown were conducted.	1.5	3	Target Attained	Continued with structured problem-solving and class engagement through quizzes.
			CO3	1.5	3	Gear ratio and cam profile design gained clarity with real components and design sheets.	Used cut-section gearboxes and animation tools to explain gear trains and cams.	1.5	3	Target Attained	Consistent attainment through visualization tools and manual design practice.
			CO4	1.5	3	Students demonstrated strong design understanding through synthesis problems and graphical methods.	Conducted mini design challenges and used CAD tools for mechanism synthesis tasks.	1.5	3	Target Attained	Sustained by encouraging iterative design and peer review during design tasks.
	Fluid		CO1	1.5	3	Excellent clarity seen in basic fluid properties and pressure measurement techniques.	Real-time manometer demonstrations and hands-on lab sessions supported theoretical concepts.	1.5	3	Target Attained	Learning sustained through continued integration of lab and theory components.
			CO2	1.5	3	Students applied theoretical laws effectively to fluid flow problems.	Problem-based learning sessions and application-based numericals from	1.5	3	Target Attained	Reinforced by applying Bernoulli's and momentum principles to pipe flow and

12	Mechanics and Hydraulics Machines	ME401ES					engineering fields.				nozzle problems.
			CO3	1.5	3	Clear understanding and comparison across different hydraulic machines observed.	Used actual turbine and pump cut-section models, video demos, and performance analysis.	1.5	3	Target Attained	Continued use of demonstration units and performance testing in lab sustained the outcome.
			CO4	1.5	3	Good grasp on Buckingham π theorem, similarity laws, and scale-up process.	Step-by-step examples in class with case-based learning on hydraulic model testing.	1.5	3	Target Attained	Strategies will continue to ensure students retain critical analysis skills in dimensional modeling.
13	Thermal Engineering – 1	ME502PC	CO1	1.5	3	Strong understanding of cycle analysis and thermodynamic laws observed.	Explained PV and TS diagrams with animations and cycle comparisons using real-engine data.	1.5	3	Target Attained	Continued use of comparative study of Otto, Diesel, and Dual cycles helped in retaining conceptual clarity.
			CO2	1.5	3	Students demonstrated good clarity in combustion processes and engine types.	Incorporated engine cut-section models, videos of actual engine operation, and parameter analysis.	1.5	3	Target Attained	Practice problems involving performance metrics (BP, IP, thermal efficiency) helped sustain performance.
			CO3	1.5	3	High engagement during boiler classification and function of components was noted.	Used virtual labs and 3D models for better visualization of boiler types and accessories.	1.5	3	Target Attained	Concepts reinforced through quiz-based reviews and lab visits sustained learning outcomes.
			CO4	1.5	3	Students effectively understood Rankine cycle and methods to improve plant performance.	Solved numerical problems and case studies of thermal power plants to show real-world relevance.	1.5	3	Target Attained	Retention ensured by integrating thermodynamic analysis with live plant visits and simulations.
14	Instrumentation and Control Systems	ME702PC	CO1	1.5	1.3	Difficulty observed in differentiating types of measurement errors and characteristics.	Conducted focused sessions using real-life examples and visual aids to explain system behavior.	1.5	3	Target Attained	Clear understanding sustained through practical instrumentation setups and review quizzes.
			CO2	1.5	1.25	Students required more exposure to working principles and selection criteria of sensors.	Added hardware demos and sensor selection exercises across mechanical applications.	1.5	3	Target Attained	Target sustained using application-based mini-projects with sensor integration.
			CO3	1.5	1.5	Conceptual clarity seen in block diagram reduction and transfer function modeling.	Reinforced concepts through MATLAB simulations and weekly problem-solving practice.	1.5	3	Target Attained	Learning reinforced using Simulink models and design case studies.
			CO4	1.5	1.6	Better performance observed due to integration of controller design and root locus analysis.	Used control design toolboxes and interactive plots to visualize response and tuning.	1.5	3	Target Attained	Achievement sustained via simulation-based assignments on PID and lead-lag control systems.

15	Dynamics of Machinery	A50317	CO1	1.5	3	Strong conceptual clarity and visual demonstrations improved comprehension of balancing principles.	Continued use of practical demonstrations and simulations for real-world balancing problems.	1.5	3	Target Attained	Target was sustained with consistent practice through lab models and mechanical animations.
			CO2	1.5	3	Effective delivery using animations and case-based examples of gyroscopic motion.	Used physical models and motorcycle/ship case studies to relate theory with real-time applications.	1.5	3	Target Attained	Sustained through continued integration of real-life examples and dynamic system demonstrations.
			CO3	1.5	3	Engagement enhanced via graphical analysis and hands-on practice with turning moment calculations.	Encouraged weekly assignments involving mechanism drawing and torque estimation tasks.	1.5	3	Target Attained	Target maintained using consistent reinforcement of graphical methods and step-by-step derivations.
			CO4	1.5	3	Practical relevance of speed control and energy storage helped in better understanding.	Simulation tools and governor mechanism models used for demonstration and comparative analysis.	1.5	3	Target Attained	Sustained via classroom activities involving governor models and real-time flywheel experiments.
16	Thermal Engineering – II	A50326	CO1	1.5	3	Students applied concepts confidently through problem-solving on Rankine cycle efficiency.	Reinforced learning using power plant case studies and thermodynamic simulation tools.	1.5	3	Target Attained	Target sustained with cycle efficiency analysis sessions and real-world applications.
			CO2	1.5	3	Visual learning methods helped in retaining functional understanding of various boiler systems.	Used cut-section videos and live diagrams of industrial boiler setups in class discussions.	1.5	3	Target Attained	Sustained through interactive activities and exposure to real equipment design standards.
			CO3	1.5	3	Use of flow velocity diagrams and nozzle efficiency exercises boosted conceptual clarity.	Conducted focused tutorials on impulse and reaction turbines, including velocity triangle analysis.	1.5	3	Target Attained	Regular practice on steam turbine performance problems helped maintain attainment.
			CO4	1.5	3	Real-life cooling system scenarios enhanced understanding of heat rejection processes.	Included design-based mini projects and condenser performance charts in assessment.	1.5	3	Target Attained	Continued success due to practical exposure to industrial thermal system components and efficiency tests.
			CO1	1.5	3	Students effectively connected mathematical models with real-time optimization problems.	Solved real-life examples like production planning and transportation manually and via Excel.	1.5	3	Target Attained	Sustained through applied problem-solving in classroom and exposure to decision-making case studies.
						Step-by-step simplex	Regular worksheet				Continued with iterative

17	Operation Research	A70352	CO2	1.5	3	tabulation method reinforced clarity and problem-solving speed.	practice and peer-led error correction sessions were conducted.	1.5	3	Target Attained	problem-solving and collaborative revision sessions.
			CO3	1.5	3	Excellent understanding of optimal allocation methods and matrix formulation.	Visual flowchart explanations and MS Excel-based solving were introduced.	1.5	3	Target Attained	Target maintained by integrating industry-inspired allocation problems and software tools.
			CO4	1.5	3	Game theory strategies and sequencing logic were well understood via business applications.	Applied gamified examples and real-world replacement case studies.	1.5	3	Target Attained	Sustained through scenario-based learning and strategic thinking activities.
18	Dynamics of Machine Members – I	ME501PC	CO1	1.5	1	Limited connection between theoretical dynamics and real-time motion analysis.	Incorporated graphical simulation and physical model demonstrations in class.	1.5	3	Target Attained	Attainment improved significantly with visual content and simulation-based sessions.
			CO2	1.5	1	Difficulty visualizing balancing systems in absence of physical interaction.	Added lab sessions and virtual 3D simulations for hands-on learning.	1.5	3	Target Attained	Concept clarity achieved through balance modeling and problem-solving workshops.
			CO3	1.5	1	Abstract understanding of gyroscopic effects and frame reactions.	Provided demo kits and animated content for visualizing gyroscopic principles.	1.5	3	Target Attained	Student engagement enhanced with animation-based lectures and conceptual assignments.
			CO4	1.5	1	Conceptual gaps in flywheel energy fluctuation and torque application analysis.	Weekly practice on numerical design of flywheels and torque fluctuation problems.	1.5	3	Target Attained	CO attained after repeated assessments and problem sets focused on energy storage mechanisms.
19	Metrology and Machine Tools	ME503PC	CO1	1.5	3	Strong clarity observed in types of measurement systems and accuracy standards.	Sustained attainment through lab demonstrations and frequent quizzes.	1.5	3	Target Attained	Continued hands-on sessions and exposure to precision instruments maintained high performance.
			CO2	1.5	3	Students understood applications of micrometers, vernier calipers, and angular tools.	Regular measurement experiments and problem-solving tasks were emphasized.	1.5	3	Target Attained	Consistent engagement with lab tools helped in retention and application of concepts.
			CO3	1.5	3	Tool geometry and material concepts were well grasped due to structured lectures.	Used industrial case studies and comparative charts of tool materials.	1.5	3	Target Attained	Use of real-world machining scenarios supported deep learning and concept application.
			CO4	1.5	3	Students related well to surface roughness parameters and inspection standards.	Visual inspection tools and surface texture demonstrations were used.	1.5	3	Target Attained	Live demonstrations of comparator use and quality inspection sustained attainment levels.
						Conceptual clarity achieved	Animated simulations and problem-solving				Continued use of visual tools

			CO1	1.5	2.88	through structured delivery and visual representation.	worksheets helped improve abstraction skills.	1.5	3	Target Attained	and practice problems sustained high achievement.
20	Finite Element Methods	A60330	CO2	1.5	2.88	Analytical skills were strengthened through repeated exposure to numerical formulation.	Step-wise derivation sessions and group assignments enhanced understanding.	1.5	3	Target Attained	Structured assignments and peer discussion ensured continuity in concept retention.
			CO3	1.5	2.88	Practical application of theory was reinforced through real-life structural examples.	Design-based tasks and classroom simulations supported learning.	1.5	3	Target Attained	Sustained by contextual teaching and reinforcement via lab-based structural simulations.
			CO4	1.5	2.88	Improved visualization in multi-dimensional analysis through software tools.	ANSYS and FEM software training modules supported concept reinforcement.	1.5	3	Target Attained	Use of software applications and project work maintained consistent learning outcomes.
			CO1	1.5	3	Core concepts were well understood through derivation-based and graphical explanations.	Used thermal system diagrams, solved numericals, and conducted interactive quizzes.	1.5	3	Target Attained	Sustained using conceptual videos and practical examples in HVAC and electronics cooling.
21	Heat Transfer	A60331	CO2	1.5	3	High engagement seen in thermal resistance networks and composite wall analysis.	Hands-on practice with thermal circuit analogies and insulation case studies.	1.5	3	Target Attained	Continued with case-based worksheets and simulation of transient systems in lab.
			CO2	1.5	3	Strong performance supported by simplified boundary layer concepts and fluid dynamics.	Used visual simulations and practical airflow system demos to explain convection.	1.5	3	Target Attained	Maintained through real-life problem solving and HVAC case discussions.
			CO4	1.5	3	Application-based learning on heat exchanger design boosted understanding.	Shell-and-tube heat exchanger demos and NTU-effectiveness problems were practiced.	1.5	3	Target Attained	Continued through lab experiments and design assignments related to industrial applications.
			CO1	**1.5**	3	High clarity achieved through comparison charts and practical examples of materials.	Used real samples and visual comparisons of metals, ceramics, polymers, and composites.	1.5	3	Target Attained	Continued use of tactile and visual learning reinforced excellent conceptual understanding.
22	**Engineering Materials**	**ME700OE**	**CO2**	**1.5**	3	Concepts reinforced with stress-strain curve analysis and lab-based demonstrations.	Conducted tensile, impact, and hardness testing sessions in lab.	1.5	3	Target Attained	Practical exposure ensured better application and interpretation of material strength behavior.
			CO3	**1.5**	3	Understanding improved through step-wise explanation of iron-carbon phase diagram.	Implemented group-based analysis of phase changes and interactive heat treatment charts.	1.5	3	Target Attained	Continued lab correlation and simulation tools sustained high attainment.

			CO4	**1.5**	3	Interest sustained through industry case studies on smart and advanced materials.	Case-based learning on biomaterials, shape memory alloys, and nanomaterials was used.	1.5	3	Target Attained	Maintained momentum with guest lectures and examples from cutting-edge applications.
23	**Refrigeration and Air Conditioning**	**ME701PC**	**CO1**	**1.5**	3	Strong conceptual clarity due to clear explanation of vapor compression cycle and performance terms.	Used pressure-enthalpy diagrams, system layout charts, and real-time cycle demos.	1.5	3	Target Attained	Sustained using simulation software and industry-based examples.
			CO2	**1.5**	3	Comprehensive understanding through comparative study of refrigerants and their environmental impact.	Students engaged in case studies of refrigerant selection based on COP and ODP/GWP values.	1.5	3	Target Attained	Continued through discussions on green refrigerants and efficiency factors in design tasks.
			CO3	**1.5**	3	High engagement due to interactive psychrometric chart solving and real-time applications.	Live problem-solving sessions and psychrometric process plotting were used effectively.	1.5	3	Target Attained	Consistent reinforcement through HVAC-related case studies and mini projects.
			CO4	**1.5**	3	Students showed strong application skills in load calculations and duct design.	Practice with design worksheets and building layout-based problem-solving.	1.5	3	Target Attained	Continued through system-based assignments and exposure to building energy management tools.

8.1.2 Actions Taken Based on the Results of Evaluation of the POs/PSOs Attainment (20)

Institute Marks : 20.00

CAYm2 (2019-23)				
PO/PSO	**Target Level**	**Attained Level**	**Observations (Gap / Achievement)**	**Action Plan to Sustain / Improve**
PO1 – Engineering Knowledge	1.7	2.23	High attainment due to strong foundational coverage in Thermodynamics, Mechanics of Solids, Engineering Mathematics, and Kinematics of Machines.	Continue integrating mathematical models in core subjects; sustain through conceptual clarity sessions and real-world examples.
PO2 – Problem Analysis	1.7	2.07	Supported well by Engineering Mechanics, Operation Research, and Machine Design involving structured analysis of engineering systems.	Sustain through case-based problem-solving, critical analysis tasks, and advanced tutorials for interpreting mechanical behaviors.
PO3 – Design/Development			Insufficient hands-on experience in applying theoretical concepts to real-	Problem-based learning (PBL) will be integrated into the curriculum, where students work on real or simulated mechanical design problems . Design and analysis assignments will be shifted from purely theoretical

of Solutions	1.7	1.38	world mechanical design problems. Most student exposure remains conceptual with limited practical application.	exercises to application-oriented tasks using CAD, FEA, and prototyping tools. Regular workshops and bootcamps on software such as SolidWorks and ANSYS, will be conducted to enhance design and simulation skills.
PO4 – Investigation of Complex Problems	1.7	2.07	Strong support from Instrumentation & Control Systems and Finite Element Methods, which emphasized modeling, experiments, and simulations.	Sustain by embedding experimental analysis in more labs; encourage exploratory assignments with MATLAB/ANSYS and lab-to-field exercises.
PO5 – Modern Tool Usage	1.7	2.23	Attainment driven by use of CAD in Machine Drawing, MATLAB in IC Systems, and simulation in FEM.	Continue using licensed tools in labs; conduct student tool training workshops and ensure hands-on tool application in final year projects.
PO6 – Engineer and Society	1.7	1.4	Slight dip due to limited explicit discussion on social, health, and safety aspects in core engineering courses.	Real-life case studies and community-based projects will be integrated into the curriculum to provide students with practical exposure to societal challenges. Guest lectures or seminars by professionals from NGOs will be conducted to enhance awareness of legal and ethical responsibilities.
PO7 – Environment and Sustainability	1.7	1.26	Gap due to lack of sustainability modules in regular courses; Thermal Engineering and FMHM touched this only partially.	Introduce eco-design components and green manufacturing projects; add sustainability-focused assignments and interdisciplinary activities.
PO8 – Ethics	1.7	2.03	Ethics were embedded in Project work and indirectly addressed in Engineering Practices and team tasks.	Sustain by incorporating ethical dilemmas in assessments, group reflections, and linking codes of conduct with project decisions.
PO9 – Individual and Teamwork	1.7	2.14	Achieved through group projects, lab experiments (e.g., FMHM, RAC), and Machine Drawing assignments.	Reinforce by structured peer reviews, team role assignments in labs, and participation in interdepartmental competitions.
PO10 – Communication	1.7	2.27	Well-supported through project presentations, Machine Drawing, and Project Reviews.	Sustain by continuing project documentation tasks, presentation rubrics, and mock viva sessions to enhance articulation and technical reporting.
PO11 – Project Management and Finance	1.7	2.03	Covered in final-year capstone projects and in OR where resource optimization is learned.	Sustain through introducing mini projects with budget planning; include project costing in lab submissions and mentor-guided planning exercises.
PO12 – Lifelong Learning	1.7	2.32	High due to exposure to tools, diverse projects, and self-learning components (MOOCs, peer-led learning).	Sustain through credit-linked self-learning platforms, value-added courses, and promoting student-led tech talks or knowledge sharing.
			Consistent attainment as students	Ensure vertical integration of technical skills via electives, expert lectures, and project

PSO1	1.7	1.92	demonstrate domain knowledge in thermal, design, and production streams.	internships aligned with mechanical specializations.
PSO2	1.7	1.71	Attained just at the threshold, suggesting the need for increased multidisciplinary application and innovation in final year.	Encourage participation in innovation challenges, hackathons, and interdisciplinary research initiatives.

CAYm1 (2020-24)				
PO/PSO	**Target**	**Attained**	**Observations**	**Action Plan**
PO1 – Engineering Knowledge	1.8	2.21	Target exceeded due to strong alignment in foundational and core subjects like Thermodynamics, Mechanics of Solids, and Mathematics.	Continue using applied problem-solving in theory and lab courses; sustain by connecting principles to real-world case studies.
PO2 – Problem Analysis	1.8	2.03	Attained due to practical courses like Engineering Mechanics, Kinematics, and Machine Design that required analytical skills.	Sustain through inclusion of problem-solving scenarios in labs and continuous assessments with engineering-based data.
PO3 – Design/Development of Solutions	1.8	1.46	Slight gap exists as exposure to iterative design and design constraints is limited in project components.	Include design case studies in Machine Drawing and Production Technology; introduce constraints in final year projects.
PO4 – Investigations of Complex Problems	1.8	1.94	Achieved through simulation and modeling practices in Instrumentation and FEM.	Sustain by expanding mini-projects requiring data analysis and synthesis; increase use of experimental investigation in labs.
PO5 – Modern Tool Usage	1.8	1.97	Good attainment driven by lab usage of tools like AutoCAD, ANSYS, and MATLAB in core courses.	Sustain by strengthening tool-based assignments and increasing hands-on sessions in FEM and Machine Design.
PO6 – Engineer and Society	1.8	1.9	Attained through societal relevance in projects and seminars focused on real-world mechanical applications.	Introduce sessions on industry regulations, safety standards, and ethics during project planning and review.
PO7 – Environment and Sustainability	1.8	1.47	Slight shortfall; sustainability components were not deeply embedded in most courses.	Integrate sustainability topics in Thermal, Production, and FMHM with design-for-environment projects or case analysis.
PO8 – Ethics	1.8	2.03	Target attained via ethical discussions in project reviews and student internships.	Sustain through seminar series on professional ethics and industry case studies showing ethical dilemmas.
PO9 – Individual and Teamwork	1.8	1.94	Attainment supported through collaborative lab work and capstone projects.	Sustain through peer-reviewed team activities and defined roles in group projects.
PO10 – Communication	1.8	2.12	High attainment observed due to regular presentations, reports, and viva practices.	Sustain by evaluating communication in every project/lab and encouraging participation in conferences or expos.
PO11 – Project Management and Finance	1.8	2.04	Attained via capstone projects and exposure to resource planning in labs.	Sustain through workshops on project planning tools (e.g., Gantt charts), and cost analysis modules.

PO12 – Lifelong Learning	1.8	2.27	Students demonstrated enthusiasm for developing problem-solving skills and engaging in practice-based learning by utilizing tools.	Encourage continued self-paced learning and reflective journals; recognize completion of extra-curricular tech learning.
PSO1	1.8	2.23	Attainment shows students have built competence in core domains (thermal, design, production).	Maintain through vertical alignment of subjects and domain-specific electives/projects.
PSO2	1.8	1.8	Target met, but further scope for innovation and multidisciplinary thinking exists.	Sustain and enhance through industry-aligned interdisciplinary projects and innovation competitions.

8.2 Academic Audit and actions taken thereof during the period of Assessment (15) **Total Marks 15.00**

Institute Marks : 15.00

To ensure an effective teaching and learning process and timely redressal of actions, identified to ensure that continuous improvement in terms of implementing and attaining Outcome-Based Education. As part of that, we regularly have academic audits through internal and external agencies.

External Audit: As part of an external agency, the affiliated university JNTUH conducts Academic Audit every year in the form of Fact Finding Committee (FFC), which helps us to identify the deviations if any in terms of Academic Infrastructure and Faculty which helps us to ensure proper standards above the minimal requirements are maintained. At the national level, AICTE will also conduct an audit through online or offline to ensure that the other ends of the guidelines are maintained.

Internal Audit: At the Institute level, we maintain internal Academic audit team comprised of

Table: Department Audit Committee Member

S. No	Name of the Faculty	Designation
1	Dr. Ruchir Shrivastava	HOD & Associate Professor
2	Dr. Motilal Lakavat	Associate Professor
3	Mr. Santosh Naik	Associate Professor
4	Mr SNS Santhosh	Associate Professor
5	Mr P Praveen	Assistant Professor
6	G V P N Dhanasree	Student
7	Sabavath Lahari Sheshank Tej	Student

Academic audit reviews the academic and activity calendar prepared before commencement of each Academic year. This teak monitors the curriculum delivery by the faculty, implementation of OBE and students support for continuous improvements in the learning. The committee also evaluates the course delivery, syllabus coverage, OBE implementation of course level projects or PBL and the readiness and availability of equipment in the Laboratories.

The above audits will always help the department to identify the issues and challenges in the curriculum delivery, infrastructure support. So as to act and timely address to ensure the quality of teaching and learning.

Sample Audit report:

1.Date of Meeting: 18th July 2023

2.Time: 10:00 AM – 12:30 PM

3.Venue: HOD Office, ECE Department

4.Department: Electronics and Communication Engineering (ECE)

5.Meeting Objective: Review of academic performance, faculty allotment, curriculum planning, and syllabus progress

6.Observations by the team:

·Reviewed subject allotment for upcoming semester; minor interchanges requested by faculty based on expertise.

·Discussed integration of emerging topics (AI, IoT, ML) into curriculum via open electives and projects.

·Noted syllabus backlog in subjects like Signals & Systems, Control Systems due to initial timetable issues.

·Mixed student feedback received suggestion to increase interactive teaching and provide recorded sessions.

·Labs (VLSI, Embedded Systems) require equipment/software updates; proposal preparation initiated.

·Internal exam calendar aligned with university guidelines.

Plan of Action Table No. 8.2.2

S. No	Area	Action Plan	Responsible Faculty
1	Subject Allotment	Finalize inter-departmental subject swaps and confirm updated allocations	HOD + DAC Coordinator
2	Curriculum	Propose open electives in AI, ML, IoT for BoS consideration	Curriculum Committee
3	Syllabus Coverage	Schedule extra classes for SS, CS, EMF, and DSD to complete coverage	Subject Instructors
4	Lab Readiness	Prepare lab requirement proposal and initiate procurement for new kits	Lab In-charge
5	Student Feedback	Implement interactive quizzes and upload lecture videos for slow learners	All Faculty

6	CO-PO Mapping	Submit updated CO-PO attainment sheets to NBA coordinator	Course Coordinators
7	NBA Compliance	Ensure subject files, lesson plans, and SAR documentation are updated	All Faculty + HOD

Outcome: Our department has consistently received "No Deficiency" remarks in all audits conducted by both JNTUH and AICTE till date, which is a testament to our sustained academic quality and administrative compliance.

8.3 Improvement in Faculty Qualification/Contribution (15) — **Total Marks 15.00**

Institute Marks : 15.00

Academic Performance	CAYm1 (2023-24)	CAYm2 (2022-23)	CAYm3 (2021-22)
No. of faculty members with Ph.D. degree	2.00	2.00	2.00
No. of publications in peer reviewed journals	24.00	15.00	6.00
No. of publications in conferences	30.00	18.00	12.00

8.4 Improvement in Academic Performance (10) — **Total Marks 10.00**

Institute Marks : 10.00

Academic Performance	CAYm1 (2023-24)	CAYm2 (2022-23)	CAYm3 (2021-22)
Academic Performance Index (API) of the First-Year Students in the Program (Refer to section 4.3)	6.00	6.00	6.00
Academic Performance Index (API) of the Second-Year Students in the Program (Refer to section 4.4)	5.52	5.71	6.34
Academic Performance Index (API) of the Third-Year Students in the Program (Refer to section 4.5)	6.20	6.80	6.60

9 STUDENT SUPPORT AND GOVERNANCE (120) — Total Marks 117.00

9.1 First Year Student-Faculty Ratio (FYSFR) (5) — **Total Marks 2.00**

Institute Marks : 2.00

Please provide First year faculty information considering load

Name of the faculty member	PAN No.	Qualification	From Engineering Courses	Date of Receiving Highest Degree	Area of Specialization	Designation	Date of joining	Currently Associated (Yes / No)	Nature Of Association (Regular / Contract)	Date Of leaving(In case Currently Associated is 'No')
Dr. Lavanya Na	AGIPG7816Q	Ph.D	No	27/12/2023	Chemistry	Associate Professor	06/02/2017	Yes	Regular	
Dr. Shradha Bi	AYXPB9009K	Ph.D	No	16/08/2015	Chemistry	Associate Professor	16/04/2021	Yes	Regular	
Mr.N.Venkata F	AMZPN3712D	M.Sc	No	10/12/2010	Chemistry	Assistant Professor	23/12/2021	Yes	Regular	
Mrs.Vijaya Lak	BYPPM4268N	M.Sc	No	28/04/2013	Chemistry	Assistant Professor	10/07/2024	Yes	Regular	
Mrs.Y. Aruna	BMKPA2918Q	M.Sc	No	01/06/2012	Chemistry	Assistant Professor	02/12/2013	No	Regular	06/06/2025
Dr. Ashalatha	AFZPD7535B	Ph.D	No	27/01/2007	English	Professor	04/01/2023	Yes	Regular	
Mr. Bivash Mar	EMCPM7005M	MA	No	20/09/2020	English	Assistant Professor	14/07/2022	Yes	Regular	
Mr. Dipti Ranja	ABXPL6183D	MA	No	18/12/2001	English	Assistant Professor	04/07/2022	Yes	Regular	
Dr. Rajya Laksh	ASMPB3994N	Ph.D	No	17/08/2021	English	Associate Professor	01/10/2021	No	Regular	31/01/2024
Ms. Roshni Ku	EHKPK5536A	MA	No	22/02/2019	English	Assistant Professor	18/07/2024	Yes	Regular	
Mr. Meghnath (	BTNPC2043L	MA	No	20/09/2021	English	Assistant Professor	20/02/2024	Yes	Regular	
Ms. Kiranmai S	JMAPK6603L	MA	No	01/05/2020	English	Assistant Professor	15/04/2024	Yes	Regular	
Mrs. Sreta Patı	BBXPP6496C	MA	No	29/06/2007	English	Assistant Professor	12/12/2022	Yes	Regular	
Mrs. G. Vanaja	AMZPG9185F	MA	No	05/04/2004	English	Associate Professor	08/10/2014	Yes	Regular	
Mrs. A. Sreesh	BEWPA3692D	MBA	No	12/03/2016	Management	Assistant Professor	10/02/2020	Yes	Regular	
Mr.S.M. Hussa	DFFPS3684H	MBA	No	01/04/2009	Management	Assistant Professor	12/04/2019	Yes	Regular	
Mrs.M. Sujatha	AZWPK6548G	MBA	No	01/09/2004	Management	Assistant Professor	07/06/2021	No	Regular	26/07/2024

Col.P V R Subı	APMPS0054B	MBA	No	18/04/2021	Management	Assistant Professor	01/08/2024	Yes	Regular	
Dr. Sheela Sinç	AOEPT7860B	Ph.D	No	07/06/2024	Management	Associate Professor	01/08/2024	Yes	Regular	
Dr.K. Sandeep	BFVPK4902A	Ph.D	No	07/08/2019	Mathematics	Associate Professor	10/02/2020	Yes	Regular	
Dr.M. Naga Pa'	CMZPM4902L	Ph.D	No	25/11/2024	Mathematics	Assistant Professor	05/03/2018	Yes	Regular	
Mr.B. Uppalaia	AEVPU4615E	M.Sc	No	25/05/2005	Mathematics	Associate Professor	25/09/2014	Yes	Regular	
Dr.P. Jaikanth '	BFJPY7274R	Ph.D	No	02/09/2020	Mathematics	Associate Professor	10/08/2023	No	Regular	25/09/2024
Mr.S. Shiva Ku	IPDPK3796B	M.Sc	No	10/12/2022	Mathematics	Assistant Professor	01/08/2024	Yes	Regular	
Dr. Uma Mahes	AAUPU0920F	Ph.D	No	09/02/2025	Mathematics	Associate Professor	22/07/2024	Yes	Regular	
Ms. Sakhina Kl	CHQPK3296P	M.Sc	No	16/08/2016	Mathematics	Assistant Professor	31/08/2024	Yes	Regular	
Mrs.A. Srilatha	ARFPA0009B	M.Sc	No	01/05/2018	Mathematics	Assistant Professor	18/07/2016	No	Regular	09/06/2025
Dr.R. Uma Mah	AKVPR1258C	Ph.D	No	18/02/2024	Physics	Associate Professor	08/01/2011	Yes	Regular	
Dr.T. Rambabu	AQZPT5974F	Ph.D	No	30/08/2024	Physics	Associate Professor	06/08/2012	Yes	Regular	
Dr.A. Srinivasa	ATEPA3351R	Ph.D	No	01/11/2011	Physics	Professor	17/09/2019	No	Regular	31/05/2023
Dr. Bivash Dola	BRIPD5397P	Ph.D	No	15/12/2020	Physics	Assistant Professor	01/06/2023	No	Regular	30/09/2024
Dr.G. Jagga Ra	BURPG3774R	Ph.D	No	09/08/2015	Physics	Associate Professor	08/07/2024	Yes	Regular	
Dr.M. Prasad	ATSPM1948C	Ph.D	No	27/10/2022	Physics	Associate Professor	05/08/2024	Yes	Regular	
Mr.M. Pradeep	DFJPM2924A	M.Sc	No	01/06/2014	Physics	Assistant Professor	21/04/2022	No	Regular	31/05/2025
Dr.S. Arvind	AQHPS8867L	Ph.D	Yes	21/09/2013	AdhocNetworks	Professor	06/06/2019	Yes	Regular	
Mr.K. David raj	AUOPK9274C	M.Tech	Yes	28/04/2011	CSE	Associate Professor	11/11/2022	Yes	Regular	

Mr. Dharmendr	ASIPR2143M	M.Tech	Yes	31/08/2010	CSE	Associate Professor	31/03/2022	Yes	Regular	
Mrs.S. Mamatl	DKYPS6843A	M.Tech	Yes	29/11/2014	CSE	Assistant Professor	24/07/2024	Yes	Regular	
Mr.P. Santosh	BEXPP8033A	M.Tech	Yes	24/05/2012	Electronics andCommunications	Assistant Professor	25/06/2018	Yes	Regular	
Mr.P. Kondalra	BPXPP2309R	M.Tech	Yes	05/04/2012	EmbeddedSystems	Assistant Professor	25/06/2018	Yes	Regular	
Mr.S.N.S. Sant	CFCPS1269C	M.Tech	Yes	05/05/2018	Engineering Design	Assistant Professor	16/10/2017	Yes	Regular	
Mr. Santhosh M	ALZPN5003A	M.Tech	Yes	04/08/2016	Machine Design and Dynamics	Assistant Professor	29/08/2020	Yes	Regular	
Dr. Motilal Lak	ADDPL3342C	Ph.D	Yes	10/10/2023	Material Science	Associate Professor	12/08/2024	Yes	Regular	
Mr.M. Siddarth	FKWPS7706C	M.Tech	Yes	21/04/2017	Power Electronics	Assistant Professor	10/07/2017	Yes	Regular	
Mrs.T. Sirisha	BBHPT7039P	M.Tech	Yes	31/05/2017	Power Electronics	Assistant Professor	18/06/2018	Yes	Regular	
Dr. Padmaja Pu	AVWPP7442G	Ph.D	Yes	26/11/2016	SoftwareEngineering	Professor	01/03/2022	Yes	Regular	
Mr.PVN Sai Ch	AKOPC4412E	M.Tech	Yes	10/03/2012	Thermal Engineering	Assistant Professor	24/08/2015	Yes	Regular	
Mrs.D.Udaya	BLLPD1502K	MA	No	29/06/2007	Management	Assistant Professor	27/06/2007	Yes	Regular	

Year	Sanctioned intake of all UG programs (S4)	No. of required faculty (RF4= S4/20)	No. of faculty members in Basic Science Courses & Humanities and Social Sciences including Management courses (NS1)	No. of faculty members in Engineering Science Courses (NS2)	Percentage= No. of faculty members ((NS1*0.8) + (NS2*0.2))/(No. of required faculty (RF4)); Percentage=((NS1*0.8) + (NS2*0.2))/RF
2022-23(CAYm2)	540	27	20	10	67
2023-24(CAYm1)	600	30	22	11	66
2024-25(CAY)	720	36	30	13	74
				Average Percentage	68.85

9.2 Mentoring system (5)

Total Marks 5.00

Institute Marks : 5.00

Mentoring System at HITAM: Implementation and Practice

At HITAM, mentoring is a structured and campus-wide initiative designed to holistically support students through their academic journey, personal development, and career planning. Recognizing that every student is unique, our mentoring program helps in meaningful one-on-one interactions between faculty and students to build trust, guide academic progress, and nurture essential life skills.

To ensure the effectiveness of this initiative, HITAM offers a **Mentor Training Program** grounded in emotional intelligence and self-awareness. One such tool used in our training involves a self-assessment of traits like empathy, emotional regulation, time management, and social skills. Through this reflective process, mentors gain insights into their behavioural tendencies and communication styles, allowing them to better connect with and support their mentees.

Mentoring towards:

- Professional guidance & Career oriented
- Coursework-specific
- Emotional & Psychological
- All-round development

Each faculty mentor is assigned approximately 20 students, enabling close and continuous guidance throughout the academic year. To ensure consistency and meaningful interaction, mentoring sessions are conducted weekly during the designated Mentoring Hour. These sessions are scheduled as part of the academic timetable, encouraging in-person engagement that fosters stronger mentor-mentee relationships. This structured approach ensures that students receive timely academic, personal and career-related support in a proactive and supportive environment.

Each mentor takes care of the following activities towards their mentees:

- Academic performance and attendance tracking
- IDP (Individual Development Plan) creation and regular review
- Exposure to opportunities like clubs, certifications, entrepreneurship, and internships
- Exposure to opportunities like State / Central Government / AICTE / UGC Schemes, Scholarship provisions by various bodies
- Career goal-setting and employability readiness

Peer Mentoring: A Peer mentoring model is in place, where seniors including the Student Self Governance (SSG) team provides support in transitioning them to adopt the college life and towards academics and personal development.

Roles and Responsibilities: The role of student mentor is both rewarding and responsible. It takes empathy, patience, and a dedication to your mentees success and well-being. Furthermore, the specific roles may vary based on the goals and objectives of the mentoring programme.

- Help mentees understand course content and concepts, develop good study skills, time management abilities and academic goals
- Set a good example of a role model by exhibiting good behaviour, grooming, accountability, strong work ethic and demonstrate a commitment to academic and personal development.
- Maintain consistent communication with mentees in order to monitor their progress and well-being by being friendly and available to answer inquiries as well as address issues.
- Have the ability to suspend judgement, not to have prejudices and be willing to make time for any of the mentee’s requirements.
- Assist mentees in determining their short-term and long-term academic / personal goals and develop action plans to attain their objectives and help the mentee in making annual action plan i.e. IDP: Individual Development Plan).
- Inform mentees about extracurricular activities, clubs, competitions and organizations that may be of interest to them, aligning with Career aspiration /IDP.
- Provide advice on career exploration, internships, and job search strategies to help mentees in developing their networking and professional communication abilities.
- Take part in mentor training programmes and workshops to improve mentoring skills to stay informed on campus policies, resources, and updates.
- Track mentee development, keep records of mentoring sessions, goals, and progress.

- Educate the mentees about higher studies opportunities in India and abroad eligibility criterion and its process.
- Respect mentee's worth and human dignity with reference to cultural, individual and role differences based on age, gender, ethnicity, culture, national origin, religion, disability, language and socioeconomic status.

The formal mentoring process culminates at the conclusion of the final year of study at the institution. It is anticipated that there would be comprehensive development of the mentee and the demonstration of significant effectiveness of the mentor. The formal mentoring process is closed through a feedback mechanism assessing the participant's experience with the mentoring programme. Informal mentorship is not restricted and hence may continue in accordance with the preferences and understanding of the mentor and the mentee.

Mentoring Process:

The mentoring system at HITAM follows a structured and systematic process to ensure continuous student support and development:

1. **Assignment of Mentees to Mentors**
   At the beginning of each academic year (during the first week), students are assigned to faculty mentors to initiate personalized mentoring.
2. **Maintenance of IDP and SPF Data**
   During the first four weeks, mentors collect and record data related to each students Individual Development Plan (IDP) and Student Profile Form (SPF) to understand their academic and personal background.
3. **Formal Mentor-Mentee Interactions**
   Scheduled weekly mentoring sessions are conducted during designated hours to promote consistent communication and engagement between mentors and mentees.
4. **Identification of Improvement Areas**
   Mentors identify key areas where students require improvement and take note of necessary interventions. Weekly updates are shared with the respective Heads of Department (HODs).
5. **Referrals for Additional Support**
   If required, students are referred to counsellor for further support. Updates regarding these referrals are sent bi-weekly to the Program Office.
6. **Documentation and ERP Updates**
   Mentee information is documented and regularly updated in the ERP system on a weekly basis to ensure transparency and tracking.
7. **Parent Interaction and Feedback**
   Mentors interact with parents twice per semester to discuss the progress and well-being of the students, collecting valuable feedback.
8. **Monthly Mentoring Reports**
   A comprehensive mentoring report summarizing the progress, interventions, and outcomes is submitted to the Program Office every month.

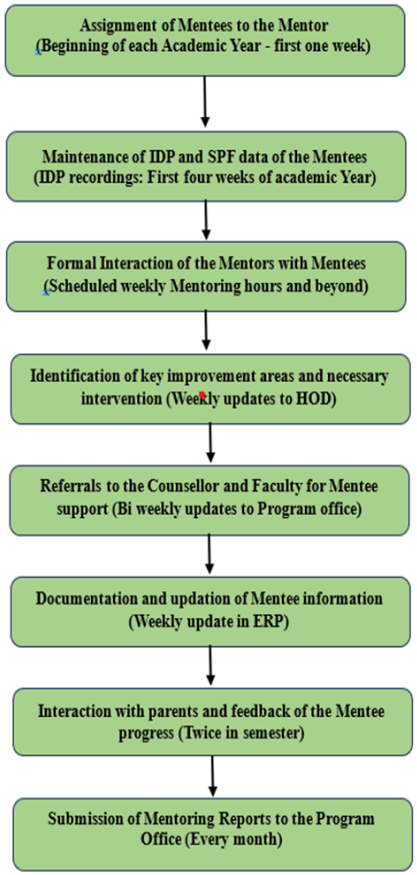


Figure 9.2.1: Flow chart of Mentoring process

HITAM Counsellor:

Dr. Ashalatha, Counsellor at HITAM is an accomplished educationist with 26 years of expertise in English Language and Literature, Guidance, Counselling, Educational Technology, and Handling in Student Psychological issues. With double Doctorates in English and Education, shes guided numerous research projects, contributed to various institutions as Principal, HoD, Coordinator, Resource Person, Research Supervisor and University Nominee. Active in academic and technical administration, shes published and presented 92 papers and promotes comprehensive learning practices, yoga, wellness initiatives as well as environmental conservation.

Figure 9.2.2: Dr. Ashalatha, Student Counsellor at HITAM

Mentoring Aptitude Tests Analysis

The mentoring aptitude tests are given to

- Evaluate the ability to communicate, listen and express appropriate communication channels.
- Analyze intrapersonal and interpersonal skills necessary for guiding the Mentees.
- Assess the personality type and stress type to ensure the Mentor's ability to adapt to any situation and support the Mentees.
- Measure emotional intelligence for understanding and responding to the needs of the Mentees.

Outcomes

- Identify faculty members with strong mentoring potential, support continuous development through FDPs / Mentor certifications and foster a dynamic academic environment.
- Analyze and orient the Mentors to transfer knowledge effectively, provide constructive feedback and monitor the learning of the Mentees.
- Ensure confidentiality in mentoring and handle the information sensitively.
- Assess the areas where improvement is needed for helping the Mentors to get suitably trained.

Score Card

Table 9.2.1: Personality Type Assessment

Score	Type	Indicators
100-150	**A**	High Stress Type - ambitious, aggressive, competitive, intolerant, determined, unfriendly, multitasking, impatient, energetic, motivated, dominant, stubborn, hasty, impatient, goal-oriented, stressed, pessimistic, workaholic, risk-taking, anxious, hostile, rigid, proactive, confident, passionate
76-99	**AB**	Medium Stress Type - Intelligent, aloof, unpredictable, quiet, sensitive, meticulous, outgoing, independent, self-centered, gentle, empathetic, caring, understanding, dependable, sociable, adaptable, rational, composed, adaptable, indecisive, accurate, logical, skeptical, organized, detached
30-75	**B**	Low Stress Type - peaceful, relaxed, stress free, procrastinating, flexible, stable, even-tempered, less competitive, adaptable, laid back, collaborative patient, calm, enthusiastic, spontaneous, inspiring, optimistic, balanced, strong, philosophical, expressive, good at listening, assertive, confident, creative

Table 9.2.2: Mentoring Readiness

Score	Mentoring Readiness
70 -75	V. Good
60 -70	Good
50 - 60	Satisfactory
26 - 49	Average

1 - 25	Not Satisfactory

Table 9.2.3: Emotional Quotient

A=1 Mark B=2 Marks

Score	**EQ**
25-40	EQ Dominant
1-25	IQ Dominant

Rubrics for the test:

The following test is designed to give an idea to assess the behaviour type. Read each statement carefully and then circle the number corresponding to the category of behaviour that best fits you.

1 = never, 2 = seldom, 3 = sometimes, 4 = usually, 5 = always

When you finish, add up all the circled numbers.

Table 9.2.4: Rubrics for the test

1.	I become angry or irritated whenever I have to stand in line for more than 15 minutes.	1 2 3 4 5
2.	I handle more than one problem at a time.	1 2 3 4 5
3.	It's hard finding time to relax and let myself go during the day.	1 2 3 4 5
4.	I become irritated or annoyed when someone is speaking too slowly.	1 2 3 4 5
5.	I try hard to win at sports and games.	1 2 3 4 5
6.	When I lose at sports or games, I get angry at myself or others.	1 2 3 4 5
7.	I have trouble doing special things for myself.	1 2 3 4 5
8.	I work much better under pressure or when meeting deadlines.	1 2 3 4 5
9.	I find myself looking at my watch whenever I am sitting around or not doing something active.	1 2 3 4 5
10.	I bring work home with me.	1 2 3 4 5
11.	I feel energized and exhilarated after being in a pressure situation.	1 2 3 4 5
12.	I feel like I need to take charge of a group in order to get things moving.	1 2 3 4 5
13.	I find myself eating rapidly in order to get back to work.	1 2 3 4 5

14.	I do things quickly regardless of whether I have time or not.	1 2 3 4 5
15.	I interrupt what people are saying when I think they are wrong.	1 2 3 4 5
16.	I'm flexible and rigid when it comes to changes at work or at home.	1 2 3 4 5
17.	I become jittery and need to move whenever I'm trying to relax.	1 2 3 4 5
18.	I find myself eating faster than the people I'm eating with.	1 2 3 4 5
19.	At work, I need to perform more than one task at a time in order to feel productive.	1 2 3 4 5
20.	I find myself being very picky and looking at small details.	1 2 3 4 5
21.	I take less vacation time than I'm entitled to.	1 2 3 4 5
22.	I become annoyed at people who don't work as hard as I do.	1 2 3 4 5
23.	I find that there aren't enough things to do during the day.	1 2 3 4 5
24.	I spend a good deal of my time thinking about my work.	1 2 3 4 5
25.	I get bored very easily.	1 2 3 4 5
26.	I'm active on weekends either working or doing projects.	1 2 3 4 5
27.	I get into arguments with people who don't think my way.	1 2 3 4 5
28.	I have trouble rolling with the punches whenever problems arise.	1 2 3 4 5
29.	I interrupt someone's conversation in order to speed things up.	1 2 3 4 5
30.	I take everything I do seriously.	1 2 3 4 5

Total =

Table 9.2.5: Sample Faculty score card:

S. No.	Name of the Employee	Designation	Personality Type	Stress Type	Mentoring Aptitude	IQ Dominant / EQ Dominant
1	Mr. K. Suresh	Associate Professor	B	Low	Satisfactory	Moderately EQ Dominant
2	Mr. S. V. Satyanarayana	Asst. Professor	AB	Medium	Good	Highly EQ Dominant
3	Ms. P. Madhavi	Asst. Professor	B	Low	Good	Highly EQ Dominant
4	Mr. M. Siddhartha	Asst. Professor	AB	Medium	Good	Moderately EQ Dominant
5	Dr. M Chiranjivi	Asso. Professor	AB	Medium	Good	Highly EQ Dominant
6	Mrs T Sirisha	Asst. Professor	AB	Medium	Good	Moderately EQ Dominant
7	Mrs M Rani	Asst. Professor	AB	Medium	Satisfactory	Moderately EQ Dominant
8	Mrs. U Divya	Asst. Professor	AB	Medium	Good	Moderately EQ Dominant
9	Mr.P.Praveen	Teaching Assistant	A	High	V. Good	Moderately EQ Dominant
10	Mr.S.Siva Raj	Teaching Assistant	A	High	V. Good	Moderately EQ Dominant
11	Mr.P.Anjaiah	Teaching Assistant	A	High	V. Good	Average EQ Dominant / Moderately IQ Dominant
12	Mr.G.Singaiah	Asso. Professor	A	High	Good	Moderately EQ Dominant
13	Mr.P.V.N.Sai Chandu	Asso. Professor	B	Low	Good	Moderately EQ Dominant
14	Mr. Santhosh Madeva Naik	Asso. Professor	B	Low	V. Good	Highly EQ Dominant
15	Mr.P.Praveen	Asst. Professor	B	Low	Good	Highly EQ Dominant
16	Mrs.N Krishnaveni	Asst. Professor	AB	Medium	Good	Highly EQ Dominant

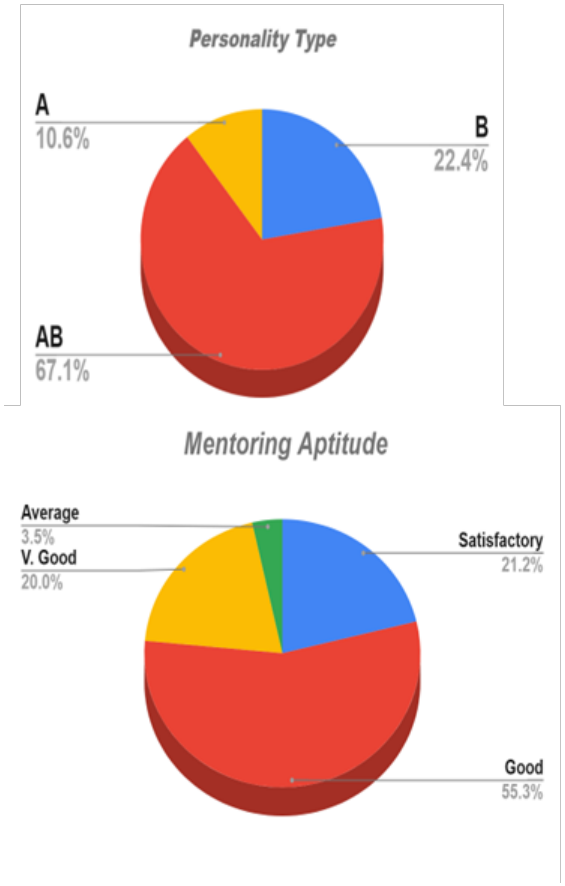
17	Mr.Chetla Venu Gopal	Asst. Professor	B	Low	Good	Moderately EQ Dominant
18	MVA Ramakrishna	Asso. Professor	AB	Medium	V. Good	Highly EQ Dominant
19	Dr..S.V.Devika	Professor	A	High	Good	Moderately EQ Dominant
20	Mrs.K.Bindhu madhavi	Asso. Professor	AB	Medium	Good	Highly EQ Dominant
21	Mr.P.Kondalrao	Asst. Professor	AB	Medium	Good	Highly EQ Dominant
22	Mr.P.Santosh	Asst. Professor	AB	Medium	Good	Highly EQ Dominant
23	Dr. J.Rajeshwar Goud	Asso. Professor	A	High	Good	Highly EQ Dominant
24	Mr. Jagadeesh Chandra Prasad	Asso. Professor	AB	Medium	Good	Moderately EQ Dominant
25	Ms.Tejaswi V	Asst. Professor	AB	Medium	Good	Moderately EQ Dominant
26	Mrs M Rani	Asst. Professor	AB	Medium	Good	Highly EQ Dominant
27	Mr K Akhil	Lab.Asst.	AB	Medium	Good	Moderately EQ Dominant
28	Dr K Satish Kumar	Professor	AB	Medium	Good	Moderately EQ Dominant
29	Dr Omprakash	Asst. Professor	B	Low	Good	Highly EQ Dominant
30	Mr. T Naveen Kumar	Teaching Assistant	B	Low	V. Good	Average EQ Dominant / Moderately IQ Dominant
31	Mr G Venkatesh	Teaching Assistant	AB	Medium	Good	Moderately EQ Dominant
32	Mr. Vednidhi Tiwari	Teaching Assistant	AB	Medium	Satisfactory	Moderately EQ Dominant
33	Mr. T Venkanna Babu	Asst. Professor	AB	Medium	Good	Moderately EQ Dominant
34	Dr T Satish Kumar	Professor	AB	Medium	Good	Moderately EQ Dominant

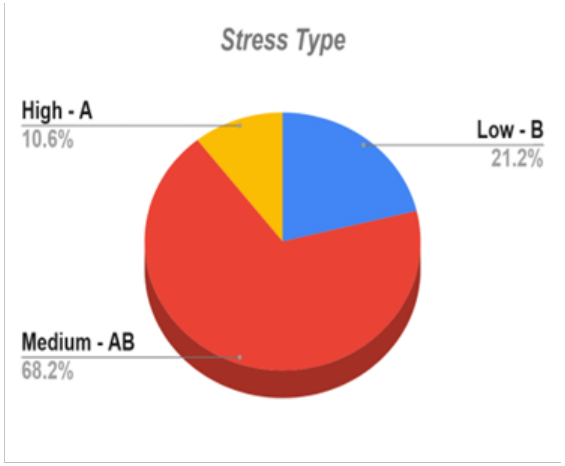
35	Dr.Padmaja Pulicherla	Professor	B	Low	Good	Highly EQ Dominant
36	Mr.B.Surendra Reddy	Asso. Professor	AB	Medium	Good	Highly EQ Dominant
37	Mr.T.Raghavendra Gupta	Asso. Professor	AB	Medium	Good	Highly EQ Dominant
38	Mrs.K.Veena	Asst. Professor	AB	Medium	Good	Highly EQ Dominant
39	Mrs. M Devi	Lab.Asst.	AB	Medium	Satisfactory	Moderately EQ Dominant
40	Mrs. Zeenath jaha Begum	Asst. Professor	AB	Medium	Satisfactory	Moderately EQ Dominant
41	Mrs P Bhargavi	Asst. Professor	B	Low	Satisfactory	Moderately EQ Dominant
42	Mr Jeevan Babu	Asst. Professor	B	Low	Average	Average EQ Dominant / Moderately IQ Dominant
43	Mrs. K Sunitha	Asst. Professor	AB	Medium	Good	Moderately EQ Dominant
44	Dr.M.Rajeshwar	Asso. Professor	AB	Medium	Average	Moderately EQ Dominant
45	Mrs. P Swathy	Asso. Professor	AB	Medium	V. Good	Highly EQ Dominant
46	Mr.Vadla Navakishore	Asso. Professor	B	Low	Satisfactory	Average EQ Dominant / Moderately IQ Dominant
47	Ms.Chatragadda Shanthi priya	Asst. Professor	A	High	Good	Moderately EQ Dominant
48	Mr.Bhaskar Das	Asso. Professor	AB	Medium	Satisfactory	Moderately EQ Dominant
49	Ms.Chintolla Surekha	Asst. Professor	B	Low	Good	Moderately EQ Dominant
50	Mrs P Ila Chandana	Asso. Professor	AB	Medium	Satisfactory	Moderately EQ Dominant
51	Dr. M V A Naidu	Asso. Professor	AB	Medium	Good	Moderately EQ Dominant

52	Mr.Sahik. Meer Subhani Ali	Asst. Professor	B	Low	Satisfactory	Moderately EQ Dominant
53	Mr.Thambi Joseph	Asst. Professor	B	Low	Good	Highly EQ Dominant
54	Mr David Raju	Asst. Professor	AB	Medium	V. Good	Highly EQ Dominant
55	Mrs. G Aparna	Asso. Professor	AB	Medium	V. Good	Highly EQ Dominant
56	Mr. N Shiva Kumar	Asst. Professor	AB	Medium	V. Good	Highly EQ Dominant
57	Mrs P Ramana	Asst. Professor	AB	Medium	Good	Moderately EQ Dominant
58	Mr. P Tharun	Teaching Assistant	AB	Medium	Satisfactory	Moderately EQ Dominant
59	Mrs. B Aruna Kumari	Asst. Professor	AB	Medium	V. Good	Moderately EQ Dominant
60	Mrs. Rohini Jadhav	Asst. Professor	AB	Medium	V. Good	Highly EQ Dominant
61	Mr. D Manikanta	Asst. Professor	AB	Medium	V. Good	Highly EQ Dominant
62	Dr. Srinivas Mekala	Asst. Professor	AB	Medium	Satisfactory	Moderately EQ Dominant
63	Mr. Periaswamy	Asst. Professor	AB	Medium	Good	Moderately EQ Dominant
64	Ms. Richa Tiwari	Asst. Professor	AB	Medium	Satisfactory	Moderately EQ Dominant
65	Mr. S N Murthy	Asst. Professor	B	Low	V. Good	Highly EQ Dominant
66	Ms. Ch Meghana	Asst. Professor	AB	Medium	V. Good	Highly EQ Dominant
67	Dr.K.Sandeep Kumar	Asso. Professor	AB	Medium	V. Good	Highly EQ Dominant
68	Mr.R.Uma Maheshwar Singh	Asso. Professor	B	Low	Good	Highly EQ Dominant
69	Mr.T.Rambabu	Asso. Professor	AB	Medium	Good	Highly EQ Dominant

70	Mr.B.Uppalaiah	Asso. Professor	AB	Medium	Satisfactory	Moderately EQ Dominant
71	Mrs.A.Srilatha	Asst. Professor	AB	Medium	Good	Moderately EQ Dominant
72	Mrs. Lavanya Nagamalla	Asso. Professor	AB	Medium	Good	Moderately EQ Dominant
73	Dr.Shradha Binani	Asso. Professor	A	High	Satisfactory	Moderately EQ Dominant
74	Mrs.K.Mallesh Sujatha	Asst. Professor	AB	Medium	Satisfactory	Moderately EQ Dominant
75	Dr.B.K.Rajya lakshmi	Asst. Professor	A	High	Good	Highly EQ Dominant
76	Mr.N.Venkata Rajendra kumar	Asso. Professor	B	Medium	V. Good	Highly EQ Dominant
77	Mrs.A.Usha	Lab Asst	AB	Medium	Good	Moderately EQ Dominant
78	Mr. M Pradeep Kumar	Asso. Professor	B	Low	Good	Highly EQ Dominant
79	Mr. Bivash Mandal	Asst. Professor	AB	Medium	Satisfactory	Moderately EQ Dominant
80	Mrs G Vanaja	Asso. Professor	AB	Medium	Average	Average EQ Dominant / Moderately IQ Dominant
81	Dr. Bivash Dolai	Asst. Professor	AB	Medium	Good	Highly EQ Dominant
82	Dr Jaikanth Yadav	Asst. Professor	AB	Medium	Satisfactory	Moderately EQ Dominant
83	Ms A Srunjana	Asst. Professor	AB	Medium	Good	Moderately EQ Dominant

Faculty Mentoring Test Result Analysis for above table:





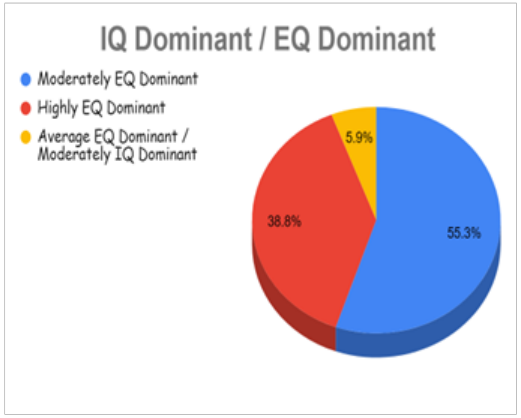


Figure 9.2.3: Faculty Mentoring test result analysis

Outcome: HITAM has significantly contributed to the overall well-being and success of students. Through regular one-on-one interactions and timely interventions, many students have received valuable academic guidance, emotional support, and career counseling. The dedicated mentoring hour has become a safe space for students to express concerns and seek advice.

9.3 Feedback Analysis (10)	**Total Marks 10.00**
9.3.1 Feedback on Teaching and Learning Process and Corrective Measures Taken, if any (5)	Institute Marks : 5.00

At HITAM, a robust multi-layered feedback mechanism is in place to ensure continuous improvement in teaching quality and student satisfaction.

Frequency of Feedback: Twice in a semester

1.ERP-Based Student Feedback

Student feedback is collected online via the ERP system once every semester. This feedback covers a detailed evaluation of each faculty member based on clearly defined teaching and mentoring parameters. After the feedback window closes:

- A summary report is generated and shared with the respective Heads of Departments.
- The Principal and HODs jointly review the data and recommend corrective or enhancement measures wherever necessary.
- Action plans are discussed with faculty to ensure accountability and progress.

2.CRC (Class Representative Council) Feedback

The principal personally conducts fortnightly feedback sessions with CRC members representing all academic programs and years.

- This platform enables students to raise academic and administrative concerns in real time.
- Based on the feedback received, prompt actions are initiated, and progress is tracked by the academic office.

Sample reports with Rubrics:

Faculty Performance Evaluation Format:

Feedback is collected through a structured form twice a year for each semester, evaluating faculty across multiple teaching dimensions.

Rubrics for Faculty Feedback evaluation:

1: Has the faculty covered entire Syllabus as per lesson Plan?

2: Has the faculty covered relevant topics beyond syllabus?

3: Rate Effectiveness of faculty in terms of technical content/course content

4: Rate Effectiveness of faculty in terms of Communication skills

5: Rate Effectiveness of faculty in terms of Use of teaching aids

6: Were you comfortable with the Pace on which contents were covered

7: Was the faculty able to Motivation and inspiration for students to learn

8: Did the faculty Support for the development of Student skill (Practical demonstration, Hands on training)

9: Clarity of expectations of students

10: Does the faculty provide Feedback provided on Students progress

11: Is the faculty Willing to offer help and advice to students beyond class hours

Table 2.3.1: Sample Faculty Feedback Evaluation Summary

S.No	Name of the Faculty	Subject Taught	1	2	3	4	5	6	7	8	9	10	11	Overall Percentage	Result
1	Dr. K. Sandeep	"Statistical And Mathematical Foundations"	93	89	91	91	90	91	88	88	90	88	88	90	Excellent

2	Dr. M Rajeshwar	"Object Oriented Programming Using Java"	86	83	87	87	85	84	85	84	84	83	84	85	Very Good
3	Mr. Jagadeesh Chandra prasad R	Microwave And Optical Communicatio ns Lab	89	88	84	89	88	89	89	86	86	86	86	87	Very Good
4	Ms. CH. Meghana	Introduction To Artificial Intelligence	69	68	67	70	72	71	70	69	67	71	72	70	Average
5	Mr. CH. Nagababu	Digital Signal Processing	70	60	55	60	55	48	30	35	55	35	55	50	Poor
6	Mr. Bhaskar Das	Data Structures And Algorithms*	97	95	95	93	92	92	94	91	90	88	90	92	Excellen t
7	Mr. S. Shiva Kumar	Statistical And Mathematical Foundations	89	84	87	85	86	86	87	85	86	85	84	86	Very Good
8	Ms. Krishna Jyothi	Database Management Systems	87	86	86	85	84	84	85	85	83	82	85	85	Very Good
9	Mr. M Joseph	Database Management Systems	88	87	87	86	86	86	84	87	84	84	85	86	Very Good
10	Mr. Rohini Jadav	Software Engineering	76	75	74	74	73	75	75	75	75	75	74	75	Good
11	Ms. Sure Mamatha	Data Mining And Data Analytics	70	71	72	74	68	73	70	71	70	71	70	71	Good

- **Performance Ratings:**
- **Excellent**: ≥ 90%
- **Very Good**: 80% – 89%
- **Good**: 70% – 79%
- **Average**: 60% – 69%
- **Poor**: < 60%

Sample Action Taken Report:

Based on the comprehensive student feedback collected across 11 parameters, HITAM has taken the following actions to ensure continuous enhancement in teaching quality and student satisfaction:

1. **Poor Feedback:**
    - **Faculty Identified:** Mr. CH. Nagababu (Digital Signal Processing)
    - **Action Taken:** The faculty member was initially counselled and provided support to improve. Despite multiple efforts, there was no visible progress. As a result, the course was reassigned to another competent faculty member to ensure better delivery and learning outcomes.
2. **Average Feedback:**
    - **Faculty Identified:** Ms. CH. Meghana (Introduction to Artificial Intelligence)
    - **Action Taken:** To strengthen course delivery, an adjunct faculty was assigned to support teaching. The primary faculty was guided to enhance classroom engagement and subject clarity through structured mentorship.
3. **Good Feedback:**
    - **Faculty Identified:** Mr. Rohini Jadav and Ms. Sure Mamatha
    - **Action Taken:** These faculty members were advised to pursue continuous improvement through Faculty Development Programs (FDPs), NPTEL courses, and internal pedagogical workshops to elevate their teaching effectiveness.
4. **Very Good Feedback:**
    - Faculty in this category were appreciated for their consistent performance and were encouraged to continue their development through advanced training and by mentoring peers.
5. **Excellent Feedback:**
    - **Faculty Identified:** Dr. K. Sandeep and Mr. Bhaskar Das
    - **Action Taken:** These faculty members were recognized in the faculty meetings to motivate others to follow the best practices and the initiations carried out by them.

9.3.2 Feedback on Academic Facilities (5)

Institute Marks : 5.00

At HITAM, feedback on campus facilities is collected systematically through the ERP system and through CRC meetings every semester to ensure continuous improvement in infrastructure, amenities, and student services. The feedback process allows students to share their experiences regarding classrooms, laboratories, library resources, hostel facilities, transportation, and other campus utilities. This structured approach helps in identifying key areas that need enhancement, ensuring that the institution provides an optimal learning environment.

Table 9.3.2: ERP Feedback

S. No	Activity	2024-25	2023-24	2022-23	Grade
1	Library	66%	63%	62%	Good
2	Canteen	72%	71%	73%	Good
3	Hostel	72%	71%	73%	Good

4	Transport	79%	75%	72%	Very Good
5	Dispensary	78%	81%	79%	Very Good
6	Laboratories	73%	71%	75%	Very Good
7	Conduct of Examinations	79%	78%	77%	Very Good
8	Discipline	82%	79%	78%	Very Good
9	Office	73%	71%	72%	Good

Table 9.3.3: CRC Feedback

S. No	Activity	2024-25	2023-24	2022-23	Grade
1	Sports	75%	74%	75%	Very Good
2	Classrooms	77%	77%	76%	Very Good
3	Common Rooms	81%	80%	79%	Very Good
4	Internet and Wi-fi	85%	75%	76%	Very Good
5	Drinking water facility	74%	71%	74%	Good

Action Taken Report:

Once the feedback is collected, it is summarized and analyzed to identify recurring concerns and suggestions. Students also play an active role in various committees, where they provide real-time observations and recommendations based on their experiences. These committees serve as a crucial link between students and administration, ensuring that concerns are addressed proactively. The summarized feedback is then reviewed by the relevant authorities, and an action plan is formulated to resolve identified issues.

1. Library (Good – Avg. 64%)

Action Taken: Library operating hours were extended from 5:00 PM to 6:00 PM to provide students with more access for study and research.

2. Canteen (Good – Avg. 72%)

Action Taken: The canteen vendor was replaced based on quality and hygiene feedback. A revised and diversified menu was introduced. New food options such as a Chinese stall and a bakery corner were added to enhance variety and student satisfaction.

3. Hostel Facilities (Good – Avg. 72%)

Action Taken: Regular monitoring and inspection schedules were implemented to maintain cleanliness and ensure timely maintenance. Hostel wardens were made more accountable with routine reporting.

4. Transport (Very Good – Avg. 75%)

Action Taken: Two additional transport routes were added to cater to more students. Bus timings were restructured based on student needs and punctuality was monitored.

5. Dispensary (Very Good – Avg. 79%)

Action Taken: No immediate changes required. The facility continues to function efficiently with regular supply checks and availability of medical staff.

6. Laboratories (Very Good – Avg. 73%)

Action Taken: A modernization drive was initiated in multiple labs, where outdated equipment was replaced or upgraded with industry-relevant tools and instruments.

7. Conduct of Examinations (Very Good – Avg. 78%)

Action Taken: Midterm examinations were transitioned to online evaluation. Script view access was provided to students post-assessment to enhance transparency and self-review.

8. Discipline (Very Good – Avg. 80%)

Action Taken: Sniffer dogs were deployed occasionally to detect drugs or harmful items on campus. A dress code policy was enforced. Lady gatekeepers were stationed at entry. Senior faculty members were assigned regular discipline rounds to ensure order and compliance.

9. Office Services (Good – Avg. 72%)

Action Taken: Additional administrative staff were recruited under the Program Office. The office is now more responsive to student attendance tracking and parent communication.

Corrective actions are implemented based on the severity and feasibility of the suggestions. Common actions taken include upgrading lab equipment, improving internet connectivity, enhancing hostel facilities, addressing maintenance concerns, and optimizing classroom infrastructure. The progress of these corrective measures is monitored during the assessment period, and necessary follow-ups are conducted to ensure their effectiveness.

9.4 Training and Placement Support (10)	**Total Marks 10.00**
	Institute Marks : 10.00

The Career Development Centre (CDC) at the Hyderabad Institute of Technology and Management (HITAM) supports the students in shaping and managing their careers by building key ingredients required for a student to be a complete professional. The Centre will focus on building life skills or employability skills through various training programs and an extensive industry connect program ensuring an all-round development. These skills not only improve the chances of placements for students but also help in developing professional attributes for continuing and growing in the job. These are the skills, attitudes and actions that enable professionals to get along with their fellow workers, reporting managers/ supervisors and to take informed decisions at crucial times.

CDC-MAJOR FUNCTIONS:

The major functions of the Career Development Centre involve:

- Planning and organizing campus as well as off-campus selection activities.
- Inviting specialists to address students on self-enhancement, confidence building, etc.
- Conducting Individual Development Programme on regular basis to the students of first year to final year course of all branches. This deals with soft skill development, Personality Development, etc.
- Organizing Aptitude Tests to students
- Conducting GDs, Mock Interviews, etc., to prepare the students to face interviews.
- Coordinating for Industrial Visits and vacation In-plant Training in industries for students from 2nd year onwards

Campus placements:

The training and placement division of CDC critically reviews the training programs and update based on the market strategy. The training cell initiates, evaluates and processes different training programs in the Institute. Some successful initiatives of the training cell are Industry Linkage - periodic visits to relevant industries. Every training program is effectively designed to prepare the students to face the different categories of industries while appearing for the placement drives.

Career Assurance Program (CAP):

HITAM offers CAP a unique education that caters not only to outgoing batches but to the entire student community from first year as well. Training need analysis is done to categorize the individual requirements of each student. The students are then trained for exponential growth by overcoming their mistakes and through practical application of the knowledge they have gained.

Online Assessments:

The CDC will conduct online assessments for all students on regular basis. These assessments will be measuring students‟ abilities on numerical ability, logical reasoning, data interpretation and problem solving on one hand and on the other side it measures Academic knowledge thereby helping organizations reach the right candidates and helping students identify development areas much in advance.

Profile Discussion and Personalized Counseling:

Each student at the campus goes through a personalized profile discussion, assessment and counseling session with the expert counselors. This enables the student to assess his strengths, weaknesses and improvement areas well in time before he begins his journey as a professional.

Career Development Plan:

The CDC counselor and student will jointly work towards creating an action plan focused on improvement of his identified areas of development. The same plan will be having clear milestones against specific actions the student needs to take. The actions could be self-driven, activities which the CDC has planned as a part of the calendar or could also be training programs he undertakes online.

HR Conclave:

CDC organizes regular Annual meet with HR’s from various industries to bring awareness to the students about the current Market scenario, trends, technologies and required skill sets. It also serves as a networking forum for all prominent industry connections.

CDC Team: HITAM has separate Department towards conduction of Training and Placement activities. The team consists of: Dean Careers supported by Assistant Dean Careers, Head CDC and office assistants.

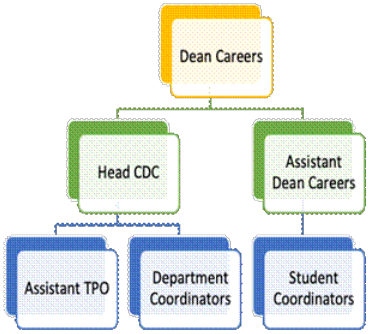


Figure 9.4.1: CDC Team

Table 9.4.1: CSD Team details:

S. No	Designation	Name of the staff
1	Dean Careers	Col. Pavan
2	Head CDC	Mr. Harsha
3	Assistant Dean Careers	Mr. Deepti

4	Assistant Training and Placement Officer (TPO)	Mr. Hari
5	Department Coordinators	ECE: Mr. Venkanna Babu
		EEE: Mr. Siddhartha
		Mech: Ms. Shyamala
		CSE: Dr. T. Satish
		CSD: Mr. Bobby
		CSM: Mr. Manikanta
6	Student Coordinator	Mr. Karthik, Student of AIML Student Dean CDC, SSG.

Responsibilities of Dean Careers:

1. Strategic Planning: Develop and implement long-term strategies for student career development aligned with institutional goals.
2. Student Development Programs: Coordinate soft skills training, resume writing, interview preparation, and personality development workshops.
3. Industry Collaboration: Build and maintain partnerships with industries, corporates, startups, and government organizations.
4. Internships & Placements: Oversee summer internships, industrial training, and final placements for students.
5. Corporate Relations: Host corporate talks, guest lectures, industry panels, and career fairs.
6. Skill Gap Analysis: Assess skill deficiencies and arrange bridging programs or workshops.
7. Tracking Alumni Success: Monitor alumni career trajectories to improve institutional offerings and engagement.
8. Placement Analytics: Maintain and analyze placement data, student profiles, recruiter feedback, and market trends.

Responsibilities of HEAD CDC:

The Head of the Career Development Centre plays a crucial role in ensuring students are career-ready and aligned with industry expectations. The responsibilities span four major domains, each essential to creating a robust and inclusive placement ecosystem.

1. Educate Students Accordingly

- **Recent Job Trends**: Continuously monitor industry trends, emerging job roles, and skills in demand to ensure students are prepared for the future workforce.
- **Career Awareness**: Conduct sessions, workshops, and one-on-one guidance to educate students on diverse career paths and industry expectations.
- **Skill Mapping**: Help students align their academic and technical skills with market needs through relevant certifications and training.

2. Execute Hiring Events

- **Network with Employers**: Build and sustain relationships with recruiters, industry leaders, and HR professionals to facilitate hiring opportunities.
- **Organize Placement Drives**: Plan and manage campus recruitment events, job fairs, and virtual hiring sessions.
- **Coordinate Industry Engagements**: Facilitate guest lectures, panel discussions, and mentorship programs to enhance industry exposure.

3. Promote High CTC Placements

- **Screen Potential Students**: Identify and groom high-performing students suitable for high-package placements.
- **Exclusive Training Programs**: Organize specialized training for students aiming at product-based companies or premium recruiters.
- **Pre-Placement Support**: Provide mock interviews, aptitude tests, and resume-building support tailored to top-tier companies.

4. Ensure Equal Opportunity

- **Placement Policy**: Design, implement, and enforce a transparent placement policy that ensures fairness and accountability.
- **Inclusive Opportunities**: Create a level playing field for all students, regardless of academic background, by identifying suitable roles and companies.
- **Support & Guidance**: Extend support to underperforming or non-placed students through re-skilling and internship opportunities.

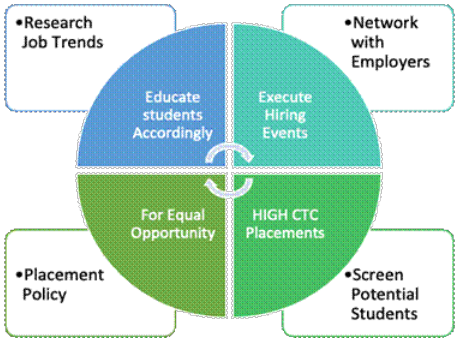


Figure 9.4.2: Responsibilities of CDC

Responsibilities of Assistant TPO

Assistant Training and Placement Officer

1. Assist in conducting CDC training and assessment programs
    1. Prepare the training and assessment time table
    2. Venue confirmation and preparedness
    3. Coordinate with CDC coordinators for students' participation and attendance
    4. Collect feedback from students
2. Assist in placement
    1. Coordinate campus recruitment activities
    2. Researching companies
    3. Create posters on drive information
    4. Making arrangements for pre-placement talks, tests, and interviews
3. Students connect
    1. Regular interactions on training, assessments, career opportunities, resume building, professional development, and placements
4. Alumni connect
    1. Build and maintain relationships with alumni for industry interactions, internships, mock interviews, placements, and job referrals.
5. Record keeping
    1. Maintain records of all CDC activities
6. Collect Offer Letters, Acceptance Letters and On-boarding Proof
7. Maintain a departmental level placement calendar and keep the students informed.
8. Review the Shortlisted Students
9. Creating awareness among the students about the training calendar and curriculum.

Responsibilities of Department Coordinators:

1. Inform the students about placement drives from time to time.
2. Ensure Students Registration and participation for Placement Drives

3. Following up with Shortlisted Students and ensuring their presence on the day of the drive
4. To present on the Day of Placement Drives for their department.
5. Support in designing the Training Calendar & Curriculum by providing the required information to CDC
6. Coordinate in conducting the training by making arrangements for the required classrooms and labs
7. Ensuring all students access to training materials (physical or online)
8. Inform the students on the Assessment Schedule.
9. Collect proof of Internship Completion Certificate and submit to CDC
10. Maintain Departmental Level Training, Internship, Project, and Placement Records

Table 9.4.2: Capacity building and Skills Enhancement Initiatives taken by the CDC (Batch 2019-23)

S. No	Name of the capability Enhancement Program	Number of students Enrolled
1	Aptitude and Reasoning	1800
2	Python Programming Training	1393
3	Programming in C	485
4	Java Programming	55
5	Seminar on Self Confidence & Attitude for Future Entrepreneurs	180
6	Awareness session on District Industrial Centre for New Beginners in Business	220
7	Seminar on Business Opportunities & Marketing Strategies	80
8	A session on Human Values, Anti-raging, Womens Safety, and Cyber-crimes	380
9	IELTS Training for III-II students of 2020-24 Batch	33

Table 9.4.3: Capacity building and Skills Enhancement Initiatives taken by the Institution (Batch 2020-24)

S. No	Name of the capability Enhancement Program	Number of students Enrolled
1	Aptitude and Reasoning Training	1800
2	TCS NQT Training	313
3	Full Stack Development using Python, DSA, OOPS Technical Training	528
4	Problem Solving on Hacker Rank/Leet Code, DSA Training	528
5	Problem Solving with Python and p5.js Training	587

6	Mock Interviews	34

Table 9.4.4: Capacity building and Skills Enhancement Initiatives taken by the Institution (Batch 2021-25)

S. No	Name of the capability Enhancement Program	Number of students Enrolled
1	Career Awareness Session and Collecting Career Aspirations for II-I 2023-27 Batch	626
2	AON Co Cubes Y-1 Assessment for 2021-25 Batch	448
3	Company Specific Trainings for IV-I (2021-25 Batch)	502
4	Mock GDs and Mock Interviews for IV-I of 2021-25 Batch	35
5	Career Enablement Programme for III-I 2022-26 Batch	585

Table 9.4.5: Impact Analysis: IV year

Year	Total No of Students	Placements	Higher Studies
2022-23	332	211	20
2023-24	472	284	23
2024-25	504	110 and ongoing	-

9.5 Start-up and Entrepreneurship Activities (5)

Total Marks 5.00

Institute Marks : 5.00

HITAM has established an incubation center to promote entrepreneurship among its students and faculty. This center serves as a platform to nurture innovative ideas and transform them into successful startups. It provides aspiring entrepreneurs with essential resources, guidance, and mentorship to develop their business ventures from ideation to execution.

Innovation at HITAM: Nurturing Future-Ready Engineers

At Hyderabad Institute of Technology and Management (HITAM), innovation is not an add-on—it is embedded in the very fabric of the institution. HITAM believes in "Doing Engineering rather than just Studying Engineering", fostering a culture where students are encouraged to ideate, experiment, and create from the very beginning of their academic journey.

1. Foundation Through Design Thinking (First-Year Initiation):

The innovation journey at HITAM begins from the first year with a mandatory course on Design Thinking. This course enables students to:

- Understand problem-solving in a human-centric manner.
- Work on real-world community-based or industry-driven problems.
- Develop empathy, ideation, prototyping, and testing skills early on.

2. Structured Innovation Ecosystem – From 'Xplore' to 'Innovations':

HITAM has a well-structured progression of innovation-focused programs:

- **Xplore:** A platform where First year students start exploring emerging technologies and develop POC (Proof of Concept) models.
- **Innovations:** Second and Third-year students work in multidisciplinary teams to develop impactful projects, often aligned with SDGs and industry relevance. It is not limited to years, anyone interested are welcome to implement their innovations.
- Students participate in national-level competitions, hackathons, and innovation challenges, gaining recognition and real-world exposure.

3. Multidisciplinary Innovation and Incubation Support:

- The Incubation Center at HITAM acts as a launchpad for entrepreneurial ideas and supports multidisciplinary student projects.
- Students from various departments collaborate and receive mentorship, prototyping support, and access to funding opportunities.
- Partnerships with industries and research organizations strengthen the pipeline from idea to market-ready product.

4. Ministry of Education's Innovation Cell (MIC):

- HITAM has an active MIC Cell, aligned with the Ministry of Educations Innovation Cell.
- Regular activities like IPR workshops, entrepreneurship boot camps, and ideation contests are conducted under this initiative.
- HITAM received a prestigious 4-Star Rating from MIC, one of the highest in the state of Telangana, for its excellence in:
    - Innovation ecosystem creation
    - Promotion of IPR (Intellectual Property Rights)
    - Entrepreneurial education and student startups

Table 9.5.1: List of Activities

S. No	Activity	Year
1	Workshop on "Entrepreneurship and Innovation" as Career Opportunity	2024
2	Problem Solving and Ideation Workshop	2024
3	Poster Presentation of Ideas/PoC & linkage with Innovation Ambassadors/Experts for Mentorship Support.	2024
4	Session on Entrepreneurship	2024
5	Workshop on Design Thinking, Critical thinking and Innovation Design	2024
6	Innovation & Entrepreneurship Outreach Program in Schools/Community	2024

	Workshop on Entrepreneurship Skill, Attitude and Behavior Development	
7	Session on Achieving Problem-Solution Fit and Product-Market Fit	2024
8	Exposure Visit to Pre-incubation units such as Ideas Lab, Fab lab, Makers Space, Design Centers, City MSME clusters, workshops etc.	2024
9	Inter/Intra Institutional Innovation Competition/Challenge/Hackathon and Reward Best Innovations.	2024
10	Workshop on Prototype/Process Design and Development.	2024
11	Session/ Workshop on Business Model Canvas (BMC)	2024
12	Field/Exposure Visit to Incubation Unit/Patent Facilitation Centre/Technology Transfer Centre such as Atal Incubation Centre etc.	2024
13	Session on “How to plan for Start-up and legal & Ethical Steps”	2024
14	Workshop on Intellectual Property Rights (IPRs) and IP management for start up	2024
15	Mentoring Event: Demo Day/Exhibition/Poster Presentation of Business Plans & linkage with Innovation Ambassadors/Experts for Mentorship Support.	2024
16	Entrepreneurship	2024
17	Session on Innovation/Prototype Validation – Converting Innovation into a Start-up or Session on Achieving “Value Proposition Fit” & “Business Fit”	2024
18	Session on Accelerators/Incubation - Opportunities for Students & Faculties - Early-Stage Entrepreneurs	2024
19	Innovation & Entrepreneurship Outreach Program in Schools/Community	2024
20	Organize an Inter/Intra Institutional Start-up Competition and Reward Best Start-ups.	2024

21	Mentoring Event: Demo Day/Exhibition/Poster Presentation of Start-Ups & Linkage with Innovation Ambassadors/Experts for Mentorship Support.	2024
22	Entrepreneurship session-1	2024
23	Entrepreneurship session-2	2024
24	Innovation & Entrepreneurship Activity - St. Anthonys High School, Sanga Reddy	2024
25	Innovation & Entrepreneurship Activity - St. Peters School, Sanga Reddy	2024
26	Innovation & Entrepreneurship Activity - Zilla Parishad High School, Miyapur	2024
27	YUKTI Innovation-Idea Prototype details submission	2024
28	YUKTI Innovation - Startup	2024

5. Holistic Development through Innovation:

Innovation at HITAM is not limited to labs or competitions. It permeates through:

- Curriculum design with project-based learning (PBL) components.
- Community-based innovation through Unnat Bharat Abhiyan.
- Encouraging students to take ownership of their learning and contribute to sustainable development.

Outcomes:

6 Startup has been established by the students till now.

Table 9.5.2: List of Startups in our college

S. No	Name of Venture/Startup	DPIIT/Start up India Registration No.	Year of recognition by DPIIT/startup India
1	Eunoia Innovations Private Limited	DIPP93755	2022
2	Kephi Innovations Private Limited	DIPP95484	2022
3	Hicet Sustainable Solutions Private Limited	DIPP114672	2022

4	One Gear Technologies Private Limited	DIPP95527	2022
5	Veenero Sustainable Solutions Private Limited	DIPP140637	2023
6	Asthra Technologies	DIPP145563	2023

1. **Eunoia Innovations Private Limited:** Aqua Skimmer is an unmanned boat powered by artificial intelligence that cleans and collects floating trash on board. To float, the device is made up of two split hulls called catamaran. The inlet is equipped with a mechanical arm that collects the captured trash. The devices camera assists in detecting trash and capturing it in the collecting waste basket attached to the catamarans. It is powered by solar energy, which provides a renewable source of energy while also extending the device.
2. **Kephi Innovations Private Limited:** The Startup is working on the Eco-Friendly and Nature based Water treatment Solutions and Carbon Emission Neutralizers. This startup provides solutions that are used to treat the water naturally with Eco-friendly byproducts and helps to reduce global carbon emissions using carbon neutralizers. Their products serve businesses ranging from farmers to power plant corporations.
3. **HICET Sustainable Solutions Private Limited:** They have done digitization of Archery Scores. In Archery, for distance calculation from center it will do and according to that it will automatically calculate the score.
4. **One Gear Technologies Private Limited:** HOPPER is an electric vehicle created byOne Gear Technologies Private Limited. It is customer centric and is budget friendly. It will be placed at a correct price so that everyone can afford it.
5. **Veenero Sustainable Solutions Private Limited**
   Focuses on water conservation, renewable energy, and sustainable agriculture technologies. Develops scalable solutions for rural and urban ecological challenges. Promotes student-driven research aligned with the UN SDGs.
6. **ASTHRA TECHNOLOGIES**
   Works on AI, robotics, and embedded systems to create next-gen tech products. Encourages a research-oriented mindset among students in cutting-edge domains. Aims to position HITAM as a hub for deep-tech innovation.

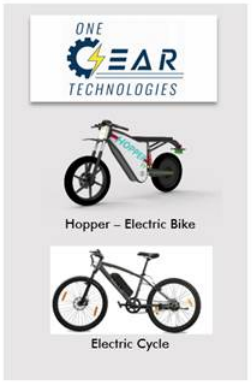


Figure 9.5.1: Startups

Recognitions to Startups:

Eunoia Innovations Private Limited

1. Received VC funding of ₹25,00,000 under the NIDHI-SSS scheme (ISB D-Labs) in December 2023, marking a significant milestone in its entrepreneurial journey.
2. AICTE Ministry of Education funded Rs. 6,00,000 Grant-in-Aid under the scheme of Grant Support to Innovations, MIC for the year 2023-24
3. Ministry of Housing and Urban Affairs under Amrut 2.0, this startup received Rs. 20,00,000 funding in the year 2022
4. Ministry of Housing and Urban Affairs under Amrut 4.0, this startup received Rs. 20,00,000 funding in the year 2022

9.6 Governance and Transparency (25)	**Total Marks 25.00**
9.6.1 Availability of the Institutional Strategic Plan and its Effective Implementation and Monitoring (10)	Institute Marks : 10.00

Institute Vision:

To be a role model technological university of national repute that imparts research-based multi-disciplinary competencies in students to enable their career aspirations and contribute to the society.

Institute Mission:

1. Build students' competencies through HITAM's 'Doing Engineering' approach with relevant curriculum, pedagogy and assessment.
2. Collaborate with industry and institutions for capacity building in research, innovation and real time knowledge.
3. Develop employability skills for emerging trends and societal needs
4. Excel by adopting NEP 2020 and improving Accreditations & national rankings.

Strategic Plan

Table 9.6.1: SWOT Analysis of Hyderabad Institute of Technology and Management HITAM

STRENGTHS	WEAKNESSES
• Visionary leadership	

• Value-driven organizational culture • One of the first US LEED Silver-rated Green buildings in India • Committed and loyal teaching and non-teaching workforce • Innovative Teaching methods • Experimentative and quick to adapt to Change • Proactive global-best learning practices (Doing Engineering, PBL, EPICS etc.) • Excellent Campus ambience, digital resources and learning spaces	• Limited brand visibility and market presence • Lack of strong operational level leadership • Limited surrounding land blocking campus expansion • Limited Industry / Corporate Connect • Research center
OPPORTUNITIES	**THREATS**
• Conducive Regulatory environment • Partnership opportunities for international collaborations • Open horizons to attract students across India • High demographic dividend • Scope for scaling to Deemed-to-be University • Strategic partnership with Industries and corporates • Scope to attract best talent and students • Engage with Industry-relevant Hybrid courses • Evolve a Unique global HEI model	• Volatility in Higher Education landscape creating tougher competition • Disruptive and ever evolving technologies • Top colleges may attract greater number of students due to Enhanced GER (Graduate Enrolment Ratio) thus affecting quality and quantity of admissions in HITAM as per NEP guidelines • Non-availability of quality faculty in the market • Job market disruptions affecting student Employability

Strategic Objectives Identified:

The purpose of this strategic plan is to outline a roadmap for HITAM to become a role model technological university. To achieve our objective of becoming a technological university, we will focus on the following key goals:

Table 9.6.2: Strategic Objectives

Objectives	**Description**	**Key Performance Indicators (KPI)**
	HITAM will introduce new and innovative pedagogical methods, emphasizing hands-on learning and project-based learning, to enhance	● Number of faculty with PhD degrees or other relevant qualifications ● Student-faculty ratio

Enhancing Academic Quality	the academic quality of its programs. HITAM will also invest in faculty development and recruitment to attract the best talent and expertise to the institution.	● Number of academic publications and citations ● Feedback from students and faculty on teaching effectiveness ● Number of patents filed and granted
Strengthening Research and Innovation	HITAM will promote a culture of research and innovation, focusing on cutting-edge technologies and interdisciplinary collaboration. It will create an ecosystem that supports research and innovation, and encourages students and faculty to pursue new ideas and projects.	● Amount of research funding obtained from external sources ● Number of research projects undertaken ● Number of industry partnerships for research collaborations ● Number of patents filed and granted ● Number of publications and citations
Building Industry Partnerships	HITAM will establish strategic partnerships with leading industries in India and abroad to provide its students with opportunities to work on industry-led projects and internships. These partnerships will also provide access to the latest technologies and industry insights.	● Number of industry partnerships established ● Amount of funding obtained from industry partners ● Number of industry-led projects undertaken by students ● Number of students placed in industry through these partnerships
Partnerships with International Universities	HITAM will establish collaborations and partnerships with leading international universities to offer exchange programs, joint research projects, and faculty exchange programs. These partnerships will provide students and faculty with exposure to global best practices and diverse perspectives.	● Number of international collaborations and partnerships established ● Number of students and faculty participating in exchange programs / immersions ● Number of joint research projects undertaken with international partners

Strengthening of Infrastructure	HITAM will invest in state-of-the-art infrastructure, including labs, workshops, and research facilities, to support hands-on learning and research activities. HITAM will also upgrade our campus facilities, to provide students with a world-class learning environment.	● Number of new buildings constructed or renovated ● Amount of funds invested in infrastructure improvements ● Availability and adequacy of classrooms, labs, libraries, and other facilities ● Feedback from students and faculty on the quality of infrastructure ● Reduction in maintenance and repair backlog
Focus on Student Placements	HITAM will develop strong ties with industry partners to ensure high-quality placements for our students. HITAM will offer career development services, including mentorship and training programs, to prepare students for successful careers in the technology industry. We will work closely with leading companies and organizations to provide internship opportunities, conduct placement drives, and offer career guidance and counseling. Through these efforts, we will ensure that our students are well-prepared to meet the needs of the industry and contribute to the growth and development of the country.	● Number of students placed in leading companies and organizations ● Starting salaries of graduates ● Feedback from employers on the quality of our graduates ● Alumni engagement and support for placement activities
Quality of Admissions	HITAM will focus on recruiting the most talented and motivated students, with a commitment to diversity and inclusion. HITAM will also offer scholarships and financial aid to deserving students to ensure equal access to education.	● Average score and cut-off rank of admitted students in entrance exams ● Diversity of the student body in terms of gender, socio-economic background, and geographic location ● Retention and graduation rates of admitted students ● Feedback from students and faculty on the quality of admitted students

Accreditations and Rankings	HITAM will work towards achieving NAAC A++ in the next cycle, and increase the departmental scores in the next NBA renewal. HITAM will enter into the rankings of ARIIA and NIRF.	● Accreditation status obtained for different programs ● Rank obtained in national and international rankings ● Feedback from stakeholders on the quality and reputation of our institution

The strategic plan was reviewed and refined in the year 2024 to be inline with the situation.

To measure our progress towards achieving these goals, we will continuously track performance metrics, and progress towards becoming a technological university.

9.6.2 Governing Body, Administrative Setup, Functions of Various Bodies, Service Rules, Recruitment procedures and Promotion Policies (10) — Institute Marks : 10.00

We have a structured organization framework to cater to the needs as per the requirements of Statutory and Non-Statutory administrative committees.

Various bodies like the Governing Body, Academic Council, Academic Committee, Advisory Committee, and IQAC exist in the institution to formulate guidelines and monitor the functioning of the institution from time to time.

The Governing body in general meets once in a semester to review and take decisions on the policy matters of the institute. This body takes decisions related to the financial, administrative and quality measures to be taken up and takes measures to ensure the effective functioning of the institution. mission of the institute.

To support effective Governance, the college has set up various Statutory and Non-Statutory committees like: Academic Council. Grievance committee, IQAC, Anti Ragging, Disciplinary, Women empowerment cell, Internal complaints, Admin Committee, Board of Studies (BoS), Finance Committee.

HODs are responsible for the functioning of the Department as per the laid down policies of the college. To provide policy framework and direction for the functioning of the institution, various committees play a vital role. These committees help the administration to evaluate, monitor and recommend in respect of various matters leading to progress of the institution as per its quality policy.

Service rules, procedures, recruitment, promotional policies have been formulated as per the guidelines of competent authorities like affiliating university, AICTE and UGC and are approved by the governing body. These rules are disseminated to all the faculty members of HITAM at the time of joining and they can refer to the same from HR. The service rules are linked to the additional information.

Recruitment and Promotion Policies: The recruitment of teaching and administrative staff is done through publication in both online and offline. All the applicants are interviewed by the Selection Committee. The faculty undergo a demo to assess their teaching proficiency.

The Selection Committee makes recommendations based on the requirement of the faculty specialized in certain courses and technologies so that the Institution has a balanced and efficient teaching body. The promotions are performance based.

All HODs initiate Performance Reports once in an academic year under the Performance Management System, which are processed through the Director and Principal to the management for award of increments, incentives and promotions based on their merit and demonstrated performance.

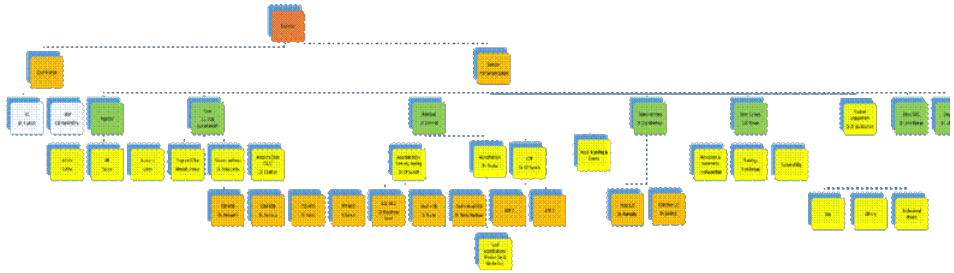


Figure 9.6.1: Organogram

Organogram: https://hitam.org/wp-content/uploads/2025/03/Oronogram.pdf (https://hitam.org/wp-content/uploads/2025/03/Oronogram.pdf)

Governing Body:

The following are the Governing Body members of the College:

Table 9.6.3: Governing Body members

S. No	Position	Name	Affiliation	Constituted by
1	Chairman	Prof. Sanjay Dhande	Former Director IIT Kanpur	Nominated by Society
2	Member	Prof. Satyanshu Kumar Upadhyay	Professor of Statistics, Banaras Hindu University	Nominated by UGC
3	Member	Dr. Ravinder Reddy	Professor of Maths, JNTUH	Nominated by JNTUH
4	Member	Dr. Ashok Shettar	Vice Chancellor, KLETECH	Educationist
5	Member	Dr. Gopalkrishna Joshi	Vice Chancellor, MIT Vishwa Prayag	Educationist
6	Member	Dr. Mallikarjuna Babu	Vice Chancellor, Galgotia University	Educationist
7	Member	Brig. P. Ganesham	President, Pallesrujana	Nominee by Society
8	Member	Nirmala Sambamoorthy	Director, Ascent Leadership & Mgmt. Consultants Pvt. Ltd.	Nominee by Society
9	Member	Mr. Tirupathi Reddy	Hon. Chairman, HITAM	Nominated by Society (Society Member)
10	Member	Dr. V. Surender Rao	Secretary, Royal Education Society	Nominated by Society (Society Member)

11	Member	Sri. Prashanth Arutla	Founder Chairman, HITAM	Nominated by Society (Society Member)
12	Member	Mrs. Susheela Devi	Founder Arutla Foundation	Nominated by Society (Society Member)
13	Member	Mr. Sameer Nagpal	Co-founder, One bac Technologies	Industrialist Nominated by Principal
14	Member	Nominee of AICTE	AICTE	Nominee of AICTE
15	Member	Smt. Sujatha K	Principal, SDDGWTTI	Nominee of State Government
16	Member	Mr. Rajeshwar	Associate Professor, HITAM	Assoc. Prof. Nominee by Principal
17	Member	Mr. Surendra Bandi	Associate Professor, HITAM	Assoc. Prof. Nominee by Principal
18	Member	Mr. Vinay Singh	Manager, Cocubes	Alumni Nominated by Principal
19	Member	Ms. Krupali	Tech Manager, TCS	Alumni Nominated by Principal
20	Member Secretary	Dr. S. Arvind	Professor	Principal (Ex-Officio)

Functions:

1. Lay down service conditions, emoluments, traveling allowances for the teaching and non-teaching staff.
2. Lay down procedure for selection/ recruitment of teaching or nonteaching staff and to appoint the same.
3. Regulate and enforce discipline among members of teaching and non-teaching staff in accordance with the rules/ procedures laid down in this regard.
4. Invest any money belonging to the college in stocks, funds, shares or securities as it shall from time to time, think fit or in the purchase hire/rental of immovable property.
5. Transfer of any movable or immovable property
6. Fix the fee structure and other charges payable by the students based on the recommendation of academic council, subject to the approval of the finance committee.
7. Entertain, adjudicate upon and if thought fit constitute a committee for advice to redress the grievances of the members of staff and the students
8. Delegate administrative and financial powers to the principal and other functionaries for smooth functioning.
9. Accept endowments for specific purpose.
10. Approve new Programmes of study leading to degrees and / or diplomas.
11. Approve annual report of the college.
12. Approve the foreign trips/tours/assignments/ research paper readings of the employees.
13. Perform such other function and create committees as may be necessary and deemed fit for the proper development and fulfillment of the objectives for which the college was established and for national concern.

Academic Council:

Table 9.6.4: Academic Council Members

S. No	Name	Designation	Category
1	Dr. S. Arvind	Principal, HITAM	Chairman

2	Dr. T. Satish Kumar	HoD CSE	Member
3	Dr. J. Rajeshwar Goud	HoD ECE	Member
4	Dr. Ruchir Srivastava	HoD Mech	Member
5	Dr. O.P. Suresh	HoD EEE	Member
6	Dr. P. Padmaja	HoD CSE-AI & ML	Member
7	Dr. M.V.A. Naidu	HoD CSE-DS	Member
8	Dr. K. Sandeep	HoD Maths	Member
9	Dr. Lavanya	HoD Chemistry	Member
10	Dr. Ashalatha	HoD English	Member
11	Dr. Rambabu T	HoD Physics	Member
12	Col. P.V.R. Subramaniam	HoD MBA	Member
13	Dr. Devika SV	Professor of ECE	Member
14	Mr. Surendra Bandi	Assoc. Professor of CSE	Member
15	Dr. B. Lokeswara Rao	Professor of ECE	Member
16	Mr. K. Suresh	Assoc. Professor of EEE	Member
17	Dr. Gopalkrishna Joshi	Vice Chancellor, SVKP University	Academic Expert
18	Dr. Mallikarjuna Babu	Vice Chancellor, Galgotia University	Academic Expert
19	Dr. Pratap Reddy	Professor of ECE, JNTUH Hyderabad	Academic Expert
20	Dr. Vijaya Sekhar Reddy	Professor and Dean School of CSE, UPES Dehradun	Academic Expert
21	Dr. P. Ravi Reddy	Director Technical Dept, MEIL, Hyd.	Industry Expert
22	Dr. C. D. Naidu	Principal VNRVJIET, Hyderabad	Academic Expert
23	Dr. A. Jayashree	Professor of Chemistry, JNTUH	University Nominee
24	Dr. M. T. Naik	Professor of MECH, JNTUH	University Nominee
25	Dr. G. V. Narsimha Reddy	Professor of CIV & Principal JNTUH	University Nominee
26	Dr. O.P.Suresh	Professor of EEE & CoE	Member Secretary

The Academic Council is the principal academic body of the Institute and shall, in addition to all other powers and duties vested in it, has to perform duties without prejudice to the generality of functions mentioned. The following are the powers of the Academic Council:

1. Scrutinize and approve the proposals with or without modification of the Board of Studies with regard to courses of study, academic regulations, curricula, syllabi and modifications thereof, instructional and evaluation arrangements, methods, procedures relevant thereto etc., provided that where the Academic Council differs on any proposal, it will have the right to return the matter for reconsideration to the Board of Studies concerned or reject it, after giving reasons to do so.
2. Make regulations for admission of students to different programmes of study.
3. Make regulations for sports, extra-curricular activities, and proper maintenance and functioning of the playgrounds and hostels.
4. Recommend to the Governing Body proposals for new programmes of study.
5. Recommend to the Governing Body about scholarships, studentships, fellowships, prizes and medals, and to frame regulations for the award of the same.
6. Advise the Governing Body on suggestions pertaining to academic affairs.
7. Perform such other functions as may be assigned by the Governing Body.
8. Suggest measures for departmental co-ordination.
9. Take periodical review of the activities of the Departments and make recommendations if any for improving the standards of instruction.
10. Recommend required teaching posts to the Governing Body.

BOARD OF STUDIES: STRUCTURE AND FUNCTIONS

The College will strictly adhere to the guidelines prescribed by all the statutory bodies such as UGC, AICTE, JNTUH and TSCHE for developing and restructuring the curricula. The Board of Studies are responsible to frame scheme of instruction, course structure and syllabi. It is proposed to revise the syllabi once in every three years or as and when required. The syllabi will be implemented by the Departments concerned and add-on courses will be conducted to meet the needs of the industry. Details of the syllabi shall be made available with the Departments, Central Library, College website, and to the students.

The Board of Studies shall be primarily responsible for the following:

- Prepare syllabi and various courses, keeping in view, the objectives of the college, interest of the Stakeholders and national requirement for consideration and approval of the Academic Council.
- Suggest methodologies for innovative teaching/learning and evaluation techniques.
- Suggest panel of names to the Academic Council for appointment of examiners.
- Coordinate research, teaching, extension and other academic activities.

Table 9.6.5: Board of Studies Structure

S.No	BoS – Member	Designation	Affiliation
1	Dr. Ruchir Srivastava	Chairman	HoD – Mechanical
Senior faculty members with different specialization			
2	Ms. Syamala	Member	Professor
3	Mr.Praveen P	Member	Professor
4	Mr.Ramakrishna A	Member	Assoc Professor
5	Mr.Santosh Naik	Member	Assoc Professor
6	Mr.S.N.S. Santosh	Member	Assoc Professor
7	Dr. P. Ramesh Babu	Member (nominated by the Academic Council.)	Professor, OU

8	Dr P Vamsi Krishna	Member (nominated by the Academic Council.)	Associate Professor, NIT Warangal
9	Dr. Venkata Ramana	Subject Expert Nominated by AC	Professor, MGIT, Hyderabad
10	Dr.B.Balu Naik	JNTUH Nominee	Sr.Professor of ME, JNTUH UCESTH
11	G Sivarama Krishna Reddy	Industry Expert	Scientist F, DRDL, Kanchanbagh, Hyderabad
12	Ms. Sai Prasanna Nanabolu	Alumni	Associate Quality Analyst, TCS, Hyderabad

Finance Committee:

Table 9.6.6: Finance Committee members

S.No.	**Committee Members**	**Designation**
1	Dr. S. Arvind	Principal
2	Col. A.V. Subramaniam	Registrar
3	Mr. U. Ravi Kiran	Chartered Accountant
4	Mr.P. Veerabadra Rao	External Member
5	Mr.M. Rajesh	External Member
6	Mr.A. Srinivas	Financial Consultant
7	Mr.G. Ravi	Administrative Officer
8	Mrs.D. Udaya	Sr.Accountant

The Finance Committee shall have the following responsibilities:

i. The annual accounts and financial estimates of the Institute shall be placed before the Finance Committee for consideration and thereafter submitted to the Governing Body together with the comments of the Finance Committee for approval.
ii. The Finance Committee shall fix limits of the total recurring expenditure and the total non-recurring expenditure of the year based on the income and resources of the Institute. No expenditure shall be incurred by the Institute in excess to the limits so fixed.
iii. No expenditure other than that provided for in the budget shall be incurred by the Institute without the approval of the Finance Committee.
iv. Recommend to the Governing Body the creation of all types of posts.
v. Provide the financial estimates with respect to the building and other infrastructural facilities that have been planned on the basis of the recommendations of Academic Council.

Internal Quality Assurance Center (IQAC)

The following members constitute the Internal Quality Assurance Center (IQAC) of the College.

Table 9.6.7: Internal Quality Assurance Center (IQAC) Members

S.No	Name	Designation
1	Mr.Prashanth Arutla	Management
2	Dr. S. Arvind	Principal
3	Dr.C.Sunil Kumar	Dean IQAC
4	Dr.B.Lokeswara Rao	Dean R&D
5	Dr.A.Chandramouli	Dean Freshman Engg.
6	Dr. S.V.Devika	Faculty
7	Dr.M V A Naidu	Faculty
8	Dr.T.Satish kumar	Faculty
9	Dr. M.Rajeshwar	Faculty
10	Dr. O.P Suresh	Faculty
11	Dr. J. Rajeshwar Goud	Faculty
12	Dr. R.Umamaheswara Singh	Faculty
13	Dr. K.Bindu Madhavi	Faculty
14	Dr.Ruchir Shrivastav	Faculty
15	Dr.P.Padmaja	Faculty
16	Dr.T.Rambabu	Faculty
17	Dr.N.Lavanya	Faculty
18	Mr. Surendra Bandi	IQAC Coordinator

Functions:

- Development and application of quality benchmarks / parameters for various academic and administrative activities of the College.
- Facilitate a learner-centric environment conducive for quality education and faculty maturation and adopt the required mechanism for participatory teaching and learning process.
- Arrangement for feedback responses from students, parents and other stakeholders on quality-related processes.
- Dissemination of information on various quality parameters of higher education.
- Organization of inter and intra-institutional workshops, seminars on quality related themes and their promotion.
- Documentation of various programmes / activities of the College, leading to quality improvement.
- Acting as a nodal agency of the college for coordinating quality-related activities, including adoption and dissemination of good practices.
- Development and maintenance of institutional database through MIS/ERP for the purpose of maintaining / enhancing the institutional quality.

- Development of the Annual Quality Assurance Report (AQAR) of the College based on the quality parameters/assessment criteria.

Academic Committee

Table 9.6.8: the Academic Committee members

S.No.	Committee Members	Designation
1	Dr. S. Arvind (Committee Chairman)	Principal
2	Dr. R. Uma Maheswara Singh (Committee Convenor)	Asst Dean Academics
3	Col. A.V. Subramaniam	Registrar
4	Dr. B. Lokeswara Rao	Dean Freshman Engg.
5	Dr. O. P. Suresh	Controller of Exams & HOD - EEE
6	Dr. Ruchir Srivastava	HOD - MECH
7	Dr. G. Rajeshwar Goud	HOD- ECE
8	Dr. T. Satish Kumar	HOD -CSE
9	Dr. Padmaja	HOD -CSM
10	Dr. M. V. A. Naidu	HOD - DS
11	Dr. Lavanya	HOD- H&S-1
12	Dr. Rambabu	HOD- H&S-2
13	Dr. Sandeep	BoS Chairman
14	Dr. S. V. Devika	BoS Chairman
15	Based on agenda concerned leadership member will be invited.	

Functions:

- Recommend and review curriculum structures for all programs in line with statutory bodies (AICTE/UGC/University norms).
- Ensure inclusion of industry-relevant and employability-enhancing subjects.
- Prepare and monitor the academic calendar including schedules for internal assessments, co-curricular activities, and final exams.
- Analyze student performance data (e.g., results, attendance, backlogs) and recommend remedial measures.
- Propose strategies for improving academic outcomes and learning levels.
- Suggest faculty training needs and recommend FDPs, workshops, and higher education opportunities.
- Encourage research and publication activities among faculty.
- Recommend policies and practices for academic quality improvement.
- Assist in preparing documentation for NAAC, NBA, and other accreditations.
- Promote the use of ICT tools, blended learning, and outcome-based education methodologies.
- Encourage project-based learning and student research work.
- Plan and execute internal academic audits of departments.

- Ensure compliance with institutional academic standards.
- Suggest improvements in assessment methods, question paper patterns, and evaluation systems.
- Recommend policies for student mentoring, academic counselling, and bridge courses for slow learners.
- Collect and analyze feedback from students and stakeholders for curriculum and teaching improvements.

Admin Committee

Table 9.6.9: Admin Committee members

S.No.	Committee Members	Designation
1	Dr. S. Arvind (Committee Chairman)	Principal
2	Mrs. Meezab Unnisa (Committee Coordinator)	Head Operations
3	Col. A.V. Subramaniam	Registrar
4	Dr. B. Lokeswara Rao	Dean Freshman Engg.
5	Mr. B. Surendra	Assoc.Dean Institutional Affairs
6	Dr. M. Rajeshwar	Asst.Dean
7	Dr. S.V. Devika	Assoc.Dean Accreditation
8	Dr. Ashalatha	Student counsellor

Anti-Ragging & Disciplinary Committee

Table 9.6.10: Anti-Ragging Committee composition

S.No.	Committee Members	Designation
1	Dr. S. Arvind (Committee Chairman)	Principal
2	Col. A.V. Subramaniam (Committee Convenor)	Registrar
3	Dr. B. Lokeswara Rao	Dean Freshman
4	Dr. O. P. Suresh	HOD- EEE & Controller of Examinations
5	Dr. G. Rajeshwar Goud	HOD- ECE
6	Dr. P. Padmaja	HOD -CSM
7	Dr. M. V. A. Naidu	HOD - DS
8	Dr. T. Satish Kumar	HOD -CSE
9	Mr. Ravi Gurram	Admin Officer
10	Mr. A. Rajkumar	Physical Director

11	Om Kumar Gupta	Student Nominee
12	Palak Guleria	Student Nominee
13	Bipul Kumar Yadav	Student Nominee
14	Paluru Naga Babu	Student Nominee
15	Hari Kishan Singh Prasad	Student Nominee

Table 9.6.11: Disciplinary Committee composition

S.No.	Committee Members	Designation
1	Dr. S. Arvind (Committee Chairman)	Principal
2	Col. P. V. Subramanyam (Committee Convenor)	Dean
3	Col. A.V. Subramaniam	Registrar
4	Dr. Rajeshwar M	Asst. Dean
5	Mr. Ravi Gurram (Invitee)	Admin Officer
6	Mrs. Meezab Unnisa	Head Operations
7	Dr. Ashalatha	Wellness counsellor
8	Respective HOD & mentor	Invitees
9	Ishita	Student Nominee
10	Heramba Sai	Student Nominee
11	Sai Bhargav	Student Nominee

Functions:

The Initiatives of the college to curb the menace of ragging are as follows:

- Preparing, distributing and publicizing about anti-ragging through materials such as posters, brochures, circulars etc.
- Displaying posters and putting up notices at all the designated places in the college.
- Obtaining affidavits, undertaking forms from all the students and their parents.
- Sensitizing all the stake holders with the help of media.
- Organizing ‘Anti – Ragging awareness campaigns’.
- Initiating measures for girls’ security such as appointing women faculty as counselors.
- Ensuring‘Alcohol and Smoking Free Zone’ in the campus.
- Making ‘Orientation Programmes’ mandatory for every department.
- Establishing ‘Mentoring and Counseling Cells’ at institutional level.
- Seeking a pledge by all the students to make the campus a ‘Ragging Free Zone’.

Hyderabad Institute of Technology and Management, in compliance with the regulations, directives and act, has decided to constitute an 'Anti-Ragging Committee' at the college level and 'Anti Ragging Squads' at the department level for overseeing the effective implementation of the provisions to curb ragging of any form in its campus with immediate effect.

Monitoring mechanism:

a) Anti-ragging Committee:

1. 'Anti-Ragging Committee' is headed by the Head of the Institution, and it consists of representatives of civil and police administration, local media, Non Government Organizations involved in youth activities, representatives of faculty members, parents, students belonging to the freshers' category as well as senior students and non-teaching staff.
2. It shall be the duty of the 'Anti-Ragging Committee' to ensure compliance with the provisions of these regulations as well as the provisions of any law for the time being in force concerning ragging, and also to monitor and oversee the performance of the 'Anti-Ragging Squad' in preventing of ragging in the institution.

b) Anti-Ragging Squad:

1. 'Anti-Ragging Squad' is nominated by the Head of the Institution having representation of faculty and staff members for maintaining vigil, oversight and patrolling functions. It shall remain mobile, alert and active at all times.
2. It shall be the duty of the 'Anti-Ragging Squad' to be called upon to make surprise raids on hostels, and other places vulnerable to incidents and having the potential for ragging and shall be empowered to inspect such places.
3. It shall also be the duty of the 'Anti-Ragging Squad' to conduct an on-the-spot enquiry into any incidents of ragging referred to it by the Head of the Institution or any member of the faculty or any member of the staff or any student or any parent or guardian or any employee of a service provider or by any other person, as the case may be; and the enquiry report along with recommendations shall be submitted to the authority observing a fair and transparent procedure and the principles of natural justice and after giving adequate opportunity to the student or students accused of ragging and other witnesses to place before it the facts, documents and views concerning the incidents of ragging, and considerations such other relevant information as may be required.

c) Mentoring / Counseling Cell:

In order to promote the objectives of the regulations for curbing the menace of ragging and also to instill confidence in fresher's and students to ensure the practice of human values, rights, and dignity, the college has constituted a 'Mentoring / Counseling Cell'. It consists of faculty members as 'Mentors / Counselors'. Each mentor guides ten students to take care of academic as well as personal problems. Students have a one-period slot designated for this purpose in addition to meeting the mentor / counselor as and when needed for guidance.

d) Punishments:

Depending upon the nature and gravity of the offence as established, the possible punishments for those found guilty of ragging at the institution level shall be as per clause 9 of 'UGC Regulations' as indicated above.

Grievances & Redressal Cell

Grievances Redressal Cell' is formed in order to establish healthy working atmosphere and to uphold the dignity of the college by ensuring strife free atmosphere in the college and to promote cordial student to student relationship, Student to teacher relationship and staff to staff relations etc. This cell also helps staff, students and parents to record their complaints and solve their problems related to academics, resources and personal grievances.

Woman harassment complaints will be handled by WOMEN'S PROTECTION CELL as per the Government guide lines.

'Suggestion / complaint Boxes' have been installed at different places in the college campus in which the students/staff, who want to remain anonymous, put in writing their grievances and their suggestions for improving the academics/administration in the college. Students, parents and staff can lodge complaint of any kind including ragging complaint. The person concerned can personally approach and write / e-mail to any member of the Cell.

Table 9.6.12: Students Grievance Redressal Committee

S.No.	Committee Members	Designation
1	Dr. S. Arvind (Committee Chairman)	Principal

2	Dr. D. Ashalatha (Committee Convenor)	Wellness counsellor
3	Dr. S. V. Hemanth	CSE CooD
4	Dr. M. Rajeshwar	Asst.Dean
5	Mr. P. Kondala Rao	ECE- Dept. Cood
6	Mr. Surendra Bandi	Assoc. Dean- Education
7	Respective HOD & mentor	Invitees
8	Pravallika Sayyapparaju	Student Nominee
9	Saumya S	Student Nominee
10	Maanik Manohar	Student Nominee

Table 9.6.13: Staff Grievance Redressal Committee

S.No.	Committee Members	Designation
1	Dr. S. Arvind (Committee Chairman)	Principal
2	Dr. R. Uma Maheswara Singh (Committee Convenor)	Asst Dean Academics
3	Mr. Bhaskar Das	Lead accreditation
4	Mrs. Meezab Unnisa	Head Operations
5	Mr. B. Surendra Bandi	Assoc.Dean Institutional affairs
6	Mrs. Sailaja	HR Operations

Functions:

- A 'Grievance Redressal Committee' is formed to look into the complaints from the aggrieved.
- 'Suggestion/ Compliant Box' are provided at office of Principal for students and staff to lodge their complaints/ suggestions.
- Enquire into the complaints received from the aggrieved students/staff about any incident including ragging.
- Recommend to the Principal, the penalty to be imposed, action to be taken and corrective measures to be formulated.
- Forward the report of grievance committee to Principal for further action
- Take the corrective measures and record in the register.

Internal Complaint Committee / Women Empowerment Committee

In view of the increasing number of girl students in the campus, 'Women Grievance Redressal Cell' makes every effort to ensure that the girls feel at home. The cell resolves common problems of girl students and also takes up individual cases of sexual harassment, if any. Ragging in the hostels is totally disallowed, and any involvement in this respect is punishable. The following are the constituents' faculty members and students of the 'Women Empowerment Committee':

Table 9.6.14: Women Empowerment Committee Members List

S.No.	Committee Members	Designation

1	Dr. S. Arvind (Committee Chairman)	Principal
2	Mrs. Vanaja (Committee Convener)	H&S- Faculty
3	Mrs. Moshe Rani	ECE - Faculty
4	Mr. M. V. A. Ramakrishna	Mech-Faculty
5	Dr. Aparna	ET- Faculty
6	Dr. S. V. Hemanth	CSE CooD
7	Mrs. Sailaja	HR Operations
8	Dr. Devika	Assoc. Dean-Accreditations
9	Hrushita	Student Nominee
10	Architha Reddy	Student Nominee

Functions

- Ensure safety of the women staff and students.
- Provide counseling on interaction with opposite gender.
- Promote decent code of conduct among the staff and the students.
- Create awareness of socio-cultural, political and biological complexities of the issue.
- Enhance the understanding of the other gender.
- Enquire into complaints received from the aggrieved students including ragging or from staff of the college.
- Recommend to the Principal for necessary action like penalty to be imposed, suspension, rustication etc. The Principal upon receipt of the report from the committee shall, after giving an opportunity of being heard to the person complained against and with the recommendation of the 'Grievance Redressal Committee' takes necessary action.

Library Committee

The Library Committee monitors the Library activities of the College. The following are the members of the Committee:

Table 9.6.15: Members List of Library Committee

S.No.	Committee Members	Designation
1	Dr. S. Arvind (Committee Chairman)	Principal
2	Dr. T. Satish Kumar (Committee Convenor)	CSE HOD
3	Mr. P. Santosh	ECE - Faculty
4	Dr. Aparna	ET- Faculty
5	Mr. S. V. Satyanarayana	EEE-Faculty
6	Dr. N. Lavanaya	H&S- HOD
7	Dr. Ruchir Srivastav	Mech-Faculty
8	Mr. P. Narayana Rao	Librarian

9	Mr. E. Ramesh	Librarian
10	Neeharika	Student Nominee
11	Varsha	Student Nominee
12	Sriya	Student Nominee

Functions:

1. Guide the Librarian in formulating general library policies and regulations.
2. Provide for proper documentation services and updating the Library collection.
3. Work towards modernization and improvement of Library and documentation Services.
4. Formulate policies and procedures for efficient use of Library resources.
5. Review Library readership dept-wise and adopt measures to enhance readership.
6. Prepare budget and proposals for the development of the Library.
7. Recommend to the authorities the fees and other charges for Library.
8. Seek feedback on Library functions from readers.
9. Submit the annual report on the functioning of the library.
10. Take measures to increase the membership of the Library.

Transport Committee:

The 'Transport Committee' plans and recommends to the 'Transport Manager' the facilities required for organizing transport to faculty, staff and students. The Committee submits a report to the Principal every six months regarding the adequacy and quality of maintenance of the facility being provided.

Table 9.6.16: Members List of Transport Committee

S.No.	Committee Members	Designation
1	1. Col. Subramaniam (Committee Chairman)	Registrar
2	2. Ravi Gurram (Committee Convenor)	Admin Officer
3	3. Mr. Raj Kumar	Physical Director
4	4. Mrs. Moshe Rani	ECE-Faculty
5	5. Mrs. Vanaja	H&S Faculty
6	6. Mr. U. Murlidhar	Mech - Lab Asst
7	7. Mr. Siddhartha	EEE-Faculty
8	8. Mr. Chiranjeevi	COOD - EEE
9	9. Mrs. Sailaja	HR
10	10. Mr. S. Durga Rao	Mech - Lab Asst
11	11. Mr. Pradeep (Physics)	Physics-Faculty
12	12. Mr. S. Srikanth	H&S Lab asst.
13	K Vinay	Student Nominee

14	Om Kumar Gupta	Student Nominee
15	Satvika Reddy	Student Nominee

Functions:

- Maintain all the buses, mini transport and other vehicles of the college.
- Manage all the transport staff and schedule of operations of all the buses and other vehicles with the approval of Principal.
- Handle all the statutory bodies, obtaining/renewal of licenses, special permissions and other related matters with the approval of Principal.
- Handle all student complaints and indiscipline in the college buses.
- Conduct meeting monthly or as and when required and submit report to the Principal.

Hostel Committee

The 'Hostel Committee' plans the infrastructure facilities required for providing hostel facility for girls and boys separately. The hostels are effectively managed through Warden and Staff.

Table 9.6.17: Members List of Hostel Committee

S.No.	Committee Members	Designation
1	Col. Subramaniam (Committee Chairman)	Registrar
2	Mr. Ravi Gurram (Committee Convenor)	Admin Officer
3	Mrs. Meezab Unnisa	Head Operations
4	Mr. G Shyam Sundar	PO
5	Mr. Abhinesh	EA & HR
6	Mr. Meghnath	H&S-Faculty
7	Mr. D. Manikanta	CSE-Faculty
8	Mrs. Roshni	H&S - Faculty
9	Ms. Meghana	ET -Faculty
10	K. Vinay	Student Nominee
11	V Sai Krishna	Student Nominee
12	D. Sneha	Student Nominee
13	V. Roopa Sai Reddy	Student Nominee

Functions:

- The 'Hostel Committee' shall discuss and make recommendations regarding:
    a. Admissions;
    b. Discipline of resident students;
    c. Maintenance and development of the hostel; and
    d. Any other matter pertaining to the ambience of the hostel.
- Receive complaints from students regarding facilities and amenities from time to time and forward it to Principal.

- Submit a monthly report to the Principal on matters relating to the adequacy and quality of maintenance of the following facilities: Protected drinking water, kitchen, dining halls, newspapers, telephones, restrooms, fans, lights and power.

Canteen Committee

Table 9.6.18: Members List of Canteen Committee

S.No.	Committee Members	Designation
1	1. Dr. S. Arvind (Committee Chairman)	Principal
2	2. Dr. Hemanth (Committee Convenor)	CSE- Cood
3	3. Mr. Navakishore	ET- Faculty
4	4. Mr. Ravi Gurram	Admin.Officer
5	5. Mr. S. V. Satyanarayana	EEE-Faculty
6	6. Mr. Ashok	System Admin
7	7.Mrs. Roshni	H&S - Faculty
8	8. Mr. Bobby Simon	ET-Faculty
9	9. Dr. T. Sathish	HOD -CSE
10	K. Vinay	Student Nominee
11	Gourishetti HARSITH	Student Nominee
12	Vivekananda Sastry	Student Nominee

Functions:

- Supervise the day-to-day functioning of the college canteen to ensure smooth and hygienic operations.
- Conduct regular inspections to ensure cleanliness, quality of raw materials, and safe food handling practices are maintained.
- Collect feedback from students and staff regarding food quality, pricing, variety, and service, and recommend improvements.
- Suggest nutritious, affordable, and diverse menu options and periodically review food pricing in consultation with the vendor.
- Act as a bridge between the canteen vendor and the institution for any issues related to supply, performance, or grievances.
- Ensure proper waste disposal and promote eco-friendly practices like avoiding single-use plastics and using biodegradable packaging.
- Assess and recommend improvements in canteen infrastructure such as seating, ventilation, lighting, water supply, and sanitation.
- Ensure that the canteen complies with FSSAI guidelines and other applicable food safety and health regulations.
- Maintain records of inspections, vendor agreements, complaints, resolutions, and submit periodic reports to the Principal.

Sports Committee

The Purpose of organizing physical education, sports and games activities is to create an environment that stimulates selected movement and experiences resulting in desirable responses that contribute to the optimal development of the individuals potentialities in all the phases of life.

Table 9.6.19: Sports and Games Committee of the College.

S.No.	Committee Members	Designation

1	Dr. K. Satish Reddy (Committee Chairman)	Asst. dean IIIC
2	Mr. SNS Santosh (Committee Convenor)	Mech-Faculty
3	Dr. T. Rambabu	HOD H&S (ET)
4	Meezab Unnisa	Head Operations
5	Mr. Siddhartha	EEE-Faculty
6	Dr. Lavanya	HOD -H&S (non ET)
7	Mr. G. Shyam Sundar	Protocol officer
8	Mr.P.Santosh	ECE-Faculty
9	Mr. Khaleemuddin	Mech - Lab Asst
10	Mr. A. Rajkumar (Cood)	Physical Director
11	K. Lazar	Student Nominee
12	Thangalapelly Mukesh	Student Nominee
13	K. Rakshitha	Student Nominee

Functions:

- Prepare sports calendar and an action plan to implement the same.
- Suggest methods which encourage students and faculty to utilize sports and games facilities available in the college.
- Take up the responsibility of preparing the budget estimate, requirement of infrastructure and equipment, maintaining the equipment and play fields.
- Selection of teams to represent the college in inter-collegiate tournaments and also the intra-mural tournaments.
- Prepare the details of attendance exemption to be given to the students representing college in various sports and games.
- Increase the cordial relations between students and faculty by organizing exhibition games between the teams of students and faculty wherever possible.
- Ensure the availability of all sports equipment at all times and if needed the new items to be procured.
- Maintain every record of the purchase i.e. quotation, purchase order, bills and stock register.
- Be in touch with the captains for any kind of developmental activities.
- Any issue deemed fit to be brought to the notice of the Principal.
- The convener may also co-opt one student member from each UG & PG Courses and one girl student.

Student Welfare Committee

Table 9.6.20: Members List of Student Welfare Committee

S.No.	Committee Members	Designation
1	Dr. S. Arvind (Committee Chairman)	Principal
2	Mrs. Meezab Unnisa (Committee convenor)	Head Operations
3	Dr. T. Sathish Kumar	CSE-HOD
4	Dr. Satish K	Asst. Dean IIIC
5	Dr. K. Bindu Madhavi	Lead SE

6	Mr. K. Suresh	Asst.Controller of Examinations
7	Dr. D. Ashalatha	Student counsellor
8	Ms Akhila	Overseas education Counsellor
9	Ishita	Student Nominee
10	Mohammad Amaan	Student Nominee
11	G. Shayanidhi Reddy	Student Nominee

Functions:

- Suggest various extracurricular activities to be organized during the academic year.
- Suggest various improvements for the existing student chapters such as ISTE, IETE, IEEE, CSI, SAEINDIA and ASSE and Art of Living.
- Prepare proposals for conducting State and National Level events in extracurricular activities.
- Coordinate all the events and festivals of the college as per schedule and procedures.
- Prepare a data base of highly talented students in different activities and motivate them to participate in the events within and outside the college.
- Organize the cultural events under the supervision of cultural coordinator who in turn can identify in-charge staff members as cultural and technical event in- charges.
- Mobilize the resources like audio-visual equipment, stage management material, costumes, presentation materials, stage decoration items etc.
- Maintain the photo album, video and audio recording of all the events organized at the college.
- Maintain all the files, bills, reports, records and documents pertaining to every event organized in the college and submit to the Principal.
- The Cultural Coordinator, if he so desires, may form subcommittees as mentioned below for the event management.
    - Stage In-charge - audio-visual equipment, stage management material, etc.
    - Finance in-charge – maintain all the files, bills, reports, records and documentation pertaining to every event organized in the college.
    - Audio & Video in-charge –maintain the photo album, video and audio recording of all the events organized in the college.
    - Hospitality in-charge for transportation, refreshments, reception, presentations and gifts.

Staff Welfare Committee

Table 9.6.21: Members List of Staff Welfare Committee

S.No.	Committee Members	Designation
1	Dr. S. Arvind (Committee Chairman)	Principal
2	Mrs. Meezab Unnisa (Committee convenor)	Head Operations
3	Dr. T. Sathish Kumar	CSE-HOD
4	Dr Devika	Assoc.Dean Accreditation
5	Mr. Harsha Vardhan	Head CDC
6	Dr. UM Singh	Asst. Dean- academics
7	Dr. Lokeswara Rao	Dean Freshman Engg.
8	Dr. M. Rajeshwar	Asst.Dean
9	Mr. S. N. S. Santosh	Mech-Faculty

Functions:

- Assess and recommend initiatives related to health, well-being, and professional satisfaction of teaching and non-teaching staff.
- Suggest and coordinate programs such as yoga sessions, health check-ups, stress management workshops, and recreational activities.
- Propose schemes for professional growth including faculty development programs, training sessions, and orientation workshops.
- Recommend improvements in staff facilities such as staff rooms, cafeteria, transport, and medical aid.
- Organize appreciation events for long-serving or outstanding staff members (e.g., Teachers' Day, Retirement Functions, Awards, etc.)
- Collect and address staff grievances confidentially, and coordinate with the grievance redressal cell where necessary.
- Promote a positive, inclusive, and collaborative working environment through communication and feedback sessions.
- Help implement institutional welfare schemes like loans, insurance, and leave encashment benefits.
- Keep documentation of all welfare activities, feedback collected, budgets used, and submit regular reports to the Principal.

SC/ST Welfare Committee

Table 9.6.22: Members List of Staff Welfare Committee

S.No.	Committee Members	Designation
1	1. Dr. S. Arvind (Committee Chairman)	Principal
2	2. Mrs. Moshe Rani (Committee Convenor)	ECE - Faculty
3	3.Mrs. C. Surekha	ET-Faculty
4	4. Ms. Pranathi Aryan	CSE- Faculty
5	5. Mr. M. Siddhartha	EEE - Faculty
6	6. Mr. Pradeep Kumar	H&S - Faculty
7	7. Mr. T. Joseph	ET- FAculty
8	Rathla Rahul	Student Nominee
9	Gudepu Chandu	Student Nominee
10	Koninti Likith	Student Nominee
11	B.William Carry Sunny	Student Nominee

Functions:

- Plan and promote activities for the academic, social, and financial upliftment of SC/ST students and staff.
- Ensure proper implementation of reservation policies in admissions, recruitment, and promotions as per government guidelines.
- Organize seminars, workshops, and awareness programs on rights, opportunities, and schemes available for SC/ST communities.
- Identify and support SC/ST students needing academic, financial, or emotional assistance. Facilitate scholarship applications and follow-up.
- Provide a platform for SC/ST students and staff to address complaints related to caste-based discrimination or harassment.
- Liaise with national/state-level social welfare departments for implementing relevant welfare schemes and grants.
- Motivate SC/ST students to actively participate in curricular and extracurricular activities.
- Keep proper records of SC/ST students and staff, their participation in welfare programs, grievances, and resolutions.
- Prepare and submit reports to the Principal and higher authorities regarding committee activities, outcomes, and compliance with statutory requirements.

Sustainability & Eco-Wellness Committee

Table 9.6.23: Members List of Sustainability & Eco-Wellness Committee

S.No.	Committee Members	Designation
1	1. Col. Subramaniam(Committee Chairman)	Registrar
2	2. Mr. Ravi Gurram (Committee Convenor)	Admin officer
3	3. Dr. Chiranjeevi	COOD - EEE
4	4. Mr. P Praveen	MECH Faculty
5	5. Mr. P Kondala Rao	COOD - ECE
6	6. Mr. T. Raghavendra Gupta	CSE- Faculty
7	Gnanitha	Student Nominee
8	Hari Kishan Singh	Student Nominee
9	Shraddha Koti	Student Nominee

Functions:

1. Policy & Planning

- Formulate and implement eco-friendly policies for sustainable campus operations.
- Promote a culture of environmental responsibility among students and staff.

2. Sanitation & Hygiene

- Ensure cleanliness and hygiene standards are maintained across the campus including classrooms, hostels, toilets, and common areas.
- Conduct awareness programs on personal hygiene, waste segregation, and cleanliness.
- Periodically audit sanitation practices and report to the management.

3. Energy Management

- Monitor energy consumption and promote the use of energy-efficient appliances and practices.
- Recommend and support installation of renewable energy systems like solar panels.
- Conduct energy audits and implement conservation strategies.

4. Greenery & Plantation

- Plan and maintain green cover on campus by planting trees, maintaining lawns, and nurturing gardens.
- Conduct plantation drives involving students and staff.
- Collaborate with horticulturists to ensure scientific maintenance of green areas.

5. Waste Management

- Implement solid and liquid waste segregation, recycling, and disposal systems.
- Promote use of reusable, recyclable, and biodegradable materials.
- Ensure proper handling of e-waste and hazardous waste (if any).

6. Water Conservation & Management

- Monitor water usage and promote conservation techniques such as rainwater harvesting and drip irrigation.

- Ensure proper maintenance of water supply systems and water quality testing.
- Prevent water wastage and promote reuse and recycling of water where applicable.

7. Awareness & Engagement

- Organize workshops, awareness campaigns, exhibitions, and competitions on sustainability topics.
- Encourage student clubs and NSS/NCC units to participate in green initiatives.

8. Monitoring & Reporting

- Maintain records of all sustainability initiatives, audits, and improvements.
- Submit annual reports to the Principal/Management with recommendations and outcomes.
- Coordinate with external bodies (like Pollution Control Boards, Municipalities, NGOs) for expert support and collaboration.

9. Infrastructure Recommendations

- Suggest eco-friendly infrastructure developments (e.g., green buildings, eco-toilets, LED lighting).
- Ensure campus infrastructure projects comply with environmental regulations and green building norms.

9.6.3 Transparency (5)

Institute Marks : 5.00

Hyderabad Institute of Technology and Management (HITAM) is committed to fostering transparency, accessibility, and effective communication with all its stakeholders. To ensure that all policies, rules, processes, and governance documents are easily accessible, we have adopted a comprehensive dissemination strategy through website and ERP.

Availability of Policies, Rules, and Processes

At HITAM, all key institutional policies, academic regulations, administrative rules, processes, and guidelines related to faculty, students, and financial powers are uploaded and made available on the official institutional website. These include: Academics and Non-Academics include only functioning policies

- Academic and Examination Regulations
- Administrative and Service Rules for Faculty and Staff
- Student Code of Conduct and Discipline Guidelines
- Research, Consultancy, and Innovation Policies
- Financial Delegation and Approval Processes
- Grievance Redressal and Anti-Ragging Policies

Table 9.6.24: List of policies

S. No	List of Policies	Link
1	Regulations	https://hitam.org/wp-content/uploads/2025/04/HR21-Regulations.pdf (https://hitam.org/wp-content/uploads/2025/04/HR21-Regulations.pdf)
2	Syllabus	https://hitam.org/electronics-and-communication-engineering/ (https://hitam.org/electronics-and-communication-engineering/)

3	Academic Calendars	https://hitam.org/wp-content/uploads/2025/03/Academic-Calendar-24-25.pdf (https://hitam.org/wp-content/uploads/2025/03/Academic-Calendar-24-25.pdf)
4	Internship Policy	https://drive.google.com/file/d/1M2knIwJbaLleUDupuD5EAjx7pPh-4Iji/view?usp=sharing (https://drive.google.com/file/d/1M2knIwJbaLleUDupuD5EAjx7pPh-4Iji/view?usp=sharing)
5	Attendance Policy	https://drive.google.com/file/d/1XEw2b989exjCkmEJUNUoTrz__-40Bubk/view?usp=sharing (https://drive.google.com/file/d/1XEw2b989exjCkmEJUNUoTrz__-40Bubk/view?usp=sharing)
6	Timetable policy	https://drive.google.com/file/d/1-iX7twDXo7RsXlgK7_XgHML79XhXkFDM/view?usp=sharing (https://drive.google.com/file/d/1-iX7twDXo7RsXlgK7_XgHML79XhXkFDM/view?usp=sharing)
7	Examination Regulations (Calendar, Evaluation Guide, Do's and Don'ts)	https://drive.google.com/file/d/1UwJT_nCTDJGl4uyO6hn9oG6gAbKsqu8L/view?usp=sharing (https://drive.google.com/file/d/1UwJT_nCTDJGl4uyO6hn9oG6gAbKsqu8L/view?usp=sharing)
8	Code of conduct	https://hitam.org/accreditations/ (https://hitam.org/accreditations/)
9	R&D Policy	https://drive.google.com/file/d/1EKAL2lhq8I4wOtXwx2R6A9jYU_NhpEzq/view?usp=sharing (https://drive.google.com/file/d/1EKAL2lhq8I4wOtXwx2R6A9jYU_NhpEzq/view?usp=sharing)
10	Service rules	https://drive.google.com/file/d/1BpyyS6BBC9cce_ItEqTIUj58rUxEQVah/view?usp=sharing (https://drive.google.com/file/d/1BpyyS6BBC9cce_ItEqTIUj58rUxEQVah/view?usp=sharing)
11	Financial policy	https://drive.google.com/file/d/1BpyyS6BBC9cce_ItEqTIUj58rUxEQVah/view?usp=sharing (https://drive.google.com/file/d/1BpyyS6BBC9cce_ItEqTIUj58rUxEQVah/view?usp=sharing)

Stakeholder Awareness and Dissemination Mechanisms

HITAM has established multiple channels to ensure that all stakeholders are well-informed about institutional policies, governance processes, and operational guidelines. These include:

- Regular Notifications and Circulars sent through official emails, WhatsApp groups, and displayed on campus notice boards.
- Faculty Orientation Programs to familiarize new and existing faculty with institutional policies and processes.
- Student Induction Programs at the beginning of every academic year, where students are informed about academic regulations, examination policies, grievance redressal mechanisms, and campus conduct expectations.
- Faculty Access via ERP, allowing seamless retrieval of institutional documents directly from the ERP platform.
- Periodic HR Sessions to update all stakeholders about policy changes, new processes, or governance reforms.

9.7 Budget Allocation, Utilization, and Public Accounting at Institute Level (12) | **Total Marks 12.00**

:

Total Income at Institute level: For CFY,CFYm1,CFYm2 & CFYm3
CFY : (Current Financial Year),
CFYm1 : (Current Financial Year minus 1),
CFYm2 : (Current Financial Year minus 2) and
CFYm3 : (Current Financial Year minus 3)

Table 1 - CFY 2024-2025

Total Income 317251798				Actual expenditure(till…):	Total No. Of Students	Expenditure per student
Fee	Govt.	Grants	Other sources(specify)			
308819907	551470	6850598	1029823	334000199	2521	132487.19

Table 2 - CFYm1 2023-2024

Total Income 267820665				Actual expenditure(till…):	Total No. Of Students	Expenditure per student
Fee	Govt.	Grants	Other sources(specify)			
260117525	307559	6195866	1199715	260161308	2278	114206.02

Table 3 - CFYm2 2022-2023

Total Income 234849842				Actual expenditure(till…):	Total No. Of Students	Expenditure per student

Fee	Govt.	Grants	Other sources(specify)			
229119234	138730	5027923	563955	228459889	1895	120559.31

Table 4 - CFYm3 2021-2022

Total Income 185490234				Actual expenditure(till…):	Total No. Of Students	Expenditure per student
Fee	Govt.	Grants	Other sources(specify)			
183498018	256831	1296000	439385	180202222	1739	103624.05

Items	**Budgeted in 2024-2025**	**Actual Expenses in 2024-2025 till**	**Budgeted in 2023-2024**	**Actual Expenses in 2023-2024 till**	**Budgeted in 2022-2023**	**Actual Expenses in 2022-2023 till**	**Budgeted in 2021-2022**	**Actual Expenses in 2021-2022 till**
Infrastructure Built-Up	130000C	1366287	380000C	4076998	200000C	220545C	450000C	4734225
Library	700000	452723	120000C	1365752	100000C	113613C	100000C	959710
Laboratory equipment	280000C	3086525	800000C	8749441	450000C	4929643	550000C	5576837
Teaching and non-teaching sta	155000C	1563128	150000C	1462478	113000C	1122953	750000C	7484982
Outreach Programs	500000	477434	100000C	1175039	300000	298885	500000	335748
R&D	800000	504700	150000C	1341214	500000	502582	155000C	164450C
Training, Placement and Indust	450000C	4889355	350000C	3450861	250000C	2395655	300000C	3834576
SDGs	220000C	2117622	200000C	2363732	500000	613062	150000C	1530944
Entrepreneurship	500000	488816	500000	500000	100000C	1256784	100000C	705555
Others, specify	0	0	0	0	0	0	0	0
Total	**297000000**	**304958797**	**205700000**	**205963888**	**125300000**	**125633577**	**134050000**	**136779947**

9.8 Program Specific Budget Allocation, Utilization (8) **Total Marks 8.00**

:

Total Income at Institute level: For CFY,CFYm1,CFYm2 & CFYm3
CFY: (Current Financial Year),

CFYm1 : (Current Financial Year minus 1),
CFYm2 : (Current Financial Year minus 2) and
CFYm3 : (Current Financial Year minus 3)

Table 1 :: CFY 2024-2025

Total Budget 1210000		Actual expenditure (till…): 1089876		Total No. Of Students 114
Demanded	Actual Allocated	Actual Expenditure	% Spent	Expenditure per student
1500000	1210000	1089876	90.07	9560.32

Table 2 :: CFYm1 2023-2024

Total Budget 1760000		Actual expenditure (till…): 1642052		Total No. Of Students 142
Demanded	Actual Allocated	Actual Expenditure	% Spent	Expenditure per student
2000000	1760000	1642052	93.30	11563.75

Table 3 :: CFYm2 2022-2023

Total Budget 1355000		Actual expenditure (till…): 1241983		Total No. Of Students 138
Demanded	Actual Allocated	Actual Expenditure	% Spent	Expenditure per student
1500000	1355000	1241983	91.66	8999.88

Table 4 :: CFYm3 2021-2022

Total Budget 1405000		Actual expenditure (till…): 1283452		Total No. Of Students 187
Demanded	Actual Allocated	Actual Expenditure	% Spent	Expenditure per student
1500000	1405000	1283452	91.35	6863.38

Items	**Budgeted in 2024-2025**	**Actual Expenses in 2024-2025 till**	**Budgeted in 2023-2024**	**Actual Expenses in 2023-2024 till**	**Budgeted in 2022-2023**	**Actual Expenses in 2022-2023 till**	**Budgeted in 2021-2022**	**Actual Expenses in 2021-2022 till**
Laboratory equipment	150000	130288	700000	656235	350000	320253	350000	331305
Software	150000	116634	50000	43720	100000	74118	150000	114842
SDGs	200000	169410	200000	189099	50000	49045	150000	122475

Support for faculty developmer	250000	242020	400000	369632	600000	566708	300000	276504
R & D	50000	40376	100000	107297	50000	40207	150000	131560
Industrial Training, Industry exp	400000	391148	300000	276069	200000	191652	300000	306766
Miscellaneous Expenses	10000	0	10000	0	5000	0	5000	0
Total	**1210000**	**1089876**	**1760000**	**1642052**	**1355000**	**1241983**	**1405000**	**1283452**

9.9 Quality of Learning Resources (Hard/Soft) (5)

Total Marks 5.00

Institute Marks : 5.00

The library at HITAM consists of state-of-art facilities to cater to the needs of the students and faculties such as reading space, seating capacity spread over a built up area of 4000 sft. The Library is supported by 40, 865 physical volumes towards 4987 titles, 10,664 e-books, 36 print journals, nearly more than 900 e journals and 500 rare books. Self-improvement books have been provided to faculty and Leadership that supports the professional development of staff.

A dedicated staff helps the students find the necessary titles. The books are indexed, categorized according to programs and subjects and arranged alphabetically. The software contains details about the author's name, title and publishing house. Upon an inquiry, the librarian searches in the software and helps the students locate the book. The library follows the book bank scheme. With this, the students are able to borrow books for the entire length of a semester so as to help them study. All books are bar coded and a reference ID is given. The issues and returns are also digitized. The college library follows set norms of the competent authorities. First Library in Telangana having NDLI (National Digital Library of India) Club in association with IIT Kharagpur. HITAM has been awarded as best performer in Telangana state from NDLI and in top 10 NDLI clubs securing 2nd position in the country.

List of resources in the Library:

Library Management System (LMS):

HITAMs Library Management System is a digital platform used to manage library operations efficiently. It handles the cataloging, circulation (issue/return), member management, and inventory control of books and other resources. This system allows both students and staff to search for and reserve books, track due dates, and manage their library usage online.

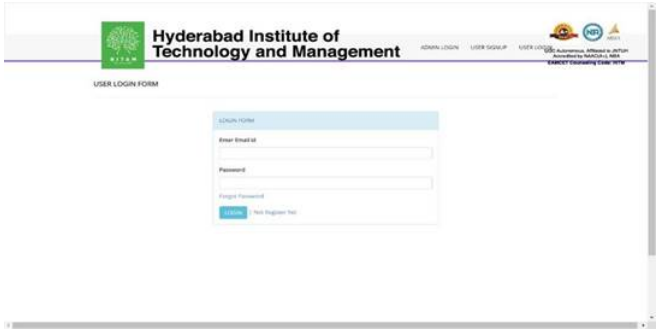


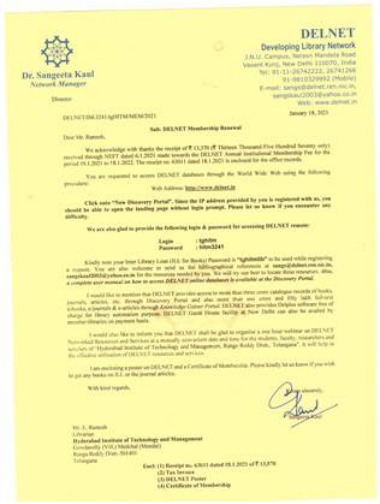
Figure 9.9.1: HITAM LMS

Online Public Access Catalog (OPAC):

Online Public Access Catalog (OPAC) is a digital catalog that allows users to search the entire library collection at HITAM. Through OPAC, students and faculty can check the availability of books, journals, and other materials by using keywords such as title, author, or subject. It enhances transparency and ease of access to library resources.

Developing Library Network (DelNet):

DelNet is a resource-sharing platform that provides access to a vast network of libraries across India and abroad. HITAM users can access millions of books, articles, and research papers not physically available in the library through interlibrary loan and document delivery services. It is particularly helpful for academic and research-related purposes.



DELNET
Developing Library Network

Dr. Sangeeta Kaul
Network Manager

Director

Sub: DELNET Membership Renewal

Dear Mr. Ramesh,

We are also glad to provide the following login & password for accessing DELNET remote:

Login : lghhtm
Password : hhtm2345

Kindly note your User Library Loan (ILL for Books) Password is "lghhtmILL" to be used while registering a request. You are also welcome to send us the bibliographical references at sangy@delnet.nic.in, sangeetakaul2003@yahoo.co.in for the resources needed by you. We will try our best to locate these resources. Also, a complete user manual on how to access DELNET online databases is available at the Discovery Portal.

I would like to mention that DELNET provides access to more than three crore catalogue records of books, journals, articles, etc. through Discovery Portal and also more than one crore and fifty lakh full-text e-books, e-journals & e-articles through Knowledge Gateway Portal. DELNET also provides Dolphin software free of charge for library automation purpose. DELNET Guest House facility at New Delhi can also be availed by member-libraries on payment basis.

I would also like to inform you that DELNET shall be glad to organize a one hour webinar on DELNET Specialized Resources and Services at a mutually convenient date and time for the students, faculty, researchers and scholars of 'Hyderabad Institute of Technology and Management, Rampur Reddy Distt., Telangana'. It will help in the effective utilization of DELNET resources and services.

I am enclosing a poster on DELNET and a Certificate of Membership. Please kindly let us know if you wish to get any books on ILL or the journal articles.

With kind regards,

Mr. J. Ramesh
Librarian
Hyderabad Institute of Technology and Management
Gowdavelly (Vill.) Medchal (Mandal)
Ranga Reddy Distt.- 501401
Telangana

Encl: (1) Receipt no. 63011 dated 18.1.2021 of ₹ 13,570
(2) Tax Invoice
(3) DELNET Poster
(4) Certificate of Membership

Figure 9.9.2: DelNet Membership

National Digital Library of India (NDLI):

HITAM is **the first library in Telangana** to establish an **NDLI Club** in association with **IIT Kharagpur**. The club promotes the use of the National Digital Library, which hosts a repository of academic content including books, articles, videos, and simulations from multiple disciplines. Through the club, HITAM conducts reading activities, quizzes, and awareness programs to enhance digital learning.

Figure 9.9.3: Certificate of Appreciation from NDLI

Information and Library Network (INFLIBNET):

INFLIBNET is a government-funded initiative that supports access to scholarly and research materials. HITAM faculty and students use INFLIBNET for research projects and academic work. It provides free access to open-source journals, theses, dissertations, e-books, and bibliographic databases, making it a vital tool for research and higher learning.

Digital Library:

HITAM's Digital Library is equipped with 20 computer systems, offering students access to a wide range of online journals, e-resources, and educational databases. It provides a quiet and technology-enabled environment where students can work on research, explore digital content, and watch academic lectures.

Figure 9.9.4: Digital Library

NPTEL Lectures:

HITAM is a recognized NPTEL Local Chapter, which means students have access to high-quality video lectures created by IITs and IISc under the National Programme on Technology Enhanced Learning (NPTEL). These lectures are available in the library and can be used by students to supplement their classroom learning and prepare for competitive exams.

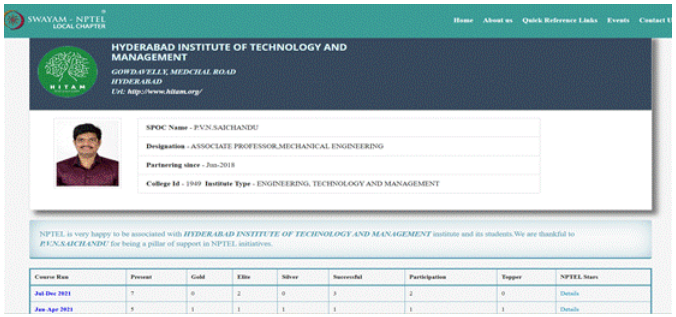


Figure 9.9.5: NPTEL Local chapter in the website

YouTube Channel – eLearn_HITAM:

HITAM runs an official YouTube channel called eLearn_HITAM, where faculty upload teaching videos, technical content, project demonstrations, and subject tutorials. This platform supports blended learning and helps students revise or learn at their own pace outside the classroom.

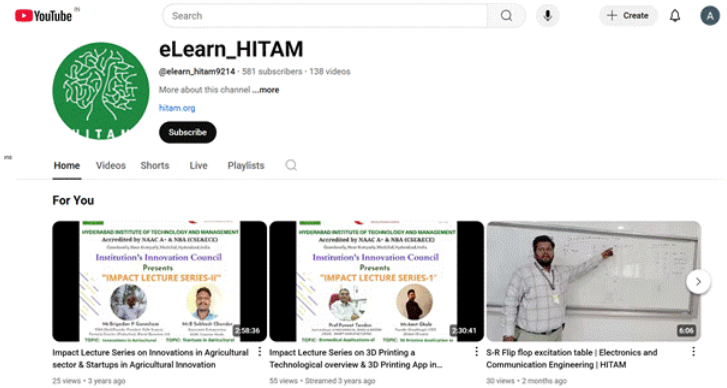


Figure 9.9.6: HITAM You Tube Channel

Table 9.9.1: List of resources available in the library

Library resources	**If yes, details of memberships/ subscriptions**	**Link to the relevant document**
Books	998	https://drive.google.com/file/d/1OQmCB3PiYB-3czFdADmOejDLADbOLDx2/view?usp=sharing (https://drive.google.com/file/d/1OQmCB3PiYB-3czFdADmOejDLADbOLDx2/view?usp=sharing)
Journals	50	https://drive.google.com/file/d/1xF0HVx62-ZUHoEXyAUwIyV4_zTAg-kyB/view?usp=sharing (https://drive.google.com/file/d/1xF0HVx62-

		ZUHoEXyAUwIyV4_zTAg-kyB/view?usp=sharing)
e – journals	DELNET	https://drive.google.com/file/d/1m1AUD3yROMVte8dTimKOMNjsijZ97bQP/view?usp=sharing (https://drive.google.com/file/d/1m1AUD3yROMVte8dTimKOMNjsijZ97bQP/view?usp=sharing)
e-books	10667	http://www.e-booksdirectory.com/
	e-booksThrough DELNET	
e-ShodhSindhu	Free membership	https://ndl.iitkgp.ac.in/
Shodhganga	Free membership	https://discovery1.delnet.in/
Databases	DELNET, NDLI, NPTEL	https://drive.google.com/drive/folders/1Z40afsJqBQLki_16Y277t0zRyxtQUOu3?usp=sharing (https://drive.google.com/drive/folders/1Z40afsJqBQLki_16Y277t0zRyxtQUOu3?usp=sharing)
	Drill Bit	
Local and / or Remote access to e-resources (Specify)	DELNET (IP based)	https://drive.google.com/drive/folders/1Z40afsJqBQLki_16Y277t0zRyxtQUOu3?usp=sharing (https://drive.google.com/drive/folders/1Z40afsJqBQLki_16Y277t0zRyxtQUOu3?usp=sharing)
	NDLI (Remote based)	
You Tube	eLearn_HITAM	https://www.youtube.com/@elearn_hitam9214

Campus-Wide Computing Resources:

HITAM is committed to maintaining cutting-edge IT facilities to enhance the learning experience for students. Our Wi-Fi infrastructure is regularly updated to ensure a seamless and high-speed internet connection, currently boasting an impressive speed of 550 Mbps. As part of our commitment to staying technologically current, we prioritize the annual update and purchase of computers. This ensures that students have access to the latest technology, creating an environment conducive to learning and innovation.

IT Policy Overview: The Institute has an IT policy covering major areas such as Wi-Fi, cyber security, and software upgrades, which are updated as per institutional needs. HITAM continuously upgrades IT facilities in compliance with regulatory norms and industry requirements. The institution provides 3 to 5% of the annual budget for IT upgrades, which are audited regularly to ensure transparency and accountability.

Wi-Fi and Network Infrastructure:

Bandwidth of internet connection in the Institution:

Hyderabad Institute of Technology and Management (HITAM) ensures uninterrupted internet connectivity through high-speed leased lines and bandwidth services. HITAM is offering total internet capacity of 550 Mbps, which includes:

- 100 Mbps Internet Leased Line from D-Atum Vilcom Private Limited.
- 50 Mbps Internet Leased Line from D-Atum Vilcom Private Limited.
- 200 Mbps Bandwidth from Neolog Online Services Private Limited, Hyderabad.
- 200 Mbps Bandwidth from KP Internet Services, Hyderabad from March 2024 to June 2024

Table 9.9.2: Contracted Services from July 2023 to June 2024, ensuring reliable and efficient internet access across the campus for academic and administrative needs.

S. No	Description	Name of the Company	Duration
1	100 Mbps Internet Leased line	D-Atum Vilcom Private Limited	July 2023 – March 2024
2	50 Mbps Internet Leased line	D-Atum Vilcom Private Limited	July 2023 – March 2024
3	200 MBPs Bandwidth	Neolog Online Services Private Limited, Hyderabad	July 2023 – March 2024
4	200 MBPs Bandwidth	KP Internet Services	April 2024 – June 2024
5	200 Mbps Internet Leased line	D-Atum Vilcom Private Limited	April 2024 – June 2024

9.10 E-Governance (5)

Total Marks 5.00

Institute Marks : 5.00

At HITAM, were committed to using technology to improve teaching and learning. Here are some ways weve done that over the past 5 years:

1. YouTube Channel (HITAM_eLearn): We have a YouTube channel where students can watch recorded lectures anytime. This makes it easy for them to review the material whenever they need to.
2. MOODLE LMS Portal: Our Learning Management System (LMS) gives students access to digital content like lecture slides and videos. They can stay updated with class materials even outside of the classroom.
3. Online Certifications: We encourage students and faculty to take online courses and get certified through platforms like SWAYAM and NPTEL. This helps them expand their knowledge and skills in specific areas.
4. Guest Lectures and Workshops: We organize guest lectures and workshops, both online and offline, where students can learn from experts and industry professionals. These events offer different learning experiences to suit everyones preferences.
5. Delnet and Online Library Resources: HITAM is affiliated with Delnet, providing students with access to a vast array of online library resources. This includes e-books, journals, and other academic materials, enriching their learning experience beyond traditional textbooks.
6. Online Journals Access: Our students have access to online journals through various databases, allowing them to stay updated with the latest research and developments in their fields of study.

E-governance Initiatives:

1. Administration: ERP Software

HITAM uses a centralized ERP (Enterprise Resource Planning) system to streamline administrative operations including faculty data management, attendance, schedules, circulars, leave management, and departmental coordination. It ensures transparency, efficiency, and quick decision-making across all administrative levels.

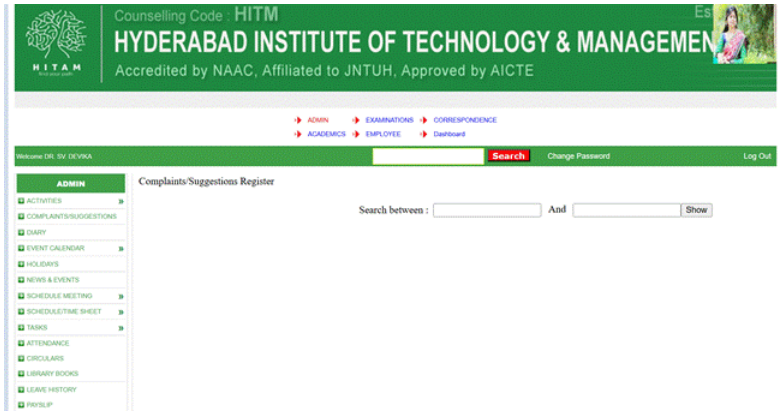


Figure 9.10.1: ERP software for administration

2. Finance: ERP and Tally

The **Finance Department** utilizes both **ERP** and **Tally** software:

- **ERP** manages fee collection, payroll processing, budgeting, and financial reporting.
- **Tally** is used for accounting purposes such as maintaining ledgers, balance sheets, and audit compliance, ensuring accurate and real-time financial tracking.

3. Examinations: The BEES (Board of Examination & Evaluation System) software is used for managing all academic assessments.

Figure 9.10.2: Bees software & ERP Software

4. Library: LMS, ERP, DelNet

- **LMS (Library Management System):** Manages book circulation, cataloging, and inventory.
- **ERP:** Integrates library data with student records for seamless access and usage tracking.
- **DelNet:** Provides access to inter-library services and a large repository of research materials.

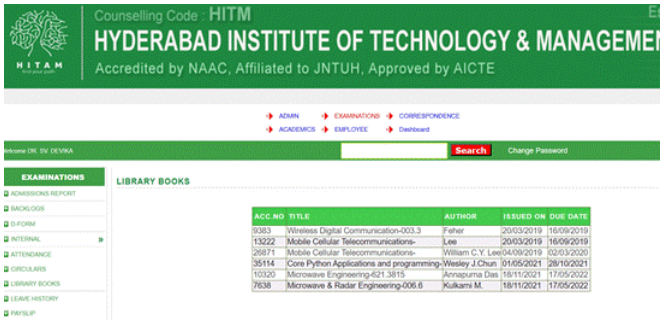


Figure 9.10.3: Library Management System

5. Alumni Portal:

The Alumni Portal connects HITAM with its graduates. It supports: Networking and mentorship opportunities, Alumni registration and profiles, Event updates and participation, Placement and internship support, Feedback and engagement with the institution for knowledge sharing and collaboration.

Figure 9.10.4: Alumni portal

6. Grievances cell:

HITAM maintains a transparent and accessible grievance redressal system. It allows students, faculty, and staff to submit complaints or suggestions online through a structured form. The grievance cell reviews and resolves issues related to academics, facilities, faculty behavior, or other concerns within a defined timeframe.

Table 9.10.1: Committee composition

S. No	Name of the Faculty	Designation
1	Dr. Arvind S (Committee Chairman)	Principal
2	Col. PVR Subramanyam (Committee Convenor)	Registrar
3	Mrs. Bindu Madhavi	Lead Student Engagement
4	Dr. M. Rajeshwar	Assistant Dean
5	Dr. D. Ashalatha	Student counsellor
6	Mr. Surendra Bandi	Assoc. Dean Education

7	Mr. Bhavith	Student Registrar

7. MOODLE:

HITAM (Hyderabad Institute of Technology and Management) uses Moodle, an open-source Learning Management System (LMS), as its official digital platform for teaching, learning, and assessment. Moodle serves as a virtual classroom that complements offline teaching, ensuring continuous academic engagement.

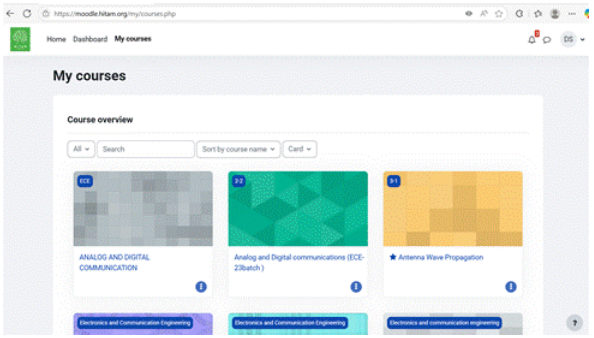


Figure 9.10.5: Moodle Software

8. Zoom:

Zoom at HITAM supports flexible, remote, and hybrid learning models, enhancing accessibility and real-time engagement across various stakeholders.

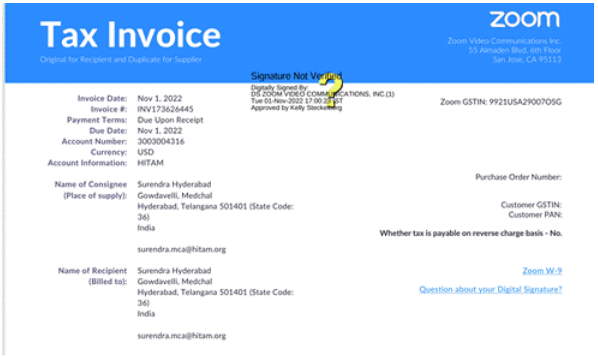


Figure 9.10.6: Zoom invoice

9. IONCUDOS:

Intelligent Outcome-based Course Design and Outcome-based System) is an advanced academic management platform implemented at HITAM to strengthen Outcome-Based Education (OBE) practices.

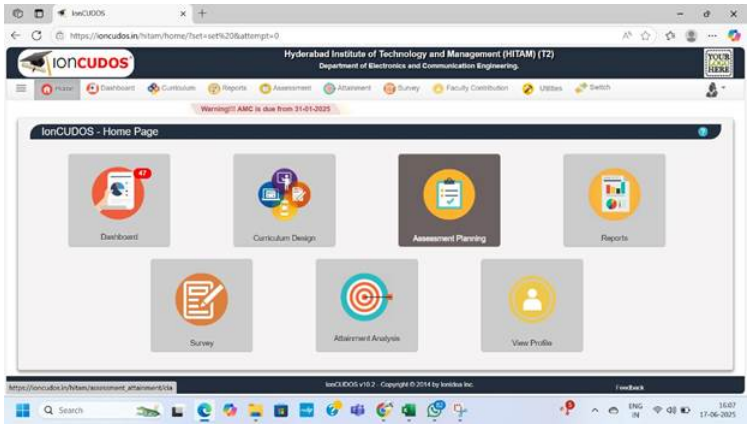


Figure 9.10.7: Ioncudos tool for outcome based education

9.11 Initiatives and Implementation of Sustainable Development Goals (SDGs) (10)	**Total Marks 10.00**
	Institute Marks : 10.00

Sustainable practices in academic and learning management:

HITAM is the first Educational Green Building Institution in the country awarded with '*Silver rating'* by the US Green Building Council. Being the Green Building Institute, always emphasizes on implementation of Sustainable Development Goals.

Table 9.11.1: How HITAM is contributing to SDG Goals

SDG	Goal Title	Contribution of HITAM
1	No Poverty	Helping Students to achieve scholarships, financial aid, For-a-cause Activities and NSS activities.
2	Zero Hunger	Promote Agri-tech projects and smart farming.
3	Good Health and Well-being	Run blood donation camps, and research in the medical informatics field.
4	Quality Education	Provide inclusive, quality technical education with updated curriculum aligned to industry needs.
5	Gender Equality	Ensure gender parity in admissions, support women in STEM, run women empowerment cells and awareness campaigns.

6	Clean Water and Sanitation	Innovate water purification, rainwater harvesting systems
7	Affordable and Clean Energy	Promote research in solar, wind, and bioenergy; install renewable energy sources on campus;
8	Decent Work and Economic Growth	Facilitate internships, placements, entrepreneurship cells, and skill-based training to improve employability.
9	Industry, Innovation, and Infrastructure	Run innovation labs, incubation centers, and work on community infrastructure development projects. Collaborate with MSMEs and startups.
10	Reduced Inequalities	Promote inclusive policies for differently-abled and economically weaker students;
11	Sustainable Cities and Communities	Projects on smart city solutions, traffic management systems, green buildings, and urban planning.
12	Responsible Consumption and Production	Conduct workshops on waste reduction, promote reuse/recycle practices on campus, and support eco-friendly startups.
13	Climate Action	Integrate Environmental Science in the curriculum, using minimum numbers of ACs.
14	Life Below Water	Research on water pollution control
15	Life on Land	Tree plantation drives and sustainability audits of the campus.
16	Peace, Justice, and Strong Institutions	Promote ethics in engineering, anti-ragging policies, student grievance redressal systems, and leadership programs.
17	Partnerships for the Goals	Collaborate with government bodies, NGOs, industries, and international universities to advance SDG-based initiatives.

The orientation and spacing of the buildings in the complex have been designed in a manner that minimizes interclass interference. Fly ash brick construction with cavity walls has been used for better thermal insulation. 85 % of the areas are day lit. This has been achieved by optimizing window sizes. Reused furniture is chosen for Classroom and other administrative areas. Passive Downdraft Evaporative Cooling (PDEC) system has been specially designed and adopted for space conditioning of the entire building. HITAM believes that nurturing nature is the best way to promote environmental sustainability with the adoption of eco-friendly methods.

Plastic items are strictly not allowed in the campus and signages are displayed at conspicuous places. Intranet and ERP systems are in use for all day-to-day activities of office, department including parent teacher interaction, assignments and performance appraisal. Thus, the usage of paper on campus is minimized. All communication to departments, resources and students is made through mails and other electronic media to spread awareness about the same.

Campus has around 450 species of plants including herbs, shrubs and big shady trees. This provides home to flora and creates a heaven for the nesting birds. HITAM campus is a noteworthy example of creating environmentally responsive passive habitants. The design of the project is woven around principles of climatic design which were practiced centuries back in regions which were hot and dry during summer and warm and humid during monsoon. Blended with passively ventilated comfortable indoors and well shaded outdoors, the institute has been celebrating nature to enhance the experience of technical learning. The institute is located on the outskirts of Hyderabad in the Gowdavelli village area which is about 20 km from the city. The summer months in this region are predominantly hot and dry while monsoons are warm and humid. This adverse climatic condition of the region was surely a challenge for the design team. The architecture of this building is a unique modern adaptation of traditional climatic design strategies that were prevalent in building designs of this region. Passive climate control measures like shading, optimum orientation, optimized day lighting, courtyard planning, cross and stack ventilation and evaporative cooling has been integrated intelligently in the design, thus enabling the project to achieve considerable thermal comfort even during peak summer afternoons.

During 2019, Indian Green Building Council (IGBC) has awarded “Best Practicing Green Building in India” to HITAM for practicing all facets of Green Building norms.

Figure 9.11.1: Battery operated vehicles designed by HITAM students under Skill Development Centre

Figure 9.11.2: No plastic boards in the Campus

Solid waste management:

Inspired by Swachh Bharat Mission, Twin-Bin system is being used in the Institute to segregate recyclable and biodegradable waste. The institution takes all measures required to ensure that the campus is free of plastic items and other wastes that harm the environment. Segregation of waste from the dustbins is done in other strategic locations, thus maintaining the Campus and keeping it clean and green. Professional contractors collect the recyclable waste and biodegradable waste. Chemical and hazardous waste from laboratories is disposed of as per MSDS. This waste is collected and disposed through a certified third party.

E-Waste Management:

All Electronic waste CPU's, Hard disks, Laboratory Equipment scrap is sent to the market either for repair or returned to the suppliers for disposal as per the manufacturer 's policy.

Liquid Waste Management:

At our campus, we treat wastewater through Sedimentation. The Sewage water from the entire campus is received through the underground pipelines. The treated water is used as natural organic compost for gardening.

Sewage Treatment Plant (STP) of 5000 L/day capacity is in use in the Institution campus. The treated water is used for flushing and gardening purpose.

Hyderabad Institute of Technology and Management (HITAM) is committed to comprehensive water conservation practices, ensuring a sustainable and responsible approach to water management within the institution. The following facilities and initiatives exemplify HITAMs dedication to water conservation:

1. **Rainwater Harvesting:** HITAM has implemented an efficient rainwater harvesting system that collects and stores rainwater for various purposes. This eco-friendly practice helps replenish groundwater and reduces the reliance on external water sources.

2. **Bore well/Open Well Recharge:** The institution has established borewell and open well recharge systems, enabling the replenishment of groundwater levels. This sustainable approach supports the conservation of water resources and ensures a consistent water supply for various needs within the campus.

3. **Construction of Tanks and Bunds:** HITAM has strategically constructed tanks and bunds to capture and store water. This infrastructure not only aids in preventing soil erosion but also serves as storage for rainwater, contributing to the overall water availability on campus.

4. **Wastewater Recycling:** The institution actively engages in wastewater recycling initiatives, treating and repurposing wastewater for non-potable purposes. This practice minimizes water wastage and promotes a circular and sustainable use of water resources within the campus.

5. **Maintenance of Water Bodies and Distribution System:** HITAM places significant emphasis on the maintenance of existing water bodies and the distribution system within the campus. Regular upkeep ensures the efficient flow and utilization of water, preventing leaks and optimizing water distribution for various needs.

Figure 9.11.3: a) Rain Water harvesting b) Borewells

Figure 9.11.4: Water tanks

Figure 9.11.5: RO plant

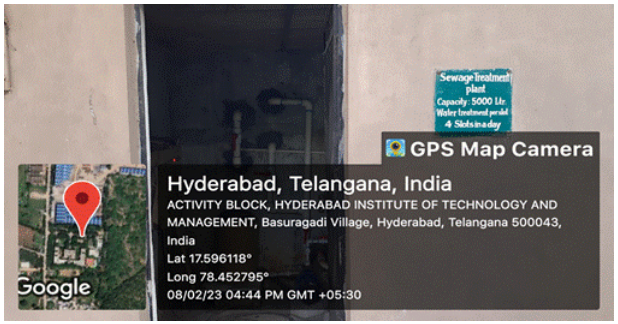


Figure 9.11.6: Sewage Treatment plant

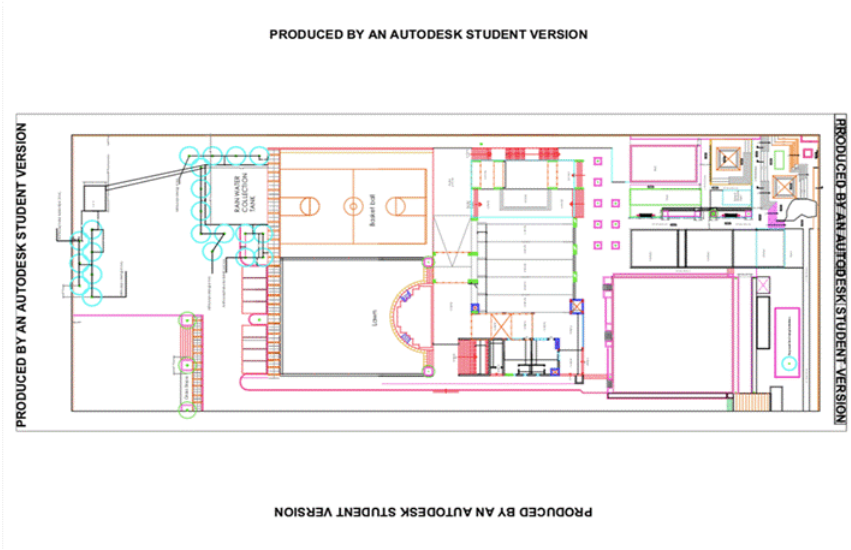


Figure 9.11.7: Water Distribution chart

9.12 Innovative Educational Initiatives and Implementation (5)	Total Marks 5.00
	Institute Marks : 5.00

1. Student Mobility and Academic Bank of Credits (ABC):

- HITAM is registered with the *Academic Bank of Credits* portal under UGC, enabling students to accumulate and redeem academic credits across institutions.
- Credit transfer for MOOCs offered through NPTEL, SWAYAM, and Coursera is actively facilitated.
- Students are encouraged to undertake internships, research projects, and entrepreneurship activities at national and international levels, supported through MoUs with industries and foreign universities.
- Flexible curriculum structure and the Choice-Based Credit System (CBCS) allow students to take interdisciplinary electives and fast-track their degrees.

2. Holistic Education and Human Values:

- Courses such as Universal Human Values (UHV), , and Environmental Science are integrated into the curriculum.
- Regular activities under NSS and Unnat Bharat Abhiyan promote community engagement, empathy, and ethical leadership.
- Yoga, meditation, and wellness sessions are held to promote mental well-being.

3. Multidisciplinary/Interdisciplinary Curriculum:

- The curriculum allows students to choose open electives across departments (CSE, ECE, EEE, Mech), supporting a multidisciplinary learning path.
- A *Multidisciplinary Makerspace* has been established where students from diverse backgrounds collaboratively build projects.
- Interdisciplinary hackathons and innovation challenges are conducted regularly to promote collaborative problem-solving.

4. Indian Knowledge System (IKS) and Indian Languages:

- Elements of Indian Knowledge System are introduced through orientation programs, workshops, and guest lectures.
- Programs such as *"Bharatiya Vijnana Parampara"* introduce students to ancient Indian scientific traditions.
- Efforts have been made to encourage teaching-learning in Indian languages by offering select tutorials and content in Telugu and Hindi, especially for rural-background students.

5. Inclusivity and Equity Policies:

- HITAM provides need-based scholarships and fee waivers for economically weaker students.
- A dedicated *Equal Opportunity Cell* ensures non-discrimination and equitable treatment of students from all backgrounds.
- The campus infrastructure is made accessible for physically challenged students (ramps, lifts, disabled-friendly restrooms).
- Support systems like peer mentoring, bridge courses, and special academic counseling are in place.

6. Support for Economically, Socially, and Physically Challenged Students:

- Reserved scholarships, mentorship support, and academic monitoring are provided.
- Tie-ups with NGOs and government agencies ensure extended support.
- Regular sensitization workshops are held to create an inclusive campus environment.

7. Action Plan for Slow Learners:

- Academic performance is tracked through continuous assessments.
- An Early Intervention Program identifies slow learners and assigns faculty mentors.
- Remedial and tutorial classes are scheduled outside regular hours.
- Personalized learning plans and regular parent communication are implemented.
- Usage of digital tools like Learning Management Systems (Moodle) and recorded lectures aid asynchronous learning.

9.13 Faculty Performance Appraisal and Development System (FPADS (10)	**Total Marks 10.00**
	Institute Marks : 10.00

Faculty performance evaluation sheet used at HITAM to assess faculty contributions in research, teaching, student engagement, and institutional development. It tracks research activities such as paper presentations, publications, patent filings, and project proposals while also evaluating teaching effectiveness through student attendance, pass percentage, and feedback. Faculty involvement in innovative teaching methods, student research guidance, mini/major projects, and workshops is also documented. Additionally, it records participation in institutional and departmental events, guest lectures, industry visits, administrative roles, and professional achievements, including awards and recognitions. This structured evaluation helps in faculty appraisals, promotions, and overall academic excellence. This process is done once a year based on the given parameters.

Table 9.13.1: Rubrics for Performance Metric system at HITAM

S. No	Parameters
1	Paper Presentations/year (Conference) Conference paper in Scopus index/ UGC
2	Paper Publications/year (Q1, Q2, Q3 category of Journals only)
3	Guest lecture delivered/ year in the other institutions
4	Avg Students Attendance
5	Pass % (Highest of last 3years) 70% or higher of the last 3 yrs. whichever is high
6	Innovative Teaching
7	PBL teaching
8	Student feedback (As per ERP) each subject individual scores to be considered
9	Student Paper/Poster Presentation (Applicable only to 1st year students)
10	Student paper publications (Applicable for 2nd, 3rd & 4th year students)
11	Guide Mini/major projects by all Departments except H&S. Micro/course projects by H&S Dept.

12	Conduct of Workshop /FDP/Seminars/ Conferences (Convenor & coordinator)
13	Industry Visit (Relevant industry)
14	Patent
15	publishing/editing of Articles/ Chapter in Books
16	Awards/Competitions won by faculty
17	Institutional/Dept Events/year (Event convenor/Coordinator/Committee in charges)
18	Administrative works/Role
19	Submission of project proposals to funding agencies

The performance varies from Professor, Associate Professor and Assistant Professor based on the experience.

PMS sample evaluation sheet of a faculty: https://drive.google.com/file/d/1izySB_qjvUQdJS2fNx1d9lnmOoYD8ssl/view?usp=sharing (https://drive.google.com/file/d/1izySB_qjvUQdJS2fNx1d9lnmOoYD8ssl/view?usp=sharing)

9.14 Outreach Activities (5)

Total Marks 5.00

Institute Marks : 5.00

Hyderabad Institute of Technology and Management (HITAM) integrates social responsibility and civic engagement into its core educational practices. Through participation in national missions, NGO collaborations, student-led clubs, and structured social internships, HITAM nurtures a sense of service, leadership, and empathy among students.

1. Unnat Bharat Abhiyan (UBA): Rural Empowerment through Innovation

HITAM is an active participant in the Unnat Bharat Abhiyan (UBA), an initiative of the Ministry of Education, Government of India.

- The institute has adopted 4 villages:

1. Gowdavelli – Medchal District
2. Hakkimpet – Medak District
3. Kazhipet – Medak District
4. Kolanupaka - Yadari Bhuvanagiri District

- Through regular village visits, problem identification surveys, and solution implementation, HITAM focuses on:
    - Sanitation and waste management
    - Digital literacy and education
    - Sustainable agriculture practices
    - Solar energy and water conservation

- Health and hygiene awareness programs

Students and faculty members work collaboratively with villagers to propose **technological and awareness-based solutions** aligned with sustainable development goals.

2. NGO Collaborations: Learning Through Community Engagement

HITAM encourages student involvement with external organizations to strengthen real-world social engagement. Key NGO collaborations include:

- **Sahaya**: Focuses on educational outreach for underprivileged children through volunteer teaching, donation drives, and book distributions.
- **For a Cause**: Involves students in urban social campaigns, health awareness events, and mental wellness initiatives.
- **Arutla Foundation**: Engages students in rural and community development efforts, including youth support, healthcare outreach, and women's empowerment programs.

3. NCC and NSS: Building Responsible Citizens

- **National Cadet Corps (NCC):** HITAM supports a dedicated NCC unit to develop qualities of discipline, leadership, and patriotism. Students participate in:
  - National integration camps
  - Road safety awareness
  - Clean India and Fit India campaigns
- **National Service Scheme (NSS)**: NSS volunteers at HITAM engage in:
  - Swachh Bharat drives
  - Voter awareness and blood donation camp
  - Literacy programs in nearby village
  - Tree plantation and environmental protection activities

4. XPLORE (Experiential Platform for Learning & Outreach in Real time Engineering)

Objectives of the Practice:

•To empower the students to apply engineering knowledge on the real time problems while meeting academic learning goals and contribute to society

•Apply domain knowledge to the design of community-based projects.

•Identify and acquire new knowledge as a part of the problem solving / design process.

•Design products on multidisciplinary concepts and an appreciation for the contributions from individuals from multiple disciplines.

•Build a role that their discipline can play in social contexts.

•Provide significant service to the community while learning; gain an understanding of the role that engineering (and their discipline) can play in society.

- **Engineering Projects in Community Service (EPICS)**

HITAM has been an EPICS Member College since 2016. HITAM has adapted the EPICS program from Purdue University, USA. Students from multiple disciplines have registered. Every semester students are identifying problems from the community and solving their problems by providing engineering solutions.

- **Unnat Bharat Abhiyan (UBA)**

HITAM is a Participating Institution of UBA from 2018. Under UBA HITAM Adopted Seven villages, conducted household surveys and took up technological interventions for improving life in rural areas. Got funding for 3 projects under Unnat Bharat Abhiyan (UBA) - Ministry of Education (MOE). Students will work on Technological intervention in the villages.

- **Engineers Without Borders Student Chapter (EWB)**

EWB-HITAM was established as a non-profitable chapter on 17th AUG 2019. HITAM believes in practical implementation is required for every engineer to solve community-oriented problems. The Design Process is followed for identifying of problems its consists of the following phases: Project Identification, Specification Development, Conceptual Design, Detailed Design.

Annexure I

(A) PROGRAM OUTCOME (POs)

Engineering Graduates will be able to:

PO1: Engineering Knowledge: Apply knowledge of mathematics, natural science,computing, engineering fundamentals and an engineering specialization as specified in WK1 to WK4 respectively to develop to the solution of complex engineering problems.

PO2: Problem Analysis: Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions with consideration for sustainable development. (WK1 to WK4)

PO3: Design/Development of Solutions: Design creative solutions for complex engineering problems and design/develop systems/components/processes to meet identified needs with consideration for the public health and safety, whole-life cost, net zero carbon, culture, society and environment as required. (WK5)

PO4: Conduct Investigations of Complex Problems: Conduct investigations of complex engineering problems using research-based knowledge including design of experiments, modelling, analysis & interpretation of data to provide valid conclusions. (WK8).

PO5: Engineering Tool Usage: Create, select and apply appropriate techniques, resources and modern engineering & IT tools, including prediction and modelling recognizing their limitations to solve complex engineering problems. (WK2 and WK6)

PO6: The Engineer and The World: Analyze and evaluate societal and environmental aspects while solving complex engineering problems for its impact on sustainability with reference to economy, health, safety, legal framework, culture and environment. (WK1, WK5, and WK7).

PO7: Ethics: Apply ethical principles and commit to professional ethics, human values, diversity and inclusion; adhere to national & international laws. (WK9)

PO8: Individual and Collaborative Team work: Function effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.

PO9: Communication: Communicate effectively and inclusively within the engineering community and society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations considering cultural, language, and learning differences

PO10: Project Management and Finance: Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects and in multidisciplinary environments.

PO11: Life-Long Learning: Recognize the need for, and have the preparation and ability for i) independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change. (WK8)

(B) PROGRAM SPECIFIC OUTCOME (PSOs)

Program should specify 2-4 program specific outcomes.

PSO1	Identify, construct and translate engineering problems in design, thermal and production streams.
PSO2	Design and develop an energy efficient system in all engineering and interdisciplinary fields to meet the present challenges of industry and society.