NANDHA ENGINEERING COLLEGE
(Autonomous)
Erode- 638 052
Department of Mechanical Engineering

NEC/MECH/PAC-02/2024-25 **DATE:** 5-11-2024

CIRCULAR

Originator:	**Circulated to:**
Chairman- PAC	Members of PAC& All faculty members

Sub: Programme Assessment Committee (PAC) meeting:

The PAC meeting is scheduled on 11.11.2024 to discuss the agenda listed below. In this connection, all the PAC members are requested to attend the meeting.

Date & Time of Meeting: **11.11.2024 (12.30 PM)-Monday**
Venue: Block 7

AGENDA	
Dissemination of vision and mission of the department	
VISION	• To be recognised as a centre of excellence in the field of Mechanical Engineering and to produce competent engineers with multi-disciplinary exposure to meet the changing needs of the society.
MISSION	• To enrich technical knowledge and skills by imparting quality education with ethics and social responsibility. • To empower the students in the thrust areas of Mechanical, Allied Engineering and Entrepreneurship in the continually changing global market. • To provide a conducive learning environment for improving continually to cater the needs of the society.
Item 2.01	Review of the previous PAC meeting minutes
Item 2.02	Overall attainment of the 2024 pass out batch & fix target for the I year (2024 – 2028 batch).
Item 2.03	Teaching Learning Process and Assessment.
Item 2.04	Class Committee Meeting (CCM) reports and action taken.
Item 2.05	Proctor meeting minutes and action taken reports
Item 2.06	Department academic plan and activities.
Item 2.07	Any other matter (if any)

5/11/24

CHAIRMAN-PAC

HEAD OF THE DEPARTMENT
DEPARTMENT OF MECHANICAL ENGINEERING,
NANDHA ENGINEERING COLLEGE
ERODE - 638 052.

To
- ✓ All members of PAC,
- ✓ All Faculty members,
- ✓ File (O/o Head)

MINUTES OF THE PROGRAMME ASSESSMENT COMMITTEE MEETING

Name of the Body	**PROGRAMME ASSESSMENT COMMITTEE (PAC)**	
Department	Mechanical Engineering	
Meeting No.	02	2024-2025
Date & Time	**11.11.2024 & 12.30 PM**	

Disseminated the vision and mission of the department	
VISION	• To be recognised as a centre of excellence in the field of Mechanical Engineering and to produce competent engineers with multi-disciplinary exposure to meet the changing needs of the society.
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HEAD OF THE DEPARTMENT
DEPARTMENT OF MECHANICAL ENGINEERING,
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ERODE - 638 052.

The Chairman PAC, Dr. M. Muthukumar & HoD / Mechanical, welcomed the PACmembers and internal members. The board considered various items of the agenda for discussion and the resolutions are given below:

<table>
<tr><td>Item 2.01</td><td>Review of the previous PAC meeting minutes</td></tr>
<tr><td></td><td>The previous PAC meeting minutes were reviewed. There were no comments from members.</td></tr>
<tr><td>Item 2.02</td><td>Overall attainment of the 2024 pass out batch & fix target for the I year (2024 – 2028 batch).</td></tr>
<tr><td>Discussion</td><td>
✓ Dr. MM presented the attained POs and PSOs: [PO1, PO2, PO3, PO5, PO9, PO11, PO12, and PSO1, PSO2].
✓ Dr. MM presented the POs and PSOs that were not attained: [PO4, PO6, PO7, PO8, PO10, and PSO3, PSO4].
✓ Dr. MM explained that the targets vary based on the nature of the course (theory, problem-based, or lab-oriented).
PO1: Engineering Knowledge: an ability to apply knowledge of Mathematics, Science and Engineering
<table>
<tr><th>POs</th><th>Target Level</th><th>Attainment Level</th><th>Observations</th></tr>
<tr><td>PO1</td><td>65%</td><td>75.96</td><td>Target achieved.</td></tr>
</table>
PO2: Problem Analysis: an ability to design and conduct experiments, as well as to analyze and interpret data
<table>
<tr><th>POs</th><th>Target Level</th><th>Attainment Level</th><th>Observations</th></tr>
<tr><td>PO2</td><td>65%</td><td>69.82</td><td>Target achieved.</td></tr>
</table>
PO3: Design/ Development of Solutions: an ability to design a system, component or process to meet desired needs within realistic constraints such as economic, environmental, social, ethical, safety, manufacturability and sustainability
<table>
<tr><th>POs</th><th>Target Level</th><th>Attainment Level</th><th>Observations</th></tr>
<tr><td>PO3</td><td>65%</td><td>70.18</td><td>Target achieved.</td></tr>
</table>
PO4: Conduct Investigations of Complex Problems: an ability to function on multidisciplinary teams to solve complex problems
<table>
<tr><th>POs</th><th>Target Level</th><th>Attainment Level</th><th>Observations</th></tr>
<tr><td>PO4</td><td>65%</td><td>65.51</td><td>Target not achieved.</td></tr>
</table>
Action 1: Students are investigating real time problems by collecting data from literature/industry while doing their projects in the seventh and eighth semesters.
Action 2: One subject from III semester is made as Project Based Learning subject wherein they investigate a problem based on the subject and solve the problem through project fabrication process.
Action 3: Personality Career Development (PCD) clubs like trekking, NSS, safety, etc., helps the students to the identify the environmental problems and provide good solution for those problems.
</td></tr>
</table>

PO5: Modern Tool Usage: an ability to use the techniques, skills and modern engineering tools necessary for engineering practice

POs	Target Level	Attainment Level	Observations
PO5	65%	69.76%	Target achieved.

PO6: The Engineer and Society: an ability to infer societal, health, safety, legal & cultural issues and consequent responsibilities relevant to the professional engineering practice.

POs	Target Level	Attainment Level	Observations
PO6	65%	57.12%	Target not achieved.

Action 1: Awareness programs and interactive sessions are arranged for the students to act as a professional engineer considering the societal, health, safety, legal & cultural issues

Action 2: Courses like Constitution of India and Essence of Indian tradition are incorporated in the curriculum as non-credit and mandate courses guiding the students to understand their societal and safety needs during their engineering practices.

Action 3: Students are given awareness about their requirement to the society through arranging blood donation camp and activities through NSS and other PCD clubs.

Action 4: Students' have gone for internships in industries to understand the aspects of an engineer's work and its impact in societal, health, safety, legal & cultural issues.

PO7: Environment and Sustainability: an ability to explain, compare and summarize the impact of engineering solutions for sustainable development with societal and environmental perspective

POs	Target Level	Attainment Level	Observations
PO7	65%	55.43%	Target not achieved.

Action 1: Hands on training on various Non-Destructive Techniques are given to make the students to understand the concepts of NDT.

Action 2: Field visits to several renewable energy plants are organized. Students are guided to take up solar thermal energy related projects.

Action 3: Students are engaged in various sustainable activities like having a rally for creating the awareness of many environmental issues.

Action 4: MoUs have been signed with Sustainable Communities India Private Limited for enhancing technical skills related to energy management in industries.

PO8: Ethics: an understanding of professional and ethical responsibility

POs	Target Level	Attainment Level	Observations
PO8	65%	52.11%	Target not achieved.

Action 1: Ethical practices and moral values in industries have been demonstrated during industrial visits, in-plant trainings and through industrial seminars by industrial experts.

Action 2: Students are assigned with responsibilities as Event Coordinators/ Volunteers in organizing programs through Department association/Professional Society to learn the professional and ethical responsibilities.

PO9: Individual and Team Work: an ability to function effectively as an individual / team in different environments

POs	Target Level	Attainment Level	Observations
PO9	65%	60.79%	Target achieved.

Action 1: Participation in Co-curricular and Extracurricular activities as a team.
Action 2: Group activities like symposium, intra & inter department meet were organized and students show their interest in different team activities for effective team building.
Action 3: Opportunities are provided to students to participate in inter and intra sports competitions as individual and as a team.
Action 4: Students were separated into batches and made to work as a team for projects during seventh and eighth semesters.

PO10: Communication: an ability to communicate effectively

POs	Target Level	Attainment Level	Observations
PO10	65%	58.98%	Target not achieved.

Action 1: Inter-department meet have been conducted through department association in all semesters.
Action 2: Soft Skill- Listening and speaking; Soft Skills- Reading and Writing are introduced in the curriculum as a course to improve the communication and presentation skills.
Action 3: Assessments like assignments, viva voce in laboratory courses are followed effectively for improving the writing and reading skills of the students.
Action 4: Seminars/Project presentations are used as a platform to improve the communication skills.

PO11: Project Management and Finance: an ability to apply knowledge of engineering and management principles to the projects

Pos	Target Level	Attainment Level	Observations
PO11	65%	66.25%	Target achieved.

PO12: Life-long Learning: an ability to recognize the need for life-long learning

Pos	Target Level	Attainment Level	Observations
PO12	65%	67.54%	Target achieved.

PSO1: Ability to design mechanical systems with required specifications using latest software packages

PSOs	Target Level	Attainment Level	Observations
PSO1	65%	65.17%	Target achieved.

PSO2: Ability to identify sustainable materials and technologies for alternate engineered solutions

PSOs	Target Level	Attainment Level	Observations
PSO2	**65%**	**65.60%**	Target achieved.

PSO3: Ability to apply the concepts and principles of manufacturing engineering to innovate and to create products and processes with sustainable manufacturing

PSOs	Target Level	Attainment Level	Observations
PSO3	**65%**	**56.06%**	Target not achieved.

Action 1: Students take up fabrication projects and learn the product development cycle.
Action 2: Industrial visits to manufacturing companies have been organized.
Action 3: One credit courses titled GD&T ad Lean manufacturing have been organized in association with leading industries.
Action 4: Students participate in Seminars on manufacturing technology.

PSO4: Ability to provide solution to challenges in the solar thermal systems

PSOs	Target Level	Attainment Level	Observations
PSO4	**65%**	**58.57%**	Target not achieved.

Action 1: Field visits to solar systems inside the institution and other plants outside have been arranged for the students.
Action 2: Students are guided to take up solar thermal energy related projects.
Action 3: Industry supported lab namely Renewable Energy lab is established to provide experience to the students in the solar energy conversion

Fixing PO target for 2024- 2028 batch: Students entry level academic performance and previous Batch PO attainment performance were discussed in detail. It decided to fix PO attainment target for **2024- 2028 batch as 67%.**

Item 2.03 — Teaching Learning Process and Assessment.

Discussion

Category of Course	Continuous Assessment (CA) marks	End semester Exam.(ES) marks	Total Marks
Theory Courses	40	60	100
Theory + Project Courses (Project Based Learning- PBL)	40	60	100
Laboratory Courses	60	40	100
Embedded Courses Theory + Laboratory	50	50	100
Project work	40	60	100
Employability Enhancement Courses (EEC), One credit Courses, Mandatory Courses (non-credit),Mini Project, etc.	100	-	100

1. Teaching-Learning Process

a) Lectures and Conceptual Understanding

Theoretical Concepts: Classes should begin with clear explanations of mechanical principles, equations, laws, and design methodologies. Topics may include Thermodynamics, Mechanics of Materials, Fluid Mechanics, Heat Transfer, and Machine Design.

Problem-Solving: Demonstrations of step-by-step problem-solving approaches to reinforce theory.

Interactive Sessions: Incorporate discussion-based or flipped-classroom techniques where students can engage with the material and ask questions.

b) Laboratory Work and Hands-On Learning

Practical Exposure: Students must apply theoretical knowledge to practical problems, which can be done in workshops and laboratories. For example, they might work with lathes, milling machines, or perform experiments related to fluid dynamics or thermodynamics.

Simulation and Software: Introducing simulation software such as ANSYS, Solid Works, can enhance their design and analysis capabilities.

c) Design Projects and Case Studies

Real-World Applications: Students can work on individual or group projects that solve real-world mechanical problems, from design to manufacturing.

Case Studies: Present industrial problems or incidents (like those in automobile design, HVAC, or manufacturing processes) and have students analyze or propose solutions.

d) Industry Interaction

Guest Lectures and Seminars: Inviting professionals from industries can provide insights into current trends and technologies.

Industrial Visits: Site visits to manufacturing plants, refineries, or automotive facilities allow students to connect theory with real-world applications.

Internships: Practical training in the industry to expose students to mechanical systems in real-world operations.

e) Peer Learning and Collaborative Learning

Group Assignments: Assigning tasks that require students to collaborate can foster teamwork and communication skills, critical in mechanical engineering projects.

Problem-Solving Groups: Allowing students to work in groups to solve complex mechanical problems.

f) Self-Learning

Online Resources: Encouraging the use of online courses, webinars, and research papers to stay updated on the latest mechanical engineering trends.

Resolution	Resolved to approved
Item 2.04	Class Committee Meeting (CCM) reports and action taken.
Discussion	Dr. MM shared the Class Committee Meeting (CCM) and ATR request faculty members look at to this.
Resolution	Resolved to approve the ATR of Class Committee Meeting (CCM).
Item 2.05	Proctor meeting minutes and action taken reports
	Mr. R. Rajkumar present the proctor meeting minutes on year wise student achievement and the academic activities with proctor ATR
Resolution	Resolved to approve the ATR of Proctor meeting MoM.
Item 2.06	Department academic plan and activities.

Association coordinator Mr. M. Sengottaiyan presented the academic activities event calendar 2024-2025

Month	ISTE(2)	IEI(3)	SAE(3)	SOME		
				International (1)	National (2)	State level (6)
NOV					SYMPOSIUM 2024 (Week 1)	
DEC	Exam					
JAN	Academic Seminar (Week 1)				Academic Seminar (Week 4)	
FEB		Guest Lecture (week 1)				Industrial Seminar (Week4)

	MAR			Industrial Seminar (Week1)	International Conference /Seminar (Week 2)		
	APR						Workshop (Week) 4
	MAY	Exam					
	Count	2	3	3	1	2	6
Resolution	Resolved to accept and put forth to DAB.						
Item 2.07	Any other matter (if any)						

Date: 11-11-2024

PAC- CHAIRMAN

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