

NANDHA ENGINEERING COLLEGE (AUTONOMOUS)
ERODE – 52
DEPARTMENT OF MECHANICAL ENGINEERING

BOARD OF STUDIES

MEETING NO. 10	MODE: OFFLINE MODE
VENUE: BOARD ROOM	DATE: 30.07.2022 & TIME: 10.30 am

AGENDA

Item 10.01	Welcome address and Introduction of members.
Item 10.02	Review and approval of the 9 th BOS meeting minutes and ATR
Item 10.03	Review and approval of the PAC and DAB meeting minutes & ATR
Item 10.04	Review of Institute Vision & Mission
Item 10.05	Review and approval of Department Vision, Mission, PEOs and PSOs
Item 10.06	Review of Correlation between the Vision and Mission statement of Institute and Department, correlation between PEOs and POs.
Item 10.07	UG- B.E., Mechanical Engineering Programme Approval of <ul style="list-style-type: none">▪ Curriculum (R22)▪ Syllabus- 1st & 2nd semesters and CO –PO/PSO Mapping
Item 10.08	Review on <ul style="list-style-type: none">▪ analysis of CO- PO/PSO mapping and attainment▪ approval of CO & PO attainment target
Item 10.09	PG- M.E., Engineering Design Programme Approval of <ul style="list-style-type: none">▪ Curriculum and syllabus (R22)▪ CO –PO/PSO Mapping
Item 10.10	Ratification of PSE/OE courses in R17 (UG & PG) if any.
Item 10.11	Approval/ Ratification of one credit courses
Item 10.12	Approval of Panel of Examiners (UG & PG)
Item 10.13	Any other matter
	Vote of Thanks


CHAIRMAN

BoS- Mechanical Engineering
Dr. M.EASWARAMOORTHI M.E., Ph.D.,
Head of the Department,
Department of Mechanical Engineering
Nandha Engineering College (Autonomous)
ERODE - 638 052.



NANDHA ENGINEERING COLLEGE
(Autonomous Institution)
Pitchandampalayam, Erode To Perundurai Road, Erode-638 052

BOARD OF STUDIES

Academic Year: 2021 – 2022

Date: 30.07.2022

Board	Mechanical Engineering	Meeting No.	10	R2022
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LIST OF MEMBERS

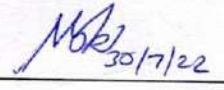
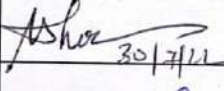

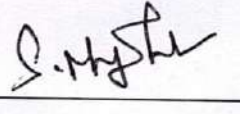
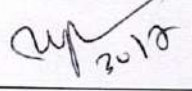
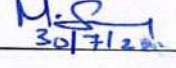
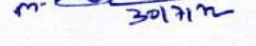
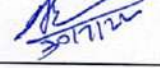
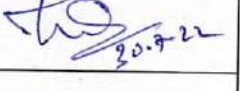

Sl. No	Members	Representation	Signature
1	Dr. M.Easwaramoorthi, Professor & Dean – Mechanical	Chairman	
2	Dr. S. P. Vendan, Professor, Department of Mechanical Engineering, PSG College of Technology, Coimbatore – 641 004	University Nominee	Leave of absence
3	Dr. V. Arul Mozhi Selvam, Associate Professor, Department of Mechanical Engineering, National Institute of Technology, Tiruchirappalli – 620015	Expert Nominee (Nominated by Academic Council)	 30/7/22
4	Dr. S. J. Vijay, Professor, Department of Mechanical Engineering, Karunya Institute of Technology and Sciences, Coimbatore – 641114	Expert Nominee (Nominated by Academic Council)	 30/7/22
5	Mr. Pradeep Chandrasekaran Associate Director - Vehicle Engineering, OLA Electric Technologies Pvt Ltd. Bengaluru	Member (Expert from Industry)	 30/7/22
6	Mr. Karthikeyan Rajamanickam Dev Ops Engineer, Eleviant Tech. Coimbatore	Alumnus	



NANDHA ENGINEERING COLLEGE
(Autonomous Institution)
Pitchandampalayam, Erode To Perundurai Road, Erode-638 052

BOARD OF STUDIES

LIST OF MEMBERS (INTERNAL MEMBERS)

Sl.No	Members	Representation	
1.	Dr. M. Muthukumar, Professor – Mechanical	Senior Members	 30/7/22
2.	Dr. B. Ashok Kumar, Professor – Mechanical		 30/7/22
3.	Dr. M.K. Murthi, Associate Professor – Mechanical		 30/7/22
4.	Dr. S. Magibalan, Associate Professor - Mechanical		
5.	Dr. A. Peramanan, Associate Professor – Mechanical		Leave of absence
6.	Mr. V.N. Loganathan, Assistant Professor - Mechanical		 30/7/22
7.	Mr. M. Shanmugam, Assistant Professor - Mechanical		 30/7/22
8.	Mr. M. Sengottaiyan, Assistant Professor - Mechanical		 30/7/22
9.	Mr. S. Eswaran, Assistant Professor - Mechanical		 30/7/22
10.	Mr. T. Venkateshan, Assistant Professor - Mechanical		 30/7/22
11.	Mr. R. Rajkumar, Assistant Professor - Mechanical		 30/7/22

NANDHA ENGINEERING COLLEGE, ERODE - 638 052
(An Autonomous Institution, Affiliated to Anna University Chennai and
Approved by AICTE New Delhi)

MINUTES OF THE 10th BOARD OF STUDIES MEETING

Name of the Body	Board of Studies
Name of the Board	Mechanical Engineering
Meeting No.	10
Date & Time	30.07.2022, 10.30 am
Mode	Offline Mode

NANDHA ENGINEERING COLLEGE, ERODE - 638 052

**(An Autonomous Institution, Affiliated to Anna University Chennai and
approved by AICTE New Delhi)**

Minutes of 10th Board of Studies Meeting (BoS) held on 30.07.2022

The 10th Board of Studies (BoS) meeting was held on 30.07.2022 by 10.30 am at Board room, Nandha Engineering College. The members attended the meeting are given in **Annexure I**.

Dr. M. Easwaramoorthi, Chairman (BoS) and Professor & HoD, Mechanical Engineering chaired the meeting, welcomed all the members to the 10th BoS meeting followed by introduction of the members. After the brief introduction, the agenda items listed below were taken up for discussion and the following resolutions were passed.

AGENDA	
Item 10.01	Welcome address and Introduction of members.
Item 10.02	Review and approval of the 9 th BOS meeting minutes and ATR
Item 10.03	Review and approval of the PAC and DAB meeting minutes & ATR
Item 10.04	Review of Institute Vision & Mission
Item 10.05	Review and approval of Department Vision, Mission, PEOs and PSOs
Item 10.06	Review of Correlation between the Vision and Mission statement of Institute and Department, correlation between PEOs and POs.
Item 10.07	UG- B.E., Mechanical Engineering Programme Approval of <ul style="list-style-type: none">▪ Curriculum (R22)▪ Syllabus - 1st & 2nd semesters with CO –PO/PSO Mapping. Semester -1 <ul style="list-style-type: none">▪ Course-1: Engineering Graphics and Drafting▪ Course-2: Engineering Graphic (Common to EEE, AGRI, Civil, Chemical Branches)▪ Course-3: Engineering Graphics Laboratory (Common to ECE, BME & CSE and IT Branches)▪ Course-4: Engineering Practices Laboratory Semester -2 <ul style="list-style-type: none">▪ Course-1: Engineering Mechanics
Item 10.08	Review on <ul style="list-style-type: none">▪ analysis of CO- PO/PSO mapping and attainment▪ fixing PO attainment target for batch 2022-26
Item 10.09	PG- M.E., Engineering Design Programme Approval of <ul style="list-style-type: none">▪ Curriculum and syllabus (R22)▪ CO –PO/PSO Mapping
Item 10.10	Ratification of PSE/OE courses in R17 (PG)
Item 10.11	Approval/ Ratification of one credit courses
Item 10.12	Approval of Panel of Examiners (UG & PG)
Item 10.13	Any other matter
	Vote of Thanks

The proceedings of BoS started. The discussions and resolutions are recorded as follows:

Item 10.01	Welcome note and introduction of members
	Dr. M. Easwaramoorthi, Chairman BoS introduced the members and welcomed all followed by a brief note on functioning of BoS.
Item- 10.02	Review and approval of the 9 th BOS meeting minutes and ATR
Discussion	The salient decisions taken in the 9 th BoS meeting and action taken were presented. The members have appreciated the efforts taken to implement the suggestions.
Resolution	Resolved to approve the Action Taken Report of 9th BoS meeting.
Item - 10.03	Review and approval of the PAC and DAB meeting minutes & ATR.
Discussion	The important suggestions given by the PAC and DAB members during the meeting and action taken were presented.
Resolution	All members have noted the ATR of PAC and DAB meeting. Resolved to record the proceeding.
Item- 10.04	Review of Institute Vision & Mission
Discussion	<p>Dr. MEM presented the proposed Institute Vision, Mission.</p> <p><u>VISION</u></p> <p>To be a centre of excellence providing high quality Engineering, Technology and Management education to meet the ever growing needs of the society.</p> <p><u>MISSION</u></p> <ul style="list-style-type: none"> ▪ To provide quality education to produce competent professionals and leaders with social responsibility ▪ To excel in research in the field of Engineering, Technology and Management ▪ To be a learner centric environment with continual progress to meet the global needs. <p>➤ Dr. S. J. Vijay suggested</p> <ul style="list-style-type: none"> ▪ to modify the vision statement by adding “To be an institute of excellence” instead of “To be a centre of excellence”. ▪ to include the existing term “ever growing socio-economic needs” in the last sentence of vision statement <p>➤ Dr. V. Arul Mozhi Selvam opined</p> <ul style="list-style-type: none"> ▪ to modify second statement of mission as “To excel in the thrust areas of Engineering, Technology and entrepreneurship by solving research oriented problems. ▪ to add action verb in third statement of mission like “To create a learner centric environment”.
Resolution	Resolved to put forth the suggestion in the academic council meet for approval.
Item-10.05	Review and approval of Department Vision, Mission, PEOs and PSOs.
Discussion	<p>Dr. MEM presented the proposed Department Vision, Mission, PEOs and PSOs statements.</p> <p><u>VISION (UG)</u></p> <p>To be a centre of excellence providing high quality Mechanical Engineering education to meet the ever growing needs of the society.</p>

	<p><u>MISSION (UG)</u></p> <ul style="list-style-type: none"> ▪ To provide quality education to produce Mechanical Engineering professionals with social responsibility ▪ To excel in research in the field of Mechanical Engineering ▪ To be a learner centric environment with continual progress to meet the global needs. <p><u>VISION (PG)</u></p> <p>To be a centre of excellence providing Engineering Design education to meet the ever growing needs of the society.</p> <p><u>MISSION (PG)</u></p> <ul style="list-style-type: none"> ▪ To provide quality education to produce Engineering Design professionals with social responsibility. ▪ To excel in research in the field of Engineering Design ▪ To be a learner centric environment with continual progress to meet the global needs of industry. <p>✓ Members unanimously stated that the Vision and Mission of the Department should be in line with the vision and mission of the Institute. After detailed deliberations, the board expressed their satisfaction over the statements of Program Educational Objectives.</p> <p>✓ Dr. V. Arul Mozhi Selvam opined to</p> <ul style="list-style-type: none"> ▪ Change UG programme’s 2nd mission as “To excel in research in the thrust areas of Mechanical Engineering by solving real world problems. ▪ Change PG programme’s 2nd mission as “To excel in research in the field of Engineering Design by solving real world problems. ▪ Add action verb “create” in 3rd UG programme’s mission statement (To create a learner centric environment.....) <p>✓ Dr. S. J. Vijay suggested checking and modifying PG programme PO2 and PSO2 since it seems to be same.</p>
Resolution	Resolved to approve the modification in the Department Vision, Mission, PEOs and PSOs statements.
Item -10.06	Review of Correlation between the Vision and Mission statements of Institute and Department, and correlation between PEOs and POs.
Discussion	<p>✓ Dr. MEM presented the correlation between the Institute and department Vision, Mission, PEOs and POs statement. .</p> <p>✓ Dr. S.J.Vijay clarified the correlation matrix for Vision, Mission and PEO.</p> <p>✓ Other members appreciated the efforts taken for bringing changes.</p>
Resolution	Resolved to approve the Correlation matrix.
Item -10.07	<p>UG- B.E., Mechanical Engineering Programme</p> <p>Approval of</p> <ul style="list-style-type: none"> ▪ Curriculum (R22) ▪ Syllabus - 1st & 2nd semesters and CO –PO/PSO Mapping. <p style="text-align: center;"><u>Semester -1</u></p> <ul style="list-style-type: none"> ▪ Course-1: Engineering Graphics and Drafting

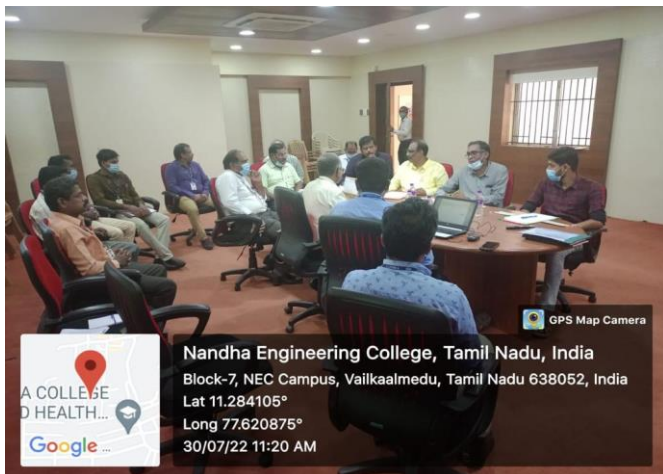
	<ul style="list-style-type: none"> ▪ Course-2: Engineering Graphic (Common to EEE, AGRI, Civil, Chemical) ▪ Course-3: Engineering Graphics Laboratory (Common to ECE, BME, CSE & IT) ▪ Course-4: Engineering Practices Laboratory <p style="text-align: center;"><u>Semester -2</u></p> <p>Course-1: Engineering Mechanics</p>
Discussion	<ul style="list-style-type: none"> ✓ Dr. MEM BoS Chairman explained the need for new regulation (R22) and presented the proposed curriculum R22 developed based on AICTE model curriculum. ✓ Dr. S. J. Vijay suggested to combine few courses such as Manufacturing Process and Materials Engineering Technology in semester 3 & 4. ✓ Mr. Pradeep Chandrasekaran Industry expert recommended to add Automobile Engineering course in Professional core instead of elective. ✓ Dr. S. J. Vijay, Dr. V. Arul Mozhi Selvam, Mr. Pradeep chandrasekaran, Mr. Karthikeyan Rajamanickam suggested to <ul style="list-style-type: none"> ▪ Include one textbook written by international authors and another textbook by Indian authors. ▪ Order the reference books by considering the contents of the book with relevance to the syllabus. <p><u>Semester -1</u></p> <p><u>Course-1: Engineering Graphics and Drafting (Theory + Lab) (Mechanical)</u></p> <p>Dr. MEM presented the Engineering Graphics and Drafting (Theory + Lab) syllabi</p> <p>No comments</p> <p><u>Course-2: Engineering Graphics (Common to EEE, AGRI, Civil, Chemical)</u></p> <ul style="list-style-type: none"> ✓ Dr. MEM presented the Engineering Graphics syllabus. ✓ Dr. S. J. Vijay suggested to include topics on projection of orthographic and isometric views for pyramid/ prism using free hand sketching. <p><u>Course-3: Engineering Graphics Laboratory (Common to ECE, BME & CSE and IT programmes)</u></p> <ul style="list-style-type: none"> ✓ Dr. MEM presented the Engineering Graphics Laboratory syllabus. ✓ No comments <p><u>Course-4: Engineering Practices Laboratory –</u></p> <ul style="list-style-type: none"> ✓ Dr. MEM presented syllabi of Engineering Practices Laboratory course ✓ Dr. S. J. Vijay suggested considering for removing the topics on pipe threading since it is studied in the later semesters. BoS Chairman clarified that the course is offered to other than mechanical engineering programmes also. So it would be useful for them to know about threading. <p><u>Semester -2</u></p> <p><u>Course-1: Engineering Mechanics</u></p> <ul style="list-style-type: none"> ✓ Dr. MEM presented the Engineering Mechanics syllabi. ✓ Dr. V. Arul Mozhi Selvam suggested including a text book on Engineering Mechanics by S. S. Bhavikatti.
Resolution	Resolved to approve the changes suggested by the members.

Item- 10.08	Review on <ul style="list-style-type: none"> ▪ Analysis of CO, PO and PSO mapping and attainment ▪ Fixing PO attainment target for batch 2022-26 																																																			
Discussion	BoS Chairman presented PO and PSO target and its attainment of BATCH (2017 – 21)																																																			
	BATCH (2017 – 21), PO, PSO & CO ATTAINMENT Target – 65 %																																																			
	<table border="1"> <thead> <tr> <th></th> <th>PO 1</th> <th>PO 2</th> <th>PO 3</th> <th>PO 4</th> <th>PO 5</th> <th>PO 6</th> <th>PO 7</th> <th>PO 8</th> <th>PO 9</th> <th>PO 10</th> <th>PO 11</th> <th>PO 12</th> <th>PSO 1</th> <th>PSO 2</th> <th>PSO 3</th> <th>PSO 4</th> </tr> </thead> <tbody> <tr> <td>Attainment</td> <td>2.14</td> <td>1.97</td> <td>2.03</td> <td>1.71</td> <td>2.06</td> <td>2.01</td> <td>2.04</td> <td>1.42</td> <td>1.46</td> <td>1.48</td> <td>2.03</td> <td>1.89</td> <td>1.98</td> <td>2.02</td> <td>1.56</td> <td>1.48</td> </tr> <tr> <td>% of attainment</td> <td>71</td> <td>67</td> <td>66</td> <td>61</td> <td>68</td> <td>53</td> <td>66</td> <td>50</td> <td>56</td> <td>59</td> <td>67</td> <td>65</td> <td>65</td> <td>67</td> <td>52</td> <td>49</td> </tr> </tbody> </table>		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	Attainment	2.14	1.97	2.03	1.71	2.06	2.01	2.04	1.42	1.46	1.48	2.03	1.89	1.98	2.02	1.56	1.48	% of attainment	71	67	66	61	68	53	66	50	56	59	67	65	65	67	52	49
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4																																			
	Attainment	2.14	1.97	2.03	1.71	2.06	2.01	2.04	1.42	1.46	1.48	2.03	1.89	1.98	2.02	1.56	1.48																																			
% of attainment	71	67	66	61	68	53	66	50	56	59	67	65	65	67	52	49																																				
<ul style="list-style-type: none"> ✓ Dr. MEM explained the reasons for non-attainment of PO4, PO6, PO8, PO9, PO10, PSO3 and 4 with action taken to improve the attainment level. ✓ Mr. R. Karthikeyan clarified about P10 and non-attainment. ✓ Dr. MEM explained the reason for non-attainment and action for improving the communication skill. ✓ After deliberations on PO and PSO attainment and quality of students expected to admit from 2022 in Mechanical Engineering program, it is decided to keep the PO attainment target as 65%. 																																																				
Resolution	Resolved to record the PO/PSO attainment and approve the target.																																																			
Item -10.09	PG- M.E., Engineering Design Programme Approval of Curriculum and syllabus (R22) and CO –PO/PSO Mapping																																																			
Discussion	<ul style="list-style-type: none"> ✓ Dr. MEM BoS Chairman presented the PG- M.E- Engineering Design Curriculum and syllabus (R22). ✓ Dr. V. Arul Mozhi Selvam shared the practice followed in NIT Trichy for PG programmes and suggested similar pattern of allowing students to complete all theory and laboratory courses in the first year itself followed by one year project in the 2nd year. ✓ Dr. MEM clarified the provision given to the PG students for completing all theory courses in 3rd semester in the first year itself by studying additional courses (add-on), completing NPTEL online courses of equivalent credits and claiming course exemptions. 																																																			
	<p><u>Semester -1</u></p> <ul style="list-style-type: none"> ✓ Course-1: Concepts of Engineering Design ✓ Course-2: Mechanical Vibrations ✓ Course-3: Failure Analysis and Design ✓ Course-4: Computer Applications in Design ✓ Course-5: Design for Manufacture, Assembly and Environments 																																																			

	<p><u>Semester -2</u></p> <ul style="list-style-type: none"> ✓ Course-6: Computer Aided Modeling Lab ✓ Course-7: Advanced Finite Element Analysis ✓ Course-8: Mechanisms Design and Simulation ✓ Course-9: Integrated Mechanical Design ✓ Course-10: Analysis and Simulation Lab ✓ Course-11: Technical Seminar <p><u>Semester -3</u></p> <ul style="list-style-type: none"> ✓ Course-12: Project Work Phase - I ✓ Course-13: Industrial Training <p><u>Semester -4</u></p> <ul style="list-style-type: none"> ✓ Course-14: Project Work Phase – II <p>BoS members verified the topics of syllabus and ensured the contents at par with other leading Universities and Parent University.</p> <p><u>Professional Elective Course</u></p> <p>Design of Fluid Power systems, Composite Materials and Mechanics, Mechanical Behavior of Materials, Maintenance Engineering, Design of Material Handling Equipment, Experimental Stress Analysis, Advanced Tool Design, Biomechanics, Mechatronics in Manufacturing Systems, Bearing Design and Rotor Dynamics, Additive Manufacturing, Advanced Metal Forming Techniques, Optimization Techniques in Design, Computational Fluid Dynamics, Design of Pressure Vessel and Piping, Design of Heat Exchangers, Productivity Management and Re-Engineering, Design for Internet of Things, Design for Six Sigma, Advanced Strength of Materials, Tribology in Design, Nano-materials and Nano Technology, Micro Electro Mechanical Systems, Surface Engineering, Engineering Fracture Mechanics, Industrial Robotics and Expert systems, Product Lifecycle Management, Quality Concepts in Design, Design of Biomass Conversion Technology, Welding Metallurgy, Materials Characterization.</p>
Resolution	Resolved to approve the curriculum & syllabus.
Item -10.10	Ratification of PSE courses in R17 (PG)
Discussion	<p>Dr. MEM presented and requested to ratify the following courses which were offered to PhD scholars as a part of their course work.</p> <p>17EDX29 - Design of Biomass Conversion Technology</p> <p>17EDX30 - Welding Metallurgy</p> <p>17EDX31 - Materials Characterization</p> <p>No comments.</p>
Resolution	Resolved to approve the syllabi
Item –10.11	Approval/ Ratification of one credit courses
Discussion	<p>Dr. MEM presented the syllabus of following one credit courses which were offered to UG student and requested to ratify.</p> <p>17MEI08 – Advanced Industrial Automation and Robotics</p> <p>17MEI06 – Industrial Automation and Control (SCADA & HMI)</p>

	17MEI07-Numerical Modeling of Physics Systems In The Virtual Domain Using CFD Dr. V. Arul Mozhi Selvam requested industry expert Mr. Pradeep about the scope of offering similar courses in the emerging areas of Mechanical Engineering. Mr. Pradeep assured to support the college after consulting their higher officials.
Resolution	Resolved to ratify the one credit courses.
Item –10.12	Approval of Panel of Examiners (UG & PG)
Discussion	BoS members clarified about minimum eligibility fixed for becoming a panel of examiner. Dr. MEM explained the process of preparing panel of examiner for question paper setting, valuation and laboratory examinations based on the examiner specialization viz., Design, Thermal, Manufacturing and Management. The minimum experience of 5 years' is fixed for being an examiner.
Resolution	Resolved to approve the panel of Examiners for question paper setting, valuation and laboratory examinations
Item –10.13	Any other matter - Nil

Finally, Dr. S. Magibalan - BoS Coordinator thanked all the members for their active participation.



Date: 30.07.2022

Dr. M. Easwaramoorthi
(Chairman, Bos – Mechanical Engineering)