NANDHA ENGINEERING COLLEGE, ERODE - 638 052

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

MINUTES OF THE 6th BOARD OF STUDIES MEETING

Name of the Body	Board of Studies
Name of the Board	Mechanical Engineering
Meeting No.	06
Date & Time	05.05.2018, 10.00 am
Venue	Board Room Nandha Engineering College (Autonomous) Erode - 638 052

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Minutes of 6thBoard of Studies Meeting (BoS) held on 05.05.2018

The 6th Board of Studies (BoS) meeting was held on 05.05.2018 by 10.00 am at Board Room, Nandha Engineering College, Erode - 52. The members attended the meeting are given in **Annexure I.**

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

AGENDA	
Item 6.01	To review Action Taken Report (ATR) on 5th BoS meeting minutes of Mechanical Engineering held on 29.04.2017
Item 6.02	To review Action Taken Report (ATR) on 5th Academic Council meeting minutes
Item 6.03	To discuss on AICTE model curriculum and syllabi of Mechanical Engineering
Item 6.04	To review and approve the curriculum & syllabi of 7th and 8th semesters under Regulation R15 for the batch of students admitted in B.E., Mechanical Engineering programme from the year 2015 - 16 onwards
Item 6.05	To review and approve the curriculum & syllabi of 3rd to 8th semesters under Regulation R17 (CBCS) for the batch of students admitted in B.E., Mechanical Engineering programme from the year 2017 - 18 onwards
Item 6.06	To review and approve the syllabi of Professional Specific Electives (PSE) under Regulation R17 (CBCS) for the batch of students admitted in B.E., Mechanical Engineering programme from the year 2017 - 18 onwards
Item 6.07	To review and approve the syllabi of Open electives (OE) under Regulation R15 and R17 (CBCS) for the batch of students admitted in B.E., Mechanical Engineering programme
Item 6.08	To ratify and approve One Credit Courses (R15 and R17 CBCS)
Item 6.09	To approve panel of Examiners for question paper setting, valuation and laboratory examinations
Item 6.10	Any other matter

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

Item 6.01	To review Action Taken Report on 5th BoS meeting minutes of Mechanical Engineering held on 29.04.2017 (Annexure - II)	
Discussion	The ATR of 5th BoS meeting minutes were reviewed. There were no comments from members.	
Resolution	Resolved to approve the ATR of 5th BoS meeting.	
Item 6.02	To review Action Taken Report on 5th Academic Council meeting minutes (Annexure - III)	
Discussion	The ATR of 5th Academic Council meeting were reviewed. The members have appreciated the efforts taken to implement the suggestions.	
Resolution	Resolved to approve the ATR of 5th Academic Council meeting.	
Item 6.03	To discuss on AICTE model curriculum and syllabi of Mechanical Engineering	
Discussion & Resolution	• Contact hours & Credits for Laboratory 1 contact hour/ week = 0.5 credit (UGC) 1 contact hour/ week = 1 credit (AICTE) • Mandatory courses: • Maximum credits as per AICTE model curriculum	✓ Advised to follow contact hours and credits as per UGC guidelines ✓ Anna University nominee suggested to include wherever possible ✓ BoS members suggested to keep maximum credits within 175.
Item 6.04	To review and approve the curriculum & syllabi of 7th and 8th semesters under Regulation R15 for the batch of students admitted in B.E., Mechanical Engineering programme from the year 2015 - 16 onwards	
Discussion	**7th and 8th Semester:** All BoS members have expressed their views regarding Project in 8th Semester. Dr.P.Karthikeyan (PSG) suggested to include Project - I in 7th Semester and Project - II in 8th Semester to give sufficient time for students to learn practical skills and do the projects in an effective manner.	✓ Project - I included with 4 credits and Project – II included with 8 credits
	7th Semester: **Course-1: CAD/ CAM/ CIM** Dr. Rajesh Ranganathan (CIT) advised to include a textbook on CAD/CAM by Groover.M.P and Zimmers.E.W. with latest edition **Course-2: CAD/ CAM Laboratory** Dr.V.S.Saravanan (Indo Shell) highlighted the need of knowledge in understanding the	✓ Included ✓ Dr. M.Easwaramoorthi explained the existing

	drawings	practices being followed to enhance the drawing skills. ➢ Engineering Graphics in 1st Semester ➢ Computer Aided Modelling and Drafting in 2nd Semester ➢ Computer Aided Machine Drawing in 3rd Semester ➢ CAD Laboratory course in 7th Semester ➢ Additionally One credit courses on Geometric Dimensioning and Tolerancing are offered by arranging industry experts
Resolution	Resolved to approve the curriculum & syllabi of 7th and 8th semesters under Regulation R15 for the batch of students admitted from the year 2015 - 16 onwards in B.E., Mechanical Engineering course programme.	
Item 6.05	To review and approve the curriculum & syllabi of 3rd to 8th semesters under Regulation R17 for the batch of students admitted in B.E., Mechanical Engineering programme from the year 2017 - 18 onwards	
	3rd Semester: **Course-1: Materials Engineering Technology** Dr. Vela Murali advised to • Include Aluminium related contents as separate unit considering the feasibility • Include Eutectic phases topics in Unit-II • Include the characterization techniques of materials in Unit-IV • Include a textbook on Introduction to Physical Metallurgy by Sidney H. Avner in textbooks • Move the textbook on Callister's Materials Science and Engineering by Balasubramaniam.R to Reference books Dr.V.S.Saravanan (Indo Shell) advised to include Cooling Temperature Transfer (CTT) after TTT diagrams if possible since industries are using CTT concepts	✓ Included ✓ Included ✓ Included ✓ Included ✓ Changed ✓ Included

	Course-2: Engineering Thermodynamics Dr.P.Karthikeyan (PSG) suggested to • Include the contents related to Gas power cycles • Include the contents related to Steam formation • Modify the content of Unit-II • Include the contents related to Psychrometry Dr. Vela Murali advised to include a textbook on Thermodynamics by Natarajan. E in Reference books	✓ Included ✓ Included ✓ Modified and Updated ✓ Included ✓ Included
	Course-3: Fluid Mechanics and Machinery Dr.P.Karthikeyan (PSG) suggested to • Rename Unit-I as Fluid Statics and Properties • Include Dimensional Analysis in Unit-II • Combine Fluid Dynamics and Incompressible fluid flow in Unit-III • Have Hydraulic Turbines as Unit-IV • Have Hydraulic Pumps as Unit-V • Modify the course into Embedded course with 4 credits (L T P C - 3 0 2 4)	✓ Modified ✓ Included ✓ Modified ✓ Modified ✓ Modified ✓ Modified
	Course-4: Manufacturing Processes • Dr.V.S.Saravanan (Indo Shell) suggested to include the Electrode classification and Specifications considering the feasibility • Dr.V.S.Saravanan suggested to include the hot and cold compaction • Dr.Rajesh Ranganathan (CIT) suggested to include the types of plastics • Dr.Vela Murali (Anna University) suggested to include Friction Stir Welding, MIG and TIG welding in Unit-III	✓ Modified ✓ Modified ✓ Included ✓ Modified
	Course-5: Strength of Materials Dr.P.Karthikeyan (PSG) suggested to modify the course into Embedded course with 4 credits (L T P C - 3 0 2 4) Dr.Vela Murali (Anna University) suggested to • Include a textbook on Strength of Materials by B.C.Punmia in Reference books • Include a textbook on Strength of Materials by Bansal.R.K in Reference books	✓ Modified ✓ Modified ✓ Included
	Course-6: Manufacturing Processes Laboratory Dr.V.S.Saravanan (Indo Shell) suggested to include the Standards for welding exercises (preferably AWS Standards)	✓ Modified

	Course-7: Computer Aided Machine Drawing Laboratory Dr.V.S.Saravanan (Indo Shell) suggested to include the assembly drawing for any industrial applications	✓ Included
	4th Semester: **Course-1: Kinematics of Machinery** Dr.P.Karthikeyan (PSG) suggested to • Include the Pre-requisite for the course as Engineering Mechanics • Move the book on Theory of Machines by Rattan.S.S as 1st Reference book	 ✓ Included ✓ Modified
	Course-2: Thermal Engineering Systems Dr.P.Karthikeyan (PSG) suggested to • Modify the Course outcome (CO1) • Include a textbook on Thermodynamics: An Engineering Approach by Michael A. Boles and Yunus A. Cengel. • Include Vapour power cycles • Modify the contents in Unit-III related to Steam Nozzles and Turbines	 ✓ Modified ✓ Included ✓ Included ✓ Modified
	Course-3: Subtractive Manufacturing Processes Dr.V.S.Saravanan (Indo Shell) suggested to • Include the threading concepts. • Include Burnishing in Unit IV. Dr.Rajesh Ranganathan (CIT) suggested to rename Unit-IV as "Grinding and Gear Manufacturing"	 ✓ Included ✓ Included ✓ Renamed
	Course-4: Fluid Power Systems Dr.Vela Murali (Anna University) suggested including the applications related topics (such as Hydraulic lifting) in Unit-V.	✓ Included
	Course-5: Thermal Engineering Systems Laboratory No comments	
	Course-6: Subtractive Manufacturing Processes Laboratory Dr.V.S.Saravanan (Indo Shell) suggested to include industrial product constituting all experiments (such as Shaft with keyways) if possible	✓ Included
	5th Semester: **Course-1: Design of Machine Elements** No comments	

	Course-2: Heat and Mass Transfer Dr.P.Karthikeyan (PSG) suggested to include modify the course credits from (L T P C - 2 2 2 4) to course credits (L T P C - 3 0 2 4)	✓ Modified
	Course-3: Dynamics of Machinery Dr.P.Karthikeyan (PSG) suggested to move a book on Theory of Machines by Rattan.S.S from Textbook to Reference books	✓ Changed
	Course-4: Kinematics and Dynamics Laboratory Dr.P.Karthikeyan (PSG) suggested to spilt and modify the laboratory course as two Embedded courses like Kinematics of Machinery with laboratory components and Dynamics of Machinery with laboratory components	✓ Modified
	6th Semester: **Course-1: Mechatronics** Dr.P.Karthikeyan (PSG) suggested to • Include the concepts of CAN controllers if possible • Add case studies related to applications of Mechatronics in Unit-V Dr.V.S.Saravanan (Indo Shell) suggested to include the topics on Servo motors	✓ Included ✓ Added ✓ Included
	Course-2: Design of Transmission Systems Dr.P.Karthikeyan (PSG) suggested to include details regarding the usage of PSG Design Data book	✓ Included
	Course-3: Metrology and Measurements • Dr.Rajesh Ranganathan (CIT) suggested to include the types of 3D surface metrology • Dr.V.S.Saravanan (Indo Shell) suggested to include the topics on Advanced Metrology	✓ Included ✓ Included
	Course-4: Mechatronics Laboratory Dr. Vela Murali (Anna University) suggested to include the MATLAB experiments	✓ Included
	Course-5: Finite Element Analysis Dr.Vela Murali (Anna University) suggested to • Include a textbook on The Finite Element Method in Engineering by Rao.S.S • Include a textbook on An Introduction to the Finite Element Method • Include the topics related to deflections and stresses in trusses	✓ Included ✓ Included ✓ Included

	Course-6: Computer Aided Analysis Laboratory Dr.P.Karthikeyan (PSG) suggested to • Include experiments on contact analysis if possible • Include real time application such as chassis design related experiments if possible Dr.Vela Murali (Anna University) suggested to remove the Computational Fluid Dynamics (CFD) related experiments as the concepts of CFD falls under different domain	✓ Included ✓ Included ✓ Removed
Resolution	Resolved to approve the curriculum & syllabi of 3rd to 8th semesters under Regulation R17 for the batch of students admitted from the year 2017 - 18 onwards in B.E., Mechanical Engineering course programme.	
Item 6.06	To review and approve the syllabi of Professional Specific Electives (PSE) under Regulation R17 for the batch of students admitted in B.E., Mechanical Engineering programme from the year 2017 - 18 onwards	
Discussion	**Professional Electives:** **Course-1: Design for Manufacturing and Assembly** Dr.P.Karthikeyan (PSG) suggested to modify the contents and change the course "Design for Manufacturing" to "Design for Manufacturing and Assembly" **Course-2: Advanced Automobile Engineering** Dr.P.Karthikeyan (PSG) suggested to • modify the course "Advanced Automobile Engineering" into "Automobile Engineering" **Course-3: Power Plant Technology** Dr.P.Karthikeyan (PSG) suggested to • Include Diesel Power plant concepts in Unit-II	✓ Modified ✓ Modified ✓ Included

<table>
<tr><td rowspan="2"></td><td>Include Solar power generation related topics in Unit-IV
Include Wind and geothermal energy (Renewable energy sources) in Unit-V</td><td>✓ Included

✓ Included</td></tr>
<tr><td colspan="2">The Board of Studies members had approved the following Professional Elective courses without any comments:

Composite Materials, Engineering Failure Analysis, Mechanical Vibrations, Micro Electro Mechanical Systems, Product Design, Tool Design, Tribology, Computational Fluid Dynamics, Cryogenic Engineering, Fuels and Combustion, Gas Dynamics and Jet Propulsion, Internal Combustion Engines, Refrigeration and Air Conditioning, Solar Thermal Systems, Nanotechnology, Non-Destructive Evaluation and Testing, Additive Manufacturing Processes, Engineering Economics and Cost Analysis, Industrial Engineering & Management, Lean and Agile Manufacturing, Metal Casting Technology, Metal Forming Technology, New Venture Planning and Management, Industrial Robotics, Process Planning and Cost Estimation, Surface Engineering, Total Quality Management, Welding Engineering, Operations Research, Entrepreneurship Development</td></tr>
<tr><td>Resolution</td><td colspan="2">Resolved to approve the syllabi of Professional Elective courses semesters under Regulation R17 for the batch of students admitted from the year 2017 - 18 onwards in B.E., Mechanical Engineering course programme.</td></tr>
<tr><td>Item 6.07</td><td colspan="2">To review and approve the syllabi of Open electives (OE) under Regulation R15 and R17 (CBCS) for the batch of students admitted in B.E., Mechanical Engineering programme</td></tr>
<tr><td rowspan="2">Discussion</td><td colspan="2">BoS members reviewed the list of open elective courses under regulation R15 and R17 (CBCS)</td></tr>
<tr><td>Discussions were made regarding the offering of Open Elective courses before 7th semester itself if possible.</td><td>Decided to follow the suggestions after studying practical limitations like giving time to students movements between departments</td></tr>
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Resolution	Resolved to approve the syllabi of Open Elective courses semesters under Regulation R15 and R17 (CBCS) for the batch of students admitted in B.E., Mechanical Engineering course programme.	
Item 6.08	• To review and ratify the "one credit courses" conducted during 2017-18 to 3rd year (6th semester) students of B.E., Mechanical Engineering • To approve the proposed one credit courses for the academic year 2018 - 19	
Discussion	• Dr.P.Karthikeyan (PSG) suggested to include Internet of Things (IoT) as One credit course	✓ Included
	• Dr. Rajesh Ranganathan (CIT) suggested to include Auto Infotronics as One credit course	✓ Included
	• Dr.V.S.Saravanan (Indo Shell) suggested to include Industrial Automation as One credit course	✓ Included
	• Dr.Vela Murali (Anna University) suggested to include Telemedicining, Entrepreneurship Resource Planning and Euro Emission norms as One credit course	✓ Included
	• Mr.Karthikeyasridharan (TCS) suggested to ✓ Include Reliability Engineering, Industrial safety and HSE (Health, Safety and Environment) for Engineers as One credit course	✓ Included
	✓ Motivate students doing online one credit courses	✓ Students doing NPTEL courses
Resolution	• Resolved to approve titles of "one credit courses" conducted during 2017-18 • Resolved to approve the proposed one credit courses for the academic year 2018 – 19	
Item 6.09	To approve panel of Examiners for question paper setting, valuation and laboratory examinations	
Discussion	The BoS members recommended to prepare the panel of examiners based on their specialization viz., Design Engineering, Thermal Engineering, Manufacturing Engineering and Management	
Resolution	Resolved to approve the panel of Examiners for question paper setting, valuation and laboratory examinations	
Item 6.10	Any other matter	

Finally, Prof.M.K. Murthi, Head of the Department thanked all the members for their active participation

Date: 05.05.2018

Dr. M. Easwaramoorthi
(Chairman, BoS / Mechanical Engineering)