

Department of Mechanical Engineering

**MINUTES of 20th Meeting of Board of Studies held on
02nd December, 2023 at 10.30 a.m.**

**Venue: Smart Class Room,
Department of Mechanical Engineering
National Engineering College**

National Engineering College, K.R.Nagar, Kovilpatti – 628 503
(An Autonomous Institution - Affiliated to Anna University, Chennai)
www.nec.edu.in

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**20th Board of Studies Meeting
Department of Mechanical Engineering**

Venue: Smart Class Room,
Department of Mechanical Engineering
National Engineering College

Date & Time: 02.12.2023 & 10.30 a.m.

AGENDA

BoS / MECH 20.1	:	Welcome address and Opening Remarks by Chairman, Board of Studies, Department of Mechanical Engineering
BoS / MECH 20.2	:	Action taken report on minutes of 19 th Board of Studies meeting.
BoS / MECH 20.3	:	Business brought forward by the Chairman, Board of studies
	20.3.1	B.E. - Mechanical Engineering – Syllabus for II and III semester courses under R2023.
	20.3.2	B.E./B.Tech Degree Programme - Syllabus II and III semester common courses under R2023.
	20.3.3	Curriculum structure design for verticals for UG Degree Programmes under R-2023.
	20.3.4	Syllabus for the courses in verticals for UG Degree Programmes under R-2019.
	20.3.5	II & III Semester Core course and Elective course syllabus for M.E. - Energy Engineering under R-2023.
	20.3.6	Student internship evaluation along with 8 th semester evaluation process for 2020-2024 batch.
	20.3.7	Approval for Mr.Nandhu Prakash (Reg No: 2110063) to rejoin during 2023-24 Even semester after one year break.
BoS / MECH 20.4	:	Suggestions given by the BOS Members
BoS / MECH 20.5	:	Any other items

National Engineering College, K.R.Nagar, Kovilpatti – 628 503
(An Autonomous Institution - Affiliated to Anna University, Chennai)

F. No. 1-1/NEC/ MECH

06th December, 2023

Dear Sir,

Sub: Minutes of the 20th Board of Studies meeting for Mechanical Engineering - Reg.

Kindly find attached herewith the Minutes of the Board of Studies meeting for Mechanical Engineering of National Engineering College, K.R.Nagar, Kovilpatti – 628503 held on 02nd December, 2023 at 10.30 a.m.in Smart Class Room, Department of Mechanical Engineering, National Engineering College.

It is requested that comments on the Minutes of Board of Studies meeting, if any, may please be sent by email to hodmech@nec.edu.in, at the earliest. If no comments are received, within ten days, the Minutes shall be taken as confirmed.

Yours Sincerely,


Chairman

Board of Studies

Dr. S. IYAHRAJA M.Tech, (IITM), Ph.D.,
Professor & Head,
Dept. of Mechanical Engineering,
National Engineering College,
K.R. Nagar, Kovilpatti - 628 503.

National Engineering College, K.R.Nagar, Kovilpatti – 628 503

(An Autonomous Institution - Affiliated to Anna University, Chennai)

Department of Mechanical Engineering

MINUTES OF THE MEETING

The 20th Board of Studies meeting of the Mechanical Engineering was held on 02nd December, 2023 at 10.30 a.m.in Smart Class Room, Department of Mechanical Engineering, National Engineering College, K.R.Nagar, Kovilpatti – 628 503

1. The following members were present

1.	Dr.S.Iyahraja, Professor & Head, Department of Mechanical Engg.	Chairman
2.	Dr.K.Srithar, Professor, Department of Mechanical Engineering, Thiagarajar College of Engineering, Madurai – 625015.	University Nominee
3.	Dr. Ing. M. Duraiselvam, Professor, Department of Production Engineering, National Institute of Technology, Trichy - 620015	Academic Experts
4.	Dr. K. Murugan, Scientist –E, Centre for Sol-Gel Coatings, ARCI, Hyderabad – 500 005, Telangana.	Meritorious Alumnus Nominated by the Principal
5.	Mr. R. Kanda Subburaj Managing Director, Gulf Asia Engineering and Projects Pvt. Ltd., Chennai - 600058	Industrial Experts
6.	Mr. V. Hari Babu Senior Vice President, Head of Engineering & DOA Delegations Responsible AXISCADES Technologies Ltd. Bengaluru, Karnataka - 560024	
7.	Mr. Sivaram Sundaram, Senior Director, Comcast India Engineering Centre, Thoraipakkam, Chennai – 600 097	
8.	Dr. D. Venkat Kumar, Professor / Mechanical Engineering	Internal Members
9.	Dr. M. Kathiresan, Professor / Mechanical Engineering	
10.	Dr. R. Harichandran, Professor / Mechanical Engineering	

11.	Dr. P. Ramanan, Associate Professor / Mechanical Engineering		
12.	Dr. I. Sankar, Associate Professor / Mechanical Engineering		
13.	Dr. D. Vignesh Kumar, Associate Professor / Mechanical Engineering		
14.	Dr. F. Michael Thomas Rex, Associate Professor / Mechanical Engineering		
15.	Mr. A. Andrews Assistant Professor (S.G) / Mechanical Engineering		
16.	Mr. K. Thoufiq Mohammed, Assistant Professor (S.G) / Mechanical Engineering		
17.	Mr. B. Prince Abraham, Asst. Professor Assistant Professor / Mechanical Engineering		
18.	Mr. K. Sudalaiyandi, Asst. Professor Assistant Professor / Mechanical Engineering		
19.	Mr. R. Jaya Venkatesh Assistant Professor / Mechanical Engineering		
20.	Mr. C. Veera Ajay, Assistant Professor / Mechanical Engineering		
21.	Dr. W. Beno Wincy, Assistant Professor / Mechanical Engineering		
22.	Dr. T. Sakthi, Asst. Professor (SG) Assistant Professor (S.G) / Humanities		
23.	A. Aakash, III Year / Mechanical Engineering		Student Members
24.	G. Sathya seelan, II Year / Mechanical Engineering		
25.	D. Benial Raven, II Year / Mechanical Engineering		

2. The following member could not attend the meeting due to unavoidable reasons and they were granted leave of absence.

1.	Dr. A. Arockiarajan Professor / Applied Mechanics, Indian Institute of Technology Madras, Chennai 600036	Academic Experts
2.	Dr. M. Venkata Ramanan, Professor & Director Institute for Energy Studies, CEG, Anna University, Chennai - 600025	
3.	Mr. S. Ravikumar Associate Vice President, Department Head - Cab Chassis (TA/PCX) Daimler India Commercial Vehicles Pvt. Ltd. Kancheepuram District - 602105	Industrial Expert

BoS / MECH 20.1	: WELCOME ADDRESS AND OPENING REMARKS BY CHAIRMAN, BOARD OF STUDIES, DEPARTMENT OF MECHANICAL ENGINEERING
	: The Chairman, BOS of the Mechanical Engineering welcomed and introduced the members of 20 th Board of Studies and thanked each one of them for sparing their valuable time to attend the meeting.
BoS / MECH 20.2	: TO APPROVE THE ACTION TAKEN REPORT OF THE MINUTES OF NINETEENTH BOS MEETING HELD ON 01 st July, 2023.
	: The minutes of the Nineteenth Board of Studies meeting held on 01 st July, 2023 were communicated to the members. The comments given by the members have been incorporated and placed for confirmation. The same was approved by the 19 th Academic council. The action taken report of the Nineteenth Board of Studies meeting held on 01 st July, 2023 has been presented and the same has been approved in the 20 th Board of Studies meeting. (Enclosed in Annexure – I)
BoS / MECH 20.3.1	: TO CONFIRM AND APPROVE Syllabus of II and III semester courses for B.E. - Mechanical Engineering under R2023. (Enclosed in Annexure – II)
BoS / MECH 20.3.2	: TO CONFIRM AND APPROVE Syllabus of II and III semester common courses for all B.E./B.Tech Degree Programme under R2023. (Enclosed in Annexure – III)
BoS / MECH 20.3.3	: TO CONFIRM AND APPROVE Curriculum structure design for verticals for UG Degree Programmes under R-2023. (Enclosed in Annexure – IV)

BoS / MECH 20.3.4	:	TO CONFIRM AND APPROVE Syllabus for the courses in verticals for UG Degree Programmes under R-2019. (Enclosed in Annexure – V)
BoS / MECH 20.3.5	:	TO CONFIRM AND APPROVE II & III Semester Core course and Elective course syllabus for M.E. - Energy Engineering under R-2023. (Enclosed in Annexure – VI)
BoS / MECH 20.3.6	:	TO CONFIRM AND APPROVE Student internship evaluation along with 8th semester evaluation process for 2020-2024 batch.
BoS / MECH 20.3.7	:	TO CONFIRM AND APPROVE Mr.Nandhu Prakash (Reg No: 2110063) to rejoin during 2023-24 Even semester after one year break.
BoS / MECH 20.4	:	Suggestions Given by the Members
20.4.1	:	<u>Engineering Mechanics</u> <ul style="list-style-type: none"> • Include the topic 'Failure of Joints' in CO2 with specific topics/example in order to provide an introduction about that topic. • Include the book "Engineering Mechanics - Statics & Dynamics" authored by H. Shames and G. Krishna Mohana Rao in Text book.
20.4.2	:	<u>Engineering Thermodynamics</u> <ul style="list-style-type: none"> • Replace the topic 'Tds relations' from CO5 to CO2 under 'Entropy' • Syllabus under gaseous part in CO4 need to be reduced since the content looks little huge. • Availability of the reference book no.4 to be checked in library. • In the reference book no.5 provide all authors and remove et.al. • Include the book "Fundamentals of Thermodynamics" authored by Richard E. Sonntag
20.4.3	:	<u>Basic Manufacturing Processes</u> <ul style="list-style-type: none"> • In CO1 'Heat transfer and solidification in casting' to be modified as 'solidification in casting'. • In CO1 post casting process also need to be provided.

		<ul style="list-style-type: none"> • Include the book "Fundamentals of modern manufacturing" authored by 'Mikell Groover'
20.4.4	:	<p><u>Fluid Mechanics and Hydraulic Machines</u></p> <ul style="list-style-type: none"> • The topics 'Flow over cylinders & Boundary Layer separation' need to be added in CO3. • Concept of mass equation, Energy Equation and Momentum equation need to be added. • Include the book "Fluid Mechanics" authored by 'Munson, Okiishi, Huebsch and Rothmayer'.
20.4.5	:	<p><u>Materials Engineering</u></p> <ul style="list-style-type: none"> • In CO2 it will be better to given an introduction to type of furnace and atmosphere requirement for different heat treatment process. • Include PETG material in CO4.
20.4.6	:	<p><u>Professional Ethics and Human Values</u></p> <ul style="list-style-type: none"> • Case study can be given for the topics like 'collective bargaining' and 'Conflict of interest'
20.4.7	:	<p><u>Intellectual Property Rights Study</u></p> <ul style="list-style-type: none"> • An introduction to 'patent examination process' may be added.
20.4.8	:	<p><u>Curriculum structure for Verticals under R2023</u></p> <ul style="list-style-type: none"> • Under the vertical "CLEAN AND GREEN TECHNOLOGY" the content for the subjects "Renewable Energy Sources, Solar Photovoltaic Energy Conversion, Energy Conservation in Industries, Energy Storage Systems" needs to be carefully designed to avoid the overlapping of the content. • Under the vertical "MATERIAS AND MODERN MANUFACTURING ENGINEERING" among the name "Composite Materials / Advanced Engineering Materials". Advanced Engineering Materials can be finalized. • Under the vertical "MODERN MOBILITY SYSTEMS" the course "Automated Guided Vehicle" can be added.
20.4.9	:	<p><u>Cogeneration and Waste Heat Recovery</u></p> <ul style="list-style-type: none"> • In Unit 3 give specific topics instead of "etc."

20.4.10 :	<p><u>Refrigeration System</u></p> <ul style="list-style-type: none"> • In Unit 2 topics related to basic components can be added instead of advanced topics. • Include the topics "Vapour cycle, Gas cycle; Refrigerants, Solar Refrigeration, Cascade Cycle" • Unit 4 syllabus is very less.
20.4.11 :	<p><u>M.E - Energy Engineering</u></p> <ul style="list-style-type: none"> • Update all Text and Reference books.
BoS / MECH 20.5 :	<p><u>Any other items</u></p>
20.5.1 :	<p>The members suggested to evaluate the internship programme at the end of every split and allocate the marks for those particular credit. At the end of the programme the credits and marks can be cumulated.</p> <p>As per regulation the student can claim credit transfer for their SCI/Scopus publication. Chairman requested the members to suggest the grade allocation method for the SCI/Scopus publication.</p> <p>The members suggested to allocate the grade as per the journal ranking system like Q1, Q2, Q3, Scopus/Conference, patent submission/papers receiving comments.</p>


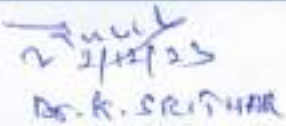
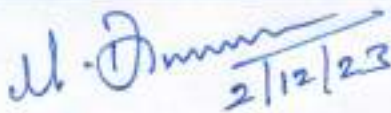




The members had a brainstorming discussion and interaction among themselves. After discussion, fruitful suggestions were incorporated appropriately in the II and III semester syllabus of R2023.

After discussion, BoS resolved to recommend the syllabus for the II and III semester courses prescribed for Mechanical Engineering (Annexure II) under Regulation 2023, Syllabus for the II and III semester courses prescribed for other U.G. Programmes (Annexure III) under Regulation 2023, Curriculum structure design of verticals (Annexure IV) under R2023 and Syllabus for elective courses (Annexure V) under R2019 verticals after carry out the modifications suggested by the members.

Based on the suggestions given by the members, BoS resolved to recommend the Syllabus for the core courses & elective courses for the II and III semester – M.E. Energy Engineering Programme (Annexure VI) under Regulation 2023 to the Academic Council for further approval.

Dr. D. Venkat Kumar, Professor / Mechanical Engineering proposed vote of thanks for their kind cooperation and the meeting came to an end.

Members Present

CHAIRMAN	
Dr. S. Iyahraja, Professor & Head, Mechanical Engg.	 2/12/23
UNIVERSITY NOMINEE	
Dr. K. Srithar, Professor, Department of Mechanical Engineering, Thiagarajar College of Engineering, Madurai – 625015.	 2/12/23 DR. K. SRITHAR
ACADEMIC EXPERT	
Dr.-Ing. M. Duraiselvam Professor / Production Engineering, National Institute of Technology, Trichy 620015.	 2/12/23
MERITORIOUS ALUMNUS NOMINATED BY THE PRINCIPAL	
Dr. K. Murugan Scientist –E, Centre for Sol-Gel coatings, ARCI, Hyderabad – 500 005, Telangana.	 02/12/23
INDUSTRIAL EXPERTS	
Mr. R. Kanda Subburaj Managing Director, Gulf Asia Engineering and Projects Pvt. Ltd, Chennai 600058.	
Mr. Hari Babu vulava Senior Vice President, Head of Engineering & DOA Delegations Responsible AXISCADES Technologies Ltd Bengaluru, Karnataka, India 560024.	
Mr. Sivaram Sundaram, Senior Director, Comcast India Engineering Centre, Thoraipakkam, Chennai – 600097.	

INTERNAL MEMBERS	
Dr. D. Venkatkumar, Professor	D. U. Venkatkumar
Dr. M. Kathiresan, Professor	Kathiresan
Dr. R. Harichandran, Professor	R. Harichandran
Dr. P. Ramanan, Associate Professor	P. Ramanan
Dr. I. Sankar, Associate Professor	I. Sankar
Dr. D. Vignesh Kumar, Associate Professor	D. Vignesh Kumar
Dr. F. Michael Thomas Rex, Associate Professor	F. Michael Thomas Rex
Mr. B. Prince Abraham, Asst. Professor	B. Prince Abraham
Mr. A. Andrews, Asst. Professor (SG)	A. Andrews
Mr. K. Sudalaiyandi, Asst. Professor	K. Sudalaiyandi
Mr. R. Jaya Venkatesh, Asst. Professor (BoS Incharge)	R. Jaya Venkatesh
Mr. K. Thoufiq Mohamed, Asst. Professor (SG)	K. Thoufiq Mohamed
Mr. C. Veera Ajay, Asst. Professor	C. Veera Ajay
Dr. W. Beno Wincy, Asst. Professor (BoS Incharge)	W. Beno Wincy
Dr. T. Sakthi, Asst. Professor (SG)	T. Sakthi
STUDENT MEMBERS	
A. Aakash, III Year / Mechanical Engg.	A. Aakash
G. Sathya Seelan, II Year / Mechanical Engg.	G. Sathya Seelan
D. Benial Raven, II Year / Mechanical Engg.	D. Benial Raven

2/12/23
CHAIRMAN

BOARD OF STUDIES

Dr. S. IYAHRAJA M.Tech. (IITM), Ph.D.,
Professor & Head,
Dept. of Mechanical Engineering,
National Engineering College,
K.R. Nagar, Kovilgatti - 628 583.

20th BOARD OF STUDIES MEETING

DEPARTMENT OF MECHANICAL ENGINEERING ON 02.12.2023

