

Department of Electrical and Electronics Engineering

MINUTES 24th Meeting of the Board of studies held on
08th December 2025 at 10.00 AM

Venue: Conference Hall, Autonomous Block
National Engineering College.

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

Department of Electrical and Electronics Engineering

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24th Board of studies Meeting in the Department of **Electrical and Electronics Engineering**

Venue: Conference Hall, Autonomous Block
National Engineering College

Date & Time:08.12.2025 &10.00 AM

AGENDA

BoS / EEE 24.1	:	Welcome address and Opening Remarks by Chairman, Board of studies in the Department of Electrical and Electronics Engineering
BoS / EEE 24.2	:	Confirmation of the Minutes of the 23 rd meeting of Board of Studies in the Department of Electrical and Electronics Engineering held on 14.06.2025 and Action Taken report of 23 rd meeting of Board of studies.
BoS / EEE 24.3	:	Business brought forward by the Chairman, Board of studies
	24.3.1	Syllabus for final year courses of B.E-EEE programme under R-2023
	24.3.2	Syllabus for Programme Elective Courses of B.E-EEE programme under R-2023
	24.3.3	Syllabus for One Credit Courses of B.E-EEE programme under R-2023
	24.3.4	Course Design Document for 6 th and 7 th Semester courses under R-2023.
BoS / EEE 24.4	:	Any other Agenda brought forward by the Chairperson.
BoS / EEE 24.5	:	Suggestions given by the BoS Members

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F. No. 1-1/NEC/EEE.

08th December, 2025

Dear Sir/Madam,

Sub: Minutes of the 24th Meeting of the Board of studies in the EEE-Reg.

Kindly find attached herewith the Minutes of the 24th Meeting of Board of studies of the Electrical and Electronics Engineering of the National Engineering College, K.R.Nagar, Kovilpatti – 628503 held on 08th December 2025 at 10.00 AM in Conference Hall, Autonomous Block of National Engineering College, Kovilpatti.

It is requested that comments on the Minutes, if any, may please be sent by email at hodeeee@nec.edu.in or by post, at the earliest. If no comments are received, within ten days, the Minutes shall be taken as confirmed.

Yours Sincerely


Dr. M. Willjuice Iruthayarajan
8/12/2025

Dr. M. WILLJUICE IRUTHAYARAJAN M.E., Ph.D.,
PROFESSOR AND HEAD
DEPT. OF ELECTRICAL AND ELECTRONICS ENGINEERING
NATIONAL ENGINEERING COLLEGE
K.R. NAGAR, KOVILPATTI - 628 503.

Department of Electrical and Electronics Engineering

MINUTES OF THE MEETING

The 24th Meeting of the Board of Studies of the Electrical and Electronics Engineering was held on 08th December, 2025, at 10.00 AM in the Conference Hall, Autonomous Block, National Engineering College, Kovilpatti.

Venue: EEE Department Computer Centre, National Engineering College.

The following members were present:

1.	Dr.M.WilljuiceIruthayarajan, Professor and Head/ EEE	Chairman
2.	Dr.L.Kalaivani, Professor/ EEE	Internal Members
3.	Dr.R.V.Maheswari, Professor/ EEE	
4.	Dr.B.Vigneshwaran, Associate Professor/ EEE	
5.	Dr.S.Sankarakumar Associate Professor/ EEE	
6.	Mr.J.Thangaraj Assistant Professor / EEE	
7.	Dr.D.Kavitha, Associate Professor, Department of Electrical and Electronics Engineering, Thiagarajar College of Engineering, Madurai.	University Nominee
8.	Dr. M.P.Selvan, Professor, Department of EEE, National Institute of Tech, Tiruchirappalli	
9.	Dr.P.S.Manoharan, Professor, Department of Electrical and Electronics Engineering, Thiagarajar College of Engineering, Madurai,	Academic Expert
10.	Mr.Muthu Senthilkumar Deputy General Manager, Mahindra & Mahindra Limited, Chennai.	
11.	Dr.Gopinath Selvaraj, Practice Head, ADAS & Autonomous Driving Practice, Automotive Center of Excellence (CoE), UST Global Pvt. Ltd., Bengaluru.	Industrial Expert

12.	Shri. C. Chandrasekharan, Deputy Director (Retd.), AISE, ISRO Propulsion Complex (IPRC), Mahendragiri.	Scientists from R&D Laboratories
13.	Mr.Ragupathy Ramachandran, Assistant General Manager, ESAB India Limited, Chennai.	Meritorious Alumnus
14.	M.Esakkimuthu, Third Year/EEE	Student Member

The Academic Experts: Dr. Rajesh Joseph Abraham, Associate Professor, Department of Avionics, Indian Institute of Space Science and Technology, Valiamala P.O., Thiruvananthapuram, Kerala. Siva Rama Krishna Vanjari, Professor / EE, Indian Institute of Technology, Hyderabad, Industrial experts Mr.Vijay Karthik, Lead Services Specialist, Technical Support, REN GS-GA-Field Engineering, GE T&D India Limited, Chennai and Mr.V.Karthikeyan, Co-Founder, Rapid Semiconductor Technology, Chennai, Dr.T.Bavisha, Project Technical Engineer Senior Professional, Hitachi Energy- Porur, Chennai, A.Reginold, IV/EEE, student member could not attend the meeting due to their prior commitments and unavoidable reasons and granted leave of absence.

BoS / EEE 24.1 : WELCOME ADDRESS AND OPENING REMARKS BY CHAIRMAN, BOARD OF STUDIES IN THE DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

The Chairman, BOS of the Electrical and Electronics Engineering, welcomed and introduced the members of the 23rd Board of Studies and thanked each one of them for sparing their valuable time to attend the meeting.

BoS / EEE 24.2 : TO CONFIRM THE MINUTES OF THE TWENTY-THIRD BOS MEETING HELD ON 14th JUNE 2025

The minutes of the Twenty Third Board of Studies meeting held on 14th June 2025 were communicated to the members via letter No. F.No.1-1/NEC/EEE, Dated 14.06.2025 The

comments received have been incorporated and placed for confirmation. The same was approved by the 23rd Academic Council.

Action Taken Report

(Enclosed in Annexure I)

BoS / EEE
24.3.1 **TO CONFIRM AND APPROVE THE SYLLABUS FOR FINAL YEAR COURSES OF B.E-EEE PROGRAMME UNDER R-2023**

RESOLVED TO APPROVE the Syllabus for final year courses of B.E-EEE programme under R-2023

BoS/EEE 24.3.2 : **TO CONFIRM AND APPROVE THE SYLLABUS FOR PROGRAMME ELECTIVE COURSES OF B.E-EEE PROGRAMME UNDER R-2023**

RESOLVED TO APPROVE the Syllabus for Programme Elective Courses of B.E-EEE programme under R-2023

BoS/EEE 24.3.3 **TO CONFIRM AND APPROVE THE SYLLABUS FOR ONE CREDIT COURSES OF B.E-EEE PROGRAMME UNDER R-2023**

RESOLVED TO APPROVE the Syllabus for One Credit Courses of B.E-EEE programme under R-2023

BoS/EEE 24.3.4 : **TO CONFIRM AND APPROVE THE COURSE DESIGN DOCUMENT FOR 6TH & 7TH SEMESTER COURSES UNDER R-2023.**

RESOLVED TO APPROVE the Course Design Document for 6th & 7th Semester courses under R-2023.

BoS/EEE 24.4 : **ANY OTHER ITEMS, IF ANY, WITH THE PERMISSION OF THE CHAIRMAN OF THE BOS**

The BOS members discussed the NPTEL courses opted for by students under the OEC and PEC categories with the

Chairman and internal members. They also suggested utilizing CARLA, an open-source autonomous driving simulator, and providing datasheets to students to help them understand processors used in MPMC, VLSI, Embedded Systems, and related domains.

BoS/EEE 24.5 : SUGGESTIONS GIVEN BY THE BOS MEMBERS

B.E – EEE

BoS/EEE 24.5.1 : • In the course, “Electric Vehicle Dynamics”, IC Engines comparison can be added in CO1.
• Case studies on two/three and four-wheelers can be given in CO5. Include MATLAB reference for modeling.

BoS/EEE 24.5.2 : • In the course, “Control of Hybrid Electric Vehicle”, the CO1 statement can be revised.
• In CO1, the order of content HEV, BEV, and FCEV may be swapped to BEV, HEV, and FCEV.

BoS/EEE 24.5.3 : • In the course, “Grid Integration of Electric Vehicles”, other concepts related to V2G can be removed in CO1.
• Regulatory and Legal Challenges may be given in separate COs. CO3, CO4 statements need to be revised.

BoS/EEE 24.5.4 : In the course, “High Voltage Switchgear”, Autonomous Switchgear can be included.

BoS/EEE 24.5.5 : In the course, “Switched Mode Power Conversions”, an SMPS design for the EV charging case study can be given in CO5.

BoS/EEE 24.5.6 : In the course “Logic and Distributed Control System”, a communication protocol for SCADA and case studies can be

included.

BoS/EEE 24.5.7 : In the course, “POWER QUALITY”, CO4 and CO5 can be swapped

BoS/EEE 24.5.8 : In the course, “Electrical Energy Conservation and Auditing”, the title can be renamed as “Energy Auditing and Conservation”. COs order can be swapped.

BoS/EEE 24.5.9

- In the course, “Utilization and Electric Traction”, the title can be renamed as “Utilization of Electrical Energy”.
- Utilization content needs to be added in CO1. Laser welding and types of Arc welding can be added in CO3.

BoS/EEE 24.5.10

In the course “Embedded Systems”, CO4 and CO5 can be swapped. Mention Processors in case studies.

BoS/EEE 24.5.11

In the course, “Energy Storage Systems and Application”, battery recycling can be included in CO3.

BoS/EEE 24.5.12

- In the course, “Thermal Management for Electrical and Electronics Engineering, ” thermal impedance and Thermal analysis comparison of silicon and silicon carbide devices can be added in CO1.
- The heat sink loss model can be added in CO3.

BoS/EEE 24.5.13

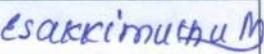
In the course. “Digital Signal Processing”, Selection of Processors needs to be addressed.

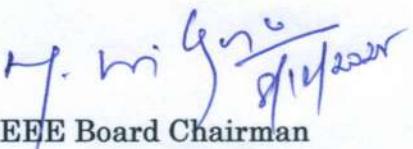
The members had a brainstorming discussion and interaction among themselves. After discussion, fruitful suggestions were incorporated appropriately in the Curriculum and Syllabi. Based on the suggestions given by the members, BOS resolved to recommend the following to the Academic Council for further approval.

Dr.S.Sankarakumar, Associate Professor/ EEE thanked all the members for their kind cooperation and the meeting came to an end.

Members Present

CHAIRMAN	
1.	Dr.M.WilljuiceIruthayarajan Professor and Head/ EEE
INTERNAL MEMBERS	
2.	Dr.L.Kalaivani, Professor/ EEE
3.	Dr.R.V.Maheswari, Professor/ EEE
4.	Dr.B.Vigneshwaran, Associate Professor/ EEE
5.	Dr.S.Sankarakumar Associate Professor/ EEE
6.	Mr.J.Thangaraj Assistant Professor / EEE
UNIVERSITY NOMINEE	
7.	Dr.D.Kavitha, Associate Professor, Department of Electrical and Electronics Engineering, Thiagarajar College of Engineering, Madurai.
ACADEMIC EXPERTS	
8.	Dr. M.P.Selvan, Professor , Department of EEE, National Institute of Tech, Tiruchirappalli
9.	Dr.P.S.Manoharan, Professor, Department of Electrical and Electronics Engineering, Thiagarajar College of Engineering, Madurai,
INDUSTRIAL EXPERTS	
10.	Dr.Gopinath Selvaraj, Practice Head, ADAS & Autonomous Driving Practice, Automotive Center of Excellence (Co E), UST Global Pvt.

	Ltd., Bengaluru.	
11.	Mr.Muthu Senthilkumar Deputy General Manager, Mahindra & Mahindra Limited, Chennai	
SCIENTISTS FROM R&D LABORATORIES		
12.	Shri. C. Chandrasekharan, Deputy Director (Retd.), AISE, ISRO Propulsion Complex (IPRC), Mahendragiri.	
MERITORIOUS ALUMNUS		
13.	Mr.Ragupathy Ramachandran, Assistant General Manager, ESAB India Limited, Chennai.	
STUDENT MEMBER		
14.	M.Esakkimuthu, Third Year/EEE	


EEE Board Chairman

Dr. M. WILLJUICE IRUTHAYARAJAN M.E.,Ph.D.,
PROFESSOR AND HEAD
DEPT. OF ELECTRICAL AND ELECTRONICS ENGINEERING
NATIONAL ENGINEERING COLLEGE
K.R. NAGAR, KOVILPATTI - 628 503.

Annexure-I

Action taken on suggestions from 23rd BoS Meeting

B.E-EEE	
<ul style="list-style-type: none"> • In the course "Power System Protection and Switchgear", overview of substation automation, applications of IED can be included in CO3. • In the course "High Voltage Engineering", design of lightning arrester can be given as case study in CO1. • In the course "Electric Vehicle Safety", need of Electric Vehicle Safety in CO1, introduction to charging standards, wireless charging and its safety implications in CO2, cyber security risk in EV and functional safety in CO5 can be added. • In the course "Battery Management Systems and Modeling", fast charging, rate of charging in CO1, depth of discharge in CO2, wireless Battery Management Systems in CO3 can be included. • In the course "HVDC Transmission Systems", Voltage Source Converter and multiterminal HVDC can be included in CO1. 	The mentioned suggestions has been incorporated in the syllabus and approved through academic council meeting held on 28.06.2025
<ul style="list-style-type: none"> • In the course "Electrical Machine Design" estimation of performance and losses in CO2, design using modern tools as case study in CO5 can be included. 	The suggestion has been carried out in the syllabus.
<ul style="list-style-type: none"> • In the course "Solid State Drives", PWM techniques, vector control can be added in CO3 	
<ul style="list-style-type: none"> • In the course "Mobile Robotics and Control", Radar, laser scanner, LIDAR in CO1, workspace, frames in CO2, and Case studies in CO5 can be included. • In the course "MEMS and NEMS" Application specific integrated circuits (ASIC) can be included in CO1. • In the course "Electric Power Stations", case study can be given in CO5. 	The content has been added in the syllabus and approved through academic council meeting held on 28.06.2025

<ul style="list-style-type: none">• In the course "Sustainable Power Generation System", pumped storage in CO4 and MNRE renewable energy report can be included in references.• In the course "Quality Practices for Safety Critical Instrumentation System", IP standards have to be included in course content.	<p>The suggestion has been carried out in the syllabus.</p>
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EEE Board Chairman

24th BOARD OF STUDIES MEETING - DEPARTMENT OF EEE ON 08.12.2025

