VIGNAN'S
FOUNDATION FOR SCIENCE, TECHNOLOGY & RESEARCH
(Deemed to be University) - Estd. u/s 3 of UGC Act 1956

Department of Electrical and Electronics Engineering

Date: 05.04.2026

MINUTES OF BOARD OF STUDIES MEETING

The Joint Board of Studies (BoS) meeting for the **M.Tech. Program in Autonomous Electric Vehicles (AEV)** and **B.Tech. Program in Electrical and Electronics Engineering** was conducted on 04-04-2026 in virtual mode from 10:00 AM to 2:00 PM.

All the internal members of VFSTR attended the meeting in person, while the external members participated virtually through the following link:

Join: https://teams.microsoft.com/meet/45883983937543?p=UkQNQo1iwVQ4rVMDFM

Agenda of the BoS Meeting:

- Ratification and approval of Course Structure and Syllabi for Professional Core, Department Electives and Add-on Courses under R-25 Regulations for M.Tech. program in **Autonomous Electric Vehicles**.
- Discussion on the integration of Artificial Intelligence (AI) tools and AI-based applications into Electrical Engineering courses, laboratories, projects, and research activities to enhance industry readiness and interdisciplinary learning.
- Any other points with the permission of Chairperson.

The following members were present

SI. No	Name of the Member	Designation and Address	Role
1	Dr. K. Mercy Rosalina	Professor	Chairperson
2	Dr. Jithendranath J.	Senior Project Engineer, Hitachi Energy Technology Services P. Ltd., Grid and Power Quality Solutions, Chennai Mobile: +91-9949537586 Email: jithendranath.j@hitachienergy.com	External Member (Industry)
3	Dr. B. Satish Babu	Sr. Staff Engineer, Infineon Technologies, Bangalore Phone: 9958006750 Email: satishbabu.bhogineni@infineon.com	Invited Member (External-Industry)
4	Prof. B. Subba Reddy	Professor, Department of EEE IISc, Bangalore Phone: 9482229655 Email: sreddy@iisc.ac.in	Invited Member (External-Academia)
4	Dr. Polamraju V. S. Sobhan	Associate Professor & HoD	Internal Member
5	Dr. M. Subba Rao	Associate Professor	Internal Member

6	Dr. K. Rachananjali	Associate Professor	Internal Member
7	Dr. A.R. Vijay Babu	Associate Professor	Internal Member
8	Mr. K. Ashok Kumar	Assistant Professor, VFSTR Deemed to be University, Off Campus	Internal Member
9	Dr. K. Chakravarthi	Assistant Professor (BoA), Department of EEE, VFSTR	Member Secretary

In the beginning of the meeting the Chairperson of the BoS, Dr. K. Mercy Rosalina, Professor, department of EEE welcomed all the members and briefed them about the progress of the Department.

The following are the views expressed by the external members:

Dr. Jithendranath J.

M.Tech. Program:

- Appreciated the initiative taken by the Department of EEE in introducing an industry-oriented and futuristic program focusing on Electric Vehicles, Autonomous Systems, Artificial Intelligence, Machine Learning, Vehicle Dynamics, and Smart Mobility technologies.
- Recommended removing the Future concept from the content of UNIT-III in Module-2 of *EV Charging Technologies and Smart Infrastructure*.
- Proposed removing the AUTOSAR concepts from Module–2 of the course *Battery Management Systems, Functional Safety, and EV Standards* and including them in Unit–1 of Module–1 of the course *Real Time Embedded Systems and V2X Communications*.

B.Tech. Program:

- Appreciated the department's initiative in integrating Artificial Intelligence (AI) tools and AI-based applications into the Electrical Engineering curriculum, considering the growing industrial demand for AI-enabled engineering solutions.
- Advised strengthening industry-academia collaboration through AI-related expert talks, workshops, internships, and certification programs in Electrical Engineering.

Dr. B. Satish Babu

M.Tech. Program:

- Appreciated the curriculum designed with a balanced combination of theory, practical exposure, simulation, and research components.
- Recommended including the flux ray concept in UNIT-2 of Module-1 of the course *Real Time Embedded Systems and V2X Communications*.
- Emphasized strengthening practical exposure using MATLAB/Simulink, ROS, CARLA, and Hardware-in-the-Loop (HIL) simulation tools.

B.Tech. Program:

- Suggested incorporating AI and Machine Learning applications in areas such as Smart Grids, Electric Vehicles, Power System Analysis, Predictive Maintenance, Industrial Automation, and Renewable Energy Systems to enhance interdisciplinary learning.

- Encouraged promoting interdisciplinary research in AI, IoT, embedded systems, robotics, and intelligent transportation systems to match current technological advancements.

Dr. B. Subba Reddy

M.Tech. Program:

- Appreciated that the curriculum adequately addresses emerging technologies such as Artificial Intelligence and Deep Learning, Cybersecurity in Autonomous Vehicles, and Vehicle-to-Everything (V2X) Communication.
- Recommended procurement of EV two-wheelers, real-time controllers, and DSP kits for experimentation and laboratory activities.
- Encouraged strengthening collaborations with EV industries and startups.
- Proposed including AI/ML-based load forecasting concepts for smart grids in Module-2 of the course *Smart Grid Technologies*.

B.Tech. Program:

- Recommended conducting workshops, certification programs, guest lectures, and industry interaction sessions on AI tools and emerging technologies to strengthen student competency and employability.
- Encouraged faculty and students to use modern AI tools for data analysis, intelligent control, optimization, and engineering design applications in Electrical Engineering.

The following resolutions made after the discussion:

- BoS members approved the curriculum structure and syllabus of the M.Tech. Programme in Autonomous Electric Vehicles (AEVs), which is aligned with NEP 2020. The curriculum structure is provided in Appendix-A.
- • A major restructuring has been implemented in the curriculum, emphasizing continuous learning, self-learning, and module-based assessment.
- The curriculum includes courses that promote employability, entrepreneurship, and skill development, as detailed in Appendix-B.
- Substantial changes have been made to the content of all courses; therefore, they are considered new courses, as listed in Appendix-C.
- On average, 100% of the syllabus has been revised compared to the previous curriculum.
- The members approved the integration of Artificial Intelligence (AI) tools and AI-based applications into the B.Tech. Electrical Engineering curriculum to enhance interdisciplinary learning, innovation, and industry readiness.
- The committee also approved the inclusion of AI-oriented practical activities, mini-projects, simulations, and research-based learning components in laboratories and project work to strengthen students' technical competency and problem-solving skills.

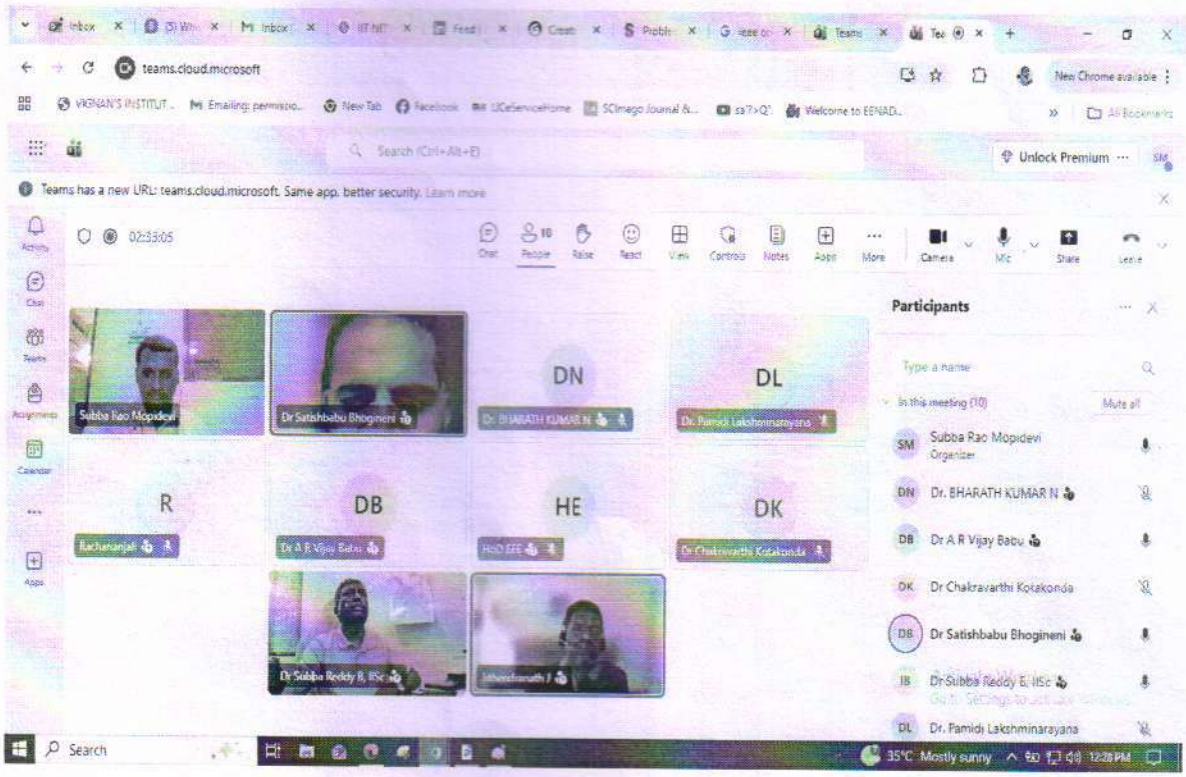
The Chair rendered the closing remarks by thanking all the external members and internal members for their participation.

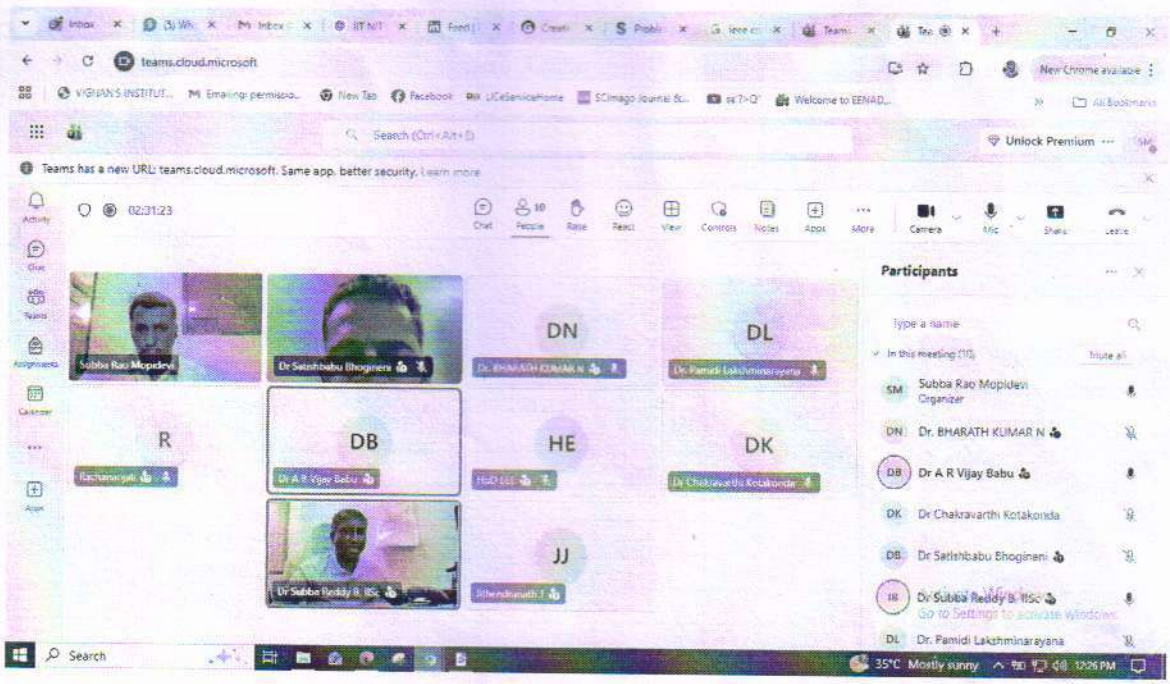
Member Secretary **Chairperson**

The following are the members present for the board of studies meeting held at Department of Electrical and Electronics Engineering on 04.04.2026

Sl. No	Name of the Member	Designation and Address	Signature
1	Dr. K. Mercy Rosalina	Professor	
2	Dr. Narasimharaju B. L	Professor, Department of Electrical Engineering, NIT Warangal Phone: 9448401052, 08702462247 Email: blnraju@nitw.ac.in, narasimharaju.bl@gmail.com	Not Present
3	Dr. Jithendranath J.	Senior Project Engineer, Hitachi Energy Technology Services P. Ltd., Grid and Power Quality Solutions, Chennai Mobile: +91-9949537586 Email: jithendranath.j@hitachienergy.com	Participated the Meeting Virtually
4	Dr. B. Satish Babu	Sr. Staff Engineer, Infineon Technologies, Bangalore Phone: 9958006750 Email: satishbabu.bhogineni@infineon.com	Participated the Meeting Virtually
5	Prof. B. Subba Reddy	Professor, Department of EEE IISc, Bangalore Phone: 9482229655 Email: sreddy@iisc.ac.in	Participated the Meeting Virtually
6	Dr. Polamraju V. S. Sobhan	Associate Professor & HoD	
7	Dr. M.SubbaRao	Associate Professor	
8	Dr. K. Rachananjali	Associate Professor	
9	Dr. A. R. Vijay Babu	Associate Professor	
10	Mr. P. Ashok Kumar	Assistant Professor, VFSTR Deemed to be University, Off Campus	Participated the Meeting Virtually
11	Dr. K. Chakravarthi	Assistant Professor (BoA), Department of EEE, VFSTR	

PHOTOS





Chairman, BoS

APPENDIX A
M.Tech- AEV
Course Structure- R25 Regulation

M.Tech. – Autonomous Electric Vehicles (AEV)

COURSE STRUCTURE – R25

Pre - Semester

Course Code	Title of the course	L	T	P	SL	C	Course type
	Orientation Session					1	Binary graded
	IT workshop and cyber security					1	Binary graded
	Total					**2**	

I Year I Semester

Course Code	Title of the course	L	T	P	SL	C	Course type
1	Advanced Electric Vehicle Powertrain and Power Electronics	2	2	2	2	4	Professional Core
2	Electric Vehicle Dynamics, Modeling, and Autonomous Control Systems	2	2	2	2	4	Professional Core
3	Machine Learning and Deep Learning for Autonomous Electric Vehicles	3	0	2	3	4	Professional Core
	Department Elective					4	Elective
	Teaching Assistantship					1	Binary graded
	Indian Knowledge System					1	Binary graded
	Work-in-lieu of a course*					2	Elective & Floating Credit
	Sub Total					**20**	
	Add on course -1					3	
	Total					**23**	

I Year II Semester

Course Code	Title of the course	L	T	P	SL	C	Course type
4	Battery Management Systems, Functional Safety, and EV Standards	2	2	2	2	4	Professional Core
5	EV Charging Technologies and Smart Infrastructure	3	0	2	3	4	Professional Core
	Department Elective					4	Elective
	Department Elective					4	Elective
	Research Methodology & IPR					2	Interdisciplinary
	Interdepartmental Project					1	Project
	Teaching Assistantship					1	Binary graded
	Sub Total					**20**	
	Add on course -2					3	
	Total					**23**	

II Year I Semester

Course Code	Title of the course	L	T	P	SL	C	Course type
	Project/Internship					13	Project
	Sub Total					**13**	
	Add on course -3 (MOOCs Course)					3	
	Total					**16**	

II Year II Semester

Course Code	Title of the course	L	T	P	SL	C	Course type
	Project/Internship					13	Project
	Sub Total					**13**	
	Add on course -4 (MOOCs Course)					3	
	Total					**16**	

DEPARTMENT ELECTIVES

Course Code	Title of the course	L	T	P	SL	C	Course type
6	Real Time Embedded Systems and V2X Communications	3	2	0	3	4	Department Elective
7	Computer Vision and Perception Systems for Autonomous Vehicles	3	0	2	3	4	Department Elective
8	Sensors, IoT, and Intelligent Vehicle Architectures	2	2	2	2	4	Department Elective
9	Reinforcement Learning	3	2	0	3	4	Department Elective
10	Automotive Security	3	0	2	2	4	Department Elective
11	Cloud and Edge Computing for Autonomous Vehicles	3	0	2	2	4	Department Elective
12	Systems Engineering	2	2	2	2	4	Department Elective
13	Verification and Validation of Autonomous Systems	3	0	2	2	4	Department Elective
14	Advanced Optimization Techniques for AEVs	2	2	2	2	4	Department Elective

Add on Courses

Course Code	Title of the course	L	T	P	SL	C	Course type
15	IoT Applications in Electrical Engineering	2	2	0	2	3	Add on Course
16	Smart Automation Systems	2	2	0	2	3	Add on Course
17	Smart Grid Technologies	2	2	0	2	3	Add on Course
18	Embedded and Communication Systems for Electric Vehicles	2	2	0	2	3	Add on Course

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APPENDIX – B

List of courses that enable employability or entrepreneurship or skill development in the R25 Regulation

M.Tech – Autonomous Electric Vehicles

Sl.	Course Name	Employability / Skill Development / Entrepreneurship
1	Advanced Electric Vehicle Powertrain and Power Electronics	Employability
2	Electric Vehicle Dynamics, Modeling, and Autonomous Control Systems	Employability
3	Machine Learning and Deep Learning for Autonomous Electric Vehicles	Employability
4	Battery Management Systems, Functional Safety, and EV Standards	Employability
5	EV Charging Technologies and Smart Infrastructure	Employability
6	Real Time Embedded Systems and V2X Communications	Skill Development
7	Computer Vision and Perception Systems for Autonomous Vehicles	Employability
8	Sensors, IoT, and Intelligent Vehicle Architectures	Employability
9	Reinforcement Learning	Employability
10	Automotive Security	Employability
11	Cloud and Edge Computing for Autonomous Vehicles	Skill Development
12	Systems Engineering	Employability
13	Verification and Validation of Autonomous Systems	Skill Development
14	Advanced Optimization Techniques for AEVs	Skill Development
15	IoT Applications in Electrical Engineering	Entrepreneurship
16	Smart Automation Systems	Entrepreneurship
17	Smart Grid Technologies	Employability
18	Embedded and Communication Systems for Electric Vehicles	Employability

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APPENDIX – C

List of new courses in the R25 Regulation M.Tech – Autonomous Electric Vehicles

Sl.	Course Name
1	Advanced Electric Vehicle Powertrain and Power Electronics
2	Electric Vehicle Dynamics, Modeling, and Autonomous Control Systems
3	Machine Learning and Deep Learning for Autonomous Electric Vehicles
4	Battery Management Systems, Functional Safety, and EV Standards
5	EV Charging Technologies and Smart Infrastructure
6	Real Time Embedded Systems and V2X Communications
7	Computer Vision and Perception Systems for Autonomous Vehicles
8	Sensors, IoT, and Intelligent Vehicle Architectures
9	Reinforcement Learning
10	Automotive Security
11	Cloud and Edge Computing for Autonomous Vehicles
12	Systems Engineering
13	Verification and Validation of Autonomous Systems
14	Advanced Optimization Techniques for AEVs
15	IoT Applications in Electrical Engineering
16	Smart Automation Systems
17	Smart Grid Technologies
18	Embedded and Communication Systems for Electric Vehicles

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