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: 26.05.2025

MINUTES OF BOARD OF STUDIES MEETING

Board of Studies (BoS) meeting of B.Tech., Electrical and Electronics Engineering program was conducted on 24.05.2025 in virtual mode from 9.30 am to 4.00 pm.

All the internal members of VFSTR attended the meeting in person while all the external members participated the meeting virtually with link:
Google Meet joining info: https://meet.google.com/npa-zccw-yvz

Agenda of the BoS Meeting:
- Ratification of Course Structure under R-25 Regulation
- Ratification of First Year Courses under R-25 Regulation
- Ratification of Syllabi for Professional Core, Department Electives, Honours, and Minors
- Any other points with the permission of Chairperson.

The following members were present

Sl. No	Name of the Member	Designation and Address	Role
1	Dr. K. Mercy Rosalina	Professor	Chairperson
2	Dr. Narasimharaju B. L	Professor, Department of Electrical Engineering, NIT Warangal Phone: 9448401052, 08702462247 Email: blnraju@nitw.ac.in, narasimharaju.bl@gmail.com	External Member (Academia)
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	External Member (Industry)
4	Dr. B. Satish Babu	Sr. Staff Engineer, Infineon Technologies, Bangalore Phone: 9958006750 Email: satishbabu.bhogineni@infineon.com	Invited Member (External)
5	Dr. Polamraju V. S. Sobhan	Associate Professor	Internal Member
6	Dr. Y. Srinivasa Rao	Associate Professor	Internal Member
7	Dr. K. Rachananjali	Associate Professor	Internal Member
8	Dr. N. Bharath Kumar	Assistant Professor	Internal Member

9	Dr. M. Sarada	Professor, Department of ECE, VFSTR Deemed to be University	Invited Member (School Dean Nominee)
10	Dr. A. R. Vijay Babu	Associate Professor	Invited Member (Dean R&D Nominee)
11	Mr. K. Ashok Kumar	Assistant Professor, VFSTR Deemed to be University, Off Campus	Internal Member
12	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. Narasimharaju B. L
- Suggested renaming the two Electrical Machines courses as **"DC Machines and Transformers"** and **"Induction and Synchronous Machines."**
- Suggested swapping the courses **"Power Transmission and Distribution"** to the 4th semester and **"DC Machines and Transformers"** to the 3rd semester.
- Suggested swapping the courses **"Microprocessor and Digital Controllers"** to the 6th semester and **"Induction and Synchronous Machines"** to the 5th semester.
- Suggested replace **"Analog and Digital Communication"** in the Professional Core with a course on Electric Vehicles, while retaining Analog and Digital Communication as a Departmental Elective.
- The emphasis on Self-Learning is appreciated.

Dr. Jithendranath J
- The inclusion of Design Thinking in the curriculum is commendable, as it fosters creativity, innovation, and user-centered problem-solving among students.
- The addition of Soft Computing and Machine Learning in Electrical Engineering is a progressive step, aligning with current industry trends and enhancing employability.
- The emphasis on Self-Learning is appreciated; structured self-directed learning modules will help students develop lifelong learning skills.
- It is suggested to integrate hands-on tools such as MATLAB and Python in Soft Computing and Machine Learning courses to facilitate practical understanding.
- Design Thinking may benefit from a project-based pedagogy involving interdisciplinary teams to enhance collaborative problem-solving and real-world application.

Dr. B. Satish Babu
- A structured self-learning framework with resource mapping, defined milestones, and faculty guidance is recommended.
- Introducing credits for "Work-in-Lieu of Course – Research paper publications / patents / presentations / global certifications" is highly appreciated.

- A module on Entrepreneurship and the Innovation Ecosystem is advised to promote a start-up culture and innovation mindset.
- Encouraging interdisciplinary capstone projects, preferably in collaboration with industry partners, is highly beneficial.
- Providing flexibility through open electives can foster cross-domain skills and enhance adaptability.
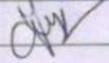
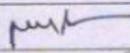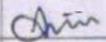### The following resolutions made after the discussion:

- BoS members approved the revised regulations, curriculum structure, and syllabus of the B.Tech. EEE program, 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.
- A *significant reformation has been introduced* by offering Honors/Specialization or Minor degrees through 16 additional credits with supplementary courses.
- 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, 31.52% of the syllabus has been revised compared to the previous curriculum.

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 24.05.2025

Sl. No	Name of the Member	Designation and Address	Signature
1	Dr. K. Mercy Rosalina	Professor	*signature*
2	Dr. Narasimharaju B. L	Professor, Department of Electrical Engineering, NIT Warangal Phone: 9448401052, 08702462247 Email: blnraju@nitw.ac.in, narasimharaju.bl@gmail.com	online
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	online
4	Dr. B. Satish Babu	Sr. Staff Engineer, Infineon Technologies, Bangalore Phone: 9958006750 Email: satishbabu.bhogineni@infineon.com	online
5	Dr. Polamraju V. S. Sobhan	Associate Professor	*signature*
6	Dr. Y. Srinivasa Rao	Associate Professor	*signature*
7	Dr. K. Rachananjali	Associate Professor	*signature*
8	Dr. N. Bharath Kumar	Assistant Professor	*signature*
9	Dr. M. Sarada	Professor, Department of ECE, VFSTR Deemed to be University	*signature*
10	Dr. A. R. Vijay Babu	Associate Professor	*signature*
11	Mr. P. Ashok Kumar	Assistant Professor, VFSTR Deemed to be University, Off Campus	Online
12	Dr. K. Chakravarthi	Assistant Professor (BoA), Department of EEE, VFSTR	*signature*

PHOTOS

Vadlamudi, Andhra Pradesh, India

Vadlamudi, Andhra Pradesh, India
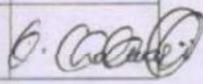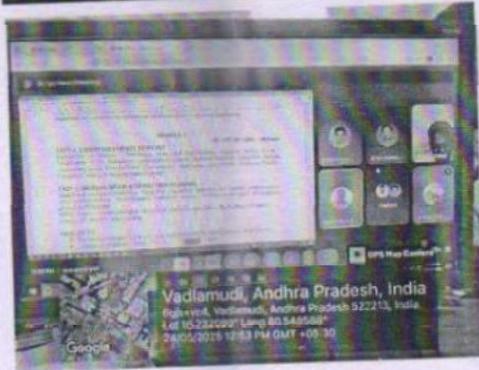
Chairman, BoS

B.Tech-Electrical and Electronics Engineering
Course Structure- R25 & C25 Regulation

Induction program

Course Title	L	T	P	SL	C	Course category
Orientation program (Induction Program)					1	Binary graded
Total					**1**	

Pre-Semester

Course Title	L	T	P	SL	C	Course category
Mathematics					1	Basic Sciences
English Communication					1	Humanities
Aptitude & Logical Reasoning					1	Humanities
IT Tools					1	Basic Engineering
					1	Binary graded
					1	Binary graded
Total					**6**	

1 Year 1 Semester

Course Title	L	T	P	SL	C	Course category
Mathematics					4	Basic Sciences
Physics / Chemistry					4	Basic Sciences
Basic Electrical and Electronics Engineering / Engineering Graphics	2	0	2	2	3	**Basic Engineering**
Programming in C					4	Basic Engineering
English Proficiency & Communication Skills (PET)					1	Humanities
Environmental Studies / Management Studies					3	Basic Sciences / Humanities
					1	Binary graded
					1	Binary graded
					1	Binary graded
Total					**22**	

I Year II Semester

Course Title	L	T	P	SL	C	Course category
Mathematics					4	Basic Sciences
Physics / Chemistry					4	Basic Sciences
Basic Electrical and Electronics Engineering / Engineering Graphics					**3**	**Basic Engineering**
Problem Solving through Python					3	Basic Engineering
Technical English Communication					2	Humanities
Environmental Studies / Management Studies					3	Basic Sciences / Humanities
Cyber security					1	Basic Engineering
					1	Binary graded
					1	Binary graded
					1	Binary graded
					1	Binary graded
Total					**24**	

II Year I Semester

Course Title	L	T	P	SL	C	Course category
Transforms and Applications	3	2	0	3	4	**Basic Sciences**
Semiconductor Devices and Electromagnetics	2	2	0	2	3	**Basic Sciences**
Data Structures					4	Basic Engineering
Design Thinking and Engineering Orientation					1	Basic Engineering
Electrical Circuit Analysis	3	0	2	3	4	**Professional Core-1**
Power Generation, Transmission and Distribution	3	0	2	3	4	**Professional Core-2**
Analog and Digital Electronics	3	0	2	3	4	**Professional Core-3**
Total					**24**	

II Year II Semester

Course Title	L	T	P	SL	C	Course category
Probability and Statistics	3	2	0	3	3	Basic Sciences
Industry – Interface (I^2) Course					1	Dept. Elective-1
					3	Open Elective-1
Power Electronic Devices and Circuits	3	0	2	3	4	**Professional Core-4**
DC Machines and Transformers	3	0	2	3	4	**Professional Core-5**
Fundamentals of Electric and Hybrid Electric Vehicles	3	0	2	3	4	**Professional Core-6**
PV Technologies and Applications	2	2	0	2	3	**Professional Core-7**
					1	Project
Total					**23**	

III Year I Semester

Course Title	L	T	P	SL	C	Course category
Soft Skills Laboratory					1	Humanities
Quantitative Aptitude & Logical Reasoning					1	Humanities
					3	Dept. Elective-2
Induction and Synchronous Machines	3	0	2	3	4	**Professional Core-8**
Linear Control Systems	3	0	2	3	4	**Professional Core-9**
Power System Analysis and Control	3	0	2	3	4	**Professional Core-10**
Intelligent Systems and Soft Computing in Electrical Engineering	3	2	0	3	4	**Professional Core-11**
Sub-Total					**21**	
Honours/Minors (Add-on)					4	Honours/Minors
Total					**25**	

III Year II Semester

Course Title	L	T	P	SL	C	Course category
Professional Communication Skills					1	Humanities
					4	Dept. Elective-3
					4	Dept. Elective-4
					3	Open Elective-2
Microprocessor and Digital Controllers	2	2	2	2	4	**Professional Core-12**
Power System Protection	2	2	0	2	3	**Professional Core-13**
					1	Project
Sub-Total					20	
Honours/Minors (Add-on)					4	Honours/Minors
Total					24	

IV Year I Semester

Course Title	L	T	P	SL	C	Course category
Dept. Specific (Professional Ethics)					2	Humanities
					4	Dept. Elective-5
					4	Dept. Elective-6
Work-in-Lieu of Course – Research paper publications/patents/presentations/global certifications					4*	Dept. Elective-7
					3	Open Elective-3
Sub-Total					17	
Honours/Minors (Add-on)					4	Honours/Minors
Total					21	

IV Year II Semester

Course Title	L	T	P	SL	C	Course category
Project/Internship					12	Project/Internship
Sub-Total					12	
Honours/Minors (Add-on)					4	Honours/Minors
Total					16	

DEPARTMENT ELECTIVES

Sl.	Course Title	L	T	P	SL	C
1.	Green Energy Technologies	2	2	0	2	3
2	Signals and Systems	2	2	0	2	3
3	Energy System Economics	2	2	0	2	3
4.	Electrical Measurements and Instrumentation	3	0	2	3	4
5	Precision Control and Actuation Systems	3	2	0	3	4
6	Flexible Ac Transmission Systems	3	2	0	3	4
7	Switch Mode Power Converters	3	2	0	3	4
8	Industrial Electric Drives	3	2	0	3	4
9	Utilization of Electrical Energy	3	0	2	3	4
10	Advanced Power Conversion Technologies	3	0	2	3	4
11	Machine Learning Techniques in Electrical Engineering	3	2	0	3	4
12	Foundations of Quantum Computing in Electrical Engineering	3	2	0	3	4
13	Smart Automation Systems	3	2	0	3	4
14	Deep Learning Applications in Electrical Engineering	3	0	2	3	4
15	IoT Applications in Electrical Engineering	3	2	0	3	4
16	Digital Controllers in Power Electronics Systems	3	0	2	3	4
17	Digital Signal Processing	2	2	2	2	4
18	Analog and Digital communication	2	2	2	2	4

Honours-1 (Electric Vehicle Technologies)

Course Title	L	T	P	SL	C
EV Powertrain and System Integration	3	0	2	3	4
EV Charging Infrastructure and Charging Protocols	3	0	2	3	4
Electric Vehicle Battery Technologies and Management	3	0	2	3	4
Intelligent Transportation System	3	2	0	3	4

Honours-2 (Sustainable Energy Systems)

Course Title	L	T	P	SL	C
Solar and Wind Energy Conversion Systems	3	2	0	3	4
Alternate Energy Technologies	3	2	0	3	4
Sustainable Energy Economics	3	2	0	3	4
Energy Efficiency Management and Audit	3	2	0	3	4

Minor-1 (E-Mobility)

Course Title	L	T	P	SL	C
Electric Vehicles and E-mobility System	2	0	2	2	3
Electric Vehicles Propulsion System	2	0	2	2	3
Smart Charging Systems for Electric Vehicles	2	2	0	2	3
Autonomous and Electric Mobility	2	2	0	2	3

Open Elective

| Course Title	L	T	P	SL	C
Fundamentals of Solar Cells	2	2	0	2	3
Solar Photovoltaic Systems	2	2	0	2	3
Design and Economics of Solar PV Systems	2	2	0	2	3
Fundamentals of Electric Vehicles	2	2	0	2	3

Chairman, BoS

APPENDIX – B

List of courses that enable employability or entrepreneurship or skill development in the R25 & C25 Regulation

B.Tech – Electrical and Electronics Engineering

Sl.	Course Name	Employability / Skill Development/Entrepreneurship
1	Mathematics	Skill Development
2	Physics	Skill Development
3	Chemistry	Skill Development
4	Basic Electrical and Electronics Engineering / Engineering Graphics	Skill Development
5	Problem Solving through Python	Employability
6	Technical English Communication	Skill Development
7	Environmental Studies / Management Studies	Skill Development
8	Cyber security	Employability
9	Transforms and Applications	Skill Development
10	Semiconductor Devices and Electromagnetics	Skill Development
11	Data Structures	Employability
12	Design Thinking and Engineering Orientation	Entrepreneurship
13	Electrical Circuit Analysis	Skill Development
14	Power Generation, Transmission and Distribution	Skill Development
15	Analog and Digital Electronics	Skill Development
16	Probability and Statistics	Skill Development
17	Industry – Interface (I^2) Course	Employability
18	Power Electronic Devices and Circuits	Skill Development
19	DC Machines and Transformers	Skill Development
20	Fundamentals of Electric and Hybrid Electric Vehicles	Employability
21	PV Technologies and Applications	Employability
22	Soft Skills Laboratory	Skill Development

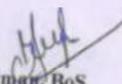| 23	Quantitative Aptitude & Logical Reasoning	Skill Development
24	Induction and Synchronous Machines	Skill Development
25	Linear Control Systems	Skill Development
26	Power System Analysis and Control	Skill Development
27	Intelligent Systems and Soft Computing in Electrical Engineering	Employability
28	Professional Communication Skills	Skill Development
29	Microprocessor and Digital Controllers	Employability
30	Power System Protection	Skill Development
31	Professional Ethics	Skill Development
32	Work-in-Lieu of Course – Research paper publications/patents/presentations/global certifications	Employability
32	Project/Internship	Employability
33	Green Energy Technologies	Employability
34	Signals and Systems	Skill Development
35	Energy System Economics	Entrepreneurship
36	Electrical Measurements and Instrumentation	Skill Development
37	Precision Control and Actuation Systems	Employability
38	Flexible Ac Transmission Systems	Skill Development
39	Switch Mode Power Converters	Employability
40	Industrial Electric Drives	Employability
41	Utilization of Electrical Energy	Skill Development
42	Advanced Power Conversion Technologies	Employability
43	Machine Learning Techniques in Electrical Engineering	Employability
44	Foundations of Quantum Computing in Electrical Engineering	Employability
45	Smart Automation Systems	Employability
46	Deep Learning Applications in Electrical Engineering	Employability
47	IoT Applications in Electrical Engineering	Employability
48	Digital Controllers in Power Electronics Systems	Employability
49	Digital Signal Processing	Skill Development

50	Analog and Digital communication	Skill Development
51	EV Powertrain and System Integration	Employability
52	EV Charging Infrastructure and Charging Protocols	Employability
53	Electric Vehicle Battery Technologies and Management	Employability
54	Intelligent Transportation System	Employability
55	Solar and Wind Energy Conversion Systems	Employability
56	Alternate Energy Technologies	Employability
57	Sustainable Energy Economics	Employability
58	Energy Efficiency Management and Audit	Employability
59	Electric Vehicles and E-mobility System	Employability
60	Electric Vehicles Propulsion System	Employability
61	Smart Charging Systems for Electric Vehicles	Employability
62	Autonomous and Electric Mobility	Employability
63	Fundamentals of Solar Cells	Skill Development
64	Solar Photovoltaic Systems	Skill Development
65	Design and Economics of Solar PV Systems	Skill Development
66	Fundamentals of Electric Vehicles	Skill Development
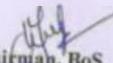
Chairman, BoS

APPENDIX – C

List of new courses in the R25 & C25 Regulation B.Tech – Electrical and Electronics Engineering

Sl.	Course Name
1	Transforms and Applications
2	Semiconductor Devices and Electromagnetics
3	Signals and Systems
4	Foundations of Quantum Computing in Electrical Engineering
5	Smart Automation Systems
6	Deep Learning Applications in Electrical Engineering
7	IoT Applications in Electrical Engineering
8	Analog and Digital communication
9	EV Powertrain and System Integration
10	EV Charging Infrastructure and Charging Protocols
11	Intelligent Transportation System
12	Autonomous and Electric Mobility

Chairman, BoS