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

CIRCULAR

Date: 25.03.2024

Department of Department of Electrical and Electronics Engineering is going to conduct Board of Studies (BoS) meeting for the B.Tech., in Department of Electrical and Electronics Engineering Programme on **30.03.2024** from 10.00 am in blended mode. The online ZOOM platform link for the meeting is

https://us06web.zoom.us/j/85196768059?pwd=bjumMYTsu4XyWyvG0sChVxpkRe8PMF.1

All the members are requested to make it convenient to attend the meeting.

The members are

Sl.	Name of the Faculty	Designation & Addresses	Position
1	Dr. Polamraju V.S. Sobhan	Assoc. Professor & HoD	Chairperson
2	Dr. K. Mercy Rosalina	Professor	Member
3	Dr. G. Srinivasa Rao	Professor & Dean R&D	Member
4	Dr. M. Subba Rao	Assoc. Professor	Member
5	Dr. K. Balakrishna	Assoc. Professor	Member
6	Dr. P. M. Venkatesh	Asst. Professor	Member
7	Dr. Narasimharaju B. L	Professor Department of Electrical Engineering National Institute of Technology Warangal, 9448401052, 08702462247 blnraju@nitw.ac.in	External Member
8	Dr. Jithendranath J.	Senior Project Engineer, Hitachi Energy Technology Services Ltd Grid and Power Quality Solutions,Chennai +91-9949537586 jithendranath.j@hitachienergy.com	External Member
9	Dr. B. Satish Babu	Sr. Staff Engineer, Infineon Technologies, Bangalore, 9958006750 satishbabu.bhogineni@infineon.com	Special Invitee
10	Dr. M. Sarada	Professor, Department of ECE, VFSTR	School Dean Nominee
11	Dr. M. Umamaheswara Rao	Asst. Professor	Member Secretary

Agenda of the BoS Meeting:

1. To Discuss and finalize the revised curriculum structure and detailed syllabus of B.Tech.. Electrical and Electronics Engineering Programme for the regulation 2022.

2. To approve the revised R22 curriculum and syllabus of B.Tech., Electrical and Electronics Engineering Programme and recommend to the Academic council.

3. Approval of change in L-T-P structure, No. of credits or contents of existing courses.

4. Approval of NPTEL courses.

5. Any other points, if required.

Chairperson

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Date: 30.03.2024

Minutes of Board of Studies Meeting

Board of Studies (BoS) meeting of B.Tech., Electrical and Electronics Engineering programme was conducted on 30.03.2024 in blended mode from 10.00 am to 1.00 pm. The venue of the meeting Department of Electrical and Electronics Engineering, H-Block, VFSTR, Vadlamudi.

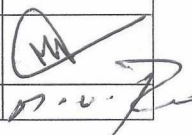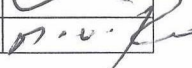The ZOOM online link for the meeting is
https://us06web.zoom.us/j/85196768059?pwd=bjumMYTsu4XyWyvG0sChVxpkRe8PMF.1

Agenda of the BoS Meeting:

1. To Discuss and finalize the revised curriculum structure and detailed syllabus of B.Tech., Electrical and Electronics Engineering Programme for the regulation 2022.

2. To approve the revised R22 curriculum and syllabus of B.Tech., Electrical and Electronics Engineering Programme and recommend to the Academic council.

3. Approval of change in L-T-P structure, No. of credits or contents of existing courses.

4. Approval of NPTEL courses.

5. Any other points with the permission of Chairperson.

The following members were present either through offline or online.

Sl.	Name of the Faculty	Designation & Addresses	Position	Signature
1	Dr. Polamraju V.S. Sobhan	Assoc. Professor & HoD	Chairperson	
2	Dr. K. Mercy Rosalina	Professor	Member	
3	Dr. G. Srinivasa Rao	Professor & Dean R&D	Member	
4	Dr. M. Subba Rao	Assoc. Professor	Member	
5	Dr. K. Balakrishna	Assoc. Professor	Member	
6	Dr. P. M. Venkatesh	Asst. Professor	Member	
7	Dr. Narasimharaju B. L	Professor Department of Electrical Engineering National Institute of Technology Warangal, 9448401052, 08702462247 blnraju@nitw.ac.in	External Member	Attended Online
8	Dr. Jithendranath J.	Senior Project Engineer, Hitachi Energy Technology Services Ltd Grid and Power Quality Solutions,Chennai +91-9949537586 jithendranath.j@hitachienergy.com	External Member	Attended Online
9	Dr. B. Satish Babu	Sr. Staff Engineer, Infineon Technologies, Bangalore, 9958006750 satishbabu.bhogineni@infineon.	Special Invitee	Attended Online

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10	Dr. M. Sarada	Professor, Department of ECE, VFSTR	School Dean Nominee	
11	Dr. M. Umamaheswara Rao	Asst. Professor	Member Secretary	

Chairperson Dr. Polamraju V.S. Sobhan, Associate professor & Head, opened the meeting by welcoming and introducing the external members, invitees to the internal members. Chairperson presented about revised R22 courses followed by courses offered to students in NPTEL category.

The following points were discussed in the BoS meeting:
1. Revised course structure for R22 is discussed
2. Credits for Basic sciences is increased to 30 Credits out of 160 credits
3. Approval of change in L-T-P structure, No. of credits or contents of existing courses.
4. Discuss about the changes in "Electrical Power Generation Transmission and Distribution" course.
5. Introduce the new course "Synchronous and Special Machines".
6. Combine the analog electronics and digital electronics courses into single course.
7. Electric vehicle technology course has been shifted from elective to main course.
8. Approval of NPTEL courses.
9. Discuss about the changes in "Transformers and Induction Machines" course.
10. Introduce the new course "Design of Photovoltaic and Wind Energy Systems".

**The following resolutions made after the discussion:**
1. BoS Members approved the revised R22 regulations, curriculum structure, syllabus of B.Tech., Electrical and Electronics Engineering and it follows based on the NEP 2020. Curriculum structure is provided in Appendix-I.
2. Based on the suggestions given by BOS, Swap the concepts of classification of PV systems and maximum power point tracking in "Design of Photovoltaic and Wind Energy Systems" course.
3. Based on the suggestions given by BOS, synchronous generator concept has been removed from module-1, unit-1 in "Electrical Power Generation Transmission and Distribution" course.
4. Based on the suggestions given by BOS, speed controlling methods are added for special machines in module-2, unit-2 in "Synchronous and Special Machines" course.
5. Based on the suggestions given by BOS, some practices are added for special machines in "Synchronous and Special Machines" course.
6. Based on the suggestions given by BOS, parallel operations of transformers have been shifted from unit-1 to unit-2 in moule-1 in "Transformers and Induction Machines" course.
7. Based on the suggestions given by BOS, equivalent circuit concept has been removed in unit-1, module-1 in "Transformers and Induction Machines" course.
8. Major restructuring has taken place in the curriculum which is oriented towards continuous learning and assessment based on Module structure.
9. The curriculum is encompassing the courses that enable employability or entrepreneurship or skill development, provided in Appendix- II.
10. The significant changes are made in the content of all courses and hence the courses are considered as new courses provided in Appendix- III.
11. Stakeholders feedback is analyzed thoroughly and the curriculum follows the choice based credit system (CBCS).

Based on the suggestions given by the members, the Chairperson of BoS told that, those fruitful suggestions would be incorporated appropriately in the curriculum and syllabi of the revised regulation R22 and this will be recommended to the Academic Council of VFSTR for the approval.

There being no further points for discussion, the Chairperson thanks all the external, internal, invited members and announced that the meeting was adjourned.

Member Secretary
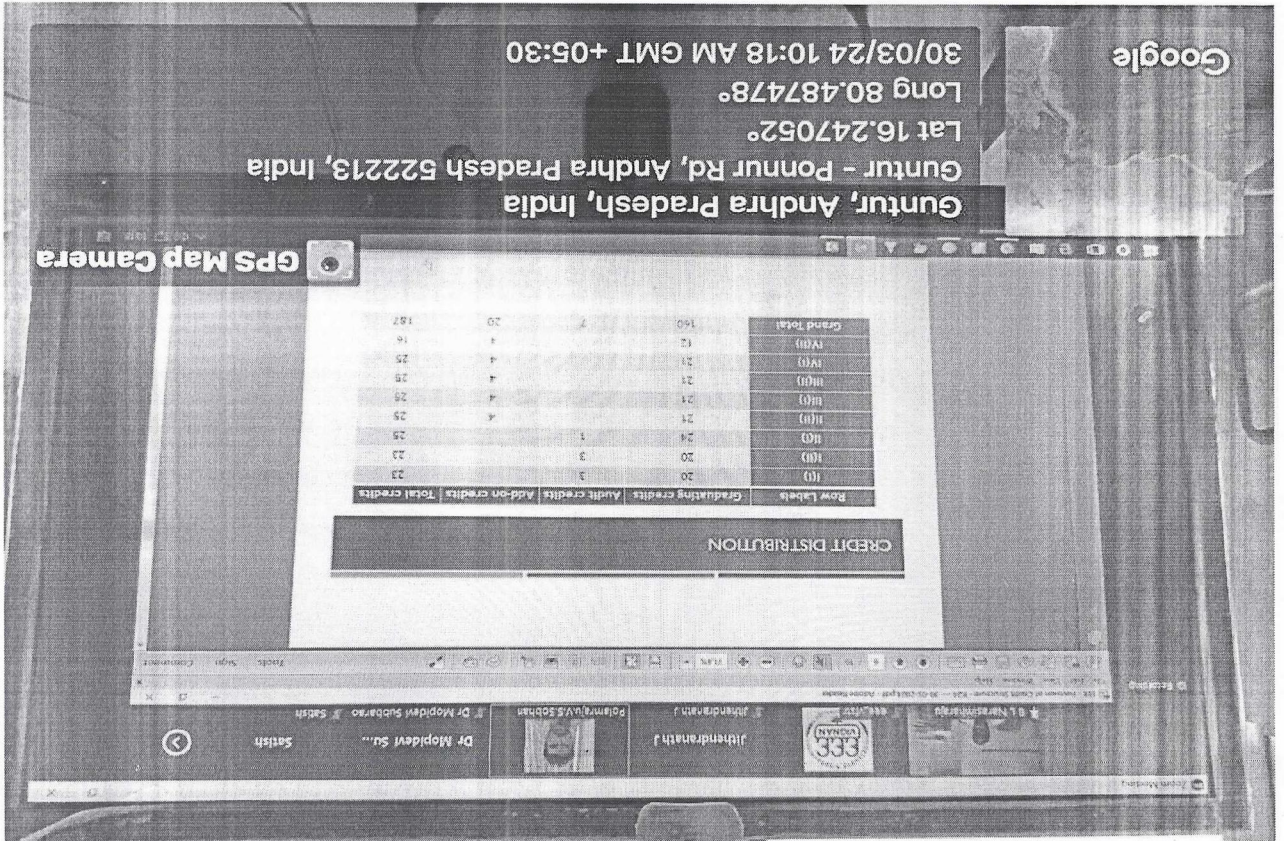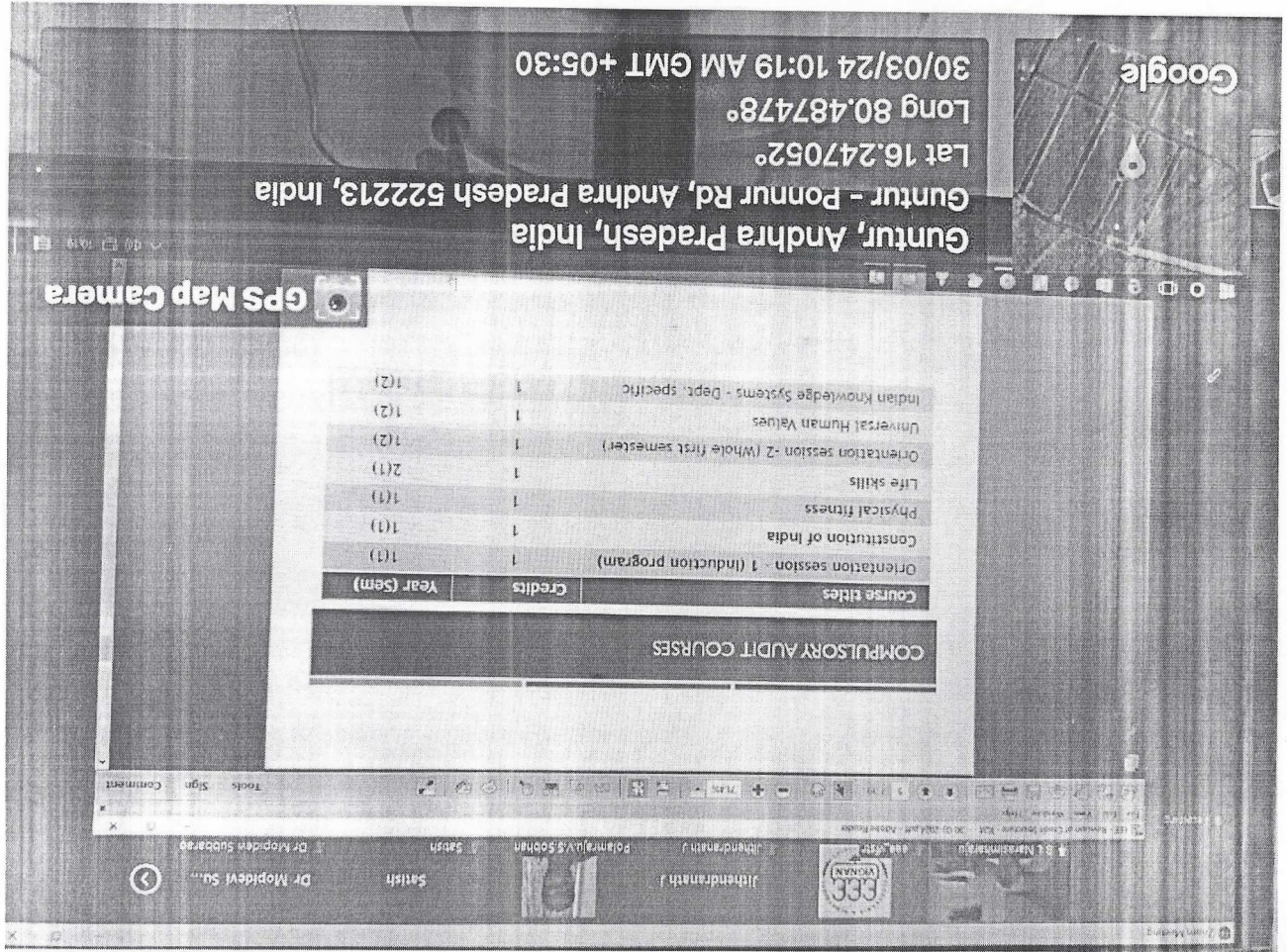
Chairperson

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

APPENDIX I

B. Tech in Electrical and Electronics Engineering Programme: Curriculum Structure

I Year I Semester

Course Title	C	Course category
Mathematics – I / Mathematics – II	4	Basic Sciences
Physics / Chemistry	4	Basic Sciences
Basic of Electrical & Electronics Engineering/ Engineering Graphics	3	Basic Engineering
Programming in C	3	Basic Engineering
English Proficiency & Communication Skills (PET)	1	Humanities
IT Tools & Cyber security	2	Basic Engineering
Environmental Studies / Management Studies	3	Basic Sciences / Humanities
Total	20	

I Year II Semester

Course Title	C	Course category
Mathematics – II / Mathematics – I	4	Basic Sciences
Physics / Chemistry	4	Basic Sciences
Basic of Electrical & Electronics Engineering/**Engineering Graphics**	3	Basic Engineering
Competitive coding	3	Basic Engineering
Technical English Communication	3	Humanities
Environmental Studies / Management Studies	3	Basic Sciences / Humanities
Total	20	

II Year I Semester

Course Title	C	Course category
Maths – 3 (Dept. Specific)	4	**Basic Sciences**
Data Structures and Algorithms	4	**Basic Engineering**
Branch specific basic science course (New Course Design)	3	**Basic Sciences**
Electrical Circuits and Networks	4	**Professional core-1**
Machine Learning Techniques for Electrical Engineering	4	**Professional core-2**
Transformers & Induction Machines	4	**Professional core-3**
Design Thinking & Engineering Orientation	1	Basic Engineering
Total	24	

II Year II Semester

Course Title	C	Course category
P&S	4	Basic Sciences
Practicing Data Structures	1	Basic Engineering
Field projects / IDP	1	Project
Analog and Digital Electronics	4	Professional core-4
Electrical Power Generation, Transmission and Distribution	4	Professional core-5
Power Electronics Devices and Circuits	4	Professional core-6
OE-1 : NPTEL	3	Open Elective-1
Total	21	

III Year I Semester

Course Title	C	Course category
Soft Skills Laboratory	1	Humanities
Synchronous and Special Machines	4	Professional core-7
Linear Control Systems	4	Professional core-8
DE-1 :	4	Department Elective-1
DE-2 :	3	Department Elective-2
OE-2 :	3	Open Elective-2
Industry interface course (Modular course)	1	Department Elective
BEC Certification	1	Humanities
Total	21	

III Year II Semester

Course Title	C	Course category
Quantitative aptitude & Logical reasoning	2	Humanities
Power System Protection	4	Professional core-9
Microprocessors and Microcontrollers	4	Professional core-10
Electric Vehicles Technology	3	Professional core-11
DE-3 :	4	Department Elective-3
OE-3 :	3	Open Elective-3
Field projects / IDP	1	Project
Total	21	

IV Year I Semester

Course Title	C	Course category
Professional ethics	2	**Humanities**
Analysis and Operation of Power Systems	4	**Professional core-12**
OE-6 :	4	**Department Elective-6**
Industrial Electric Drives	3	**Professional core-13**
OE-4 :	4	**Department Elective-4**
OE-5 :	4	**Department Elective-5**
Total	21	

IV Year II Semester

Course Title	C	Course category
Internship / Project Work	12	Project
Total	12	

List of NPTEL Courses

Course Name	NPTEL Course ID
Operation and planning of power distribution system	Noc24-ee41
Machine learning for engineering and science applications	Noc24-cs38
Industrial automation and control	Noc24-ee56
Non-conventional energy sources	Noc24-ge24

List of Department Elective Courses

Basket Name	Name of the course
Course-1	Green Energy Technologies
Course-2	Electric Vehicles
Course-3	High Voltage Engineering
Course-4	Switch Mode Power Conversion
Course-5	Sensors and Transducers
Course-6	Special Electrical Machines
Course-7	Optimization Techniques
Course-8	Advanced Control Systems

Course-9	Advanced Power Electronics
Course-10	Power Quality
Course-11	Advanced Power System Analysis
Course-12	Energy Storage Technologies
Course-13	Energy Audit, Conservation and Management
Course-14	Smart Grid Technologies
Course-15	Energy System Economics
Course-16	Flexible of AC Transmission Systems
Course-17	SCADA Systems and Applications
Course-18	Plug-In Electric Vehicles in Smart Grid
Course-19	Soft Computing Techniques in Electrical Engineering
Course-20	Programmable Logic Controllers
Course-21	PV Technologies and Applications
Course-22	Utilization of Electrical Energy

List of Honour/Specialization Courses

Basket Name	Name of the course
Course-1	Electric Vehicles Technology
Course-2	Energy Storage and Management System
Course-3	EV Charging Infrastructure and BMS
Course-4	Modelling and Simulation of Electric Vehicles
Course-5	Intelligent Transport Systems

List of Minor Courses

Basket Name	Name of the course
Course-1	E- Mobility

Chairperson

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

APPENDIX II

List of Courses that Enables Employability or Entrepreneurship or Skill Development

S. No.	Year and Semester	Course Title	Employability / Entrepreneurship / Skill development
1.	I Year I Semester	Mathematics – I / Mathematics – II	Skill development
2.	I Year I Semester	Physics / Chemistry	Skill development
3.	I Year I Semester	Basic of Electrical & Electronics Engineering/ Engineering Graphics	Skill development
4.	I Year I Semester	Programming in C	Employability
5.	I Year I Semester	English Proficiency & Communication Skills (PET)	Skill development
6.	I Year I Semester	IT Tools & Cyber security	Skill development
7.	I Year I Semester	Environmental Studies / Management Studies	Entrepreneurship
8.	I Year II Semester	Mathematics – II / Mathematics – I	Skill development
9.	I Year II Semester	Physics / Chemistry	Skill development
10.	I Year II Semester	Basic of Electrical & Electronics Engineering/Engineering Graphics	Skill development
11.	I Year II Semester	Competitive coding	Skill development
12.	I Year II Semester	Technical English Communication	Skill development
13.	I Year II Semester	Environmental Studies / Management Studies	Entrepreneurship
14.	II Year I Semester	Maths – 3 (Dept. Specific)	Skill development
15.	II Year I Semester	Data Structures and Algorithms	Employability
16.	II Year I Semester	Branch specific basic science course (New Course Design)	Skill development
17.	II Year I Semester	Electrical Circuits and Networks	Employability
18.	II Year I Semester	Machine Learning Techniques for Electrical Engineering	Employability
19.	II Year I Semester	Transformers & Induction Machines	Employability
20.	II Year I Semester	Design Thinking & Engineering Orientation	Employability
21.	II Year II Semester	P&S	Employability
22.	II Year II Semester	Practicing Data Structures	Skill development
23.	II Year II Semester	Field projects / IDP	Skill development
24.	II Year II Semester	Analog and Digital Electronics	Employability
25.	II Year II Semester	Electrical Power Generation, Transmission and Distribution	Employability
26.	II Year II Semester	Power Electronics Devices and Circuits	Employability
27.	II Year II Semester	OE-1 : NPTEL	Employability

28.	III Year I Semester	Soft Skills Laboratory	Skill development
29.	III Year I Semester	Synchronous and Special Machines	Employability
30.	III Year I Semester	Linear Control Systems	Employability
31.	III Year I Semester	DE-1 :	Employability
32.	III Year I Semester	DE-2 :	Employability
33.	III Year I Semester	OE-2 :	Employability
34.	III Year I Semester	Industry interface course (Modular course)	Employability
35.	III Year I Semester	BEC Certification	Skill development
36.	III Year II Semester	Quantitative aptitude & Logical reasoning	Skill development
37.	III Year II Semester	Power System Protection	Employability
38.	III Year II Semester	Microprocessors and Microcontrollers	Employability
39.	III Year II Semester	Electric Vehicles Technology	Employability
40.	III Year II Semester	DE-3 :	Employability
41.	III Year II Semester	OE-3 :	Employability
42.	III Year II Semester	Field projects / IDP	Skill development
43.	IV Year I semester	Professional ethics	Skill development
44.	IV Year I semester	Analysis and Operation of Power Systems	Employability
45.	IV Year I semester	OE-6 :	Employability
46.	IV Year I semester	Industrial Electric Drives	Employability
47.	IV Year I semester	OE-4 :	Employability
48.	IV Year I semester	OE-5 :	Employability
49.	IV Year II semester	Internship / Project Work	Skill development

Chairperson

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

APPENDIX III

List of New Courses in the R22 Curriculum

S. No.	Year and Semester	Course Title	Employability / Entrepreneurship / Skill development
1.	II Year I Semester	Maths – 3 (Dept. Specific)	Skill development
2.	II Year I Semester	Branch specific basic science course (New Course Design)	Skill development
3.	II Year II Semester	Analog and Digital Electronics	Employability

Chairperson