



Department of Electrical and Electronics Engineering

Date: 06.07.2021

Minutes of the Board of Studies (BoS) Meeting held on 05/07/21 at 10.00 A.M. in Chancellors Chamber (B.Tech- Electrical and Electronics Engineering)

All the internal members of VFSTR attended the meeting in person while the external members participated the meeting virtually.

External Members:

- 1) Dr. V. T. Somasekhar - Professor, Dept. of Electrical Engineering,
NIT Warangal
- 2) Dr. K. Siva Kumar - Associate Professor,
Dept. of Electrical Engineering, IIT Hyderabad
- 3) Dr.V.Nagesh - CTO, Chirra Engineering Pvt. Ltd. Bangalore
- 4) Dr.M.V.Rayudu - CEO, Chirra Engineering Pvt. Ltd. Bangalore
- 5) Mr.B.Murali Krishna - Technical Specialist ,
Honeywell Technology Solutions, Hyderabad

Internal Members:

- 1) Dr. G. Srinivasa Rao - Head, Dept. of EEE, VFSTR
- 2) Dr. P. V. S. Sobhan - Assoc. Prof., EEE, VFSTR
- 3) Dr. K. Mercy Rosalina - Professor., EEE, VFSTR
- 4) Dr. M. Subba Rao - Assoc. Prof., EEE, VFSTR
- 5) Dr. Y. Srinivasa Rao - Asst. Prof., EEE, VFSTR
- 6) Dr. K. Bala Krishna - Asst. Prof., EEE, VFSTR
- 7) Dr.A.R.Vijay Babu - Asst. Prof., EEE, VFSTR

The following are the views expressed by the external members

- 1) Dr. G. SrinivasaRao briefed the changes from R19 to R21 to the external members.
- 2) External BoS members appreciated credited based intra, inter and societal projects.
- 3) Dr. V. T. Somasekhar suggested to remove the subject EMF, as concepts in that course is covered in Engineering Physics. Suggested to introduce one more core subject in the curriculum.

- 4) Dr. K.Sivakumar suggested that in Power Electronics Laboratory, instruct the students to perform sophisticated simulation by connecting RLE, Capacitive load, DC motor instead of R, RL loads.
- 5) Dr. K.Sivakumar suggested to change the Electrical Measurements Laboratory from 4th year to 2nd year, as it covers measuring instruments.
- 6) External BoS members appreciated introduction of CSE/IT courses as open elective courses and suggested to introduce some more advanced interdisciplinary courses on that pool, as the selection of open elective course is choice of student.
- 7) External BoS members appreciated introduction of AI and ML courses in the revised curriculum and suggested to introduce minor degree (or) specialization in AI&ML.
- 8) Dr.M.V.Rayudu suggested to refer the recently released AICTE model curriculum on minor degree in emerging areas of engineering to introduce minor degree in AI & ML .
- 9) Discussion on intra, inter, societal Project and minor project on coding was made, and finally concluded that it has to be more strengthened, both faculty and students are to be made responsible.
- 10) Credits for the NPTEL courses are appreciable, but faculty has to advise the students to choose advanced courses which are relevant to industry.

Outcomes of the BoS Meeting:

1. BoS members approved the revised curriculum (Structure, Syllabus and regulations) of B. Tech, Electrical and Electronics Engineering and it follows Choice Based Credit System. Structure is provided in Appendix A.
2. Major restructuring has taken place in the curriculum which is oriented towards Project based learning with inclusion of Intra disciplinary, Inter-departmental and Societal centric and industry related projects.
3. All the Courses in the Curriculum are designed to fall under either of the domains of employability or skill development. The mapping of the courses with employability or skill development is provided in Appendix B.
4. In all the courses of the revised curriculum (R21) substantial changes are made in the content. The percentage of change in the curriculum from R19 to R21 is 28%. The list of new courses provided in Appendix C.
5. Stakeholders feedback analyzed in CDMC is placed before the BoS and given utmost priority while designing the curriculum and their suggestions are implemented.

APPENDIX A

B.Tech-Electrical and Electronics Engineering Course Structure-2021 Regulation

I Year I Semester

Code	Course Title	L	T	P	C
Basic Science	Engineering Mathematics - I (E)	3	1	-	4
Basic Science	Engineering Physics (A)	3	-	2	4
Basic Engineering	Basic Electrical and Electronics Engineering	3	-	2	4
Basic Engineering	Engineering Graphics & Design	-	-	2	1
Basic Engineering	Introduction to C Programming	3	-	2	4
Sports & Games	Physical Fitness, Sports & Games - I	-	-	3	1
	Total	12	1	11	18

I Year II Semester

Code	Course Title	L	T	P	C
Basic Science	Engineering Mathematics - II (E)	3	1	-	4
Basic Science	Engineering Chemistry (C)	2	-	-	2
Basic Engineering	Programming for Problem Solving	3	-	2	4
Humanities and Management	English Proficiency and Communication Skills	-	-	2	1
Humanities and Management	Technical English Communication	2	-	2	3
Humanities and Management	Constitution of India	1	-	-	1
Basic Engineering	Basic Engineering Products	2	-	2	3
Basic Engineering	Workshop	1	-	2	2
Sports & Games	Physical Fitness, Sports & Games - II	-	-	3	1
	Total	14	1	13	21

II Year I Semester

Code	Course Title	L	T	P	C
Basic Engineering	Data Structures	2	-	2	3
Professional Core	Electrical Circuit Analysis	3	-	2	4
Professional Core	Digital Electronic Circuits	3	1	-	4
Professional Core	Analog Electronics	3	-	2	4
Professional Core	Electrical Measurements Laboratory	-	-	4	2
Employability & Life Skills	Life Skills - I	-	-	2	-
Seminar	Technical Seminar - I	-	-	2	1

Project	Intra-Disciplinary Projects - I	-	-	2	1
Sports & Games	Physical Fitness, Sports & Games - III	-	-	2	1
	Total	11	1	18	20

II Year II Semester

Code	Course Title	L	T	P	C
Professional Core	Electrical Machines - I	3	-	2	4
Professional Core	Power Transmission and Distribution	3	1	-	4
Basic Science	Probability Theory and Statistics for machine Learning	3	-	-	3
Humanities & Management	Environmental Studies	1	-	-	1
Open Elective	Open Elective-I	2	-	2	3
Open Elective	Open Elective-II	2	-	2	3
Humanities & Management	Management Science	3	-	-	3
Employability & Life Skills	Life Skills - II	-	-	2	1
Seminar	Technical Seminar - II	-	-	2	1
Project	Intra-Disciplinary Projects - II	-	-	2	1
	Total	17	1	12	24

III Year I Semester

Code	Course Title	L	T	P	C
Professional Core	Power Electronics	3	-	2	4
Professional Core	Control Systems	3	-	2	4
Professional Core	Electrical Machines - II	3	-	2	4
Department Elective	Department Elective - I	3	-	-	3
Open Elective	Open Elective-III	2	-	2	3
Open Elective	Open Elective-IV	2	-	2	3
Humanities & Management	Soft Skills Laboratory	-	-	2	1
Employability & Life Skills	Employability Skills - I	-	-	2	-
Project	Inter-Departmental Projects - I	-	-	4	2
Modular Course	Modular Course	-	-	-	1
	Total	16	-	18	25

III Year II Semester

Code	Course Title	L	T	P	C
Professional Core	Soft Computing Techniques	3	-	-	3
Professional Core	Machine Learning	3	-	-	3
Professional Core	Microprocessors & Microcontrollers	3	-	2	4
Humanities & Management	Professional Communication Laboratory	-	-	2	1
Humanities & Management	Human Values, Professional Ethics & Gender Equity	2	-	-	2
Department Elective	Department Elective - II	3	-	-	3
Open Elective	Open Elective-V	-	-	4	2
Open Elective	Open Elective (NPTEL/Swayam)	3	-	-	3
Employability & Life Skills	Employability Skills - II	-	-	2	1
Project	Inter-Departmental Projects - II	-	-	4	2
Open Elective	Open Elective-VI	-	-	2	1
	Total	17	-	16	25

IV Year I Semester

Course Code	Course Title	L	T	P	C
Professional Core	Analysis and Operation of Power Systems	3	-	2	4
Professional Core	Deep Learning	3	-	-	3
Professional Core	Reinforcement Learning	3	-	-	3
Professional Core	Digital Signal Processing	3	-	-	3
Professional Core	Industrial Electric Drives	3	-	-	3
Department Elective	Department Elective - III (NPTEL / Swayam)	3	-	-	3
Department Elective	Department Elective - IV (NPTEL / Swayam)	3	-	-	3
Project	Societal-Centric and Industry Related Projects	-	-	6	3
	Total	21	-	8	25

IV Year II Semester

Code	Course Title	L	T	P	C
Internship / Project	Internship / Project work	-	-	24	12
	Total	-	-	24	12

The courses that are highlighted denote implementation of 'Choice Based Credit System (CBCS)'

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DEPARTMENT ELECTIVE COURSES

Course Title	L	T	P	C
Applications of AI	3	-	-	3
Electric Vehicles	3	-	-	3
Green Energy Technologies	3	-	-	3
Smart Grid Technologies	3	-	-	3
Industrial Automation & Robotics	3	-	-	3
Energy Storage Technologies	3	-	-	3
Advanced Power Electronics	3	-	-	3
Switch Mode Power Conversion	3	-	-	3
VLSI Design and Technology	3	-	-	3
Embedded Systems in Electrical Engineering	3	-	-	3
SCADA Systems and Applications	3	-	-	3
Energy System Economics	3	-	-	3
High Voltage Engineering	3	-	-	3
Energy Audit, Conservation and Management	3	-	-	3
Power System Protection	3	-	-	3

Open Electives

1. Fundamentals of solar PV systems and applications
2. Elements of solar Thermal Energy Conversion
3. Alternate Energy Resources
4. Design and economics of solar PV systems



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APPENDIX – B

List of courses that enable employability or entrepreneurship or skill development in the R-21

B.Tech – Electrical and Electronics Engineering

Sl.	Course Name	Employability / Skill Development/Entrepreneurship
1.	Basic Electrical and Electronics Engineering	Skill Development
2.	Basic Engineering Products	Skill Development
3.	Electrical Circuit Analysis	Skill Development
4.	Digital Electronic Circuits	Skill Development
5.	Analog Electronics	Skill Development
6.	Electrical Machines - I	Skill Development
7.	Control Systems	Skill Development
8.	Power Transmission and Distribution	Skill Development
9.	Power Electronics	Employability
10.	Probability Theory and Statistics for machine Learning	Employability
11.	Electrical Machines - II	Skill Development
12.	Soft Computing Techniques	Employability
13.	Machine Learning	Employability
14.	Microprocessors & Microcontrollers	Employability
15.	Analysis and Operation of Power Systems	Skill Development
16.	Deep Learning	Employability
17.	Reinforcement Learning	Employability
18.	Digital Signal Processing	Skill Development
19.	Electrical Measurements Laboratory	Skill Development
20.	Energy System Economics	Skill Development
21.	Applications of AI	Employability
22.	High Voltage Engineering	Skill Development
23.	Industrial Automation & Robotics	Employability
24.	Smart Grid Technologies	Employability
25.	Computer Controlled Systems	Entrepreneurship
26.	Advanced Power Electronics	Entrepreneurship

27.	Switch Mode Power Conversion	Entrepreneurship
28.	Energy Audit, Conservation and Management	Entrepreneurship
29.	Electric Vehicles	Employability
30.	SCADA Systems and Applications	Employability
31.	VLSI Design and Technology	Employability
32.	Power System Protection	Skill Development
33.	Industrial Electric Drives	Skill Development
34.	Embedded Systems in Electrical Engineering	Employability
35.	Green Energy Technologies	Entrepreneurship
36.	Energy Storage Technologies	Entrepreneurship
37.	Fundamentals of solar PV systems and applications	Entrepreneurship
38.	Elements of solar Thermal Energy Conversion	Entrepreneurship
39.	Design and Economics of solar PV systems	Entrepreneurship
40.	Alternate Energy Resources	Skill Development
41.	Technical Seminar - I	Skill Development
42.	Intra-Disciplinary Projects - I	Skill Development
43.	Technical Seminar - II	Skill Development
44.	Intra-Disciplinary Projects - II	Skill Development
45.	Inter-Departmental Projects - I	Skill Development
46.	Modular Course	Skill Development
47.	Inter-Departmental Projects - II	Skill Development
48.	Societal-Centric and Industry Related Projects	Employability
49.	Internship	Skill Development
50.	Project work	Employability



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APPENDIX – C

List of new courses in the R21 B.Tech –Electrical and Electronics Engineering

Sl.	Course Name
1.	Basic Electrical and Electronics Engineering
2.	Basic Engineering Products
3.	Electrical Circuit Analysis
4.	Digital Electronic Circuits
5.	Analog Electronics
6.	Electrical Machines - I
7.	Control Systems
8.	Power Transmission and Distribution
9.	Power Electronics
10.	Probability Theory and Statistics for machine Learning
11.	Electrical Machines - II
12.	Soft Computing Techniques
13.	Machine Learning
14.	Microprocessors & Microcontrollers
15.	Analysis and Operation of Power Systems
16.	Deep Learning
17.	Reinforcement Learning
18.	Digital Signal Processing
19.	Electrical Measurements Laboratory
20.	Energy System Economics
21.	Applications of AI
22.	High Voltage Engineering
23.	Industrial Automation & Robotics
24.	Smart Grid Technologies
25.	Computer Controlled Systems
26.	Advanced Power Electronics
27.	Switch Mode Power Conversion
28.	Energy Audit, Conservation and Management
29.	Electric Vehicles

30.	SCADA Systems and Applications
31.	VLSI Design and Technology
32.	Power System Protection
33.	Industrial Electric Drives
34.	Embedded Systems in Electrical Engineering
35.	Green Energy Technologies
36.	Energy Storage Technologies
37.	Fundamentals of solar PV systems and applications
38.	Elements of solar Thermal Energy Conversion.
39.	Design and Economics of solar PV systems
40.	Alternate Energy Resources
41.	Technical Seminar - I
42.	Intra-Disciplinary Projects - I
43.	Technical Seminar - II
44.	Intra-Disciplinary Projects - II
45.	Inter-Departmental Projects - I
46.	Modular Course
47.	Inter-Departmental Projects - II
48.	Societal-Centric and Industry Related Projects
49.	Internship
50.	Project work



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