



VIGNAN'S
Foundation for Science, Technology & Research
UNIVERSITY

(Estd u/s 3 of UGC Act of 1956)

Department of Electrical and Electronics Engineering

Date: 09.04.2016

**Minutes of the Board of studies (BoS) meeting held on
09/04/16 at 10.00a.m in Simulation Lab
(B.Tech- Electrical and Electronics Engineering)**

The following are the members presented for the meeting.

- 1) Dr. V. T. Somasekhar - Professor, Dept. of Electrical Engineering,
NIT Warangal
- 2) Dr.K. Siva Kumar - Assistant Professor,
Dept. of Electrical Engineering, IIT Hyderabad
- 3) Mr.B.Murali Krishna - Technical Specialist ,
Honeywell Technology Solutions, Hyderabad
- 4) Dr. G. Srinivasa Rao - Head, Dept. of EEE, Vignan's University
- 5) Mr. P. V. S. Sobhan - Assoc. Prof, EEE, Vignan's University
- 6) Mr. M. Subba Rao - Asst. Prof, EEE, Vignan's University
- 7) Mr. B. Satish Babu - Asst. Prof, EEE, Vignan's University

The following are the views expressed by the external members

- 1) Dr.V.T. Somasekhar has given a short talk on what is the basic philosophy behind framing course objectives, programme objectives linking and connectivity in syllabus.
- 2) Mr. B. Murali Krishna insisted the exposure of industry practices for faculty, importance of feedback from old students & industrial persons.
- 3) Dr. Sivakumar insisted about creating the interest among faculty to improve industrial exposure.
- 4) Dr. G. Srinivasa Rao discussed about choice based credit system, credits to skills and exit options to students.
- 5) The external members have felt that course on Engineering Products is a very useful course and gave suggestions for inclusion of House Wiring if possible. Also suggested to include proper titles for each unit and expected outcome of it.
- 6) Dr. G. Srinivasa Rao gave clarification regarding proposed specializations in Electrical Engineering and members finalized the specializations as

- ii. Power Electronics and Drives
- iii. Automation and Energy Systems

- 7) Dr. V. T. Somasekhar suggested that department elective should start from 3-1 instead of 2-2.
- 8) Dr. V. T. Somasekhar advised to use the term 'Dept.Stream' instead of 'Dept.Elective'.
- 9) Dr. Siva Kumar has expressed that introduction of 1 credit courses/modular courses/workshops on the concepts of Basic Electrical Engineering can be made specific for first year students.
- 10) The External Experts restructured the complete PE PS Domains and suggested new subjects along with the course contents.
- 11) Mr. B. Murali Krishna has felt that courses related to communication engineering can be introduced so that students can know about it which is also required for students aspiring IES/Govt. examinations.
- 12) He advised to keep Alternate Sources of Energy as a common course in all the department streams with slight modification in the contents of Unit-5 as per their application.
 - For PE Stream the contents to be appended are Distributed Generation
 - For PS & Energy Streams the contents to be appended are Battery and super capacitor storage
- 13) Discussion on Mini-Project was made, and finally concluded that it has to be more strengthened and both faculty and students are to be made responsible for that.

Power Electronics Stream:

- 14) The Courses in the PE stream are as follows as per the guidance given by the team:

- i. 2.1 Alternate Sources of Energy
- ii. 2.2 Power Semiconductor Devices & Passive Components
- iii. 2.3 Analysis of Inverters
- iv. 2.4 SMPS based Converters
- v. 2.5 Design of Power electronic Systems

- 15) The Content suggested for the course Power Semiconductor Devices & Passive Components (2.2)

- i. Power Semi conductor devices (diode, transistor, thyristor, IGBT, MOSFET etc.,)
- ii. Capacitors

- iii. MOV (Metal Oxide Varistors)
 - iv. Magnetics (Inductors & Transformers)
 - v. Heat Sinking
- 16) The Content suggested for the course Design of Power electronic Systems (2.5)
- i. Design of AC-AC, AC-DC, DC-AC & DC-DC convertors
 - ii. Design of Magnetics
 - iii. GATE Driver Circuits
 - iv. Thermal Management (Heat Sinks)
- 17) The Team suggested that the course Design of Power electronic Systems (2.5) should be covered through case studies.

Power Systems Stream:

- 18) Dr. V. T. Somasekhar suggested to change the name of the course EHVAC Transmission Systems as Advanced AC Transmission Systems
- 19) The Team Suggested to omit the course on Smart Grid Technologies as it require strong Communication background as it's pre-requisite.
- 20) The Courses in the PS stream are as follows as per the guidance given by the team:
- i. 1.1 Alternate Sources of Energy
 - ii. 1.2 HVDC & FACTS
 - iii. 1.3 Advanced AC Transmission Systems
 - iv. 1.4 Advanced Power System Engineering
- 21) The Content suggested for the course Advanced Power System Engineering (1.4)
- i. Smart Grid
 - ii. Distributed Generation
 - iii. Microprocessor based advanced Switch gear protection

Automation & Energy Systems Stream:

- 22) The Courses in the Automation & Energy Systems stream are as follows as per the guidance given by the team:
- i. Alternate Sources of Energy
 - ii. Utilization of Electrical Energy

- iii. Energy Audit, Conservation & Management
- iv. Energy Economics

23) The team suggested reducing the no of credits to 4 from 5 for the course Electrical Drives in IV year I sem.

24) The team suggested including 1 credit modular course from industry in IV year I sem.

Opinion of BoS Members:

1. More number of modular courses from industry (1 credit courses) has to be introduced into the curriculum.
2. The members have felt that, instead of keeping basic science and humanities courses in first year, due to the concept of specialization it can be rearranged in either second or third year so that basic courses related to the specialization can be covered in the initial years itself, their by student can feel much better on working with projects in relevant specialization.

Merging of Lab & Theory:




3. In the Lab slots, all the students have to do the same experiment.
4. In Electronics and Computer labs, it is possible to conduct the same experiment by all the students but in Electrical Lab it is difficult without duplication of the existing lab equipments.
5. If duplicated cost is very high but it is done only in IIT Madras in 2010 for electrical machines laboratory.

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 with theory courses integrated with laboratory sessions.
3. All the Courses in the Curriculum are designed to fall under either of the domains of employability or skill development or Entrepreneurship. The mapping of the courses with employability or skill development is provided in Appendix B.
4. In all the courses of the revised curriculum (R16) substantial changes are made in the content. The percentage of revision from R13 to R16 is 55%. The list of new courses provided in Appendix C.
5. Stakeholder's feedback analyzed in CDMC which is place before the committee given utmost priority.

The following are the members present for the Board of Studies meeting held at Department of Electrical & Electronics Engineering on 09-04-2016.

External Members :

Sl. No.	Name of the Member	Designation	Signature
1.	Dr. V.T. Somasekhar	Professor Department of Electrical Engineering, NIT Warangal Ph:9908150883	
2.	Dr K.Siva Kumar	Assistant Professor, Department of Electrical Engineering, IIT Hyderabad Ph:9494750750	
3.	Sri. B.Murali Krishna	Technology Specialist, Honeywell Technology Solutions, Hyderabad Ph:9000707043	

Internal Members :

Sl. No.	Name of the Member	Designation	Signature
1.	Dr. G. Srinivasa Rao	Professor & HOD	
2.	Mr. P.V.S. Sobhan	Assoc. Professor	
3.	Mr. B. Satish Babu	Asst. Professor	
4.	Mr. M. Subba Rao	Asst. Professor	

Appendix A

B.Tech- Electrical and Electronics Engineering

Course Structure

I - Year

1st Semester

S.No	Subject	L	T	P	C
1	Engineering Mathematics-I	3	1	2	5
2	Engineering Physics	3	-	-	3
3	Technical EnglishCommunication	3	-	2	4
4	Basics of computers and Internet	3	-	2	4
5	Basics of Engineering Products	3	-	2	4
6	Computer Programming	3	3	2	5
7	English Proficiency and communications Skills	-	-	2	1
8	Engineering Physics Laboratory	-	-	3	2
Total		18	2	15	28

2nd Semester

S.No	Subject	L	T	P	C
1	Engineering Chemistry	3	1	2	3
2	Engineering Mathematics-II	3	-	-	5
3	Engineering Graphics	1	-	3	3
4	Data Structures	3	-	2	4
5	Environmental Scienceand Technology	2	-	-	2
6	Work shop Practice	-	-	3	2
7	Basics of Electrical and Electronics Engineering	3	-	2	4
8	Engineering Chemistry Laboratory	-	-	3	2
Total		15	1	13	25

II - Year

1st Semester

S.No	Subject	L	T	P	C
1	Linear System & Signal analysis	3	1	-	4
2	Management Science	3	-	-	3
3	Electrical Circuit Analysis	3	-	2	4
4	Electromagnetic Fields and Transmission Lines	3	1	-	4
5	Digital Electronics	3	-	2	4
6	Electronic Devices and circuits	3	-	2	4
7	Employability and Life skills Elective	-	-	-	3
	Total	18	2	6	26

2nd Semester

S.No	Subject	L	T	P	C
1	D.C Machines	3	-	2	4
2	Power generation systems	3	1	-	4
3	Power Electronics Devices and Circuits	3	-	2	4
4	Analog Electronics	3	-	2	4
5	Soft Skills Laboratory	-	-	2	1
6	Other Electives (Inter Dept & Minor)-1	3	1	-	4
7	Dept Electives -1	3	1	-	4
8	Employability and Life skills Elective	-	-	-	3
	Total	18	3	8	28

III - Year

1st Semester

S.No	Subject	L	T	P	C
1	Control Systems	3	-	2	4
2	Electrical Power Transmission & Distribution	3	-	2	4
3	Electrical Measurements and Instrumentation	2	-	2	3
4	Transformers and Induction motors	3	-	2	4
5	Professional Communication Laboratory	-	-	2	1
6	Other Electives (Inter Dept & Minor)-2	3	1	-	4
7	Dept Electives -2	3	1	-	4
8	Employability and Life skills Elective	-	-	-	3
	Total	17	2	10	27

2nd Semester

S.No	Subject	L	T	P	C
1	Professional Ethics	2	-	-	2
2	Power System Analysis	3	-	2	4
3	Microprocessors architectures and control	3	-	2	4
4	Switch Gear and protection	3	-	-	3
5	Synchronous & Special Machines	3	-	2	4
6	Other Electives (Inter Dept & Minor)-3	3	1	-	4
7	Dept Electives -3	3	1	-	4
8	Employability and Life skills Elective	-	-	-	3
	Total	20	2	6	28

IV - Year

1st Semester

S.NO	Subject	L	T	P	C
1	Electrical Drives	3	-	2	4
2	Power system operation and Control	3	-	2	4
3	Principles of Digital Signal Processing	3	1	-	4
4	AI Techniques in Electrical Engineering	3	-	-	3
5	Other Electives (Inter Dept & Minor)-4	3	1	-	4
6	Dept Electives -4	3	1	-	4
7	Employability and Life skills Elective	-	-	-	3
	Total	18	3	4	26

2nd Semester

S.No	Subject	L	T	P	C
1	PROJECT WORK \ INTERNSHIP	-	-	30	15
	Total	-	-	30	15

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

Department Electives

Stream-1(Power Systems)

1. Renewable Energy Technologies
2. HVDC& FACTS
3. Advanced AC Transmission Systems
4. Advanced Power System Engineering
5. High Voltage Engineering
6. Advanced Switchgear for Power systems

Stream-2 (Power Electronics)

1. Alternate Energy Resources
2. Power Semiconductor Devices and Passive components
3. Analysis of Inverters
4. Design of Power Electronic Systems
5. SMPS based Converters
6. Advanced Control Systems

Stream-3 (Automation and Energy Systems)

1. Utilization of Electrical Energy
2. Energy Audit , Conservation and Management
3. Energy Economics
4. Digital Control Systems

Open Electives

1. Solar PV Technologies-I
2. Solar PV Technologies-II
3. Design and Economics of PV systems
4. Solar Thermal Systems



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APPENDIX – B

List of courses that enable employability or entrepreneurship or skill development in the R-16 B.Tech – Electrical and Electronics Engineering

Sl.	Course Name	Employability / Skill Development/Entrepreneurship
1	Basics of Engineering Products	Skill development
2	Basics of Electrical and Electronics Engineering	Skill development
3	Linear Systems & Signal Analysis	Employability
4	Dc Machines	Employability
5	Electrical Circuit Analysis	Employability
6	Power Generation Systems	Employability
7	Electromagnetic Fields & Transmission Lines	Employability
8	Power Electronic Devices & Circuits	Employability
9	Electronic Devices and Circuit Theory	Employability
10	Analog Electronics	Skill development
11	Renewable Energy Technologies	Employability
12	Alternate Energy Resources	Employability
13	Solar PV Technologies-I	Employability
14	Control Systems	Skill development
15	Power System Analysis	Entrepreneurship
16	Electrical Power Transmission & Distribution	Skill development
17	Microprocessors Architectures & Control	Entrepreneurship
18	Electrical Measurements & instrumentation	Employability
19	Switch Gear & Protection	Employability
20	Transformers and Induction Motors	Employability
21	Synchronous and Special Machines	Employability
22	HVDC and FACTS	Employability
23	Advanced AC Transmission Systems	Employability
24	Power Semiconductor Devices & Passive Components	Skill development
25	Analysis of inverters	Skill development
26	Utilization of Electrical Energy	Skill development
27	Energy Audit, Conservation and Management	Employability
28	Solar PV Technologies-II	Employability

29	Design & Economics of PV plants	Skill development
30	Electric Drives	Skill development
31	Power System Operation and Control	Skill development
32	Principles of Digital Signal Processing	Employability
33	AI Techniques In Electrical Engineering	Employability
34	Project Work	Employability
35	Internship	Skill development
36	Advanced Power System Engineering	Skill development
37	High Voltage Engineering	Skill development
38	Advanced Switch Gear for Power Systems	Employability
39	Design of power electronic Systems	Skill development
40	SMPS based Converters	Skill development
41	Advanced Control Systems	Skill development
42	Energy Economics	Skill development
43	Digital Control Systems	Skill development
44	Solar Thermal Conversion Systems	Skill development
45	Employability Skills-III	Employability
46	Modular Course	Employability



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APPENDIX - C
List of new courses in the R-16
B.Tech – Electrical and Electronics Engineering

Sl.	Course Name
1.	Basics of Engineering Products
2.	Basics of Electrical and Electronics Engineering
3.	Linear Systems & Signal Analysis
4.	Dc Machines
5.	Electrical Circuit Analysis
6.	Power Generation Systems
7.	Electromagnetic Fields & Transmission Lines
8.	Power Electronic Devices & Circuits
9.	Electronic Devices and Circuit Theory
10.	Analog Electronics
11.	Renewable Energy Technologies
12.	Alternate Energy Resources
13.	Solar PV Technologies-I
14.	Control Systems
15.	Power System Analysis
16.	Electrical Power Transmission & Distribution
17.	Microprocessors Architectures & Control
18.	Electrical Measurements & instrumentation
19.	Switch Gear & Protection
20.	Transformers and Induction Motors
21.	Synchronous and Special Machines
22.	HVDC and FACTS
23.	Advanced AC Transmission Systems
24.	Power Semiconductor Devices & Passive Components
25.	Analysis of inverters
26.	Utilization of Electrical Energy
27.	Energy Audit, Conservation and Management
28.	Solar PV Technologies-II
29.	Design & Economics of PV plants
30.	Electric Drives
31.	Power System Operation and Control
32.	Principles of Digital Signal Processing
33.	AI Techniques In Electrical Engineering
34.	Project Work
35.	Internship
36.	Advanced Power System Engineering
37.	High Voltage Engineering
38.	Advanced Switch Gear for Power Systems
39.	Design of power electronic Systems

40.	SMPS based Converters
41.	Advanced Control Systems
42.	Energy Economics
43.	Digital Control Systems
44.	Solar Thermal Conversion Systems
45.	Employability Skills-III
46.	Modular Course


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