SREE VIDYANIKETHAN ENGINEERING COLLEGE
(Autonomous)
Sree Sainath Nagar, Tirupati – 517 102, AP.

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Agenda for 8th Meeting of Board of Studies for

PG Program M.Tech. (Power Electronics and Drives)

on

27th March, 2017

1. Action taken report on minutes/ resolutions of 7th BOS meeting.

2. Report on implementation of autonomy with respect to syllabi and regulations (SVEC16 I M. Tech.).

3. M. Tech. Academic Calendar for 2017-18.

4. Vision and Mission of the Department PEOs, POs and PSOs of M.Tech (Power Electronics and Drives).

5. Course structure, Course Objectives & Course Outcomes and Course Syllabi of M.Tech (Power Electronics and Drives).

6. Teaching, Learning and Evaluation Practices.

7. Research activities.

8. Faculty and Staff development activities.

9. Student development activities.

10. Student support systems.

11. Extension activities.

12. Any other item.

Chairman, BOS-EEE

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SREE
VIDYANIKETHAN
Engineering College
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Meeting of
Board of Studies
Electrical and Electronics Engineering
on
27th March, 2017

Minutes of the Meeting:

Members Present:

S. No.	Name	Designation
1	**Dr. T. Nageswara Prasad** Professor, Head, Dept. of EEE, SVEC	Chairman
2	**Dr. K. Vaisakh** Professor, Department of Electrical Engineering, Andhra University College of Engineering, Andhra University	External Member (Academics)
3	**Dr. R. P. Kumudini Devi** Professor, Dept. of EEE, Power System Engineering Division, Anna University	External Member (Academics)
4	**Mr. Sreevatsav RSSD** Alstom Transport Pvt. Ltd., Bangalore	Alumni (Industry)
5	**Dr. P. Umapathi Reddy** Professor, Dept. of EEE, SVEC	Internal Member
6	**Dr. M.S. Sujatha** Professor, Dept. of EEE, SVEC	Internal Member
7	**Dr. N.M.G. Kumar** Professor, Dept. of EEE, SVEC	Internal Member
8	**Dr. S. Hema Chandra** Professor, Dept. of EEE, SVEC	Internal Member
9	**Dr. K. Venkatesan** Professor, Dept. of EEE, SVEC	Internal Member
10	**Dr. R. Selvarasu** Professor, Dept. of EEE, SVEC	Internal Member
11	**Dr. S. Farook** Associate Professor, Dept. of EEE, SVEC	Internal Member
12	**Dr. E. Parimala Sundar** Associate Professor, Dept. of EEE, SVEC	Internal Member
13	**Mr. M. Manohara** Associate Professor, Dept. of EEE, SVEC	Internal Member

1. **Dr. T. Nageswara Prasad, chairman BoS, EEE has**

   - presented the resources, strengths and achievements of the department during the academic year 2016-17.

   - presented the need for introduction of new programme M.Tech. (Power Electronics and Drives). Also, appraised the members that application has been submitted to AICTE, New Delhi for introducing the program M.Tech. (PED) from the AY 2017-2018 under SVEC-16 regulations.

2. **Action taken report on minutes/ resolutions of 7th BOS meeting:**

   The chairman Dr. T. Nageswara Prasad has presented the report on action taken on the resolutions made in the BoS meeting held on 23rd April, 2016.

3. **Report on implementation of autonomy for M.Tech. Program:**

   SVEC-16 regulations have been under implementation for M.Tech. (EPS) for the students admitted from the AY 2016-2017. The members of the BOS were appraised the feedback of the students and the faculty on the courses of I-Semester M.Tech. (EPS).

4. **Vision and Mission of the Department Vision and Mission of the Department, PEOs, POs and PSOs:**

   The Chairman, BoS has appraised the members about the Vision & Mission of the dept. and PEOs, POs & PSOs of M.Tech. (PED). The members approved the Vision & Mission of the dept. and PEOs, POs & PSOs of M.Tech (PED). The approved vision, Mission PEOs & PSOs of M.Tech. (PED) program under SVEC16 regulations is sent to the Academic Council for perusal and ratification (Annexure-M1).

5. **M. Tech. (PED) Course Structure:**

   The chairman Dr. T. Nageswara Prasad has presented

   - the proposed course structure for I and II year M. Tech. (PED) program under SVEC-16 regulations in line with the program outcomes for approval.

   - the pre-requisites for various courses of M.Tech. (PED).

   - the tentative time table for approval.

   After detailed discussion on the course structure, the Board of Studies members have made the following suggestions for possible amendment in the course structure:

   - to include the course Applied Mathematics in I semester of M.Tech. (PED).

   - to change course title as special electrical machines instead of special machines and their controllers in I Year, II semester.

   The Course structure is thus approved with the above said suggestions (Annexure-M1).

6. **M. Tech. (PED) Syllabi for the course:**

The chairman Dr. T. Nageswara Prasad has presented the detailed syllabus, Lesson plans for various courses of M.Tech. (PED) under SVEC-16 regulations. After detailed discussion on the Syllabus, the Board of Studies members have made the following suggestions on the syllabus:

a) consider the following aspects in the course advanced power semiconductor devices,

b) remove the following content in unit II

- construction, steady state characteristics, turn–on methods, gate characteristics, switching characteristics, two transistor analogy and series, and parallel operation of thyristor.
- increase the number of periods required for handling unit III.

c) consider the following aspects in the course analysis of power converters,

- include single phase and three phase dual converter in unit I
- introduce Power factor correction rectifiers in Unit-V by removing Cycloconverters.

d) confirm a detailed syllabus for the course modelling of electrical machines in unit II.

e) add the topics SMPS applications and OFF line and ON line UPS in the course Analysis of Inverters

f) Advanced control systems course is to be renamed as Linear and Non-Linear system Theory and include the concepts of nonlinear control such as P, PI, fractional control, hysteresis control, Sliding mode and switching surface control and Time Delay control for the course.

g) change the text book author name as R. Krishnan by Electric motor drives for the course modelling of electrical machines.

h) confirm the overall content of the course Power Electronics in Renewable Energy Systems.

i) reconsider the unit II title as stepper motors in place of stepping motors for the course special electrical machines.

j) consider the text book Power Electronics by Ned Mohan for the courses analysis of inverters and analysis of power converters.

k) consider the text book Power Electronics by M D Singh as a reference book for the courses analysis of inverters and analysis of power converters.

l) consider the following aspects in the course Power Electronics lab,

- experiments shall be conducted using the breadboard avoiding hardware kits.
- selection of switching devices for different applications using data sheets

7. Teaching, Learning and Evaluation

The Chairman BoS presented the teaching, learning and evaluation practices followed in the department. The members of BOS appreciated the good practices being followed by the department. The Assessment manual is discussed and ratified by the BoS and is sent to the Academic Council for approval.

The members appreciated the pro-active approach of college management and efforts taken by department

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1	**Dr. T. Nageswara Prasad** Professor, Head, Dept. of EEE, SVEC	Chairman	
2	**Dr. K. Vaisakh** Professor, Department of Electrical Engineering, Andhra University College of Engineering, Andhra University	External Member (Academics)	
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Department of Electrical and Electronics Engineering

Approved Course Structure

Program: M.Tech. - Power Electronics and Drives

Regulations: SVEC - 16

I-Semester

S. No.	Course Code	Course Title	L	T	P	Total	Credits	Internal Marks	External Marks	Total Marks
1.	16MT1BS01	Applied Mathematics	4	-	-	4	4	40	60	100
2.	16MT18301	Advanced Power Semiconductor Devices	4	-	-	4	4	40	60	100
3.	16MT18302	Analysis of Inverters	4	-	-	4	4	40	60	100
4.	16MT18303	Analysis of Power Converters	4	-	-	4	4	40	60	100
5.	16MT18304	Modelling of Electrical Machines	4	-	-	4	4	40	60	100
6.	**Professional Elective-1**		4	-	-	4	4	40	60	100
	16MT18305	Electric and Hybrid-Electric Vehicles								
	16MT18306	Intelligent Controllers								
	16MT10707	Microcontrollers and Applications								
	16MT10705	Reactive Power Compensation and Management								
7.	16MT18331	Power Electronics Design Lab	-	-	4	4	2	50	50	100
8.	16MT18332	Power Electronics Simulation Lab	-	-	4	4	2	50	50	100
		Total	24	-	8	32	28	340	460	800
9.	16MT13808	Research Methodology (Audit course)	-	2	-	2	-	-	-	-

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II-Semester

S. No.	Course Code	Course Title	Contact Periods per Week				Credits	Scheme of Examination Max. Marks		
			L	T	P	Total		Internal Marks	External Marks	Total Marks
1.	16MT28301	Linear and Nonlinear Control Systems	4	-	-	4	4	40	60	100
2.	16MT28302	Power Electronics in Renewable Energy Systems	4	-	-	4	4	40	60	100
3.	16MT28303	Solid State AC Drives	4	-	-	4	4	40	60	100
4.	16MT28304	Solid State DC Drives	4	-	-	4	4	40	60	100
5.	16MT28305	Special Electrical Machines	4	-	-	4	4	40	60	100
6.	**Professional Elective-2**		4	-	-	4	4	40	60	100
	16MT20701	Flexible AC Transmission Systems								
	16MT20707	High Voltage DC Transmission								
	16MT20708	Power Quality								
	16MT20709	Smart Grid Technology								
7.	16MT28331	Electric Drives Lab	-	-	4	4	2	50	50	100
8.	16MT28332	Electric Drives Simulation Lab	-	-	4	4	2	50	50	100
9.	16MT28333	Seminar	-	-	-	-	2	--	100	100
		Total:	24	-	8	32	30	340	560	900
10.	16MT23810	Intellectual Property Rights (Audit Course)	-	2	-	2	-	-	-	-

III-Semester

S. No.	Course Code	Course Title	Contact Periods per Week				Credits	Scheme of Examination Max. Marks		
			L	T	P*	Total		Internal Marks	External Marks	Total Marks
1.	16MT3MOOC	Massive Open Online Course (MOOC)	-	-	-	-	-	-	-	-
2.	16MT38301	Project Work – Phase I	-	-	-	-	8	50	50	100
		Total:	-	-	-	-	8	50	50	100

*Fulltime Project Work

IV-Semester

S. No.	Course Code	Course Title	Contact Periods per Week				Credits	Scheme of Examination Max. Marks		
			L	T	P*	Total		Internal Marks	External Marks	Total Marks
1.	16MT48301	Project Work – Phase II	-	-	-	-	20	150	150	300
		Total:	-	-	-	-	20	150	150	300
		Grand Total:					86	880	1220	2100

*Fulltime Project Work

Department of Electrical and Electronics Engineering

LIST OF NEW COURSES INTRODUCED

Program: M.Tech.- Power Electronics and Drives

Regulations: SVEC - 16

16MT1BS01	Applied Mathematics
16MT18304	Modelling of Electrical Machines
16MT18305	Electric and Hybrid-Electric Vehicles
16MT18306	Intelligent Controllers
16MT18331	Power Electronics Design Lab
16MT13808	Research Methodology
16MT28301	Linear and Nonlinear Control Systems
16MT28305	Special Electrical Machines
16MT28331	Electric Drives Lab
16MT23810	Intellectual Property Rights

Chairman, BOS-EEE