Department of Electrical & Electronics Engineering

[Minimum Credits to be earned: 174 (for regular students)/132(for Lateral entry students)]

No	Course Code	Course	POs	Periods			
				L	T	P	C
First Semester							
1	16HSX01	English Communication Skills I	10	3	1	-	3
2	16MAX01	Engineering Mathematics I	1,2	3	1	-	3
3	16PYX01	Engineering Physics	1,2	3	1	-	3
4	16MEX01	Engineering Mechanics	1,2,3	3	1	-	3
5	16CSX01	Problem solving using C	1,2,3	3	1	-	3
6	16PYX02	Engineering Physics Lab	4	-	-	3	2
7	16CSX02	Problem solving using C Lab	4	-	-	3	2
8	16MEX02	Engineering Drawing	4,9,10	-	-	3	2
			Total	15	5	9	21
Second Semester							
1	16HSX03	English Communication Skills II	10	3	1	-	3
2	16MAX02	Engineering Mathematics II	1,2	3	1	-	3
3	16CYX01	Engineering Chemistry	1,2	3	1	-	3
4	16EEX01	Basic Electrical Engineering	1,2	3	1	-	3
5	16CHX01	Environmental Studies	1, 3, 6,7	3	1	-	3
6	16HSX02	English Communication Skills Lab	10	-	-	3	2
7	16CYX02	Engineering Chemistry Lab	4,	-	-	3	2
8	16MEX03	Engineering Workshop	1,2,10,12	-	-	3	2
			Total	15	5	9	21
Third Semester							
No	**Course Code**	**Course**	**POs**	**Periods**			
				L	**T**	**P**	**C**
1	16MA303	Engineering Mathematics III	1,2	3	-	2	4
2	16EE302	Circuit Theory	1,2	3	1	-	3
3	16EE303	DC Machines	1,2	3	1	-	3
4	16EE304	Electromagnetic Field Theory	1,2	3	1	-	3
5	16EC302	Digital Electronics	1,2,3	3	1	-	3
6	16EC303	Electronic Devices & Circuits	1,2,3	3	1	-	3
7	16EC307	Digital Electronics Lab	4	-	-	3	2
8	16EC308	Electronic Devices & Circuits Lab	4	-	-	3	2
9	16EE309	Electrical Engineering Lab	4	-	-	3	2
10	16HSX05	CC & EC Activities I	10	-	-	3	-
11	16ESXIA	Employability Skills I	8,10	-	2	-	-
			Total	20	4	12	25
Fourth Semester							
1	16EC503	Linear IC Applications	1, 2,3	3	1	-	3
2	16EE402	Control Systems	2,3,5,13,14	3	-	2	4
3	16EE403	Network Analysis & Synthesis	1, 2,13	3	1	-	3
4	16EE404	Transformers & Induction Machines	2,3,14	3	1	-	3
5	16EE405	Power Plant Engineering & Economics	2,6,7	3	1	-	3
6	16EE406	Electrical Measurements & Instrumentation	2,3,14	3	1	-	3
7	16EC607	Linear IC Applications Lab	4	-	-	3	2
8	16EE408	Electrical Measurements & Instrumentation Lab	4	-	-	3	2
9	16EE409	DC Machines Lab	4	-	-	3	2
10	16HSX05	CC & EC Activities I	10	-	-	3	1
11	16ESXIB	Employability Skills II	8,10	-	2	-	1
			Total	21	3	12	27
Fifth Semester							
No	**Course Code**	**Course**	**POs**	**Periods**			

				L	T	P	C
1	16CS307	Object Oriented Programming	2,3,4,5,11,12	3	-	2	4
2	16EE502	Power Electronics	2,3,13,14	3	1	-	3
3	16EE503	Power Transmission & Distribution	2,3,13	3	1	-	3
4	16EE504	Signal and Systems Theory	2,3,13	3	1	-	3
5	16EE505	Synchronous & Special Machines	2,3,14	3	1	-	3
6		Elective I / CC					3
7	16EE507	AC Machines Lab	4	-	-	3	2
8	16EE508 / 16EE509	Term Paper / Mini project	9,10,11,12	-	-	3	2
9	16HSX06	CC & EC Activities II	10	-	-	3	-
10	16ESX2A	Employability Skills III	8,10	-	2	-	-
11		Summer Internship	10, 11	-	-	-	-
			Total	16	4	12	23
Sixth Semester							
1	16EE601	Discrete Signal Processing	2, 3,13,14	3	1	-	3
2	16EE602	Electrical Drives	2,3,14	3	1	-	3
3	16EE603	Power System Analysis	2,3,5,14	3	1	-	3
4	16EC603	Microprocessors & Microcontrollers	1,2,3,4,5,10	3	-	2	4
5		Elective II / CC					3
6		Elective III (Open Elective)					3
7	16EE607	Power Electronics Lab	4, 5	-	-	3	2
8	16EE508 / 16EE509	Term Paper / Mini project	9,10,11,12	-	-	3	2
9		Audit Course	8	-	-	-	-
10	16HSX06	CC & EC Activities II	10	-	-	3	1
11	16ESX2B	Employability Skills IV	8,10	-	2	-	1
			Total	16	0	12	25
Seventh Semester							
No	**Course Code**	**Course**	**POs**	**Periods**			
				L	**T**	**P**	**C**
1	16HSX04	Engineering Economics & Project Management	1,2,3,9,11	3	1	-	3
2		Elective IV / CC					3
3		Elective V / CC					3
4	16EE704	Electrical Systems and Simulation Lab	4,5	-	-	3	2
5	16PE704	Power Systems Lab	4	-	-	3	2
6	16EE706	Full Semester Internship*	9, 10, 11,12, 13, 14	-	-	-	16
			Total	3	1	6	13/16
Eighth Semester							
1	16EE801	Ethics for Electrical Engineers	6,7,8,12	4	-	-	3
2	16EE802	Power System Protection	2,3,14	4	-	-	3
3		Elective VI / CC					3
4	16EE804	Project	9, 10, 11,12, 13, 14	-	-	-	10
5	16EE706	Full Semester Internship**	9, 10, 11,12, 13, 14				16
			Total	8	0	0	19/16

*Student who opt for FSI-16EE706 during 7th semester, have to register one more additional elective and 16EE704 & 16PE608 as additional lab courses during 8th semester.

** Student who opt for FSI-16EE706 during 8th semester, have to register an additional course in consultation with HoD during 7th semester.

List of Electives

No	Course Code	Course	POs	Periods			
				L	T	P	C
Elective I							
1	16EE001	Electrical Machine Design	2,3	3	1	-	3
2	16EE002	Automotive Electrical Engineering	2,3	3	1	-	3
3	16EE003	Advanced Control Systems	2,3	3	1	-	3
4		MOOCs		-	-	-	3
Elective II							
1	16IT504	Computer Networks	1,2	4	-	-	3
2	16CS304	Data Base Management Systems	1, 2,3	4	-	-	3
3	16CSX15	Fundamentals of Software Engineering	2,3,5	4	-	-	3
4		MOOCs		-	-	-	3
Elective III (Open Electives – Mathematics, Chemistry, Entrepreneurship Skills, Industrial Safety and Engineering & Technology)							
1	16CE007	Disaster Management	2	3	1	-	3
2	16EE004	Renewable Energy Sources	2,7	3	1	-	3
3	16ME009	Principles of Entrepreneurship	1,5,8,11	3	1	-	3
4	16EC004	Fundamentals of Global Positioning System	1,2,6	3	1	-	3
5	16CS006	Computational Intelligence	3,5,6	3	1	-	3
6	16CS007	IoT for Engineering Applications	1,5	3	1	-	3
7	16CH007	Industrial Safety & Hazard Management	1,2,3,6,8	3	1	-	3
8	16IT005	Fundamentals of Cloud Computing	2,5,6	3	1	-	3
9	16PE007	Smart Grid Technology	3,5	3	1	-	3
10	16MA001	Computational Mathematics	1,2	3	1	-	3
11	16CY001	Nano Science and Technology	1,2,12	3	1	-	3
Elective IV							
1	16EE005	Flexible AC Transmission Systems	2,3	4	-	-	3
2	16EE006	High Voltage DC Transmission	2,3	4	-	-	3
3	16EE007	Power System Deregulation	2,3	4	-	-	3
4	16EE008	Power System Operation and Control	2,3	3	1	-	3
5		MOOCs		-	-	-	3
Elective V							
1	16EC023	Communication Systems	1,2	4	-	-	3
2	16EE009	Electric Locomotives, Traction and Vehicles	2,6	4	-	-	3
3	16EE010	PLCs & SCADA	2,3	4	-	-	3
4	16EC505	VLSI Design	1,2,3	4	-	-	3
5		MOOCs		-	-	-	3
Elective VI							
1	16EE011	Artificial intelligence applications to power systems	2,3,5	4	-	-	3
2	16EE012	Design and Layout of Power Systems	2,3,8	4	-	-	3
3	16EE013	Electrical Installation, Design & Estimation	2,3	4	-	-	3
4	16EE014	Energy Audit, Conservation &Management	2,3,6,8	4	-	-	3
5	16EE015	Power Quality	2,3,8	4	-	-	3
6	16EC011	Embedded Systems	1,2,3	4	-	-	3
		MOOCs		-	-	-	3
Contemporary Courses (CC)[1]							
1	16CSX16	Digital Marketing (Self Study Mode)	3,14	-	-	-	1
2	16EE017	Batteries & Super Capacitors	3,14	4	-	-	3

[3] Contemporary and One Credit Courses may vary from one Academic Year to another academic year and depends on the recent trends in the industries

3	16EE018	Power System Devices	3,14	4	-	-	3
4	16EE019	Railway Signaling System	3,14	4	-	-	3
One Credit Course (s)[3]							
1	16EEI01	Automotive Electrical and Electronics	2,3,14	1	0	0	1
2	16EEI02	Solid State Lighting	2,3,14	1	0	0	1
3	16EEI03	Air field Ground Lighting System	2,3,14	1	0	0	1
4	16EEI04	Power plant Familiarization	2,3,14	1	0	0	1
Audit Courses							
1	16AT001	Contemporary India: Economy, Polity & Society (ME)	---				
2	16AT002	Indian Heritage and Culture (EEE)					
3	16AT003	Intellectual Property Rights and Patents (ECE)					
4	16AT004	Introduction to Journalism (CSE)					
5	16AT005	Professional Ethics and Morals (CE)					
6	16AT006	Science, Technology and Development (Chem)					
7	16AT007	Industrial sociology (PE)					
8	16AT008	Organizational Behavior (IT)					
9	16AT009	Communication Etiquette in workplaces (BS& H)					

Department of Electrical & Electronics Engineering
Power and Industrial Drives

[Minimum Credits to be earned: 72]

No	Course Code	Course	POs	Periods			
				L	T	P	C
First Semester							
1	16MEX101	Advanced Optimization Techniques		4	-	-	4
2	16PID102	Analysis of Power Electronic Converters		4	-	-	4
3	16PID103	Power Electronic Control of DC Drives		4	-	-	4
4		Elective I		4	-	-	4
5		Elective II		4	-	-	4
6	16PID104	Power Electronic Systems Simulation Lab			-	3	2
7	16PID105	Term Paper			-	-	2
			Total	20	-	3	24
Second Semester							
1	16PID201	Electrical Machine Modeling and Analysis		4	-	-	4
2	16PID202	Power Electronics Control of AC Drives		4	-	-	4
3	16PID203	Switched Mode Power Conversion		4	-	-	4
4		Elective III		4	-	-	4
5		Elective IV		4	-	-	4
6	16PID204	Power Electronics and Drives Lab			-	3	2
7	16PID205	Comprehensive Viva			-	-	2
			Total	20	-	3	24
Third Semester							
No	**Course Code**	**Course**	**POs**	**Periods**			
				L	**T**	**P**	**C**
1	16PID301	Internship		-	-	-	4
2	16PID302	Project		-	-	-	-
			Total	-	-	-	4
Fourth Semester							
1	16PID302	Project		-	-	-	20

List of Elective Courses

No	Course Code	Course	POs	Periods			
				L	T	P	C
Elective I							
1	16PID001	DSP Applications to Drives		4	-	-	4
2	16PID002	Modern Control Theory		4	-	-	4
3	16PID003	Power Electronic Applications to Power Systems		4	-	-	4
Elective II							
1	16PID004	Power Electronics Applications for Renewable Energy Systems		4	-	-	4
2	16PID005	Power Semiconductor Devices & Protection		4	-	-	4
3	16PID006	Special Machines and Controls		4	-	-	4
Elective III							
1	16PID007	Computer Control of Industrial Drives		4	-	-	4
2	16PID008	Intelligent applications to Electric Drives		4	-	-	4
3	16PID009	PLCs & SCADA		4	-	-	4
Elective IV							
1	16PID010	HVDC Transmission		4	-	-	4
2	16PID011	Modeling& Simulation of Power Electronic Systems		4	-	-	4
3	16PID012	Power Quality Issues & Mitigation		4	-	-	4

Department of Electrical & Electronics Engineering

6th Board of Studies Meeting

Date: 21-11-2015 Time: 10.00 AM Venue: Simulation Lab

Agenda:

1. Review & Finalization of course structure of PG Programmes under AR16 regulations.
2. Review & Finalization of course titles & content of PG Programmes under AR16 regulations.
3. Review & Revision of continuous assessment & semester end evaluation components under AR16 Regulations.
4. Review & Revision of continuous assessment system for AR16 Regulations.
5. Any other with the permission of the Chairman.

Members Present:

S.No	Name	Designation& Affiliation	Signature
1	Dr. T. Suresh Kumar	Chairman BoS Prof. & Head, Dept. of EEE, GMRIT	
2	Dr. G. Yesuratnam	Professor, EE Dept. Osmania University, Hyderabad	
3	Dr. G V Marutheswar	Professor, EE Dept. SV University, Tirupati	
4	Mr. G. Ravi Kumar (Special Invitee)	Scientist – G, NSTL, Visakhapatnam	Absent
5	Dr. G. Chandra Sekhar	Professor, Dept. of EEE, GMRIT	
6	Dr. B. Harish	Assistant Professor, Dept. of EEE, GMRIT	
7	Dr. K.V.S. Prasad	Assistant Professor, Dept. of EEE, GMRIT	
8	Mr. P. Devendra	Associate Professor, Dept. of EEE, GMRIT	
9	Mr. J.S.V. Siva Kumar	Assistant Professor, Dept. of EEE, GMRIT	
10	Mr. M. Rambabu	Assistant Professor, Dept. of EEE, GMRIT	
11	Mr. P. Ramana	Associate Professor, Dept. of EEE, GMRIT Member Secretary	

Chairman-BoS
HOD-EEE

Department of Electrical & Electronics Engineering

Minutes of 6th Board of Studies (BOS) Meeting
(UG Courses)

Dte: 21-11-2015 Time: 10.00AM Venue: Simulation Lab

Members Present:

S.No.	Name & Designation
1	Dr. T.Suresh Kumar- Chairman Bos, Prof& Head, Dept of EEE, GMRIT
2	Dr. G.Yesuratnam- Professor, EEE Dept, Osmania University, Hyderabad
3	Dr. G V Marutheswar- Professor, EEE Dept., S V University, Tirupati
4	Mr. G.Ravi Kumar(Special Invitee)-Scientist-G,NSTL,Visakhapatnam
5	Dr.G.Chandra Sekhar-Professor, Dept of EEE,GMRIT
6	Dr. B.Harish-Assistant Professor, Dept. of EEE, GMRIT
7	Dr. K V S Prasad-Assistant Professor, Dept of EEE, GMRIT
8	Mr. P.Devendra-Associate Professor, Dept. of EEE, GMRIT
9	Mr. J S V Sivakumar-Assistant Professor, Dept. of EEE,GMRIT
10	Mr. M.Rambabu-Assistant Professor, Dept. of EEE,GMRIT
11	Mr. P.Ramana-Associate Professor., Dept of EEE, GMRIT., Member Secretary

1. The course structure and Syllabus for AR-16(UG-All Semesters0 were revised and approved with following modifications.

   a. For all courses text and referee books should be of latest editions. Few more text books and reference books should be added in various subjects.

   b. Pulse & Digital Circuits subject should be added in 4th or 5th semester.

   c. Electrical Measurements lab & Control systems labs should be combined into single lab as "Measurements & Control Systems "Lab.

   d. Digital Electronics lab has to be introduced in 4th or 5th Semester

   e. Minor modifications in the content of few subjects like Circuit Theory, Electrical Measurements & Instrumentation, Power Electronics are suggested by the board members and they are modified accordingly.

   f. The course outcomes and objectives of all the courses were reviewed and finalized.

   g. As per the suggestion from NBA committee visit, the department specific outcomes are discussed and finalized as follows:

PSO 1: Utilize statistics/probability, transform methods, discrete mathematics, complex analysis or applied differential equations in support of electrical/electronic(s) systems.

PSO 2: Analyze, design and implement control, computer, instrumentation or power systems to any problem/application of electrical/electronic (s) engineering.

2. The Board members also made suggestions as follows:
    a. Revise and reduce the syllabus of Microprocessors & Microcontrollers theory subject.
    b. Complete restructuring of Embedded Systems subject is needed
    c. The examination for audit course may be kept as optional for the students, as there are no credits for the course.

Dr. T. Suresh Kumar -

Dr. G. Yesuratnam -

Dr. G V Marutheswar -

Mr. G. Ravi Kumar -

Dr. G. Chandra Sekhar -

Dr. B. Harish -

Dr. K.V.S Prasad -

Mr. P. Devendra -

Mr. J.S.V. Siva Kumar -

Mr. M. Rambabu -

Mr. P. Ramana -

Chairman-BoS
HOD-EEE