B.Tech –ECE-Course Structure

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

First Semester

No	Course Code	Course	POs	Periods			
				L	T	P	C
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	1,3	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	16MA304	Complex Variables	1,2,13	3	1	-	3
2	16EC302	Digital Electronics	1,2,3,13	3	1	-	3
3	16EC303	Electronic Devices and Circuits	1,2,3,13	3	1	-	3
4	16EC304	Linear Circuit Analysis	1,2,4,5,14	3	-	2	4
5	16EC305	Random Variables & Stochastic Processes	1,2,14	3	1	-	3
6	16EC306	Signals & Systems	1,2,14	3	1	-	3
7	16EC307	Digital Electronics lab	1,2,4,13	-	-	3	2
8	16EC308	Electronic Devices and Circuits Lab	2,3,4,13	-	-	3	2
9	16EC309	Signals and Systems Lab	2,14	-	-	3	2
10	16HSX05	CCEC Activities I	9,10	-	-	3	-
11	16ESX1A	Employability Skills I		-	2	-	-
			Total	18	7	14	25

Fourth Semester

1	16EE410	Linear Control Systems	1,2,13,14	3	1	-	3
2	16IT306	Object Oriented Programming through java	1,2,3,5,13	3	1	-	3
3	16EC403	Analog Communications	1,2,14	3	1	-	3
4	16EC404	Electromagnetic Fields and Waves	1,2,14	3	1	-	3
5	16EC405	Electronic Circuit Analysis	1,2,3,13,14	3	1	-	3
6	16EC406	Pulse and Digital Circuits	1,2,3,5,13	3	-	2	4
7	16IT309	Java Lab	4,5	-	-	3	2
8	16EC408	Analog Communications lab	4,7,8,9,10,11,13	-	-	3	2
9	16EC409	Electronic Circuits Lab	4,5, 8,9,10,13,14	-	-	3	2
10	16HSX05	CCEC Activities I	9,10	-	-	3	1
11	16ESX1B	Employability Skills II		-	2	-	1
			Total	18	7	14	27

Fifth Semester							
No	**Course Code**	**Course**	**POs**	**Periods**			
				L	**T**	**P**	**C**
1	16EC501	Antennas and Wave Propagation	1,2,3,14	3	1	-	3
2	16EC502	Digital Communications	1,2,3,14	3	1	-	3
3	16EC503	Linear IC Applications	1,2,3,13,14	3	1	-	3
4	16EC504	Structured Digital Design	1,2,3,4,5,13	3	-	2	4
5	16EC505	VLSI Design	1,2,3,13	3	1	-	3
6		Elective I / CC		3	1	-	3
7	16EC507	Digital Communications Lab	1,2,4,14	-	-	3	2
8	16EC508/ 16EC509	Term Paper/Mini project	2,3,4,5,9,10,11,13,14	-	-	3	2
9	16HSX06	CC & EC Activities II	9,10	-	-	3	-
10		Summer Internship	8,9	-	-	-	-
11	16ESX2A	Employability Skills III		-	2	-	-
			Total	18	7	11	23
Sixth Semester							
1	16EC601	Cellular and Mobile Communications	1,2,3,14	3	1	-	3
2	16EC602	Digital Signal Processing	1,2,3,14	3	1	-	3
3	16EC603	Microprocessors and Microcontrollers	1,2,3,4,5,13	3	-	2	4
4	16EC604	Microwave Engineering	1,2,14	3	1	-	3
5		Elective II/CC		3	1	-	3
6		Elective III (Open Elective)		3	1	-	3
7	16EC607	Linear IC Applications Lab	2,3,4,13,14	-	-	3	2
8	16EC509/ 16EC508	Mini Project/Term paper	2,3,4,5,9,10,11,13,14	-	-	3	2
9		Audit Course	8,12	-	-	-	-
10	16HSX06	CC & EC Activities II	9,10	-	-	3	1
11	16ESX2B	Employability Skills IV		-	2	-	1
			Total	18	7	11	25
Seventh Semester							
No	**Course Code**	**Course**	**POs**	**Periods**			
				L	**T**	**P**	**C**
1	16HSX04	Engineering Economics and Project Management	11	3	1	-	3
2		Elective IV/CC		3	1	-	3
3		Elective V/CC		3	1	-	3
4	16EC703	Digital Signal Processing Lab	1,2,4,14	-	-	3	2
5	16EC704	Microwave Engineering Lab	2,3,4, 8,10	-	-	3	2
6	16EC705	Full Semester Internship*	8,9,10,12	-	-	-	16
			Total	9	3	6	13/16
Eighth Semester							
1	16EC801	Professional Ethics and Standards	6,7,8,12	3	1	-	3
2	16EC802	Wireless Sensor Networks	1,2,3,14	3	1	-	3
3		Elective VI		3	1	-	3
4	16EC804	Project work	2,3,4,5,9,10,11,13,14	-	-	-	10
5	16EC706	Full Semester Internship**	8,9,10,12	-	-	-	16
			Total	9	3	-	19/16

*Student who opt for FSI-16EC705 during 7th semester, have to register one more additional elective and 16EC703 & 16EC704 as an additional lab courses during 8th semester

** Student the who opt for FSI-16EC705 during 8th semester, have to register an additional course in consultation with HoD during 7th semester

List of Elective Courses, Contemporary Courses, Audit Courses, Employability Skills and One Credit Courses

No	Course Code	Course	POs	Periods			
				L	T	P	C
Elective I							
1	16CS303	Computer Organization and Architecture	2,3,13	3	1	-	3
2	16EC001	Electronic Measurements and Instrumentation	1,2	3	1	-	3
3	16EC002	Transmission Lines and Waveguides	1,2	3	1	-	3
4		MOOCs		-	-	-	3
Elective II							
1	16IT404	Computer Networks	1,2,13	3	1	-	3
2	16CS304	Database Management Systems	1,2,3	3	1	-	3
3	16EC003	Optical Communication and Networks	1,2	3	1	-	3
4				-	-	-	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	1,2,6,13	3	1	-	3
5	16CS006	Computational Intelligence	3,5,6	3	1	-	3
6	16CS007	IoT Engineering Applications	1,5	3	1	-	3
7	16CH007	Industrial Safety and 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	Nanoscience & Technology	1,12	3	1	-	3
Elective IV							
1	16EC005	Digital Image Processing	1,2,3,14	3	1	-	3
2	16EC006	Radar Engineering	1,2,14	3	1	-	3
3	16EC007	Speech Processing	1,2,3,14	3	1	-	3
4	16EC008	Wavelet Theory and its Applications	1,2,3,14	3	1	-	3
5		MOOCs		-	-	-	3
Elective V							
1	16EC009	Biomedical Signal Processing	1,2,3,14	3	1	-	3
2	16EC010	Electromagnetic Interference and Compatibility	1,2,7	3	1	-	3
3	16EC011	Embedded Systems	1,2,3,13	3	1	-	3
4	16EC012	RF Circuit Design	1,2,3,13,14	3	1	-	3
5		MOOCs		-	-	-	3
Elective VI							
1	16EE502	Power Electronics	1,2,3	3	1	-	3
2	16CS004	Real Time Operating Systems	1,2,13	3	1	-	3
3	16EC013	Adaptive Signal Processing	1,2,3,14	3	1	-	3
4	16EC014	Analog and Mixed Signal Design	1,2,3,13	3	1	-	3
5	16EC015	Neural Networks and Fuzzy Logic	1,2,3,13,14	3	1	-	3
6	16EC016	Satellite Communications	1,2,14	3	1	-	3
7		MOOCs		-	-	-	3
Contemporary Courses (CC)							
1	16EC017	ARM Processor Architecture and Applications	1,2,3,13	3	1	-	3
2	16EC018	ASIC Design	1,2,3,13	3	1	-	3
3	16EC019	Software Defined Radio	2,3,5,13,14	3	1	-	3
4	16EC020	Testing of VLSI Circuits	1,2,13,14	3	1	-	3
5	16CSX16	Digital Marketing (Self Study Mode)	1,2,3,4,5,14	-	-	-	1

One Credit Course (s)3							
1	16ECI01	Modelling and Simulation of Basic Electronic System		1	-	-	1
2	16ECI02	Efficient Design of RF Transceiver		1	-	-	1
3	16ECI03	Antenna Design		1	-	-	1
4	16ECI04	Internet of Things		1	-	-	1
5	16ECI05	Full Custom VLSI Design		1	-	-	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(BSH)					

Department of Electronics and Communication Engineering
VLSI and Embedded system Design

[Minimum Credits to be earned: 72]

No	Course Code	Course	POs	Periods			
				L	T	P	C
First Semester							
1	16MEX101	Advanced Optimization Techniques	3,4	3	1	-	4
2	16VLS102	Embedded system design	1,2,3,5	3	1	-	4
3	16DEC003	VLSI Technology and Design	1,2,3,5	3	1	-	4
4		Elective I		3	1	-	4
5		Elective II		3	1	-	4
6	16DEC106	HDL Programming Laboratory	3,5,8,11		-	3	2
7	16VLS107	Term Paper	8,9,10,11		-	-	2
			Total	15	5	3	24
Second Semester							
1	16VLS201	Algorithms for VLSI design Automation	1,2,3,5	3	1	-	4
2	16DEC006	Embedded and Real time systems	1,2,3,5	3	1	-	4
3	16CSE203	Soft computing techniques	3, 5	3	1	-	4
4		Elective III		3	1	-	4
5		Elective IV		3	1	-	4
6	16VLS206	Embedded systems laboratory	3,5,8,11		-	3	2
7	16VLS207	Comprehensive Viva	1,2,3,8,11		-	-	2
			Total	15	5	3	24
Third Semester							
No	**Course Code**	**Course**	**POs**	**Periods**			
				L	**T**	**P**	**C**
1	16VLS301	Internship	4,6,7,8	-	-	-	4
2	16VLS302	Project	1,2,3,4,5,6,7,8,9,10,11	-	-	-	-
			Total	-	-	-	4
Fourth Semester							
1	16VLS302	Project	1,2,3,4,5,6,7,8,9,10,11	-	-	-	20

List of Elective Courses

No	Course Code	Course	POs	Periods			
				L	T	P	C
Elective I							
1	16DEC007	Analog and Digital IC design	1,2,3,5	3	1	-	4
2	16DEC002	Digital design through VERILOG	1,2,3,5	3	1	-	4
3	16VLS003	Embedded software design	1,2,3,5	3	1	-	4
Elective II							
1	16VLS004	Advanced Microcontrollers and Processors	3,5	3	1	-	4
2	16DEC202	DSP Processors and Architectures	3,4,5	3	1	-	4
3	16DEC012	VLSI Signal processing	3,45	3	1	-	4
Elective III							
1	16VLS007	Design of fault tolerant system	2,3,5	3	1	-	4
2	16VLS008	Embedded networking	2,3,5	3	1	-	4
3	16DEC009	Low power VLSI design	2,3,5	3	1	-	4
Elective IV							
1	16VLS010	CPLD and FPGA Architectures & applications	2,3,5	3	1	-	4
2	16VLS011	Hardware software co design	2,3,5	3	1	-	4
3	16DEC011	System modeling & simulation	2,3,5,6	3	1	-	4

GMR Institute of Technology
An Autonomous Institute Affiliated to JNTUK, Kakinada

GMRIT
Training Tomorrow's Engineers Today

GMR Nagar, Rajam-532 127
Srikakulam (Dist.)
Andhra Pradesh

T +91 (8941) 251 592/251 593/ 252 989
F +91 (8941) 251 591
W www.gmrit.org

Department of ECE

6th Board of Studies Meeting (External)

Date &Time : 20-11-2015 10.00 AM

Members Present:

S.No	NAME	DESIGNATION	SIGNATURE
1	Dr P. S. Khuntia	HOD, Chairman BOS, Dept. of ECE, GMRIT(A), Rajam	
2	Dr. Patri Srihari Rao	Associate Professor, NIT, Warangal	
3	Dr. N.Balaji	Professor, Department of ECE, JNTUK, Vizianagaram	
4	Dr.P.Mallikarjuna Rao	Professor, BOS Chairman and AU Senate Member, Andhra University, Visakhapatnam	
5	Dr. Birendra Biswal	Professor & Associate Dean(R&D) Dept. of ECE, GMRIT(A), Rajam	
6	Dr. M.V.Nageswara Rao	Professor & Associate Dean (S & F) Dept. of ECE, GMRIT(A), Rajam	
7	Mr. D.Tirumala Rao	Associate Professor, Dept. of ECE, GMRIT(A), Rajam	
8	Mr. P.M.K.Prasad	Associate Professor, Dept. of ECE, GMRIT(A), Rajam	
9	Dr. V.Jagan Naveen	Associate Professor, Dept. of ECE, GMRIT(A), Rajam	
10	Dr.G.Manmadha Rao	Associate Professor, Dept. of ECE, GMRIT(A), Rajam	
11	Mr. G.B.S.R.Naidu	Senior Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	
12	Smt.T.Geetamma	Senior Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	
13	Mr D.V.Ramana	Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	
14	Mr K.Krishna Kishore	Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	
15	Smt. S Sri Durga Kameswari	Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	
16	Mr J.Venkata Suman	Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	
17	Mr B.Anil Kumar	Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	

GMR Institute of Technology
An Autonomous Institute Affiliated to JNTUK, Kakinada

GMRIT Training Tomorrow's Engineers Today

GMR Nagar, Rajam-532 127
Srikakulam (Dist.)
Andhra Pradesh

T +91 (8941) 251 592/251 593/ 252 989
F +91 (8941) 251 591
W www.gmrit.org

18	Mr.D.Srinivasa Rao	Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	
19	Mr P.Devi Pradeep	Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	
20	Mr P Ravi Kumar	Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	
21	Mr.D Suresh	Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	
22	Mr.Ch. Babji Prasad	Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	
23	Mr.G.Suresh	Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	
24	Smt N.V.Lalitha	Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	
25	Mr.DYV Prasad	Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	
26	Mr.O.Kishore	Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	
27	Mr.B.M.S Sreenivasa Rao	Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	
28	Mr.P.Kalyanchakravarthi	Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	
29	Mr.T.Govinda Rao	Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	
30	Mr.K.Vijaya kumar	Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	
31	Mr.Ch.Kalyanchakravarthi	Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	
32	Mr D Arunkumar	Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	
33	Mr M. Balakrishana	Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	
34	P.V.Murali krishana	Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	
35	G.Sahu	Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	
36	Mr. A.Sudhakar	Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	
37	Mr.N.Sudheer Kumar	Assistant Professor, Dept. of ECE, GMRIT(A), Rajam	

GMR Institute of Technology
An Autonomous Institute Affiliated to JNTUK, Kakinada

GMRIT
Training Tomorrow's Engineers Today

GMR Nagar, Rajam-532 127
Srikakulam (Dist.)
Andhra Pradesh

T +91 (8941) 251 592/251 593/ 252 989
F +91 (8941) 251 591
W www.gmrit.org

AGENDA:

1. SWOT & GAP Analysis of the course structure and curriculum under AR13 regulations
2. Review & Finalization of course structure of UG Programmes under AR16 regulations.
3. Review & Finalization of course titles & content of UG Programmes under AR16 regulations.
4. Review & Finalization of course structure of PG Programmes under AR16 regulations.
5. Review & Finalization of course titles & content of PG Programmes under AR16 regulations.
6. Review & Revision of continuous assessment & semester end evaluation components under AR16 Regulations.
7. Review & Revision of continuous assessment system for AR16 Regulations.
8. Any other with the permission of the Chairman.

GMR Institute of Technology
An Autonomous Institute Affiliated to JNTUK, Kakinada

GMRIT Training Tomorrow's Engineers Today

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

7th Board of Studies

24.12.2016 (Saturday)

Minutes of the Meeting

No	Points Discussed	ATR
	Moocs Compared with JNTU (4 credits) 3 providing 2 credits. Whether it is equal to elective weightage.	on par with other PAT. online notification should be matched. It depends on the agency (HOD) offering Moocs.
	Add / drop courses. As per students mentality, the students may drop. suggested - the extra credited persons, to be identified.	

Devendra

No	Points Discussed	ATR
	Integrated course. How it differs from theory & practical courses. HoD explained the concept of integrated courses. 4+3 hours → reduced to 3+2	
	2+2+2 hours are suggested for Integrated. Enquired about EDC as integrated courses. HoD explained that the students may miss real hands on experience.	
	CC EC → how to quantify. Submitting report based on company.	

.NO	Points Discussed	ATR
	Electronic circuit simulation Lab "The term simulation" to be removed.	
	DICA → Digital system design to be remodified. HDL Lab → Verilog codes followed. EEPM → raised the question on why placing 5th semester. suggested through Mooc (or)	
	Course to be taught in 4-1 semester. EEPM is compulsory to be kept in final year.	

NO	Points Discussed	ATR
	I Semester → Traditional skills. (placed part of the curriculum) → Skillful writing.	
	one credit courses. 1. part of Music to be included. (X) pre-Requisite is to be noted for Industry driven course topics.	
	Employability skills. Debate on constitution can be made. Quantitative aptitude — online test Business news analysis to be included.	

.o	Points Discussed	ATR
	Structure content 1. Sample questions is necessary to be kept in curriculum. 2. Raised a question on PO mapping.	