

5 Year Dual Degree Programme (Electronics & Communication Engineering)

SEMESTER I

S. No.	Subject Code	Courses	L-T-P	Credits
		THEORY		
1	CY101/PH102	Engineering Chemistry/Engineering Physics	3-1-0	4
2	MA101	Mathematics – I	3-1-0	4
3	CE101	Engineering Mechanics	2-1-0	3
4	CS101	Computer Programming – I	2-0-0	2
5	EC101/EE102	Basic Electronics/Electrical Technology	2-0-0	2
6	HU 101	English Proficiency	2-0-0	2
7	SS101	Human Values & Buddhist Ethics	2-0-0	2
		PRACTICALS		
8	CY103/PH104	Engineering Chemistry Lab/ Physics Lab	0-0-2	1
9	CE103	Engineering Graphics	0-0-3	2
10	CS103	Computer Programming Lab –I	0-0-3	2
11	EC103/EE104	Basic Electronics Lab/ Electrical Technology Lab	0-0-2	1
12	GP101	General Proficiency	-	1
		Total	16-3-10	26
		Total Contact Hours	29	

SEMESTER II

S. No.	Subject Code	Courses	L-T-P	Credits
		THEORY		
1	PH102/CY101	Engineering Physics/ Engineering Chemistry	3-1-0	4
2	MA102	Mathematics – II	3-1-0	4
3	CE106	Ecology and Environment	2-1-0	3
4	CS102	Computer Programming – II	2-0-0	2
5	EE102/EC101	Electrical Technology/ Basic Electronics	2-0-0	2
6	HU102	Professional Communication	2-0-0	2
7	SS102	History of Science & Technology	2-0-0	2
		PRACTICALS		
8	PH104/CY103	Engineering Physics Lab/ Chemistry Lab	0-0-2	1
9	CS104	Computer Programming Lab II	0-0-3	2

10	EE104/EC103	Electrical Technology Lab/ Basic Electronics Lab	0-0-2	1
11	ME102	Workshop Practices	0-0-3	2
12	GP102	General Proficiency	-	1
		Total	16-3-10	26
		Total Contact Hours	29	

SEMESTER III

Sr. No.	Subject Code	Courses	L-T-P	Credits
		THEORY		
1	MA201	Quantitative Techniques	3-1-0	4
2	CS201	Internet Technology	2-0-0	2
3	CS205	Data Structure and Algorithms	2-1-0	3
4	EC201	Digital Electronics	3-0-0	3
5	EC203	Electronic Devices and Circuits	3-0-0	3
6	EC205	Signals and Systems	3-1-0	4
		PRACTICALS		
7	EC207	Digital Electronics Lab	0-0-3	2
8	EC209	Electronic Devices and Circuits Lab	0-0-3	2
9	CS209	Data Structure and Algorithms Lab	0-0-3	2
10	GP201	General Proficiency		1
		Total	16-3-9	26
		Total Contact Hours	28	

SEMESTER – IV

Sr. No.	Subject Code	Courses	L-T-P	Credits
		THEORY		
1	MA202	Numerical Methods of Analysis	3-1-0	4
2	EE202	Measurements and Instrumentation -I	2-0-0	2
3	EE206	Electromagnetic Field Theory	3-1-0	4
4	EC202	Analog Communication	3-0-0	3
5	EC204	Microprocessor and Microcontrollers	3-0-0	3
6	EC206	Digital Logic Design	3-0-0	3
		PRACTICALS		
7	EE216	Measurements and Instrumentation Lab- I	0-0-3	2

8	EC208	Microprocessor and Microcontrollers Lab	0-0-3	2
9	EC210	Analog Communication Lab	0-0-3	2
10	GP202	General Proficiency		1
		Total	17-2-9	26
		Total Contact Hours	28	

SEMESTER – V

Sr. No.	Subject Code	Courses	L-T-P	Credits
		THEORY		
1	ME311	Principles of Technology Management	2-0-0	2
2	EE305	Control Theory	3-1-0	4
3	CS311	Computer Organization and Architecture	3-1-0	4
4	EC301	Digital Signal Processing	3-0-0	3
5	EC303	Advance Electronic Circuits	3-0-0	3
6	EC305	Antenna and Wave Propagation	3-0-0	3
		PRACTICALS		
7	EC307	Advance Electronic Circuits Lab	0-0-3	2
8	EE313	Control Theory Lab	0-0-3	2
9	EC309	Antenna and Wave Propagation Lab	0-0-3	2
10	GP301	General Proficiency		1
		Total	17-2-9	26
		Total Contact Hours	28	

SEMESTER – VI

Sr. No.	Subject Code	Courses	L-T-P	Credits
		THEORY		
1	ME312	Entrepreneurship & Innovation	2-0-0	2
2	EE302	Microwave Engineering	3-1-0	4
3	CS308	Computer Networks	3-1-0	4
4	EC302	Network Analysis and Synthesis	2-1-0	3
5	EC304	Digital Communication Systems	3-1-0	4
6	EC306	Information Theory & Coding Techniques	2-0-0	2
		PRACTICALS		

7	CS312	Computer Networks Lab	0-0-3	2
8	EE316	Microwave Engineering Lab	0-0-3	2
9	EC308	Digital Communication Systems Lab	0-0-3	2
10	GP302	General Proficiency		1
		Total	15-4-9	26
		Total Contact Hours	28	

SEMESTER – VII

Sr. No.	Subject Code	Courses	L-T-P	Credits
		THEORY		
1	SS401	Social Aspects of Engineering	2-1-0	3
2	EC401	Wireless Communication	3-0-0	3
3	EC403	VLSI Systems	3-1-0	4
4	EC405	Optical Communication	2-0-0	2
5		Elective – I	3-0-0	3
6		Elective – II	2-1-0	3
		PRACTICALS		
7	EC423	VLSI Systems Lab	0-0-3	2
8	EC425	Optical Communication Lab	0-0-3	2
9	EC427	Seminar	0-0-3	2
10	GP401	General Proficiency	-	1
		Total	15-3-9	25
		Total Contact Hours	27	

SEMESTER – VIII

Sr. No.	Subject Code	Courses	L-T-P	Credits
		THEORY		
1	MA402	Simulation and Modeling	3-1-0	4
2	EC402	Telecommunication Switching and Networks	3-1-0	4
3	EC404	Television and Radar Engineering	3-0-0	3
4		Specialization Elective – 1	3-0-0	3
5		Specialization Elective – 2	3-0-0	3
6		Specialization Elective – 3	2-1-0	3

		Projects		
7	EC426	Special Problem-1	0-0-3	2
8	EC428	Seminar	0-0-3	2
9	GP402	General Proficiency		1
		Total	17-3-6	25
		Total Contact Hours	26	

SUMMER SEMESTER (After 8th Semester)

Sr. No.	Subject Code	Courses	L-T-P	Credits
1	EC430	Project	0-0-20	10
		Total	0-0-20	10
		Total Contact Hours	10	

SEMESTER – IX

Sr. No.	Subject Code	Courses	L-T-P	Credits
		THEORY		
1		Open Elective	2-0-0	2
2		Specialization Elective – 4	3-0-0	3
3		Specialization Elective – 5	3-0-0	3
4		Specialization Elective – 6	3-0-0	3
5		Specialization Elective – 7	2-1-0	3
6		Specialization Elective – 8	2-1-0	3
		PRACTICAL		
7		Lab – I	0-0-3	2
8		Lab - II	0-0-3	2
9	EC559	Research Project (Preliminary)	1**-0-4	3
10	GP501	General Proficiency	-	1
		Total	16-2-10	25
		Total Contact Hours	28	

**** This will not be a usual lecture session, but this is one to one interaction of each individual student with the concerned faculty member.**

SEMESTER – X

Sr. No.	Subject Code	Courses	L-T-P	Credits
1	EC502	Research Project	-	24
2	GP502	General Proficiency	-	1
		Total	-	25

Grand Total Credits of Dual Degree = 266

LIST OF ELECTIVES

Elective-I

Sr. No.	Subject Code	Courses	L-T-P	Credits
1	EC407	Digital System Design & Micro-controllers	3-0-0	3
2	EC409	Artificial Intelligence	3-0-0	3
3	EC411	Satellite Communication	3-0-0	3
4	EC413	Mobile Communication	3-0-0	3

Elective-II

Sr. No.	Subject Code	Courses	L-T-P	Credits
1	EC415	Cryptography & Information Security Issues	3-0-0	3
2	EC417	Soft computing Techniques	3-0-0	3
3	EC419	Operation Research	3-0-0	3
4	EC421	Digital Image Processing	3-0-0	3

LIST OF OPEN ELECTIVES

Sr. No.	Subject Code	Courses	L-T-P	Credits
1	EC501	Advance Internet Technologies	3-0-0	3
2	EC503	Reliability Analysis and Prediction	3-0-0	3
3	EC505	Pattern Recognition and Applications	3-0-0	3
4	EC507	Quality Engineering	3-0-0	3
5	EC509	Software Safety and Reliability Engineering	3-0-0	3
6	EC511	Queuing and Inventory Theory	3-0-0	3
7	EC513	Wavelet Analysis	3-0-0	3

8	EC515	Multicast Networks	3-0-0	3
9	EC517	Data Mining and Warehousing	3-0-0	3

WIRELESS COMMUNICATION AND NETWORKS

LIST OF SPECIALIZATION ELECTIVES (IV Year)

Sr. No.	Subject Code	Courses	L	T	P	Credits
1	EC406	Networking Protocols	3	0	0	3
2	EC408	Wireless Telecom Networks	3	0	0	3
3	EC410	QoS in Networks	2	1	0	3
4	EC412	Ad-Hoc Wireless Networks	3	0	0	3
5	EC414	Broadband Wireless Networks	3	0	0	3

LIST OF SPECIALIZATION ELECTIVES (V Year)

Sr. No.	Subject Code	Courses	L	T	P	Credits
1	EC519	Security in Wireless Networks	2	1	0	3
2	EC521	Microwave Techniques	2	1	0	3
3	EC523	Advanced RF Engineering	2	1	0	3
4	EC525	Smart Antenna System	2	1	0	3
5	EC527	Sensor Network	3	0	0	3
6	EC529	Mobile Computing	2	1	0	3
7	EC531	Distributed systems	3	0	0	3
8	EC533	Network Programming	3	0	0	3
9	EC535	Discrete Simulation and Modeling	2	1	0	3

VLSI DESIGN

LIST OF SPECIALIZATION ELECTIVES (IV Year)

Sr. No.	Subject Code	Courses	L	T	P	Credits
1	EC416	VLSI Technology	3	0	0	3
2	EC418	Digital VLSI Design	2	1	0	3
3	EC420	Analog Integrated Circuits	2	1	0	3
4	EC422	HDL and Design of Digital Systems	2	1	0	3
5	EC424	VLSI Physical Design Tools	3	0	0	3

LIST OF SPECIALIZATION ELECTIVES (V Year)

Sr. No.	Subject Code	Courses	L	T	P	Credits
1	EC537	Embedded System Design	3	0	0	3
2	EC539	Test and Verification of VLSI circuits	2	1	0	3
3	EC541	ASIC/SOC CAD Tools	3	0	0	3
4	EC543	Advanced HDL (prototyping with FPGA)	3	0	0	3
5	EC545	Advanced Digital VLSI Design	3	0	0	3
6	EC547	Advanced Analog VLSI Design	2	1	0	3
7	EC549	R F Design	2	1	0	3
8	EC551	Design of Semiconductor Memories	2	1	0	3
9	EC553	VLSI Algorithms	3	0	0	3

LABS for Electives

Sr. No.	Subject Code	Courses	L-T-P	Credits
Wireless Communication Networks				
1	EC555	Networking Protocols	0-0-3	2
2	EC557	QoS in Networks	0-0-3	2
VLSI DESIGN				
3	EC559	Digital VLSI Design	0-0-3	2
4	EC561	HDL and Design of Digital Systems	0-0-3	2