

Program Code : 116 - B. Tech. (Electronics and Communication Engineering)

Department : Department of Electronics and Communication

Year : I

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
(Autumn)														
1.	MAN-001	Mathematics-I	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	PHN-005	Electrodynamics and Optics	BSC	4	3	1	0	3	0	25	-	25	50	-
3.	CEN-105	Introduction to Environmental Studies	GSC	3	3	0	0	3	0	25	-	25	50	-
4.	HSN-001A	Communication Skills	HSSC	2	1	0	2	2	0	25	-	25	50	-
5.	HSN-002	Ethics and Self Awareness	HSSC	2	1	1	0	2	0	25	-	25	50	-
6.	ECN-101	Introduction to Electronics and Communication Engineering	DCC	2	2	0	0	2	0	-	-	-	100	-
7.	CSN-103	Fundamentals of Object Oriented Programming	ESC*	4	3	0	2	3	0	15	25	20	40	-
		Total		21	16	3	4							
(Spring)														
1.	MAN-002	Mathematical Methods	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	PHN-006	Quantum Mechanics and Statistical Mechanics	BSC	4	3	0	2	3	0	15	25	20	40	-
3.	CSN-102	Data Structures	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	ECN-104	Digital Logic Design	DCC	4	3	1	0	3	0	25	-	25	50	-
5.	MAN-006	Probability and Statistics	BSC	4	3	1	0	3	0	25	-	25	50	-
6.	EEN-112	Electrical Science	ESC	4	3	1	2/2	3	0	20	20	20	40	-
		Total		24	18	5	4							

*Open to ECE and CSE disciplines only.

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Year : II

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
(Autumn)														
1.	MIN-108	Mechanical Engineering Drawing	ESC	4	2	0	4	0	4	-	50	-	-	50
2.	ECN-203	Signals and Systems	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	ECN-242	Semiconductor Devices	DCC	4	3	1	2/2	3	0	20	20	20	40	-
4.	ECN-207	Computer Architecture and Organization	DCC	4	3	1	0	3	0	25	-	25	50	-
5.	ECN-291	Electronic Network Theory	DCC	4	3	1	0	3	0	25	-	25	50	-
6.	HSN-ELE	HSS Elective Course	HSSMEC	3	3	0	0	3	0	25	-	25	50	-
		Total		23	17	4	4							
(Spring)														
1.	MTN-106	Material Science	ESC	4	3	1	0	3	0	25	-	25	50	-
2.	ECN-205	Analog Circuits	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	ECN-212	Communication Systems and Techniques	DCC	4	3	1	0	3	0	25	0	25	50	0
4.	ECN-222	Automatic Control Systems	DCC	4	3	0	3	3	0	20	20	20	40	-
5.	ECN-232	Engineering Electromagnetics	DCC	4	3	1	0	3	0	25	-	25	50	-
6.	ECN-252	Digital Electronic Circuits Laboratory	DCC	2	0	0	3	0	3	-	50	-	-	50
		Total		22	15	4	6							

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Year : III

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
(Autumn)														
1.	ECN-311	Principles of Digital Communication	DCC	4	3	1	0	0	0	25	-	25	50	-
2.	ECN-331	Antenna Theory	DCC	3	3	0	0	3	0	25	-	25	50	-
3.	ECN-333	Microwave Techniques	DCC	3	3	0	0	3	0	25	-	25	50	-
4.	ECN-341	Microelectronic Devices, Technology, Circuits Lab	DCC	2	0	0	3	0	3	-	50	-	-	50
5.	ECN-351	IC Applications laboratory	DCC	2	1	0	3	0	3	15	35	-	-	50
6.	ECN-ELE1	Departmental Elective Course-I	DEC	4	3	1	0	3	0	25	-	25	50	-
7.	BM-ELE	Management Studies Elective Course	HSSMEC	3	3	0	0	3	0	25	-	25	50	-
8.	ECN-391	Technical Communication	DCC	2	0	2	0	0	0	-	-	-	100	-
		Total		23	16	4	6							
(Spring)														
1.	ECN-300	Industry-oriented Problem / Case study / Lab-based Project / Practical Problem	DCC	3	0	0	6	0	0	-	100	-	-	-
2.	ECN-312	Digital Signal Processing	DCC	3	3	0	0	3	0	25	-	25	50	-
3.	ECN-342	RF and Mixed Signals Circuits	DCC	3	3	0	0	3	0	25	-	25	50	-

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4.	ECN-352	Communication Systems Laboratory	DCC	2	0	0	3	0	3	-	50	-	-	50
5.	ECN-354	Microwave Laboratory	DCC	2	0	0	3	0	3	-	50	-	-	50
6.	ECN-ELE2	Departmental Elective Course-II	DEC	4	3	1	0	3	0	25	-	25	50	-
7.	OEC	Open Elective Course	OEC	3	3	0	0	3	0	25	-	25	50	-
8.	MSC1/DHC1	Minor Specialization Course-I/ Departmental Honours Course-I	MSC/ DHC	3	3	0	0	3	0	25	-	25	50	-
9.	ECN-399	Educational Tour	DCC	0	-	-	-	-	-	-	-	-	-	-
		Total		20/23	12/ 15	1	12							

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Year : IV

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
(Autumn)														
1.	ECN-ELE3	Departmental Elective Course-III	DEC	3	3	0	0	3	0	25	-	25	50	-
2.	ECN-ELE4	Departmental Elective Course-IV	DEC	3	3	0	0	3	0	25	-	25	50	-
3.	MSC2/DHC2	Minor Specialization Course-II/ Departmental Honours Course-II	MSC/ DHC	4	3	1	0	3	0	25	-	25	50	-
4.	MSC3/DHC3	Minor Specialization Course-III/ Departmental Honours Course-III	MSC/ DHC	4	3	1	0	3	0	25	-	25	50	-
5.	ECN-499	Training Seminar	DCC	2	0	2	0	0	0	100	-	-	-	-
6.	ECN-400A	B. Tech. Project	DCC	4	0	0	3	-	-	-	-	-	-	-
		Total		12/ 20	6/ 12	2/ 4	3							
(Spring)														
1.	ECN-ELE5	Departmental Elective Course-V	DEC	3	3	0	0	3	0	25	-	35	50	-
2.	ECN-ELE6	Departmental Elective Course-VI	DEC	3	3	0	0	3	0	25	-	35	50	-

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3.	MSC4/DHC4	Minor Specialization Course-IV/ Departmental Honours Course-IV	MSC/ DHC	4	3	1	0	3	0	25	-	25	50	-
4.	MSC5/DHC5	Minor Specialization on Course- V/ Departmental Honours Course- V	MSC/ DHC	4	3	1	0	3	0	25	-	25	50	-
5.	ECN-400B	B. Tech. Project (contd. From Autumn semester)	DCC	8	0	0	12	0	0	-	100	-	-	-
		Total		14/22	6/ 12	0/ 2	12							

List of courses for Minor Specialization in Electronics and Communication Engineering

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|-----|---------|--------------------------------------|------------|
| 1. | ECN-104 | Digital Logic Design | 4 credits |
| 2. | ECN-242 | Semiconductor Devices | 4 credits |
| 3. | ECN-201 | Network Theory | 4 credits |
| 4. | ECN-203 | Signals and Systems | 4 credits |
| 5. | ECN-205 | Analog Circuits | 4 credits |
| 6. | ECN-212 | Communication Systems and Techniques | 4 credits |
| 7. | ECN-232 | Engineering Electromagnetics | 4 credits |
| 8. | ECN-311 | Principles of Digital Communication | 4 credits |
| 9. | ECN-333 | Microwave Engineering | 3 credits* |
| 10. | ECN-312 | Digital Signal Processing | 3 credits* |

* Maximum one 3-credit course can be chosen.

List of Elective Courses :

1. ECN-514 Detection and Estimation Theory
2. ECN-515 Information and Coding Theory
3. ECN-519 Wireless Communication System
4. ECN-526 Statistical Machine Learning for Variation-Aware Electronic Device and Circuit Simulation
5. ECN-550 Radar Signal Processing
1. ECN-554 Microwave and Millimeter Wave Circuits
2. ECN-561 Compact Modelling of Semiconductor Devices
3. ECN-573 Digital VLSI Circuit Design
9. ECN-578 Digital System Design
10. ECN-579 Foundations of Semiconductor Device Physics
11. ECN-581 Analog VLSI Circuit Design
12. ECN-584 VLSI Mixed Signal Circuits
13. ECN-587 Nanoscale Devices
14. ECN-591 VLSI Physical Design
15. ECN-596 MEMS and NEMS
16. ECN-614 Adaptive Signal Processing Techniques
17. ECN-618 Wireless Technologies: 5G and Beyond
18. ECN-619 Introduction to Compressed Sensing
19. ECN-620 Advanced Wireless Communication
20. ECN-631 RF Receiver Design