

**BACHELOR OF TECHNOLOGY (ELECTRONICS & COMMUNICATION)**

**First Year (Autumn Semester)**

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
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-001B	Communication Skills (Advance)	HSSC	2	1	-	2	2	-	25	-	25	50	-
	HSN-001A	Communication Skills (Basic)	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	PCC	2	2	0	0	2	0	15	-	35	50	-
7	CSN-103	Fundamentals of Object Oriented Programming	ESC	4	3	0	2	3	0	15	25	20	40	-

**First Year (Spring Semester)**

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
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	PCC	4	3	1	0	3	0	25	-	25	50	-
4	ECN-104	Digital Logic Design	PCC	4	3	1	0	3	0	25	-	25	50	-
5	ECN-142	Semiconductor Devices	PCC	4	3	1	0	3	0	15	15	30	40	-
6	EEN-112	Electrical Science	ESC	4	3	1	0	3	0	20	20	20	40	-

**Second Year (Autumn Semester)**

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	MIN-108	Mechanical Engineering Drawing	ESC	4	2	0	4	0	4	-	50	-	-	50
2	ECN-203	Signals and Systems	PCC	4	3	1	0	3	0	25	-	25	50	-
3	ECN-205	Analog Circuits	PCC	4	3	1	0	3	0	25	-	25	50	-
4	CSN-221	Computer Architecture and Microprocessors	PCC	4	3	1	0	3	0	25	-	25	50	-
5	ECN-291	Electronic Network Theory (Engineering Analysis and Design course)	PCC	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	-

**Second Year (Spring Semester)**

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	MTN-105	Electrical and Electronic Materials	ESC	4	3	1	0	3	0	25	-	25	50	-
2	MAN-006	Probability and Statistics	BSC	4	3	1	0	3	0	25	-	25	50	-
3	ECN-212	Principles of Digital Communication	PCC	4	3	1	0	3	0	25	-	25	50	-
4	ECN-222	Automatic Control Systems	PCC	4	3	0	3	3	0	15	15	30	40	-
5	ECN-232	Engineering Electromagnetics	PCC	4	3	1	0	3	0	25	-	25	50	-
6	ECN-252	Digital Electronic Circuits Laboratory	PCC	2	0	0	3	0	3	-	50	-	-	50

### Third Year (Autumn Semester)

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	ECN-311	Communication Systems and Techniques	PCC	4	3	1	0	3	0	25	-	25	50	-
2	ECN-331	Antenna Theory	PCC	3	3	0	0	3	0	15	-	35	50	-
3	ECN-333	Microwave Techniques	PCC	3	3	0	0	3	0	15	-	35	50	-
4	ECN-341	Microelectronic Devices, Technology and Circuits	PCC	2	1	0	2	0	2	15	35	-	-	50
5	ECN-351	IC Application Laboratory	PCC	2	0	0	3	0	3	-	50	-	-	50
6	ECN-ELE1	Departmental Elective Course-I	PEC	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	PCC	2	0	2	0	0	0	-	-	-	100	-

### Third Year (Spring Semester)

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	ECN-300	Lab-based Project	PCC	3	0	0	6	0	0	-	100	-	-	-
2	ECN-312	Digital Signal Processing	PCC	3	3	0	0	3	0	25	-	25	50	-
3	ECN-342	RF and Mixed Signals Circuits	PCC	3	3	0	0	3	0	25	-	25	50	-
4	ECN-352	Communication Systems Laboratory	PCC	2	0	0	3	0	3	-	50	-	-	50
5	ECN-354	Microwave Laboratory	PCC	2	0	0	3	0	3	-	50	-	-	50
6	ECN-ELE2	Departmental Elective Course-II	PEC	3	3	0	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	PCC	0	-	-	-	-	-	-	-	-	-	-

### Fourth Year (Autumn Semester)

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	ECN-ELE3	Departmental Elective Course-III	PEC	¾	3	0/1	0	3	0	25	-	25	50	-
2	ECN-ELE4	Departmental Elective Course-IV	PEC	¾	3	0/1	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	PCC	2	0	2	0	0	0	100	-	-	-	-
6	ECN-400A	B.Tech. Project	PCC	4	0	0	3	-	-	-	-	-	-	-

### Fourth Year (Spring Semester)

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	ECN-ELE5	Departmental Elective Course-V	PEC	¾	3	0/1	0	3	0	25	-	25	50	-
2	ECN-ELE6	Departmental Elective Course-VI	PEC	¾	3	0/1	0	3	0	25	-	25	50	-
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)	PCC	8	0	0	12	0	0	-	100	-	-	-

## Department Electives

### Category I: Electives / Honours Courses (for 3rd year)

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1.	ECN - 314	Telecommunication Switching, Networks and Protocols II	PEC	3	3	0	0	3	0	25	0	25	50	0
2.	ECN - 343	Fundamentals of Microelectronics II	PEC	3	3	0	0	3	0	25	0	25	50	0
3.	ECN - 316	Digital Image Processing II	PEC	3	3	0	0	3	0	25	0	25	50	0
4.	ECN - 344	Embedded Engineering Design I	PEC	4	3	1	0	3	0	25	0	25	50	0
5.	CSN - 341	Computer Networks I	PEC	4	3	1	0	3	0	25	0	25	50	0
6.	CSN - 371	Artificial Intelligence I	PEC	4	3	1	0	3	0	25	0	25	50	0

### Category II: Electives / Honours Courses (for 4th year)

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1.	ECN - 512	Information and Communication Theory	PEC	3	3	0	0	3	0	25	0	25	50	0
2.	ECN - 523	Robotics & Computer Vision	PEC	3	3	0	0	3	0	25	0	25	50	0
3.	ECN - 532	Advanced Electro-Magnetic Field Theory	PEC	3	3	0	0	3	0	25	0	25	50	0
4.	ECN - 534	Antenna Theory & Design	PEC	3	3	0	0	3	0	25	0	25	50	0
5.	ECN - 539	Fibre Optics Systems	PEC	3	3	0	0	3	0	25	0	25	50	0
6.	ECN - 572	MOS Device Physics	PEC	3	3	0	0	3	0	25	0	25	50	0
7.	ECN - 573	Digital VLSI Circuits	PEC	3	3	0	0	3	0	25	0	25	50	0
8.	ECN - 581	Analog VLSI Circuits	PEC	4	3	1	0	3	0	25	0	25	50	0
9.	ECN - 515	Coding Theory and Applications	PEC	3	3	0	0	3	0	25	0	25	50	0
10.	ECN - 518	Speech and Audio Processing	PEC	3	3	0	0	3	0	25	0	25	50	0
11.	ECN - 550	Radar Signal Processing	PEC	4	3	1	0	3	0	25	0	25	50	0
12.	ECN - 554	Microwave and Millimeter - Wave Circuits	PEC	3	3	0	0	3	0	25	0	25	50	0
13.	ECN - 577	VLSI Technology	PEC	3	3	0	0	3	0	25	0	25	50	0
14.	ECN - 584	Mixed Signal Circuits	PEC	4	3	1	0	3	0	25	0	25	50	0
15.	ECN - 593	CAD and VLSI	PEC	4	3	1	0	3	0	25	0	25	50	0
16.	ECN - 612	Wireless Networks	PEC	3	3	0	0	3	0	25	0	25	50	0
17.	ECN - 614	Adaptive Signal Processing Techniques	PEC	3	3	0	0	3	0	25	0	25	50	0
18.	ECN - 631	RF Receiver Design	PEC	3	3	0	0	3	0	25	0	25	50	0
19.	CSN-513	Information and Network Security	PEC	4	3	1	0	3	0	25	0	25	50	0

Following is the list of courses from which five courses to be taken by the students for obtaining degree with Minor Specialization in Electronics & Communication Engineering. Students need to register for at least three 4-credit courses (out of the required five courses) to make total credits in the range 18 to 20.

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	EC-104	Digital Logic Design	PCC	4	3	1	0	3	0	25	-	25	50	-
2	EC-142	Semiconductor Devices	PCC	4	3	1	2/2	3	0	20	20	20	40	-
3	EC-203	Signals and Systems	PCC	4	3	1	0	3	0	25	-	25	50	-
4	EC-205	Analog Circuits	PCC	4	3	1	0	3	0	25	-	25	50	-
5	EC-291	Electronic Network Theory (Engineering Analysis and Design course)	PCC	4	3	1	0	3	0	25	-	25	50	-
6	EC-212	Principles of Digital Communication	PCC	4	3	1	0	3	0	25	-	25	50	-
7	EC-232	Engineering Electromagnetics	PCC	4	3	1	0	3	0	25	-	25	50	-
8	EC-311	Communication Systems and Techniques	PCC	4	3	1	0	3	0	25	-	25	50	-
9	EC-331	Antenna Theory	PCC	3	3	0	0	3	0	25	-	25	50	-
10	EC-333	Microwave Engineering	PCC	3	3	0	0	3	0	25	-	25	50	-
11	EC-312	Digital Signal Processing	PCC	3	3	0	0	3	0	25	-	25	50	-

### Department of Electronics & Communication Minor Specialization Course

S. No.	Subject Code	Course Title	Semester		Credit
			Autumn	Spring	
1	ECN -104	Digital Logic Design		√	4
2	ECN -142	Semiconductor Devices		√	4
3	ECN -203	Signals and Systems	√		4
4	ECN -205	Analog Circuits	√		4
5	ECN-212	Principles of Digital Communication		√	4
6	ECN -232	Engineering Electromagnetic		√	4
7	ECN -291	Electronic Network Theory	√		4
8	ECN -311	Communication Systems and Techniques	√		4
9	ECN -312	Digital Signal Processing		√	3
10	ECN -331	Antenna Theory	√		3
11	ECN -333	Microwave Engineering	√		3