

**Curriculum [Regulation-23]
Incorporating Guidelines of NEP2020**

**B.Tech. in Electronics and
Communication Engineering
(Effective From 2023-2024 Admission Batch)**



JIS College of Engineering
(NAAC 'A' Accredited An Autonomous Institute)
**(Affiliated to Maulana Abul Kalam Azad University of
Technology)**

1st Year 1st Semester									
Sl. No.	Broad Category	Category	Paper Code	Subject	Contact Hours/Week				Credit Points
					L	T	P	Total	
A. THEORY									
1	ENGG	Major	EC101	Basic Electrical and Electronics Engineering	3	0	0	3	3
2	ENGG	Minor	CS(EC)101	Programming for Problem Solving	3	0	0	3	3
3	SCI	Multidisciplinary	PH(EC)101	Engineering Physics	3	0	0	3	3
4	SCI	Multidisciplinary	M(EC)101	Engineering Mathematics- I	3	0	0	3	3
5	HUM	Value Added Course	HU104	Environmental Science	2	0	0	2	2
6	HUM	Value Added Courses	HU105	Indian Knowledge System	1	0	0	1	1
B. PRACTICAL									
1	ENGG	Major	EC191	Basic Electrical and Electronics Engineering Lab	0	0	3	3	1.5
2	SCI	Skill Enhancement Course	PH(EC)191	Engineering Physics Lab	0	0	3	3	1.5
3	ENGG	Skill Enhancement Course	CS(EC)191	Programming for Problem Solving Lab	0	0	3	3	1.5
4	ENGG	Skill Enhancement Course	ME(EC)191	Engineering Graphics and Design Lab	0	0	3	3	1.5
5	HUM	Ability Enhancement Course	HU(EC)191	Soft Skill and Aptitude	0	0	2	2	1
Total of Theory, Practical								29	22

1st Year 2nd Semester									
Sl. No.	Broad Category	Category	PaperCode	Subject	Contact Hours/Week				Credit Points
					L	T	P	Total	
A. THEORY									
1	ENGG	Major	EC201	Circuit Theory and Network	3	0	0	3	3
2	SCI	Multidisciplinary	CH(EC)201	Engineering Chemistry	2	0	0	2	2
3	SCI	Multidisciplinary	M(EC)201	Engineering Mathematics – II	3	0	0	3	3
4	HUM	Ability Enhancement Course	HU201	Professional Communication	2	0	0	2	2
5	ENGG	Value Added Course	HU202	Values and Ethics	2	0	0	2	2
6	ENGG	Value Added Course	HU203	Constitution of India	1	0	0	1	1
B. PRACTICAL									
1	SCI	Skill Enhancement Course	CH(EC)291	Engineering Chemistry Lab	0	0	2	2	1
2	ENGG	Skill Enhancement Course	ME(EC)291	Workshop and Manufacturing Practices Lab	0	0	3	3	1.5
3	ENGG	Major	EC291	Circuit Theory and Network Lab	0	0	3	3	1.5
4	HUM	Ability Enhancement Course	HU291	Professional Communication Lab	0	0	2	2	1
Total of Theory, Practical								23	18

2 nd Year 3 rd Semester									
Sl. No.	Broad Category	Category	Paper Code	Subject	Contact Hours/Week				Credit Points
					L	T	P	Total	
A. THEORY									
1	ENGG	Major	EC301	Digital Electronics	3	0	0	3	3
2	ENGG	Major	EC302	Solid State Devices	3	0	0	3	3
3	ENGG	Major	EC303	Signals and Systems	3	0	0	3	3
4	ENGG	Minor	CS(EC)301	Data Structure	3	0	0	3	3
5	SCI	Minor	M(EC)301	Numerical Methods	2	0	0	2	2
B. PRACTICAL									
1	ENGG	Major	EC391	Digital Electronics Lab	0	0	3	3	1.5
2	ENGG	Minor	CS(EC)391	Data Structure Lab	0	0	3	3	1.5
3	HUM	Ability Enhancement Course	HU(EC)391	Technical Seminar Presentation and Group Discussion	0	0	2	2	1
Total of Theory, Practical								22	18

2nd Year 4th Semester									
Sl. No.	Broad Category	Category	Paper Code	Subject	Contact Hours/Week				Credit Points
					L	T	P	Total	
A. THEORY									
1	ENGG	Major	EC401	EM Theory and Antenna	3	0	0	3	3
2	ENGG	Major	EC402	Analog Circuits	3	0	0	3	3
3	ENGG	Major	EC403	Analog and Digital Communication	3	1	0	4	4
4	ENGG	Minor	IT(EC)401	Database Management System	3	0	0	3	3
5	ENGG	Minor	M(EC)401	Probability and Statistics	3	0	0	3	3
B. PRACTICAL									
1	ENGG	Major	EC491	EM Theory and Antenna Lab	0	0	3	3	1.5
2	ENGG	Major	EC492	Analog Circuits Lab	0	0	3	3	1.5
3	ENGG	Major	EC493	Analog and Digital Communication Lab	0	0	3	3	1.5
4	ENGG	Minor	IT(EC)491	Database Management System Lab	0	0	3	3	1.5
Total of Theory, Practical								28	22

3 rd Year 5 th Semester									
Sl. No	Broad Category	Category	Paper Code	Subject	Contact Hours/Week				Credits
					L	T	P	Total	
A. THEORY									
1	ENGG	Major	EC501	Digital Signal Processing	3	0	0	3	3
2	ENGG	Major	EC502	Microprocessor and Microcontroller	3	0	0	3	3
3	ENGG	Major	EC503	Computer Network	3	0	0	3	3
4	ENGG	Major	EC504A	Mobile Communication and Network	3	0	0	3	3
			EC504B	Embedded Systems					
			EC504C	RF and Microwave Engineering					
5	ENGG	Minor	CS(EC)501A	Object Oriented Programming using JAVA	3	0	0	3	3
			CS(EC)501B	Introduction to Quantum Computing					
			CS(EC)501C	Cloud Computing					
6	HUM	Ability Enhancement Course	HU(EC)501	Business Communication	1	0	0	1	1
B. PRACTICAL									
1	ENGG	Major	EC591	Digital Signal Processing Lab	0	0	3	3	1.5

2	ENGG	Major	EC592	Microprocessor and Microcontroller Lab	0	0	3	3	1.5
3	ENGG	Major	EC594A	Mobile Communication and Network Lab	0	0	3	3	1.5
			EC594B	Embedded Systems Lab					
			EC594C	RF and Microwave Engineering Lab					
4	ENG G	Minor	CS(EC)591A	Object Oriented Programming using JAVA Lab	0	0	3	3	1.5
			CS(EC)591B	Introduction to Quantum Computing Lab					
			CS(EC)591C	Cloud Computing Lab					
5	ENGG	Skill Enhancement Course	IT(EC)591	IT Workshop Lab (Sci Lab/MATLAB/C++)	0	0	2	2	1
Total of Theory, Practical								30	23

3 rd Year 6 th Semester									
Sl. No.	Broad Category	Category	Paper Code	Subject	Contact Hours/Week				Credit Points
					L	T	P	Total	
A. THEORY									
1	ENGG	Major	EC601	VLSI Design	3	0	0	3	3
2	ENGG	Major	EC602	Control System	3	0	0	3	3
3	ENGG	Major	EC603A	IoT for Communication	3	0	0	3	3
			EC603B	Digital Image Processing					
			EC603C	Soft Computing					
4	ENGG	Minor	CS(EC)601A	Artificial Intelligence	3	0	0	3	3
			CS(EC)601B	Web Intelligence and Big Data					
			CS(EC)601C	Software Engineering					
B. PRACTICAL									
1	ENGG	Major	EC691	VLSI Design Lab	0	0	3	3	1.5
2	ENGG	Major	EC692	Control System Lab	0	0	3	3	1.5
3	ENGG	Major	EC693A	IoT for Communication Lab	0	0	3	3	1.5
			EC693B	Digital Image Processing Lab					
			EC693C	Soft Computing Lab					
4	ENGG	Minor	CS(EC)691A	Introduction to AI Lab	3	0	0	3	1.5
			CS(EC)691B	Web Intelligence and Big Data Lab					
			CS(EC)691C	Software Engineering Lab					
5	ENGG	Internship	EC681	Industrial Training (Min. 2 Weeks)	0	0	0	0	1
Total of Theory, Practical								24	19

4 th Year 7 th Semester									
Sl. No.	Broad Category	Category	PaperCode	Subject	Contact Hours/Week				Credit Points
					L	T	P	Total	
A. THEORY									
1	ENGG	Major	EC701	Satellite Communication	3	0	0	3	3
2	ENGG	Major	EC702A	Information Theory and Coding	3	0	0	3	3
			EC702B	Fiber Optic Communication					
			EC702C	Remote Sensing and GIS					
3	ENGG	Major	EC703A	Computer Architecture	3	0	0	3	3
			EC703B	Machine Learning					
			EC703C	IC Technology					
4	ENGG	Minor	CS(EC)701 A	Data Analytics	3	0	0	3	3
			CS(EC)701 B	Deep Learning					
			CS(EC)701 C	Cyber Security and Cryptography					
5	HUM	Skill Enhancement Course	HU(EC) 701	Economics for Engineers	2	0	0	2	2
B. PRACTICAL									
1	ENGG	Major	EC791	Satellite Communication Lab	0	0	2	2	1
2	ENGG	Internship	EC781	Internship (Min. 1 Month)	0	0	0	0	1
3	PRJ	Project	EC782	Project-I	0	0	0	6	6
Total of Theory, Practical								22	22

4 th Year 8 th Semester									
Sl. No.	Broad Category	Category	Paper Code	Subject	Contact Hours/Week				Credit Points
					L	T	P	Total	
A.THEORY									
1	ENGG	Major	EC801 A	Ad-Hoc and Wireless Sensor Networks	3	0	0	3	3
			EC801B	Introduction to EDA					
			EC801C	Speech and Audio Signal Processing					
2	ENGG	Major	EC802A	Adaptive Signal Processing	3	0	0	3	3
			EC802B	Electronic System Design					
			EC802C	Industrial Automation and Robotics					
3	ENGG	Minor	CS(EC)801A	Data Mining and Data Warehouse	3	0	0	3	3
			BM(EC)801B	Biomedical Electronics					
			CS(EC)801C	Block Chain					
4	HUM	Ability Enhancement Course	HU(EC)801	Principles of Management	2	0	0	2	2
B.PRACTICAL									
1	ENGG	Internship	EC881	Grand Viva	0	0	0	0	1
2	PRJ	Project	EC882	Project-II	0	0	0	12	6
Total of Theory, Practical								23	18

Total Credit = 162