COURSE STRUCTURE

for

B.TECH. DEGREE

in

ELECTRONICS AND COMMUNICATION ENGINEERING

(Applicable from the academic session 2024-2025)

Dr. B. C. Roy Engineering College

An Autonomous Institution

Approved by: All India Council for Technical Education (AICTE)

Affiliated to: Maulana Abul Kalam Azad University of Technology, West Bengal (Formerly Known as -WBUT)

Jemua Road, Durgapur, West Bengal, India, 713206

Dr. B. C. Roy Engineering College, Durgapur
Proposed Syllabus for B. Tech in Electronics and Communication Engineering Applicable from the academic session 2024-25

Curriculum Structure

2nd Year: 3rd Semester

A. Theory							
Sl No.	Field	Theory	Contact Hours/week				Credit Points
			L	T	P	Total	
1.	EC301	Semiconductor Devices	3	0	0	3	3
2.	EC302	Digital Electronics	3	0	0	3	3
3.	EC303	Signals and Systems	3	0	0	3	3
4.	EC304	Network Analysis and Synthesis	3	0	0	3	3
5.	ES-CS301	Data Structure & Algorithm	3	0	0	3	3
6.	BS-M301	Probability and Statistics	3	0	0	3	3
Total Theory						18	18
B. Practical							
7.	EC391	Semiconductor Devices Lab	0	0	2	2	1
8.	EC392	Digital Electronics Lab	0	0	2	2	1
9	ES-CS391	Data Structure & Algorithm Lab	0	0	2	2	1
10	EC-393	Signal and System Lab	0	0	2	2	1
11	HSM-381	Soft Skill Development Lab	0	0	2	2	1
Total Practical						10	5
Total Credits						28	23

2ndYear: 4th Semester

A. Theory							
Sl No.	Field	Theory	Contact Hours/week				Credit Points
			L	T	P	Total	
1.	EC401	Analog Electronic Circuits	3	0	0	3	3
2.	EC402	Analog Communication	3	0	0	3	3
3.	EC403	Electromagnetic Waves and Transmission line	3	0	0	3	3
4.	EC404	Digital System Design	3	0	0	3	3
5.	ES-M401	Numerical Methods	3	0	0	3	3
6.	BS-B401	Biology for Engineers	2	1	0	3	3
Total Theory						18	18
B. Practical							
7.	EC491	Analog Electronic Circuits Lab	0	0	2	2	1
8.	EC492	Analog Communication Lab	0	0	2	2	1
9.	EC493	Electromagnetic Waves and transmission line	0	0	2	2	1
10	EC494	Digital System Design	0	0	2	2	1
11.	ES-M(CS)491	Python Programming and Numerical Methods Lab			2		
Total Practical						10	5
Total Credits						28	23

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3rd Year: 5th Semester

A. Theory							
Sl No.	Field	Theory	Contact Hours/week				Credit Points
			L	T	P	Total	
1.	EC501	Digital Signal Processing	3	0	0	3	3
2.	EC502	Digital Communication	3	0	0	3	3
3.	EC503	Computer Organization & Architecture	3	0	0	3	3
4.	EC504	Microprocessors & Microcontrollers	3	0	0	3	3
5.	EC 505	CMOS VLSI Design	3	0	0	3	3
6.	ES-CS501	Object Oriented Programming	3	0	0	3	3
Total Theory						18	18
B. Practical							
7.	EC591	Digital Signal Processing Lab	0	0	2	2	1
8.	EC592	Digital Communication Lab.	0		2	2	1
9.	EC593	Microprocessors & Microcontrollers Lab	0		2	2	1
10.	EC594	CMOS VLSI Design Lab	0	0	2	2	1
11.	ES-CS591	Object Oriented Programming	0	0	2	2	1
Total Practical						10	5
Total Credits						28	23

3rd Year: 6th Semester

A. Theory							
Sl No.	Field	Theory	Contact Hours/week				Credit Points
			L	T	P	Total	
1.	EC601	Communication Network	3	0	0	3	3
2.	EC602	Control System	3	0	0	3	3
3.	PE-EC603	Program Elective I	3	0	0	3	3
4.	OE-EC604	Open Elective I	3	0	0	3	3
5	HS-HU601	Economics for Engineers	3	0	0	3	3
6.	ES-CS601	Database management system	3	0	0	3	3
Total Theory						18	18
B. Practical							
7.	EC691	Communication Network Lab.	0	0	2	2	1
8	EC692	Control System Lab	0	0	2	2	1
9	ES-CS691	Database management system Lab	0	0	2	2	1
10	EC681	Project I	0	0	8	8	4
Total Practical						14	7
Total Credits						32	25

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4th Year: 7th Semester

A. Theory							
Sl No.	Field	Theory	Contact Hours/week				Credit Points
			L	T	P	Total	
1.	EC701	Wireless Communication	3	0	0	3	3
2.	PE-EC702	Program Elective II	3	0	0	3	3
3.	PE-EC703	Program Elective III	3	0	0	3	3
4.	OE-EC704	Open Elective II	3	0	0	3	3
	HMS-701	Principles of Management	3	0	0	3	3
Total Theory						15	15
B. Practical							
5	EC791	Wireless Communication Lab	0	0	2	2	1
6.	EC781	Industrial Training	During Semester Break(6th & 7th)				1
7	EC782	Project II	0	0	12	12	6
Total Practical						14	8
Total Credits						29	23

4th Year: 8th Semester

A. Practical							
SlNo.	Field	Practical	Contact Hours/week				Credit Points
			L	T	P	Total	
1.	EC881	Project III	0	0	16	16	8
2.	EC882	Grand Viva					2
Total Practical						16	10
Total Contact /Credits						16	10

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Program Electives

Sl No.	Course Code	Course Title	Hours/week			Credits	Semester
			L	T	P		
1	PE-EC603A	Nano Electronics	3	0	0	3	
2	PE-EC603B	Power Electronics	3	0	0	3	
3	PE-EC603C	Information Theory & Coding	3	0	0	3	VI
4	PE-EC702A	Microwave Theory andTechniques	3	0	0	3	
5	PE-EC702B	Satellite Communication	3	0	0	3	
6	PE-EC702C	Antennas and Radar Engineering	3	0	0	3	
7	PE-EC703A	Adaptive Signal Processing	3	0	0	3	VII
8	PE-EC703B	Embedded System	3	0	0	3	
9	PE-EC703C	Neural Network and Fuzzy LogicControl	3	0	0	3	

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List of Open Elective

Sl No.	Course Code	Course Title	Hours/week			Credits	Semester
			L	T	P		
1	OE-EC604A	Applications of Artificial Intelligence in Electronics and Communications(ABB)	3	0	0	3	VI
2	OE-EC604B	Cyber Law & Intellectual Property Rights	3	0	0	3	
3	OE-EC604C	Electronic Measurements and Measuring Instruments	3	0	0	3	
4	OE-EC604D	Operating System	3	0	0	3	
5	OE-EC704A	Web Technology	3	0	0	3	VII
6	OE-EC704B	Optimization Technique	3	0	0	3	
7	OE-EC704C	Entrepreneurship	3	0	0	3	