

JALPAIGURI GOVERNMENT ENGINEERING COLLEGE
JALPAIGURI- 735102
(An Autonomous Government College)

COURSE STRUCTURE AND SYLLABUS
FOR
FIRST SEMESTER TO EIGHTH SEMESTER B.TECH. DEGREE
IN
ELECTRONICS & COMMUNICATION ENGINEERING

(Implemented for the new entry batch from the Academic Year 2021-22)



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Jalpaiguri Government Engineering College
Structure and syllabus of B.Tech. in **Electronics & Communication Engineering** to be implemented
from the entry batch of 2021-22

CC: Course Code, SC: Subject Code. Cr.: Credit, L-T-P-T: Lecture-Tutorial-Practical-Total

1st Year

CC	SC	Subject Name	Contact Hrs./Week		CC	SC	Subject name	Contact Hrs./Week	
			L-T-P-TO	Cr.				L-T-P-TO	Cr.
BSC	BS-CH101	Chemistry	3-1-0-4	4	BSC	BS-PH201	Physics	3-1-0-4	4
BSC	BS-M101B	Mathematics-IB	3-1-0-4	4	BSC	BS-M201B	Mathematics-IIB	3-1-0-4	4
ESC	ES-ES101	Basic Electrical Engineering	3-1-0-4	4	HUM	HM-HU201	English	2-0-0-2	2
BSC	BS-CH191	Chemistry Laboratory	0-0-3-3	1.5	ESC	ES-CS201	Programming for Problem Solving	3-0-0-3	3
ESC	ES-EE191	Basic Electrical Engineering Laboratory	0-0-2-2	1	ESC	ES-ME292	Workshop/Manufacturing Practice	1-0-4-5	3
ESC	ES-ME191	Engineering Graphics & Design	1-0-4-5	3	ESC	ES-CS291	Programming for Problem Solving Laboratory	0-0-4-4	2
Mandatory Induction Program- 3 weeks duration. It is to be done before initiation of classes (theoretical, laboratory & sessional) as per syllabus following guidelines of AICTE and MAKAUT			10-3-9-22	17.5	BSC	BS-PH291	Physics Laboratory	0-0-3-3	1.5
					HUM	HM-HU291	Language Laboratory	0-0-2-2	1
					Total			12-2-13-30	20.5

2nd Year

CC	SC	Subject Name	Contact Hrs./Week		CC	SC	Subject Name	Contact Hrs./Week	
			L-T-P-TO	Cr.				L-T-P-TO	Cr.
HUM	HM-HU(EC)301	Value & Ethics in Profession	2-0-0-2	2	BSC	BS-M(EC)401	Mathematics – III	3-1-0-4	4
ESC	ES-EC301	Basic Electronics	3-1-0-4	4	BSC	BS-CH(EC)401	Biology	2-0-0-2	2
ESC	ES-CS (EC)301	Data Structure	3-0-0-3	3	ESC	ES-CS(EC)401	Design and Analysis of Algorithm	3-0-0-3	3
PCC	PC-EC301	Network Theory	3-0-0-3	3	PCC	PC-EC401	Analog Electronics	3-0-0-3	3
PCC	PC-EC302	Signal & System	3-0-0-3	3	PCC	PC-EC402	Digital Electronics	3-0-0-3	3
PCC	PC-EC303	Solid State and Opto-Electronic Devices	3-0-0-3	3	PCC	PC-EC403	EM Theory & Antenna	3-0-0-3	3
PCC	PC-EC391	Laboratories on Basic Electronics, Circuit Theory & Network and Data Structure	0-0-6-6	3	PCC	PC-EC491	Laboratories on Analog Electronics, Digital Electronics and EM Theory	0-0-6-6	3
MC	MC-EC301	Essence of Traditional Knowledge	3-0-0-3	0	MC	MC-EC491	Environmental Science	0-0-3-3	0
Total			20-1-6-27	21	Total			20-1-6-27	21

3rd Year

CC	SC	Subject Name	Contact Hrs./Week		CC	SC	Subject Name	Contact Hrs./Week	
			L-T-P-TO	Cr.				L-T-P-TO	Cr.
PCC	PC-EC501	Microprocessors & Microcontrollers	3-0-0-3	3	HUM	HM-HU(EC)601	Principles of Management	2-0-0-2	2
PCC	PC-EC502	Analog Communication	3-0-0-3	3	PCC	PC-EC601	Digital Communication	3-1-0-4	4
PCC	PC-EC503	Control system	3-0-0-3	3	PCC	PC-EC602	DSP	3-0-0-3	3
PEC	PE-EC501	Professional Elective-I a) Electronic Measurement and Instrumentation b) Biomedical Instrumentation c) RF Components and Circuit Design d) MEMS and Applications	3-0-0-3	3	PCC	PC-EC603	VLSI	3-0-0-3	3
PEC	PE-EC502	Professional Elective-II a) Power Electronics b) Nano Electronics c) Computer Architecture & Organization d) Telecommunication Switching and Computer Networking	3-0-0-3	3	PEC	PE-EC601	Professional Elective-IV a) VLSI Technology b) Embedded System c) FPGA & Reconfigurable Computing d) Mobile communication and Network	3-0-0-3	3

PEC	PE-EC503	Professional Elective-III a) Upper Atmospheric Propagation b) Fiber Optic Communication c) Information Theory & Coding d) Remote Sensing & GIS	3-0-0-3	3
PCC	PC-EC591	Laboratory on Microcontroller, Control System, Analog Communication	0-0-6-6	3
Total			18-0-6-24	21

OEC	OE-CS(EC)601	Open Elective-1 a) Object Oriented Programming b) Data Base Management System c) Internet of Things (IoT) d) Numerical Methods in Engineering	3-0-0-3	3
PCC	PC-EC691	Laboratory on Digital Communication, DSP and VLSI	0-0-6-6	2
Proj	PR-EC681	Design	0-0-2-2	1
Total			17-1-6-24	21

4th Year

CC	SC	Subject Name	Contact Hrs./Week	
			L-T-P-TO	Cr.
PCC	PC-EC701	Microwave Engineering & Radar	3-0-0-3	3
PEC	PE-EC702	Professional Elective-V a) Mixed signal VLSI design b) Electronics Design and Automation c) Satellite Communication d) Architectural Design of ICs	3-0-0-3	3
OEC	OE-CS(EC)701	Open Elective-II a) Artificial Intelligence b) Software Engineering c) Cryptography and CyberSecurity d) Consumer Electronics	3-0-0-3	3
OEC	OE-EC(EC)702	Open Elective-III a) Digital Image Processing b) Robotics c) Adhoc Networks d) Operating Systems	3-0-0-3	3
OEC	OE-EC(EC)703	Open Elective-IV a) Biomedical Signal Processing b) SYSTEMS BIOLOGY: MODELING AND CONTROL c) Internet Technology d) Renewable Energy	3-0-0-3	3
PCC	PC-EC791	Laboratories on Microwave and Antenna Lab.	0-0-4-4	2
Proj	PR-EC781	Project-I	0-0-8-8	4
Total Credit			15-0-12-27	21

CC	SC	Subject Name	Contact Hrs./Week	
			L-T-P-TO	Cr.
HUM	HM-HU(EC)801	Financial Management and Accounts	3-0-0-3	3
PEC	PE-EC801	Professional Elective-VI a) Wireless Communication b) Semiconductor Device Modelling c) Speech and Audio Processing d) Electronic Device and Material Characterization	3-0-0-3	3
OEC	OE-CS(EC)801	Open Elective-V a) Machine Learning b) Hardware Security c) FOUNDATIONS OF EDUCATIONAL TECHNOLOGY d) Deep Learning	3-0-0-3	3
Proj	PR-EC881	Project-II	0-0-12-12	6
Proj	PR-EC882	Viva	0-0-0-0	2
Proj	PR-EC883	Internship Evaluation	0-0-0-0	0
			9-0-12-21	17