

JALPAIGURI GOVERNMENT ENGINEERING COLLEGE

JALPAIGURI- 735102

(An Autonomous Government College)

**COURSE STRUCTURE AND SYLLABUS
FOR
FIRST SEMESTER TO EIGHTH SEMESTER B.TECH. DEGREE
IN
INFORMATION TECHNOLOGY**

(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 Information Technology
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-M101A	Mathematics-IA	3-1-0-4	4	BSC	BS-M201A	Mathematics-IIA	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(IT)301	Value & Ethics in Profession	2-0-0-2	2	PCC	PC-IT401	Discrete Mathematics	3-1-0-4	4
ESC	ES-IT301	Analog and Digital Electronics	3-0-0-3	3	BSC	BS-CH(IT)401	Biology	2-0-0-2	2
PCC	PC-IT301	Data Structure and Algorithms	3-0-0-3	3	PCC	PC-IT402	Computer Organization	3-1-0-4	4
PCC	PC-IT302	Computer Architecture	3-0-0-3	3	PCC	PC-IT403	Formal Language & Automata Theory	3-0-0-3	3
BSC	BS-M(IT)301	Mathematics-III (Differential Calculus)	2-0-0-2	2	PCC	PC-IT404	Design and analysis of Algorithm	3-1-0-4	4
ESC	ES-IT391	Analog and Digital Electronics Lab.	0-0-4-4	2	MC	MC-IT401	Environmental Science	3-0-0-3	0
PCC	PC-IT391	Data Structure & Algorithms Lab.	0-0-4-4	2	PCC	PC-IT491	Computer Organization Lab	0-0-4-4	2
PCC	PC-IT392	Computer Architecture Lab.	0-0-4-4	2	PCC	PC-IT492	Design and Analysis of Algorithms Lab	0-0-4-4	2
PCC	PC-IT393	IT Workshop (Sci Lab/MATLAB/Python/R)	0-0-4-4	2					
MC	MC-IT301	Essence of Traditional Knowledge	3-0-0-3	0					
Total			16-0-16-32	21	Total			17-3-8-28	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.
ESC	ES-IT501	Signal & Systems	3-0-0-3	3	HUM	HM-HU(IT)601	Principles of Management	2-0-0-2	2
PCC	PC-IT501	Compiler Design	3-0-0-3	3	PCC	PC-IT601	Database Management System	3-0-0-3	3
PCC	PC-IT502	Operating Systems	3-0-0-3	3	PCC	PC-IT602	Computer Networks	3-0-0-3	3
PCC	PC-IT503	Object Oriented Programming	3-0-0-3	3	PEC	PE-IT601	Professional Elective-II a.Data Science b.Distributed Systems c.Software Engineering d.Image Processing & GIS	3-0-0-3	3
PEC	PE-IT501	Professional Elective-I a.Theory of Computation b.Artificial Integillence c.Advanced Computer Architecture d.Computer Graphics	3-0-0-3	3	PEC	PE-CS602	Professional Elective-III a.Parallel and Distributed Algorithms b.Data Mining c.Machine Learning d.Bioinformatics	3-0-0-3	3
PEC	PE-IT591	Compiler Design Lab	0-0-4-4	3	OEC	OE-IT601	Open Elective-I a.Numerical Analysis & Programming b.Theory Of Block Chain c.UX-UI Design	2-0-0-2	2
PCC	PC-IT592	Operating Systems Lab	0-0-4-4	2	PCC	PC-IT691	Database Management Systems Lab	0-0-4-4	2
PCC	PC-IT593	Object Oriented Programming Lab.	0-0-4-4	2	PCC	PC-IT692	Computer Networks Lab	0-0-4-4	2
Total			15-0-12-27	21	Proj	PR-IT691	Project-I	0-0-2-2	1
Total					Total			16-0-10-26	21

4th 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.
HM	HU-IT701	Project Management and Entrepreneurship	2-1-0-3	3	HUM	HM-HU801	Financial Management and Accounts	3-0-0-3	3
PEC	PE-IT702	Professional Elective-IV a. Internet Technology b. Quantum Computing c. Cloud Computing d. Advanced Operating System	3-0-0-3	3	PEC	PE-IT801	Professional Elective-VI a. Signals and Networks b. Cryptography & Network Security c. Speech and Natural Language Processing d. Internet of Things	3-0-0-3	3
OEC	PC-IT701	Professional Elective-V a. Multimedia Technology b. Neural Networks and Deep Learning c. Soft Computing d. Ad-Hoc and Sensor Networks e. Information Theory and Coding f. Cyber Security	3-0-0-3	3	OEC	OE-IT801	Open Elective-IV a. Big Data Analysis b. Cyber Law and Ethics c. E-Commerce and ERP d. Micro-electronics	3-0-0-3	3
OEC	OE-IT701	Open Elective-II a. Human Computer Interaction b. Introduction to Philosophical Thoughts c. Soft Skill & Interpersonal Communication	3-0-0-3	3	Proj	PR-IT881	Project-III	0-0-12-12	6
OEC	OE-IT702	Open Elective-III a. Operations Research b. Mobile Computing c. Robotics d. Microwave	3-0-0-3	3	Proj	PR-IT882	Viva	0-0-0-0	2
Proj	PR-IT781	Project-II	0-0-12-12	6	Proj	PR-IT883	Internship Evaluation	0-0-0-0	0
Total Credit			14-1-12-27	21				9-0-12-21	17