



School of
Engineering & Information Technology

Department of Engineering

**FACULTY -
BACHELOR OF
TECHNOLOGY (B.Tech)**

Computer Science &
Engineering

(Semester I - VIII)

Scheme of Study
(w.e.f Batch 2020-21)



ARKA JAIN
University
Jharkhand (Jamshedpur)



SEMESTER - I (GROUP A)

S.No	Name of the Subject	Type of Paper	Credit	Contact Hours Per Week	Total Marks	End Term Theory/ Practical Exam	Mid Term Theory/ Practical Exam	CIA *	Attendance
1	Engineering Chemistry	BSC	3	3	100	70	20	5	5
2	Engineering Mathematics-I	BSC	4	4	100	70	20	5	5
3	Basic Electrical Engineering	ESC	4	4	100	70	20	5	5
4	Engineering Mechanics	ESC	3	3	100	70	20	5	5
	Practical								
5	Engineering Chemistry Lab	BSC	1	2	50	35	5	5	5
6	Basic Electrical Engineering Lab	ESC	1	2	50	35	5	5	5
7	Engineering Mechanics Lab	ESC	1	2	50	35	5	5	5
8	Engineering Graphics & Design	ESC	2	4	50	35	5	5	5
	Total		19	24	600	420	100	40	40



SEMESTER - I (GROUP B)

S.No	Name of the Subject	Type of Paper	Credit	Contact Hours Per Week	Total Marks	End Term Theory/ Practical Exam	Mid Term Theory/ Practical Exam	CIA *	Attendance
1	Engineering physics	BSC	4	4	100	70	20	5	5
2	Engineering Mathematics - I	BSC	4	4	100	70	20	5	5
3	Programming for Problem Solving	ESC	3	3	100	70	20	5	5
4	English for Communication	HSMC	3	3	100	70	20	5	5
5	Constitution of India	MC	0	2	50	35	10	2.5	2.5
	Practical								
6	Engineering physics Lab	BSC	1	2	50	35	5	5	5
7	Programming for Problem Solving Lab	ESC	2	4	50	35	5	5	5
8	Workshop Practices	ESC	2	4	50	35	5	5	5
	Total		19	26	600	420	105	37.5	37.5



SEMESTER - II (GROUP A)

S.No	Name of the Subject	Type of Paper	Credit	Contact Hours Per Week	Total Marks	End Term Theory/ Practical Exam	Mid Term Theory/ Practical Exam	CIA *	Attendance
1	Engineering physics	BSC	4	4	100	70	20	5	5
2	Engineering Mathematics - II	BSC	4	4	100	70	20	5	5
3	Programming for Problem Solving	ESC	3	3	100	70	20	5	5
4	English for Communication	HSMC	3	3	100	70	20	5	5
5	Constitution of India	MC	0	2	50	35	10	2.5	2.5
	Practical								
6	Engineering physics Lab	BSC	1	2	50	35	5	5	5
7	Programming for Problem Solving Lab	ESC	2	4	50	35	5	5	5
8	Workshop Practices	ESC	2	4	50	35	5	5	5
	Total		19	26	600	420	105	37.5	37.5



SEMESTER - II (GROUP B)

S.No	Name of the Subject	Type of Paper	Credit	Contact Hours Per Week	Total Marks	End Term Theory/ Practical Exam	Mid Term Theory/ Practical Exam	CIA *	Attendance
1	Engineering Chemistry	BSC	3	3	100	70	20	5	5
2	Engineering Mathematics - II	BSC	4	4	100	70	20	5	5
3	Basic Electrical Engineering	ESC	4	4	100	70	20	5	5
4	Engineering Mechanics	ESC	3	3	100	70	20	5	5
	Practical								
5	Engineering Chemistry Lab	BSC	1	2	50	35	5	5	5
6	Basic Electrical Engineering Lab	ESC	1	2	50	35	5	5	5
7	Engineering Mechanics Lab	ESC	1	2	50	35	5	5	5
8	Engineering Graphics & Design	ESC	2	4	50	35	5	5	5
	Total		19	24	600	420	100	40	40

SEMESTER - III

S.No	Name of the Subject	Type of Paper	Credit	Contact Hours Per Week	Total Marks	End Term Theory/ Practical Exam	Mid Term Theory/ Practical Exam	CIA *	Attendance
1	Analog Electronic Circuits	PCC	3	3	100	70	20	5	5
2	Digital structure	PCC	3	3	100	70	20	5	5
3	Digital Electronics	PCC	3	3	100	70	20	5	5
4	Engineering Mathematics - III	BSC	4	3	100	70	20	5	5
5	Humanities - I	HSMC	3	3	100	70	20	5	5
	Professional Practice, Law & Ethics								
	Organizational Behavior								
6	Environmental Science	MC	0	2	50	35	10	2.5	2.5
7	Python Programming	PCC	3	3	100	70	20	5	5
	Practical								
8	Analog Electronic Circuit Lab	PCC	2	4	50	35	5	5	5
9	Data Structure Lab	PCC	2	4	50	35	5	5	5
10	Digital Electronic Lab	PCC	2	4	50	35	5	5	5
11	IT Workshop (MATLAB)	PCC	1	2	50	35	5	5	5
12	Python Programming Lab	PCC	2	4	50	35	5	5	5
	Total		28	38	900	640	155	57.5	57.5



SEMESTER - IV

S.No	Name of the Subject	Type of Paper	Credit	Contact Hours Per Week	Total Marks	End Term Theory/ Practical Exam	Mid Term Theory/ Practical Exam	CIA *	Attendance
1	Discrete Mathematics	BSC	4	4	100	70	20	5	5
2	Computer Organization & Architecture	PCC	3	3	100	70	20	5	5
3	Operating Systems	PCC	3	3	100	70	20	5	5
4	Design & Analysis of Algorithms	PCC	3	3	100	70	20	5	5
5	Microprocessor & Microcontroller	PCC	3	3	100	70	20	5	5
6	Software Engineering	PCC	3	3	100	70	20	5	5
	Practical								
7	Operating System Lab	PCC	2	4	50	35	5	5	5
8	Design & Analysis of Algorithms Lab	PCC	2	4	50	35	5	5	5
9	Computer Organization & Architecture Lab	PCC	2	4	50	35	5	5	5
	Total		25	31	750	525	135	45	45



SEMESTER - V

S.No	Name of the Subject	Type of Paper	Credit	Contact Hours Per Week	Total Marks	End Term Theory/ Practical Exam	Mid Term Theory/ Practical Exam	CIA *	Attendance
1	Signal & System	PCC	3	3	100	70	20	5	5
2	Database Management System	PCC	3	3	100	70	20	5	5
3	Formal Language & Automata Theory	PCC	3	3	100	70	20	5	5
4	Object Oriented Programming	PCC	3	3	50	70	20	5	5
5	Humanities - II Soft Skill and Interpersonal Communication	HSMC	3	3	100	70	20	5	5
6	Elective -I Graph Theory Image Processing Advance Algorithms	PEC	3	3	100	70	20	5	5
	Practical								
7	Database Management System Lab	PCC	2	4	50	35	5	5	5
8	Object Oriented Programming Lab	PCC	2	4	50	35	5	5	5
9	Summer Internship - I (3 - 4 weeks)	PROJ	1	0	50	50	0	0	0
	Total		23	36	750	540	130	40	40



SEMESTER - VI

S.No	Name of the Subject	Type of Paper	Credit	Contact Hours Per Week	Total Marks	End Term Theory/ Practical Exam	Mid Term Theory/ Practical Exam	CIA *	Attendance
1	Compiler Design	PCC	3	3	100	70	20	5	5
2	Computer Networks	PCC	3	3	100	70	20	5	5
3	Advance Java Programming	PEC	3	3	100	70	20	5	5
4	Elective - II Artificial Intelligence Machine Learning Visual Programming	PEC	3	3	100	70	20	5	5
5	Elective - III Web Technology Neural Network and Deep Learning	PEC	3	3	100	70	20	5	5
6	Open Elective - I Cyber Law and Ethics Human Resource Development and Organizational Behavior Advanced Algorithms	HSMC	3	3	100	70	20	5	5
	Practical								
7	Computer Design Lab	PCC	2	4	50	35	5	5	5
8	Computer Network Lab	PCC	2	4	50	35	5	5	5
9	Advance Java Programming Lab	PCC	2	4	50	35	5	5	5
	Total		24	30	750	525	135	45	45

SEMESTER - VII

S.No	Name of the Subject	Type of Paper	Credit	Contact Hours Per Week	Total Marks	End Term Theory/ Practical Exam	Mid Term Theory/ Practical Exam	CIA *	Attendance
1	Elective - IV Cryptography & Network Security Advance Operating System Web and Internet	PCC	3	3	100	70	20	5	5
2	Elective - V Quantum Computing Optimization Techniques Real Time System	PEC	3	3	100	70	20	5	5
3	Open Elective - II Electronic Design Automation Computer Graphics Data Mining and Warehousing Semantic Web and Social Networks	OEC	3	3	100	70	20	5	5
4	Biology for Engineers	BSC	3	3	100	70	20	5	5
5	Data Analysis	PCC	3	3	100	70	20	5	5
	Practical								
6	Minor Project	PROJ	4	8	100	100	0	0	0
7	Industrial Training (Summer internship - 4-6 Weeks)	PROJ	4	0	100	100	0	0	0
	Total		23	23	700	550	100	25	25



SEMESTER - VIII

S.No	Name of the Subject	Type of Paper	Credit	Contact Hours Per Week	Total Marks	End Term Theory/ Practical Exam	Mid Term Theory/ Practical Exam	CIA *	Attendance
1	Elective VI Cloud Computing Data Mining Advance Computer Architecture	PEC	3	3	100	70	20	5	5
2	Open Elective - III Signals and Systems Advance Operating Systems	OEC	3	3	100	70	20	5	5
3	Open Elective - IV Cyber Security Soft Computing	OEC	3	3	100	70	20	5	5
4	VLSI System Design	PCC	3	3	100	70	20	5	5
	Practical								
5	Major Project	PROJ	6	12	100	0	0	0	0
6	Extra-Curricular Co-Curricular Activity	PROJ	0	0	100	70	30	0	0
	Total		18	24	600	350	110	20	20

DISTRIBUTION OF CREDIT ACROSS 8 SEMESTERS:

Sl. No	Type of Paper	No. of Paper	Total Credit
1	Humanities and Social Sciences including Management Courses (HSMC)	3	15
2	Basic Science courses (BSC)	9	28
3	Engineering Science courses including workshop, drawing, basics of electrical/mechanical/computer etc (ESC)	8	18
4	Professional core courses (PCC)	30	77
5	Professional Elective courses relevant to chosen specialization/branch (PEC)	5	15
6	Open subjects - Electives from other technical and /or emerging subjects (OEC)	3	9
7	Project work, seminar and internship in industry or elsewhere (PROJ)	5	14
8	Mandatory Courses [Environmental Sciences, Induction training, Indian Constitution, Essence of Indian Knowledge Tradition] (MC)	2	0
	Total	66	176

CIA - Continuous Internal Assessment - Based on Projects / Assignment during the semester

Note:

AICTE Activity Points to be earned by students admitted to Diploma program (For more details refer to Chapter 6, AICTE, Activity Point Program, Model Internship Guidelines):

Every regular student, who is admitted to the 4 year Degree program, is required to earn 100 activity points in addition to the total credits earned for the program. Students entering 4 years Degree Program through lateral entry are required to earn 75 activity points in addition to the total credits earned for the program. The activity points earned by the student shall be reflected on the students 8th Semester grade card.

The activities to earn the points can be spread over the duration of the course. However, minimum prescribed duration should be fulfilled.

Activity Points (non-credit) have no effect on SGPA/CGPA and shall not be considered for vertical progression.

Incase student fail to earn the prescribed activity points, Eight semesters Grade Card shall be issued only after earning the required activity Points.

Students shall be eligible for the award of degree only after the release of the Eight Semester grade card.

There are two groups (A & B) in semester 1 & 2. The Group division will be decided by The Dean SoE & IT before commencement of classes