School of
Engineering & Information Technology

Department of
Engineering & Polytechnic

FACULTY - DIPLOMA IN MECH. ENGG.

(Semester I - VI)

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

JGi

ARKA JAIN University
Jharkhand (Jamshedpur)

Approved in the 16th Academic Council Meeting held on dated 25th November 2020

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	Communication Skills in English	HSC	3	3	100	70	20	5	5
2	Mathematics - I	BSC	4	4	100	70	20	5	5
3	Applied Physics	BSC	4	4	100	70	20	5	5
4	Applied Chemistry	BSC	4	4	100	70	20	5	5
	Practical								
5	Engineering Workshop Practice	ESC	2	4	50	35	5	5	5
6	Applied Physics Lab	BSC	1	2	50	35	5	5	5
7	Applied Chemistry Lab	BSC	1	2	50	35	5	5	5
8	Communication Skills in English Lab	HSC	1	2	50	35	5	5	5
	Total		20	25	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	Mathematics -I	BSC	4	4	100	70	20	5	5
2	Fundamentals of Electrical & Electronics Engg.	ESC	4	4	100	70	20	5	5
3	Introduction to IT system	ESC	3	3	100	70	20	5	5
4	Engineering Mechanics	ESC	4	4	100	70	20	5	5
5	Environmental Science	AC	0	2	50	35	10	2.5	2.5
	Practical								
6	Fundamentals of electrical & electronics Engg. Lab	ESC	1	2	50	35	5	5	5
7	Introduction to IT system Lab	ESC	1	2	50	35	5	5	5
8	Engineering Mechanics Lab	ESC	1	2	50	35	5	5	5
9	Engineering Graphics	ESC	2	4	50	35	5	5	5
	Total		20	27	650	455	110	42.5	42.5

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	Mathematics -II	BSC	4	4	100	70	20	5	5
2	Fundamentals of Electrical & Electronics Engg.	ESC	4	4	100	70	20	5	5
3	Introduction to IT system	ESC	3	3	100	70	20	5	5
4	Engineering Mechanics	ESC	4	4	100	70	20	5	5
5	Environmental Science	AC	0	2	50	35	10	2.5	2.5
	Practical								
6	Fundamentals of electrical & electronics Engg. Lab	ESC	1	2	50	35	5	5	5
7	Introduction to IT system Lab	ESC	1	2	50	35	5	5	5
8	Engineering Mechanics Lab	ESC	1	2	50	35	5	5	5
9	Engineering Graphics	ESC	2	4	50	35	5	5	5
	Total		20	27	650	455	110	42.5	42.5

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	Communication Skills in English	HSC	3	3	100	70	20	5	5
2	Mathematics - II	BSC	4	4	100	70	20	5	5
3	Applied Physics	BSC	4	4	100	70	20	5	5
4	Applied Chemistry	BSC	4	4	100	70	20	5	5
	Practical								
5	Engineering Workshop Practice	ESC	2	4	50	35	5	5	5
6	Applied Physics Lab	BSC	1	2	50	35	5	5	5
7	Applied Chemistry Lab	BSC	1	2	50	35	5	5	5
8	Communication Skills in English Lab	HSC	1	2	50	35	5	5	5
	Total		20	25	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	Strength of Materials	PCC	4	4	100	70	20	5	5
2	Material Science & Engineering	PCC	3	3	100	70	20	5	5
3	Fluid Mechanics & Hydraulic Machinery	PCC	4	4	100	70	20	5	5
4	Manufacturing Technology-I	PCC	3	3	100	70	20	5	5
5	Thermal Engineering-I	PCC	3	3	100	70	20	5	5
	Practical								
6	Strength of Materials Lab	PCC	1	2	50	35	5	5	5
7	Fluid Mechanics & Hydraulic Machinery Lab	PCC	1	2	50	35	5	5	5
8	Manufacturing Technology - I Lab	PCC	1	2	50	35	5	5	5
9	Thermal Engineering - I Lab	PCC	1	2	50	35	5	5	5
10	Summer Internship-I (3 - 4 Weeks)	PROJ	2	0	50	35	15	0	0
	Total		23	25	750	525	135	45	45

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	Measurements & Metrology	PCC	3	3	100	70	20	5	5
2	Manufacturing Technology - II	PCC	4	4	100	70	20	5	5
3	Thermal Engineering - II	PCC	4	4	100	70	20	5	5
4	Elective-I Tool Engineering Heat Transfer Farm Equipment & Farm Machinery	PEC	3	3	100	70	20	5	5
5	Elective-II Computer Integrated Manufacturing Refrigeration & Air conditioning Material Handling Systems	PEC	3	3	100	70	20	5	5
6	Essence of Indian Knowledge Tradition	AC	0	2	50	35	10	2.5	2.5
	Practical								
7	Measurements & Metrology Lab	PCC	1	2	50	35	5	5	5
8	Computer Aided Machine Drawing Practice Lab	PCC	1	2	50	35	5	5	5
9	Manufacturing Technology - II Lab	PCC	1	2	50	35	5	5	5
10	Thermal Engineering - II Lab	PCC	1	2	50	35	5	5	5
11	Minor Project	PROJ	2	4	50	35	15	0	0
	Total		23	31	800	560	145	47.5	47.5

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	Advanced Manufacturing Processes	PCC	3	3	100	70	20	5	5
2	Theory of Machines & Mechanisms	PCC	3	3	100	70	20	5	5
6	Industrial Engineering & Management	PCC	3	3	100	70	20	5	5
3	Elective - III Computer Aided Design and Manufacturing Automobile Engineering Hybrid V ehicles	PEC	3	3	100	70	20	5	5
4	Elective - IV Industrial Robotics & Automation Power Plant Engineering Mechatronics	PEC	3	3	100	70	20	5	5
5	Open Elective - I Renewable Energy Technology Operation Research Internet of Thing	0EC	3	3	100	70	20	5	5
	Practical								
7	CAD/CAM Lab	PCC	1	2	100	70	20	5	5
8	Theory of Machines & Mechanisms Lab	PCC	1	2	50	35	5	5	5
9	Summer Internship - II (4-6 Weeks)	PROJ	3	0	100	70	30	0	0
10	Major Project - I	PROJ	1	2	50	35	15	0	0
	Total		24	24	900	630	190	40	40

Project to be carried over to next semester

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	Design of Machine Elements	PCC	3	3	100	70	20	5	5
3	Production & Operations Management	PCC	3	3	100	70	20	5	5
3	Entrepreneurship and Start - ups	PROJ	4	4	100	70	20	5	5
4	Open Elective - II Sustainable Development Robotics Artificial Intelligence & Machine Learning	OEC	3	3	100	70	20	5	5
5	Open Elective - III Project Management Product Design Cyber Security Laws, Standards & IPR 3 - D Printing	OEC	3	3	100	70	20	5	5
6	Indian constitution	AC	0	2	50	35	10	2.5	2.5
	Practical								
7	Seminar	PROJ	1	2	50	35	15	0	0
8	Major Project - II	PROJ	3	0	100	70	30	0	0
	Total		20	20	700	490	155	27.5	27.5

DISTRIBUTION OF CREDIT ACROSS 6 SEMESTERS:

Sl. No	Type of Paper	No. of Paper	Total Credit
1	Humanities and Social Sciences Courses (HSC)	2	4
2	Basic Science courses (BSC)	6	18
3	Engineering Science courses (ESC)	8	18
4	Professional core courses (PCC)	25	59
5	Professional Elective courses (PEC)	2	6
6	Open Electives Courses (OEC)	3	9
7	Project work, seminar and internship in industry or elsewhere (PROJ)	7	16
8	Audit Courses [Environmental Sciences, Induction training, Indian Constitution, Essence of Indian Knowledge Tradition] (AC)	3	(non-credit)
	Total	56	130

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 3 year Diploma program, is required to earn 75 activity points in addition to the total credits earned for the program. Students entering 3 years Diploma Program through lateral entry are required to earn 50 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 6th 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, Sixth semester 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 Six 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