

Curriculum for B.Tech

Smart Manufacturing

From The Academic Year 2025

(Approved in Senate 60)



Indian Institute of Information Technology Design and Manufacturing, Kancheepuram

Chennai-600 127

Semester 1					
Category	Course Name	L	T	P	C
BSC	Calculus	3	1	0	4
BSC	Physics for Engineers	3	0	2	4
BEC	Basic Electrical Engineering	3	1	0	4
ITC	Problem Solving and Programming	3	0	2	4
DSC	Concepts in Engineering Design	2	0	2	3
BEC	Engineering Skills Practice	0	0	2	1
HMC	Effective Language and Communication Skills	1	0	2	2
HMC	NSO/NCC/SSG/NSS/YOGA	0	0	2	P/F
					22.0
Semester 2					
Category	Course Name	L	T	P	C
BSC	Differential Equations	3	1	0	4
SEC	Dept. Specific Science Elective I	3	0	0	3
BEC	Engineering Graphics	1	1	2	3
ITC	Data Structures and Algorithms	3	0	2	4
DSC	Design Realization	2	0	2	3
PCC	Thermal and Fluids Engineering	3	1	0	4
HMC	Earth, Environment and Design	1	0	0	P/F
					21.0
Semester 3					
Category	Course Name	L	T	P	C
SEC	Dept. Specific Science Elective II (Linear Algebra)	3	0	0	3
ITC	Introduction to AI with Python	2	0	2	3
PCC	Database Management Systems	2	0	2	3
PCC	Applied Mechanics	3	0	2	4
PCC	Casting, Forming and Joining	3	0	0	3
PCC	Sensors and Controls	3	0	0	3
PCC	Production Drawing	0	0	4	2
PCC	Manufacturing Processes Practice	0	1	2	2
HMC	Indian Constitution and Essence of Indian Traditional Knowledge	1	0	0	P/F
					23.0
Semester 4					
Category	Course Name	L	T	P	C
SEC	Dept. Specific Science Elective III (Numerical and Computational Methods)	3	0	2	4
ITC	Data Science for Mechanical Engineers	2	0	2	3
PDC	Theory of Machines and Design	3	1	0	4
PCC	Machining Technology	3	0	0	3
PCC	Introduction to DevOps	2	0	2	3
PCC	Manufacturing Systems	3	0	0	3
PCC	Machining Technology Practice	0	1	2	2
HMC	Human Values and Stress Management	1	0	0	P / F
					22.0

Semester 5					
Category	Course Name	L	T	P	C
HMC	Entrepreneurship and Management Functions	1	0	2	2
PCC	Quality Engineering	2	0	2	3
PDC	Embedded Systems Design	2	0	2	3
PCC	Electrical Drives	3	0	2	4
PCC	Fundamentals of IIoT and Cloud Computing	2	0	2	3
PCC	Digital Manufacturing	3	0	2	4
PEC	Program Elective 1	3	0	0	3
HMC	Professional Ethics and Organizational Behaviour	1	0	0	P/F
					22.0
Semester 6					
Category	Course Name	L	T	P	C
PCD	Product Design and Prototyping	0	0	2	1
PCC	Additive Manufacturing	3	0	0	3
PCC	Operations and Supply Chain Management	3	1	0	4
PDC	Robotics and Automation	3	0	2	4
PCC	Generative AI for Manufacturing	2	0	2	3
PEC	Program Elective 2	3	0	0	3
ELC	Open Elective 1	3	0	0	3
HMC	Professional Communication	1	0	2	2
HMC	Intellectual Property Rights	1	0	0	P/F
					23.0
	Summer				
PCD	Summer Internship MID MAY to MID JULY				P/F
Semester 7					
Category	Course Name	L	T	P	C
PEC	Program Elective 3	3	0	0	3
ELC	Open Elective 2	3	0	0	3
ELC	Open Elective 3	3	0	0	3
ELC	Open Elective 4	3	0	0	3
ELC	Open Elective 5	3	0	0	3
PCD	Comprehensive Exam				P/F
HMC	Invited Expert Lectures*	0	0	0	P/F
	* 6 Expert lectures to be attended from Sem 1 to Sem 7				15.0
Semester 8					
Category	Course Name	L	T	P	C
PCD	B.Tech. Project (BTP)	0	0	18	9
					9.0

9 Credits for the BTP can be earned by any of the following:

1. Fully In-house BTP at the institute.
2. BTP IITs/IISc/IISERs/TIFR/ISI/DRDO/ISRO, etc if 148 credits are completed by the end of 7th semester.
3. Three Program Elective courses, each with a minimum of three credit, in lieu of BTP.
4. Industry Internship/Training in lieu of BTP at the company selected through the Institute Placement Cell and if 148 credits are completed by the end of 7th semester.

Semester wise Credit Distribution	Credits									
Category	S1	S2	S3	S4	S5	S6	S7	S8	Total	%
Basic Science Course (BSC)	8	4	0	0	0	0	0	0	12	7.6
Science Elective Course (SEC)	0	3	3	4	0	0	0	0	10	6.4
Basic Engineering Course (BEC)	5	3	0	0	0	0	0	0	8	5.1
Design Course (DSC)	3	3	0	0	0	0	0	0	6	3.8
IT Skill Course (ITC)	4	4	3	3	0	0	0	0	14	8.9
Program Core Course (PCC)	0	4	17	11	14	10	0	0	56	35.7
Program Design Course(PDC)				4	3	4			11	7.0
Program Elective Course (PEC)	0	0	0	0	3	3	3	0	9	5.7
Elective Course (ELC)	0	0	0	0	0	3	12	0	15	9.6
Humanities and Management Course (HMC)	2	0	0	0	2	2	0	0	6	3.8
Professional Career Development (PCD)	0	0	0	0	0	1	0	9	10	6.4
Total	22	21	23	22	22	23	15	9	157	100
	22	43	66	88	110	133	148	157	157	