Curriculum for B.Tech

Design Engineering

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	2	0	4	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
ITC	Data Structures and Algorithms	3	0	2	4
PCC	Materials for Design Engineers	3	0	0	3
PCC	Electronics for Designers	3	0	2	4
DSC	Form Design and CAD Modeling	2	0	2	3
DSC	Biology for Design	2	0	2	3
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 I (Linear Algebra)	3	0	0	3
ITC	Introduction to AI with Python	2	0	2	3
PCC	Mechanics and Mechanisms	3	0	2	4
PCC	Instrumentation and Control systems	3	0	2	4
DSC	Sociology of Design	2	0	2	3
DSC	Human Centered Design	2	0	2	3
DSC	Techno-asthetics in Product Detailing	2	0	2	3
HMC	Indian Constitution, 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 II (Probability and Statistics)	3	0	0	3
PCC	Design of Engineering Components	3	0	2	4
PCC	Fluids and thermodynamics	2	0	2	3
PCC	Embedded systems for product development	2	0	2	3
PCC	Manufacturing Technology	3	0	2	4
DSC	Data Driven Design	2	0	2	3
DSC	Systems Thinking for Design	2	0	2	3
HMC	Human Values and Stress Management	1	0	0	P / F
					23.0

Semester 5					
Category	Course Name	L	T	P	C
PCC	Cyber Physical Systems	3	0	2	4
PCC	Advanced Manufacturing	3	0	2	4
DSC	Generative Design	2	0	2	3
DSC	Smart Product Design	2	0	2	3
DSC	Entrepreneurship and Venture Creation	3	1	0	4
PEC	Program Elective 1	3	1	0	4
HMC	Professional Ethics and Organizational Behaviour	1	0	0	P/F
					22.0

Semester 6					
Category	Course Name	L	T	P	C
SEC	Dept. Specific Science Elective III (Numerical and Computational Methods)	3	0	0	3
DSC	Simulation Driven Design	2	0	2	3
DSC	Ergonomics and Usability	2	0	2	3
DSC	Product and Innovation Management	3	1	0	4
PEC	Program Elective 2	3	1	0	4
ELC	Open Elective 1	3	0	0	3
HMC	Professional Communication	1	0	2	2
HMC	Intellectual Property Rights	1	0	0	P/F
					19.0
	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	8
Science Elective Course (SEC)	0	0	3	3	0	3	0	0	9	6
Basic Engineering Course (BEC)	5	0	0	0	0	0	0	0	5	3
IT Skill Course (ITC)	4	4	3	0	0	0	0	0	11	7
Program Core Course (PCC)	0	7	8	14	8	0	0	0	37	24
Program Elective Course (PEC)	0	0	0	0	4	4	3	0	11	7
Elective Course (ELC)	0	0	0	0	0	3	12	0	15	10
Humanities and Management Course (HMC)	2	0	0	0	0	2	0	0	4	3
Professional Career Development (PCD)	0	0	0	0	0	0	0	9	9	6
Design Course (DSC)	3	6	9	6	10	10	0	0	44	28
Total	22	21	23	23	22	22	15	9	157	100
	22	43	66	89	111	133	148	157	157	