Curriculum for B.Tech

Engineering Physics

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 Skill	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
PCC	Semiconductor Physics	3	0	0	3
BEC	Engineering Graphics and Modeling	2	0	2	3
ITC	Data Structures and Algorithms	3	0	2	4
DSC	Design Realization	2	0	2	3
PCC	Classical Mechanics and Relativity	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 I (Mathematical Physics)	3	0	0	3
ITC	Introduction to AI with Python	2	0	2	3
PCC	Electronic Devices and Circuits	3	1	0	4
PDC	Digital Circuit Design	3	1	0	4
PCC	Signals and Systems	3	1	0	4
PCC	General Physics	1	0	2	2
PDC	Digital Circuit Design Practice	0	1	2	2
PCC	Electronic Devices and Circuits Practice	0	1	2	2
HMC	Indian Constitution and Essence of Indian Traditional Knowledge	1	0	0	P/F
					24.0
Semester 4					
Category	**Course Name**	**L**	**T**	**P**	**C**
SEC	Dept. Specific Science Elective II (Numerical and Computational Methods)	3	0	2	4
PCC	Optics and Photonics	3	0	0	3
ITC	Data Science for Electronics Engineers	2	0	2	3
PCC	Statistical and Thermal Physics	3	1	0	4
PCC	Introduction to Quantum Mechanics	3	1	0	4
PCC	Applied Physics Practice	0	1	2	2
PDC	Microprocessors and Embedded System Design	2	1	2	4
HMC	Human Values and Stress Management	1	0	0	P / F

					24.0

Semester 5					
Category	**Course Name**	**L**	**T**	**P**	**C**
HMC	Entrepreneurship and Management Functions	1	0	2	2
PCC	Atomic, Molecular and Laser Physics	3	1	0	4
PCC	Condensed Matter Physics	3	1	0	4
PCC	Electrodynamics	3	1	0	4
PCC	Condensed Matter Physics Practice	0	1	2	2
PEC	Program Elective 1	3	1	0	4
HMC	Professional Ethics and Organizational Behaviour	1	0	0	P/F
					20.0

Semester 6					
Category	**Course Name**	**L**	**T**	**P**	**C**
PCD	Product Design and Prototyping	0	0	2	1
PCC	Nuclear and Particle Physics	3	1	0	4
PDC	Analog Circuit Design	3	1	0	4
PCC	Photonics and Spectroscopy Practice	0	1	2	2
PDC	Analog Circuit Design Practice	0	1	2	2
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
					22.0
	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	4	0	0	0	0	7	4.5
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	7	12	13	14	6	0	0	52	33.1
Program Design Course(PDC)	0	0	6	4	0	6	0	0	16	10.2
Program Elective Course (PEC)	0	0	0	0	4	4	3	0	11	7.0
Open 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	24	24	20	22	15	9	157	100
	22	43	67	91	111	133	148	157	157	