Curriculum for B.Tech

Computer Science and Engineering With specialization in Artificial Intelligence

From The Academic Year 2020

(Approved in Senate 43 & 44)



Indian Institute of Information Technology Design and Manufacturing, Kancheepuram

Chennai-600 127

		Semester 1					
S.No	Course Code	Course Name	Category	L	Т	Р	с
1	MA1000	Calculus	BSC	3	1	0	4
2	PH1000	Engineering Electromagnetics	BSC	3	0	0	3
3	EC1000	Electrical Circuits for Engineers	BEC	3	1	0	4
4	CS1000	Problem Solving and Programming	BEC	3	0	0	3
5	ME1000	Materials for Engineers	BEC	3	0	0	3
6	DS1000	Foundation for Engineering and Product Design	DSC	1	2	0	3
7	PH1001		BSC	0	0	3	5 1.5
8	CS1001	Engineering Electromagnetics Practice	BEC	0	0	3	1.5
 9		Problem Solving and Programming Practice	HSC	1	0	2	
9 10	HS1000	Effective Language and Communication Skills NSO Semester 1	NC	0	0	2	2
10	NC1000		NC	0	0	2	0
	NC1002	NCC Semester 1					
	NC1004	SSG Semester 1					25
							25
C NL		Semester 2	C 1		-		6
S.No	Course Code	Course Name	Category	L	T	P	C
1	MA1001	Differential Equations	BSC	3	1	0	4
2	MA1002	Linear Algebra	BSC	3	1	0	4
3	ME1001	Engineering Graphics	BEC	2	0	4	4
4	CS1004	Data Structures and Algorithms	ITC	3	0	0	3
5	DS1001	Sociology of Design	DSC	1	2	0	3
6	ID1000	Design and Manufacturing Lab	ITC	0	0	2	1
7	CS1005	Discrete Structures for Computer Science	PCC	3	1	0	4
8	CS1006	Data Structures and Algorithms practice	ITC	0	0	4	2
9	NC1001	NSO Semester 2	NC	0	0	2	0
	NC1003	NCC Semester 2					
	NC1005	SSG Semester 2					
10	NC1008	Earth, Environment and Design	NC	1	0	0	0
							25
		Semester 3					
S.No	Course Code	Course Name	Category	L	Т	Р	С
1	MA2000	Optimization Techniques for Machine Learning	BSC	3	1	0	4
2	CS2005	Applied Data Science *	PMC	3	0	2	4
3	CS2000	Object Oriented Programming	PCC	2	0	4	4
4	CS2001	Digital System Design	PCC	3	1	0	4
5	CS2002	Design and Analysis of Algorithms	PCC	3	1	0	4
6	CS2003	Digital System Design practice	PCC	0	0	4	2
7	CS2004	Design and Analysis of Algorithms practice	PCC	0	0	4	2
8	NC2000	Indian Constitution, Essence of Indian Traditional Knowled	NC	1	0	0	0
							24
*Change	e of Course name fro	m Data Science: An Applied Perspective to Applied Data Sc	ience (Appr	oved in Sen	ate 47)		
		Semester 4					
S.No	Course Code	Course Name	Category	L	Т	Р	С
1	MA2001	Probability and Statistics	BSC	3	1	0	4
2	CS2012	Artificial Intelligence	BSC 3 1 0 PMC 3 0 2		-	4	
3	CS2007	Computer Organization and Architecture	PCC	3	1	0	4
4	CS2008	Database Systems	PCC	3	1	0	4
5	CS2009	Theory of Computation	PCC	3	1	0	4
6	CS2010	Computer Organization and Architecture practice	PCC	0	0	4	2
7	CS2010	Database Systems practice	PCC	0	0	4	2
8	NC2001	Human Values and Stress Management	NC	1	0	0	0
5				-	ľ	<u> </u>	24
							2 4

		Semester 5							
S.No	Course Code	Course Name	Category	L	Т	Р	С		
1	CS3007	Pattern Recognition and Machine Learning PMC 3 0 2					4		
2	DS3000	Entrepreneurship and Management Functions	DSC	1	2	0	3		
3	CS3000	Operating Systems	PCC	3	1	0	4		
4	CS3001	Computer Networks	PCC	3	1	0	4		
5	CS3002	Compiler Design	PCC	3	1	0	0 4		
6	CS3003	Operating Systems practice	PCC	0	0	4	2		
7	CS3004	Computer Networks practice	PCC	0	0	4	2		
8	CS3005	Compiler Design Practice	PCC	0	0	4	2		
9	NC3000	Professional Ethics and Organizational Behaviour	NC	1	0	0	0		
							25		
		Semester 6							
S.No	Course Code	Course Name	Category	L	Т	Р	С		
1	CS3008	Deep Learning	PMC	3	0	2	4		
2	CS3009	Reinforcement Learning	-		0	2	4		
3		Professional Major Elective Course 1	PME	3	1	0	4		
4		Professional Major Elective Course 2	PME	3	1	0	4		
5		Free Elective Course 1	ELC	3	1	0	4		
6	HS3000	Professional Communication	HSC	1	0	2	2		
7	NC3001	Intellectual Property Rights	NC	1	0	0	0		
							22		
		Semester 7							
S.No	Course Code	Course Name	Category	L	Т	Р	С		
1		Professional Major Elective Course 3	PME	3	1	0	4		
2		Professional Major Elective Course 4		3	1	0	4		
3		Free Elective Course 2	ELC	3	1	0	4		
4	CS4001	BT-CS-AI-Summer Internship (May-Jul)	PCD	0	0	16	0		
							12		
		Semester 8							
S.No	Course Code	Course Name	Category	L	Т	Р	С		
1		Free Elective Course 3	ELC	3	1	0	4		
2	CS4003	BT-CS-AI-Project in AI	PCD	0	0	16	8		
							12		

 $\$ All NC courses are Pass/Fail courses for which the letter grade H/L shall be awarded.

1. Professional Major Elective Course is an elective course offered or prescribed by the parent department. Free Elective Course is an elective course offered by any department, including the parent department. For example: - a ME student, based on his/her choice, can register the elective course offered by ME department or CSE department as free elective course.

2. 3 Months internship is mandatory, however, the curriculum offers the flexibility to carry out 3-12 Months internship with the approval of the parent department. To satisfy the minimum credit requirement, students opting for long term internship (More than 3 months) are expected to advance a few elective courses and credit a few courses from NPTEL. In line with the guidelines approved by the Senate (Senate 46-07), a B.Tech student can earn a maximum of 9 credits from NPTEL Courses. For all successfully completed NPTEL Courses, the letter grade "H" (Pass) will be awarded and credits of such courses will not be accounted for CGPA calculation.

		Seme	ster wise Cr	edit Distribu	ition					
	Semester									
Category	S1	S2	S3	S4	S5	S6	S7	S8	Total	%
Basic Science Course (BSC)	8.5	8	4	4	0	0	0	0	24.5	14.5
Basic Engineering Course (BEC)	11.5	4	0	0	0	0	0	0	15.5	9.2
Design Course (DSC)	3	3	0	0	3	0	0	0	9	5.3
IT Skill Course (ITC)	0	6	0	0	0	0	0	0	6	3.6
Professional Core Course (PCC)	0	4	16	16	18	0	0	0	54	32
Professional Major Course (PMC)	0	0	4	4	4	8	0	0	20	11.8
Professional Major Elective (PME)	0	0	0	0	0	8	8	0	16	9.5
Free Elective Course (ELC)	0	0	0	0	0	4	4	4	12	7.1
Humanities and Social Science Course (HSC)	2	0	0	0	0	2	0	0	4	2.4
Professional Career Development (PCD)	0	0	0	0	0	0	0	8	8	4.7
Total	25	25	24	24	25	22	12	12	169	100
	25	50	74	98	123	145	157	169		