

INDIAN INSTITUTE OF ENGINEERING SCIENCE & TECHNOLOGY, SHIBPUR
Department of Computer Science and Technology
Semester-wise Course Structure
4-year B.Tech Programme from 2019-20 Session

1st Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week	Marks
			L	T	P			
1.	Mathematics – I		3	1	0	4	4	100
2.	Chemistry/Physics		3/4	0	0	3/4	3/4	100
3.	Intro to Computing/Basic Electrical Eng.	CS1101/	3/4	0	0	3/4	3/4	100
4.	Mechanics/ Ecology & Environment		4/3	0	0	4/3	4/3	100
5.	English/Sociology & Professional Ethics		3	0	0	3	3	100
	Theory Sub-total		16/17	1	NIL	17/18	17/18	500
6.	Chemistry Lab/Physics Lab		0	0	3	2	3	50
7.	Computer Lab/ Electrical Lab	CS1171/	0	0	3	2	3	50
8.	Drawing/Workshop		0	1/0	3	3/2	4/3	50
9.	NSS/NCC/PT/Yoga							
	Sessional Sub-total		NIL	1/0	9	7/6	10/9	150
	1st Semester Total					24	27	650

2nd Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week	Marks
			L	T	P			
1.	Mathematics – II		3	1	0	4	4	100
2.	Physics/Chemistry		4/3	0	0	4/3	4/3	100
3.	Basic Electrical Eng./Intro to Computing	/CS1201	4/3	0	0	4/3	4/3	100
4.	Environment and Ecology/Mechanics		3/4	0	0	3/4	3/4	100
5.	English/Sociology & Professional Ethics		3	0	0	3	3	100
	Theory Sub-total		17/16	1	NIL	18/17	18/17	500
6.	Physics Lab/Chemistry Lab		0	0	3	2	3	50
7.	Electrical Lab/Computer Lab	/CS1271	0	0	3	2	3	50
8.	Workshop/Drawing		0	0/1	3	2/3	3/4	50

9.	NSS/NCC/PT/Yoga		0	0	0	0	0	0
	Sessional Sub-total		NIL	0/1	9	6/7	9/10	150
	2nd Semester Total					24	27	650

3rd Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week	Marks
			L	T	P			
1.	Mathematics – III		3	0	0	3	3	100
2.	Core Theory – I: Discrete Structures	CS2101	4	0	0	4	4	100
3.	Core Theory – II: Digital Logic	CS2102	3	0	0	3	3	100
4.	Core Theory – III: Data Structures	CS2103	3	0	0	3	3	100
5.	Core Theory – IV: Signals and Systems	CS2104	3	0	0	3	3	100
	Theory Sub-total		16	0	NIL	16	16	500
6.	Core Lab/Pract – I: Digital Logic Laboratory	CS2171	0	0	3	2	3	50
7.	Core Lab/Pract – II: Data Structures Laboratory	CS2172	0	0	3	2	3	50
8.	Core Lab/Pract – III: Signals and Systems Laboratory	CS2173	0	0	3	2	3	50
9.	Seminar/Minor Project	CS2191	0	0	0	2	0	50
	Sessional Sub-total		NIL	NIL	9	8	9	200
	3rd Semester Total					24	25	700

4th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week	Marks
			L	T	P			
1.	Core Theory – V: Design and Analysis of Algorithm	CS2201	3	0	0	3	3	100
2.	Core Theory – VI: Computer Architecture and Organization – I	CS2202	3	0	0	3	3	100
3.	Core Theory – VII: Programming Paradigms	CS2203	3	0	0	3	3	100
4.	Core Theory – VIII: Theory of Computation	CS2204	4	0	0	4	4	100
5.	Core Theory- IX: Introduction to Data Science	CS2205	3	0	0	3	3	100
	Theory Sub-total		16	0	NIL	16	16	500
6.	Core Lab/Pract – IV: Algorithm Laboratory	CS2271	0	0	3	2	3	50
7.	Core Lab/Pract – V: Computer Architecture and Org. Lab.	CS2272	0	0	3	2	3	50
8.	Core Lab/Pract – VI: Programming Paradigms	CS2273	0	0	3	2	3	50

	Laboratory							
9.	Core Lab-VII /Minor Proj contd.	CS2291	0	0	0	2	0	50
Sessional Sub-total			NIL	NIL	9	8	9	200
4th Semester Total						24	25	700

5th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/Week	Marks
			L	T	P			
1.	Core Theory – X: Microprocessor Based Systems	CS3101	4	0	0	4	4	100
2.	Core Theory – XI: Database Management Systems	CS3102	3	0	0	3	3	100
3.	Core Theory – XII: Computer Architecture and Organization – II	CS3103	3	0	0	3	3	100
4.	Core Theory – XIII: Graph Algorithms	CS3104	3	0	0	3	3	100
5.	Core Theory – XIV: Departmental Elective – I		3	0	0	3	3	100
Theory Sub-total			16	0	NIL	16	16	
6.	Core Lab/Pract– VIII: Microprocessor Based Systems Lab	CS3171	0	0	3	2	3	50
7.	Core Lab/Pract– IX: Database Management Systems Lab	CS3172	0	0	3	2	3	50
8.	Core Lab/Pract– X: Departmental Elective – I Lab	CS3181/CS3182/CS3183	0	0	3	2	3	50
Sessional Sub-total			NIL	NIL	9	6	9	150
5th Semester Total						22	25	650

* Departmental Elective – I

i)	Computer Graphics (CS3121) Computer Graphics Lab. (CS3181)	ii)	Web Technology (CS3122) Web Technology Lab. (CS3182)	iii)	Soft Computing (CS3123) Soft Computing Lab. (CS3183)

6th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/Week	Marks
			L	T	P			
1.	Core Theory – XV: Operating Systems	CS3201	3	0	0	3	4	100
2.	Core Theory – XVI: Data Communication and Computer Network	CS3202	4	0	0	4	4	100
3.	Core Theory – XVII: Software Engineering	CS3203	3	0	0	3	3	100
4.	Core Theory – XVIII: Information Security and Cryptography	CS3204	4	0	0	4	3	100
5.	Core Theory – XIX/ Departmental Elective - II		3	0	0	3	3	100
Theory Sub-total			17	0	NIL	17	17	500
6.	Lab – XI: Operating Systems Lab	CS3271	0	0	3	2	3	50
7.	Lab – XII: Computer Network Lab	CS3272	0	0	3	2	3	50
8.	Lab – XIII: Software Engineering Lab	CS3273	0	0	3	2	3	50
Sessional Sub-total			NIL	NIL	9	6	9	150
6th Semester Total						23	26	650

* Departmental Elective – II

i)	Nature Inspired Algorithms (CS3221)	ii)	Bioinformatics (CS3222)	iii)	Computing-in-Memory Architecture (CS3223)
iv)	Graph Theory (CS3224)				

7th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/Week	Marks
			L	T	P			
1.	Core Theory – XX: Compiler Design	CS4101	3	0	0	3	3	100
2.	Core Theory – XXI: Machine Learning	CS4102	3	0	0	3	3	100
3.	Core Elective – I: Departmental Elective – III		3	0	0	3	3	100
4.	Open Elective – I (HSS –III)		3	0	0	3	3	100
Theory Sub-total			12	0	0	12	12	400
6.	Lab – XIV: Compiler Design Laboratory	CS4171	0	0	3	2	3	50
7.	Lab – XV: Machine Learning Laboratory	CS4172	0	0	3	2	3	50
8.	B. Tech. Project/1	CS4173	0	0	2	4	2	100
9.	Internship from 4 th /6 th Sem (Evaluation) / Group Discussion / Seminar	CS4192	0	0	0	2	0	50
Sessional Sub-total			NIL	NIL	8	10	8	250
7th Semester Total						22	20	650

* Departmental Elective – III

i)	Embedded Systems (CS4121)	ii)	Digital Image Processing (CS4122)	iii)	Mobile and Pervasive Computing (CS 4123)
iv)	Natural Language Processing (CS4224)	v)	Internet of Things (CS4225)		

8th semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/Week	Marks
			L	T	P			
1.	Core Theory – XXII: Artificial Intelligence	CS4201	4	0	0	4	4	100
2.	Core Elective – II: Departmental Elective – IV		3	0	0	3	3	100
3.	Open –Elective II		3	0	0	3	3	100
Theory Sub-total			10	0	0	10	10	300
4.	B. Tech. Project /2	CS4272	0	0	6	8	6	200
5.	Core Lab –XVIII: Artificial Intelligence Laboratory	CS4271	0	0	3	2	3	50
6.	Comprehensive Viva	CS4292	0	0	0	2	0	100
Sessional Sub-total			NI	NI	9	12	9	350
8th Semester Total						22	19	650

* Departmental Elective – IV

i)	Big Data Analytics (CS4221)	ii)	Computer Control and Industrial Processes (CS4222)	iii)	Computational Complexity (CS4223)
iv)	Algorithmic Game Theory (CS4224)	v)	Reconfigurable Computing (CS4225)	vi)	Quantum Computing (CS4226)

Open –Elective II

i)	Data Mining (CS4261)	ii)	Soft Computing (CS4262)
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