Course Structure

For

4-Year B.Tech. Degree

in

Computer Science and Engineering

Indian Institute of Information Technology Kalyani

Webel IT Park Campus

West Bengal 741235, India

w.e.f. 2021 (Odd Semester)

Course Structure

1st Year (Semester: I)							
Sl No.	Code No.	Subject	Contact Periods/Week				Credit
			L	T	P	Total	
Theoretical Papers							
1	MAC101	Mathematics – I (Linear Algebra)	3	1	0	4	4
2	PHC101	Physics	3	1	0	4	4
3	ECC101	Basic Electrical and Electronics Engineering	3	0	0	3	3
4	CSC101	Programming – I (C Language)	3	0	0	3	3
5	HUC101	English for Communication	3	0	0	3	3
6	HUC102	Humanities – I (Values & Ethics in Profession)	3	0	0	3	3
Sessional Papers							
7	CSC111	Programming – I Laboratory (C Language)	0	0	3	3	2
8	ECC111	Basic Electronics Engineering Laboratory	0	0	3	3	2
Total			**18**	**2**	**6**	**26**	
						Total Credit	**24**

1st Year (Semester: II)							
Sl No.	Code No.	Subject	Contact Periods/Week				Credit
			L	T	P	Total	
Theoretical Papers							
1	MAC201	Mathematics - II (Probability and Statistics)	3	1	0	4	4
2	PHC201	Engineering Mechanics	3	1	0	4	4
3	ECC201	Digital Logic Design and Circuit	3	0	0	3	3
4	CSC201	Data Structures and Algorithms	3	1	0	4	4
5	HUC201	Humanities - II (Economics)	3	0	0	3	3
Sessional Papers							
6	ECC211	Digital Logic Design and Circuit Laboratory	0	0	3	3	2
7	CSC211	Data Structures and Algorithms Laboratory	0	0	3	3	2
Total			**15**	**3**	**6**	**24**	
						Total Credits	**22**

2nd Year (Semester: III)							
Sl No.	Code No.	Subject	Contact Periods/Week				Credit
			L	T	P	Total	
Theoretical Papers							
1	MAC301	Mathematics - III (Calculus and Differential Equations)	3	1	0	4	4
2	CSC301	Computer Organization and Architecture	3	0	0	3	3
3	CSC302	Algorithms - I	3	1	0	4	4
4	CSC303	Discrete Mathematics	3	1	0	4	4
5	HUC301	Humanities - III (Psychology)	3	0	0	3	3
Sessional Papers							
6	CSC311	Computer Organization and Architecture Laboratory	0	0	3	3	2
7	CSC312	Algorithms - I Laboratory	0	0	3	3	2
8	CSC313	Programming - II Laboratory (Python)	1	0	2	3	2
Total			**16**	**3**	**8**	**27**	
						Total Credits	**24**

2nd Year (Semester: IV)							
Sl No.	Code No.	Subject	Contact Periods/Week				Credit
			L	T	P	Total	
Theoretical Papers							
1	MAC401	Mathematics - IV (Numerical Analysis and Computing)	3	1	0	4	4
2	CSC401	Operating Systems	3	1	0	4	4
3	CSC402	Formal Languages and Automata Theory	3	0	0	3	3
4	CSC403	Object Oriented Programming (JAVA)	3	1	0	4	4
5	HUC404	IPR Law: Concepts and Applications	3	0	0	3	3
Sessional Papers							
6	CSC411	Operating Systems Laboratory	0	0	3	3	2
7	CSC412	Numerical Analysis and Computing Laboratory (R/Sci Lab)	0	0	3	3	2
8	CSC413	Programming- III Laboratory (JAVA)	0	0	3	3	2
Total			**15**	**3**	**9**	**27**	
						Total Credits	**24**

3rd Year (Semester: V)							
Sl No.	Code No.	Subject	Contact Periods/Week				Credit
			L	T	P	Total	
Theoretical Papers							
1	CSC501	Compiler Design	3	1	0	4	4
2	CSC502	Artificial Intelligence	3	1	0	4	4
3	ECC502	Microprocessor and Microcontroller System	3	0	0	3	3
4	HUC501	Humanities - IV (Organizational Behaviour)	3	0	0	3	3
Sessional Papers							
5	CSC511	Compiler Design Laboratory	0	0	3	3	2
6	ECC512	Microprocessor and Microcontroller System Laboratory	0	0	3	3	2
7	HUC511	Soft Skill Development	0	0	3	3	2
8	CSC591	Project - I (A)	0	0	5	5	3
Total			**12**	**2**	**14**	**28**	
						Total Credits	**23**

3rd Year (Semester: VI)							
Sl No.	Code No.	Subject	Contact Periods/Week				Credits
			L	T	P	Total	
Theoretical Papers							
1	CSC601	Computer Networks	3	1	0	4	4
2	CSC602	Machine Learning	3	0	0	3	3
3	CSC603	Database Management System	3	1	0	4	4
4	CSC604	Cryptography and Network Security	3	0	0	3	3
Sessional Papers							
5	CSC611	Computer Networks Laboratory	0	0	3	3	2
6	CSC612	Machine Learning Laboratory	0	0	3	3	2
7	CSC613	Database Management System Laboratory	0	0	3	3	2
8	CSC691	Project - I (B)	0	0	5	5	3
Total			**12**	**2**	**14**	**28**	
						Total Credits	**23**

4thYear (Semester: VII)							
Sl No.	Code No.	Subject	Contact Periods/week				Credit
			L	T	P	Total	
Theoretical Papers							
1	CSC701	Algorithms - II	3	0	0	3	3
2	CSC702	Software Engineering	3	0	0	3	3
3	CSE7XX	Elective - I	3	0	0	3	3
4	CSE7XX	Elective - II	3	0	0	3	3
Sessional Papers							
5	CSC711	Algorithms - II Laboratory	0	0	3	3	2
6	CSC791	Project - II (A)	0	0	15	15	10
Total			**12**	**0**	**18**	**30**	
						Total Credits	**24**

4th Year (Semester: VIII)							
Theoretical Papers							Credits
Sl No.	Code No.	Subject	Contact Periods/Week				
			L	T	P	Total	
1	CSE8XX	Elective - III	3	0	0	3	3
2	CSE8XX	Elective - IV	3	0	0	3	3
3	CSE8XX	Elective - V	3	0	0	3	3
Sessional Papers							
4	CSC891	Project - II (B)	0	0	15	15	10
5	CSC892	Comprehensive Viva	0	0	0	0	3
Total			**9**	**0**	**15**	**24**	
						Total Credits	**22**

Total Program Credit	**24+22+24+24+23+23+24+22**	**186**

List of Elective Subjects

Sl. No.	Semester	Course Name	Course code	L-T-P	Credit
		CSE			
1		Logic & Reasoning	CSE721	3-0-0	3
2		Data Analytics & Optimization Techniques	CSE722	3-0-0	3
3		Ad-Hoc and Sensor Networks	CSE723	3-0-0	3
4		Mobile Computing	CSE724	3-0-0	3
5		Cyber Law and Security	CSE725	3-0-0	3
6		Computational Number Theory	CSE726	3-0-0	3
7		Computational Complexity	CSE727	3-0-0	3
8		Computer Graphics and Multimedia	CSE728	3-0-0	3
9		Computational Geometry	CSE729	3-0-0	3
10	**Autumn**	Computer Vision and Image Understanding	CSE730	3-0-0	3
11		Fuzzy Logic and Applications	CSE731	3-0-0	3
12		Mathematical Methods	CSE732	3-0-0	3
13		Neural Networks and Deep Learning	CSE733	3-0-0	3
14		Data Communications	CSE734	3-0-0	3
15		Digital Signal Processing	CSE735	3-0-0	3
		ECE			
1		Optical Communication	ECE721	3-0-0	3
2		Remote Sensing and GIS	ECE722	3-0-0	3
3		Modern Radar Systems	ECE723	3-0-0	3
4		Satellite Communication Systems	ECE724	3-0-0	3
5		Mixed-Signal and RF Design	ECE725	3-0-0	3
6		Principle of Nano-electronics and devices	ECE726	3-0-0	3
7		VLSI Technology	ECE727	3-0-0	3
8		Embedded System Design	ECE728	3-0-0	3
		CSE			
1		Data Mining	CSE821	3-0-0	3
2		Speech and Natural Language Processing	CSE822	3-0-0	3
3		Soft Computing	CSE823	3-0-0	3
4		Big Data Analytics	CSE824	3-0-0	3
5		Coding Theory	CSE825	3-0-0	3
6		Distributed Operating Systems	CSE826	3-0-0	3
7		Distributed Database Management System	CSE827	3-0-0	3
8		Advanced Computer Architecture	CSE828	3-0-0	3
9		Fault Tolerant Computing	CSE829	3-0-0	3
10		Real Time Systems	CSE830	3-0-0	3
11		Robotics: Machines and Control	CSE831	3-0-0	3
12		Internet of Things	CSE832	3-0-0	3
13		Blockchain Technology	CSE833	3-0-0	3
14	**Spring**	Information Theory and Coding	CSE834	3-0-0	3
15		Advanced Cryptography	CSE835	3-0-0	3
16		Digital and Cyber Forensics	CSE836	3-0-0	3
17		Cyber Physical Systems	CSE837	3-0-0	3
18		Cloud Computing	CSE838	3-0-0	3
19		Parallel and Distributed Computing	CSE839	3-0-0	3
20		Quantum Computing	CSE840	3-0-0	3
		ECE			

1		Multiple Input Multiple Output System	ECE821	3-0-0	3
2		Sensors and Instrumentation	ECE822	3-0-0	3
3		Adaptive Systems and Signal Processing	ECE823	3-0-0	3
4		CAD for VLSI	ECE824	3-0-0	3
5		Low power circuits and systems	ECE825	3-0-0	3
6		RF and Microwave Networks	ECE826	3-0-0	3
7		MEMs and Applications	ECE827	3-0-0	3
8		Biomedical System Engineering and Automation	ECE828	3-0-0	3
9		5G and Wireless Technology	ECE829	3-0-0	3
10		Integrated Nano photonics	ECE830	3-0-0	3
11		Mobile Communication and Fading	ECE831	3-0-0	3
12		Fiber Optics, Components and Devices	ECE832	3-0-0	3