

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, SOLAN								
COURSE CURRICULUM OF CSE&IT DEPARTMENT- 2021 Batch (160 CREDITS)								
B. TECH (COMPUTER SCIENCE AND ENGINEERING) 1 st SEMESTER								
S. No.	Category Code	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
				L	T	P		
1	HSS	21B11HS111	English	2	0	0	2	2
2	Basic Sciences	18B11MA111	Engineering Mathematics -I	3	1	0	4	4
3	Basic Sciences	18B11PH111	Engineering Physics-I	3	1	0	4	4
4	Engg Science	19B11CI111	Programming for Problem Solving-II	2	0	0	2	2
5	Engg Science	18B17GE171	Workshop Practices OR	0	0	3	1.5	3
6		18B17GE173	Engineering Graphics	0	0	3		3
7	Basic Sciences	18B17PH171	Engineering Physics Lab-I	0	0	2	1	2
8	Engg Science	19B17CI171	Programming for Problem Solving Lab-II	0	0	4	2	4
9	HSS	21B17HS171	English Lab	0	0	2	1	2
10		18B17GE172	Mandatory Induction Program	-	-	-	-	-
						Total	17.5	23
B. TECH (COMPUTER SCIENCE AND ENGINEERING) 2 nd SEMESTER								
S. No.	Category Code	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
				L	T	P		
1	Basic Sciences	18B11MA211	Engineering Mathematics -II	3	1	0	4	4
2	Basic Sciences	18B11PH211	Engineering Physics-II	3	0	0	3	3
3	Basic Sciences	18B11PH271	Engineering Physics Lab - II	0	0	2	1	2
4	Engg Science	18B11EC211	Electrical Sciences	3	1	0	4	4
5	Engg Science	18B17EC271	Electrical Sciences Lab	0	0	2	1	2
6	Engg Science	18B17GE173	Engineering Graphics OR	0	0	3	1.5	3
7		18B17GE171	Workshop Practices	0	0	3		3
8	Engg Science	18B11CI211	Data Structures and Algorithms	3	1	0	4	4
9	Engg Science	18B17CI271	Data Structures and Algorithms Lab	0	0	4	2	4
10	HSS	21B11HS211	Life Skills & Effective Communication	1	0	0	1	1
11	HSS	21B17HS271	Life Skills & Effective Communication	0	0	2	1	2
						Total	22.5	32

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B. TECH (COMPUTER SCIENCE AND ENGINEERING) 3 rd SEMESTER								
S. No.	Category Code	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
				L	T	P		
1	Professional Core	18B11CI314	Python Programming Essentials	3	0	0	3	3
2	Engg Science	18B11CI311	Object Oriented Systems and Programming	3	0	0	3	3
3	Professional Core	18B11CI313	Database Management systems	3	0	0	3	3
4	Basic Sciences	18B11MA313	Probability & Statistics	3	0	0	3	3
5	HSS	21B11HS312	Interpersonal Dynamics, Values and Ethics	1	0	0	1	1
6	Professional Core	18B17CI374	Python programming Lab	0	0	4	2	4
7	Engg Science	18B17CI371	Object Oriented Systems and Programming Lab	0	0	4	2	4
8	Professional Core	18B17CI373	Database Management Systems Lab	0	0	4	2	4
9	Engg Science	18B17CI372	IT Workshop (SciLab/MATLAB) Lab	0	0	4	2	4
10	HSS	21B11HS311	Professional Communication Practice	0	0	2	Audit	2
						Total	21	31
B. TECH (COMPUTER SCIENCE AND ENGINEERING) 4 th SEMESTER								
S. No.	Category Code	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
				L	T	P		
1	Professional Core	18B11CI414	Discrete Computational Mathematics	3	0	0	3	3
2	Professional Core	18B11CI413	Modeling and Simulation Techniques	2	0	0	2	2
3	Professional Core	18B11CI411	Operating Systems	3	0	0	3	3
4	Professional Core	18B11CI412	Design & Analysis of Algorithms	3	0	0	3	3
5	Mandatory Course	18B11GE411	Environmental Studies	2	-	-	-	2
6	HSS	18B11HS411	Finance & Accounts	3	0	0	3	3
7	Professional Core	18B17CI473	Data Simulation Lab	0	0	4	2	4
8	Professional Core	18B17CI471	Operating System Lab	0	0	4	2	4
9	Professional Core	18B17CI472	Design and Analysis of Algorithms Lab	0	0	4	2	4
10	Professional Core	18B17CI474	Web Tech Lab	0	0	4	2	4
						Total	22	32

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B. TECH (COMPUTER SCIENCE AND ENGINEERING) 5 th SEMESTER								
S. No.	Category Code	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
				L	T	P		
1	Professional Core	18B11CI515	Computer Graphics	3	0	0	3	3
2	Basic Sciences		Science Elective	3	0	0	3	3
3	Professional Core	18B11CI513	Formal Language & Automata Theory	3	0	0	3	3
4	Professional Core	18B11CI514	Computer Organization and Architecture	3	0	0	3	3
5	HSS	18B11HS511	Project Management and Entrepreneurship	3	0	0	3	3
6	Professional Core	18B17CI575	Computer Graphics Lab	0	0	4	2	4
7	Professional Core	18B17CI574	Computer Organization and Architecture Lab	0	0	2	1	2
8	Engg Science	18B17CI575	Multimedia Lab	0	0	2	1	2
9	Professional Elective		Elective -I	2	0	0	2	2
10	Professional Elective		Elective -I Lab	0	0	2	1	2
						Total	22	27
B. TECH (COMPUTER SCIENCE AND ENGINEERING) 6 th SEMESTER								
S. No.	Category Code	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
				L	T	P		
1	Professional Core	18B11CI612	Compiler Design	3	0	0	3	3
2	Professional Core	18B11CI611	Computer Networks	3	0	0	3	3
3	Professional Core	18B17CI672	Compiler Design Lab	0	0	4	2	4
4	Professional Core	18B17CI671	Computer Networks lab	0	0	4	2	4
5	Professional Elective		Elective II	2	0	0	2	2
6	Professional Elective		Elective - II Lab	0	0	2	1	2
7	Professional Elective		Elective III	2	0	0	2	2
8	Professional Elective		Elective - III Lab	0	0	2	1	2
9	Open Elective		Open Elective -I (Humanities)	3	0	0	3	3
10	Project	18B19CI691	Minor Project	0	0	6	3	6
						Total	22	31

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B. TECH (COMPUTER SCIENCE AND ENGINEERING) 7 th SEMESTER								
S. No.	Category Code	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
				L	T	P		
1	Professional Elective		Elective IV	2	0	0	2	2
2	Professional Elective		Elective IV Lab	0	0	2	1	2
3	Professional Elective		Elective V	3	0	0	3	3
4	Open Elective		Open Elective II / MOOC Course*	3	0	0	3	3
5	Open Elective		Open Elective III / MOOC Course*	3	1	0	3	3
6	Mandatory Course	18B11HS711	Indian Constitution	1	-	-	-	1
7	Project	18B19CI791	Major Project - I	0	0	12	6	12
						Total	18	26
B. TECH (COMPUTER SCIENCE AND ENGINEERING) 8 th SEMESTER								
S. No.	Category Code	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
				L	T	P		
1	Professional Elective		Elective VI	3	0	0	3	3
2	Open Elective		Open Elective IV / MOOC Course*	3	0	0	3	3
3	Open Elective		Open Elective V / MOOC Course*	3	0	0	3	3
4	Project	18B19CI891	Major Project - II	0	0	12	6	12
						Total	15	21
			TOTAL CREDITS				160	160
			TOTAL HOURS				216	
			HSS				12	
			Basic Science				23	
			Engg Science				26	
			Professional Core				51	
			Professional Elective				18	
			OE				15	
			PROJECT				15	

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B. TECH (COMPUTER SCIENCE AND ENGINEERING)								
ELECTIVE-I								
S. No.	Category Code	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
				L	T	P		
1	Professional Elective	18B1WC1532	Data Compression	2	0	0	2	2
2	Professional Elective	18B1WC1533	Principal of Programming Languages	2	0	0	2	2
3	Professional Elective	18B1WC1534	Java Programming	2	0	0	2	2
4	Professional Elective	18B1WC1531	Information Theory & Coding	2	0	0	2	2
5	Professional Elective	18B1WC1572	Data Compression Lab	0	0	2	1	2
6	Professional Elective	18B1WC1573	Principal of Programming Languages Lab	0	0	2	1	2
7	Professional Elective	18B1WC1574	Java Programming Lab	0	0	2	1	2
8	Professional Elective	18B1WC1571	Information Theory & Coding Lab	0	0	2	1	2
9	Professional Elective	20B1WC1531	Foundation for Data Science and Visualization	2	0	0	2	2
10	Professional Elective	20B1WC1571	Data Science and Visualization Lab	0	0	2	1	2
11	Professional Elective	19B1WC1531	Big Data using Hadoop	2	0	0	2	2
12	Professional Elective	19B1WC1571	Big Data using Hadoop Lab	0	0	2	1	2
13	Professional Elective	19B1WC1532	Image Analysis and Pattern Recognition	2	0	0	2	2
14	Professional Elective	19B1WC1572	Image Analysis and Pattern Recognition Lab	0	0	2	1	2
15	Professional Elective	20B1WC1532	Cloud Computing: Concepts, Technology & Architecture	2	0	0	2	2
16	Professional Elective	20B1WC1572	Cloud Computing: Concepts, Technology & Architecture Lab	0	0	2	1	2
17	Professional Elective	19B1WC1533	Human-Computer Interaction	2	0	0	2	2
18	Professional Elective	19B1WC1573	Human-Computer Interaction Lab	0	0	2	1	2
19	Professional Elective	19B1WC1534	Social Media	2	0	0	2	2
20	Professional Elective	19B1WC1574	Social Media Lab (Node XL)	0	0	2	1	2
ELECTIVE-II								
S.No.		Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
				L	T	P		
1	Professional Elective	18B1WC1633	Software Testing Fundamentals	2	0	0	2	2
2	Professional Elective	18B1WC1634	Machine Learning	2	0	0	2	2
3	Professional Elective	18B1WC1637	C# and VB.NET	2	0	0	2	2
4	Professional Elective	18B1WC1631	Data Structure and Software Design	2	0	0	2	2
5	Professional Elective	18B1WC1673	Software Testing Fundamentals Lab	0	0	2	1	2
6	Professional Elective	18B1WC1674	Machine Learning Lab	0	0	2	1	2
7	Professional Elective	18B1WC1677	C# and VB.NET Lab	0	0	2	1	2
8	Professional Elective	18B1WC1671	Data Structure and Software Design Lab	0	0	2	1	2
9	Professional Elective	19B1WC1631	Digital Forensics	2	0	0	2	2
10	Professional Elective	19B1WC1671	Digital Forensics lab	0	0	2	1	2
11	Professional Elective	19B1WC1633	Computer Animation	2	0	0	2	2
12	Professional Elective	19B1WC1673	Computer Animation Lab	0	0	2	1	2
13	Professional Elective	19B1WC1634	Computer and Robot Vision	2	0	0	2	2
14	Professional Elective	19B1WC1674	Computer and Robot Vision lab	0	0	2	1	2
15	Professional Elective	19B1WC1636	Computability, Complexity & Algorithms	2	0	0	2	2
16	Professional Elective	19B1WC1676	Computability, Complexity & Algorithms Lab	0	0	2	1	2
17	Professional Elective	19B1WC1638	Statistics and Data Science	2	0	0	2	2
18	Professional Elective	19B1WC1678	Statistics and Data Science Lab	0	0	2	1	2

ELECTIVE-III								
S. No.	Category Code	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
				L	T	P		
1	Professional Elective	18B1WCI638	Pattern Recognition	2	0	0	2	2
2	Professional Elective	18B1WCI635	Data Mining & Data Warehousing	2	0	0	2	2
3	Professional Elective	18B1WCI632	Parallel and Distributed Algorithms	2	0	0	2	2
4	Professional Elective	18B1WCI636	Digital Image processing	2	0	0	2	2
5	Professional Elective	18B1WCI678	Pattern Recognition Lab	0	0	2	1	2
6	Professional Elective	18B1WCI675	Data Mining & Data Warehousing Lab	0	0	2	1	2
7	Professional Elective	18B1WCI672	Parallel and Distributed Algorithms Lab	0	0	2	1	2
8	Professional Elective	18B1WCI676	Digital Image processing Lab	0	0	2	1	2
9	Professional Elective	19B1WCI632	Information Security	2	0	0	2	2
10	Professional Elective	19B1WCI672	Information Security Lab	0	0	2	1	2
11	Professional Elective	20B1WCI732	From Graph to Knowledge Graph	2	0	0	2	2
12	Professional Elective	20B1WCI772	From Graph to Knowledge Graph Lab	0	0	2	1	2
13	Professional Elective	19B1WCI635	Architecting Distributed Cloud Applications	2	0	0	2	2
14	Professional Elective	19B1WCI675	Architecting Distributed Cloud Applications Lab	0	0	2	1	2
15	Professional Elective	19B1WCI637	Statistics and Exploratory Data Analytics	2	0	0	2	2
16	Professional Elective	19B1WCI677	Statistics and Exploratory Data Analytics Lab	0	0	2	1	2
ELECTIVE-IV								
S. No.	Category Code	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
				L	T	P		
1	Professional Elective	18B1WCI734	Cryptography& network security	2	0	0	2	2
2	Professional Elective	18B1WCI743	Advanced Algorithms	2	0	0	2	2
3	Professional Elective	18B1WCI741	R-Programming	2	0	0	2	2
4	Professional Elective	18B1WCI742	Artificial Intelligence	2	0	0	2	2
5	Professional Elective	18B1WCI774	Cryptography& network security Lab	0	0	2	1	2
6	Professional Elective	18B1WCI773	Advanced Algorithms Lab	0	0	2	1	2
7	Professional Elective	18B1WCI771	R-Programming Lab	0	0	2	1	2
8	Professional Elective	18B1WCI772	Artificial Intelligence Lab	0	0	2	1	2
9	Professional Elective	19B1WCI731	Computational Data Analysis	2	0	0	2	2
10	Professional Elective	19B1WCI771	Computational Data Analysis lab	0	0	2	1	2
11	Professional Elective	19B1WCI732	Game Development and Design	2	0	0	2	2
12	Professional Elective	19B1WCI772	Game Development Lab	0	0	2	1	2

ELECTIVE-V								
S. No.	Category Code	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
				L	T	P		
1	Professional Elective	18B1WCI736	Storage Networks	3	0	0	3	3
2	Professional Elective	18B1WCI738	Internet of Things	3	0	0	3	3
3	Professional Elective	18B1WCI735	Mobile Computing	3	0	0	3	3
4	Professional Elective	18B1WCI737	Cloud Computing	3	0	0	3	3
5	Professional Elective	18B1WCI740	Computational Techniques and Algorithms in Engineering	3	0	0	3	3
6	Professional Elective	19B1WCI736	Information Auditing & Risk Management	3	0	0	3	3
7	Professional Elective	19B1WCI737	Optimization Methods in Business Analytics	3	0	0	3	3
8	Professional Elective	18B1WCI840	Computer Vision	3	0	0	3	3
9	Professional Elective	19B1WCI738	Introduction to Deep Learning	3	0	0	3	3
ELECTIVE-VI								
S. No.	Category Code	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
				L	T	P		
1	Professional Elective	18B1WCI843	Data Analytics	3	0	0	3	3
2	Professional Elective	18B1WCI844	BIG DATA	3	0	0	3	3
3	Professional Elective	18B1WCI845	Network Management	3	0	0	3	3
4	Professional Elective	18B1WCI846	Graph Theory	3	0	0	3	3
5	Professional Elective	19B1WCI831	Ethics and Information Technology	3	0	0	3	3
6	Professional Elective	18B1WCI832	Social and Information Network Analysis	3	0	0	3	3
7	Professional Elective	19B1WCI832	Probabilistic Graphical Models	3	0	0	3	3
8	Professional Elective	19B1WCI833	Information Modeling	3	0	0	3	3
9	Professional Elective	19B1WCI834	Information Visualization	3	0	0	3	3
10	Professional Elective	19B1WCI835	Cloud Computing Security	3	0	0	3	3
11	Professional Elective	19B1WCI836	Knowledge-Based AI: Cognitive Systems	3	0	0	3	3
12	Professional Elective	19B1WCI837	Reinforcement Learning	3	0	0	3	3
13	Professional Elective	21B1WCI833	Machine Learning Engineering for Production	3	0	0	3	3

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LIST OF OPEN ELECTIVES								
S. No.	Category Code	Semester	Name of the Subjects	Course Hours			Credits	Total Hours
				L	T	P		
OPEN ELECTIVE II (7th Semester)								
1	19B1WCI733	7	Introduction to C++ Programming	2	0	0	2	2
2	19B1WCI734	7	Object-Oriented Technologies using Java	2	0	0	2	2
3	19B1WCI735	7	Software Testing Methodologies	2	0	0	2	2
4	19B1WCI773	7	Introduction to C++ Programming Lab	0	0	2	1	2
5	19B1WCI774	7	Object-Oriented Technologies using Java Lab	0	0	2	1	2
6	19B1WCI775	7	Software Testing Methodologies Lab	0	0	2	1	2
OPEN ELECTIVE III (7th Semester)								
1	18B1WCI735	7	ARM based Embedded System Design	3	0	0	3	3
2	19B1WCI739	7	Software Defined Network	3	0	0	3	3
3	19B1WCI740	7	Introduction to Statistical learning	3	0	0	3	3
OPEN ELECTIVE IV (8th Semester)								
1	19B1WCI838	8	Principles of Distributed Database Systems	3	0	0	3	3
2	19B1WCI839	8	Foundations of Blockchain	3	0	0	3	3
3	19B1WCI840	8	Computational Biology	3	0	0	3	3
4	21B1WCI831	8	Digital Twin – Fundamental Concepts of Application in Advanced Manufacturing	3	0	0	3	3
OPEN ELECTIVE V (8th Semester)								
1	19B1WCI841	8	Wireless Sensor Networks: Protocols and Applications	3	0	0	3	3
2	19B1WCI842	8	Service Oriented Architecture	3	0	0	3	3
3	19B1WCI843	8	Multimedia Systems and Applications	3	0	0	3	3
4	21B1WCI832	8	Affective Computing	3	0	0	3	3