DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING TEZPUR UNIVERSITY

Offered Courses for new batches, Autumn 2020

The following are the courses being offered by the Department of Computer Science & Engineering, in the Autumn Semester 2020, for new batches (1st semester) of Ph.D., M.Tech(IT), M. Tech(CSE), MCA and B.Tech. programmes.

Code		MCA 1 st Se	mestei	r					
CS404 Programming and Problem Solving 3	Course	Course Title	Credit Structure			Credit	Course		
CS405 Discrete Mathematics 2	Code		L	Т	Р		Туре		
CS408 Data Structures 3 0 1 4 CS	CS404	Programming and Problem Solving	3	1	1	5	Core		
CS312 OO programming & Data Structures Data Data Communication Com	CS405	Discrete Mathematics	2	1	0	3	Core		
Lab.	CS408	Data Structures	3	0	1	4	Core		
XXXXX	CS312		0	0	2	2	Core		
XXXXX	EF103	Communication Skills (non-credit)	2	0	1	0	Audit		
Choose Elective-1 from the following two courses	XXXXX	Elective-1	3	0	1	3	Elect.		
Choose Elective-1 from the following two courses	XXXXX	Elective-2				3	Elect.		
CS320 Probability & Statistics 2 1 0 3 Electron State CS204 Mathematical Foundation 3 0 0 3 Electron State CS422 Numerical Methods 2 0 1 3 Electron State CS305 Internet Concepts and Web Technology 2 1 0 3 Electron State CS421 Graph Theory 3 0 0 3 Electron State CS424 Formal Language & Automata 3 0 0 3 Electron State Bridge Courses (Compusory for students without Computer Science background. B. SC(CS), B.Sc(IT), BCA students need not register these courses) CS410 Computer organization 2 1 0 0 Automate M.Tech. (IT) 1st Semester CS531 Object Oriented Programming & Design 3 1 1 5 Computer Science CS601 Design and Analysis of Algorithms 3 0 0 3 Computer Science CS603 Selected Topics in Computer Networks 3 0 1 4 Computer Science CS543 Advanced Programming Lab I 0 1 2 3 Computer Science CS543 Advanced Programming Lab I 0 1 2 3 Computer Science CS540 Selected Topics in Computer Networks 3 0 1 2 3 Computer Science CS540 Advanced Programming Lab I 0 1 2 3 Computer Science CS540 Selected Topics in Computer Networks 3 0 1 2 3 Computer Science CS541 Advanced Programming Lab I 0 1 2 3 Computer Science CS542 Selected Topics in Computer Networks 3 0 1 2 3 Computer Science CS543 Advanced Programming Lab I 0 1 2 3 Computer Science CS544 Selected Topics in Computer Networks 3 0 1 2 3 Computer Science CS544 Selected Topics in Computer Networks 3 0 1 2 3 Computer Science CS544 Selected Topics in Computer Networks 3 0 1 2 3 Computer Science CS545 Advanced Programming Lab I 0 1 2 3 Computer Science CS546 Selected Topics in Computer Networks 3 0 1 2 3 Computer Science CS547 Advanced Programming Lab I 0 1 2 3 Computer Science CS548 Selected Topics in Computer Networks 3 0 1 2 3 Computer Science CS548 Selected Topics in Computer Networks 3 0 1 2 3 Computer Science CS549 Advanced Programming Lab I 0 1 2 3 3 Computer Science CS549 Advanced Programming Lab I 0 1 2 3 3 Computer Science CS540 Advanced Programming Lab I 0 1 2 3 3 Computer Science CS540 Advanced Programming Lab I 0	XXXXX	Elective-3				3	Elect.		
CS320				Total	•	18			
CS204 Mathematical Foundation Choose Elective-2 from the following two courses CS422 Numerical Methods CS305 Internet Concepts and Web Technology Choose Elective-3 from the following two courses CS421 Graph Theory CS422 Formal Language & Automata Bridge Courses (Compusory for students without Computer Science background. B. SC(CS), B.Sc(IT), BCA students need not register these courses) CS309 Computing fundamentals CS410 Computer organization M.Tech. (IT) 1st Semester CS531 Object Oriented Programming & Design CS601 Design and Analysis of Algorithms Selected Topics in Computer Networks 3 0 1 4 CGCCS543 Advanced Programming Lab I 0 1 2 3 CGCCSCSCSCSCSCSCSCSCSCSCSCSCSCSCSCSCSCS		Choose Elective-1 from the following two courses							
CS422 Numerical Methods 2 0 1 3 Elective-2 from the following two courses CS422 Numerical Methods 2 0 1 3 Elective-3 Internet Concepts and Web Technology 2 1 0 3 Elective-3 from the following two courses CS421 Graph Theory 3 0 0 3 Elective-3 Formal Language & Automata 3 0 0 3 Elective-3 Formal Language & Automata 3 0 0 A Elective-3 Formal Language & Automata 3 0 0 A Elective-3 Formal Language & Automata 3 0 0 A Elective-3 Formal Language & Automata 4 0 0 A Elective-3 Formal Language & Automata 5 0 0 A Elective-3 Formal Language & Automata 5 0 0 A Elective-3 Formal Language & Automata 5 0 0 A Elective-3 Formal Language & Automata 5 0 0 A Elective-3 Formal Language & Automata 6 0 0 A Elective-3 Formal Language & Automata 7 0 0 A Elective-3 Formal Language & Automata 8 0 0 A Elective-3 Formal Language & Automata 9 0 0 A Elective-3 Formal L	CS320	Probability & Statistics	2	1	0	3	Elect.		
CS422 Numerical Methods 2 0 1 3 Electronology 2 1 0 0 3 Electronology 3 0 0 3 Electronology 3 0 0 3 Electronology 3 0 0 3 Electronology 5 Electronology 6 Electronology 6 Electronology 6 Electronology 6 Electronology 6 Electronology 7 Electronology 8 Elec	CS204	Mathematical Foundation	3	0	0	3	Elect.		
CS305 Internet Concepts and Web Technology 2 1 0 3 Electric Choose Electrice-3 from the following two courses CS421 Graph Theory 3 0 0 3 Electric CS424 Formal Language & Automata 3 0 0 3 Electric Compusory for students without Computer Science background. B. SC(CS), B.Sc(IT), BCA students need not register these courses) CS309 Computing fundamentals 2 0 1 0 Acceptable CS410 Computer organization 2 1 0 0 Acceptable CS410 Computer organization 2 1 5 Cceptable CS531 Object Oriented Programming & Design 3 1 1 5 Cceptable CS601 Design and Analysis of Algorithms 3 0 0 3 Cceptable CS634 Selected Topics in Computer Networks 3 0 1 4 Cceptable CS543 Advanced Programming Lab I 0 1 2 3 Cceptable CS543 Advanced Programming Lab I 0 1 2 2 3 Cceptable CS543 Advanced Programming Lab I 0 1 2 2 3 Cceptable CS543 Advanced Programming Lab I 0 1 2 2 3 Cceptable CS543 Advanced Programming Lab I 0 1 2 2 3 Cceptable CS543 Advanced Programming Lab I 0 1 2 2 3 Cceptable CS543 Advanced		Choose Elective-2 from the following two courses							
CS421 Graph Theory 3 0 0 3 Elected Section Sec	CS422	Numerical Methods	2	0	1	3	Elect.		
CS421 Graph Theory 3 0 0 3 Elected Topics in Computer Networks 3 0 0 0 3 Elected Topics in Computer Networks 3 0 0 0 3 Elected Topics in Computer Networks 3 0 0 0 3 Elected Topics in Computer Networks 3 0 1 2 3 Computer Networks 1 0 0 1 2 3 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	CS305	Internet Concepts and Web Technology	2	1	0	3	Elect.		
Section		Choose Elective-3 from the following two courses							
Bridge Courses (Compusory for students without Computer Science background. B. SC(CS), B.Sc(IT), BCA students need not register these courses) CS309 Computing fundamentals 2 0 1 0 0 Au CS410 Computer organization 2 1 0 0 Au M.Tech. (IT) 1 st Semester CS531 Object Oriented Programming & Design 3 1 1 5 Council CS601 Design and Analysis of Algorithms 3 0 0 3 Council CS634 Selected Topics in Computer Networks 3 0 1 4 Council CS543 Advanced Programming Lab I 0 1 2 3 Council CS634 CS543 Advanced Programming Lab I 0 1 2 3 Council CS634 CS543 Advanced Programming Lab I 0 1 2 3 Council CS634 CS543 Advanced Programming Lab I 0 1 2 3 Council CS634 CS543 Advanced Programming Lab I 0 1 2 3 Council CS634 CS543 Advanced Programming Lab I 0 1 2 3 Council CS634 CS543 Advanced Programming Lab I 0 1 2 3 Council CS634 CS543 Advanced Programming Lab I 0 1 2 3 Council CS634 CS543 Advanced Programming Lab I 0 1 2 3 Council CS634 CS543 Advanced Programming Lab I 0 1 2 3 Council CS634 CS543 Advanced Programming Lab I 0 1 2 3 Council CS634 CS543 Advanced Programming Lab I 0 1 2 3 Council CS634 CS543 Advanced Programming Lab I 0 1 2 3 Council CS634 CS543 Advanced Programming Lab I 0 1 2 3 Council CS634	CS421	Graph Theory	3	0	0	3	Elect.		
(Compusory for students without Computer Science background. B. SC(CS), B.Sc(IT), BCA students need not register these courses) CS309 Computing fundamentals 2 0 1 0 Au CS410 Computer organization 2 1 0 0 Au M.Tech. (IT) 1 st Semester CS531 Object Oriented Programming & Design 3 1 1 5 Co CS601 Design and Analysis of Algorithms 3 0 0 3 Co CS634 Selected Topics in Computer Networks 3 0 1 4 Co CS543 Advanced Programming Lab I 0 1 2 3 Co	CS424	Formal Language & Automata	3	0	0	3	Elect.		
CS410 Computer organization 2 1 0 0 Au M.Tech. (IT) 1 st Semester CS531 Object Oriented Programming & Design 3 1 1 5 Computer Networks 3 0 0 3 Computer Networks 3 0 1 4 Computer Networks 3 0 1 4 Computer Networks 3 Computer		(Compusory for students without Computer Science background.							
M.Tech. (IT) 1 st Semester CS531 Object Oriented Programming & Design 3 1 1 5 Co CS601 Design and Analysis of Algorithms 3 0 0 3 Co CS634 Selected Topics in Computer Networks 3 0 1 4 Co CS543 Advanced Programming Lab I 0 1 2 3 Co	CS309	Computing fundamentals	2	0	1	0	Audit		
CS531 Object Oriented Programming & Design 3 1 1 5 Colors CS601 Design and Analysis of Algorithms 3 0 0 3 Colors CS634 Selected Topics in Computer Networks 3 0 1 4 Colors CS543 Advanced Programming Lab I 0 1 2 3 Colors	CS410	Computer organization	2	1	0	0	Audit		
CS601 Design and Analysis of Algorithms 3 0 0 3 Colors CS634 Selected Topics in Computer Networks 3 0 1 4 Colors CS543 Advanced Programming Lab I 0 1 2 3 Colors		M.Tech. (IT) 1 ^s	t Seme	ster					
CS634 Selected Topics in Computer Networks 3 0 1 4 Computer Networks 3 0 1 2 3 Computer Networks 1 1 2 3 Computer Networks 1 2 3 Computer Networks 2 3 0 1 2 3 Computer Networks 3 0 1 2 3 Computer Networks 1 2 3 Computer Networks 2 3 0 1 2 3 Computer Networks 3 0 1 2 3 3 Computer Networks 3 0 1 2 3 3 Computer Networks 3 0 1 3 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2	CS531	Object Oriented Programming & Design	3	1	1	5	Core		
CS543 Advanced Programming Lab I 0 1 2 3 Co	CS601	Design and Analysis of Algorithms	3	0	0	3	Core		
	CS634	Selected Topics in Computer Networks	3	0	1	4	Core		
XXXXX Elective 1 3 Elective 1	CS543	Advanced Programming Lab I	0	1	2	3	Core		
	XXXXX	Elective 1				3	Elect.		

XXXXX	Elective 2				3	Elect.		
			Total		21			
	Choose two Electives from the following list.							
IT510	Advanced Operating Systems	3	0	1	4	Elect.		
CS525	Artificial Intelligence	3	0	0	3	Elect.		
CS541	Mathematical Foundation for Computer Science	3	1	0	4	Elect.		
CS538	Computational Geometry	3	0	0	3	Elect.		
CS606	Computer Architecture & Parallel Processing	3	0	0	3	Elect.		
CS6XX	Fundamentals of Speech Processing	3	0	1	4	Elect.		
	M.Tech. (CSE) 1	.st Sem	ester	L	I			
CS541	Mathematical Foundation for Computer Science	3	1	0	4	Core		
CS634	Selected Topics in Computer Networks	3	0	1	4	Core		
CS542	Advanced Algorithms and Data Structures	2	1	0	3	Core		
CS543	Advanced Programming Lab I	0	1	2	3	Core		
IT510	Advanced Operating Systems	3	0	1	4	Core		
			Total		18			
	Ph.D. 1 st Se	meste	r					
CS704	Doctoral Research Methodology	4	0	0	4	Core		
CS701	Algorithms and Complexity	4	0	0	4	Core		
XXXXX	Research area based Elective I				3/4	Elect.		
XXXXX	Research area based Elective II				2/3/4	Elect.		
XXXXX	Research area based Elective III (Not required if total credit already				2/3/4	Elect.		
	becomes 16)		Total		16/17/18			
	Choose 2/3 Elective	es from		owing li				
	Choose 2/3 Electives from the following list. (the 3 rd elective is required if total credit of the four courses selected become less that 16).							
	(Minimum tota	1	1			T -		
CS731	Data Mining in Security	4	0	0	4	Elect.		
CS6XX	Fundamentals of Speech Processing	3	0	1	4	Elect.		
CS638	Software Defined Networking &	3	0	0	3	Elect		
CS538	Network Function Virtualization	3	0	0	3	Elect.		
CS4602	Computational Geometry Image Processing	3	0	0	3	Elect.		
CS4602 CS610	Bioinformatics	3	0	0	3	Elect.		
C3010	B. Tech. (CSE) 1			0	<u> </u>	LICCI.		
CH103			1	1	4	Core		
CH103	Chemistry Rhysics I	3	0	1	4	Core		
PH103	Physics-I	2	0	1	3	Core		
MS104	Mathematics-I	3	1	0	4			
EE103	Basic Electrical Engineering	3	0	0	3	Core		

EE104	Basic Electrical Engineering Lab	0	0	1	1	Core
EF103	Communicative English	2	0	1	3	Core
SE100	Induction Program	-	-	-	-	-
		Total			18	

(B. Borah) Head, CSE