

**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

**TEZPUR UNIVERSITY**

**Offered Courses (Autumn 2021)**

2 August, 2021

The following are the courses being offered by the Department of Computer Science & Engineering, in the Autumn Semester, 2021 for Ph.D., M.Tech (IT), M. Tech (CSE), MCA and B. Tech. programmes. In addition, the students shall have to take Open Elective courses and SWAYAM MOOCs courses as applicable. **Number of MOOCs course taken by each student should not exceed two.**

<b>MCA 3<sup>rd</sup> Semester</b>							
CS516	Operating Systems	2	1	0	3	Core	D. K. saikia
CS517	Operating system Lab	0	1	1	2	Core	M. Devi
CS519	Computer Networks	3	1	0	4	Core	N. Medhi
CS520	Networks Lab	0	1	1	2	Core	N. Medhi
CS510	Minor Project	0	0	5	5	Core	
XXxxx	Elective-6	3	0	0	3	E	
XXxxx	Elective-7	3	0	0	3	E	
XXxxx	Open Elective	3	0	0	3	OE	
		Total			25		
	Choose two Electives from the following list and MOOCs list. Choose at most one course with practical component (4 credits).						
CS522	Computer Graphics	3	0	1	4	E	R. Sarmah
CS602	Image Processing	3	0	0	3	E	B. Borah
IT509	Data Mining & Data Warehousing	3	0	1	4	E	B. Borah
CO504	Natural Language Processing	3	0	0	3	E	U. Sharma
CO513	Fundamentals of Speech Processing	3	0	1	4	E	S. Nath
CS538	Computational Geometry	3	0	0	3	E	A. Karmakar
CS621	Mobile Computing	4	0	0	4	E	N. Sarma
CS525	Artificial Intelligence	3	0	0	3	E	S. Kalita
CO519	Internet of Things	3	0	0	3	E	D. Boro
<b>MCA 5<sup>th</sup> Semester</b>							
CS514	Minor Project	0	0	8	8	Core	
XXxxx	Elective	3	0	0	3	E	
XXxxx	Elective	3	0	0	3	E	
XXxxx	Elective	3	0	0	3	E	
XXxxx	Elective/Open Elective (If three Open Electives not yet taken)	0	0	3	3	E/OE	
		Total			20		
	Choose 3 Electives from the following list and MOOCs list. Number of MOOCs courses taken should not exceed 2.						

CS602	Image Processing	3	0	0	3	E	B. Borah
IT509	Data Mining & Data Warehousing	3	0	1	4	E	B. Borah
CO504	Natural Language Processing	3	0	0	3	E	U. Sharma
CO513	Fundamentals of Speech Processing	3	0	1	4	E	S. Nath
CS538	Computational Geometry	3	0	0	3	E	A. Karmakar
CS621	Mobile Computing	4	0	0	4	E	N. sarma
CS525	Artificial Intelligence	3	0	0	3	E	S. Kalita
CO519	Internet of Things	3	0	0	3	E	D. Boro
<b>M. Tech. (IT) 3<sup>rd</sup> Semester</b>							
IT604	Term Project I	0	0	8	8	Core	
XXxxx	Elective 5	3	0	0	3	E	
XXxxx	Elective 6	3	0	0	3	E	
XXxxx	Open Elective (If three Open Electives not yet taken)	0	0	3	3	OE	
		Total			14		
<b>Choose two Electives from the following list and MOOCs list.</b>							
IT509	Data Mining & Data Warehousing	3	0	1	4	E	B. Borah
CO504	Natural Language Processing	3	0	0	3	E	U. Sharma
CO513	Fundamentals of Speech Processing	3	0	1	4	E	S. Nath
CS621	Mobile Computing	4	0	0	4	E	N. Sarma
CS538	Computational Geometry	3	0	0	3	E	A. Karmakar
CS610	Bioinformatics	3	0	0	3	E	S. S. Satapathy
CS525	Artificial Intelligence	3	0	0	3	E	S. Kalita
CO519	Internet of Things	3	0	0	3	E	D. Boro
<b>M.Tech. (CSE) 3<sup>rd</sup> Semester</b>							
CS640	Term Project I	0	0	8	8	Core	
XXxxx	Elective III	3	0	0	3/4	E	
XXxxx	Elective IV	3	0	0	3/4	E	
XXxxx	Open Elective II	3	0	0	3	OE	
		Total			17-19		
<b>Choose two Electives from the following list and MOOCs list.</b>							
IT509	Data Mining & Data Warehousing	3	0	1	4	E	B. Borah
CO504	Natural Language Processing	3	0	0	3	E	U. Sharma
CO513	Fundamentals of Speech Processing	3	0	1	4	E	S. Nath
CS621	Mobile Computing	4	0	0	4	E	N. Sarma
CS538	Computational Geometry	3	0	0	3	E	A. Karmakar
CS 610	Bioinformatics	3	0	0	3	E	S. S. Satapathy
CS525	Artificial Intelligence	3	0	0	3	E	S. Kalita
CO519	Internet of Things	3	0	0	3	E	D. Boro

<b>B.Tech. 3<sup>rd</sup> Semester</b>							
MS205	Mathematics - III	3	0	0	3	Core	
CO202	Digital Logic Design	3	0	1	4	Core	S. Nath
CO209	Computing Workshop	0	0	2	2	Core	M. Devi
CO210	Data Structures	3	1	0	4	Core	B. Nath
CO211	Data Structures using Object Oriented Programming Lab	0	1	2	3	Core	S. I. Singh
BA201	Economics	3	0	0	3	Core	
EC205	Signals and Systems	2	1	0	3	Core	
ES201	Environmental Science	2	0	1	0	NC	
		Total			22		
<b>B.Tech. 5<sup>th</sup> Semester</b>							
CO303	Computer Graphics	3	0	1	4	Core	R. Sarmah
CO309	Operating Systems	3	0	0	3	Core	S. K. Deka
CO310	Operating Systems Lab	0	0	1	1	Core	M. Devi
CO311	Software Engineering	3	0	0	3	Core	S. S. Satapathy
CO312	Database Systems	3	0	0	3	Core	S. Saharia
CO313	Database Systems Lab	0	1	1	2	Core	RCB
LW301	Indian Constitution	1	0	0	0	NC	
XXxxx	Elective-I (PEC01)	3	0	0	3	E	
XXxxx	Open Elective-I (OEC01)	3	0	0	3	E	
		Total			22		
<b>Choose Elective-I from the following list.</b>							
CO318	Cryptography	3	0	0	3	E	N. Sarma
CO434	Image Processing	3	0	0	3	E	B. Borah
CO519	Internet of Things	3	0	0	3	E	D. Boro
<b>B. Tech. 7<sup>th</sup> Semester</b>							
CO401	Artificial Intelligence	3	0	0	3	Core	S. Kalita
CO402	Project II	0	0	0	4	Core	
CO404	Summer Internship /Industrial Training	0	0	0	0	NC	
CT465	Indian Traditional Knowledge	1	0	0	0	NC	
XXxxx	HSS/Management Elective	3	0	0	3	E	
XXxxx	Elective III	3	0	1	4	E	
XXxxx	Elective IV	3	0	0	3	E	
XXxxx	Open Elective III	3	0	0	3	OE	
		Total			20		
<b>Choose HSS/Management Elective from the following list</b>							
BM322	Social Responsibility and professional ethics of engineering	3	0	0	3	E	
<b>Choose Elective III and Elective IV from the following lists and MOOCs list. Number of MOOCs courses taken should not exceed 2.</b>							

<b>Elective (4 Credits)</b>							
IT509	Data Mining and Data Warehousing	3	0	1	4	E	B. Borah
CO513	Fundamentals of Speech Processing	3	0	1	4	E	S. Nath
IT510	Advanced Operating Systems	3	0	1	4	Core	S. K. Deka
<b>Elective (3 Credits)</b>							
CO434	Image Processing	3	0	0	3	E	B. Borah
CO504	Natural Language Processing	3	0	0	3	E	U. Sharma
CS610	Bioinformatics	3	0	0	3	E	S. Satapathy
CS538	Computational Geometry	3	0	0	3	E	A. Karmakar
CO519	Internet of Things	3	0	0	3	E	D. Boro
CO435	Mobile Computing	3	0	0	3	E	N. sarma
<b>Ph.D.</b>							
CS704	Doctoral Research Methodology	4	0	0	4	Core	US/DKB
CS701	Algorithms and Complexity	4	0	0	4	Core	A. Karmakar
XXxxx	Research area based Elective I				3/4	E	
XXxxx	Research area based Elective II				2/3/4	E	
XXxxx	Research area based Elective III (Not required if total credit already becomes 16)				2/3/4	E	
		Total			16-18		
Choose Electives from the following list and MOOCs list. Number of MOOCs courses taken should not exceed 2.							
CO513	Fundamentals of Speech Processing	3	0	1	4	E	S. Nath
CS538	Computational Geometry	3	0	0	3	E	A. Karmakar
CS602	Image Processing	3	0	0	3	E	B. Borah
CS610	Bioinformatics	3	0	0	3	E	S. Satapathy
<b>Open Electives (for Non-CSE, i.e., students from other Departments)</b>							
CS537	Natural Language Processing	3	0	0	3	OE	U. Sharma
CS536	Computer Applications and Information Management	2	0	1	3	OE	L. B. Singh
CS610	Bioinformatics	3	0	0	3	OE	S. Satapathy
<b>Core Courses (for 3<sup>rd</sup> Semester Integrated M.Sc. students)</b>							
CS535	Introduction to Scientific Computing	2	0	1	3	Core	RCB

### MOOCs Courses

Course Id	NPTEL Course Id	Course Name & Instructor(s)	Duration (in Week)	Total Credit
CS650	noc21-cs85	Introduction to Machine Learning – IIT KGP,	8	2

		Prof. Sudeshna Sarkar		
CS651	noc21-cs79	Artificial Intelligence Search Methods For Problem Solving, Prof. Deepak Khemani	12	3
CS653	noc21-cs63	Introduction to Internet of Things, Prof. Sudip Misra	12	3
CS654	noc21-cs67	Programming, Data Structures And Algorithms Using Python, Prof. Madhavan Mukund	8	2
CS655	noc21-cs59	Scalable Data Science Prof. A. Dasgupta and Prof. S. Bhattacharya, IIT KGP	8	2
CS656	noc21-ma75	Introduction To R Software, Prof. Shalabh, IITK	8	2
CS657	noc21-cs62	Cloud Computing, Prof. SoumyaKanti Ghosh	8	2
CS658	noc21-cs74	Social Networks, Prof. Sudarshan Iyengar, IIT Ropar	12	3
CS660	noc21-cs56	Programming in Java, Prof. Debasis Samanta, IITKGP	12	3
CS661	noc21-cs69	Data Science for Engineers, Prof. Rangunathan Rengasamy and Prof. Shankar Narasimhan	8	2
CS669	noc21-cs66	Introduction to Industry 4.0 and Industrial Internet of Things, Prof. Sudip Misra, IIT KGP	12	3
CS671	noc21-cs71	Reinforcement Learning Prof. Balaraman Ravindran, IIT Madras	12	3
CS673	noc21-cs94	Demystifying networking, Prof. Sridhar Iyer, IITB	4	1
CS674	noc21-cs83	Theory of Computation, Prof. Raghunath Tewari	8	2
CS677	noc21-cs70	Introduction to Machine Learning Prof. Balaraman Ravindran, IIT Madras	12	3
CS682	noc21-cs82	Multi-Core Computer Architecture - Storage and Interconnects	8	2

*B. Borah*

**(B. Borah)**  
**Head, CSE**