

**B Tech in Computer Science & Engineering (Cyber Security) (Academic Year 2021)**

Year	THIRD SEMESTER						FOURTH SEMESTER					
	Sub. Code	Subject Name	L	T	P	C	Sub. Code	Subject Name	L	T	P	C
II	MAT_ 2155	Engineering Mathematics – III	2	1	0	3	MAT_ 2256	Engineering Mathematics – IV	2	1	0	3
	CSE_ 2151	Computer Organization & Architecture	3	1	0	4	CSE_ 2251	Database Systems	2	1	0	3
	CSE_ 2152	Data Structures and Applications	3	1	0	4	CSE_ 2252	Design and Analysis of Algorithms	3	1	0	4
	CSE_ 2153	Digital System Design	3	1	0	4	CSE_ 2253	Embedded Systems	3	1	0	4
	CSE_ 2154	Object Oriented Programming	3	1	0	4	CSE_ 2254	Formal Languages & Automata Theory	2	1	0	3
	CSE_ 2161	Data Structures Lab	0	0	3	1	****	Open Elective – I				3
	CSE_ 2162	Digital System Design Lab	0	0	3	1	CSE_ 2261	Algorithms Lab	0	0	3	1
	CSE_ 2163	Object Oriented Programming Lab	0	0	3	1	CSE_ 2262	Database Systems Lab	0	0	6	2
	CSE_ 2164	Open Source Technologies Lab	1	0	3	2	CSE_ 2263	Embedded Systems Lab	0	0	3	1
				15	5	12	24			12	5	9
<b>Total Contact Hours (L + T + P)</b>			<b>32</b>			<b>Total Contact Hours (L + T + P) + OE</b>			<b>26 + 3 = 29</b>			
III	FIFTH SEMESTER						SIXTH SEMESTER					
	HUM_ 3152	Essentials of Management	2	1	0	3	HUM_ 3151	Engg Economics & Financial Mgmt	2	1	0	3
	CSE_ 3111	Number Theory and Cryptography	3	1	0	4	CSE_ 3231	Applied Cryptography	3	1	0	4
	CSE_ 3152	Computer Networks	2	1	0	3	CSE_ 3232	Essentials of Cyber Security	2	1	0	3
	CSE_ 3153	Operating Systems	2	1	0	3	CSE ****	Program Elective – I	3	0	0	3
	CSE_ 3114	Digital Forensics	2	1	0	3	CSE ****	Program Elective – II	3	0	0	3
	****	Open Elective – II				3	****	Open Elective – III				3
	CSE_ 3121	Number Theory and Cryptography Lab	0	0	3	1	CSE_ 3241	Essentials of Cyber Security Lab	0	0	3	1
	CSE_ 3162	Computer Networks Lab	0	0	6	2	CSE_ 3262	Internet Technologies Lab	1	0	3	2
	CSE_ 3163	Operating Systems Lab	0	0	6	2	CSE_ 3243	Applied Cryptography-Lab	0	0	3	1
			11	5	9	24			14	3	9	23
<b>Total Contact Hours (L + T + P) + OE</b>			<b>27 + 3 = 30</b>			<b>Total Contact Hours (L + T + P) + OE</b>			<b>26 + 3 = 29</b>			
IV	SEVENTH SEMESTER						EIGHTH SEMESTER					
	CSE ****	Program Elective – III	3	0	0	3	CSE_ 4298	Industrial Training				1
	CSE ****	Program Elective – IV	3	0	0	3	CSE_ 4299	Course/Project Work/Practice School				12
	CSE ****	Program Elective – V	3	0	0	3	CSE_ 4296	Project Work ( for B.Tech honours)				20
	CSE ****	Program Elective – VI	3	0	0	3						
	CSE ****	Program Elective – VII	3	0	0	3						
****	Open Elective – IV				3							
			15	0	0	18						13
<b>Total Contact Hours (L + T + P) +OE</b>			<b>15 + 3 = 18</b>									

<p><b>Minor Specializations</b></p> <p><b>I. Advanced Security Systems</b>  CSE_ 4059: Advanced Cryptography  CSE_ 4015 :Distributed Cloud Security  CSE_ 4094 :Cyber Law and Ethics  CSE_ 4027: AI in Cyber Security</p> <p><b>II. Computational Intelligence</b>  CSE_ 4053: Artificial Intelligence  CSE_4032: Machine Learning  CSE_ 4054: Soft Computing Paradigms  CSE_4036: Pattern Recognition</p> <p><b>III. Data Analytics</b>  CSE_4037: Big Data Analytics  CSE_3172: Natural Language Processing  CSE_4038: Machine Learning for Data Analytics  CSE_4039: Pattern Classification</p>	<p><b>Other Programme Electives</b>  CSE_ 3154: Software Engineering  CSE_ 4099: Distributed Systems  CSE_ 4055: Advanced Computer Networks  CSE_ 4062: Android Application Development  CSE_ 4066: Ethical Hacking and Cyber Security  CSE_ 4034: Data Warehousing and Advanced Data Mining  CSE_ 4064: Deep Learning  CSE_ 4029: Cognitive Systems  CSE_ 4095: Robotics and Intelligent Systems  CSE_ 4074: Social Network Analysis  CSE_ 4052: Digital Image Processing  CSE_ 4078: Wireless Networks  CSE_ 4079: Software Defined Networks  CSE_ 4080: Cryptanalysis  CSE_4033: Block Chain Technology  CSE_4035: Mobile Security and Privacy  CSE_4096: Parallel Computer Architecture and Programming  CSE_4040 Object Oriented System Design  CSE_4041: Information Security</p>	<p><b>Open Electives</b>  CSE_ 4301: Essentials of Industrial Computing  CSE_ 4302: Essentials of IT  CSE_ 4303: Linux Programming  CSE_ 4304: Principles of Database Systems  CSE_ 4305: Principles of Soft computing  CSE_ 4306: Principles of Software Engineering  CSE_ 4307: Programming in C#  CSE_ 4308: Programming in Java  CSE_ 4309: Python Programming  CSE_4314: Principles of Cryptography  CSE_4311: Introduction to Machine Learning</p> <p><b>Note:</b> B Tech Honours students must take 3 additional theory courses of 12 credits and an additional research project of 8 credits to accumulate 20 credits.</p> <p><b>The additional theory for BTech Honours courses:</b>  IT_5021 Information Security Management.  IT_5022 Internet of Things Security  IT_5012 Advanced Machine Learning</p>
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