

## B TECH COMPUTER SCIENCE & ENGINEERING (AI&ML)

Year	THIRD SEMESTER								FOURTH SEMESTER							
	Sub. Code	Subject Name	L	T	P	C	Sub. Code	Subject Name	L	T	P	C				
<b>II</b>	MAT 2128	Linear Algebra and Logic	3	0	0	3	MAT 2233	Probability And Optimization	3	0	0	3				
	CSE 2125	Digital Systems & Computer Organization	2	1	0	3	CSE 2224	Database Systems	3	1	0	4				
	CSE 2122	Data Structures	3	1	0	4	CSE 2222	Design and Analysis of Algorithms	3	1	0	4				
	CSE 2126	Introduction to Data Analytics	2	0	2	3	CSE 2225	Artificial Intelligence	3	1	0	4				
	CSE 2124	Object Oriented Programming	3	1	0	4	CSE 2226	Operating Systems	3	0	0	3				
	CSE 2127	Formal Languages and Automata Theory	2	1	0	3	CSE 2242	Algorithms Lab	0	0	3	1				
	CSE 2141	Data Structures Lab	0	0	3	1	CSE 2241	Database Systems Lab	0	0	3	1				
	CSE 2143	Object Oriented Programming Lab	0	0	3	1	CSE 2244	Artificial Intelligence Lab	0	0	3	1				
			<b>17</b>	<b>2</b>	<b>8</b>	<b>22</b>				<b>15</b>	<b>3</b>	<b>9</b>	<b>21</b>			
<b>Total Contact Hours (L + T + P)</b>			<b>27</b>				<b>Total Contact Hours (L + T + P)</b>			<b>27</b>						
<b>III</b>	FIFTH SEMESTER								SIXTH SEMESTER							
	HUM 3021	Essentials of Management	3	0	0	3	HUM 3022	Engineering Economics and Financial Management	3	0	0	3				
	CSE 3125	Machine Learning	3	0	0	3	CSE 3223	Deep Learning	3	0	0	3				
	CSE 3126	Foundation of Computer Vision	3	0	0	3	CSE 3221	Parallel Computer Architecture and Programming	2	1	0	3				
	CSE 3127	Big Data Analytics	3	0	0	3	CSE ****	Program Elective – I/Minor Specialization	3	0	0	3				
	CSE 3175	Artificial Neural Network	3	0	0	3	CSE ****	Program Elective – II/ Minor Specialization	3	0	0	3				
	IPE 4302	Open Elective-1 Creativity, Problem Solving and Innovation	3	0	0	3	*** ****	Open Elective-2	3	0	0	3				
	CSE 3144	Computer Vision Lab	0	0	3	1	CSE 3244	Deep Learning Lab	0	0	3	1				
	CSE 3145	Big Data Analytics Lab	0	0	3	1	CSE 3243	Web Programming Lab	1	0	2	1				
	CSE 3146	Machine Learning Lab	0	0	3	1	CSE 3241	Parallel Programming Lab	0	0	3	1				
			<b>18</b>	<b>0</b>	<b>9</b>	<b>21</b>				<b>18</b>	<b>1</b>	<b>8</b>	<b>21</b>			
<b>Total Contact Hours (L + T + P) + OE</b>			<b>27</b>				<b>Total Contact Hours (L + T + P) + OE</b>			<b>27</b>						
<b>IV</b>	SEVENTH SEMESTER								EIGHTH SEMESTER							
	CSE ****	Program Elective – III/ Minor Specialization	3	0	0	3	CSE 4291	Industrial Training				1				
	CSE ****	Program Elective – IV/ Minor Specialization	3	0	0	3	CSE 4292	Project Work / Practice School				12				
	CSE ****	Program Elective – V	3	0	0	3	CSE 4293	Project Work (B. Tech Honours) **				20				
	CSE ****	Program Elective – VI	3	0	0	3	CSE ****	B Tech Honours (Theory 1)** (V Semester)				4				
	CSE ****	Program Elective – VII	3	0	0	3	CSE ****	B Tech Honours (Theory 2)** (VI Semester)				4				
	*** ****	Open Elective -3	3	0	0	3	CSE ****	B Tech Honours (Theory 3)** (VII Semester)				4				
	CSE 4191	Mini Project (Minor Specialization) *				8										
			<b>18</b>	<b>0</b>	<b>0</b>	<b>18</b>							<b>13/33</b>			
<b>Total Contact Hours (L + T + P) + OE</b>			<b>18</b>													

\*Applicable to students who opted for minor specialization

\*\*Applicable to eligible students who opted for and successfully completed the B Tech – Honours requirements

<p><b>Minor Specializations</b></p> <p><b>I. AI in Healthcare</b>  CSE 4421: AI for Medical Image Analysis  CSE 4422: Bio-Informatics  CSE 4423: Healthcare Informatics  CSE 4424: Applications of AI in Medicine</p> <p><b>II. Computer Vision</b>  CSE 4425: Deep Learning in Computer Vision  CSE 4426: Computer Vision for Assistive Technologies  CSE 4427: Autonomous Systems  CSE 4428: Augmented Reality</p> <p><b>III. Internet of Things</b>  CSE 4409: Introduction to IoT  CSE 4410: IoT in Agriculture  CSE 4411: IoT for Healthcare  CSE 4412: Smart Cities</p> <p><b>IV. Applied Natural Language Processing</b>  CSE 4429: Natural Language Processing  CSE 4430: Speech Processing  CSE 4431: Machine Translation  CSE 4432: Deep Learning for Natural Language Processing</p> <p><b>V. Cyber Security</b>  CSE 4433: Principles of Cryptography  CSE 4434: Information Security  CSE 4435: Blockchain Technology  CSE 4436: AI in Cyber Security</p>	<p><b>Other Programme Electives</b>  CSE 4442: Android Application Development  CSE 4448: Distributed Systems  CSE 4449: Ethical Hacking and Cyber Security  CSE 4453: Human Computer Interface  CSE 4454: Information Retrieval  CSE 4456: iOS Application Development  CSE 4457: Knowledge Representation and Ontology  CSE 4459: Multimedia Retrieval  CSE 4461: Pattern Anomaly and Detection  CSE 4462: Pervasive Computing  CSE 4464: Social Network Analysis  CSE 4471: Cognitive Systems  CSE 4472: Compiler Design  CSE 4473: Computer Networks  CSE 4474: Data Warehousing and advanced Data Mining  CSE 4475: Embedded Systems  CSE 4476: Logical AI and Automated Reasoning  CSE 4477: Machine Learning with Text using Python  CSE 4478: Reinforcement Learning  CSE 4479: Robotics and Intelligent Systems  CSE 4480: Software Engineering  CSE 4481: Soft Computing Paradigms</p> <p><b>Open Electives</b>  CSE 4321: Introduction to Artificial Intelligence  CSE 4322: Introduction to Machine Learning  CSE 4323: Natural Language Processing with Python  CSE 4324: Introduction to Soft Computing Paradigms</p> <p><b>Inter-Institute Elective (IIE)</b>  IIE ****: Healthcare IT</p>	
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