

**B.TECH. COMPUTER SCIENCE AND ENGINEERING**

Year	THIRD SEMESTER							FOURTH SEMESTER						
	Subject Code	Subject Name	L	T	P	C	Subject Code	Subject Name	L	T	P	C		
II	MAT 2126	Engineering Mathematics - III	2	1	0	3	MAT 2226	Engineering Mathematics - IV	2	1	0	3		
	CSE 2121	Computer Organization & Architecture	3	1	0	4	CSE 2221	Formal Languages and Automata Theory	2	1	0	3		
	CSE 2122	Data Structures	3	1	0	4	CSE 2222	Design and Analysis of Algorithms	3	1	0	4		
	CSE 2123	Digital System Design	3	1	0	4	CSE 2223	Embedded Systems	4	0	0	4		
	CSE 2124	Object Oriented Programming	3	1	0	4	CSE 2224	Database Systems	3	1	0	4		
	CSE 2141	Data Structures Lab	0	0	3	1	CSE 2241	Database Systems Lab	0	0	3	1		
	CSE 2142	Digital System Design Lab	0	0	3	1	CSE 2242	Algorithms Lab	0	0	3	1		
	CSE 2143	Object Oriented Programming Lab	0	0	3	1	CSE 2243	Embedded Systems Lab	0	0	3	1		
			<b>14</b>	<b>5</b>	<b>9</b>	<b>22</b>			<b>14</b>	<b>4</b>	<b>9</b>	<b>21</b>		
	<b>Total Contact Hours (L + T + P)</b>		<b>28</b>				<b>Total Contact Hours (L + T + P)</b>				<b>27</b>			
	FIFTH SEMESTER							SIXTH SEMESTER						
III	HUM 3021	Essentials of Management	3	0	0	3	HUM 3022	Engineering Economics and Financial Management	3	0	0	3		
	CSE 3121	Principles of Cryptography	2	1	0	3	CSE 3221	Parallel Computer Architecture and Programming	2	1	0	3		
	CSE 3122	Software Engineering	2	1	0	3	CSE 3222	Compiler Design	2	1	0	3		
	CSE 3123	Operating Systems	2	1	0	3	CSE ****	Program Elective – I/ (Minor Specialization)	3	0	0	3		
	CSE 3124	Computer Networks	2	1	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 3141	Software Engineering Lab	0	0	3	1	CSE 3241	Parallel Programming Lab	0	0	3	1		
	CSE 3142	Operating Systems Lab	0	0	3	1	CSE 3242	Compiler Design Lab	0	0	3	1		
CSE 3143	Computer Networks Lab	0	0	3	1	CSE 3243	Web Programming Lab	1	0	2	1			
			<b>14</b>	<b>4</b>	<b>9</b>	<b>21</b>			<b>17</b>	<b>2</b>	<b>8</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>			
	SEVENTH SEMESTER							EIGHTH SEMESTER						
IV	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>18/26</b>						<b>13/33</b>		
	<b>Total Contact Hours (L + T + P)</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

## Minor Specializations

### I. Computer Graphics & Visualization

CSE 4401: Digital Image Processing  
CSE 4402: Computer Graphics  
CSE 4403: Computer Vision  
CSE 4404: Augmented and Virtual Reality

### II. Computational Intelligence

CSE 4405: Artificial Intelligence  
CSE 4406: Soft Computing Paradigms  
CSE 4403: Computer Vision  
CSE 4408: Machine Learning

### III. Internet of Things

CSE 4409: Introduction to IoT  
CSE 4410: IoT in Agriculture  
CSE 4411: IoT for Healthcare  
CSE 4412: Smart Cities

### IV. Data Analytics

CSE 4413: Data Warehouse and Data Mining  
CSE 4414: Natural Language Processing  
CSE 4403: Computer Vision  
CSE 4416: Big Data Analytics

### V. Cyber Security

CSE 4417: Network Security  
CSE 4418: Cyber forensics  
CSE 4419: Artificial Intelligence in Cyber security  
CSE 4420: Database and Application Security

## Other Programme Electives

CSE 4441: Advanced Algorithms  
CSE 4442: Android Application Development  
CSE 4443: Animation Technologies  
CSE 4444: Blockchain Technology  
CSE 4445: Cloud Computing  
CSE 4446: Cryptanalysis  
CSE 4447: Deep Learning  
CSE 4448: Distributed Systems  
CSE 4449: Ethical Hacking and Cyber Security  
CSE 4450: Game Programming  
CSE 4451: Hardware Security CSE 4452: High Performance Computer Architecture  
CSE 4453: Human Computer Interface  
CSE 4454: Information Retrieval  
CSE 4455: Information Security  
CSE 4456: iOS Application Development  
CSE 4457: Knowledge Representation and Ontology  
CSE 4458: Machine Translation  
CSE 4459: Multimedia Retrieval  
CSE 4460: Multimedia Technologies  
CSE 4461: Pattern Anomaly and detection  
CSE 4462: Pervasive Computing  
CSE 4463: Quantum Computing  
CSE 4464: Social Network Analysis  
CSE 4465: Software Architecture  
CSE 4466: Software Defined Networks  
CSE 4467: Software Testing and Analysis  
CSE 4468: Storage Device and Technology  
CSE 4469: UML and Design Patterns  
CSE 4470: Wireless Networks

## Open Electives

CSE 4311: Essentials of Industrial Computing  
CSE 4312: Essentials of IT  
CSE 4313: Linux Programming  
CSE 4314: Principles of Database Systems  
CSE 4315: Principles of Software Engineering  
CSE 4316: Python Programming  
CSE 4317: Web Programming  
CSE 4318: iOS Application Development

### Inter-Institute Elective (IIE)

IIE \*\*\*\*: Healthcare IT