

B Tech Curriculum – 2022

Flexible Total Credits: 160/168/180/188

Mandatory Learning Courses (MLC): 12 Credits (2+9+1)

Flexible Core - Choice Based Credit System (CBCS)

Provisions for awarding credits to students for their performance in NCC and Major Projects (optional) - OEs

Scope for Component level Self Directed Learning (SDL) in a few courses

Mandatory Mini Project for Minor Specialization

B Tech in Computer Science and Engineering(2022 admission year onwards)

| 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_2156 | Engineering Mathematics - IV | 2 | 1 | 0 | 3 | | |
| | CSE_2151 | Computer Organization & Architecture | 3 | 1 | 0 | 4 | CSE_2254 | Formal Languages and Automata Theory | 2 | 1 | 0 | 3 | | |
| | CSE_2152 | Data Structures | 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 | 4 | 0 | 0 | 4 | | |
| | CSE_2154 | Object Oriented Programming | 3 | 1 | 0 | 4 | CSE_2251 | Database Systems | 3 | 1 | 0 | 4 | | |
| | CSE_2161 | Data Structures Lab | 0 | 0 | 3 | 1 | CSE_2262 | Database Systems Lab | 0 | 0 | 3 | 1 | | |
| | 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_2263 | Embedded Systems Lab | 0 | 0 | 3 | 1 | | |
| | | | 14 | 5 | 9 | 22 | | | | 14 | 4 | 9 | 21 | |
| Total Contact Hours (L + T + P) | | | 28 | | | | Total Contact Hours (L + T + P) | | | 27 | | | | |

B Tech in Computer Science and Engineering

| Year | FIFTH SEMESTER | | | | | | | SIXTH SEMESTER | | | | | | |
|------|----------------|--------------------------|---|---|---|---|-----------|--|---|---|---|---|--|--|
| | Sub. Code | Subject Name | L | T | P | C | Sub. Code | Subject Name | L | T | P | C | | |
| III | HUM_3152 | Essentials of Management | 3 | 0 | 0 | 3 | HUM_3151 | Engineering Economics and Financial Management | 3 | 0 | 0 | 3 | | |

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|--|---|-----------|----------|----------|-----------|--|--|-----------|----------|----------|-----------|
| CSE_4058 | Principles of Cryptography | 2 | 1 | 0 | 3 | CSE_3252 | Parallel Computer Architecture and Programming | 2 | 1 | 0 | 3 |
| CSE_3154 | Software Engineering | 2 | 1 | 0 | 3 | CSE_3151 | Compiler Design | 2 | 1 | 0 | 3 |
| CSE_3153 | Operating Systems | 2 | 1 | 0 | 3 | | PE – 1 / Minor Specialization | 3 | 0 | 0 | 3 |
| CSE_3152 | Computer Networks | 2 | 1 | 0 | 3 | | PE – 2 / Minor Specialization | 3 | 0 | 0 | 3 |
| | OE – Creativity, Problem Solving and Innovation** (MLC) - mandatory | 3 | 0 | 0 | 3 | | OE – 1** (MLC) | 3 | 0 | 0 | 3 |
| CSE_3164 | Software Engineering Lab | 0 | 0 | 3 | 1 | CSE_3263 | Parallel Programming Lab | 0 | 0 | 3 | 1 |
| CSE_3163 | Operating Systems Lab | 0 | 0 | 3 | 1 | CSE_3161 | Compiler Design Lab | 0 | 0 | 3 | 1 |
| CSE_3162 | Computer Networks Lab | 0 | 0 | 3 | 1 | CSE_3264 | Web Programming Lab | 1 | 0 | 2 | 1 |
| | | 14 | 4 | 9 | 21 | | | 17 | 2 | 8 | 21 |
| Total Contact Hours (L + T + P) | | 27 | | | | Total Contact Hours (L + T + P) | | 27 | | | |

** Performance of students to be recorded in Eighth semester grade sheet?

B Tech in Computer Science and Engineering

| Year | SEVENTH SEMESTER | | | | | EIGHTH SEMESTER | | | | | | |
|------|------------------|-------------------------------|---|---|---|-----------------|-----------|---|---|---|---|----|
| | Sub. Code | Subject Name | L | T | P | C | Sub. Code | Subject Name | L | T | P | C |
| IV | | PE – 3 / Minor Specialization | 3 | 0 | 0 | 3 | CSE_4298 | Industrial Training (MLC) | | | | 1 |
| | | PE – 4 / Minor Specialization | 3 | 0 | 0 | 3 | CSE_4299 | Project Work | | | | 12 |
| | | PE – 5 | 3 | 0 | 0 | 3 | CSE_4296 | Project Work (B Tech – honours)* (V - VIII sem) | | | | 20 |
| | | PE – 6 | 3 | 0 | 0 | 3 | | B Tech – honours Theory – 1* (V semester) | | | | 4 |
| | | PE - 7 | 3 | 0 | 0 | 3 | | B Tech – honours Theory – 2* (VI semester) | | | | 4 |

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|--|---|-----------|----------|----------|-----------------|---|--|--|--|---------------|
| | OE – 2** (MLC) | 3 | 0 | 0 | 3 | B Tech – honours Theory – 3* (VII semester) | | | | 4 |
| | Mini Project (Minor specialization)*** | | | | 8 | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | 18 | 0 | 0 | 18/26*** | | | | | 13/33* |
| | Total Contact Hours (L + T + P) | 18 | | | | Total Contact Hours (L + T + P) | | | | |

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

** Performance of students to be recorded in Eighth semester grade sheet?

***Applicable to students who opted for minor specialization

| | | |
|--|---|--|
| <p>Minor Specializations</p> <p>I. Computer Graphics & Visualization</p> <ol style="list-style-type: none"> Digital Image Processing-I CSE_4001 Computer Graphics-II CSE_4002 Computer Vision_III CSE_4003 Augmented and Virtual Reality- IV CSE_4004 <p>II. Computational Intelligence</p> <ol style="list-style-type: none"> Artificial Intelligence-I CSE_4053 Soft Computing Paradigms-II CSE_4054 Computer Vision-III CSE_4031 Machine Learning-IV CSE_4032 <p>III. Internet of Things</p> <ol style="list-style-type: none"> Introduction to IoT- CSE_ 4019 IoT in Agriculture- CSE_ 4020 IOT for Smart Cities- CSE_ 4022 Internet of Robotics- CSE_4017 <p>IV. Data Analytics</p> <ol style="list-style-type: none"> Data Warehousing and Mining- CSE_4060 Business Intelligence and Analytics- CSE_4018 Text Analytics - CSE_4006 Semantic Web- CSE_4007 <p>V. Cyber Security</p> <ol style="list-style-type: none"> Network Security –I CSE_4089 Cyber forensics –II CSE_4090 Artificial intelligence in Cyber security III CSE_4091 Database and Application Security –IV CSE_4092 | <p>Other Programme Electives</p> <ul style="list-style-type: none"> Distributed Systems CSE_3251 Pervasive Computing CSE_4073 Android Application Development CSE_4062 Ethical Hacking and Cyber Security CSE_4066 Information Retrieval CSE_4070 Multimedia Retrieval CSE_4088 Cloud Computing CSE_4063 Deep Learning CSE_4064 Human Computer Interface CSE_4069 Multimedia Technologies CSE_4072 Social Network Analysis CSE_4074 Software Architecture CSE_4075 UML and Design Patterns CSE_4005 Software Testing and Analysis CSE_4076 Software Defined Networks CSE_4079 Game Programming CSE_4067 Cryptanalysis CSE_4080 Hardware Security CSE_4081 Quantum Computing CSE_4082 Information Security CSE_4056 Blockchain Technology CSE_4033 Natural Language Processing CSE_3172 | <ul style="list-style-type: none"> Animation Technologies CSE_4093 Wireless Networks CSE_4078 Knowledge Representation and Ontology CSE_4030 <p>Open Electives</p> <ul style="list-style-type: none"> Introduction to Artificial Intelligence- CSE_4310 Introduction to Machine Learning- CSE_4311 Introduction to Natural Language Processing - CSE_4312 Principles of Soft Computing - CSE_4305 Essentials of Web 3.0- CSE_4313 Principles of Software Engineering- CSE_4306 <p>Note: All minor specialization courses are also part of other programme electives.</p> <p>The additional theory courses(B Tech(Hons)):</p> <ol style="list-style-type: none"> CSE_5151: Advanced Computer Networks CSE_5022: Advanced Machine Learning CSE_5040: Pattern Recognition |
|--|---|--|

| | | |
|--|--|--|
| | <ul style="list-style-type: none">• Big Data Analytics CSE_3272• Machine Translation CSE_4024 | |
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