

Curriculum for B.Tech. Computer Science and Engineering Program

| Semester : 1 Minimum Semester Credit Required : 21 Cumulative Semester Credit Required : 21 | | | | |
|---|-------------|-------------------------------------|----------------|-----------|
| Course Code | Subject No. | Subject Name | L-T-P | Credits |
| E.S. | | Engineering Mechanics | 3-0-0 | 3 |
| E.S. | | Basic Electrical Technology | 3-0-0 | 3 |
| B.S. | | Mathematics (MATLAB/Mathematica) | 3-0-0 | 3 |
| B.S. | | Physics | 3-0-0 | 3 |
| B.S. | | Biosciences | 2-0-0 | 2 |
| HSS | | H.S.S. – I (communication skills) | 3-0-0 | 3 |
| Lab | | Physics Lab | 0-0-3 | 2 |
| Lab | | Electrical Tech Lab | 0-0-3 | 2 |
| | | Total | 17-0-6 | 21 |
| Semester : 2 Minimum Semester Credit Required : 21 Cumulative Semester Credit Required : 42 | | | | |
| Course Code | Subject No. | Subject Name | L-T-P | Credits |
| E.S. | | Programming and Data Structure | 3-0-0 | 3 |
| E.S. | | Basic Electronics | 3-0-0 | 3 |
| B.S. | | Statistics | 3-0-0 | 3 |
| B.S. | | Chemistry | 3-0-0 | 3 |
| Lab | | Computer aided engineering drawings | 1-0-3 | 3 |
| Lab | | Programming and Data Structure lab | 0-0-3 | 2 |
| Lab | | Chemistry Lab | 0-0-3 | 2 |
| Lab | | Basic Electronics Lab | 0-0-3 | 2 |
| | | Total | 13-0-12 | 21 |

| Semester : 3 | | Minimum Semester Credit Required : 22 Cumulative Semester Credit Required : 64 | | |
|---------------------|--------------------|---|----------------|----------------|
| Course Code | Subject No. | Subject Name | L-T-P | Credits |
| E.S. | | Fluid Mechanics | 3-0-0 | 3 |
| B.S. | | Material Science | 2-0-0 | 2 |
| B.S. | | Environmental Sciences | 2-0-0 | 2 |
| P.C. | | Mathematics I for CS (Combinatorics and Graph Theory) | 3-0-0 | 3 |
| P.C. | | Computer Organization | 3-0-0 | 3 |
| H.S.S. | | H.S.S. – II | 3-0-0 | 3 |
| H.S.S. | | H.S.S. – III | 3-0-0 | 3 |
| Lab | | Workshop- I | 0-0-3 | 2 |
| Project | | Project – I | 0-0-1 | 1 |
| | | Total | 19-0-4 | 22 |
| Semester : 4 | | Minimum Semester Credit Required : 21 Cumulative Semester Credit Required : 85 | | |
| Course Code | Subject No. | Subject Name | L-T-P | Credits |
| E.S. | | Thermodynamics | 3-0-0 | 3 |
| P.C. | | Mathematics II for CS (Linear Algebra and Abstract Algebra) | 3-0-0 | 3 |
| P.C. | | Advanced Data Structures | 3-0-0 | 3 |
| P.C. | | Computer Architecture | 0-0-3 | 3 |
| H.S.S | | H.S.S. – IV | 3-0-0 | 3 |
| Lab | | Data Structures Lab | 0-0-3 | 2 |
| Lab | | Computer Architecture Lab | 0-0-3 | 2 |
| Project | | Paper – II | 0-0-1 | 1 |
| G.R | | Group related activities | 0-0-1 | 1 |
| | | Total | 12-0-11 | 21 |

| Semester : 5 | | Minimum Semester Credit Required : 21 Cumulative Semester Credit Required : 106 | | |
|---------------------|--------------------|--|----------------|----------------|
| Course Code | Subject No. | Subject Name | L-T-P | Credits |
| P.C. | | Design and Analysis of Algorithms | 3-0-0 | 3 |
| P.C. | | Theory of Computation | 3-0-0 | 3 |
| P.C. | | Operating Systems | 3-0-0 | 3 |
| P.C. | | Stochastic Processes | 0-0-3 | 3 |
| H.S.S. | | H.S.S. – V | 0-0-3 | 3 |
| Lab | | Algorithms Lab | 0-0-3 | 2 |
| Lab | | Operating Systems Lab | 0-0-3 | 2 |
| Project | | Paper – III | 0-0-1 | 1 |
| G.R. | | Group related activities | 0-0-1 | 1 |
| | | Total | 9-0-14 | 21 |
| Semester : 6 | | Minimum Semester Credit Required :23 Cumulative Semester Credit Required : 129 | | |
| Course Code | Subject No. | Subject Name | L-T-P | Credits |
| P.C. | | Data Base Management Systems | 3-0-0 | 3 |
| P.C. | | Computer Networks | 3-0-0 | 3 |
| P.C. | | Machine Learning | 3-0-0 | 3 |
| P.C. | | Departmental Elective I | 3-0-0 | 3 |
| P.C. | | Departmental Elective – II | 0-0-3 | 3 |
| H.S.S. | | H.S.S. – VI | 0-0-2 | 2 |
| Lab | | DBMS Lab | 0-0-3 | 2 |
| Lab | | Computer Networks Lab | 0-0-3 | 2 |
| G.R. | | Group related activities | 0-0-1 | 1 |
| S.S. | | Soft Skills | 0-0-1 | 1 |
| | | Total | 12-0-16 | 23 |

| Semester : 7 | | Minimum Semester Credit Required :24 Cumulative Semester Credit Required : 153 | | |
|---------------------|--------------------|--|---------------|----------------|
| Course Code | Subject No. | Subject Name | L-T-P | Credits |
| P.C. | | Data Science | 3-0-0 | 3 |
| P.C. | | Open Elective – I | 3-0-0 | 3 |
| P.C. | | Departmental Elective – III | 0-0-3 | 3 |
| P.C. | | Departmental Elective – IV | 0-0-3 | 3 |
| P.C. | | Departmental Elective – V | 0-0-3 | 3 |
| H.S.S. | | H.S.S. – VII | 0-0-2 | 2 |
| Project | | Mini Project | 0-0-3 | 3 |
| I.T. | | Industrial Training Seminar | 0-0-3 | 3 |
| S.S. | | Soft Skills | 0-0-1 | 1 |
| | | Total | 6-0-21 | 24 |
| Semester : 8 | | Minimum Semester Credit Required : 19 Cumulative Semester Credit Required : 172 | | |
| Course Code | Subject No. | Subject Name | L-T-P | Credits |
| P.C. | | Departmental Elective – VI | 0-0-3 | 3 |
| P.C. | | Departmental Elective – VII | 0-0-3 | 3 |
| H.S.S. | | H.S.S. – VIII | 0-0-3 | 3 |
| Project | | Major Project | 0-0-9 | 9 |
| S.S. | | Soft Skills | 0-0-1 | 1 |
| | | Total | 0-0-19 | 19 |

List Of Electives

The Elective subjects are divided into three tracks.

Theory Track:

- Graph Algorithms
- Randomized Algorithms
- Complexity Theory
- Optimization Techniques
- Coding Theory
- Computational Geometry
- Models and Algorithms for Big Data
- Cryptology

Applications track:

- Wireless Networks
- Mobile Computing
- 5G and Internet of Things
- Big Data Analytics
- Security in Wireless Networks
- Cyber Security
- Uncertain and Fuzzy Systems
- Image Processing
- Pattern Recognition
- Computer Vision

Systems track:

- Distributed Systems
- Parallel Computing
- Cloud Computing
- Advanced Computer Architectures
- Information retrieval
- Computer Graphics
- System Software
- Software Engineering and Architecture
- Performance Evaluation