

| Intake: | | 2020 onwards | | | Specialization: | | Computer Science & Engineering | | | | |
|---------------------------|---|----------------|-----------------------------------|------------|-----------------|------------|--|------------|--------------|----|--|
| Details of the Curriculum | | | | | Stream: | | Integrated Computer Engineering Stream | | | | |
| Module Code | Module Name | Category C/E/O | Time allocation [Hours/Week] | | Credits offered | | Norm | | Evaluation % | | |
| | | | Lecture | Lab / Tute | GPA | NGPA | GPA | NGPA | CA | WE | |
| Semester 1 | | | Specialization requirement | | | | 15.0 | | | | |
| MA1014 | Mathematics | C | 5/2 | 1 | 3.0 | | 15.0 | | 20 | 80 | |
| CS1033 | Programming Fundamentals | C | 2 | 2 | 3.0 | | | | 20 | 80 | |
| ME1033 | Mechanics | C | 2 | 2/4 | 2.0 | | | | 20 | 80 | |
| MT1023 | Properties of Materials | C | 2 | 2/4 | 2.0 | | | | 20 | 80 | |
| CE1023 | Fluid Mechanics | C | 2 | 2/4 | 2.0 | | | | 20 | 80 | |
| EE1040 | Electrical Fundamentals | C | 2 | 2/4 | 2.0 | | | | 20 | 80 | |
| EL1030 | Language Skills Enhancement [S1 & S2] | C | 0 | 2 | 1.0 | | | | 100 | 0 | |
| Total | | | | | 15.0 | 0.0 | 15.0 | 0.0 | | | |
| Semester 2 | | | Specialization requirement | | | | 18.0 | | | | |
| MA1024 | Methods of Mathematics | C | 5/2 | 1 | 3.0 | | 18.0 | | 30 | 70 | |
| EE2094 | Theory of Electricity | C | 2 | 2 | 3.0 | | | | 30 | 70 | |
| EL1030 | Language Skills Enhancement [S1 & S2] | C | 0 | 2 | 1.0 | | | | 100 | 0 | |
| CS2953 | Communication Skills [S2 & S3] | C | 1 | 2 | 2.0 | | | | 80 | 20 | |
| CS2023 | Data Structures and Algorithms | C | 2 | 2 | 3.0 | | | | 40 | 60 | |
| CS1040 | Program Construction | C | 2 | 2 | 3.0 | | | | 60 | 40 | |
| CS1050 | Computer Organization and Digital Design | C | 2 | 2 | 3.0 | | | | 30 | 70 | |
| Total | | | | | 18.0 | 0.0 | 18.0 | 0.0 | | | |
| Semester 3 | | | Specialization requirement | | | | 23.0 | | | | |
| MA2014 | Differential Equations | C | 2 | 0 | 2.0 | | 23 | | 30 | 70 | |
| MA3014 | Applied Statistics | C | 2 | 0 | 2.0 | | | | 30 | 70 | |
| ME1823 | Fundamentals of Engineering Thermodynamics and Applications | C | 5/2 | 2/2 | 3.0 | | | | 30 | 70 | |
| CS2953 | Communication Skills [S2 & S3] | C | 0 | 2 | 1.0 | | | | 100 | | |
| CS2033 | Data Communication and Networking | C | 2 | 2 | 3.0 | | | | 40 | 60 | |
| CS2043 | Operating Systems | C | 2 | 2 | 3.0 | | | | 40 | 60 | |
| CS2053 | Computer Architecture | C | 2 | 2 | 3.0 | | | | 40 | 60 | |
| CS3043 | Database Systems | C | 2 | 2 | 3.0 | | | | 50 | 50 | |
| CS3613 | Introduction to Artificial Intelligence | C | 2 | 2 | 3.0 | | | | 40 | 60 | |
| Total | | | | | 23.0 | 0 | 23 | 0 | | | |
| Semester 4 | | | Specialization requirement | | | | 20.0 | | | | |
| MA2034 | Linear Algebra | C | 2 | 0 | 2.0 | | 18.0 | | 30 | 70 | |
| MA2054 | Graph Theory | C | 2 | 0 | 2.0 | | | | 30 | 70 | |
| CS3023 | Software Engineering | C | 2 | 2 | 3.0 | | | | 50 | 50 | |
| CS3063 | Theory of Computing | C | 2 | 0 | 2.0 | | | | 30 | 70 | |
| CS3243 | IoT Devices and Applications | C | 2 | 2 | 3.0 | | | | 30 | 70 | |
| CS3263 | Embedded Computer Networks | C | 2 | 2 | 3.0 | | | | 40 | 60 | |
| CS3340 | Robotics and Automation | C | 2 | 2 | 3.0 | | | | 50 | 50 | |
| HM-1 | Humanities Elective I | E | | | 2.0 | | 2.0 | | | | |
| Total | | | | | 20.0 | 0.0 | 20.0 | 0.0 | | | |
| Semester 5 | | | Specialization requirement | | | | 21.0 | | | | |
| MA3030 | Operational Research | C | 2 | 0 | 2.0 | | 18.0 | | 30 | 70 | |
| MA3024 | Numerical Methods | C | 2 | 0 | 2.0 | | | | 30 | 70 | |
| MA2024 | Calculus | C | 2 | 0 | 2.0 | | | | 30 | 70 | |
| CS3880 | Engineer and Society [S5 & S6] | C | 0 | 2 | 1.0 | | | | 100 | | |
| MN3043 | Business Economics and Financial Accounting | C | 3 | 0 | 3.0 | | | | 30 | 70 | |
| CS3053 | Computer Security | C | 2 | 0 | 2.0 | | | | 30 | 70 | |
| CS3350 | Embedded Software Engineering | C | 2 | 2 | 3.0 | | | | 40 | 60 | |
| CS3283 | Embedded Systems Project | C | 1 | 4 | 3.0 | | | 100 | | | |
| CS3413 | Advanced Networking | E | 2 | 2 | 3.0 | | 3.0 | 40 | 60 | | |
| CS3713 | Image Processing | E | 2 | 2 | 3.0 | | | | 40 | 60 | |
| Total | | | | | 24.0 | 0.0 | 21.0 | 0.0 | | | |

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|---------|--|----------------------------|---|-----------------|-----|-----------------------------------|------------|-------------|-------------|----|--|--|
| | | Industrial Training | | | | Specialization requirement | | | 6.0 | | | |
| CS3993 | Industrial Training | C | | | | 6.0 | | 6.0 | 100 | | | |
| | | Total | | | | 0.0 | 6.0 | 0 | 6 | | | |
| | | Semester 6 | | | | Specialization requirement | | | 12.0 | | | |
| CS3880 | Engineer and Society [S5 & S6] | C | 1 | 2 | 2.0 | | | 10.0 | 100 | | | |
| CS3940 | Professional Portfolio | C | 1 | 2 | 2.0 | | | | 100 | | | |
| CS4243 | Human Computer Interaction | C | 2 | 2 | 3.0 | | | | 50 | 50 | | |
| CS3333 | Industrial Instrumentation and Control | C | 2 | 2 | 3.0 | | | | 40 | 60 | | |
| HM-2 | Humanities Elective II | E | | | 2.0 | | 2.0 | | | | | |
| | | Total | | | | 12.0 | 0.0 | 12.0 | 0.0 | | | |
| | | Semester 7 | | | | Specialization requirement | | | 13.0 | | | |
| MN4063 | Organizational Behavior and Management | C | 2 | | 2.0 | | | 13.0 | 30 | 70 | | |
| CS4203 | Research and Development Project [S7 & S8] | C | | | 5.0 | | | | 100 | | | |
| CS4363 | Hardware Description Languages | C | 2 | 2 | 3.0 | | | | 40 | 60 | | |
| CS4373 | Machine Vision | C | 2 | 2 | 3.0 | | | | 40 | 60 | | |
| CS4223 | Software Process and Management | E | 2 | 2 | 3.0 | | | | 50 | 50 | | |
| CS4253 | Advanced Operating Systems | E | 2 | 2 | 3.0 | | | | 50 | 50 | | |
| CS4273 | Quality Engineering | E | 2 | 2 | 3.0 | | | | 50 | 50 | | |
| CS4343 | Advanced Computer Architecture | E | 2 | 2 | 3.0 | | | | 40 | 60 | | |
| CS4433 | Network and System Administration | E | 2 | 2 | 3.0 | | | | 40 | 60 | | |
| CS4453 | Information Security & Cryptography | E | 2 | 2 | 3.0 | | | | 50 | 50 | | |
| CS4463 | Computer and Network Security | E | 2 | 2 | 3.0 | | | | 40 | 60 | | |
| CS4473 | Mobile Computing | E | 2 | 2 | 3.0 | | | | 50 | 50 | | |
| CS4523 | Advanced Algorithms | E | 2 | 2 | 3.0 | | | | 40 | 60 | | |
| CS4533 | Parallel and Concurrent Programming | E | 2 | 2 | 3.0 | | | | 40 | 60 | | |
| CS4543 | Compiler Design | E | 2 | 2 | 3.0 | | | | 40 | 60 | | |
| CS4553 | Scientific Computing | E | 2 | 2 | 3.0 | | | | 40 | 60 | | |
| CS4580 | Advanced Data Structures | E | 2 | 2 | 3.0 | | | | 40 | 60 | | |
| CS4633 | Database Internals | E | 2 | 2 | 3.0 | | | | 50 | 50 | | |
| CS4743 | Bioinformatics | E | 2 | 2 | 3.0 | | | | 40 | 60 | | |
| CS3111 | Introduction to Machine Learning | E | 2 | 2 | 3.0 | | | | 40 | 60 | | |
| CS3121 | Introduction to Data Science | E | 2 | 2 | 3.0 | | | 40 | 60 | | | |
| CS3621 | Data Mining | E | 2 | 2 | 3.0 | | | 40 | 60 | | | |
| CS3631 | Deep Neural Networks | E | 2 | 2 | 3.0 | | | 40 | 60 | | | |
| | | Total | | | | 70.0 | 0.0 | 13.0 | 0.0 | | | |

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|------------|--|----------------------------|--------------------|-----------------|--------------------------------|------------|--------------|------------|----|-----|----|
| Semester 8 | | Specialization requirement | | | 10.0 | | | | | | |
| MN4123 | Human Resource Management & Industrial Relations | C | 2.0 | | 2.0 | | 10.0 | | 30 | 70 | |
| CS4203 | Research and Development Project [S7 & S8] | C | | | 5.0 | | | | | 100 | |
| CS4380 | Machine Intelligence | C | 2.0 | 2 | 3.0 | | | | | 50 | 50 |
| CS4223 | Software Process and Management | E | 2.0 | 2 | 3.0 | | | | | 50 | 50 |
| CS4253 | Advanced Operating Systems | E | 2.0 | 2 | 3.0 | | | | | 50 | 50 |
| CS4263 | Distributed Systems | E | 2.0 | 2 | 3.0 | | | | | 40 | 60 |
| CS4273 | Quality Engineering | E | 2.0 | 2 | 3.0 | | | | | 50 | 50 |
| CS4343 | Advanced Computer Architecture | E | 2.0 | 2 | 3.0 | | | | | 40 | 60 |
| CS4433 | Network and System Administration | E | 2.0 | 2 | 3.0 | | | | | 40 | 60 |
| CS4453 | Information Security & Cryptography | E | 2.0 | 2 | 3.0 | | | | | 50 | 50 |
| CS4463 | Computer and Network Security | E | 2.0 | 2 | 3.0 | | | | | 40 | 60 |
| CS4473 | Mobile Computing | E | 2.0 | 2 | 3.0 | | | | | 50 | 50 |
| CS4523 | Advanced Algorithms | E | 2.0 | 2 | 3.0 | | | | | 40 | 60 |
| CS4543 | Compiler Design | E | 2.0 | 2 | 3.0 | | | | | 40 | 60 |
| CS4553 | Scientific Computing | E | 2.0 | 2 | 3.0 | | | | | 40 | 60 |
| CS4580 | Advanced Data Structures | E | 2.0 | 2 | 3.0 | | | | | 40 | 60 |
| CS4633 | Database Internals | E | 2.0 | 2 | 3.0 | | | | | 50 | 50 |
| CS4743 | Bioinformatics | E | 2.0 | 2 | 3.0 | | | | | 40 | 60 |
| CS3111 | Introduction to Machine Learning | E | 2.0 | 2 | 3.0 | | | | | 40 | 60 |
| CS3121 | Introduction to Data Science | E | 2.0 | 2 | 3.0 | | | | | 40 | 60 |
| CS3621 | Data Mining | E | 2.0 | 2 | 3.0 | | | | 40 | 60 | |
| CS3631 | Deep Neural Networks | E | 2.0 | 2 | 3.0 | | | | 40 | 60 | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | Total | | 67 | 0 | 10.0 | 0.0 | | | |
| | | | Grand Total | | 249.0 | 6.0 | 132.0 | 6.0 | | | |

| | | |
|--|--|--------------|
| Total credit requirement for the Specialization | | 138.0 |
| Faculty/Specialization Electives beyond the specialization requirements [refer faculty electives table]* | | 12 |
| TOTAL CREDIT REQUIREMENT FOR GRADUATION | | 138.0 |

| Service modules | | | | | | | | | |
|-----------------|--|----------|------------------------------|------------|---------|------|------------|--------------|----|
| Code | Module Name | Semester | Time allocation [Hours/Week] | | Credits | | Offered to | Evaluation % | |
| | | | Lecture | Lab / Tute | GPA | NGPA | | CA | WE |
| CS1811 | Fundamentals of Programming | 4 | 2 | 2 | 3 | | TLM | 100 | |
| CS2813 | Visual Programming | 3 | 1 | 2 | 2 | | ER,TT,MT | 60 | 40 |
| CS2843 | Computer systems | 2 | 2 | 2 | 3 | | EE | 40 | 60 |
| CS2833 | Modular Software Development | 4 | 2 | 2 | 3 | | EN,EE | 50 | 50 |
| CS2023 | Data Structures and Algorithms | 4 | 2 | 2 | 3 | | EN | 40 | 60 |
| CS3033 | Computer Networks | 5 | 2 | 2 | 3 | | EN,EE | 40 | 60 |
| CS2883 | Object Oriented Programming for Mechanical Engineers | 3 | 2 | 2 | 3 | | ME | 100 | |