

Minor in Computer Science and Engineering

Motivation:

In today's world, there are many vocational opportunities for students who are trained in Computer science and Engineering. Hence, a student with a non-CSE background would like to do this minor for one or both of the following reasons:

1. Get exposure to basic computer science courses. This is when he/she augments with electives then he/she gets good training in computer science.
2. Makes him/her eligible to pursue his/her further studies in the field of computer science and allied areas.

Towards this, IIT Dharwad has decided to start this minor with the following basic requirements:

For the students who were admitted till the Academic Year 2021-22

1. Earn 30 credits in addition to the credits that he/she earns to get the B. Tech/ BS-MS degree.
2. Out of 30 credits, a student must get 23 credits by doing mandatory courses.
3. The remaining 7 credits can be obtained by choosing one or more electives from the list of courses offered by the Department of Computer Science and Engineering.

The following section describes the list of courses and guidelines on how to take these courses to obtain the minor.

List of Courses and Guidelines

The following are the mandatory courses that need to be taken by students from 3rd semester onwards.

Courses (mandatory)	Credits
Discrete Mathematics	6
Data structures and algorithms + Lab	6
Data structures and algorithms Lab	3
Software Systems Lab	8

Students are required to earn at least 7 or more credits through electives, which are the regular courses offered by the Department of Computer Science and Engineering.

The list is provided below and is not exhaustive.

Course (electives)	Credits	Semester in which the course is typically offered
Design and analysis of Algorithms	6	Even
AI + Lab	6 + 3	Even
Operating Systems + Lab	9	Even
Computer Architecture + Lab	9	Odd
Databases + Lab	9	Odd
Software Engineering	6	Odd/even
Computer Networks + Lab	6+3	Even
Compilers + Lab	6+3	Even

Note: For some of the courses in the elective's basket, there are inter dependencies, which a student must consider. For example, to do Computer Architecture and Lab, the prerequisite is Digital systems and Lab course. For Databases it is good to have exposure to Operating systems. And so forth, these dependencies are mentioned in the syllabus of each course.

If one wishes to obtain more knowledge in the field of Computer Science and Engineering, apart from taking up courses that will fetch him/her a minor in computer Science and Engineering, he/she can opt for relevant courses in CSE as a part of regular institute/Dept. electives.

For the students who were admitted from the Academic Year 2022-23

1. Earn 29 credits in addition to the credits that he/she earns to get the B. Tech degree.
2. Out of 29 credits, a student must get 23 credits by doing mandatory courses.
3. The remaining 7 credits can be obtained by choosing one or more electives from the list of courses offered by the Department of Computer Science and Engineering.

The following section describes the list of courses, and guidelines on how to go about taking these courses to obtain the minor.

List of Courses and Guidelines

The following are the mandatory courses that need to be taken by students from 3rd semester onwards.

Courses (mandatory)	Credits
Discrete Mathematics	6
CS205 Design Analysis of Algorithms	6
Software Systems Lab	8

Students are required to earn at least 7 or more credits through electives, which are the regular courses offered by the Department of Computer Science and Engineering.

The list is provided below and is not exhaustive.

Course (electives)	Credits	Semester in which the course is typically offered
AI + Lab	6 + 3	Even
Operating Systems + Lab	9	Even
Computer Architecture + Lab	9	Odd
Databases + Lab	9	Odd
Software Engineering	6	Odd/even
Computer Networks + Lab	6+3	Even
Compilers + Lab	6+3	Even

From the 2022 batch onwards, the course “Design Analysis of Algorithms” will replace the two mandatory courses namely, “Data Structures and Algorithms” “Data Structures and Algorithms Laboratory” in the CSE minor basket. With this, the minimum number of credits for a minor in CSE will be reduced from 30 to 29.