M.Tech. (Computational & Data Science) Admissions Brochure, 2023

About the M.Tech. (CDS) Program

Computational Science and Data Science are inter-disciplinary areas that bring together the domain-specific knowledge of science and engineering with relevant areas of computing systems and formal foundations. While computational science investigates scientific computing applications that require mathematical techniques and parallel computing, data science explores data-intensive applications that use scalable statistical and machine learning methods with Big Data and Cloud platforms.

The M.Tech. (Computational & Data Science) degree at CDS is designed as a course and project-based program to be completed in 24 months. Students will take 40 credits of course work over 2-3 semesters. Courses are divided into hard core (14 credits), soft core (10 credits), and electives (12 credits). Students will also complete a dissertation project worth 28 credits over a 12-month period. These impart foundational and scalable systems skills for computational and data sciences, with advanced courses selected by students to allow specialization on methods, platforms and applications. More details are at: http://cds.iisc.ac.in/academics/mtechcds/

Highlights of the Program

- *First* degree program in India from a premier institution to train students as computational and data scientists!
- Top-notch & world-renowned faculty
- Curriculum prepares students for research & development in computational and data sciences.
- One Year Dissertation Project to give comprehensive experience on applying computational and data sciences techniques
- Develops soft skills of the students
- 100% placements

The M.Tech. (CDS) Admission Process

- Candidates who wish to apply to the M.Tech. (Computational and Data Science) program should do so through the **IISc Admissions website**: http://www.iisc.ac.in/admissions/. Students with a *B.E./B.Tech./M.Sc./MCA/Four year B.S. or equivalent* in any science/engineering discipline, and a *valid GATE Score*, are eligible. A strong background in Mathematics and Programming is required.
- Details for the program are listed at https://iisc.ac.in/admissions/m-tech-m-des under the "Computational and Data Science (CP)" section.
- Based on the application, the department will *short-list students* and notify them to **appear for an online *Aptitude Test* followed by an in-person *Oral Interview*. The online aptitude test and in-person oral interview are mandatory for all the short-listed students to be considered further.**
- The aptitude test will be conducted **online** using the HackerEarth platform on Apr 13, 2023. The candidate should begin the test between 9 AM – 9:30 AM and the test will be for a duration of 90 mins. Candidates can take the aptitude test remotely from their home or at a convenient location with a stable internet connection. Candidates should have a laptop with internet and a webcam during the online test. More details about the aptitude test will be sent to shortlisted candidates from the CDS Department.
- The **in-person interview** will be from Apr 18, 2023, through Apr 21, 2023, as per the interview call letter sent to the candidates by the IISc Admissions office.
- The **syllabus** for the aptitude test and the oral interview will be from:
  - Foundations: *Linear Algebra/Matrices, Probability and Combinatorics* at the undergraduate engineering mathematics level, in addition to basic *Calculus and Geometry*.
  - Basics in Computer Science: *Data Structures (arrays, matrices, etc.), and Basic Programming.*
- The **Oral Interview** will evaluate the student's ability to think and solve problems interactively on the whiteboard. The student will also be tested on *core subjects and projects from their undergraduate*. For e.g., Algorithms for a Computer Science student, or Fluid/Solid Mechanics for a Mechanical Engineering student. The typical duration of the Oral Interview is 20 to 30 mi*nutes*.
- *We wish you all the best!*