INDIAN INSTITUTE OF SCIENCE
Bangalore, India
भारतीय विज्ञान संस्थान
बेंगलूरु, भारत

Department of Computational & Data Sciences

Department of Computational and Data Sciences

M.Tech. (Computational & Data Science) Admissions Brochure, 2020

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 36 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.
- Based on the application, the department will short-list students and notify them to appear for interview at the CDS Department, Indian Institute of Science (IISc), Bangalore.
- The interview process will begin with a short written **Test** on the first day of the interview *(Mon Apr 13, 2020)*. Applicants who clear the Written Test will be called for an **Oral Interview**, which will be held on next day *(Tue Apr 14, 2020)*.
- The **syllabus** for the written 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*.
  - Programming: *Data Structures (arrays, matrices, etc.), and Basic Programming.*
- The **Written Test** will test the mathematical foundations of the students, and programming using a high level-language like C/C++/Java (student's choice). These will be short-answer questions. The duration of the Written Test will be *30-45 minutes*. Please bring a pen, pencil and an eraser.
- The **Oral Interview** will evaluate the student's ability to think and solve problems interactively on the chalk-board. 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 minutes*.

Application Deadline: 23 March, 2020; Written Test: 13 Apr, 2020; Oral Interview: 14 Apr, 2020