**Department of Computer Science and Engineering**
Indian Institute of Technology Delhi



# M. Tech. Program

## Program

The M. Tech. programme in Computer Science and Engineering (code: MCS) is a Masters programme offered to students who are interested in advanced learning and research in any area of computer science.

Applicants to this programme are expected to already have an excellent background in computer science. (It is not a skills conversion programme).

The programme is a 60-credit degree programme, which is usually spread over 4 semesters for a full-time student. About two-thirds of the credits involve coursework, and the remainder consists of project work. The emphasis is on conducting original research and writing a thesis (individually) that reports these results. The programme is flexible enough to allow a student to specialize in any topic of interest by taking elective courses and working on a research project in that area.

Placements have been excellent (100%), and our graduates have been employed at the top research laboratories and companies in the country and even abroad.

Students are provided top quality laboratory and infrastructure facilities. We endeavour to provide financial support at Master's level stipends to all GATE-qualified full-time students. Full-time students not resident in Delhi are given priority in allotment of hostel accommodation.

### Specializations

In addition to the general M.Tech degree, we also offer MTech degrees with specialization in any one of the following areas:

- Computer Graphics, Vision and Multimedia
- Computer Networks and Distributed Systems
- Algorithms and Complexity
- Formal Methods in Software
- Embedded Systems and Architecture
- Software Systems

The requirement for the *specialization degree*is that the student must complete at least 30 credits in the area of specialization at the 700-level or higher, subject to the following constraints:

1. Major Project parts 1 and 2 (adding up to 18 credits) are in that area. (The supervisor certifies that the project is in the area of specialization.)
2. The remaining 12 credits are from the basket of courses identified for that area, with at least 3 credits at the 800 level. (In the case of Independent Study and some of the Special Topics courses, the supervisor/instructor indicates which specialization area.)
3. Not more than 4 core credits apart from Major project (i.e., from Minor Project or CSL 758 Advanced Algorithms or CSL 718 Architecture of High Performance Systems) can be counted towards the 30 credits.

### Switching programmes

It is also possible to switch your programme of study mid-way. Interested students who have demonstrated excellence in their academic performance and research potential have the opportunity to convert to the Ph. D. programme or to the MS (Research) programme.

### M. Tech. in CSE with Advanced Standing

Students at IIT Delhi pursuing a B. Tech. programme in any discipline have the option of obtaining an M. Tech. in Computer Science (Programme code: MCS) by investing an additional 2-3 semesters after the end of their B. Tech. programme.

For more details, click here.

## Admissions

## Rules and Regulations

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## Foreign Students

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## Admissions

**Eligibility:**
The candidate must have a 4-year B.Tech./B.E. degree or a MSc./MCA degree in computer-science or information technology, and have an excellent academic record. The candidate should have demonstrated adequate bacground in computer science itself (GATE in CS/IT), or else with extensive experience in computing (for part-time students).

There are two different ways in which you can register for the M. Tech. programme in CSE at IITD:
**Full-Time :** The candidate resides on the IIT campus for the entire duration of the programme. The student should have an excellent valid GATE score in CS/IT.
**Part-Time :** The candidate should be working in an industry or organisation involved in computer science research/teaching and located within 50 kms of NCR. The organization should certify that it has No Objection to the candidate pursuing this degree.

### Admission Procedure:

Download the application form from the IIT Delhi web-siteor collect a paper application form from IIT Delhi, PGS&R Section. Fill the form and attach a draft for Rs 300 made payable to the "Registrar, IIT Delhi" at New Delhi. The forms are typically available around the beginning of March.

You may wish to also attach a curriculum vitae listing your academic record, Industrial/Research Experience, Research Publications (also include a copy of your best publication), academic honors and awards etc.

Send the application to the "Deputy Registrar, Post Graduate Section. IIT, Hauz Khas, New Delhi 110016". Interviews for admission are conducted once a year in May, and admissions are synchronized with the semester beginning late July.

After looking at your application we will decide whether to invite you for an interview. You will be informed of the decision by email. The interview will test your familiarity with basic concepts in Computer Science and your ability to analyze and formulate a solution to a problem. Part-time students may be given a written-test prior to the interview.

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**Distribution of Credits**
Minimum limits given for elective categories

| Programme Core (PC) | Programme Electives (PE) | Open Electives (OE) | Total Credits |
|---|---|---|---|
| **40** | **14** | **6** | **60** |

**Semester-wise Distribution of Credits**
Typical credit distribution

| Semester I | Semester II | Semester III | Semester IV | Total Credits (min) |
|---|---|---|---|---|
| **18** | **18** | **12** | **12** | **60** |

**Semester-wise Scheduling of Courses**[1]

**Semester I**

| Course No. | Course Title | Type (PC/PE/OE) | L-T-P | Credits |
|---|---|---|---|---|
| CSL665 | Introduction to Logic and Functional Programming | PC | 3-0-2 | 4 |
| CSL630 | Data Structures and Algorithms | PC | 3-0-2 | 4 |
| CSP601 | Software Systems Laboratory | PC | 0-0-6 | 3 |
| | PE-1 | PE | 3-0-2 | 4 |
| | OE-1 | OE | 3-0-0 | 3 |
| **Total Credits** | *4 Lecture Courses, 1 Lab Course* | *PC=11,PE=4,OE=3* | *12-0-12* | **18** |

**Semester II**

| | | | | |
|---|---|---|---|---|
| CSL758 | Advanced Algorithms | PC | 3-0-0 | 3 |
| CSL718 | Architecture of High Performance Computer Systems | PC | 3-0-2 | 4 |
| CSD745 | Minor Project[2] | PC | 0-1-6 | 4 |
| | PE-2 | PE | 3-0-2 | 4 |
| | OE-2 | OE | 3-0-0 | 3 |
| **Total Credits** | *4 Lecture courses, 1 project* | *PC=11,PE=4,OE=3* | *12-1-10* | **18** |

**Semester III**

| | | | | |
|---|---|---|---|---|
| | PE-3 | PE | 3-0-0 | 3 |
| | PE-4 | PE | 3-0-0 | 3 |
| CSD893 | Major Project - Part 1 | PC | 0-0-12 | 6 |
| **Total Credits** | *2 Lecture courses, 1 project* | *PC=6,PE=6/8,OE=3* | *6-0-12* | **12** |

**Semester IV**

| | | | | |
|---|---|---|---|---|
| CSD894 | Major Project - Part 2 | PC | 0-0-24 | 12 |
| **Total Credits** | *1 project* | *PC=12* | *0-0-24* | **12** |

**Notes**

1. The schedule as presented is only indicative of how a typical student may register for courses, but allows considerable flexibility to the student in choice of when to register for programme and open electives.
2. Select students who wish to conduct their project work outside Delhi, e.g. those in special academic exchange programmes, may, on approval, swap the Minor project with an OE/PE course usually taken in Semester III, and may also register for an additional OE/PE course in the Semester II. The Minor Project and Independent Study courses may be taken in the summer in these special cases.
3. 600 level courses are not available to undergraduate and dual degree students.
4. 600 level *programme elective* courses may be taken by students only on approval of M Tech coordinator, since these are courses typically in undergraduate curricula, which are made available to PG students who have not taken equivalent courses earlier.

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