

M.Tech. (Computer Science) : Orientation

Mentor Committee

Indian Statistical Institute

20 July, 2026

Most important takeaways

- **Home page:** <https://www.isical.ac.in/~mtcs-mentor-comm>
 - contains a link to the **current, official** version of the Students' Brochure (the “rule book”) for the MTech(CS) program
 - *Please do not refer to any other versions* that may be found via Web searches; they may be outdated.
- **Email:** mtcs-mentor-comm@isical.ac.in
 - *Please do not send email to individual members.*
- **Google group:**
<https://groups.google.com/g/isi-mtech-cs-2026>
Please sign up NOW.
- **Student Information Portal (SIP):**
<https://sip.isical.ac.in/isierp>

Each student belongs to one of the following streams (categories):

- **CS stream:** any student who

- has a qualifying degree (e.g., BE, BTech) in Computer Science / Information Technology / equivalent, AND
- qualified based on performance in
 - the *CS section* of the ISI admission test, OR
 - a valid GATE score in Computer Science / Information Technology / equivalent

- **Non-CS stream:** all other students

Course requirements, options, etc. depend on your stream.

Basic structure: CS stream

1. Each course is evaluated out of 100 marks.
2. **Compulsory, full-semester, non-credit:** Introduction to Programming
 - May be waived if you pass a programming test to be conducted on July 23 (**this Thursday**) 14:30–16:30.
3. **Three compulsory courses:**
 - Discrete Mathematics (*this semester*)
 - Data Structures and Algorithms (*this semester*)
 - Design and Analysis of Algorithms (*next semester*)
4. **Four formative courses**
5. **Eight elective courses**
6. **Two more courses** (formative or elective) OR
One more course AND minor project* (equivalent to *one* course)
7. **Dissertation** (equivalent to *three* courses)
 - spans two consecutive semesters (usually 3rd, 4th)

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 - Discrete Mathematics (*this semester*)
 - Data Structures and Algorithms (*this semester*)
 - Design and Analysis of Algorithms (*next semester*)
- Total graduating score out of **2000** marks.
4. **Four formative courses**
 5. **Eight elective courses**
 6. **Two more courses** (formative or elective) OR
One more course AND minor project* (equivalent to *one* course)
 7. **Dissertation** (equivalent to *three* courses)
 - spans two consecutive semesters (usually 3rd, 4th)

CS stream: formative courses

Pool A

- Abstract Algebra and Number Theory
- Linear Algebra
- Probability and Stochastic Processes
- Statistical Methods

■ offered this semester

■ offered next semester

Pool B

- Compiler Construction
- Computer Networks
- Computing Laboratory
- Database Management Systems
- Digital Design and Computer Architecture
- Operating Systems
- Theory of Computation

- You need to pass **FOUR**, with *at least TWO from pool A*.
- Compulsory courses and Pool A formative courses to be completed within the first year of the programme.

Basic structure: non-CS stream

1. Each course is evaluated out of 100 marks.
2. **Compulsory, full-semester, non-credit:** Introduction to Programming (as for CS stream)
3. **Five compulsory courses:**
 - Discrete Mathematics (*this semester*)
 - Data Structures and Algorithms (*this semester*)
 - Design and Analysis of Algorithms (*next semester*)
 - Computing Laboratory (*next semester*)
 - Digital Design and Computer Architecture (*this semester*)
4. **Four formative courses**
5. **Eight elective courses**
One course can be substituted by a **minor project***
6. **Dissertation** (equivalent to *three* courses)
 - spans two consecutive semesters (usually 3rd, 4th)

Basic structure: non-CS stream

1. Each course is evaluated out of 100 marks.
2. **Compulsory, full-semester, non-credit:** Introduction to Programming (as for CS stream)
3. **Five compulsory courses:**
 - Discrete Mathematics (*this semester*)
 - Data Structures and Algorithms (*this semester*)
 - Design and Analysis of Algorithms (*next semester*)
 - Computing Laboratory (*next semester*)
 - Digital Design and Computer Architecture (*this semester*)
4. **Four formative courses**
5. **Eight elective courses**
One course can be substituted by a **minor project***
6. **Dissertation** (equivalent to *three* courses)
 - spans two consecutive semesters (usually 3rd, 4th)

Total graduating score out of
2000 marks.

Non-CS stream: formative courses

- Abstract Algebra and Number Theory*
- Linear Algebra*
- Probability and Stochastic Processes[†]
- Statistical Methods[†]
- Compiler Construction
- Computer Networks
- Database Management Systems
- Operating Systems
- Theory of Computation

Compulsory courses and at least two formative courses to be completed within the first year of the programme.

- Duration: one semester (either third or fourth).
- Eligibility: a student has to pass 10 (or more) courses in the first year, and obtain an aggregate score of 75% or more in the best 10 courses
- A student who does not or cannot undertake a Minor Project has to pass one more course instead.
 - CS stream: choose from formative or elective courses
 - non-CS stream: choose from electives only

Electives

Electives are classified into four tracks:

- Theory
 - Systems
 - Cryptology and Security
 - Data Science.
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- One elective can belong to multiple tracks.
 - Completing a certain number of electives in a specific track will enable a student to obtain a specialization.
 - Refer to the *Brochure* for the list of elective courses and their respective track(s).

Tracks and specialization

- Can choose a track for specialization from these four tracks: Theory, Data Science, Systems, and Cryptology and Security
- Can also graduate without a specialization
- Option of double specialisation

Requirements for a specialization in a track T

- At least FIVE of the EIGHT elective courses in track T .
- Dissertation topic in track T .

Tracks and specialization

- Can choose a track for specialization from these four tracks: Theory, Data Science, Systems, and Cryptology and Security
- Can also graduate without a specialization
- Option of double specialisation

Requirements for **double specialization** in tracks T_1 and T_2

- At least TEN electives with at least FIVE each in the two separate tracks T_1 and T_2 . One elective course cannot be counted for two different specializations.
- Completes a minor project.
- The minor project and the dissertation are in two different tracks T_1 and T_2 .

Other frequently asked questions

- **Registering for courses:** via the SIP, *within two weeks* of the start of a semester
 - Recommended no. of courses: 5-6
(Recall: total requirement = 17 courses + dissertation in 4 semesters)
- **Course prerequisites:** please discuss with the teacher concerned.
- **Repeating courses:**
 - required if you fail
 - may be permitted by MC if you would like to improve your score
- **Duration of the M.Tech. (CS) degree programme :**
 - Typically TWO years
 - May be at most THREE years
(no stipends, hostels etc. beyond two years)

The Programming Test (July 23, 2026)

Time: 14:30 to 16:30, Venue: CSSC Lab (SN Bose Bhavan, 4th floor)

- **Prerequisite:** Basic algorithmic thinking + comfortable with programming in C
 - arrays will be enough
 - no complicated data structures / algorithms will be required
- Language: C
- Duration: 2 hours
- Passing criterion: you have to correctly solve 2 out of 3 problems
- If you do not pass:
 - you have to take a non-credit course on Introduction to Programming;