Regulations for M.Tech. (Computer Science and Engineering (CSE))

1. Preamble

IIIT-Delhi subscribes to the view that a Masters degree is primarily industry-focused, though it can be used as a stepping stone for research as well. The decision whether the degree is to be pursued for skill and knowledge up-gradation or also for building research skills should rest with a student.

2. Program Educational Objectives

PEO 1: to undertake industry careers involving innovation and problem solving using software and other information technologies.

PEO 2: to undertake research careers in Computer Sciences and allied areas

PEO3: to contribute to society by becoming a model professional who can communicate effectively and observes ethical behavior

The Institute also feels that to address the needs of the industry, which today requires more specialized manpower as each field is getting more complex, it is desirable to provide specializations within Computer Science in the M.Tech. program. For this, the Institute permits a student to do an "M.Tech. in Computer Science and Engineering" or "M.Tech. in Computer Science and Engineering with specialization in <area>".

3. General Requirements

(For Graduation requirements for M.Tech.(CSE) with specialization in Artificial Intelligence, refer M.Tech.(CSE)-AI regulations)

1. M.Tech. (CSE) may be done with a thesis, or with a scholarly paper or without thesis and scholarly paper. In with thesis and scholarly paper options, students have to do certain amount of course work. In addition, students doing M.Tech. *with thesis* will have to do a thesis. Students with scholarly paper option will have to do scholarly paper instead of a thesis and will have to do additional courses. Students without thesis and scholarly paper option, will have to do only the course work.

2. The overall credits requirement for the M.Tech. is 48 credits. In addition to 48 credits a student has to complete Summer refresher of 6 credits (1. Data Structures & Algorithms (2 credits), 2. Programming (System Programming + Python) (2 credits), 3. Mathematics: Linear Algebra, Probability & Stats (2 credits), Object Oriented Programming and Design (4 credits) and Research Methods (2 credits). Requirements of 48 credits for all the three options are as follows;

a. **M.Tech. with thesis;** 32 credits of course work + 16 credits of thesis. At most 4 credits may be earned by doing 300 and 400 level courses.
b. **M.Tech. with Scholarly Paper;** 40 or 44 credits of course work + 8 or 4 credits for a scholarly paper. At most 8 credits may be earned by doing 300 and 400 level courses.
c. **M.Tech**. **without thesis and scholarly paper option;** 48 credits of course work. At most 8 credits may be earned by doing 300 and 400 level courses.

3. A student admitted to the M.Tech. program will give his/her choice regarding whether he/she wants to pursue the thesis or scholarly paper or without thesis/scholarly paper option. However, this choice can be changed at any time during the program by suitably informing the Academic Affairs Committee. Credits earned for scholarly paper or thesis may be counted towards thesis or scholarly paper respectively, if approved by the AAC.

4. Within the course work requirement, each M.Tech.(CSE) student has to earn 12 credits of core courses by doing one course from each of the bucket of core courses:
   a. Introduction to Graduate Algorithms – 4 credits.
   b. Machine Learning – 4 credits.
   c. Introduction to Graduate Systems – 4 credits.

   Note: For M.Tech.(CSE) with Artificial Intelligence, list of courses is defined in specific regulation of Artificial Intelligence

5. For completing the graduation requirement, remaining credits can be earned through any course, including online course, independent study (IS), Minor Project (Independent Project (IP)), Thesis, Capstone, Scholarly Paper or internship with the following restrictions:
   a. At most 8 credits of regular courses without CSE course code.
   b. At most 8 credits of IP and IS can be taken.
   c. At most 4 credits of online course can be taken in the second and subsequent semesters (including the summer term); online course policy is as per department guidelines.
   d. At most 4 internship credits can be taken in the fourth semester; however, in that case at most 4 credits of IP and IS will be counted towards the graduation requirement.

4. Requirements for Specialization other than Artificial Intelligence (AI).

1. For "M.Tech. in Computer Science and Engineering with specialization in <area other than Artificial Intelligence>", whereas an area refers to the areas in which specializations are offered by the Institute, the student must:

   a. Complete at least 12 credits of courses in the chosen area.
   b. Do thesis/scholarly paper in that area. The advisor will certify this fact. A student doing M.Tech. without Thesis/Scholarly paper will not be allowed to do M.Tech. with specialization.

   Note; Details about Artificial Intelligence specialization are given in specific regulation of M.Tech. (CSE) with specialization in Artificial Intelligence.

2. The lists of courses for each specialization are specified on the specialization page on IIITD website.

3. For a specialization, the student's enrollment must be approved.

4. A student enrolled in a specialization can move to M.Tech.(CSE) at any point by informing suitably. A student can move from M.Tech.(CSE) to a specialization only if permitted by the Academic Affairs Committee.

5. If a student enrolled in a specialization completes all requirements for the M.Tech., but not the requirements for specialization, he/she will be eligible for "M.Tech. in Computer Science and Engineering".

5.   Assistantship and Fee Waiver

1. Limited number of Assistantships will be available for M.Tech. students. As specified in the Regulations for M.Tech./PhD Programs, a student who is offered an Assistantship will be required to do 10-15 hours of academic work per week in-lieu of the Assistantship.

2. Limited number of partial or full fee-waivers may be provided.

Change History:

Version 2.0 (Jan 2012). Changes made: Clarified that "sufficient core courses should be offered so a student can complete the core requirement in first two semesters", and some courses added to the three sets; The following regulation deleted: "Assistantship is available only for *with*-thesis option. A student on Assistantship will have a residency requirement of 4 semesters." Added that "Limited number of partial or full fee-waivers may be provided" (since fee waiver is now delinked from assistantship in the PG regulations).

July 2013

(i) Minor change in the Preamble.

July 2014:

(i) Movement between specialization and without specialization clarified (ii) The scholarly paper credits changed from 8 to "4 or 8 (iii)Option for doing M.Tech. with Thesis/ SP/ Industry Internship/Capstone project added.

July 2015:

 Following changes have been made in the main PG regulation:

i)   Replacement upto 2 courses permitted anytime

    ii)   Fresh M.Tech. student's thesis guidance by Adjunct faculty allowed only with a co-supervisor

July 2016:

(i)   Core courses in the three buckets revised as shown in the table.
(ii)   Some minor changes shown in the main PG regulations

July 2017:

(i)   Program Educational Objectives added

July 2020:

(i)   Without Thesis option added

January 2021:

(i)   Added 3xx/4xx level courses allowed for those doing M.Tech with course work
(ii)   Slight modification in rule regarding max credits of M.Tech. project/Independent study that are allowed.
(iii)   Specialization rule for M.Tech. with course work option
(iv)   PG Committee changed to Academic Affairs committee.

May 2024

(i) OOPD Credit changed from 2 to 4 (Ref.58th **Senate)**

August 2024

(i)   Core course introduced; graduation requirement updated (Ref.63rd Senate)
(ii)   Summer Refresher credits updated from 4 to 6 and this will be applicable from AY 2025-26 admitted batch. (Ref.63rd Senate)

November 2025

(i) CSE Refresher changed from 4 to 6 (Ref. 63rd Senate)