Regulations for M.Tech. in Electronics and Communications Engineering (ECE)

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. And the decision whether the degree is to be pursued for skill and knowledge up-gradation or also for building research skills should rest with the student.

2.   Program Educational Objectives

PEO 1: to undertake industry careers involving innovation and problem solving using Electronics & Communications technologies

PEO 2: to undertake research careers in Electronics Communications and allied areas

PEO 3: to contribute to society by becoming a model citizen, who is good at communication, ethics, professionalism

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 ECE in the M.Tech. program. For specializations, the Institute offers "M.Tech. in Electronics and Communications Engineering with specialization in <area>", but also have an option for the student to do an "M.Tech. in Electronics and Communications Engineering" without any specialization. This note gives requirements for the M.Tech.(ECE) – general requirements for M.Tech. are given in Ordinances and Regulations for the M.Tech./PhD programs.

3.   General Requirements

1. M.Tech.(ECE) may be done <u>with a thesis</u>, or <u>with a scholarly paper</u> or <u>without thesis and scholarly paper</u>. In 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 in *scholarly paper* option will do instead of a thesis a scholarly paper, and will have to do additional courses. In without thesis and scholarly paper option, student have to do only course work.

2. The overall credit requirement for the M.Tech. is 48 credits. In addition to 48 credits a student has to complete Summer refresher of 4 credits, Object Oriented Programming and Design (2 credits) and Research Methods (2 credits). Requirements of 48 credits for all 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 through 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 without thesis 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. Each M.Tech. (ECE) student has to satisfy the core course requirement. For a specialization, this requirement is satisfied by completing all the core courses for that specialization. For M.Tech.(ECE) without specialization, this can be satisfied by completing 12 credits from the core courses of any of the specializations.

5. All other courses are electives. In electives, at most 8 credits of "Independent Study" and "Minor Project (Independent Project)" combined can be taken. Online course are permitted to be registered as Independent study.

4. Requirements for Specialization

1. For "M.Tech. in ECE with specialization in < area>" the student must:
   a. Complete the core courses for the specialization area.
   b. Complete at least 20 credits of courses in the chosen specialization area, including the core courses (i.e. at least 8 credits more in the area)
   c. Do his/her thesis/scholarly paper in that specialization area. The advisor will certify this fact.

2. Core courses for the specialization "**Communication and Signal Processing**" are:
   a. Statistical Signal Processing,
   b. Principles of Digital Communications Systems,
   c. Probability and Random Processes

3. Core courses for the specialization "**VLSI and Embedded Systems**" are:
   a. Digital VLSI Design,
   b. Analog CMOS Circuit Design
   c. Advance Embedded Logic Design

4. The lists of elective courses for each specialization will be specified on the specialization page on IIITD website.

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

6. A student may be enrolled in "M.Tech.(ECE) with specialization in <area>" or "M.Tech. (ECE)". Specialization areas are as notified/announced.

7. A student opting for specialization is required to do thesis/scholarly paper in the chosen area. A student doing M.Tech. without Thesis/Scholarly paper will not be allowed to do M.Tech. with specialization.

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

9. 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 Electronics and Communications 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:

July 2013. Minor change in the Preamble.

July 2014: Major changes made are:

(i) Bucket structure is replaced with core for each specialization; the core requirement regulation has been suitably enhanced.. (ii) The scholarly paper credits changed from 8 to "4 or 8" (iii) Regulations added to clarify about specialization and movement between specialization and without specialization. (iv) Requirements for specialization clarified.**(v)** Option for doing M.Tech. with Thesis/ SP/ Industry Internship/Capstone project added and (vi) Rules for Assistantship and Fee waiver 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) 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.