# MASTER OF ENGINEERING PROGRAM IN INFORMATION AND COMMUNICATION TECHNOLOGY FOR EMBEDDED SYSTEMS

## CURRICULUM TITLE

Master of Engineering Program in Information and Communication Technology for Embedded Systems (International Program)

## DEGREE TITLE

Master of Engineering (Information and Communication Technology for Embedded Systems)

## ACADEMIC SYSTEM

1. All courses are conducted in English. An academic year is divided into 2 semesters. Each semester consists of 15 weeks. Courses may be offered for a summer semester of at least 8 weeks duration. The total number of lecture hours required for the summer semester is the same as that for the regular semester. Enrollment for summer courses is optional.

2. Curriculum

   2.1 Study Plan
   The study plan consists of prescribed coursework (24 credits) and thesis (15 credits). A total of 39 credits is required for completion of the program.

   2.2 Thesis
   2.2.1 A student can register for a thesis after he or she has studied for at least 1 regular semester or has gained 12 credits with a minimum cumulative GPA of 3.00.
   2.2.2 Thesis Committee
   The thesis committee must consist of at least 3 members as follows:
   - Principal advisor: The principal advisor must be an SIIT faculty member in a corresponding or related academic program.
   - Co-advisor (*if any*): A co-advisor must be an SIIT or TU faculty member, or an expert outside TU, with a doctoral degree or equivalent, or with an academic rank of at least associate professor in a corresponding or related academic program.
   - Expert outside TU: The expert outside TU must hold a doctoral degree or equivalent with an academic rank of at least assistant professor, or have an academic rank of associate professor or higher.

- Other thesis committee members: Other thesis committee members must be SIIT or TU faculty members with a doctoral degree or equivalent, or with an academic rank of associate professor or higher.

The number of thesis committee members who are not the principal advisor or a co-advisor must not be fewer than the number of those who are the principal advisor or a co-advisor.

The number of thesis committee members who are SIIT or TU faculty members must not be fewer than the number of those who are experts outside TU.

The above thesis committee must also serve as the committees for both the proposal and final thesis defenses. However, the chairpersons of both defenses must not be the principal advisor or a co-advisor.

# GRADUATION REQUIREMENTS

To graduate, students must meet the following minimum requirements:

1. Twenty-four credits of taught courses required by the curriculum with a cumulative GPA of at least 3.00. In addition, the grade of each of these courses must be at least "C."

2. Fifteen credits of thesis work and passing a thesis defense

3. Approval of the thesis by the Thesis Committee

4. At least one paper on thesis findings has been accepted for publication in an international journal, or a national journal approved by the Academic Review and Rank Assessment Committee of SIIT, or at least one paper has been accepted for publication in international conference proceedings.

5. Having satisfied one of the following English proficiency requirements:
   - A TOEFL (official or institutional) score of at least 550 (paper-based), or 213 (computer-based), or 79 (internet-based) or Institutional TOEFL 550
   - An IELTS score of at least 6.5
   - A TU-GET score of at least 550
   - A TOEIC score of not less than 750 and pass an English efficiency evaluation by an SIIT native English speaker
   - "P" Grade in TU005 English1 and TU006 English2

   Exemption: An applicant who is a native English speaking student from Australia, Canada, New Zealand, United Kingdom, or USA may be exempted from the above English proficiency requirements if he/she passes an interview by an SIIT interviewing committee consisting of 3 English native speaking instructors.

# CURRICULUM

**1. Total Credits Requirement**

A total of 39 credits is required for completion of the program.

**2. Structure and Components**

| | | |
|---|---|---|
| **2.1 Compulsory Courses** | **15** | **Credits** |
| **2.2 Compulsory Elective Course** | **3** | **Credits** |
| **2.3 Technical Elective Courses** | **6** | **Credits** |
| **2.4 Master's Thesis** | **15** | **Credits** |
| **Total** | **39** | **Credits** |

**3. List of Courses in the Curriculum**

| | | ***Credits (lecture-practice-self study hours)*** |
|---|---|---|
| **3.1 Compulsory Courses, 15 credits** | | |
| ES605 | Research Methodology | 2(2-0-6) |
| ES606 | Research Seminar | 1(1-0-3) |
| ICT700 | Software Concepts for Embedded Systems | 3(3-0-9) |
| ICT710 | Software Design for Embedded Systems | 3(2-3-7) |
| ICT720 | Hardware Concepts for Embedded Systems | 3(3-0-9) |
| ICT730 | Hardware Design for Embedded Systems | 3(2-3-7) |
| **3.2 Compulsory Elective Course, 3 credits** | | |
| Select one of the following courses: | | |
| ES601 | Advanced Engineering Mathematics | 3(3-0-9) |
| ES611 | Theory of Computation | 3(3-0-9) |
| ES612 | Advanced Business Statistics | 3(3-0-9) |
| ET600 | Numerical Methods for Engineers | 3(3-0-9) |
| ET601 | Computer Applications for Engineers | 3(3-0-9) |
| ICT600 | Computational Mathematics | 3(3-0-9) |
| SE600 | Decision Making and Optimization | 3(3-0-9) |
| **3.3 Technical Elective Courses, 6 credits** | | |
| Select two courses from the following courses: | | |
| ICT740 | Communication Theory | 3(3-0-9) |
| ICT750 | Digital Signal Processing | 3(3-0-9) |
| ICT760 | Intelligence Processing | 3(3-0-9) |
| ICT770 | Control Systems | 3(3-0-9) |
| ICT780 | Current Topics in Embedded Systems | 3(3-0-9) |
| ICT781 | Advanced Topics in Embedded Systems | 3(3-0-9) |
| ICT782 | Selected Topics in Embedded Systems | 3(3-0-9) |
| ICT790 | Current Topics in Information and Communication Technology | 3(3-0-9) |
| ICT791 | Advanced Topics in Information and Communication Technology | 3(3-0-9) |
| ICT792 | Selected Topics in Information and Communication Technology | 3(3-0-9) |
| **3.4 Master's Thesis, 15 credits** | | |
| ICT800 | Thesis | 15 |