

# **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 consists of at least 3 members:

One principal advisor, one faculty member of SIIT or Thammasat University (TU), and at least one member not being affiliated with TU who will serve as an external committee member.

- Each committee member, who is not the external committee member, must be a faculty member of SIIT or TU, or an expert outside TU, with a doctoral degree or equivalent, or an academic rank of at least associate professor in the program or a related program.
- The principal advisor must be an SIIT faculty member in the program or a related program.
- A co-advisor (if any) must be a faculty member of SIIT or TU, or an expert outside TU, with a doctoral degree or equivalent, or an academic rank of at least associate professor in the program or a related program.
- The external committee member must be an expert outside TU with a doctoral degree and holding an academic rank of at least assistant professor or equivalent, or without a doctoral degree but holding an academic rank of at least associate professor or equivalent. The specialization of the external committee member must be in a field related to the thesis.
- The number of the committee members who are not the thesis advisor or co-advisor must not be less than the number of the committee members who are the thesis advisor and co-advisor. The number of the committee members who are faculty members of SIIT or TU must not be less than that of the committee members from outside.

2.2.3 Thesis Final Defense Committee

The Thesis Final Defense Committee consists of the same members as the Thesis Committee. However, the defense committee must be chaired by a thesis committee member who is not the advisor or 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)
  - 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

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
<b>Total</b>	<b><u>39</u></b>	<b>Credits</b>

### 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)

***Credits (lecture-practice-self study hours)***

**3.4 Master's Thesis, 15 credits**

ICT800 Thesis

15

