

## Course Detail

### Master of Engineering Program in Artificial Intelligence and Internet of Things

<b>Course Title:</b>	Master of Engineering Program in Artificial Intelligence and Internet of Things
<b>Master Degree:</b>	Master of Engineering (Artificial Intelligence and Internet of Things)
<b>Academic Institution:</b>	Sirindhorn International Institute of Technology, Thammasat University, Rangsit Campus
<b>Duration:</b>	2 years (August 2024 - July 2026)

#### **Background and Rational:**

Nowadays, economy and society are rapidly changing in various aspects. To address these changes, it is necessary for SIIT to develop the Master of Engineering Program in Artificial Intelligence and Internet of Things curriculum that is up to date and enable graduates to professionally cope with current challenges in their working life with morals and ethics. The SIIT curriculums are established according to the aim of Thammasat University to produce skillful graduates who can bring their knowledge and ability to sustainably develop the country in terms of economy and society.

#### **Objectives:**

To educate graduate students to be able to conduct high quality and innovative research in engineering and related technological development.

#### **Course Synopsis and Methodology:**

##### **1. Study plan**

Number of the total credits not less than 39,36 credits

<b>Plan A; A2 (Coursework and research plan)</b>	<b>39</b>	<b>Credits</b>
- Compulsory Courses	15	Credits
- Compulsory Elective Course	3	Credits
- Technical Elective Courses	6	Credits
- Master's Thesis	15	Credits

##### **2. Course Content/Study Topic:**

###### **Plan A2**

###### **Major: Artificial Intelligence and Internet of Things (AI&IoT)**

- Software Concepts for Artificial Intelligence and Internet of Things
- Software Designs for Artificial Intelligence and Internet of Things
- Hardware Concepts for Artificial Intelligence and Internet of Things
- Hardware Designs for Artificial Intelligence and Internet of Things
- Research Methods and Communications
- Research Methodology
- Research Seminar

###### **Compulsory Elective Course:**

- Advanced Engineering Mathematics
- Theory of Computation
- Advanced Business Statistics
- Numerical Methods for Engineers
- Computer Applications for Engineers
- Computational Mathematics
- Decision Making and Optimization

###### **Technical Elective Courses**

- Communication Theory and Connectivity
- Digital Signal Processing and Internet of Things
- Data Science and Intelligent Processing
- Control Theory and Intelligent Control
- Current Topics in Information and Communication Technology
- Current Topics in Artificial Intelligence and Internet of Things

- Advanced Topics in Artificial Intelligence and Internet of Things
- Selected Topics in Artificial Intelligence and Internet of Things

**Master's Thesis**

**Major: Applied Artificial Intelligence (Applied AI)**

Fundamentals of Artificial Intelligence  
 Fundamentals of Machine Learning  
 Programming in Artificial Intelligence  
 Applications of Artificial Intelligence  
 Research Methods and Communications  
 Research Methodology  
 Research Seminar

**Compulsory Elective Course,**

Advanced Engineering Mathematics  
 Theory of Computation  
 Advanced Business Statistics  
 Numerical Methods for Engineers  
 Computer Applications for Engineers  
 Computational Mathematics  
 Decision Making and Optimization

**Technical Elective Courses**

Natural Language Processing and Its Applications  
 Computer Vision and Its Applications  
 Internet of Things, Signal Processing, and Its Applications  
 Robotics and Its Applications  
 Current Topics in Digital Technology  
 Current Topics in Applied Artificial Intelligence  
 Advanced Topics in Applied Artificial Intelligence  
 Selected Topics in Applied Artificial Intelligence

**Master's Thesis**

**Graduation Condition:**

**Plan A2**

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. Papers are published in one of the following:
  - At least one paper on thesis results must have been published or accepted for publication in a qualified international journal under the regulations on classification of academic journals for research publications by the Higher Education Commission and the SIIT Academic Committee, or
  - At least one paper on thesis results must have been published or accepted for publication in a qualified national journal under the regulations on classification of academic journals for research publications by the Higher Education Commission and the SIIT Academic Committee, or
  - At least one paper on thesis results must have been accepted and registered for presentation in an international conference and also for publication of a full paper in international conference proceedings.
5. Having satisfied one of the following English proficiency requirements:
  - IELTS score of not less than 6.5
  - Institutional TOEFL score of not less than 550
  - TOEFL (Internet-Based Test-IBT) of not less than 79, or TOEFL (Internet-Based Test-IBT) Home Edition of not less than 79, or TOEFL (Paper-Based Test-PBT) of not less than 550
  - TU-GET (Paper-Based Test-PBT) of not less than 550, or TU-GET (Computer-Based Test-CBT) of not less than 79
  - TOEIC score of not less than 750 and he/she must also pass an English efficiency evaluation by an SIIT native English speaking instructor
  - TU005 English 1 and TU006 English 2 grades of P (Pass)

The score must not be older than 2 years from the test date to the start of the academic semester prior to the student's first academic semester and must not be older than 2 years from the test date to the student's entrance examination date.

**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 native English speaking instructors.

**Qualification:**

<b>Applicants' qualification</b>	<b>Master of Engineering Program in Artificial Intelligence and Internet of Things Plan A2</b>
<b>Education level</b>	A bachelor's degree in engineering, science, or a related field that is accepted by the SIIT Executive Committee.
<b>GPA</b>	A top 20% class rank for a bachelor's degree, or a cumulative GPA of at least 2.75, or a research work published or accepted for publications, or a research experience, or a working experience, or qualifications specified by the SIIT Executive Committee.
<b>Work experience</b>	If any
<b>Engineering and Technology research experience</b>	If any
<b>English language proficiency</b>	<p>An applicant must submit an official score for one of the following English language tests:</p> <ul style="list-style-type: none"> <li>● TOEFL score of not less than 400 (paper-based), or 32 (internet-based), or 32 (internet-based Home Edition)</li> <li>● Institutional TOEFL score of not less than 400</li> <li>● IELTS score of not less than 4.5</li> <li>● TU-GET score of not less than 400 (paper-based) or 32 (computer-based)</li> <li>● TOEIC score of not less than 500</li> </ul> <p>The score must not be older than two years from the date on which it was issued to the date of the application for admission to the program.</p> <p>In the case of no English score or a score less than the above requirements, the applicant may be admitted with conditions that he/she must take SIIT English remedial courses and/or SIIT English proficiency tests, and meet the requirements set by the institute.</p> <p><b>Exemption:</b> 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 native English speaking instructors.</p>
<b>Special qualification</b>	-

**Document required:**

- TIPP application form (Download at: <https://tica-thaigov.mfa.go.th/en/page/75500-tipp-application-form?menu=605b13dbb6f1b76ed31778b3>)
- Medical Report (If candidates had submitted other health certificates without the TICA medical report form, their application will not be accepted for consideration)
- Transcript of Bachelor's degree (to show the courses that you have learnt throughout Bachelor's degree) with at least GPA. 2.75
- Certificate of Bachelor's degree

- English test score TOEFL (PBT 400+) or (IBT 32+) or IELTS 4.5+
- Recommendation Letter (At least 3 people)
- At least one page of a statement of purpose
- Research papers, publications, or certificates (if any)
- A recent photograph (1x1.5 inches' size as .jpeg only)

**Contact:**

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\*\*\*The application procedure will complete when TICA has received the hard copy of the application form and other related documents through the Royal Thai Embassy/Permanent Mission of Thailand to the United Nations/Royal Thai Consulate – General accredited to eligible countries/territories.