



### Degree Title

- **Master of Engineering (Electrical and Computer Engineering)**  
M.Eng. (Electrical and Computer Engineering)
- **Doctor of Engineering (Electrical and Computer Engineering)**  
D.Eng. (Electrical and Computer Engineering)

[Refer to M.Eng. ECE and D.Eng. ECE curriculum revised 2021]

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### Website

<https://tggs.kmutnb.ac.th/ece>

<https://tggs.kmutnb.ac.th/academics/ece-master>

<https://tggs.kmutnb.ac.th/academics/ece-doctor>

<https://facebook.com/TGGSBangkok>



ECE Website



ECE Master



ECE Doctoral



Scholarship offers

### TGGS International Programs

#### International Master Programs:

- **Chemical and Process Engineering (CPE)**
- **Mechanical and Automotive Engineering (MAE)**  
**Minor:** Mechanical Engineering Simulation and Design (MESD)  
**Minor:** Automotive Safety and Assessment Engineering (ASAE)
- **Materials and Production Engineering (MPE)**
- **Electrical and Computer Engineering (ECE)**  
**Recommended Study Tracks**
  - Electrical Power and Energy Engineering (EPE)
  - Communication and Smart System Engineering (CSE)
  - Smart Grids Engineering (SGE)
  - Smart Electronics Engineering (MIE)
  - Computer Engineering (COM)  
System Track, Data Analytics Track,  
AI & Machine Learning Track,  
High Performance Computing Track,  
Enterprise Software Track, Vision Track
- **Railway Vehicles and Infrastructure Engineering (RVIE)**  
**Minor:** Railway Vehicles Engineering (RVE)  
**Minor:** Railwat Infrastructure Engineering (RIE)

#### International Doctoral Programs:

- **Chemical and Process Engineering**
- **Mechanical and Automotive Engineering**
- **Materials and Production Engineering**
- **Electrical and Computer Engineering**

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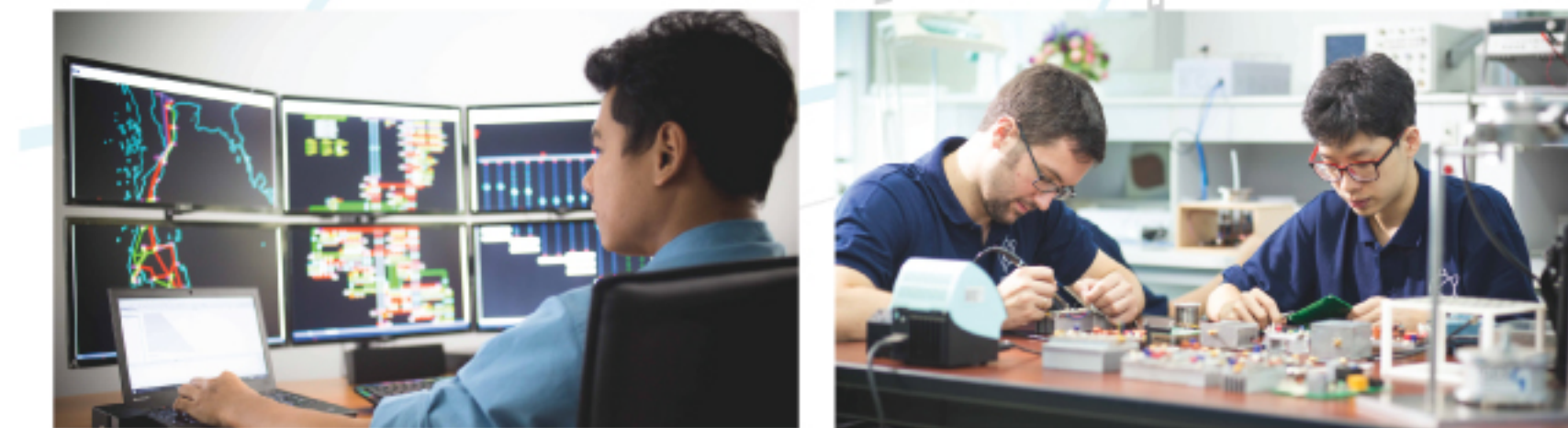
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# Electrical and Computer Engineering

## วิศวกรรมไฟฟ้าและคอมพิวเตอร์



- Language of Instruction: English
- Duration of Master Program: 2 years (Plan A1, A2, or B)
- Duration of Doctoral Program: 3 years (Plan 1.1)  
4 years (Plan 1.2)



# The Sirindhorn International Thai-German Graduate School of Engineering (TGGS)



The Sirindhorn International Thai-German Graduate School of Engineering (TGGS) is a public-private partnership established with strong support from the Thai and German government for engineering education, technology, innovation, and business development in Thailand and South-East Asia. Its industry-oriented engineering master and doctorate education concept combines teaching and research based on the successful model of RWTH Aachen University, Germany, one of Europe's leading technical university.

## Master Program Structure

### Plan A Type A1

Semester		Credits
1	Master Thesis (8 credits)	11 (30 ECTS)
	Coursework (3 credits) Core Course: Seminar in Electrical and Computer Engineering	
2	Master Thesis (8 credits)	11 (30 ECTS)
	Coursework (3 credits) Core Course: Industrial Research Methodology	
3	Master Thesis (12 credits)	12 (30 ECTS)
4	Master Thesis (12 credits)	12 (30 ECTS)
<b>Total</b>		<b>46</b> (120 ECTS)

### Plan A Type A2

Semester		Credits
1	Coursework 1 Core Course and 4 Elective Courses Core Course: Seminar in Electrical and Computer Engineering	15 (30 ECTS)
	Coursework 1 Core Course and 4 Elective Courses Core Course: Industrial Research Methodology	
3	Industrial Internship (at least 18 weeks)	4 (30 ECTS)
4	Master Thesis (12 credits)	12 (30 ECTS)
<b>Total</b>		<b>46</b> (120 ECTS)

### Plan B

Semester		Credits
1	Coursework 1 Core Course and 4 Elective Courses Core Course: Seminar in Electrical and Computer Engineering	15 (30 ECTS)
	Coursework 1 Core Course and 4 Elective Courses Core Course: Industrial Research Methodology	
3	Industrial Internship (at least 18 weeks)	4 (30 ECTS)
4	Coursework (2 elective courses, 6 credits)	12 (30 ECTS)
	Master Project (6 credits)	
<b>Total</b>		<b>46</b> (120 ECTS)

## Tuition Fees for Master Program

Thai Students	60,000 THB per semester
International Students	85,000 THB per semester

\*Only pay full tuition fees for 4 semesters. Student on fifth semester and onward only pay 10,000 THB to maintain student status.

## Scholarships

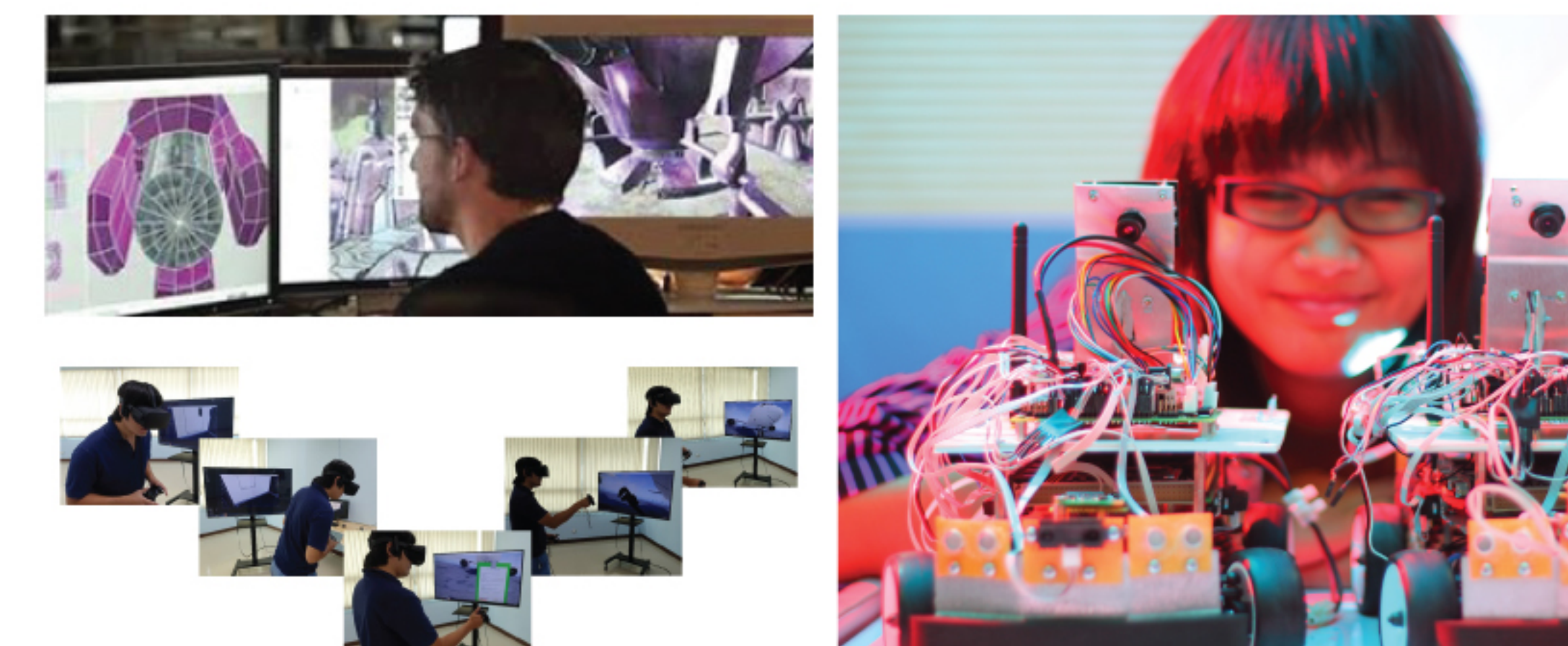
Scholarship and stipend are available for qualified students



## Entrance Requirements

**Master Program:** Bachelor Degree in Electrical Engineering, Computer Engineering, Communications Engineering awarded by an internationally recognized university with a minimum GPA of 3.0 (or 2.75 plus adequate experience), good reading, writing and communication skills in English. To obtain the TGGS M.Eng. Degree, TOEFL 525+ or equivalent has to be passed.

**Doctoral Program:** Master Degree (for study plan 1.1) or Bachelor Degree (for study plan 1.2) in engineering or science in relevant fields of Electrical and Computer Engineering. To obtain the TGGS D.Eng. Degree, TOEFL 500+ or equivalent has to be passed.



## Prospects

During their term of study at TGGS, outstanding students may have the opportunity to do their internships and these in Germany.

Graduates will be of great interest to a wide range of industries, as they are not only well versed in fundamental principles, but will also have learnt to apply these principles to real industrial problems. For those who want to continue their study abroad, it is very likely to be accepted by leading international universities, particularly those in Germany.

## Tuition Fees for Doctoral Program

Thai Students	100,000 THB per semester
International Students	100,000 THB per semester

\*Only pay full tuition fees for 6/8 semesters (plan 1.1/plan 1.2). Student only pay 20,000 THB per semester afterward to maintain student status.

## Program Description

Master of Engineering Program in Electrical and Computer Engineering at TGGS offers research and education opportunities in the fields of communication systems, power electronics, energy conversion, computer systems, and smart-grids systems:

**Communication and Smart System Engineering** focuses on in-depth theoretical and practical knowledge in modern communication technologies both from hardware oriented aspects (frontend technology, microwave and high speed digital circuits, embedded system for communication) and from protocol and software oriented side (e.g. signal processing, coding, network management and optimisation)

**Electrical Power and Energy Engineering** focuses on high voltage equipment and asset management of electrical assets, power grid analytics, synchrophasor applications and reliability aspects as well as electric vehicles, battery testing and renewable energy.

**Computer Engineering** focuses on artificial intelligence, computer architecture, machine vision, data analytics, database systems, distributed systems, enterprise software, high-performance computing, image processing, and machine learning.

**Smart Grids Engineering** focuses on operation and management of modern electricity grids, including advanced metering infrastructure (AMI), distributed resources and generation, data management and analysis, modern powergrid analytics, and other related technologies.

**Smart Microelectronics Engineering** focusses on advanced semiconductor technologies, sensors and sensing technologies, integrated circuit design, Internet of Things (IoT), data management, wireless communication protocols, embedded systems, energy-efficient design, hardware-software co-design, and data analytics with machine learning.

