RWTH AACHEN UNIVERSITY

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Electrical Power and Energy Engineering
http://epe.tggs.kmutnb.ac.th
Software Systems Engineering
http://sse.tggs.kmutnb.ac.th

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 Software Systems Engineering (ESSE)**
  - **Minor:** Communication and Smart System Engineering (CSE)
  - **Minor:** Electrical Power and Energy Engineering (EPE)
  - **Minor:** Software Systems Engineering (SSE)
  - **Minor:** Smart Grids Engineering (SGE)
- **Railway Vehicles and Infrastructure Engineering (RVIE)**
  - **Minor:** Railway Vehicles Engineering (RVE)
  - **Minor:** Railway Infrastructure Engineering (RIE)

International Doctoral Programs:

- **Chemical and Process Engineering**
- **Mechanical and Automotive Engineering**
- **Materials and Production Engineering**
- **Electrical and Software Systems Engineering**

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

King Mongkut's University of Technology North Bangkok (KMUTNB)

1518 Pracharat 1 Road, Wongsawang, Bangsue, Bangkok 10800, Thailand

บัณฑิตวิทยาลัยวิศวกรรมศาสตร์นานาชาติสิรินธร ไทย-เยอรมัน
มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ (มจพ.)
1518 ถ.ประชาราษฎร์ 1 วงศ์สว่าง บางซื่อ กรุงเทพมหานคร 10800

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The Sirindhorn International TGGS Thai-German Graduate School of Engineering

Industry-Oriented Graduate Education and Research in Thailand based on the RWTH Aachen Model

Electrical and Software Systems Engineering

วิศวกรรมไฟฟ้าและระบบซอฟต์แวร์

- Language of Instruction: English
- Duration of Master Program: 2 years

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.

Course Description

Master of Engineering Program in Electrical and Software Systems Engineering at TGGS offers the research and education opportunities in the field of communication systems, power electronics, energy conversion and software systems:

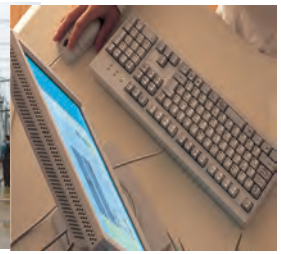
Communication and Smart System Engineering focuses on in-dept theoretical and practical knowledge in modern communication technologies both from hardware oriented aspects (frontend technology, microwave and high speed digital circuits, embedded system for communication) and from the protocal and software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

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

Software Systems Engineering focuses on the study of modern industrial software that is usually a part of complex systems with connections to application specific environments and special hardware.

Smart Grids Engineering fucuses on operation and management of modern electricity grids, including advanced metering infrastructure CAME; distributed resources and generation, data management and analysis, modern powergrid analytics, and other related technologies.





Curriculum

Year	Course	CSE	EPE	SSE	SGE
1	**1st Semester**				
	▪ Design Methodology	3	3	3	3
	▪ Microwave Components and Circuit Design	3			
	▪ Communication Protocols	3			
	▪ Broadband Wireless Communication Systems	3			
	▪ Testing and Condition Diagnostic of High Voltage Equipment		3		
	▪ Electric Drive System		3		
	▪ Electrical Power Generation Control and Protection		3		
	▪ Efficient Algorithms			3	
	▪ Advanced Software Engineering			3	
	▪ Hardware and System Software Architectures			3	
	▪ Modern Power Grid Operation and Control				3
	▪ Advanced Wireless Communications and Metering Infrastructure				3
	▪ Data Managements and Analysis				3
	▪ General Elective / Specific Elective / Other Elective / Other Specific Elective	3	3	3	3
	2nd Semester				
	▪ Industrial Research Methodology	3	3	3	3
	▪ General Elective / Specific Elective / Other Elective / Other Specific Elective	3	3	3	3
	▪ General Elective / Specific Elective / Other Elective / Other Specific Elective	3	3	3	3
	▪ General Elective / Specific Elective / Other Elective / Other Specific Elective	3	3	3	3
	▪ General Elective / Specific Elective / Other Elective / Other Specific Elective	3	3	3	3
2	**3rd Semester**				
	▪ Industrial Internship	4	4	4	4
	4th Semester				
	▪ Master Thesis	12	12	12	12
	Total Credits			**46**	

Tuition Fees

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

Scholarships

For qualified students who need financial aids, the TGGS coordinators and leadership will make a serious effort to organize scholarships from industries or government organizations.

Entrance Requirements

Bachelor Degree in Electrical Engineering, Computer Engineering, Communications Engineering or 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 within 2 years following registration.



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 Germay.