

## Course Detail

### Master of Engineering / Master of Science in Energy Technology and Management

<b>Course Title:</b>	Master of Engineering / Master of Science in Energy Technology and Management
<b>Master Degree:</b>	Master of Engineering / Master of Science
<b>Academic Institution:</b>	The Joint Graduate School of Energy and Environment (JGSEE), King Mongkut's University of Technology Thonburi (KMUTT)
<b>Duration:</b>	2 Academic Years (August 2024 – July 2026)

#### Background and Rationale:

Graduates from the Master of Science/Master of Engineering program in Energy Technology and Management will demonstrate professionalism through their technical and academic knowledge and capabilities in practical problem-based research, and their morals and ethics towards sustainability and self-sufficiency development pathway, and the society. The graduates will be capable to conduct collaborative research and/or technical works at the local, national, international especially at regional (e.g. GMS, ASEAN, etc.) levels on energy critical issues, including energy security, energy efficiency, energy policy, and energy and climate change and its mitigation options. Their abilities and skills include energy and environmental data and information analysis, diagnosis, and synthesis in order to develop, adapt and select appropriate technologies, methods and approaches, enabling the country to go towards green economy and sustainable development. Their professionalism should significantly benefit countries in the Asia-Pacific region as well as others in the world that are on the way of rapid growth development under the context of globalization. On an aspect of smart urban development, this program focuses on advanced digital technologies, energy storage, and intelligent net-zero energy buildings to enhance energy efficiency and renewable energy use. For the sustainable bioeconomy viewpoint, this program develops biomass and waste technologies for energy production and GHG emission reduction.

#### Objectives:

- To produce graduate scientists and engineers who have acquired advanced theoretical and practical knowledge and skill in the fields of energy and environment, professionally capable to analyze and synthesize data into key findings to be disseminated to stakeholders in native language and in English.
- To produce graduate scientists and engineers specialized in energy related issues, who possess capabilities to understand and develop approaches or solutions to energy problems and their implications on the environment.
- To promote capacity building by hands-on research and problems/challenges solving for both public and private sectors.

#### Course Synopsis and Methodology:

##### Study plan 40 Credits

	Credits
Compulsory	10
Specific Compulsory	6
Elective	3
Thesis	12
Internship	9
<b>Total</b>	<b>40</b>

## **Course content**

### **1. Compulsory Courses**

- Seminar
- Research Methodology
- Energy and Environmental Economics, Management and Policy
- Energy Entrepreneurship

### **2. Specific Compulsory Courses**

#### **Advanced Fuel Processing Laboratory (AFPL)**

- Fuels and Combustion
- Energy System Modeling
- Catalytic Processes and Reaction Engineering
- Renewable Energy Technologies
- Energy from Biomass

#### **Building Energy Science and Technology Laboratory (BEST)**

- Seminar
- Strategic Planning and Project Management
- Energy Management in Industry
- Climate Influence on Buildings and End-use Requirements 3 credits
- Building utility design and waste management
- Building Energy Performance Assessment
- Daylighting Applications
- Advanced Topics in Building Energy Technology
- Building Economics and Finance
- Design of Suitable Urban Ecology

#### **Energy and Environmental Policy Laboratory (EEPL)**

- Energy and Environmental Econometric Modeling and Analysis
- Foundation of Economics
- Financial Analysis and Project Appraisal
- Strategic Planning and Project Management
- Energy Outlook and Green House Gases Emissions in ASEAN

#### **Other**

- Special study I

### **3. Elective Courses** Elective As recommended by advisor

### **4. Thesis** Thesis for M.Eng/M.Sc Energy T&M

### **5. Internship**

Internship

#### **Graduation Conditions:**

**Earning credits:** The students are required to pass all the subjects (40 Credits) with minimum grade of each subject must be above C and the total average grade (GPA) must be above 3.00

**Publications or International Conference:** 1 National Journal or 1 International Conference

#### **Applicant Qualifications**

M.Sc program must hold a first degree in engineering, science, economics, technology, agriculture or related fields. M.Eng program must hold in engineering only, with a minimum GPA of 2.50, or be ranked top 25% of the class. Applicants with other qualifications may be admitted on a case by case basis subject to the approval of JGSEE's Executive Committee.

**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)
- Certificate of Bachelor's degree
- English test score (IELTS 6, TOEFL iBT 78, International program within 2 years)
- Recommendation Letter (At least 3 people)
- Thesis proposal or other documents (As university request)
- A copy of Passport (Bio page)
- Tentative proposal

**Contact:**

- Mr. Yuthasak Ngamsaeng  
Head of Academic Services Section  
Tel: 02-470-8338  
E-Mail: [yuthasak.nga@kmutt.ac.th](mailto:yuthasak.nga@kmutt.ac.th)
- Mr. Adisorn Jeungprasopsuk  
Academic Officer  
Tel: 02-470-8338  
E-Mail: [adisorn.jeu@kmutt.ac.th](mailto:adisorn.jeu@kmutt.ac.th)

**For more information:**

Human Resources Development Cooperation Division  
Thailand International Cooperation Agency (TICA)  
Government Complex, Building B (South Zone), 8th Floor,  
Chaengwattana Rd. Laksi District, Bangkok 10210 THAILAND  
Tel. +66 (2) 203 5000 ext. 43305, 43306 Fax: +66 (2) 143 8451  
E-mail: [tipp@mfa.go.th](mailto:tipp@mfa.go.th)

\*\*\*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.