

Course Detail
Master of Science/Master of Engineering Program in Energy Technology and Management

Course Title:	Energy Technology and Management
Master Degree:	Master of Science/Master of Engineering
Academic Institution:	The Joint Graduate School of Energy and Environment (JGSEE), King Mongkut's University of Technology Thonburi (KMUTT)
Duration:	2 Academic Years (August 2020 – July 2022)

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	7
Specific Compulsory	9

Elective	3
Thesis	21

Course content

1. Compulsory Courses	7 credits	
JEE xxx Seminar		1
credit		
JEE 613 Research Methodology		3
credits		
JEE 625 Energy and Environmental Economics, Management and Policy		3
credits		
2. Specific Compulsory Courses	9 credits (Select at least 3 courses based on student research focus)	
Advanced Fuel Processing Laboratory (AFPL)		
JEE 642 Fuels and Combustion		3
credits		
JEE 643 Energy System Modeling		3
credits		
JEE 657 Catalytic Processes and Reaction Engineering		3
credits		
JEE 658 Renewable Energy Technologies		3
credits		
JEE 659 Energy from Biomass		3
credits		
Building Energy Science and Technology Laboratory (BEST)		
JEE xxx Seminar		3
credits		
JEE 631 Strategic Planning and Project Management		3
credits		
JEE 633 Energy Management in Industry		3
credits		
JEE 634 Climate Influence on Buildings and End-use Requirements		3
credits		
JEE 635 Building utility design and waste management		3
credits		
JEE 636 Building Energy Performance Assessment		3
credits		
JEE 637 Daylighting Applications		3
credits		
JEE 638 Advanced Topics in Building Energy Technology		3
credits		
JEE 639 Building Economics and Finance		3
credits		
JEE 647 Design of Suitable Urban Ecology		3
credits		

Energy and Environmental Policy Laboratory (EEPL)

credits	JEE 626 Energy and Environmental Econometric Modeling and Analysis	3
credits	JEE 627 Foundation of Economics	3
credits	JEE 628 Financial Analysis and Project Appraisal	3
credits	JEE 631 Strategic Planning and Project Management	3
credits	JEE 697 Energy Outlook and Green House Gases Emissions in ASEAN	3
	Other	
	JEE 603 Special study I	3 credits
3. Elective Courses	3 credits	
credits	Elective As recommended by advisor	3
4. Thesis	21 Credits	
credits	JEE 630 Thesis for M.Eng/M.Sc Energy T&M	21

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 and research results:** 1 national journal paper

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

- A copy of passport (Bio page)
- 1 Inch size photo
- Full transcript with date of graduation
- 3 letters of recommendation
- Tentative proposal
- English proficiency test result (IELTS 6, TOEFL iBT 78, International program within 2 years)

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.