

Course Detail

Master of Engineering / Master of Science Environmental Technology and Management

Course Title: Master of Engineering / Master of Science
Environmental Technology and Management

Master Degree: Master of Environmental / Master of Science

Academic Institution: The Joint Graduate School of Energy and
Environment (JGSEE), King Mongkut's
University of Technology Thonburi (KMUTT)

Duration: 2 Years (August 2024 – July 2026)

Background and Rationale:

Graduates from the Master of Science/Master of Engineering program in Environmental 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. They will be able to conduct collaborative research and/or technical works at the local, national, and regional (e.g. GMS, ASEAN, etc.) levels on energy related environmental issues, including air quality, acid deposition and regional haze pollution, and global warming and climate change. 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 a 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.

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 environmental scientists and engineers who possess capabilities to judge what impacts on the environment are related to energy production and use.
- To promote capacity building by hands-on research and energy related environmental issues and challenges solving for both public and private sectors.

Course Synopsis and Methodology:

1. Study plan 40 Credits

	Plan A2-1	Plan A2-2
Compulsory	7	7
Specific Compulsory	9	9
Elective	3	3
Thesis	21	12
Internship	-	9
Total	40	40

2. Course content

- Compulsory Courses

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

- Specific Compulsory Courses

- Environmental Pollution Control Technology
- Specific Compulsory (As recommended by advisor)*
- Energy and Environment

- Advanced Fuel Processing Laboratory (AFPL)

- Renewable Energy Technologies
- Energy from Biomass

- Building Energy Science and Technology Laboratory (BEST)

- Design of Suitable Urban Ecology

- Tropical Climate Science Modeling Laboratory (TCSM)

- Tropical Climates and Boundary Layer Science
- Atmospheric and Air Quality Modeling

- Advanced Greenhouse Gases and Aerosols Research Laboratory (AGAR)

- Waste and Climate Change
- Climate Change: Physical Science Basis
- Waste to Energy and Its Sustainable Mitigation
- Greenhouse Gas Measurement, Mitigation and Monitoring Technology

- Life Cycle Sustainability Assessment Laboratory (LCSAL)

- Life Cycle Assessment
- Environmental and Health Risk Assessment
- Environmental Chemistry and Toxicology
- GIS and Remote Sensing

- Other

- Special Study II
- Special Study III

3. Elective Courses

- Special Study II
- Mathematical Techniques
- Design of Suitable Urban Ecology
- Solar Energy
- Renewable Energy Technologies
- Tropical Climates and Boundary Layer Science
- Life Cycle Assessment
- Waste to Energy and Its Sustainable Mitigation
- Environmental and Health Risk Assessment
- Climate Change: Physical Science Basis
- Greenhouse Gas Measurement, Mitigation and Monitoring Technology
- Selected Topics II
- Special Study III
- Clean Technologies for Solid Fuels
- Energy Entrepreneurship
- Energy Efficiency
- Energy from Biomass
- Atmospheric and Air Quality Modeling
- Waste and Climate Change
- Environmental Chemistry and Toxicology
- GIS and Remote Sensing
- Climate Change Policy
- Selected Topics I

4. Thesis

- Plan A 2-1
Thesis
- Plan A 2-2
Thesis

5. Internship

- Plan A 2-2
Internship

6. English Courses (Without Credit)

- Foundation English for International Programs
- Thesis Writing

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

- 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

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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.