

MS in Energy Studies – – Mechanical Engineering Department - Faculty of Engineering and Architecture

MS in Energy Studies

The Master of Energy Studies program is planned to consolidate and build on AUB's excellent research and professional profile addressing current and future energy research needs of the region in areas such as energy science and technology, economics, public policy, and energy management.

The program's educational goals are:

1. To promote an interdisciplinary approach to understand and evaluate various modes of energy supply and end-use efficiency of energy systems within the context of sustainability and development in the region.
2. To develop effective collaboration skills among students from different disciplines including energy science and technology, economics, and public policy.

On successful completion of this interdisciplinary course of study, students will:

- 1) Be able to evaluate different sources of energy related to energy extraction, conversion, and utilization for both traditional systems and sustainable/renewable energy alternatives.
- 2) Apply methods of economic analysis, risk and decision analysis, environmental impact assessment, and policy techniques for performing energy planning and reaching and decision making while addressing sustainability in supply and demand.
- 3) Understand advances in selected energy technologies, products and energy end-use efficiency and their impact on market economy, and development activities.

Admission requirements to the program will follow AUB Graduate Studies Policies. Bachelor degree holders from relevant fields study are eligible to apply for admission into the Energy Studies Master's program. Remedial courses may be needed for students as would be recommended by the Program.

Native English speakers and graduates of universities in which the language of instruction is English may be exempt from TOEFL. Students should have a GPA of at least 80 or 3.0 and good recommendations to be considered for regular admission into the Energy Studies Master's program. Students with GPA above 75 and below 80 are considered for admission on probation.

Degree Requirements:

MS-ENST Thesis Program Requirements

The program permits full-time or part-time enrollments. To obtain a Master's degree in energy studies (thesis program), the student must complete a minimum of 24 credits of graduate course work, 6 credits of interdisciplinary thesis work on energy-related field, and a zero-credit seminar. The course work is distributed as follows:

- 9 credits of required core courses.
- 3 to 6 credits of elective course from List A on energy resources, economics and policy.
- 6 to 9 credits elective course from List B on energy science and technology.
- 3 credits elective course as approved by thesis advisor/s if the elective is not from List A or B.
- 0 credit seminar.

MS-ENST Non-thesis Program Requirements

The program permits full-time or part-time enrollments. To obtain a Master of Science degree in Energy Studies (non-thesis program), the student must complete a minimum of 30 credits of graduate course work and a zero-credit seminar. The course work is distributed as follows:

- 9 credits of required core courses

- 6 or 9 credits of elective course from List A on energy resources, economics and policy
- 9 or 12 credits elective course from List B on energy science and technology
- 3 credits elective course as approved by thesis advisor/s if the elective is not from List A or B
- 0 credit seminar

Core Courses (3 credits each):

ECON 333	ENERGY ECONOMICS AND POLICY
PSPA 352	FUNDAMENTALS OF PUBLIC POLICY
ENST 300	THE SCIENCE AND TECHNOLOGY OF ENERGY

List A (3 credits each):

ENST 310	ADVANCED ENERGY ECONOMICS
ENST 320	ENERGY LAW AND CASE STUDIES
ECON 337	ECONOMIC DEVELOPMENT
ECON 338	ECONOMICS OF NATURAL RESOURCES & DEVELOPMENT
ECON 305	ECONOMETRICS 1
ECON 347	ECONOMIC FORECASTING
ENMG 603	PROBABILITY AND DECISION ANALYSIS
ENMG 604	DETERMINISTIC OPTIMIZATION MODELS
ENMG 656	MANAGEMENT OF TECHNOLOGICAL INNOVATIONS
MFIN 360	ENERGY FINANCE
PSPA 316	INTERNATIONAL ENVIRONMENTAL POLICY
PSPA 362	POLICY RESEARCH AND ANALYSIS
PSPA 381	SPECIAL TOPICS IN ENERGY AND PUBLIC POLICY
ENST 398	SPECIAL PROJECTS IN ENERGY STUDIES
ENST 396	TOPICS IN ENERGY ISSUES: THE CASE OF LEBANON

List B (3 credits each):

CHEM 324 E	ELECTROCHEMISTRY
CHEM 352-C	RENEWABLE ENERGY
CIVE 656	AIR POLLUTION CONTROL 1
CIVE 659	ENVIRONMENTAL IMPACT ASSESSMENT
ENST 330	ENERGY SCIENCE AND TECHNOLOGY LAB (FEA/FAS)
EECE 670	POWER SYSTEM PLANNING
EECE 671	ENVIRONMENTAL ASPECTS OF ENERGY SYSTEMS
EECE 672	ENERGY PLANNING AND POLICY
EECE 675	RENEWABLE ENERGY SYSTEMS
ENST 396A	SPECIAL TOPICS IN ENERGY STUDIES: THE FUTURE OF NUCLEAR POWER
ENST 398	SPECIAL PROJECTS IN ENERGY STUDIES
GEOL 300	ELEMENTS OF PETROLEUM GEOLOGY
MECH 671	RENEWABLE ENERGY POTENTIAL, TECH, & UTILIZATION IN BUILDINGS
MECH 673	EFFICIENT BUILDINGS WITH GOOD INDOOR AIR QUALITY
PHYS 340	ATMOSPHERIC PHYSICS AND ENERGY