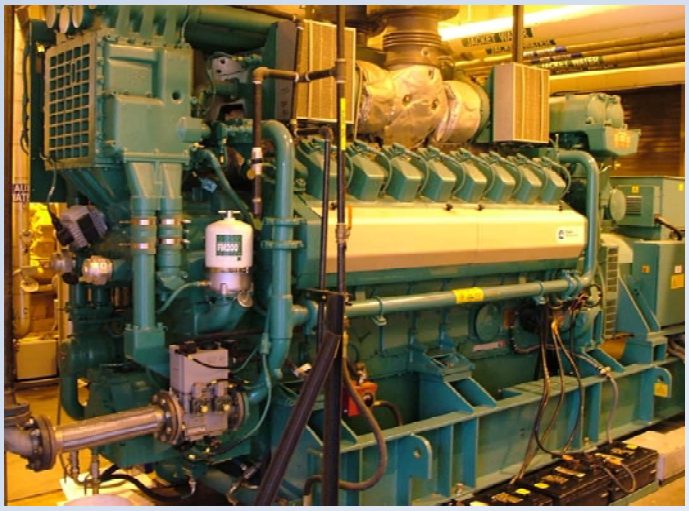
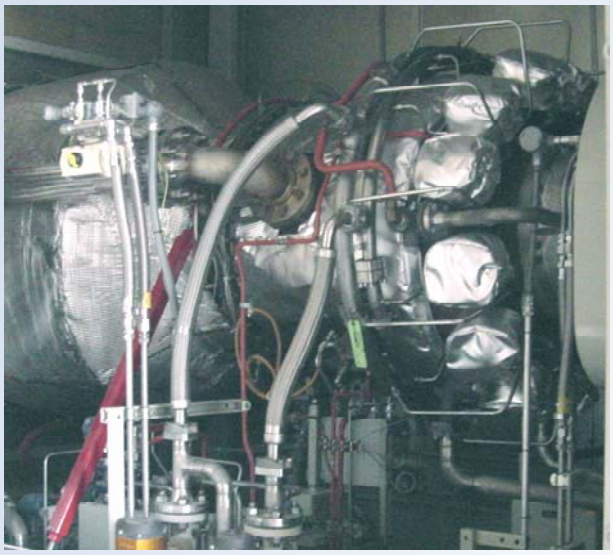
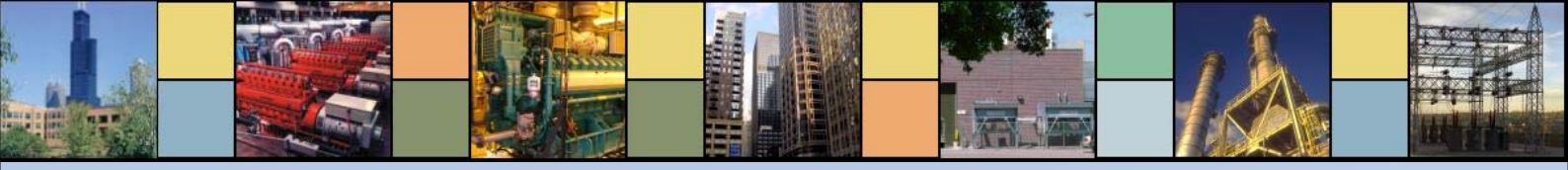
Master of Energy Engineering Program

UIC University of Illinois at Chicago







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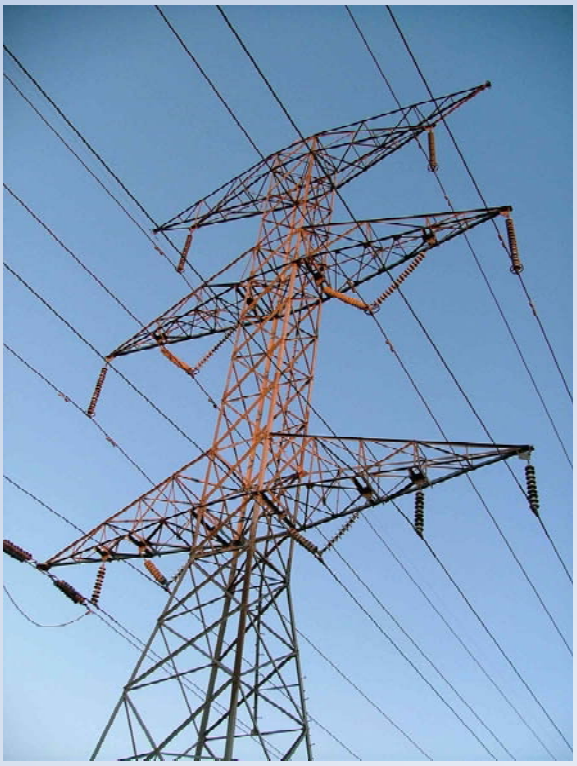
Why Energy Engineering?

Skyrocketing gasoline, natural gas, and oil prices, nationwide blackouts, global warming, uncertainty in oil producing nations, and global competitiveness have brought energy to the forefront of national concern. Opportunities for Engineers with a broad understanding of energy technology have never been better.

Who Should Enroll in This Program?

This program is designed for Engineers in:

- Architectural/Engineering Firms
- Energy Utilities and Marketing Firms
- Engine, Power, HVAC, and Refrigeration Equipment Manufacturers
- Anyone Looking for an Exciting Career Direction



Why This Program?

This program, like numerous specialized programs at UIC is targeted to providing graduate education to working students by specifically meeting their needs in a non-traditional educational structure.

Structure

Courses focused on practical knowledge that can be immediately applied on-the-job.

- Well defined step-by-step program – minimizing repetition
- No thesis requirement
- 8 course Masters Program
- Located within walking distance of downtown Chicago
- Evening classes to best meet the needs of working students.
- A 2-year schedule (with a 3 or 4 Year Option)
- Students progress together to promote contacts, friendship, and teamwork.
- Assurance of course and time availability of all courses before starting the program

For More Information

- wryan@uic.edu or netorres@uic.edu
- Or: http://www.mie.uic.edu/programs/mee.htm

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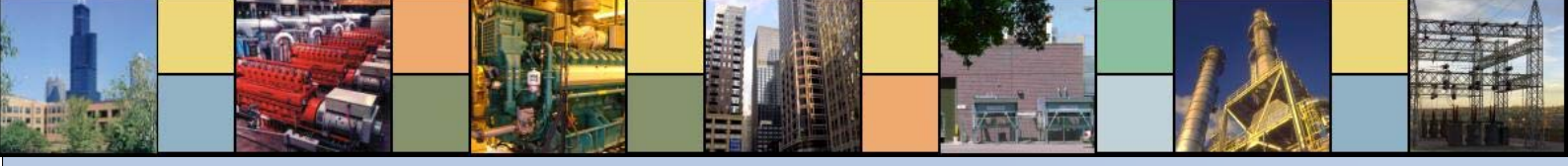
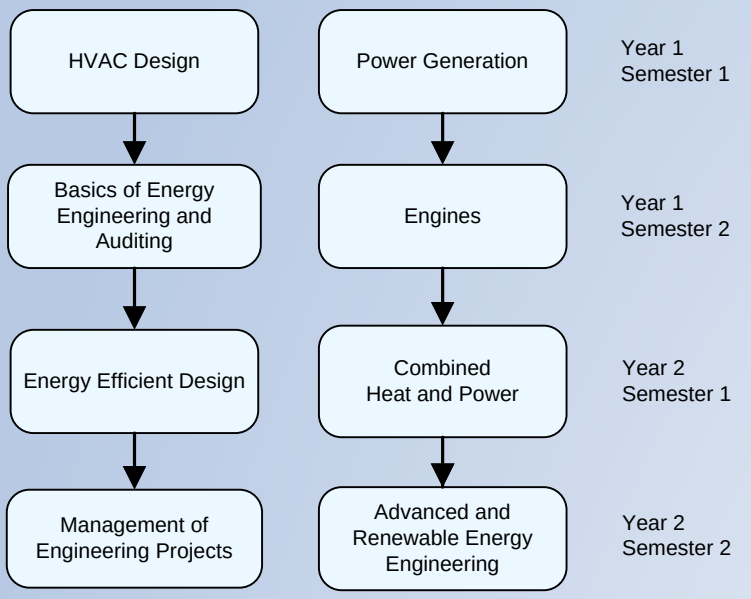


Courses

Courses feature a practical real world focus with instructors and guest speakers from the industry

- *HVAC Design*
- *Power Generation*
- *Basics of Energy Engineering and Auditing*
- *Engines*
- *Combined Heat and Power*
- *Energy Efficient Design*
- *Advanced and Renewable Energy Engineering*
- *Management of Engineering Projects*

For students without Mechanical Engineering backgrounds, a course in thermodynamics and heat transfer is required



2 Year Degree Schedule Shown

Schedule

All courses will be offered on weekday nights from our on-campus location in downtown Chicago at Taylor and Halsted

Instructors

The instructors combine an organized curriculum content with decades of experience in the field and an understanding of what the student needs to excel in the industry

To Apply Online

http://www.uic.edu/depts/oar/grad/apply_grad.html

Engineering at UIC

The Department of Mechanical & Industrial Engineering at the University of Illinois at Chicago is committed to excellence in research, teaching, and service to the community. More than 30 professors of national and international stature are actively engaged in research areas at the leading edge of technology with degrees from prestigious universities. The Department offers programs leading to B.S., M.S., and Ph.D. degrees in Mechanical Engineering, and related disciplines. UIC is one of 88 Research-I Universities in the US and is widely recognized for international education and research. The Department is housed in a new $32 million facility which combines state-of-the-art research laboratories, advanced computer labs and lecture rooms

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Courses Descriptions

HVAC Design

Refrigeration systems and heat-pump, mass transfer in humidification, solar heat transfer in buildings, heating and cooling loads, psychrometrics, air handling systems, mechanical vapor compression and absorption refrigeration, dehumidification and desiccant systems, and a design project. This course will cover the basics needed to understand heating and cooling systems.

Power Generation

The course will cover: Rankine and Brayton cycles and their application in the production of electricity, solid and other fuel boilers, steam systems, steam turbines, generators, electric distribution systems, and other issues in steam power plants, and combined cycle power plants.

Basics of Energy Engineering and Auditing

The course covers energy analysis and auditing, and builds upon the critical background established in the HVAC course. The course will cover an overview of the energy industry, billing, economic analysis, deregulated markets and energy purchasing, the energy auditing process and an introduction to a wide range of energy technologies including lighting, boilers, steam systems, motors, and high efficiency HVAC systems.

Engines

Introduction to engine types, characteristics, and performance. Combustion processes in spark and compression ignition engines; combustion abnormalities.

Combined Heat and Power

The course covers combined heat and power systems construction, operation, and economics and includes a student design project. Builds on previous courses in power plants, engines and HVAC and covers gas turbines, fuel cells, heat recovery, absorption chillers, desiccant dehumidifiers, electrical interconnection, and control equipment, with a stress on economic analysis, analysis software, utility rates, and regulation.

Advanced and Renewable Energy Engineering

The course will cover developing and emerging technologies in energy production and delivery including fuel cells, distributed energy, micro-grids, hydrogen energy systems, and other aspects of the energy industries future. The course will also cover renewable energy systems in detail with the emphasis on wind, hydroelectric, and photovoltaic, biomass fuels, in a flexible colloquium format to adapt to changes in industry.

Energy Efficient Design

The course focuses on Commercial buildings and covers high efficiency buildings, LEEDS certification, sustainable development, & renewable energy, indoor air quality, codes and building codes, energy auditing issues for commercial building, high efficiency lighting and day lighting, energy efficient urban planning and building automated control systems.

Management of Engineering Projects

The course will cover the advanced economics and project management techniques for large construction projects. Theory, strategy, and tactics of project management as applied to energy efficiency upgrades, the construction of new energy efficient buildings, and energy projects such as power or CHP plants.

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