CHP systems construction, operation, economics, and includes a student
design project. Also, builds on previous courses in power plants, engines,
HVAC, a stress on economic and software analysis, utility rates, and
regulations. Course Information: Credit is not given in ENER 420 if the
student has credit in ME 420. Prerequisite(s): Open only to Master of
Energy Engineering students.

ENER 422. Building Heating, Ventilating, and Air-Conditioning. 4
hours.
Establishes the basic knowledge needed to understand heating and
cooling systems, mass transfer in humidification, solar heat transfer
in buildings, and psychrometrics. A computer design project will be
completed. Course Information: Credit is not given for ENER 422 if the
student has credit in ME 422. Prerequisite(s): Open only to Master of
Energy Engineering students.

ENER 424. Industrial Energy Management and Conservation. 4
hours.
Beginning course in energy analysis and auditing, and builds upon the
critical background established in the HVAC course. An overview of the
energy industry, billing, economic analysis, deregulated markets and
energy purchasing. Course Information: Credit is not given for ENER 424
if the student has credit in ME 424. Prerequisite(s): Open only to Master of
Energy Engineering students.

ENER 429. Internal Combustion Engines. 4 hours.
Introduction to engine types, characteristics and performance.
Combustion processes in spark and compression ignition engines;
combustion abnormalities. Course Information: Credit is not given for
ENER 429 if the student has credit in ME 429. Prerequisite(s): Open only to Master of
Energy Engineering students.

ENER 450. Air Pollution Engineering. 4 hours.
Establishes the basic knowledge needed to understand and design air
pollution reduction equipment, particularly from large industrial and power
generation plants. Course Information: Credit is not given for ENER
450 if the student has credit in ME 450. Prerequisite(s): Consent of the
instructor. Recommended background: ENER 451 Power Generation.

ENER 451. Electric Power Generation. 4 hours.
Thermodynamics and practical aspects of central fossil fuel fired electric
generating plants. Focus on large steam cycle generating plants, with
discussion of geothermal and hydroelectric plants. Course Information:
Prerequisite(s): Open only to Master of Energy Engineering students.

ENER 494. Special Topics in Energy Engineering. 4 hours.
Particular topics vary from term to term depending on the interests of the
students and the specialties of the instructor.

ENER 501. Engineering Project Coordination and Management. 4
hours.
Theory, strategy, and tactics of the use of project management including
project planning, matrix management concept, and team meetings.
Course Information: Prerequisite(s): Open only to Master of Energy
Engineering students.

ENER 552. Design of Energy Efficient Buildings. 4 hours.
Emerging technologies in designing energy efficient buildings, including
new code issues. Course Information: Prerequisite(s): Open only to
Master of Energy Engineering students.

4 hours.
A view of the energy industries future from the perspective of emerging
and alternative technologies. Examples include fuel cells, distributed
energy, micro-grids, hydrogen energy systems, and renewables. Course
Information: Prerequisite(s): Open only to Master of Energy Engineering
students.

ENER 554. Nuclear Power Generation. 4 hours.
Theoretical and practical aspects of nuclear power generation,
operations, reactor design, power train design, licensing, regulation,
health, safety, maintenance on new and existing plants. Course
Information: Prerequisite(s): ENER 451 and ME 205; or consent of the
instructor.

ENER 555. Energy Markets and Contracting. 4 hours.
Focuses on how energy markets work, how energy prices are
determined, how financial markets operate through options and futures
markets, and how consumers can use new technologies with appropriate
contracting terms to minimize energy costs. Course Information:
Prerequisite(s): Graduate standing; or consent of the instructor.

ENER 594. Current Topics in Energy Engineering. 4 hours.
Particular topics vary from term to term depending on the interests of the
students and the specialties of the instructor.