

METU
Department of Mechanical Engineering
ME 405 Energy Conversion Systems
Spring 2014

Instructor: Feyza Kazanc, E-107, Tel: 0312 210 5215
fkazanc@metu.edu.tr

Assistant: Mehmet Hilmi Eralp, C-204, Tel: 0312 210 5273
ehilmi@metu.edu.tr

Office Hrs: Please schedule an appointment with me via e-mail/telephone ahead of time.

Prerequisite: Thermodynamics II (ME204).

Textbook: There will be no one designated textbook for this course. We will use several books related to the energy conversion systems. Lecture notes and materials distributed in class will be the main resources to learn the subject.

Energy conversion / edited by D. Yogi Goswami, Frank Kreith.
Energy conversion systems / Harry A. Sorensen. Sorensen
Engineering Thermodynamics, 6th Ed., Moran & Shapiro, Wiley, 2008

Schedule: Tuesday: 9:40-10:30, G-201 and Thursday: 13:40-15:30, G-201

Academic Honesty Policy: Please read and understand the Ethics code posted at MetuClass.

Incidents of acts of dishonesty (cheating, copying, deceiving) on examinations or homework will result in a zero grade for that examination or homework assignment. Dishonesty will result in a grade "F" and a report to the Department's Ethics Committee.

Grading: : Failure to take any exam or to complete the design project can automatically result in a grade "F" for this course regardless of your course average.

Design Project	: 40%
Two Midterm Projects	: 30% each

Course Outline:

Introduction: A general overview of the energy concepts and energy conversion systems

Energy Resources: Fossil Fuels, biomass, nuclear resources, solar energy resources, wind energy resources, geothermal energy resources

Energy Conversion Cycles: A review of the cycles of the vapor power systems, gas power systems and internal combustion engines

Energy Conversion: Combustion, power plants, gas turbines, internal combustion engines, advanced fossil fuel power systems

There will be invited seminars and site visits during the course related to the above topics.