

**ETE 1020**  
**Energy, Power, and Transportation Technology**  
**Tuesday & Thursday 9:00 – 11:45**  
**Spring 2009**  
**Room IS 117**

Instructor: Geran Call

Office: Down Stairs

Hours: MW 10:00 - 12:00am and Thursday 12:00 – 1:00pm and by appointment

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**Course Description:**

This course explores the concepts and processes relating to the control and automation (both hardwire and programmable) of technical systems in the areas of energy and power, transportation, and agricultural and related biotechnologies.

**Course Objective:**

1. Identify and explain the sources of various exhaustible, renewable and inexhaustible energies.
2. Explain the different forms of energy.
3. Define potential and kinetic energy.
4. Measure the power and energy in various systems.
5. Describe the various relationships between energy/power and the environment.
6. Explain, measure, and control the transmission of power in mechanical, fluid, electrical systems.
7. Utilize automated control systems.
8. Program various control systems using both digital and analog feedback.
9. Explain the principles and characteristics of highway, rail, air, water, and pipeline transportation systems.
10. Explain the principles and characteristics of external and internal combustion engines.
11. Disassemble and assemble a small engine.
12. Explain the principles and characteristics of solar energy and nuclear power systems.

**Text:**

Energy, Power, and Transportation Technology, by Litowitz, Len S. and Brown, Ryan A.  
ISBN 1-59070-221-2

Workbook

Energy, Power, and Transportation Technology, by Litowitz, Len S. and Brown, Ryan A.  
ISBN-10 1-59070-222-0

**Lab Fee**

ETE 1020 has a \$10 lab fee paid when registering for the course. This fee is used to offset the cost of consumables including: materials, tooling and damaged components.

**Quizzes/Participation:**

There will be a total of 10 randomly given quizzes. The two lowest scores will be dropped. Quizzes can't be made up.

**Labs:**

There will be lab assignments with this class. Some of them will be Gear tortes, small gas engines, bio diesel, national instruments, and Lego Mindstorm.

**Tests:**

There will be a total of 3 tests given throughout the semester. Make ups exams will only be offered with verifiable excuses, e.g. Doctors notes, funeral program, or birth certificates. If you know ahead of time of a scheduling problem please let me know. I will be a lot easier on you then coming to me after the fact; however, I will be held after the regular exam and will be a different version then than the original.

**Makeup Policy:**

If you feel you have an extreme circumstance that kept you from completing assignments within the given time, I will discuss documented extenuating circumstances with you individually. Any acceptance of late work will be given partial credit.

**Grading:**

Quizzes/Participation	10%
Labs	40%
Tests	50%

A	93 - 100%
A-	90 - 92.9%
B+	87 - 89.9%
B	84 - 86.9%
B-	80 - 83.9%
C+	77 - 79.9%
C	74 - 76.9%
C-	70 - 73.9%
D+	67 - 69.9 %
D	64 - 66.9%
D-	60 - 63.9%
F	59.9 or less

I reserve the right to skew the curve (up or down) based on your overall scores

**If you require accommodations through the Disability Center, please contact me so we can make arrangements.**