EE4823 Electric and Hybrid Vehicles 3.0

Fall 2010

Objective: To develop in students ability to analyze and design electric and hybrid vehicle drives. ABET: a, c, h, k.

Text: M. Ehsani, Y. Gao, and A. Emadi, *Modern Electric, Hybrid Electric, and Fuel Cell Vehicles: Fundamentals, Theory, and Design,* 2nd ed., 2010, CRC Press

Outline: Electric and hybrid vehicles mechanical fundamentals. DC, induction, and permanent magnet ac motors and drives. Hybrid drivetrains. Regenerative breaking. Automotive power electronics. Fuel cells for electric vehicles. Electric energy storage.

Lecture and recitation: Monday 3:00-5:00 in RH202 and Wednesday 1:00-3:00 in JAB673

Instructor: Dariusz Czarkowski

Contact: LC 226, x3256, dcz@pl

Office hours: Tuesday 11:00-12:00, by appointment, or whenever you can find the office door open.

Recitation instructor: Richard Macwan

Office hours: TBA or by appointment.

Course web page: see MyPoly for course info, announcements, and assignments.

Exams: Two 1-hour midterms (Oct. 13th and Nov. 10th), comprehensive final. Exams are closed-book and closed-notes. You are allowed to bring 2 sheets of paper (3 for the final) with formulas.

Homework and project: Set of problems will be assigned as a homework. Solutions will be distributed after the due date. No homework will be accepted after solutions are distributed. Homework submission is a part of the final grade. A design and simulation project will be assigned around mid semester. The project report is due at th eend of classes.

Grading:

homework 10%
project 20%
midterms 15% each
final 40%