16 May 2005

Mr. Phillip Leung
Electrical Engineer
ECE 427  Power Electronics and Drives

Dear Mr. Leung:

Welcome to ECE427, Power Electronics and Drives. This is an introductory course on the devices and circuits that condition energy by electrical means.

Your instructor is Dr. Herb Hess, Associate Professor of Electrical Engineering. The text for this course is Electric Motor Drives by Ramu Krishnan. There is an internal laboratory requirement.

In this course, we expect to achieve the following four goals:

a. Gain a propensity to use first principles to solve problems. We take a physical approach and use our circuit theory and electromechanical energy conversion fundamentals extensively. A solid foundation in these will serve us well here.

b. Improve our communications and problem solving skills. This means a great deal of oral presentation practice in the classroom and a written lab report.

c. Understand methods and devices that condition electrical energy for our use. Introduce the analysis and design of power electronic circuits and induction motors.

d. Gain the ability to develop and apply mathematical models to predict behavior of electromechanical energy conversion from first principles.

We use both classroom and companion laboratory sessions to enhance our understanding of the devices and the relationship between the abstract model and the physical system.

You may have heard that students are expected to give a short oral presentations on your technical work, mostly short homework-type problems. That is correct. Engineers make short technical presentations to peers, immediate supervisors, and customers for a living, often with little advance notice. Successful engineers are quite good at this. The best way to excel at this is to do it often, extinguishing the shortcomings as they appear. Here, we give you such opportunities and we promise not to fire you, even if you botch it badly.

Again, welcome to ECE427. I look forward to learning from you while helping you become a better engineer and build confidence for the rest of your schooling.

Herbert L. Hess
Associate Professor