I. BASIC INFORMATION

Course Title: ECE 533 H1F - Power Electronics

Course Description:
The course covers the design and analysis of switched-mode power supplies (SMPS) used in virtually all electronic devices, including miniature mobile applications, computers, medical devices, consumer electronics, motor drives, electric vehicles, and power systems. Topics to be covered include: SMPS topologies, analysis of the steady-state operation, components, modeling and control of switched-mode power supplies, practical control loop implementation.

Prerequisites: ECE314/ECE359 or equivalent (exemptions may be granted based on individual requests)

Lectures: Tuesdays (15:00 to 16:00 PM), BA1220
         Wednesdays (18:00 to 19:00), GB120
         Thursdays (12:00 to 1:00 PM), BA1210

Tutorials: TUT 01: Tuesdays (09:00 to 11:00 AM), BA2195 (Alternates starting Sep. 21)
           TUT 02: Wednesdays (16:00 to 18:00), BA2155 (Alternates, Starting Sep.22)

II. COURSE STAFF

Instructor: Prof. Olivier Trescases
Office: SF1020A
Email: olivier.trescases@utoronto.ca

Office hours: Thursdays (1:30 PM to 2:30 PM) or by appointment
(at least 24 hours in advance)

Teaching Assistant: Yue (Victor) Wen
Office: SF1016
Office Hours: (11:00 AM to 12:00 PM on tuesdays)
E-mail: wenyue@ele.utoronto.ca
III. TEXT BOOK AND COURSE MATERIAL

- Lecture Notes
- Online references (datasheets, application notes, etc.)

IV. HOMEWORK ASSIGNMENTS

- Homework assignments will be regularly assigned. You are allowed to consult with the course staff, however you must work independently and show your own work to receive full marks.

V. TEST

There will be one 90-minute test held during the tutorial. The schedule for the test will be posted on the course web site.

VI. CAD Simulations

The software package PLECS will be used to simulate power converters in this course. This is an add-on package to Matlab Simulink. Please refer to the PLECS web-site for more information:

http://www.plexim.com/downloads/

VII. PROJECT

The project will involve the design, simulation and analysis of a practical switched-mode power supply.

VIII. MARK COMPOSITION

- Homework 10 %
- Test 25 %
- Project 15 %
- Final Exam 50 %