

New Options in Electrical Engineering starting Winter 2009

Introduction and Rationale

Electrical and Computer Engineering (ELCE) is a profession that is constantly changing to meet the societal needs. The ELCE discipline has created significant impact on the human life in the past 50 years or so, and some of the key impacts of the field in our day to day living include: electrification, telephony, television, computers, internet, imaging, media devices, home appliances, and medical technologies. The ELCE discipline is rapidly evolving and is poised in making even more significant contributions in the areas that include biomedical technologies, micro and nanotechnologies, intelligent systems, laser and photonics, to name a few. To educate, train, and prepare next generation engineers to address the technical issues and challenges raised by the emerging technologies the undergraduate curriculum offered by Universities and Colleges has to be adaptable, dynamic, relevant, and efficient.

With this emerging trend in mind, and considering the faculty expertise and the laboratory facilities in place, the Department of Electrical and Computer Engineering at Ryerson University proposes to offer modern, relevant, and efficient curriculum with four new program options in the B.Eng. Electrical Engineering program, and they are:

- B.Eng. in Electrical Engineering with Energy Systems Option
- B.Eng. in Electrical Engineering with Microsystems Option
- B.Eng. in Electrical Engineering with Multimedia Systems Option
- B.Eng. in Electrical Engineering with Robotics and Control Systems Option

These program options will be in addition to the regular B.Eng. in Electrical Engineering accredited by the Canadian Engineering Accreditation Board (CEAB). The options will be effective for students entering their sixth semester from Winter 2009 onwards.

Implementation Details of the Options

Semesters 1 to 5: It should be noted that the first five semesters for the proposed options are identical, and is same as the regular electrical engineering program. It is only in the sixth semester a student will decide on an option if he or she wishes to pursue one.

Semester 6: The implementation of the option right from the sixth semester is possible because it has been realized in the current sixth semester the course “COE 618 Object Oriented Engineering Design and Analysis” need not be a compulsory course for B.Eng (ELEC) students, and the general consensus has been to reposition that course as an elective in the eighth semester. The repositioning of COE 618 has created a space for a course that could be seen as a core course for an option. In the sixth semester the students decide on two of the three courses for an option. This flexibility also ensures that even at

the end of sixth semester if a student is planning to switch an option he or she can do without taking any additional course or spending an additional semester.

Another notable thing with the restructuring of the sixth semester is that the students are exposed to some key subject areas, which they were typically exposed to at the seventh semester. The exposure to these materials will help the students to be better prepared to participate in the optional industrial internship program offered by the Department, in which the student will spend 12 to 16 months in industry designing and working with electrical, electronics, telecommunications, and computer products. The restructuring of the courses in the sixth semester also makes the students well positioned for the many summer research work employment available for them.

Semesters 7 and 8: To facilitate the options the elective courses that have been offered by the Department are streamlined so that the students are well informed of what they can take to specialize in an option.

The options will also lead to a better informed selection of the Capstone design project by the students in their 4th year of study.