

	Date	Initials
Prepared by Instructor	Sept 8, 2016	DO
Approved by Head	Sept. 12, 2016	S.Y.

## 1. Calendar Information

### **ENEL 400 Electrical Engineering Design and Technical Communications**

Fundamentals of electrical and computer engineering design, testing, and product development; critical thinking and problem solving skills development; electrical engineering standards, regulatory issues, project management, and leadership. Effective and efficient writing will be emphasized. Case studies and projects may be drawn from a range of electrical and computer engineering areas.

Course Hours: 3 units; H (1-3)

Calendar Reference:

<http://www.ucalgary.ca/pubs/calendar/current/electrical-engineering.html#41045>

## 2. Learning Outcomes and Graduate Attributes

At the end of this course, you will be able to:

1. Develop Engineering Requirements to guide engineering design
2. Develop an Acceptance Test Plan that will test your design against the engineering requirements.
3. Complete the design, prototyping, and testing of a complex device, using a methodical and structured engineering design process.
4. Complete Engineering Documentation.
5. Communicate your project status and outcomes.
6. Effectively work in an engineering team comprised of diverse roles and responsibilities.

Graduate Attributes are generic characteristics specified by the CEAB (Canadian Engineering Accreditation Board), expected to be exhibited by graduates of Canadian engineering schools. This table summarizes how the Learning Outcomes relate to key Graduate Attributes addressed in this course.

Learning Outcome*	Graduate Attribute											
	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12
1.				D								
2.				D								
3.				D								
4.							D					
5.							D					
6.						D						

CEAB Graduate Attributes:

A1. A knowledge base for engineering  
 A2. Problem analysis  
 A3. Investigation  
 A4. Design  
 A5. Use of engineering tools  
 A6. Individual and team work

A7. Communication skills  
 A8. Professionalism  
 A9. Impact of engineering on society/environment  
 A10. Ethics and equity  
 A11. Economics and project management  
 A12. Life-long learning

\*The level at which the learning outcome is addressed in this course:

I (Introduced): Introductory level  
 D (Developed): Intermediate development level  
 A (Applied): Advanced application level

### 3. Timetable

Section	Days of the Week	Start Time	Duration (Minutes)	Location
L01	Thursday	8:00	50	ENG 60
B01	Tuesday	2:00pm	165	ENG 124

### 4. Course Instructors

#### Course Coordinator

Section	Name	Phone	Office	Email
01	Denis Onen	403-220-4478	ICT 341	donen@ucalgary.ca

#### Teaching Assistants

Section	Name	Phone	Office	Email
01	Michael Herrmann			mjherrma@ucalgary.ca
01	Akash Melethil			asmeleth@ucalgary.ca

### 5. Examinations

There are no midterm and final examinations in this course.

### 6. Use of Calculators in Examinations

Not applicable.

### 7. Final Grade Determination

The final grade in this course will be based on the following components:

Component	Learning Outcome(s) Evaluated	Weight
Reports	1, 2, 4	35 %
Presentations	5	15 %

Prototype	3	30 %
Lessons learned report	4	10 %
Team work	6	10 %

**Total:** 100 %

**Notes:**

- a) All students must complete the project in order to pass the course, by passing the Prototype component. In the event that a student is unable to effectively work within their team, the student must complete a project on their own, at the instructor's discretion.
- b) In exceptional cases, with full consensus of a team, grades may be reallocated amongst team members, to reflect relative contribution levels in terms of effort, at the discretion of the instructor.
- c) A student's final grade will be scaled by the percentage of lab periods they participated in, with due consideration for unavoidable reasons, similar to missing an exam.
- d) Conversion from a score out of 100 to a letter grade will be done using a scale determined after the final examination has been marked. This allows the creation of a scale appropriate to the relative difficulty or easiness of the term work and the final exam.

**8. Textbook**

Not applicable.

**9. Course Policies**

Advising Syllabus

All Schulich School of Engineering students and instructors have a responsibility to familiarize themselves with the policies described in the Schulich School of Engineering Advising Syllabus available at:

<http://schulich.ucalgary.ca/undergraduate/advising>

Emergency Evacuation/Assembly Points

In the event of an alarm sounding, all classrooms and labs must be evacuated immediately. Please respond to alarms promptly by leaving the building by the closest available exit. Faculty and students must remain outside the building until the 'all clear' has been given by a Fire Marshall. In case of emergency, call 220-5333.

Assembly Points have been identified across campus. These areas have been selected as they are large enough to hold a significant number of people and will provide an evacuated population access to washroom facilities and protection from the elements.

More information on assembly points can be found at <http://www.ucalgary.ca/emergencyplan/assemblypoints>.

### **10. Additional Course Information**

All additional course information will be posted on the ENEL 400 D2L site.

*Template revised on Aug 9, 2016 (AN)*