Overview

ESC472 is a **one-term** (12-week) 4th year capstone course offered in the Winter Term (January to April) for Electrical and Computer Engineering majors in the Engineering Science program.

Students work on a project where they go through one design iteration of framing the opportunity and their value proposition, developing an initial design idea, developing a supporting proof-of-concept protype for this initial idea resulting in artefacts that can aid in future design cycles. Projects typically require students to leverage some of their skills in electrical and computer engineering but are not constrained to be in an engineering domain.

In 2021, the course was revised to enhance the student experience. One new addition to the course was the option for students to work with clients. Clients provide the student team with a focused opportunity (often called "problem") relevant to the client's business.

Client-Based Project and Client Role

Project Scope and Characteristics

As a client, you will provide the student team with a focused opportunity relevant to your business. Projects that work well are those that have the potential to improve your business, but are not on the critical path, since there is risk in outcomes with student projects. Note that students need to have the freedom to explore the opportunity space on their own, scope the project, and decide the design direction they would like to take. Projects that are too narrowly or too vaguely scoped would not work well.

Client Role

As a client your role will be to engage with students regularly throughout the term to:

1. Help students understand the opportunity by
    a. providing them with information, background, and experience you have related to the opportunity,
    b. introducing them to others who can provide this perspective,
    c. and/or pointing them to relevant resources to help them explore the opportunity.
2. Share you general knowledge on design, project management, or other topics relevant to the students' capstone experience and general professional development.

You must provide one or more point(s) of contact who can be available at least 1 hour each week to engage with the team.

Your role is **not** to be a team supervisor and you are **not** expected to assess team's work for course assessment purposes. The course team will, however, check in with you at points in the term to see how the experience is going for you as a client.

Approximate Timeline

Since this is a one-term capstone, the course moves quickly through the phases to ensure students are able to move to a verified and validated initial prototype quickly. Below is the approximate timeline as a guide for how the course proceeds.

Dates	Activity
Jan 6th	Classes Start
January to mid-February	Phase 1 • Team formation • Project selection • Team-client introduction • Opportunity and value proposition development • Iteration 1 of process and outcome documents
Mid-February to Mid-March	Phase 2 • Value proposition refinement • Design concept development • Prototype planning • Initial prototyping • Iteration 2 of process and outcome documents
Mid-March to early April	Phase 3 • Prototype completion • Initial design evaluation
Mid-April to end of April	Presentation of outcomes of design • Oral presentation • Finalizing process and outcomes documents

How to Get Involved

This year we are experimenting with the Riipen platform to gather project. This is an online marketplace that connects educators, students, and clients for real-world projects.

Please follow the steps below to submit your project by November 30th, 2024.

1. Use the worksheet below to prepare your project description. You will be prompted to enter it online in step 6.

2. Login or sign up on Riipen if do not already have an account.

3. Once you have created your account, you should receive an automatic prompt to apply for a portal pass to the RBC Future Launch portal to gain direct access to our work-integrated learning marketplace. Once you have put in the application to the Future Launch portal, please email me so I can expedite the approval, which can take up to 2-3 days.

4. Once you have a portal pass to U of T - please visit the ESC472 course experience.

5. Click "Request Match" to create a project or submit an existing one for the experience.

6. You will see prompts to enter your project information from the worksheet below.

Professor Philip Asare will be in touch as submissions coming in to discuss how your project idea might fit with the course.

Please note that even if your project is presented to the teams, *it is possible that it may not get chosen by students*.

Course Point of Contact

Should you have any questions in the meantime, please do not hesitate to contact Professor Asare at philip.asare@utoronto.ca with the subject "ESC472 Clients".

PROJECT DETAILS

(Project) Name

[ ]

What is the main goal for this project?

[ ]

What tasks will learners need to complete to achieve the project goal?

NOTE: This is default question in Riipen we cannot change. All students go through the same general tasks in this course. Enter the text below

The general tasks are prescribed by the course as follows:
1. Explore the opportunity described and develop a value proposition that aligns with our needs.
   a. Identify key people and communities that are affected by the project.
   b. Develop a value proposition for one of these groups.
   c. Explain how this value proposition helps us (the client) and our customer or partners.
2. Translate the value proposition into engineering requirements.
3. Develop a design concept to realize the value proposition
4. Develop a proof-of-concept prototype that helps communicate the design idea.
5. Evaluate the proof-of-concept prototype to inform future design cycles.
6. Report on design process and outcomes

The specific tasks will be developed by the students team as they go through their design cycle with input from us (the client) and the teaching team.

Optional details

Video

Add a video URL to be displayed on your project. YouTube and Vimeo links are supported.

[ ]

Add Images [you will have upload pictures online]

[ ]

TAGS

What subject areas does your project cover?

> *Main category * [select from the dropdown the closest match to your area]*

> *Sub-categories * [select from the dropdown]*

>> *Select up to 5 categories that describe your project.*

What skills or technologies will help learners to complete the project?
Suggest skills, concepts, or technologies students will need to consider.

Optional details

> *Supported cause [follow prompts online if this project supports a particular cause]*

COMPANY

Basic company information. Follow the prompts online.

LEARNERS

Where would you prefer learners be located relative to your company location? *

> NOTE: Students are at U of T so primarily in the Greater Toronto Area

Compensation offered * [select Unpaid]

> Unpaid (Not interested in opportunities with payment requirements.) **[SELECT THIS ONE]**

> Any (Open to opportunities with payment requirements.)

How will you support learners in completing this project? *

NOTE: You must provide one or more point(s) of contact who can be available at least 1 hour each week to engage with the team. List any other resources you are currently aware will be available the team.