BME/ECE/SENG 499: Design Project/Technical Project Course

SUBJECT: 499 COURSE INFORMATION

Also posted at: http://www.ece.uvic.ca/~ece499/ under “Course Information”

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What is BME/ECE/SENG 499?

499 is a course with no exam! It is a group project based course that allows you to demonstrate all the engineering skills you have acquired over the years. The course culminates in a public demonstration where each group displays their engineering solution to local industries, technocrats, and general public.

Usually, the best project as adjudicated by the IEEE Victoria Chapter will be awarded a cash prize!

What awards are available for 499 projects?

i. **IEEE Awards** will be announced on the day of public demonstration. Usually, two teams are awarded cash prizes.

ii. **Cross-Disciplinary Project Award**. Starting this year, in partnership with Coast Capital Innovation Center and the Business School on campus, a new award is initiated for the best cross-disciplinary project team comprising of engineering and business students. More details will be shared during the term.

What are the engineering skills one needs to demonstrate as a part of 499?

Engineering skills can be broadly grouped in to the following:

1) Ability to learn a new tool or a new concept using the formal process of learning and to apply systematically a learning you have had.
2) Ability to identify a problem and address it by devising a superior engineering solution compared to existing alternatives.
3) Ability to communicate clearly your engineering solution to technocrats, investors, general public and kids
4) Ability to work in a team to design, prototype, validate your solution as per prevailing standards, laws and ethics

How to get started with the 499 course?

To get started you need to form a team, choose a project and identify a faculty supervisor from the Engineering faculty. And more importantly you need to inform the course coordinator with all these details by filling an appropriate form.
The form titled “Project and team information” can be downloaded from the course website and CourseSpace page.

1) **Project team formation:**
Below, I have furnished the two requirements that each team must satisfy to be approved.

(i) Each team can comprise of up to 4 registered student members from the course. There can be additional members who are not registered students of this course.

(ii) Each team must have at least two members. Of the two, only one needs to be a registered student. Other member can be from another department or an organization. However, the two of you should be involved in design, development, and/or commercialization of the project.

2) **Choosing a project:**
You and your team has three options to decide on a project
(a) To choose a project from an industry/organization/club on campus that is already approved by the course coordinator. Usually, for industrial projects students might have to sign a Non-Disclosure Agreement with the organization.
(b) To choose a project that is given out by a faculty member on campus.
(c) To decide on your own idea

For options (a) and (b), please refer to the list of projects circulated/posted in CourseSpace. The list will be updated every week until the end of May.

3) **Choosing a faculty supervisor**
The third step in the process is to find a project supervisor from within the engineering faculty at UVic. Please note, it is mandatory to have a faculty supervisor for your 499 project team without whom you will not be able to secure any grades!
The faculty supervisor will be responsible for
(a) Approving the project idea in terms of volume of work and quality
(b) Supporting the team in overcoming technical challenges
(c) Validating the correctness of the work done
(d) Approving purchase of components
(e) Assessing each team member’s contribution and awarding marks based on one’s work

It is strongly recommended to identify a faculty supervisor pertaining to the core area of the project.

Please note, for project groups comprising of team members that are not part of the 499 course, there should be multiple faculty supervisors. For example, if an ECE student forms a team with two MECH 400 students, then the ECE student must identify a faculty supervisor from the ECE department while the MECH students have to identify a supervisor from the Mechanical Engineering department.

**What next after submitting the “Project and team information”?**
After the initial step, you and your team will start working on the project. To ensure timely completion of the project a few important steps ought to be followed.
To make sure all project groups check all the steps, marks are assigned to each of these milestone activities.
The four major documents that need to be submitted are:

1) **Work log**: Work log is a document that is to be maintained by each member of the team starting from day 1 of the project. The document will indicate
   a. the deliverables of the team member
   b. actions carried out by the team member in accomplishing the objectives set out
   c. time spent by the team member in each step
   d. the challenges encountered and the means adopted to overcome them

A sample work log will be uploaded in CourseSpace/course website before mid-May. Work-log will be collected twice during the term.

2) **Progress Report**: Progress report will comprise of a written document to be submitted to the faculty supervisor. A copy needs to be provided to the course coordinator/TA as well. More details on the expectations of the progress report will be posted on CourseSpace/website.

   Please note, if a team comprises of students from MECH 400, then progress report has to be prepared separately by MECH 400 students as well as BME/ECE/SENG 499 students and submitted to their respective faculty supervisors.

   Work-log will be collected along with the progress report.

3) **Webpage**: Each project group is expected to create a webpage for its project. More details on this important aspect will be discussed later (usually after first progress report is submitted).

4) **Final report**: As the name suggests, each project team will submit a report at the end of the term detailing the work done. Please note, if a team comprises of students from MECH 400, then final project report has to be prepared separately by MECH 400 students as well as BME/ECE/SENG 499 students and submitted to their respective faculty supervisors. BME/ELEC/SENG 499 students cannot submit the same report prepared by MECH 400 team members (and vice-versa).

   Work-log will also be collected along with the final report.

Weightage of each component is given below.

<table>
<thead>
<tr>
<th>Component</th>
<th>Weightage</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Progress Report</td>
<td>20%</td>
<td>June 13</td>
</tr>
<tr>
<td>Work log</td>
<td>05%</td>
<td></td>
</tr>
<tr>
<td>Webpage</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>Final report</td>
<td>55%</td>
<td>Aug 1</td>
</tr>
</tbody>
</table>

**What assistance do you get from the department?**

The department of ECE offers assistance to all project groups in a couple of ways.

1) Limited funding in the form of reimbursement for approved components purchase. Each group is entitled for of up to $120 (Canadian Dollars) over the course of the term.

2) Access to laboratory space, equipment and software tools is provided throughout the term.
In order to avail either of these, each project group will have to submit a few forms.

1) To get reimbursements, each group is expected
   a. To submit a letter of approval from the faculty supervisor for purchase of components.
   b. To submit a copy of the invoice (an email copy or a print version).
   c. To submit the proof of payment (credit card statement or receipt of payment).

2) To access lab space and lab equipment each member of the interested project group must
   (a) Send an email to the course coordinator requesting access to the lab/equipment.
   (b) Read, understand and sign the safety instructions to be followed in the labs.
      Please be aware that safety will not be compromised and hence students are advised to comply with the safety standards.

Note: The general laboratory is located in **ELW B336**. Students registered in 499 will have card access to this lab.

Resources available in the lab include PCs, scopes, signal generators, multi-meters, etc. IEEE Student Members can also access the soldering facility in the IEEE McNaughton Centre (ELW-B350). A soldering station is available for use under supervision in ELW B320 (ECE tech shop). ECE tech shop has various parts in stock including capacitors, resistors, ICs, and a few development kits (PIC, ATMEL). Signing out equipment, electronic/mechanical components and access to technical data books shall be done in accordance to rules set by the ECE Department. This will be considered to be a part of the course requirements and failure to comply may result in an N grade.

ECE/BME technical support staff includes: Rob Fichtner rf@uvic.ca, Paul Fedrigo pfedrigo@uvic.ca, and Brent Sirna brent@uvic.ca. SENG technical support staff includes: Lynn Palmer lpalmer@uvic.ca.

**What is the role of the coordinator?**

The course coordinator, with assistance from the TA,
- ensures all registered students have a project team to work with
- creates marking rubrics for different components and communicates to all the faculty supervisors
- approves reimbursement costs and provides access to lab space/equipment
- organizes the final public demonstration event and promotes it among the local community
- compiles marks from different faculty supervisors and assigns grades to all the students
- resolves conflicts arising within group members of a team

**What is the role of the TA?**

In addition to assisting the course coordinator with various activities, the TA is also responsible for marking the
- oral presentations of the student groups
- work-logs of the students
- a part of the final report submitted by the student groups
- webpages created by the students
FAQs

**Question:** I have a project from an organization with whom I did my coop. I have a project supervisor from the organization. Do I still need a faculty supervisor from the Engineering faculty at UVic?

**Answer:** Yes, a faculty supervisor from the Engineering faculty of UVic is mandatory. This is irrespective of any additional supervisor your team might have.

**Question:** I have a project from a company where I did my co-op. I found a faculty member to supervise my project. I have an industrial supervisor as 3rd member of my team. Is this acceptable?

**Answer:** No, this is not acceptable because you are the only member working (designing or writing an code or creating a website etc.) on the project. Other members of your team are only supervisors. To qualify your team must contain at least one more engineer who will work on some aspect of design & prototyping.

**Question:** I am working on a project that I believe has tremendous commercial potential. Can I have team mates from the Business department on campus to help me launch a product?

**Answer:** Yes, it is perfectly fine to have students from Business department as your team mates.

**Question:** I have a great project idea. However, I am not able to find any team mates. Can I work all by myself?

**Answer:** No, unfortunately you alone will not make a team. One of the key objectives of 499 is to ensure our engineering students have ability to work in a team. And thus you need to have at least one more member on-board.

**Question:** My friends and I have plans to work on a project together. We are group of 5. Can we work in one team?

**Answer:** Ideally, a team with more than 4 registered student members is discouraged. In case there are 5 of you, I suggest you send me an email explaining the role of each student. I shall take a call on a case to case basis. Please note, it is a strict no for a group with 6 or more registered student members.