

SYSC 4907: 4th Year Project

Winter Term Info Session for 3rd Year Students

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Information Session SYSC-4907

- Three sample projects, featuring different years and students from different programs
- SYSC-4907: The Course
- The 4th Year Project
- Project Selection
- Opportunities beyond the Course.

Sample Project 1 (2018-19)



Sample Project 2 (2019-20)



Sample Project 3 (2020-21)



Project Website

- All information about the project is on the web.
 - www4.sce.carleton.ca/courses/sysc-4907
 - Currently some work on new website
 - Link on the departmental page listing courses will be updated
 - We will notify you by email if and when the new site is up and running
 - Links : Notices, FAQ and Deadlines
 - Read the website before asking questions

Systems and Electronics

- SYSC-4907 Systems Projects
- ELEC-4907 Electronics Projects
- Type of project is determined **by supervisor**, not by the student
 - Systems Project: Supervised by Systems faculty
 - Electronics Project: Supervised by Electronics faculty
- Free movement of students between departments
 - At least if you are in CSE or CE
 - Students in SE, Biomed: expectation that you do a project with a supervisor in Systems
- **All information in this session is for projects supervised by Systems faculty only.**

Project Registration

- Like any other course, you register via Banner, if you have the prerequisites
 - Must register for fall and winter
 - If you change projects, make sure you change your registration.
 - Systems project to Electronics project
 - Electronics project to Systems project
 - Incorrect registration causes delays in graduation.
- Choosing your project : “Project Selection” (Later)

Project Registration

- Prerequisite: 4th year Engineering Year Status and Professional Practice (may be taken concurrently)
- Engineering Year Status != University standing
 - 4th Year Engineering Status : Successful completion of all second year requirements and 3.5 credits from third year requirements of program
- In the Systems Department:
 - **All** prerequisites are enforced.
 - Co-op students may **not** take the project during a work term

Summer Projects ?

- I only have one course left. I could graduate in the Fall. May I do my project over the summer ?
- The System Department does not offer the project over the summer. Why?
- The philosophies behind the project include more than just the technical execution of a solution
 - Time management – Over a long period, competing duties
 - Public presentations
 - Peer assessment.

The 4th Year Project

- An example of good engineering analysis and design that demonstrates your engineering skills
 - Apply lessons learned from courses
- At least 200 hours ... average of 8 hours per week
- Work under the supervision of a faculty member
 - Meetings, milestones, applying engineering processes
- But, the initiative for keeping your project on schedule must come from you
- Good Engineering also requires communication & documentation

The 4th Year Project (cont.)

- It is **NOT** a requirement that you build something that is
 - “innovative”
 - “unique”
- It **IS** important that you follow a proper engineering approach, **applying, honing, integrating and extending previously acquired knowledge and skills in a major engineering design project.**
 - There needs to be a clear relationship between your degree program and the project
 - You are to use your previously acquired knowledge and skills
 - This is **NOT** the place to learn a brand-new set of skills
 - The process you follow needs to be documented and will form a major part of your evaluation

Group Projects

- Engineering Accreditation requires team experience: **No individual projects allowed.**
- For all deliverables (and in particular for the final report, where it is mandatory):
 - Identify who DID what
 - Identify who WROTE what
- Every student receives an individual final grade
 - Seen quite a range
 - Do not assume that it will be the group grade with a small delta

Project Timeline – Before Fall Term

- Today, some faculty will be around to talk about their proposed projects for the coming year
- The SYSC-4907 website will also have a list of project proposals, which will get populated over the next few weeks and months
 - Check regularly
 - More on how to select a specific project later
- To select and register for a project, need an account on the course website
 - Not possible until current year is over and database is re-set, **probably end of May**
 - **Again, will send email to let you know that registration is now open**

Project Timeline – Fall Term

- Project Selection and Course Registration
 - Early to mid September, deadlines on website
- Proposal (Mid-late October) :
 - To convey the major objectives and the engineering challenges of the proposed project
 - Driven by project proposal and in discussion with project supervisor
 - To present an initial plan for the work to be done by each member (timetable)
- Progress Report (End of Fall Term)
 - A mid-point checkup on the progress achieved, with reference to the original proposal.
 - A chance to re-define your project, now that you know more.
 - A (refined) plan for the final term
 - Rule of Thumb: All research, requirements & design complete.

Project Timeline – Winter Term

- Oral Presentations
 - Within a strict fixed 10-minute period, you present your work thus far to your supervisor, a 2nd reader and your peers.
 - A visual performance, requiring different skills
- Poster Fair
 - A poster display will exhibit the final product of your project.
 - Visitors will be wander about, asking you questions whenever interested. It's a chance for you to talk about your work.
- Final Report (End of Winter Term) :
 - To fully document the engineering of your finished product.
 - Cover the process, less focus on the product itself
 - Ideal Goal : Allow the use and continuation of your work.
 - Major component of your final grade
 - Since 2020/21: submit a 3 minute video showcasing your project

Beside deliverables, during the term

- How much work is expected from me?
 - Rough rule of thumb : minimum 8 hours per week.
- How can I get a good mark on the project?
 - A project must contain all engineering elements : requirements analysis, design, implementation, testing and documentation.
 - The technical work must reflect the methodologies taught in courses.
 - The best projects are marked by creativity and initiative.
- Bottom Line: The project is your responsibility.
 - Supervisors can only remind/guide/criticize you.

Selection Process

- When : Anytime between now and mid September
 - First Come First Serve: Projects get full
 - Every student will have a project, but the early birds get the projects/supervisors that they want
- How :
 1. Read the project descriptions on the web
 2. Talk to supervisors (email to arrange appointments)
 - Some projects have prerequisites
 - It's up to you : **Treat it like a job search**
 3. Reach agreement with supervisor, **then**

Project Selection

- Complete the on-line **Project Selection** page
 - Once submitted, the agreement between you and the supervisor is formal:
 - The supervisor will hold a spot for you.
 - An initial group number will be assigned, although group numbers may be changed in late September.
 - The current list of projects will be available on line.
 - Projects/Professors that become full will be blocked.
- If you decide to change projects
 - Selection of a second project will not be permitted until you first notify the initial supervisor.
 - Use the on-line system to drop the project then add the new one.

Propose Your Own Project?

- Definitely!
- Criteria:
 - All or most aspects of engineering: requirements, analysis, design, implementation, testing
 - Makes use of course work but goes beyond; requires independent learning
 - Beyond integration of existing parts; some part must be your own creation (?)
- Still a group project: needs team members!

Grading

- Is unlike other courses: No fixed percentage breakdown
- Key players: Supervisor, second reader.
- Final report is the most important factor but
 - each deliverable contributes
 - your conduct contributes
- We try to assign the same person as second reader for oral/poster/final report.

The Project Coordinator

- Coordinates departmental events (selection, presentations/poster fair)
- Ensures that all students have a project
- Ensures workload is evenly distributed among faculty.
- Last resort for students looking for projects
- Can provide guidance but **is not involved in the project** and does not evaluate any deliverables.
- **Required in all communication: Group number (if you are in a project group already)**
 - ug-projects@sce.carleton.ca

Supervisors versus Coordinator

- Coordinator
 - Looks after overall administration of the projects
 - Organizes project-wide events (like information sessions)
 - Is a person to help when troubles arise.
 - Has no involvement in the project itself (not a co-supervisor)
- Supervisor
 - Responsible for regular supervision of progress
 - Responsible for informing student of all project requirements
 - Governs the format of the project deliverables, within the guidelines stated for the project.
 - Responsible for providing any resource required by project
 - Responsible for evaluating student and the project deliverables

Opportunities

- Competitions (samples, not all all the time)
 - IEEE Student Design Competition in late March
 - The IEEE Computer Society International Design Competition
 - The Canadian Appropriate Technologies in Mine Action Competition (CATIMAC)
 - The Ontario Engineering Competition
 - The Canadian Engineering Competition
- Patents
- sWall
- Departmental Toystore/Video Competition
 - We're looking for off-the-shelf demos on a CD that we can use in University Open Houses

Possible Projects

- Fateme Rajabiyazdi
- Jason Jaskolka
- Carlos Rossa

Project Website

www4.sce.carleton.ca/courses/sysc-4907