2021 Engineering Program Information Talks
Question and Answer Summary

(Please note: Questions asked by participants are displayed in the structure/format they were asked, but answers have been re-structured to include more information/detail than was possible in the duration of the Information Talk)

Program Specific Questions: Biomedical Engineering (BME)

Q: How fast growing is biomedical engineering?
A: The UVic BME program was created in September 2012. The program began with 30 students and has grown to 152 declared as BME across all years.

Program Specific Questions: Civil Engineering (CIVE)

Q: How many students are in the civil engineering program?
A: Every September, 80 students are admitted into second year of CIVE. There is currently a total of 316 declared CIVE students across all years.

Q: What sort of courses are needed for civil engineering?
A: The CIVE program planning worksheet is accessible at the following link: https://www.uvic.ca/engineering/assets/docs/program-planning/PPW-CIVE.pdf
As well, the CIVE program courses, listed by term, is also available on the UVic CIVE website here: https://www.uvic.ca/engineering/civil/undergrad-students/home/courses/index.php

Q: Are Civil engineering 2nd year classes being offered in person right now?
A: The recent 2A term (Fall 2020) was offered fully online.

Program Specific Questions: Electrical Engineering & Computer Engineering (ECE)

Q: How many students are in the CEng program?
A: Computer and Electrical Engineering essentially has a common 2nd year (as well as the common first year) and therefore a larger cohort moving into 2nd year. We have room for 125 students in the 2nd year ECE programs. There are just under 500 students in the ECE programs currently across all years.

Q: Difference between Computer engineering and Electrical?
A: An electrical engineer is involved in the design and study of various electrical and electronic systems, such as electricity generation and transmission, consumer electronics, control systems, signal processing, computer design, sensor design, telecommunications, biomedical imaging, and mechatronics. A computer engineer is similar to an electrical engineer but focuses extensively on computer applications, such as computer hardware design, microprocessors, software and operating systems design, embedded systems and microcontrollers, and mechatronics.
Q: What is the difference between the Mechatronics specialization in ECE vs in MECH?
A: Specializations are optional, but involve a student completing a certain number of technical elective courses from a specified list for the specialization in question.

For an ELEC or CENG student, completion of seven technical electives (10.5 units) is required of the program(s). Students who complete three courses (4.5 units) from the list below can request a Specialization Certificate from the ECE departmental office at the completion of their degree requirements for Mechatronics. This specialization is not listed on a student’s transcript or diploma.

The courses are as follows:
- ECE 455 Real Time Computer Systems Design Project
- ECE 426 Robotics
- ECE 460 Control Theory and Systems II
- ECE 482 Electrical Drive Systems

Each of the following courses requires additional prerequisites and permission from the offering department:
- MECH 458 Mechatronics
- MECH 464 Mechatronics Design Project
- MECH 466 Microelectromechanical Systems
- SENG 466 Software for Embedded and Mechatronics Systems

For a MECH student, completion of eight technical electives (12.0 units) is required of the program. Students who complete four courses (6.0 units) from the list below can request a Specialization Certificate from the MECH departmental office for Mechatronics. This specialization is not listed on a student’s transcript or diploma.

The courses are as follows:
- MECH 421 Mechanical Vibrations
- MECH 430 Robotics
- MECH 455 Instrumentation
- MECH 458 Mechatronics
- MECH 459 Fundamentals of Hybrid Vehicles
- MECH 466 Microelectromechanical Systems
- MECH 450, 498 and 499 Topic, thesis or project courses*

Program Specific Questions: Mechanical Engineering (MECH)

Q: How similar is the content of the mechanical engineering program to a course like ENGR 141?
A: ENGR 141 is only a "fractional part" of MECH, but MECH does make use of ENGR 141 as a foundation. Looking beyond ENGR141, MECH students also do: Thermodynamics (Heat and Energy Motion), Fluidmechanics (Fluids and Air), and Mechatronics (Robotics and Dynamics), and Control systems.

Q: How many students are in the MECH Eng program?
A: There are approximately 500 MECH students across all years.
Q: how many first years go into mech?
A: Approximately 120 to 130 students enter second year of MECH every September.

Program Specific Questions: Software Engineering (SENG)
Q: And, continuing this train, what about how many students are in Seng
A: There over 300 SENG students across all years.

Co-op/Career Specific Questions
Q: Not program specific, but what percentage of students get a first-year co-op?
A: It is difficult to provide a percentage because not all first-year students look for a co-op after their 1B term, but here are the placements over the last four Summers:

- Summer 2020 - 22
- Summer 2019 - 41
- Summer 2018 - 32
- Summer 2017 - 21

Most first year students find jobs through their own personal network of family and friends because they do not have many technical skills yet to put on their resume. You will have developed some skills through your ENGR 110/120 classes so be sure to update your resume.

The resume that you used in high school will not work for co-op jobs so it is important that you make that shift to a professional resume. Once your resume has been updated, reach out to your Co-op Coordinator or our Career Educator, John Fagan (jfagan@uvic.ca) for a resume review.

If you decide not to pursue a co-op job this summer, try to use the time to develop a skill by taking a course in Excel or technical writing, or teaching yourself a programming language like Python. Getting in the habit of continuously improving skills will make you more employable in the future and will allow you to broaden your job search.

Q: do all engineering disciplines have hands on career opportunities?
A: Even though you learn engineering in distinct disciplines, the work is much more diverse than you would think. Even in those jobs that are primarily hands-on such as in an engineering design position, there still will be reports and documentation to complete. During your career, as you develop more experience and move into more senior positions, hands-on work will likely be replaced with more managerial work supervising projects and junior engineers. Most alumni are surprised at how much report writing they end up doing in their professional work.

Q: What type of jobs would a civil engineer do in an engineering firm?
A: Our Civil Engineering students work in positions such as estimating, project management, field inspections and surveying. Students are often working for construction companies under the supervision of a Site Superintendent or a Civil Engineer on staff with that company or directly with Civil Engineering companies. These companies may be working on large transportation projects (e.g. McKenzie overpass), large infrastructure projects (e.g. Site C dam, new jetty at CFB Esquimalt, new
sewage treatment plant in Victoria) or construction projects (condominiums). Civil Engineering students are also hired to work with cities to help maintain municipal infrastructure.

Full-time civil engineers design and provide the engineered drawings for these projects. They oversee the construction by providing field inspections as the project progresses and monitor wear and tear once the project has been completed. There is a lot of research in developing green civil engineering techniques and UVic has some excellent faculty researchers in this area.

Q: is Viking Air a possible coop opportunity for mechanical?
A: Viking Air has been a long time supporter of UVic co-op students and have provided 68 work terms for UVic students. They are not always able to hire students every term. They hire predominantly students from Mechanical Engineering in both Victoria and Calgary.

Q: How likely or unlikely is it for mech eng's to get into rocketry as a career?
A: We have had Mechanical Engineering students complete work terms in rocketry. There are few co-op positions in rocketry and therefore, the field is very competitive, but that does not mean that it is impossible. Most students who have been successful in finding co-op work terms in rocketry have been members of the UVic Rocketry team.

There aren’t a lot of Canadian companies in this field so you may have to leave Canada to work for a work term in rocketry. One of our Mech students developed his own job with Rocket Labs in New Zealand and the company has provided 15 work terms for our Mech students. We have a Mech student currently working at the Canadian Space Agency and in the past, a Mech student worked at SpaceX, but you have to be a US citizen to work there.

Q: How similar are the career paths for software engineers vs comp sci majors?
A: A career path is defined by one’s degree as well as one’s strengths/weaknesses, and personal interests so whether taking a computer science degree or a software engineering (which are only a few courses different), your path ahead will be influenced by the courses you enjoy and the co-op work terms you land and complete. Computer science majors can work in software engineering capacities but one can only call oneself a “software engineer” if you have an engineering degree and go on to do your EIT and become a P.Eng. Find out more at EGBC.

Q: Which type of engineering makes the most money, on average?
A: It really depends where you look and when you are looking for work. Wages will vary depending on demand and specialization. As the economy shifts so do the wages, right now on Talent Egg it appears that Electrical Engineers earn a bit more as far as starting wages go. However, we have observed that engineers who develop a broader range of skills can often earn more – so a mechanical engineer who can also code is usually worth more than one who cannot.

Q: Which discipline would best fit a business-related career?
A: One of the core skillsets that an Engineer will learn is problem solving – and those skills have value everywhere. Most of the specializations allow for a Business minor – and that is often the choice of
students looking to head in that direction. Completing co-op work terms at a variety of companies will often give engineering students an opportunity to try out different industries and work settings.

Startups can provide an interesting learning experience during a co-op work term because you often have to wear many hats in fulfilling your position. In a small company, success is driven by revenue and the potential for revenue and this will influence your design and solutions.

Software Engineers and Computer Scientists who want to use their business skills are more likely to work in sectors such as Financial Technology (Fintech), which includes banking and financial businesses. Technical sales are another career option where you can combine technical skills with business skills. It is a growing and lucrative career option and involves explaining technical products to potential clients and troubleshooting problems when they arise.

**General Program Questions/Miscellaneous Questions**

**Q:** The meeting is being recorded, but where will it be posted?
**A:** We will be segmenting the videos, by discipline, and posting them on our advising website and to the program declaration website. A link will be sent out when the video(s) are accessible.

**Q:** How many students are in first year engineering this year?
**A:** A total of 350 students started first year in September 2020.

**Q:** How competitive are these programs?
**A:** As per the program declaration requirements, the minimum GPA required for program declaration is 3.0 (C+) average. However, depending on the group of students who are seeking to declare into a certain program, this will influence the threshold of the competitive GPA for that particular program.

**Q:** Is there a compiled list of how many students go into each discipline per year?
**A:** Every September, each program (with Computer and Electrical Engineering combined) can accommodate the following number of new second year students:

- **ECE** - 125
- **MECH** - 125
- **CIVE** - 80
- **BME** - 50
- **SENG** - 80

**Q:** Hello, are all 2nd year applicant with the minimum requirement of C+ average, no grades less than C, guaranteed for a seat in any of the engineering program?
**A:** Every effort is made to declare students in their desired program. In the event that we have more applications/declarations for any discipline than what we have spaces, then the competitive GPA is used. See Declaration into Programs for more detail [https://www.uvic.ca/calendar/undergrad/index.php-experiences/Hyo60_ztN?bc=true&bcCurrent=Faculty of Engineering%3A Requirements&bcGroup=Faculty of Engineering&bclItemType=experiences](https://www.uvic.ca/calendar/undergrad/index.php-experiences/Hyo60_ztN?bc=true&bcCurrent=Faculty of Engineering%3A Requirements&bcGroup=Faculty of Engineering&bclItemType=experiences)
Q: What's the average first year drop rate?
A: The attrition rate in first year can vary from year to year for various reasons. It is anywhere between 20-30%.

Q: Will Second year still be online? If so how will co-op be done during the semesters?
A: For up-to-date information on the format of the 2021/22 Winter Session, please refer to the UVic COVID19 updates page: https://www.uvic.ca/covid-19/index.php - ipn-updates

It has been confirmed by the President Hall on March 9, 2021 that the University is planning for a full return to face-to-face teaching and learning September 2021.

Whether instruction is face to face, online, or a mix of both, this does not alter how co-op work terms are completed as co-ops generally occur off campus, unless you are employed by a UVic faculty member and must conduct work on campus. The Engineering and Computer Science Co-op Office is open and available to accept inquiries from students (engrcoop@uvic.ca) and Co-op Coordinators are able to accept co-op work term reports over email.

Q: Is there any news about if classes will be online in September?
A: For up-to-date information on the format of the 2021/22 Winter Session, please refer to the UVic COVID19 updates page: https://www.uvic.ca/covid-19/index.php - ipn-updates

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