



UNIVERSITY  
of Prince Edward  
ISLAND

Faculty of  
SUSTAINABLE DESIGN  
ENGINEERING

# DESIGN YOUR FUTURE



Welcome & Advisement Package 2024-2025

# Message from the Dean

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## Welcome to UPEI's Faculty of Sustainable Design Engineering!

My name is Suzanne Kresta and I'm the new Dean for the Engineering program at UPEI.



This innovative, industry-linked, project-based learning model will give you the skills and experiences that are needed to become a successful professional engineer. Most importantly, it will give you a chance to engage directly with technical staff, industry partners, and the people using your designs to ensure that all of these aspects of design work come together to meet peoples' real needs - not just the ones we imagine they have. Our outstanding faculty and staff are all devoted to developing engineers with exceptional design and professional skills combined with a global perspective--engineers who are broadly capable, globally and socially aware, creative, communicative, and entrepreneurial. We've come a long way since the launch of our program in 2015, and our graduates are highly sought after by industry both in PEI and beyond.

We're delighted that you're joining us. You've come to a great place.

Suzanne Kresta, Dean and Professor  
FSDE 218, [skresta@upei.ca](mailto:skresta@upei.ca)



Welcome to UPEI Engineering! My name is Steff and I'm the Administrative Assistant to the Dean in the Sustainable Design Engineering program at UPEI. Suzanne and I work closely together to make sure that your experience in the program is a positive one.

If you have any questions regarding the program, course registration, or further clarification on any of the material in this Welcome Package, please stop by to see me or send me an email. Always happy to chat and even happier to see students succeed!

All the best in the program!

Steff Taylor  
Administrative Assistant to the Dean  
FSDE 219, [sataylor@upei.ca](mailto:sataylor@upei.ca)

# What is Sustainable Design Engineering

## Our Vision:

**To develop engineers with exceptional design and professional skills combined with a global perspective — engineers who are broadly capable, globally and socially aware, creative, communicative, and entrepreneurial.**

UPEI's Bachelor of Science in Sustainable Design Engineering program focuses on engineering design as an engineering discipline in itself. Sustainable design engineers are problem solvers. They use design skills, engineering knowledge, math and science to deliver innovative and sustainable solutions to modern-day problems. A sustainable solution is one in which all factors and stakeholders are considered. It goes beyond just providing an efficient, attractive, on-time, and on-budget solution. It also cares about how such goals are achieved and about its impact on people, the environment and society.

Our program provides students with a solid technical foundation which supports the development of their design skills. Just as important, though, the program also provides the professional skills necessary to succeed as a professional engineer. To achieve this, we have created a unique and innovative design clinic model that is integrated throughout all years of the program. In the design clinics, students are immersed in hands-on, experiential learning while working on real projects for a wide range of external partners from the community, municipalities, government, industry and others. Our students do not learn to become sustainable design engineers by simply reading textbooks or attending lectures. Instead, they accomplish this by doing what real engineers actually do - use their design and professional skills, combined with technical knowledge, to provide real solutions to real problems for real partners. And, in our program, this starts right from day one.

Sustainable design engineering is interdisciplinary by its very nature and typically involves teams of engineers, scientists, technicians, technologists, and others across multiple disciplines. Consistent with this, our program allows students in the upper years to focus their studies and apply their design skills in three areas: mechatronics; bioresources; and sustainable energy. Very often, then, design clinic projects and the interests of project team members cover each of these areas.

With a strong interdisciplinary background in engineering design, strengthened by solid professional and technical skills, our graduates are well-positioned to work in a diverse range of industry sectors such as: bio and food processing, robotics, industrial automation, aerospace, automotive, advanced manufacturing, sustainable and alternative energy, marine applications, and many others. Our graduates also pursue careers in research and development by enrolling in graduate programs either here at UPEI or at other schools. Some of our graduates move on to medical school and some even start their own companies.

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## What is the “Design Clinic” Model?

In the design clinic model, students learn to become engineers by doing what real engineers actually do - use their design and professional skills, combined with technical knowledge, to provide real solutions to real problems for real partners. In the clinic model, the focus is on providing students with opportunities to learn, develop and apply these skills and knowledge in real time such that the "learning" and the "doing" are fully integrated. This experience occurs at all levels of the program as part of our Community Design Program in Year 1 (ENGN 1210/1220), our Junior Design Clinic in Year 2 (ENGN 2210/2220), and then our Senior Design Clinics in Year 3 (ENGN 3710/3720) and Year 4 (ENGN 4710/4720). These eight design courses comprise one quarter of our program's total credit hours.



In our design clinics, students work in teams of 4-5 on design projects provided by external partners and take the lead on all aspects of their work including: communicating with their partner; managing their time and budget; developing conceptual and final designs; purchasing equipment and materials; building and testing working prototypes; documenting all work; and presenting to partners. In this way, students refine their design and professional knowledge and skills in desired areas such as communications, teamwork, ethics, project management and life-long learning.

Supervision is provided by clinic instructors who are professional engineers. Additional support is provided by technical staff with backgrounds in welding, machining, 3-D printing, fabrication, prototyping, electronics, electrical, automation, controls, and other areas. Design projects are chosen to ensure students are working at appropriate levels for their knowledge and progress in the program. Projects typically span the full year and include aspects of mechatronics, bioresources and/or sustainable energy.

## Do We Have a Co-op, Work-Term or Internship Program?

The simple answer is no. We believe our project-based, partner-focused, design clinic model is better than the traditional co-op, work-term or internship programs found at most other engineering programs.

The objectives of these other programs are to provide opportunities for students to apply the theory they have learned in school to real-world problems in order to bridge the gap between academic learning and the practice of engineering and to allow students to gain valuable real-world engineering work experience.



Students in our design clinics are doing exactly this at all levels of the program. "Learning" and "doing" are fully integrated in real time. Students apply what they are learning while they are learning it in a closely supervised and monitored environment. We believe our program provides the ultimate opportunity for students to achieve these goals.

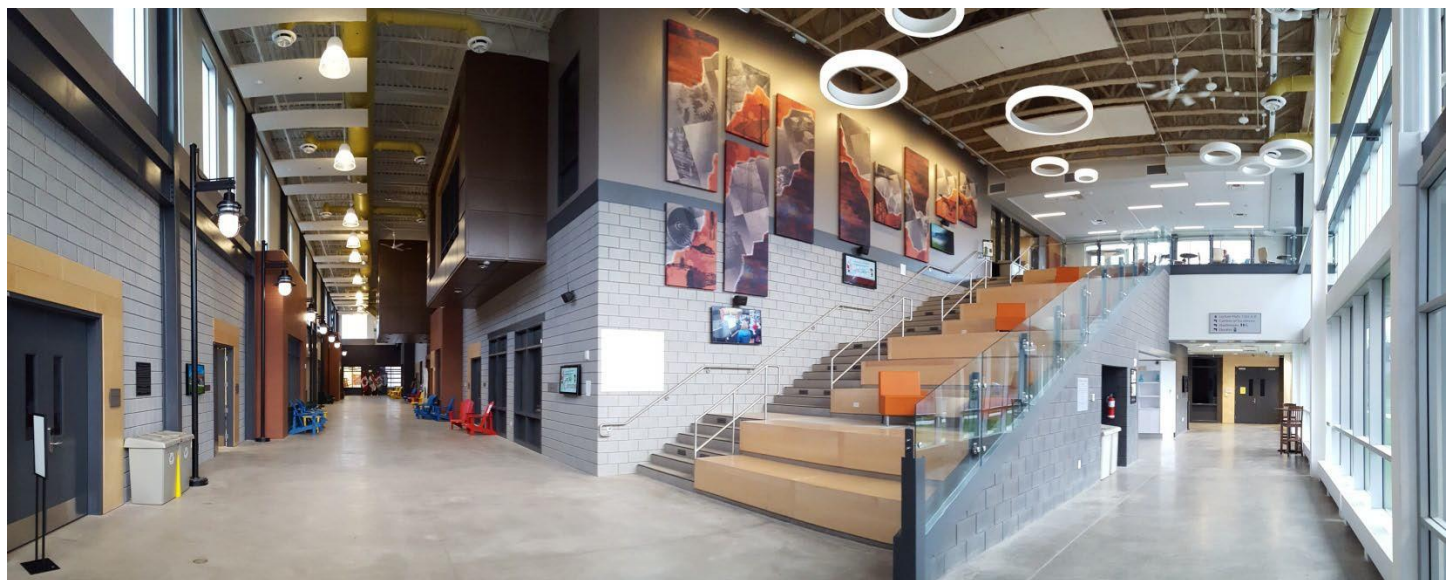
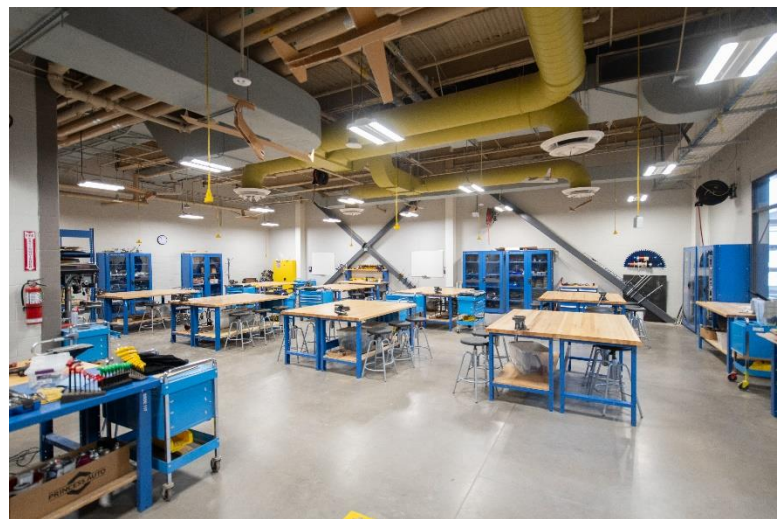
# Sustainable Design Engineering Building



The Engineering program at UPEI offers students a unique learning experience in state-of-the-art design and lab facilities, including: design studios, clinic project bays, ideation spaces, 3D printing facilities, machine shop, and other teaching labs. The building also features Research Centres of Excellence in:

- **Advanced Manufacturing**
- **Sustainable Energy**
- **Bioresources and Food Processing**
- **Sensors, Optics, and Imaging**
- **Robotics and Industrial Animation**

The building was designed and built to suit our hands-on teaching model and to create many student-centered spaces.





## Industry Partnership

Partnership with industry is a key focus of the Faculty of Sustainable Design Engineering. Industry and other organizations partner with the Design Clinic program, student work placements and Research and Development to ensure students experience hands-on, project-based learning.

The Industry Partnership Group builds and manages relationships with diverse industry and community organizations which allows students in our program an opportunity to work on interesting Design Clinic projects.

### Student Work Placements

The Industry Partnership Group facilitates student work placements, typically during the summer months, by circulating placement opportunities to students.

The Faculty of Sustainable Design Engineering has a large base of partners in industry, community and government who use this program to fill positions. This is advantageous to students in finding employment opportunities for the summer months while in our program and full-time positions upon graduating.

## Safety

### Lab Safety Training Course

Safety is of the utmost importance in the Faculty of Sustainable Design Engineering. As many of the courses in the Engineering program involve hands-on activities, labs and projects, we require our students to complete a Lab Safety Course. This course is available on Moodle and students must complete at least Level 1 of the course before being granted access to the lab and shop spaces, even for course labs. Levels 2, 3, and 4 are equipment specific and may be required later in the program as needed.

### Personal Protective Equipment (PPE)

Students in the Engineering Program are required to purchase CSA approved footwear that must be worn in all designated lab and shop areas. Footwear must have a visible green tag with the CSA logo as shown.



## Computer Recommendation

While students in the Engineering Program have access to a computer lab with printing capabilities, they are strongly encouraged to purchase a laptop to support their course work in the program. Software used in the program is primarily compatible with Microsoft Windows operating systems, **so you are strongly encouraged to come prepared with a Windows-based system**. All laptops should have 16GB of RAM or higher.

## Textbooks

Students should refrain from purchasing textbooks until the course instructor advises of the text that will be used in the course. This is often during the first week of classes. If you want to purchase earlier, it's always a good idea to reach out to the course instructor directly to confirm which text will be used.

# Engineering Success Centre

The Engineering Success Centre is your go-to place for all things engineering at UPEI! Located on the first floor of the Engineering Building, this friendly hub is here to make your engineering journey smoother. Whether you're a new student just starting the program and need a bit of extra help or simply looking for available resources on campus, our Student Success Associates (fellow engineering students) are ready to lend a hand.

The Centre is all about filling in the gaps between what you know and what you need to prepare for success. We work with instructors and students to identify those areas of knowledge.



**Free 3D Printing** available for students!



**Peer Tutoring:** *Need extra help on a project or a tricky concept?* The Centre offers peer-tutoring sessions, available for both individuals and groups, drop-in or by appointment.

**Workshops:** *Want to get ahead of the curve?* Our weekly workshops are designed to help you take the CSWA (Certified SOLIDWORKS Associate) Mechanical Design Exam.

**Study Resources:** *Struggling with healthy study habits?*

The Centre has resources, tools, and tips to help you manage your time and workload effectively.

**Skill Enhancement:** *Looking to improve your CAD, writing, analytical, and interviewing skills?*

Our workshops and resources to boost your technical and professional skills and make you stand out in your field.

**Campus Resources:** *Need to know more about what's available?*

We can connect you with all the resources you need to succeed.

The Engineering Success Centre is open weekdays and is your partner in academic success.

You can reach out to us in a few simple ways:

- Email: Send us an email at [EngSuccess@upei.ca](mailto:EngSuccess@upei.ca). Ask us *anything*!
- In-Person: Drop-in by our location in Room 119 of the FSDE Building.
- Online: Check out ESC on your [Moodle](#) or [our website](#). Operation hours and resources posted there.
- Social Media: Follow us on [Instagram](#) or [YouTube](#). We share helpful tips and updates there.

**We're here to support you every step of the way, so don't hesitate to get in touch!**



# Engineering Design Expo



The University of Prince Edward Island's Faculty of Sustainable Design Engineering (FSDE) annual Student Design Expo occurs at the end of each Winter semester to showcase the design projects that students in the Engineering program have worked on.

Each project is the result of collaboration between UPEI FSDE students and an industry or community partner, and tasks students with designing and creating real, tangible solutions to their partners' unique challenges.

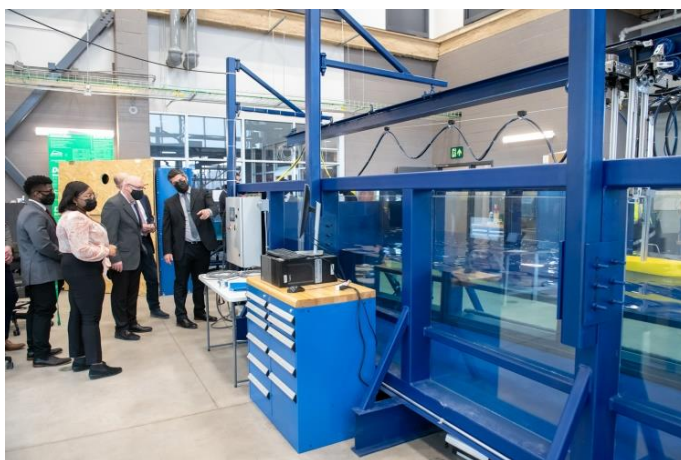
This event provides our students with the opportunity to showcase their design skills, to network with our design clinic partners, and to be recognized for their hard work as aspiring engineers.

Projects are set-up for public viewing and demonstrations at various stations around the Faculty of Sustainable Design Engineering Building.



Previous Design Clinic projects can be viewed  
on our website:

[Upei.ca/studentdesignexpo](https://upei.ca/studentdesignexpo)



## Engineering Society



The UPEI Engineering Society is proud to represent Engineering students at UPEI. Being entirely a student run team, they strive to promote a sense of community and inclusivity for all engineering students. They improve the student experience through social events and educational enrichment opportunities.

[UPEI Engineering Society](#)

## Engineering Clubs

UPEI has many clubs and societies in which students can participate and may vary from year to year. Engineering has a variety of specific clubs students can get involved in, which have included the Baja Club, FSDE Precious Plastics, UPEI Drone Club, UPEI Global Brigades, and Engineers without Borders.



The UPEI Global Brigades is a student-led, non-profit organization that participates in annual Brigades. These brigades take place in varying countries across the world. Each brigade has a different focus, granting students experience in areas applicable to their future career path. In 2023, 17 Engineering students spent their 2 week study break in rural Honduras where they built eco-stoves for six families in one community and did an engineering survey project in another town to ensure that the people living there have access to clean water. In 2024, students again revisited Honduras to make further implementations.

For a full list of clubs and societies students can get involved in, please visit the Student Union website:

[UPEI Clubs and Societies](#)



# Admission Requirements

## High School Applicants

The Faculty of Sustainable Design Engineering program's High School Admission requirements are:

- Successful completion of Grade 12 examinations in a University Preparatory Program with an overall average of at least 70% in the following courses, with no grade less than 65% and with at least 70% in Grade 12 academic Mathematics:
  - ❖ Grade 12 academic English
  - ❖ Grade 12 academic Mathematics
  - ❖ Two additional Grade 12 academic Science subjects: Biology, Chemistry\*, or Physics
  - ❖ One additional Grade 12 academic course

*\* The prerequisite for Chemistry 1110 (a required course in the engineering program) is Grade 12 academic Chemistry. Students who do not have the prerequisite for Chemistry 1110 may take the CHEM 0001 course being offered during the Summer semester. This course is required for those students planning to take Chemistry 1110 and who do not have Grade 12 Academic Chemistry.*



## Applicants from Other Institutions

Applicants attending or having attended another institution who are seeking to transfer into UPEI's engineering program must meet the same requirements as for High School applicants as well as the requirements for University Transfer Students. Transcripts will be reviewed for possible course transfer credit.



## English Academic Preparation (EAP)

[English Academic Preparation \(EAP\)](#) is an intensive language program for students who do not meet the UPEI language requirements but have conditional admission to a degree program. EAP coordinates course plans for students with this requirement.

For more information, contact: [eap@upei.ca](mailto:eap@upei.ca)



## The Gateway Program

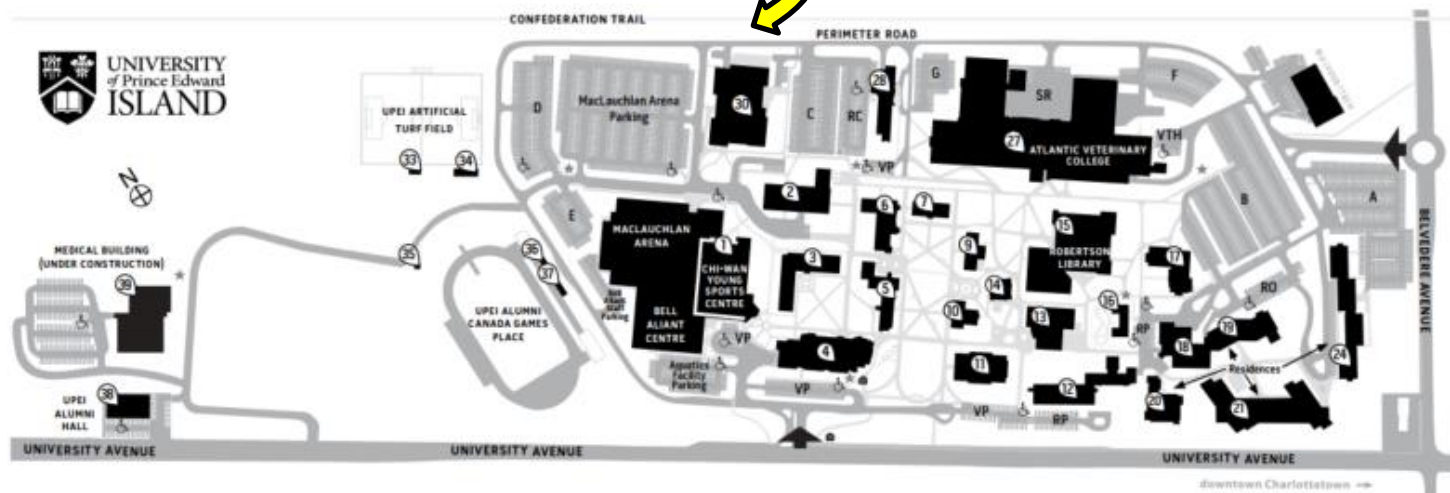
[The Gateway Program](#) is a full year non-credit bridging program that provides tutorial and mentoring support to students who are admitted to their first year at UPEI on a conditional basis, and as an optional resource for all other students interested in additional support.

For more information, contact: [gateway@upei.ca](mailto:gateway@upei.ca)



# The UPEI Campus

**We are in Building #30**



## CAMPUS BUILDINGS

- |   |   |   |
|---|---|---|
| 1 Chi-Wan Young Sports Centre (YSC)     | 13 Duffy Science Centre (DSC)                   | 28 Regis and Joan Duffy Research Centre (DRC)                       |
| 2 Central Utility Building (CUB)        | 14 Chaplaincy Centre (CC)                       | <b>30 Faculty of Sustainable Design Engineering Building (FSDE)</b> |
| 3 Health Sciences Building (HSB)        | 15 Robertson Library (RL)                       | 33 Artificial Turf Field Announcers' Building                       |
| 4 W.A. Murphy Student Centre (MSC)      | 16 Daycare Building (DCB)                       | 34 Clubhouse  |
| 5 SDU Main Building (SOMB)              | 17 K.C. Irving Chemistry Centre (ICC)           | 35 Alumni Canada Games Place Storage Building                       |
| 6 Steel Building (SB)                   | 18 Wanda Wyatt Dining Hall (WDH)                | 36 Alumni Canada Games Place Announcers' Building                   |
| 7 Dalton Hall (DH)                      | 19 Bill and Denise Andrew Hall (AH) (Residence) | 37 Alumni Canada Games Place VIP Building                           |
| 9 Memorial Hall (MH)                    | 20 Bernadine Hall (BEH) (Residence)             | 38 UPEI Alumni Hall (ALH)   |
| 10 Cass Science Hall (CSH)              | 21 Performing Arts Centre and Residence (PAC)   | 39 Medical Building (Under construction)                            |
| 11 Kelley Memorial Building (KMB)       | 24 Blanchard Hall (BLH) (Residence)             |   |
| 12 Don and Marion McDougall Hall (MCDH) | 27 Atlantic Veterinary College (AVC)            |   |

*Note: This map is not to scale*

- BUS SHELTER
- EMERGENCY CALL STATION

## PARKING

- |     |  |
|-----|--|
| A   | General & Overnight During Winter Months         |
| B   | General & Designated                             |
| C   | Designated                                       |
| D   | General  |
| E   | General  |
| F   | Designated                                       |
| G   | Designated                                       |
| VTH | Teaching Hospital Clients                        |
|     | Accessible                                       |
| RO  | Residence Only                                   |
| VP  | Visitor Metered (UPEI parking pass not required) |
| RP  | Reserved   |
| SR  | Shipping and Receiving                           |
| RC  | Research Centre                                  |

Download a printable copy of [UPEI's Campus Map](#).

## Parking

Students can purchase a General campus parking permit through the online portal for Parking Services. Please have your UPEI ID number and the vehicle license plate number, year, and model with you in order to complete your purchase.

[UPEI Website - Get Student Parking Permit](#)

## Residence

The University of Prince Edward Island provides accommodation in four different residence buildings on campus. Each of our Residence halls is unique in structure, traditions, and lifestyle options, but all offer the opportunity for students to experience the best that residence life has to offer. [Read more about the residence buildings](#): Bernadine Hall, Bill and Denise Andrew Hall, Blanchard Hall, and the Performing Arts Centre and Residence.

[Apply for Residence](#).

## Off-Campus Housing

Support is also available to assist students in locating off-campus housing. Students should contact: Off-Campus Housing Coordinator at [offcampushousing@upei.ca](mailto:offcampushousing@upei.ca). For more information, please visit [UPEI Off Campus Housing](#)

# The Campus Services

## Student Experience Hub

Many services for students are housed in the Student Experience Hub in Dalton Hall (Building #7):

Floor 1	Floor 2	Floor 3	Floor 4	Floor 5
Accessibility Services	Student Financial Services  Scholarships & Awards, Financial Aid  Work Integrated Learning & Experiential Education	Admissions  Academic Records  Registrar	Recruitment and First Year Advising  International Student Office	Student Affairs  Mawi'omi Student Centre

- **Accessibility Services**

UPEI Accessibility Services is committed to providing equal opportunities for students with disabilities, within a supportive and challenging environment, consistent with academic principles.

[UPEI Website - Accessibility Services](#)

- **Registrar's Office**

The Registrar's Office can assist with questions about registration, transcripts, verification of enrolment, academic regulations, and the academic calendar.

[UPEI Website - Registrar's Office](#)

- **Student Awards**

UPEI Student Awards Office can assist students in finding scholarships and awards they may be eligible for.

[UPEI Website - Scholarships and Awards](#)

- **Financial Aid**

UPEI Financial Aid Office can assist students in finding the best ways to finance their education.

[UPEI Website - Financial Aid](#)

- **Student Financial Services**

The UPEI Student Financial Services Office is responsible for the timely and accurate billing, collection, deposit and recording of all student fees and related charges.

[UPEI Website - Student Financial Services](#)

- **Work Integrated Learning**

UPEI Work Integrated Learning Office offers student support in experiential learning, development of professional skills and competencies, help with resume writing, and finding volunteer opportunities.

[UPEI Website - Work Integrated Learning](#)

- **Student Advisers**

UPEI Student Advisers play a big role in getting students ready for university as well as guiding them in their studies. The Student Advisement Team assists future students, accepted students looking for first-year advising, current students, international students, and graduate students.

[UPEI Website - Student Advisers](#)

- **International Office**

The International Office provides support to the more than 1,800 international students from 90+ countries that attend UPEI each year. Students can get assistance throughout their degree with study permits, immigration services, Buddy program, cultural and social activities.

[UPEI Website - International Office](#)

- **Student Affairs**

Student Affairs staff help students make the most of their time at UPEI by providing services such as academic advising and coaching, personal counselling, and accessibility services.

[UPEI Website - Student Affairs](#)

- **Mawi'omi Indigenous Student Centre**

The Mawi'omi Centre is a home away from home for all Indigenous students. The Centre's lounge offers a place for students to gather together to socialize, study, and relax. The Centre also assists current and incoming Indigenous students with admission and course selection, provides tutoring and access to other student services, as well as offers support, cultural growth, and teachings from the Elder in Residence.

[UPEI Website - The Mawi'omi Centre](#)

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## **Campus Services**

### **Chaplaincy Centre**

The Chaplaincy Centre provides a location to meet, eat, socialize, pray, and hold religious services. Our UPEI Campus Minister provides a spiritual presence that is supportive of students, faculty, staff and administration. Spiritual accompaniment and pastoral counselling, as well as opportunities for inquiry into faith and programs designed to enhance social, intellectual, and personal growth are offered. Located in Building #14.

[UPEI Website - Chaplaincy Centre](#)

### **Math Help Centre**

The UPEI School of Mathematical and Computational Sciences provides comprehensive help to students in principal Math topic areas for the first two years of study. Located in Cass Science Hall, Room 105.

[UPEI SMCS - Math Help Centre Website](#)

### **Office of Study Abroad**

The Office of Study Abroad offers students the opportunity to design their own Study Abroad programs to explore and experience other countries while earning UPEI credits. Located in the Robertson Library, Room 225.

[UPEI Website - Study Abroad](#)

### **Writing Centre**

The UPEI Writing Centre provides coaching and support for writing in all disciplines. Help is available at any stage of the writing process (brainstorming for a topic, drafting a thesis statement, organizing ideas, and the correct way to use sources) and assistance with grammar and writing mechanical problems. Located in the Robertson Library, Room 274.

[UPEI Website - Writing Centre](#)

### **UPEI Health Centre**

The UPEI Health and Wellness Centre provides access to high quality, safe health care to students by partnering with interdisciplinary and collaborative teams to deliver health promotion, optimal health care and ongoing education. Located in the W. A. Murphy Student Centre, 2nd floor, (north end).

[UPEI Website - Health Centre](#)

### **UPEI Student Union**

The UPEI Student Union is dedicated to improving the lives of students on campus and enriching the UPEI experience. They provide services such as health and dental insurance, wellness programs, clubs, and other student centric activities. Located in the W. A. Murphy Student Centre, 2nd floor, (south end).

[UPEI Website - Student Union](#)



## Tuition & Fees

Tuition and fees in the Sustainable Design Engineering program are approved by the University of Prince Edward Island Board of Governors. Tuition costs are based on the number of courses registered each semester. For a detailed breakdown of course costs and program fees, please refer to the [Tuition and Fees Calculator](#).

Registered students can view a breakdown of their tuition and fees in their Student Account in myUPEI, under the "Student Finance" section.

## Awards & Scholarships

### Entrance Awards

There are over 40 general entrance scholarships available to students entering UPEI. Students wishing to be considered for an Entrance Scholarship must submit the application by March 1. This application form covers all general entrance scholarships. There are also additional donor-funded awards which require a separate application. Students are encouraged to review all scholarship award opportunities available. [Information on Entrance Awards & Scholarships](#)

**Canadian Students:** entering UPEI directly from high school are automatically considered for the [Celebrating Student Achievement – Guaranteed Entrance Scholarships](#) based on their application for admission to the university.

Admission Average	Guaranteed Entrance Scholarship
95-100%	\$3000
90-94.99%	\$2000
85-89.99%	\$1000
80-84.99%	\$500

**International Students:** are also considered for separate entrance awards. Criteria can be found on the Scholarships and Awards website: [International Student Scholarships](#)

### FSDE Awards

Students in the Sustainable Design Engineering program are eligible for Engineering specific awards during the Fall Semester Awards Cycle. Awards are available at each program year and are presented during the annual FSDE Student Awards Ceremony. Graduating students are eligible for specific Graduation Awards which are given during convocation week. [Information on Fall Cycle Awards](#)

# Campus Card & Technology

## UPEI Campus Card



The UPEI Campus Card is the University's official photo ID card and provides the University community with convenient and efficient access to many services. Students in the Engineering program use their UPEI Campus Card to access study rooms (Ideation Rooms), project bays, and the computer lab within the Engineering Building. [Get a Campus Card](#)

## UPEI Email

Once the semester begins, any correspondence will be sent out to students' UPEI email addresses. Any issues with your UPEI email addresses should be communicated to the UPEI ITSS department at [helpdesk@upei.ca](mailto:helpdesk@upei.ca).



## UPEI SAFE App



UPEI SAFE is the University's safety app and mass notification system which helps UPEI advise the campus community about university/storm closures and any safety issues. All members of the UPEI community - students, faculty, staff, family, and friends - are encouraged to download the app.

Notifications about crisis situations and university/storm closures are pushed through UPEI SAFE as well as automatically emailed to students' @upei.ca email addresses.

[UPEI Website - SAFE App](#)

## Moodle

Moodle is a learning platform used by professors at UPEI to communicate course information to their students. Within the Moodle platform you will find your current course registrations and relevant materials such as course syllabus, course notes, presentations and assignments. If you do not see your courses in Moodle then reach out to the course instructor to resolve the issue.

[Getting started with Moodle.](#)



## Multi-Factor Authentication

MFA adds an extra layer of security to your UPEI account by requiring two or more pieces of evidence (or factors) before allowing access to a service. Verifying your identity using a second factor (such as your phone) prevents others from accessing your account, even if they know your password.

[Multi-Factor Authentication](#)

## myUPEI

myUPEI is UPEI's internal portal. Here you will find important information such as campus announcements, links, forms, and a list of your current classes. You can access your UPEI email, Moodle and other services from myUPEI. You will use myUPEI to plan and register for your courses.

## FSDE Moodle page

All FSDE Students will be added to the FSDE Student Hub Moodle page. This page houses important Engineering resources for academic planning.

### FSDE Student Hub



# Course Registration

## Searching Courses in myUPEI

→ All available courses can be found through the Course Catalog:



## Course Catalogue Quick Reference Guide

Start your Search – Enter at least one of the available options to begin.

Search for specific courses:

- Enter Course code(s) with/without dashes/caps (e.g. ENG-2120, ENG2120, eng2120)
- or .... Multiple courses separated by a comma (e.g. eng2120, anth1050)
- or ... keywords in quotes (e.g. "European history")

Use the Advanced Search criteria for a more comprehensive list of courses.

### Catalog Advanced Search

Select one of the available terms from the list.

- **Course Subject:** Select a subject from the list or start typing the subject name to find it.
- **Course Number:** Enter the 4 digit course number, leave it empty (if you want to see all courses associated with this subject) or enter a partial value followed by an asterisk \*.
- **Section:** Enter 1 or 2 numbers to search for a specific section or leave it blank.

Use the time of day criteria of Morning (8 AM – Midday), Afternoon (Midday – 4 PM), or Evening 4 PM – 8 PM) to find courses that fit your busy schedule.

Use the Add More button to add up to 6 subjects in your search. Courses Accounting 1010 Want to maximize your search results? Replace one or more characters with \*.

[Course Catalog Reference Guide](#)

Students should seek academic advice for additional guidance on any course plan that deviates from the Year 1 plans provided in this package.

**Students have the choice to complete their degree over 4 years or over 5 years.**

**Success in the 4-year degree path requires a strong academic background and performance in math.**

The 4-Year degree sequencing requires a 6 + 6 course load in Program Year 1 as follows:

Term 1 (Year 1 - Fall Semester)	Term 2 (Year 1 – Winter Semester)
ENGN 1210: Engineering Communications	ENGN 1220: Engineering Analysis
ENGN 1230: Engineering Mechanics I: Statics	ENGN 1250: Materials Science
ENGN 1410: Sustainability in Engineering Design	ENGN 1310: Computer Programming
CHEM 1110: General Chemistry I	ENGN 1340: Engineering Mechanics II: Dynamics
MATH 1910: Single Variable Calculus I	MATH 1920: Single Variable Calculus II
MATH 2610: Linear Algebra	ENG 1010: Writing Studies (UPEI 1010)

*ENG 1010: Writing Studies is available in the Summer semesters. Students may choose to complete this course during the summer (either directly before or after the upcoming year) to reduce the course-load during Year 1.*

The 5-Year degree sequencing (Fall start) has a 4 + 4 course load in Program Year 1 as follows:

Term 1 (Year 1 - Fall Semester)	Term 2 (Year 1 - Winter Semester)
ENGN 1210: Engineering Communications	ENGN 1220: Engineering Analysis
ENGN 1410: Sustainability in Engineering Design	ENGN 1310: Computer Programming
MATH 1910: Single Variable Calculus I	MATH 1920: Single Variable Calculus II
MATH 2610: Linear Algebra	ENG 1010: Writing Studies (UPEI 1010)

The 5-Year degree sequencing (Winter start) is as follows:

	Term 1 (Year 1 - Winter Semester)
	MATH 1910: Single Variable Calculus I
	MATH 2610: Linear Algebra
	ENG 1010: Writing Studies (UPEI 1010)
	IKE 1040: Indigenous Teachings
Term 2 (Year 1 - Summer Semester)	
MATH 1920: Single Variable Calculus II	

Course matrices for the full program for each of these plans can be found on following pages and are available on the UPEI FSDE webpage: <https://www.upei.ca/programs/engineering>

# The Registration Process

## Registering for Courses in myUPEI

1. Login to MyUPEI and scroll down to the Student Toolbox.
2. Select **Student Planning**. This will bring you to a secondary page where you will choose **Student Planning** again.
3. Go to **Plan & Schedule**.
4. How to Register for Courses:

### [How to Register for Courses](#)

2

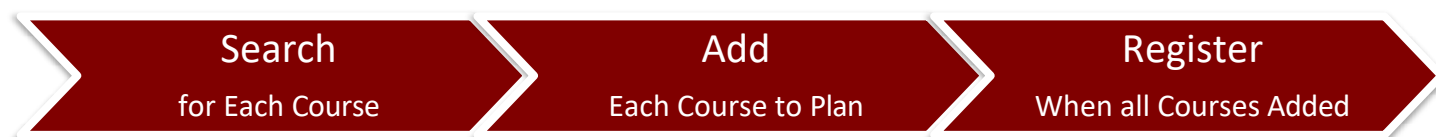


#### Plan your Degree & Register for Classes

Next, take a look at your plan to see what you've accomplished and register your remaining classes toward your degree.

[Go to Plan & Schedule](#)

Search for courses in myUPEI. Add the sections to your “plan” to identify scheduling conflicts. Once you are satisfied, then “Register” for them in myUPEI.



Courses in **yellow** are “Planned,” and not officially registered.

Courses in **green** are officially registered.

In the course timetable, the following descriptors are used for ENGN courses:

**Lecture** – offered in-person only in the building/room indicated

**Lab** – offered in-person only in the building/room indicated

**Design Studio** - offered in-person only in the building/room indicated

## Engineering Courses – Always First!

- **Students MUST register for Engineering courses first.**
- Students can then register for other **non-Engineering courses** such as Math, Chemistry, ENG 1010 and other non-Engineering electives. There are multiple sections for these courses.
- For 1<sup>st</sup> year Design (ENGN 1210 & 1220), the lab section number must match the lecture section number.
- CHEM 1110 requires registration in a lab - section number of lecture and lab do not need to match.
- MATH 1910 and MATH 1920 require registration in a **tutorial** section - section number of lecture and tutorial do not need to match.
- ENG-1010 is a requirement in Engineering and UPEI-1020 or UPEI-1030 will not be accepted.
- Design Courses run the full academic year. Please ensure you plan ahead to take these at the recommended time.
  - 1<sup>st</sup> year Design Courses: 1210/1220
  - 2<sup>nd</sup> year Design Courses: 2210/2220
  - 3<sup>rd</sup> year Design Courses: 3710/3720
  - 4<sup>th</sup> year Design Courses: 4710/4720

## Four (4) Year Degree Plan

Term 1 (Year 1 - Fall Semester)			Sem Hrs	Term 2 (Year 1 - Winter Semester)			Sem Hrs
ENGN 1210	Engineering Communications	3		ENGN 1220	Engineering Analysis	3	
ENGN 1230	Engineering Mechanics I: Statics	3		ENGN 1250	Materials Science	3	
ENGN 1410	Sustainability in Engineering Design	3		ENGN 1310	Computer Programming	3	
CHEM 1110	General Chemistry I	3		ENGN 1340	Engineering Mechanics II: Dynamics	3	
MATH 1910	Single Variable Calculus I	4		MATH 1920	Single Variable Calculus II	4	
MATH 2610	Linear Algebra	3		ENG 1010	Writing Studies (UPEI 1010)	3	
Term 3 (Year 2 - Fall Semester)				Term 4 (Year 2 - Winter Semester)			
ENGN 2210	Engineering Projects I	3		ENGN 2220	Engineering Projects II	3	
ENGN 2310	Strength of Materials	3		ENGN 2130	Statistics for Engineering Applications	3	
ENGN 2610	Thermo Fluids I: Thermodynamics	3		ENGN 2360	Materials, Mechanics and Manufacturing	3	
ENGN 2810	Electric Circuits	3		ENGN 2620	Thermo Fluids II: Fluid Mechanics	3	
MATH 2910	Multivariable and Vector Calculus	4		ENGN 2830	Digital Logic Design	3	
IKE 1040	Indigenous Teachings	3		MATH 3010	Differential Equations	3	
Term 5 (Year 3 - Fall Semester)				Term 6 (Year 3 - Winter Semester)			
ENGN 3710	Project-Based Professional Practice I	6		ENGN 3720	Project-Based Professional Practice II	6	
ENGN 3220	Engineering Measurements	3		ENGN 3270	Machines and Automatic Control	3	
ENGN 3630	Thermo Fluids III: Heat Transfer and Thermodynamic Cycles	3		ENGN 3430	Technology Management and Entrepreneurship	3	
ENGN 3810	Systems Engineering	3		ENGN 3820	System Dynamics with Simulation	3	
ENGN	Intro Focus Area Elective	3		ENGN	Focus Area Elective	3	
Term 7 (Year 4 - Fall Semester)				Term 8 (Year 4 - Winter Semester)			
ENGN 4710	Project-Based Professional Practice III	6		ENGN 4720	Project-Based Professional Practice IV	6	
ENGN 4210	Facilitated Study and Experimental Practice	3		ENGN	Focus Area Elective	3	
ENGN 4850	Computational Methods for Engineering Design	3		COMP**	Complementary Studies Elective	3	
ENGN	Focus Area Elective	3		COMP/SCI**	Complementary Studies or Science Elective	3	
Total Fall Semester Hours		71		Total Winter Semester Hours		70	

### Notes:

- A 60% minimum grade is required in: ENGN 1210, 1220, 2210, 2220, 3710, 3720 and 4710 to proceed to the next course.
- \*UPEI 1010 is cross-listed with ENG 1010 - **search ENG 1010** in the course catalogue.
- \*\*Complementary Studies is considered to be any non-Engineering or non-Science course.



## Five (5) Year Degree Plan

Term 1 (Year 1 - Fall Semester)			Sem Hrs	Term 2 (Year 1 - Winter Semester)			Sem Hrs
ENGN 1210	Engineering Communications	3		ENGN 1220	Engineering Analysis	3	
ENGN 1410	Sustainability in Engineering Design	3		ENGN 1310	Computer Programming	3	
MATH 1910	Single Variable Calculus I	4		MATH 1920	Single Variable Calculus II	4	
MATH 2610	Linear Algebra	3		ENG 1010	Writing Studies (UPEI 1010)	3	
Term 3 (Year 2 - Fall Semester)				Term 4 (Year 2 - Winter Semester)			
ENGN 1230	Engineering Mechanics I: Statics	3		ENGN 1250	Materials Science	3	
ENGN 2810	Electric Circuits	3		ENGN 1340	Engineering Mechanics II: Dynamics	3	
CHEM 1110	General Chemistry I	3		ENGN 2130	Statistics for Engineering Applications	3	
MATH 2910	Multivariable and Vector Calculus	4		MATH 3010	Differential Equations	3	
Term 5 (Year 3 - Fall Semester)				Term 6 (Year 3 - Winter Semester)			
ENGN 2210	Engineering Projects I	3		ENGN 2220	Engineering Projects II	3	
ENGN 2310	Strength of Materials	3		ENGN 2360	Materials, Mechanics and Manufacturing	3	
ENGN 2610	Thermo Fluids I: Thermodynamics	3		ENGN 2620	Thermo Fluids II: Fluid Mechanics	3	
ENGN 3220	Engineering Measurements	3		ENGN 2830	Digital Logic Design	3	
IKE 1040	Indigenous Teachings	3		ENGN 3270	Machines and Automatic Control	3	
Term 7 (Year 4 - Fall Semester)				Term 8 (Year 4 - Winter Semester)			
ENGN 3710	Project-Based Professional Practice I	6		ENGN 3720	Project-Based Professional Practice II	6	
ENGN 3630	Thermo Fluids III: Heat Transfer and Thermodynamic Cycles	3		ENGN 3430	Technology Management and Entrepreneurship	3	
ENGN 3810	Systems Engineering	3		ENGN 3820	System Dynamics with Simulation	3	
ENGN	Intro Focus Area Elective	3		ENGN	Focus Area Elective	3	
Term 9 (Year 5 - Fall Semester)				Term 10 (Year 5 - Winter Semester)			
ENGN 4710	Project-Based Professional Practice III	6		ENGN 4720	Project-Based Professional Practice IV	6	
ENGN 4210	Facilitated Study and Experimental Practice	3		ENGN	Focus Area Elective	3	
ENGN 4850	Computational Methods for Engineering Design	3		COMP**	Complementary Studies Elective	3	
ENGN	Focus Area Elective	3		COMP/SCI**	Complementary Studies or Science Elective	3	
Total Fall Semester Hours		71		Total Winter Semester Hours		70	

### Notes:

- A 60% minimum grade is required in each: ENGN 1210, 1220, 2210, 2220, 3710, 3720 and 4710 to proceed to the next course.
- \*UPEI 1010 is cross-listed with ENG 1010 - **search ENG 1010** in the course catalogue.
- \*\*Complementary Studies is considered to be any non-Engineering or non-Science course.

## Five (5) Year Degree Plan (Winter Start)

			Sem Hrs	Term 1 (Year 1 - Winter Semester)		Sem Hrs
				MATH 1910	Single Variable Calculus I	4
				MATH 2610	Linear Algebra	3
				ENG 1010	Writing Studies (UPEI 1010)	3
				IKE 1040	Indigenous Teachings	3
Term 2 (Year 1 - Summer Session)						
MATH 1920	Single Variable Calculus II	4				
Term 3 (Year 2 - Fall Semester)			Term 4 (Year 2 - Winter Semester)			
ENGN 1210	Engineering Communications	3	ENGN 1220	Engineering Analysis	3	
ENGN 1230	Engineering Mechanics I: Statics	3	ENGN 1250	Materials Science	3	
ENGN 1410	Sustainability in Engineering Design	3	ENGN 1310	Computer Programming	3	
CHEM 1110	General Chemistry I	3	ENGN 1340	Engineering Mechanics II: Dynamics	3	
MATH 2910	Multivariable and Vector Calculus	4	MATH 3010	Differential Equations	3	
Term 5 (Year 3 - Fall Semester)			Term 6 (Year 3 - Winter Semester)			
ENGN 2210	Engineering Projects I	3	ENGN 2220	Engineering Projects II	3	
ENGN 2310	Strength of Materials	3	ENGN 2130	Statistics for Engineering Applications	3	
ENGN 2610	Thermo Fluids I: Thermodynamics	3	ENGN 2360	Materials, Mechanics and Manufacturing	3	
ENGN 2810	Electric Circuits	3	ENGN 2620	Thermo Fluids II: Fluid Mechanics	3	
			ENGN 2830	Digital Logic Design	3	
Term 7 (Year 4 - Fall Semester)			Term 8 (Year 4 - Winter Semester)			
ENGN 3710	Project-Based Professional Practice I	6	ENGN 3720	Project-Based Professional Practice II	6	
ENGN 3220	Engineering Measurements	3	ENGN 3270	Machines and Automatic	3	
ENGN 3630	Thermo Fluids III: Heat Transfer and Thermodynamic Cycles	3	ENGN 3430	Technology Management and Entrepreneurship Control	3	
ENGN 3810	Systems Engineering	3	ENGN 3820	System Dynamics with Simulation	3	
ENGN	Intro Focus Area Elective	3	ENGN	Focus Area Elective	3	
Term 9 (Year 5 - Fall Semester)			Term 10 (Year 5 - Winter Semester)			
ENGN 4710	Project-Based Professional Practice III	6	ENGN 4720	Project-Based Professional Practice IV	6	
ENGN 4210	Facilitated Study and Experimental Practice	3	ENGN	Focus Area Elective	3	
ENGN 4850	Computational Methods for Engineering Design	3	COMP**	Complementary Studies Elective	3	
ENGN	Focus Area Elective	3	COMP/SCI**	Complementary Studies or Science Elective	3	
Total Fall Semester Hours		68	Total Winter Semester Hours		73	

### Notes:

- A 60% minimum grade is required in each: ENGN 1210, 1220, 2210, 2220, 3710, 3720 and 4710 to proceed to the next course.
- \*UPEI 1010 is cross-listed with ENG 1010 - **search ENG 1010** in the course catalogue.
- \*\*Complementary Studies is considered to be any non-Engineering or non-Science course.

## Degree Focus Areas

Students in the final two years of the program can enhance their technical knowledge by choosing one of three engineering focus areas: **Mechatronics, Sustainable Energy, or Bioresources**). A minimum of 4 focus area (FA) electives must be taken. The first focus area elective must be the introductory elective course in either Mechatronics (ENGN 3340), Sustainable Energy (ENGN 3440), or Bioresources (ENGN 3540). The remaining three focus area electives can be selected from any of the available courses listed below. At least one of the focus area electives must be at the 4000 level.

<b>Introductory Focus Area Electives (Fall Semester)</b>	
<b>Choose one of three. Note that at least one intro FA elective must be taken before any other FA elective.</b>	
ENGN 3340	Introduction to Mechatronics Engineering
ENGN 3440	Introduction to Sustainable Energy Engineering
ENGN 3540	Introduction to Bioresources Engineering
<b>Additional Focus Area Electives (Fall Semester)</b>	
ENGN 4310	Advanced Fabrication Techniques and Computer-Integrated Manufacturing
ENGN 4320	Control System Design
ENGN 4410	Macro Energy Systems
ENGN 4440	Advanced Energy Storage
ENGN 4510	Geoinformatics in Bioresources
ENGN 4530	Fundamentals of Agricultural Machinery
ENGN 4330	Innovations in Biomedical Engineering
ENGN 4840	Sustainable Technology Development and Commercialization
<b>Additional Focus Area Electives (Winter Semester)</b>	
ENGN 3370	Mechatronic System Integration and Interface Design
ENGN 3380	Real-time Embedded Systems
ENGN 3390	Intro to Mechatronic Computer-Aided Product Development, Modelling and Simulation
ENGN 3450	Wind and Water Power
ENGN 3460	Solar Energy and Electricity Storage
ENGN 3490	Chemical Energy Conversion
ENGN 3570	Engineering Applications of Biological Materials
ENGN 3580	Soil Mechanics
ENGN 4350	Advanced Robotic Dynamics and Control
ENGN 4370	Fluid Power Control
ENGN 4450	Fluid Loads on Energy Structures
ENGN 4470	Micro Grids
ENGN 4550	Biotechnological Processes
ENGN 4830	Biomedical Signal Processing

**Not all focus area elective courses are offered every year. Courses are offered subject to enrollment and instructor availability.**

# Prerequisite Map – 2024-25

REQUIRED PREREQUISITES	CORE ENGINEERING COURSES	PREREQUISITES FOR
ENGN 1410 and MATH 1910 must <u>both</u> be completed or taken concurrently	ENGN 1210: Engineering Communications	ENGN 1220 (requires 60% in ENGN 1210)
ENGN 1210 (60%+); ENGN 1310 completed or taken concurrently	ENGN 1220: Engineering Analysis	ENGN 2210 (requires 60% in ENGN 1220)
MATH 1910 completed or taken concurrently	ENGN 1230: Engineering Mechanics I: Statics	ENGN 1340; ENGN 2310
MATH 1920 completed or taken concurrently; CHEM 1110	ENGN 1250: Materials Science	ENGN 2210
MATH 1920 completed or taken concurrently	ENGN 1310: Computer Programming w/ Engineering Apps	<i>Co-requisite:</i> ENGN 1220; ENGN 2210, ENGN 2830, ENGN 4850
MATH 1920 completed or taken concurrently; ENGN 1230	ENGN 1340: Engineering Mechanics II: Dynamics	ENGN 2210
	ENGN 1410: Sustainability in Engineering Design	<i>Co-requisite:</i> ENGN 1210; ENGN 2210
MATH 1920	ENGN 2130: Statistics for Engineering Applications	ENGN 3220, ENGN 3710
ENGN 1220 (60%+); UPEI 1010 (ENG 1010), ENGN 1250, 1310, 1340, 1410; ENGN 2310, ENGN 2610, ENGN 2810, completed or taken concurrently	ENGN 2210: Engineering Projects I	ENGN 2220 (requires 60% in ENGN 2210)
ENGN 2210 (60%+)	ENGN 2220: Engineering Projects II	ENGN 3710 (requires 60% in ENGN 2220), ENGN 3810
ENGN 1230; MATH 1920	ENGN 2310: Strength of Materials	<i>Co-requisite:</i> ENGN 2210; ENGN 2360
ENGN 1250; ENGN 2310	ENGN 2360: Materials, Mechanics and Manufacturing	ENGN 3710, ENGN 4310
CHEM 1110 completed or taken concurrently; MATH 1920	ENGN 2610: Thermo Fluids I: Thermodynamics	<i>Co-requisite:</i> ENGN 2210; ENGN 2620
ENGN 2610; MATH 2910	ENGN 2620: Thermo Fluids II: Fluids Mechanics	ENGN 3630, ENGN 3710
MATH 1920	ENGN 2810: Electric Circuits	<i>Co-requisite:</i> ENGN 2210; ENGN 2830, ENGN 3220
ENGN 1310; ENGN 2810	ENGN 2830: Digital Logic Design	ENGN 3710
ENGN 2130; ENGN 2810; MATH 3010	ENGN 3220: Engineering Measurements	ENGN 3270, ENGN 3820, ENGN 4830
ENGN 3220	ENGN 3270: Machines and Automatic Control	ENGN 4710
ENGN 3710	ENGN 3430: Technology Management and Entrepreneurship	ENGN 4710, ENGN 4840
ENGN 2620	ENGN 3630: Thermo Fluids III: Heat Transfer and Thermodynamic Cycles	ENGN 4710
ENGN 2220 (60%+); ENGN 2130, ENGN 2360, ENGN 2620, ENGN 2830	ENGN 3710: Project-Based Professional Practice I	<i>Co-requisite:</i> ENGN 3340/ENGN 3440/ENGN 3540; ENGN 3430, ENGN 3720 (requires 60% in ENGN 3710), ENGN 4330
ENGN 3710 (60%+)	ENGN 3720: Project-Based Professional Practice II	ENGN 4710 (requires 60% in ENGN 3720), ENGN 4850
ENGN 2220	ENGN 3810: Systems Engineering	ENGN 3820
ENGN 3220; ENGN 3810	ENGN 3820: System Dynamics with Simulation	ENGN 4320, ENGN 4370, ENGN 4710
ENGN 4710 must be taken concurrently	ENGN 4210: Facilitated Study and Experimental Practice	<i>Co-requisite:</i> ENGN 4710
ENGN 3720 (60%+); ENGN 3270, ENGN 3630, ENGN 3820, and ENGN 3430; ENGN 4210 taken concurrently	ENGN 4710: Project-Based Professional Practice III	<i>Co-requisite:</i> ENGN 4210, ENGN 4840; ENGN 4720 (requires 60% in ENGN 4710)
ENGN 4710 (60%+)	ENGN 4720: Project-Based Professional Practice IV	
ENGN 1310; ENGN 3720; MATH 3010	ENGN 4850: Computational Methods for Engineering Design	



REQUIRED PREREQUISITES		ELECTIVE ENGINEERING COURSES	PREREQUISITES FOR
ENGN 3710 completed or taken concurrently	One	ENGN 3340: Introduction to Mechatronics Engineering	All Focus Area Electives Listed Below
ENGN 3710 completed or taken concurrently		ENGN 3440: Introduction to Sustainable Energy Engn	All Focus Area Electives Listed Below
ENGN 3710 completed or taken concurrently		ENGN 3540: Introduction to Bioresources Engineering	All Focus Area Electives Listed Below
ENGN 3340 or ENGN 3440 or ENGN 3540	Three Required	ENGN 3370: Mechatronic System Integration and Interface Design	
ENGN 3340 or ENGN 3440 or ENGN 3540		ENGN 3380: Real-Time Embedded Systems	
ENGN 3340 or ENGN 3440 or ENGN 3540		ENGN 3390: Intro to Mechatronic Computer-Aided Product Dev, Mod & Sim	
ENGN 3340 or ENGN 3440 or ENGN 3540		ENGN 3450: Wind and Water Power	
ENGN 3340 or ENGN 3440 or ENGN 3540		ENGN 3460: Solar Energy and Electricity Storage	
ENGN 3340 or ENGN 3440 or ENGN 3540		ENGN 3490: Chemical Energy Conversion	
ENGN 3340 or ENGN 3440 or ENGN 3540		ENGN 3570: Engn Applications of Biological Materials	
ENGN 3340 or ENGN 3440 or ENGN 3540		ENGN 3580: Soil Mechanics	
ENGN 3340 or ENGN 3440 or ENGN 3540; ENGN 2360		ENGN 4310: Advanced Fabrication Tech. & Computer-Integrated Manufacturing	
ENGN 3340 or ENGN 3440 or ENGN 3540; ENGN 3820		ENGN 4320: Control System Design	
ENGN 3710		ENGN 4330: Innovations in Biomedical Engineering	
ENGN 3340 or ENGN 3440 or ENGN 3540		ENGN 4350: Advanced Robotic Dynamics and Control	
ENGN 3340 or ENGN 3440 or ENGN 3540; ENGN 3820		ENGN 4370: Fluid Power Control	
ENGN 3340 or ENGN 3440 or ENGN 3540		ENGN 4410: Macro Energy Systems	
ENGN 3340 or ENGN 3440 or ENGN 3540		ENGN 4440: Advanced Energy Storage	
ENGN 3340 or ENGN 3440 or ENGN 3540		ENGN 4450: Fluid Loads on Energy Structures	
ENGN 3340 or ENGN 3440 or ENGN 3540		ENGN 4470: Micro Grids	
ENGN 3340 or ENGN 3440 or ENGN 3540		ENGN 4510: Geoinformatics in Bioresources	
ENGN 3340 or ENGN 3440 or ENGN 3540		ENGN 4530: Fundamental of Agricultural Machinery	
ENGN 3340 or ENGN 3440 or ENGN 3540		ENGN 4550: Biotechnological Processes	
ENGN 3220		ENGN 4830: Biomedical Signal Processing	
ENGN 3430; ENGN 4710 completed or taken concurrently		ENGN 4840: Sustainable Technology Development & Commercialization	
Grade XII Chemistry, or the permission of the Chair		CHEM 1110: General Chemistry I	<i>Co-requisite:</i> ENGN 2610; ENGN 1250
Grade XII academic Mathematics		MATH 1910: Single-Variable Calculus I	<i>Co-requisite:</i> ENGN 1210, ENGN 1230; MATH 1920
MATH 1910		MATH 1920: Single-Variable Calculus II	<i>Co-requisite:</i> ENGN 1250, ENGN 1310, ENGN 1340; ENGN 2130, ENGN 2310, ENGN 2610, ENGN 2810, MATH 2910, MATH 3010
		MATH 2610: Linear Algebra	
MATH 1920		MATH 2910: Multivariable and Vector Calculus	ENGN 2620
MATH 1920		MATH 3010: Differential Equations	ENGN 3220, ENGN 4850
		UPEI 1010 (ENG 1010)	ENGN 2210
Varies based on selected course		Complementary Studies Electives	
Varies based on selected course		Complementary Studies or Science Electives	

# Graduate Attributes

Engineering is an activity that is essential to meet the needs of people, economic development and the provision of services to society. Engineering involves the deliberate use of mathematics and the natural sciences, and of a body of knowledge of engineering, engineering technologies and techniques. Engineering seeks to produce solutions whose effects are anticipated in often uncertain contexts. Although it brings benefits, engineering activity has potential adverse effects. Consequently, engineering must be carried out responsibly and ethically, using available resources efficiently. It must also be economical, must safeguard health and safety, be ecological and sustainable, and generally must manage risks throughout the life cycle of a system.

The Engineering graduate attributes are generic to the education of professional engineers in all engineering disciplines. They categorize what graduates should know, the skills they should demonstrate and the attitudes they should possess.

1. **(KB) A knowledge base for engineering:** Demonstrated competence in university level mathematics, natural sciences, engineering fundamentals, and specialized engineering knowledge appropriate to the program.
2. **(PA) Problem analysis:** An ability to use appropriate knowledge and skills to identify, formulate, analyze, and solve complex engineering problems in order to reach substantiated conclusions.
3. **(Inv.) Investigation:** An ability to conduct investigations of complex problems by methods that include appropriate experiments, analysis and interpretation of data and synthesis of information in order to reach valid conclusions.
4. **(Des.) Design:** An ability to design solutions for complex, open-ended engineering problems and to design systems, components or processes that meet specified needs with appropriate attention to health and safety risks, applicable standards, and economic, environmental, cultural and societal considerations.
5. **Tools: Use of engineering tools:** An ability to create, select, apply, adapt, and extend appropriate techniques, resources, and modern engineering tools to a range of engineering activities, from simple to complex, with an understanding of the associated limitations.
6. **(Team) Individual and teamwork:** An ability to work effectively as a member and leader in teams, preferably in a multi-disciplinary setting.
7. **(Comm.) Communication skills:** An ability to communicate complex engineering concepts within the profession and with society at large. Such ability includes reading, writing, speaking and listening, and the ability to comprehend and write effective reports and design documentation, and to give and effectively respond to clear instructions.
8. **(Prof.) Professionalism:** An understanding of the roles and responsibilities of the professional engineer in society, especially the primary role of protection of the public and the public interest.
9. **(Impacts) Impact of engineering on society and the environment:** An ability to analyze social and environmental aspects of engineering activities. Such ability includes an understanding of the interactions that engineering has with the economic, social, health, safety, legal, and cultural aspects of society, the uncertainties in the prediction of such interactions; and the concepts of sustainable design and development and environmental stewardship.
10. **(Ethics) Ethics and equity:** An ability to apply professional ethics, accountability, and equity.
11. **(Econ.) Economics and project management:** An ability to appropriately incorporate economics and business practices including project, risk, and change management into the practice of engineering and to understand their limitations.
12. **(LL) Life-long learning:** An ability to identify and to address their own educational needs in a changing world in ways sufficient to maintain their competence and to allow them to contribute to the advancement of knowledge.

# Code of Ethics

Professional Engineers shall conduct themselves with integrity, in an honourable and ethical manner. Professional Engineers shall uphold the values of truth, honesty and trustworthiness and safeguard human life and welfare and the environment. In keeping with these basic tenets, professional engineers shall:

1. Hold paramount the safety, health and welfare of the public and the protection of the environment and promote health and safety within the workplace.
2. Offer services, advise on or undertake engineering assignments only in areas of their competence and practise in a careful and diligent manner and in compliance with applicable legislation.
3. Act as faithful agents of their clients or employers, maintain confidentiality and avoid conflicts of interest, but, where such conflict arises, fully disclose the circumstances without delay to the employer or client.
4. Keep themselves informed in order to maintain their competence and strive to advance the body of knowledge within which they practise.
5. Conduct themselves with integrity, equity, fairness, courtesy and good faith towards clients, colleagues and others, give credit where it is due, and accept, as well as give, honest and fair professional criticism.
6. Present clearly to employers and clients the possible consequences if engineering decisions or judgements are overruled or disregarded.
7. Report to their regulator other appropriate agencies any illegal or unethical engineering decisions or practices by registrants or others.
8. Be aware of, and ensure that clients and employers are made aware of, societal and environmental consequences of actions or projects and endeavour to interpret engineering issues to the public in an objective and truthful manner.
9. Treat equitably and promote the equitable and dignified treatment of people in accordance with human rights legislation.
10. Uphold and enhance the honour and dignity of the profession.

For more information, please refer to:

<https://engineerscanada.ca/publications/public-guideline-on-the-code-of-ethics#-the-code-of-ethics>