

ENGINEERING

Engineering is the application of scientific, economic, social, and practical knowledge in order to invent, design, build, maintain, and improve structures, machines, devices, systems, materials and processes. The discipline of engineering is extremely broad, and encompasses a range of more specialized fields of engineering, each with a more specific emphasis on particular areas of applied science, technology and types of application.

Who Studies Engineering?

Engineering students have a curious mind, like solving problems through ideas and designs, and thrive on organizing to get things done efficiently.

They have a strong analytical aptitude, show attention to detail and have excellent oral and written communication skills. Engineers must be able translate complex technical lingo as well as communicate with clients and others during the course of a project. A great engineer understands that they are part of a larger team working together to make one project come together successfully.

Career Opportunities

Most engineers are specialists in a certain field or even in a very specific subfield. Broad specialties include:

- Aerospace
- Agriculture
- Architectural
- Biomedical
- Chemical
- Civil
- Computer
- Electrical
- Environmental
- Industrial
- Marine
- Mechanical
- Mining and geological
- Nuclear
- Petroleum

Programs

- Certificate in Engineering (<https://calendar.kpu.ca/programs-az/science-horticulture/engineering/engineering-certificate/>)

Courses

Registration in some course sections is restricted to students in particular programs. See Timetables - [kpu.ca/registration/timetables](http://www.kpu.ca/registration/timetables/) (<http://www.kpu.ca/registration/timetables/>) - for current section information.

Visit the BC Transfer Guide - [bctransferguide.ca](https://www.bctransferguide.ca/) (<https://www.bctransferguide.ca/>) - for information about course transfer in B.C.

APSC 1124 1 credit

Introduction to Engineering

Students will learn about the practice of Engineering through a series of seminars and field trips conducted by working engineers. They will cover work done in various engineering fields, focusing on particular industries and/or specific disciplines. Students will participate in seminars on several engineering metaskills and complete a group design project followed by a presentation to the class. Note: This course is part of the first year engineering program.

Level: UG

Prerequisite(s): PHYS 1100 or Principles of Physics 12 (C)

Attributes: ASTR (<https://calendar.kpu.ca/courses-az/#astrtext>), SCIH (<https://calendar.kpu.ca/courses-az/#courseattributestext>)

APSC 1151 3 credits

Introduction to Engineering Graphics

Students will study technical sketching, orthographic projection, visualization in three dimensions, and conventions of engineering drawing. They will sketch by hand, and will draw with engineering-graphics software on the computer. Students will apply the principles of descriptive geometry to the solution of space problems.

Level: UG

Prerequisite(s): Level B1 as defined in the Math Alternatives Table

(<https://calendar.kpu.ca/course-information/mathematics-alternatives-table/>)

Attributes: ASTR (<https://calendar.kpu.ca/courses-az/#astrtext>), SCIH (<https://calendar.kpu.ca/courses-az/#courseattributestext>)

APSC 1299 3 credits

Introduction to Microcontrollers

Students will work with microcontrollers and C language in a lab setting to learn skills such as circuit design, data acquisition, DIO, ADC, and timing. Working in pairs or small groups, students will complete several labs and one project aimed at finding solutions to specified problems. Students will apply programming and debugging skills to make a device perform as intended. Note: This course is part of the first year Engineering program.

Level: UG

Prerequisite(s): CPSC 1103

Attributes: ASTR (<https://calendar.kpu.ca/courses-az/#astrtext>), SCIH (<https://calendar.kpu.ca/courses-az/#courseattributestext>)