

# ENGINEERING (ENGR)

## ENGR 101 3D Design and Drafting

2 Credits

From imagination to reality, learn how to make positive contributions to the future. Students will use imagination and creativity to engage in the design process through individual exercises and a series of mini-projects and labs undertaken in groups. The students will explore relevant technical background, such as engineering drawing and CAD tools, project and group dynamics, professional responsibility, and writing and presentation skills, serving as an introduction to the design process. Class sessions provide the foundation for completing laboratory design exercises and projects. ENGR 101 is a pre-requisite for ENGR 102 3D Design and Sustainability.

### Prerequisites

There are no specific course prerequisites but the students should have basic computer literacy.

### Transfer Credits

Explore transfer credit opportunities by visiting the BC Transfer Guide (<http://www.bctransferguide.ca>)

## ENGR 102 3D Design and Sustainability

2 Credits

Design the future! Continuing from Design and Drafting, this course expands on students understanding of engineering design as applied to larger, more self-directed projects. Examples of First Nations resource management and systems designs will be explored. Students, working in groups, will follow a structured process to design a system comprising of electrical, mechanical, and software sub-systems over the term. Students will complete one major project through several milestone stages with associated technical reporting, including a final paper in both oral and written form. This course includes an introduction to the concept of sustainability and its impact on engineering design and an exposure to engineering ethics.

### Prerequisites

ENGR 101

### Transfer Credits

Explore transfer credit opportunities by visiting the BC Transfer Guide (<http://www.bctransferguide.ca>)

## ENGR 121 Engineering Design and Drafting

2 Credits

From imagination to reality, learn how to make positive contributions to the future. Students will use imagination and creativity to engage in the engineering design process through individual exercises and a series of mini-projects and labs undertaken in groups. The students will explore relevant technical background (such as engineering drawing and CAD tools), project/group dynamics, professional responsibility, and writing and presentation skills, serving as an introduction to the Engineering design process. Class sessions provide the foundation for completing laboratory design exercises and projects. ENGR 121 is a requirement for all students completing the Common Engineering Curriculum and a pre-requisite for ENGR 122 - Engineering Design and Sustainability.

### Prerequisites

Physics 12 with a minimum grade of C+ and Pre-Calculus 12 with a minimum grade of C+

### Transfer Credits

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## ENGR 122 Engineering Design and Sustainability

2 Credits

Design the future! Continuing from ENGR 121, this course expands on student's understanding of engineering design as applied to larger, more self-directed projects. Examples of First Nations resource management and systems designs will be explored. Students, working in groups, will follow a structured process to design a system comprising of electrical, mechanical, and software sub-systems over the term. Students will complete one major project through several milestone stages with associated technical reporting (including a final paper in both oral and written form). Technical Writing is to be taken co-currently with ENGR 122 to develop student's technical writing skills in parallel to their project work. This course includes an introduction to the concept of sustainability and its impact on engineering design and an exposure to engineering ethics. ENGR 122 is a requirement for all students planning to complete the Common Engineering Curriculum.

### Prerequisites

ENGR 121, MATH 101, CPSC 123; minimum grade C;

### Transfer Credits

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