ENGINEERING SAMPLER

GRADES 10 TO 12 **4 CREDITS**

Central Okanagan Public Schools
Together We Learn

Okanagan COLLEGE

The Engineering Sampler program introduces students to the multifaceted world of engineering. Students will explore four key engineering fields and learn fundamental principles and gain an understanding of the design process. This program combines theoretical learning with hands on activities, providing students with insight into the profession and the educational pathways available to them. Students will also analyze problem solving strategies and be introduced to key systems and applications within the engineering sector. Whether you're passionate about building structures, creating machines, managing water resources, or exploring electronics, this course offers a dynamic and engaging entry point into the engineering field.

WHAT YOU WILL LEARN

Electronic Engineering

- Identify and describe the key principles of electronic circuits so that they can demonstrate their application in real-world scenarios
- Construct and troubleshoot electronic circuits using breadboards and basic components so that they gain practical experience and confidence working with electronic devices, circuits, and systems
- Create a personalized electronics project, such as a custom alarm system, environmental monitor, or simple autonomous wheeled robot, so that they can express their creativity and innovate with electronics

Civil Engineering

- Understand the fundamentals of Civil Engineering and the basics of surveying using a level circuit.
- Work with the flow of water for some hydraulic designs.
- Complete the fundamental soil test – a sieve.
- Use a 3D printer to design and make a simple product.

Mechanical Engineering

- Understand and summarize the fundamentals of Mechanical Engineering and explain the process of testing the physical limitations of a material
- Analyze the forces acting on mechanisms and compare the properties of materials relating to strength.
- Design and build a simple machine that performs a specific task and create a CAD model for 3D printing
- Synthesize principles from Mechanical Engineering to evaluate simple mechanical systems, demonstrating an understanding of foundational concepts and problem-solving skills to real world applications.

Water Technology Engineering

- Understand water systems and describe the selected components and functions of natural and engineered water systems including the water cycle, water treatment processes, and distribution and collection networks
- Analyze water quality by identifying common water quality indicators, understand contaminant sources, and evaluate the effectiveness of various water treatment methods.
- Apply sustainable solutions to basic water management that address issues such as water scarcity, pollution, and sustainable usage, incorporating principles of environmental stewardship and engineering ethics

PROGRAM AT A GLANCE

Intake Date

February to June (Semester 2)

Delivery

In-person sessions, Tues & Thursday evenings, some Saturdays, and field studies - Okanagan College, 1000 KLO Rd, Kelowna

Tuition

SD23 Pays: Tuition: Course tuition
Student Pays: $50 non-refundable deposit

*All program costs are approximate and subject to change without notice.

APPLICATION REQUIREMENTS

- Complete the School District application package and hand it into your Career Centre
- Meet with high school Career Coordinator to review program
- Application approved and accepted by School District

READY TO APPLY?
Applications are available at your school Career Centre
or www.dualcredit23.sd23.bc.ca

QUESTIONS, CONTACT
dualcredit@sd23.bc.ca