



# Undergraduate program at UBC's Department of Mechanical Engineering

## What is Mechanical Engineering?

A branch of engineering specializing in the analysis, design, production and maintenance of mechanical systems. Mechanical engineers study and design anything that moves – from robots to aircraft, energy systems and the human body.

### ABOUT OUR PROGRAM

The UBC Mechanical Engineering undergraduate program engages you in an education with both breadth and depth, giving you the teamwork, leadership, design and technical skills you need to work across a wide variety of sectors. The flexibility of the program gives you the opportunity to explore different areas of interest, and the mobility to adapt when the industry changes.

### WHY STUDY AT UBCV?

- Award-winning curriculum
- Strong support for students
- Team-oriented and design-focused
- Sense of community
- Practical and hands-on

## Program Options

### GENERAL

Our general program gives you a breadth of knowledge suitable for a variety of industries, allowing you career flexibility and the ability to adapt as industry needs change.

**IF YOU WANT TO GO DEEPER IN ONE DIRECTION, YOU CAN CHOOSE TO DO AN OPTION INSTEAD:**

### AEROSPACE

Reach for the sky and tailor your degree to the high-tech industries of aircraft and spaceflight. Specialized courses uniquely position you to enter the world of planes, drones, and rockets.

### BIOMECHANICS & BIOMEDICAL DEVICES

Bring life-changing innovation to the medical field, by learning how to design devices from hip implants to heart valves, do research in academic and government institutions, and conduct product testing.

### MECHATRONICS

With the growing capabilities of electronics, many mechanical systems are now either controlled by computers or enhanced by embedded sensors and circuits. This is Mechatronics, and it is one of modern society's most critical fields.

### THERMOFLUIDS

Thermofluids is the combined study of heat transfer, fluid dynamics, thermodynamics, and combustion, opening up the worlds of automotive design, naval architecture, power generation, heating and air conditioning, and more.

# Degree timeline

## General Engineering

At UBC we understand that flexibility is important. Get the background you need by taking one of the following:

- First Year Engineering at UBC Vancouver
- Engineering One at UBC Okanagan
- Engineering Transfer from some BC Colleges and Polytechnic Universities
- Camosun College Bridge for Mechanical Engineering Technologists (enters into third year)
- General Transfer from other recognized institutions (Note: you must match our curriculum and may need to make up some courses once you get to UBC)

## Mech 2

MECH 2 is a revolutionary new way to think about undergraduate education.

Subjects aren't taught in isolation — instead of taking six, separate courses per term, you will take four consecutive modules over the entire year, each integrating multiple aspects of mechanical engineering. Practical, hands-on approaches are emphasized with field trips, community service learning, and project work. All modules are with the same group of students, Profs, and TAs, forming a close-knit community.

[WWW.MECH.UBC.CA/UNDERGRADUATE/MECH-2](http://WWW.MECH.UBC.CA/UNDERGRADUATE/MECH-2)

## Specialize (or don't)

Breadth or depth?

It's an important choice. Students can choose to remain in a general program for breadth or to concentrate their studies in an Option: Aerospace, Biomechanics & Medical Devices, Mechatronics, or Thermofluids. Faculty-wide Minor programs are also available to Mech students, including a Minor in Commerce, a Minor in Arts, and a Minor in Science.

### CO-OP

Applications for Co-op open in September of year 2. Co-op lets you combine industrial experience with your education, connecting the classroom with the workplace. Students who take co-op extend their degree by one year and get 16 months on the job. | [www.coop.apsc.ubc.ca](http://www.coop.apsc.ubc.ca)

### AEROSPACE

Focus your core mechanical engineering skills to the world of flight, by studying propulsion, materials, aircraft design + structures, and more.

### BIOMECHANICS & MEDICAL DEVICES

From the design of medical devices to understanding how injury occurs, specialized knowledge allows mechanical engineers to improve our health.

### MECHATRONICS

Explore the overlap between movement and electronics, with subjects like electromechanics, microcomputers, and software engineering.

### THERMOFLUIDS

Thermodynamics and fluid mechanics: the basis of everything from acoustics to automotive, clean energy to combustion, fuel cells to naval architecture.

## Capstone Design

Capstone is the final piece that pulls everything together.

A full-year team project designing and prototyping a solution for a real problem for a real client. When you're done, you're ready for industry.

### Learn More

[MECH.UBC.CA/UNDERGRADUATE](http://MECH.UBC.CA/UNDERGRADUATE)

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