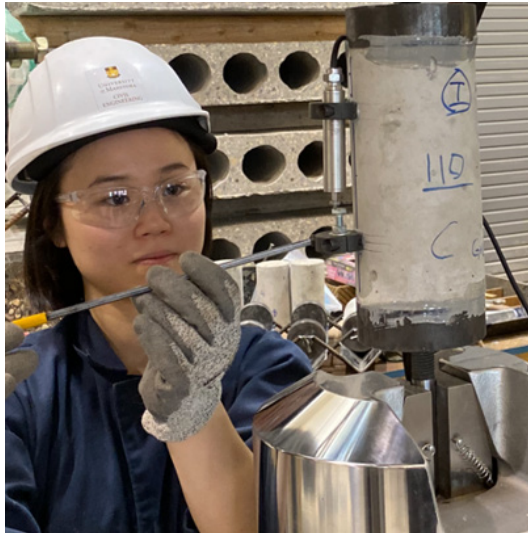# WHAT IS ENGINEERING?

Engineering uses the principles of math and science to find practical solutions to the everyday problems and needs of society. Engineers develop technological tools that enable us to live better lives, from energy solutions to vehicles to life-sustaining medical devices.

Engineering is an incredibly broad subject with many areas that you can specialize in to tackle problems and innovate with precision and creativity.

From development to testing and analysis, engineers work on a broad range of materials, systems and structures.





# WHY DOES ENGINEERING MATTER?

Bridges, cars, cell phones, satellites and wheelchairs, these are just a few things that engineers could work on.

Knowledge of the world will continue to expand. Engineers are the ones to come up with practical uses for that knowledge.

Even as the world keeps changing, there will always be a need for quality engineers to enable us to create a brighter future.

# WHAT TRAITS ARE IMPORTANT FOR AN ENGINEER TO HAVE?

*Problem solving*

**TEAMWORK**

**Logical**

Motivation

Curiosity

**Attention to detail**

CRITICAL THINKING

Effective Communication

*Creativity*



Interested in pursuing a post-secondary education in engineering? Explore what we have to offer or contact us for more information.
**eng.info@umanitoba.ca**

**University of Manitoba** | Price Faculty of Engineering

## Civil

Civil engineers plan, design, build and maintain infrastructure such as roads, bridges, buildings, water and wastewater treatment facilities and dams. They apply cutting edge technologies to protect the environment and improve the quality of human life.

### You could work on...

Water resource management
Structures and construction
Transportation

## Biosystems

Biosystems engineers solve problems involving biological systems. They are interested in how humans impact the environment and could work on anything from innovating solutions within the medical field to developing sustainable methods for producing food.
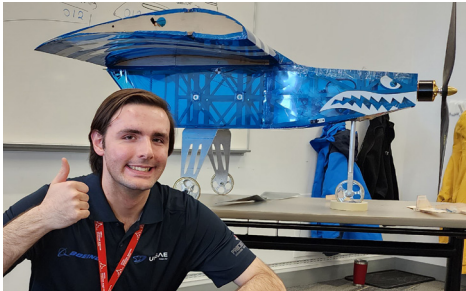
### You could work on...

Medical device testing
Energy efficient building design
Mitigation of environmental damage

# ENGINEERING FIELDS

There are lots of different fields within engineering, these are the ones offered through the Price Faculty of Engineering at the University of Manitoba.

## Computer

Computer engineers provide the ingenuity that makes systems smart. It provides the means for us, and the systems we use, to communicate and share information for both productivity and entertainment. Computing technologies and the software that drives them, makes it all possible.

### You could work on...

Mobile device design
Systems for augmented/virtual reality applications
Intelligent system design

## Mechanical

Mechanical engineers are responsible for designing and developing products and systems, from concept to production, as well as ensuring that they function efficiently and reliably. This field can be applied to a broad range of industries because we are surrounded by countless mechanical devices.

### You could work on...

Advancing vehicle safety and efficiency
Robotics and mechatronics
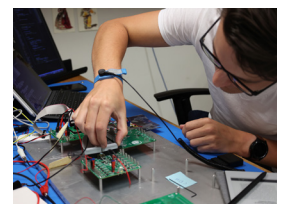Optimizing energy output and enhancing reliability

## Electrical

Electrical engineers work with the energy, communications and devices that electrify our lives. From advancing cellular communication networks, to powering your home, electrical engineering provides the electrical systems that deliver the power that is essential for our electronic devices to function.

### You could work on...

Environmentally sustainable power generation
Medical diagnostic systems and devices
Electric vehicles

## CAN YOU FIND ALL 24 WORDS RELATED TO ENGINEERING?

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A X H V E N T I L A T I O N E O K L E F X D G S T F I L R M S T N G K C R A T E S T Z H D O L I T R A C T O R
B S T Y C L E F E Y M T S O V F H X K A N F L E N V I R O N M E N T R E S E A R C H W C R V I U B G Y D L L H
K S C G D O I F R S T R U C T U R E S C I R C U I T E L E C T R I C A L A I R P L A N E B U I L D G R B W H J
D R O A D R D E S I G N M E C H A N I C A L B F N J D Z Z E N G A V A E R O S P A C E W D H T U R B I N E T I
Y B T R R R O V V S V I R P I B Y O S D N B I O S Y S T E M S W B I O M E D I C A L C I V I L C O M P U T E R
S A F W H Y N U C W X P C S U S T A I N A B L E M U Z L Q I N N O V A T E N N J Y B J V Z B R I D G E U P Y V
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