

## Mechatronics Engineering

### CAREER PROFILE

#### What is mechatronics engineering?



Mechatronics is one of the newest engineering branches. One of its stand-out features is how interdisciplinary it is, drawing heavily from mechanical, electrical, and computer engineering. The very term is a *portmanteau* of ‘mechanics’ and ‘electronics’. Mechatronics creates the smart and adaptable machines and devices that underpin robotics, autonomous systems, and automated manufacturing.

#### What do mechatronics engineers do?

Mechatronics engineers are found in dozens of different industries from mining and agriculture to aerospace, manufacturing, and consumer electronics. Some specific jobs where you will find mechatronics engineers include designing and building:

- The robots used to pack your Amazon order
- Surgical robots that make many surgeries safer, faster, and less invasive
- NASA probes and other space exploration vehicles and systems
- Self-driving cars and other kinds of autonomous vehicles
- The industrial robots and automated manufacturing, mining, and agricultural systems that make so many of the modern products we enjoy possible.

#### How do you become a mechatronics engineer?

**Science and mathematics** are essential subjects to take and excel in at school. An increasing number of institutions offer mechatronics engineering degrees. These typically include foundation courses like calculus, statistics, mechanics, electromagnetism, and programming. Thereafter, they dive deeper into electronics, computer architectures, logic, robotics, and design. Learn more by watching the video called *So You Want to Be a MECHATRONICS ENGINEER* (11:20).

Here are some general tips for choosing a university or college:

- Make sure the program is **fully accredited** locally and/or internationally.
- Choose an institution that offers a **broad mechatronics engineering program** so that you can sample as many of the sub-disciplines as possible to find the best fit for you.
- Consider accredited engineering programs offered by **technical or community colleges**.

#### WHAT IS MECHATRONICS ENGINEERING?



#### WHAT DO MECHATRONICS ENGINEERS DO?



#### TYPICAL EMPLOYERS

Typical employers include large private companies and research organizations:

- GE Aerospace
- Siemens
- Automotive companies like Tesla, Ford, and BMW
- Consumer product companies like Samsung
- Shipping companies
- Mining companies



## What are the career prospects for a mechatronics engineer?

Because of how much it draws on different engineering fields, mechatronics offers a highly versatile platform for exploring many different engineering careers. The core mechatronics engineering job market is also expected to grow by more than 6% in the coming decade. With average annual salaries of about US\$120,000, mechatronics engineers are highly sought, **highly valued, and very well paid.**

## Meet some mechatronics engineers

Watch the following videos to meet some inspiring mechatronics engineers.

### GRACE BROWN

Grace is a mechatronics engineer at the Melbourne Space Program who works on care robots for elderly facilities.



### LEILA MADRONE

Leila works at Otherlab as a mechatronics engineer. Hear about her work on heliostats, the systems used to focus and concentrate sunlight.



### PAULINE POUNDS

Watch Dr. Pauline Pounds, an associate professor of mechatronics engineering, describe how exciting the world of mechatronics is.

