



# Significance of Information Technology in Mechanical Engineering

Celine Kayal\*

Department of Mechanical Engineering, University of Melbourne, Melbourne, Australia

## DESCRIPTION

Mechanical Engineering Technology is an advanced diploma programme that teaches you how to conceive, design, construct, and operate engineering systems while also providing you with hands-on experience. You will solve design and production difficulties in engineering systems while working on projects in cutting-edge laboratories and design spaces. The course covers the theory and skills needed for:

- Engineering design using industry-leading software
- Manufacturing engineering systems
- Prototyping and proof of concept applications
- Automation systems
- CNC machine tools for programming
- Master cam (computer-aided manufacturing) software
- Operation planning and long-term viability
- Project engineering and management
- Engineering system testing and maintenance
- Energy sustainability
- Robots

The Mechanical Engineering Technician diploma programme provides a strong technical foundation for our programme. The third year builds on the manufacturing and basic design abilities learned in the first two years by focusing on comprehensive design and sophisticated manufacturing technologies. The curriculum includes a co-op option that combines work and learning and allows graduates to apply their knowledge in the workplace. The third year culminates in a capstone project in which students collaborate with industry partners to develop a working prototype as well as a complete design and production package for industry.

Current technologies and principles from machine and product design, production, and material and manufacturing processes are anticipated of mechanical engineering technologists. Aerospace, automotive, energy, nuclear, petroleum, manufacturing, product development, and industrial design are examples of expandable specialties. Mechanical engineering technologists can hold a variety of titles, including:

- Product Engineering Technologist
- Mechanical Designer
- Product Development Engineering Technologist
- Manufacturing Engineering Technologist
- Mechanical Engineering Technologist

As we enter a new technological era, mechanical engineers are on the rise. Better versions of their prior subjects are being supplied to mechanical engineers. Several innovations that emerge fall primarily under the purview of mechanical engineers. Mechanical engineering necessitates a thorough understanding of fundamental concepts in mechanics, dynamics, thermodynamics, structural analysis, material science, and other disciplines. It is the branch of engineering concerned with the design, manufacture, and operation of machines.

As humans develop, so does the field of engineering. The following are some of the major trends that will shape the mechanical industry in the coming years:

### Internet of things

The Internet of Things is a system in which computing devices, as well as digital and mechanical machinery, people, and items with unique identifiers, are linked together. It is capable of transferring data over a network without the need for human or computer intervention.

### Nanotechnology

Nanotechnology, or nanotech, is another term for nanotechnology. It breaks down matter into molecular, atomic, and supra molecular components. Nanotechnology aids in the development of innovative devices and materials with a wide range of uses.

### 4D printing technology

An active origami system, 4D printing is also known as 4D bio printing. It uses the same 3D printing technology. 4D printing is still in the research and development stages. To produce a four-

**Correspondence to:** Celine Kayal, Department of Mechanical Engineering, University of Melbourne, Melbourne, Australia, E-mail: celine.kayal@uc.ac.au

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dimensional object, computer-programmed deposition into a new layer is used.

### Friction stir welding

Friction stir welding is a method of connecting two solid states together. This welding method produces high-quality, high-strength welds with minimal distortion. When a spinning tool is put into a work piece, friction is created, which warms the material. The tool causes the material to flow in a specific direction and drives it to its maximum capacity as it travels through the weld joint. This method unites two components into one. It requires no external materials and uses less energy than other welding methods.

### Metal 3D printing

3D metal printing can manufacture entirely solid metallic parts with great detailing in a short amount of time and at a very low

weight. The 3D printer requires a computer-aided design to begin the process by developing a detailed image of the desired design from all sides. After that, the design must be converted to a stereo lithography file so that the 3D metal printer can read it. Mechanical engineers use computer science and technology to analyze and design subsystems, as well as to develop and test their prototypes. Those with skills in the latest software tools, such as 3D printing, can even eliminate the need for prototypes, moving a project from concept to final product more quickly. Exploration of new technology is the way of the future. Mechanical engineers have a lot of potential to employ these technologies to brighten the future.