# Graduate Studies in Mechanical and Materials Engineering



## Why study Mechanical and Materials Engineering at Western?

Mechanical and Materials Engineering offers two streams of graduate studies. The research intensive, thesis-based stream comprised of MESc and PhD programs provide opportunities for students to conduct innovative leading-edge fundamental or applied research, using state-of-the-art experimental and computational research facilities.

The department has research strengths in diverse areas addressing present day challenges, as well as developing technologies for the future. Our two or four year programs provide a motivating training environment and an opportunity to conduct scholarly research using developed analytical/experimental skills to produce highly capable professionals.

The second stream focuses on the course-based professional programs (MEng), providing opportunities for students to specialize in areas of high industrial demand through coursework. These MEng programs are structured to assist qualified engineers in the advancement of their professional careers and to provide students with the skills necessary to address key technological challenges.

Our department consists of 22 faculty members excelling in a variety of research and teaching subjects. We offer students a solid background in the fundamentals of mechanical engineering and the opportunity to specialize in any of the areas the profession has to offer. Graduates from these MME programs are versatile professionals who are prepared for careers in academia and industry.

### **Degree Options**

- Master of Engineering (MEng)
- Master of Engineering Science (MESc)
- Doctor of Philosophy (PhD)





# Areas of specialization

#### Course-based stream

The graduate professional program leading to a Master of Engineering (MEng) degree allows students to specialize in any one of the following areas:

- Mechanical Engineering (general)
- Automation Technologies and Systems
- Composite Materials
- Engineering in Medicine
- Heating, Ventilating and Air Conditioning (HVAC) Systems
- Materials and Solid Mechanics
- Thermofluids

#### Thesis-based research stream

The five broader areas of specialization are listed below. More information is available on faculty members' websites.

#### **Mechanical Engineering**

Research in this area includes specializations in biomechanics, musculoskeletal, and design and manufacturing.

#### **Automation Technologies and Systems**

Research in this area includes mechatronic systems, dynamics and control, robotics, sensors and actuators, real time control, micromechanics and geometric computing.

#### **Materials and Solid Mechanics**

Research in this area includes microstructure and properties of metals, polymers, composite materials, nanomaterials, and fuel cells.

#### Thermofluids

Research in this area includes two-phase flows, convective heat transfer, alternative energy systems, porous medium, combustion, biological and environmental flows, and micro-systems.

**Mechanical and Materials Engineering** 

### **Degree options**

#### Master of Engineering (MEng)

- Admission average: Minimum 70%
- Course based: 10 graduate courses
- Project based: Eight graduate courses and a research project
- Time to complete: Minimum one year (three terms)

# Master of Engineering Science (MESc)

- Admission average: Minimum 78%
- Funded program (supervisor required)
- Four graduate courses and a thesis
- Time to complete: Two years (six terms)

#### Doctor of Philosophy (PhD)

- Admission Average: Minimum 78%
- Funded program (supervisor required)
- Eight graduate courses and a thesis
- Time to complete: Four years (12 terms)

#### How to Apply

- 1. Complete the online application
- 2. Submit letters of reference
- 3. Submit any supplementary documents
- Academic records/ transcripts
- English Language
  Proficiency (if applicable)
- 4. Pay the application fee (\$100 CAD)

Check with the department's Graduate Office at mmegrad@uwo.ca for application deadlines.