



ENGINEERING AT U OF A

The Faculty of Engineering

The University of Alberta's Faculty of Engineering ranks in size among the top five percent of more than 400 engineering schools in North America, with about 4,000 undergraduate and 1,600 graduate students.

It offers 21 engineering programs as well as Canada's second-largest Engineering Co-op Program, with more than 1,400 paid student placements per year. All of our degree programs are fully accredited by the Canadian Engineering Accreditation Board.

Engineering students have access to more than \$1.5 million per year in scholarships for new and continuing studies.

CME faculty members

The CME Department's faculty members currently hold many prestigious provincial, national and international awards and chair positions in teaching and research including:

- Canadian Excellence Research Chair (1)
- Medal for Distinction in Engineering Education Winner (Engineers Canada) (1)
- National Sciences & Engineering Research Council Industrial Research Chairs (7)
- Rutherford Awards for Excellence in Undergraduate Teaching (4)
- Canada Research Chairs (7)
- Excellence in Education Awards from The Association of Professional Engineers and Geoscientists of Alberta (2)
- Campus Alberta Innovates Program Chair (1)
- Provost's Awards for Early Achievement of Excellence in Undergraduate Teaching (U of A) (2)

WHAT DO ENGINEERS DO?

A chemical engineer:

- Designs, builds and runs chemical and process plants
- Scales up new products from test tube discovery to world-scale production
- Seeks sustainable solutions to society's needs
- Is a problem solver

A materials engineer:

- Solves the mysteries of materials failure
- Chooses the best materials for new applications
- Produces steel and many other materials
- Tailors micro and nanostructures to create new materials



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CHEMICAL and MATERIALS engineering

translating ideas into reality



ABOUT

The Department of Chemical and Materials Engineering (CME) is part of the University of Alberta's Faculty of Engineering. Engineering has been taught at the U of A since it was founded in 1908. The first three graduates in chemical engineering graduated in 1928. In 1996, nine materials faculty members joined the department, which resulted in the first Department of Chemical and Materials Engineering in Canada.

With over 50 faculty members, more than 500 undergraduate and over 350 graduate students enrolled annually, the department continues to grow.

Facilities

CME has three research Centres:

- Canadian Centre for Clean Coal/Carbon and Mineral Processing Technologies (C5MPT)
- Canadian Centre for Welding and Joining (CCWJ)
- Centre for Oil Sands Innovation (COSI)

It also has researchers working closely with the National Institute of Nanotechnology (NINT) and will move into the Innovation Centre for Engineering (ICE) building to be completed in 2015.

RESEARCH

Current research is focused in 13 areas:

- Biochemical
- Biomedical and regenerative medicine
- Corrosion and wear
- Transport Phenomena
- Materials characterization and processing
- Mathematical and molecular modeling reaction to catalysis
- Nanomaterials and nanofabrication
- Oil sands and energy
- Process control
- Reactions and catalysis
- Surface science and engineering
- Thermodynamics
- Welding and metallurgy

TEACHING

CME provides courses with high-quality technical content, clear, and organized teaching, and challenging learning opportunities.

Creating excellent problem solvers by teaching:

- Fluency in key facts
- Deep fundamental understanding
- Critical analytical thinking skills
- A passion for the profession of engineering

Preparing students for the human dimensions of engineering practice:

- Teamwork
- Technical communication
- Professionalism and integrity
- Innovation and creativity

PROGRAMS

CME offers traditional Bachelors of Science and co-operative programs, which includes five four-month work terms.

Graduate-level studies include Master of Science, Master of Engineering, and Doctor of Philosophy programs.

We also offer the only Engineering Safety and Risk Management Program in Canada.

Undergraduate Programs

Over 500 undergraduate students enrolled annually.

Seven programs:

- Chemical engineering
- Chemical - biomedical
- Chemical - computer process control
- Chemical - oil sands stream
- Materials engineering
- Materials - biomedical
- Materials - nanotechnology

Graduate Research Areas

There are over 350 graduate students enrolled annually.

CME does fundamental research that has an impact on society in many areas including:

- Advanced materials
- Process control and systems engineering
- Nano and regenerative medicine
- Energy and natural resources