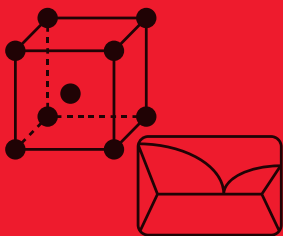


Bachelor of Engineering Materials Engineering

Faculty of Engineering



What is materials engineering?

Materials engineering is the backbone of all practical applications of engineering. Materials engineers are trained to understand the relationship between structure and function in materials such as metals and alloys, ceramics, industrial minerals, polymers, and composite nanomaterials. With this understanding, and by combining practical experimental research with cutting-edge simulation techniques, they develop novel materials for advanced applications such as automotive, aerospace, biomaterials, sustainable material processing, and batteries.

Is this program for me?

Our students learn how engineering materials are made and how their structure and properties are quantified. Technical complimentary courses offer advanced knowledge of topics, including aerospace materials, energy materials,

biomaterials, 3D printing, and sustainable materials processing. Practical learning is emphasized with laboratories and the co-op program. The Department is close-knit, offering opportunities for interactions between students and professors with one of the highest professor-to-student ratios in the Faculty.

Coursework and research areas

The first year includes general science courses in math, chemistry, and physics. Québec CEGEP students typically receive one-year advanced standing. Students then take core materials science and engineering courses, including solid mechanics, thermodynamics, heat and mass transfer, phase transformation, surfaces, additive manufacturing, process modeling, electronic/energy material properties, and computational materials design to support their understanding of materials for practical engineering applications.

The Department's faculty are leading researchers in Structural materials, Biomaterials, Energy, Electronic, and Environmental Materials, Computational Materials Engineering, Materials Characterization, Materials Process Engineering and Design, and Mineral Processing and Extractive Metallurgy.

Co-op program

McGill's Materials Engineering Co-op Program enables students to work in different industries while completing their academic degrees. This paid industrial experience synergizes with students' coursework, builds their resumé, provides opportunities to travel and participate in various aspects of materials-relevant while being exposed to different environments and cultures, and allows students to identify a career path that interests them before graduating. Co-op interviews, resume-writing practice, and building



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a network of industry contacts during the Co-op program journey are especially valuable when applying for work after graduation.

How do I apply?

Admissions information:

www.mcgill.ca/undergraduate-admissions/apply

What can I do when I graduate?

Training in process and materials engineering provides skills for a wide range of employment opportunities. Depending on their interests, graduates can work in companies concentrating minerals or producing metals, be hired by engineering or management consultancies to work on local and global projects, test and design materials for the aerospace, battery, or automotive industries, or further their research skills in graduate school. The program affords students with transferable skills such as problem solving, time management, and working in design teams.

Recent graduates from the program have gone on to careers in a variety of industries such as:

ArcelorMittal

Hatch

Lion Electric

GE Aviation

Pratt & Whitney Canada

SpaceX

Trek Bicycle

CarbiCrete

Temperpack (founded by the department graduates)

AON3D (founded by the department graduates)

connect with others and enhance their life outside of the classroom:

- ▲ Mining Engineering Undergraduate Society (MEUS)
- ▲ Engineering Undergraduate Society (EUS)
- ▲ Metsoc student chapter
- ▲ Promoting Opportunities for Women in Engineering (POWE)

Contact us

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 McGillMaterials

McGill Engineering Student Centre (MESC)

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www.mcgill.ca/engineering/students/undergraduate/mesc

Engineering Career Centre (ECC)

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Prof. Marta Cerruti

Associate Professor and Associate Chair, Department of Mining and Materials Engineering

Canada Research Chair in Bio-synthetic Interfaces

Prof. Marta Cerruti works at the interface between material science, chemistry, and biology. Her research lab focuses on materials whose surfaces are designed to interact with the biological environment. Examples of her work include the creation of polymeric biodegradable scaffolds where cells can grow into to help bones regenerate and gel-coated, drug-carrying nanoparticles targeted to the appropriate cells, as well catalysts to degrade pollutants, anodes for Li-ion batteries, and raphene-oxide based membranes for speakers or microphones.



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Student life and engagement

The Faculty of Engineering provides several opportunities to participate in a variety of clubs, activities, and student government. Below are a few groups students can join to