Materials engineers design the processes and develop the technologies that create such materials as super-strong titanium alloys for spacecrafts and artificial bone implants for medical patients. The recycling industry also relies heavily on materials engineers to discover new ways of using recycled materials.

Is this the program for me?

Materials engineers are good at math, physics and chemistry since the field involves a mix of science and technology. They enjoy working in laboratories to discover new ways of developing materials. They are responsible, independent and self-motivated but also enjoy working with other people and have good communication skills.

What kinds of courses do students take?

The first year includes general sciences courses in math, chemistry and physics. Quebec CEGEP students typically receive one-year advanced standing. Then students take courses in processing, fabrication, applications and performance of materials (metals, ceramics, polymers and composites) as well as a heavy component of lab work which involves extensive teamwork.

Why McGill?

The materials engineering degree is a co-op program that includes three paid internship terms in the industry. This gives students an opportunity to gain hands-on, practical work experience in companies that can be beneficial when they graduate.

For further information

Faculty of Engineering
www.mcgill.ca/engineering/
Department of Mining and Materials Engineering
www.mcgill.ca/minmat/
Materials Engineering Co-op Program
www.mcgill.ca/materials/

How do I apply?

Admissions information:
www.mcgill.ca/materials/undergraduate/prospective
What can I do when I graduate?

Materials engineers work in various fields, including in the resource and manufacturing sectors, designing and implementing processes in a factory or plant. They also work in material research and development, developing new nano-materials for biomedical, automotive or aerospace industries. Since so much of materials engineering involves designing processes to develop new materials, engineers have the skills needed to be good project managers, and often move into management and executive positions.

Recent graduates in Materials Engineering have gone on to exciting careers in a wide variety of industries, here are just a few:

- BBA, Jr. Engineer
- Bell Helicopter, Metallurgical Engineer
- Bombardier Aerospace, Materials and Processes Engineer
- C & D Zodiac, Research & Development Engineer
- Hatch, Process Engineer/Metallurgist
- Rolls-Royce Canada, Material and Process Specialist

Industries

The work of materials engineers is necessary everywhere since everything is made out of materials. Materials engineers are involved in a variety of fields, including the resource and manufacturing sectors, designing and implementing processes in a factory or plant. They also work in materials research and development; creating new materials such as nanomaterials, and biomedical, automotive and aerospace materials; and improving the sustainability of traditional heavy industries such as steel, copper and nickel refining.

These are some common industries that require materials engineers:

- Chemicals, Polymers and Materials
- Energy and Utilities: Hydro, Oil & Gas, Water, Sewage
- Engineering Consulting
- Finance & Insurance
- Biomedical Engineering
- Government
- Aerospace
- Mining
- Scientific & Technical Services
- Automotive

Useful Resources

- McGill Engineering Student Affairs Office
  Housed in the Engineering Student Centre; Academic Advisors provide assistance and information on program planning and academic success.
- McGill Engineering Career Centre (ECC)
  Resources, information, job postings and links for engineering students
- myFuture
  Job postings McGill students
- Materials Engineering Co-op Program
  Materials Engineering features three co-op work terms. Each four-month work term is a 2-credit course.
- The Engineering Institute of Canada
  Engineering Career Network

Professional Organizations

- Engineers Canada
  The national organization of the 12 licensing bodies that regulate the practice of engineering in Canada
- Ordre des ingénieurs du Québec
  The regulating body for Engineers in Quebec
- ASM International
  The Materials Information Society
- American Society for Testing and Materials (ASTM)
- Canadian Biomaterials Society
- Canadian Institute of Mining, Metallurgy and Petroleum (CIM)
- Minerals, Metals, and Materials Society (TMS)

Student Life

You will have the opportunity to participate in a variety of clubs, activities and student government. Getting involved in a club or other group is a great way to meet people and build your résumé.

- Materials Engineering Undergraduate Society
  www.mcgill.ca/materials/undergraduates/students/current/student-life
- Engineering Undergraduate Society (EUS)
  www.mcgilleus.ca/
- Engineers Without Borders – McGill Chapter
  mcgill.ewb.ca/
- Promoting Opportunities for Women in Engineering (POWE)
  www.mcgill.ca/engineering/current-students/undergraduate/student-life/powe