

**WHAT CAN I DO WITH MY MAJOR IN**

# MECHANICAL ENGINEERING

**OVERVIEW OF MAJOR**

Concordia University's Department of Mechanical and Industrial Engineering offers both undergraduate and graduate programs in Mechanical Engineering. At the undergraduate level it offers options in Aerospace & Propulsion, Design & Manufacturing, and Systems & Mechatronics. A Co-op program is also offered. Graduate degrees include both Master/Magisteriate and Doctor/Doctorate programs as well as a Graduate Certificate. The latest information can be found on Department's website (<http://www.me.concordia.ca/>).

Mechanical engineers work in many diverse fields and in a variety of work settings. A master's degree or Ph.D. will offer not only better pay but more opportunities with respect to job opportunities. Those who wish to pursue an academic career should strongly consider doing a Ph.D. Working in Quebec normally requires registration with l'Ordre des ingénieurs du Québec (<http://www.oiq.qc.ca>), the professional corporation. Check with Engineers Canada at <http://www.engineerscanada.ca> for requirements in other provinces.

**EXAMPLES OF JOBS ACQUIRED BY  
CONCORDIA GRADUATES**

The following job titles are representative of the types of entry-level positions for which Concordia University students are qualified upon graduation. Note that the numbers following each job title refer to Canada's National Occupational Classification (NOC) code. For details on these titles go to <http://www5.hrsdc.gc.ca/NOC/>

- Aerodynamics/Flight Dynamics Engineer (2146)
- Aircraft Performance Engineer
- Associate Technical Specialist
- Control Systems Analyst
- Design Engineer (2132)
- Gas Turbine Engineer (Rotors & Structures)
- Manufacturing Engineer (2141)
- Process Engineer
- Product Safety Officer
- Product Support Engineer
- Project Engineer
- Reliability Systems Engineer
- Technical Sales Representative
- Test Engineer
- Validation Engineer in Training

## CELEBRATED MECHANICAL ENGINEERS

**Bill Nye.** The “Science Guy”.

**Alfred Hitchcock.** Filmmaker.

**Alfred Nobel.** Founder Nobel Prize.

**Chris Hadfield.** Canadian Astronaut.

**Philip Condit.** CEO The Boeing Company.

**Mary Anderson.** Invented Windshield Wiper.

**Elijah McCoy.** Canadian Inventor (with over 57 patents).

**Ben Rich.** Led Development of the F-177 Stealth Bomber.

## MORE JOB TITLES

Mechanical engineers pursue work in research, technical sales, manufacturing, development, agriculture, maintenance and design among other fields. Many become managers. The titles below are not meant to be exhaustive but are representative of fields in which mechanical engineers pursue a career. Keep in mind that some occupations require further education (e.g., a higher degree, diploma). Note that the numbers following each job title refer to Canada’s National Occupational Classification (NOC) code. For details on these titles go to <http://www5.hrsdc.gc.ca/NOC/>

- Aerospace Engineer (2146)
- Applications Engineer
- Astronaut
- Automation Engineer
- Automotive Engineer (2132)
- Biomedical Engineer (2148)
- Consulting Engineer (2132)
- Cost Estimator (2233)
- Development Engineer
- Engineer
- Engineering Mechanic
- Engineering Project Manager (2132)
- Equipment Engineer
- Heating and Air-Conditioning Engineer
- Industrial Engineer (2141)
- Materials Handling Engineer
- Mechanical Design Engineer (2132)
- Mechanical Drafter (2253)
- Mechanical Engineer (2132)
- Mechanical Engineering
- Technician (2232)
- Military Engineer (2131)
- Packaging Engineer
- Performance and Reliability Engineer
- Plastics Engineer (2134)
- Production Development Mech. Eng.

- Project Mechanical Engineer (2132)
- Quality Assurance and Control Inspector
- Research Engineer
- Robotics Engineer (2132)
- Safety Engineer (2141)
- Sales Engineer (6221)
- Structural Engineer (2131)
- Systems Analyst (2171)
- Systems Engineer
- University Professor (4121)

## POTENTIAL WORK SETTINGS

Mechanical engineers work in a wide variety of settings and in almost every industry. Many work for manufacturers or consulting companies. To research specific employers who hire those in the field, there are many resources available in such locations as the Career Resource Centre, the Webster Library, Vanier Library and the Internet.

- Aircraft Manufacturers
- Airports
- Automobile Manufacturers
- Bioengineering Companies
- Colleges and Universities
- Construction Companies
- Consulting Firms
- Cryogenic Organizations
- Energy-Related Industries
- Engineering Firms
- Factories (Production)
- Harbour Operations
- Industrial Plants
- Industries Related to Energy
- Machine Shops
- Manufacturing Industries
- Mining Industry
- Nuclear Sites
- Oil Refineries
- Pharmaceutical Industry
- Power Plants
- Provincial Government Bodies
- Public Service Canada
- Research and Development
- Laboratories
- Spacecraft Manufacturers
- Sports Facilities
- Test Laboratories
- Transportation Industries

## SKILLS AND CHARACTERISTICS

Those entering the field should possess the ability to work under stress and with deadlines. In addition, students will find the following skills, interests, values and other characteristics valuable for succeeding in the field.

- Adeptness with Computers
- Analytical Skills
- Attention to Details
- Awareness of Trends in Field
- Computer Proficiency (CAD, CIM)
- Concentration
- Critical Thinking
- Curiosity
- Decision-Making
- Flexibility
- Good Oral Communication
- Imagination
- Inventiveness
- Keen Observation
- Knowledge of Mechanics
- Knowledge of New Technologies
- Leadership Skills
- Management Skills
- Manual Dexterity
- Mathematical and Science Ability
- Persistence
- Problem Identification and Solving
- Reading Comprehension
- Teamworking Skills
- Written Communication Skills

## PROFESSIONAL ASSOCIATION AND OTHER LINKS

Making wise career decisions requires exploring your field. A multitude of Internet sites and other resources will help you do this to the best of your ability. Professional association sites, in particular, are very useful for their career descriptions and job hunting tips. Moreover, these authoritative sites frequently provide links to Internet sites which announce job openings and list potential employers. A few recommended sites are included below.

### CANADIAN

#### Canadian Society for Mechanical Engineering

<http://www.csme-scgcm.ca/>

Click on Student Affairs for information on the benefits of student membership in the Society. Provides information on conferences, awards and useful links to engineering societies. Try Career Sites and Women in ME too.

#### Engineering Institute of Canada

<http://www.eic-ici.ca/>

Provides information on continuing education opportunities. Also offers registration with a job board allowing you to search job openings across Canada.

#### Engineers Canada

<http://www.engineerscanada.ca>

The International Engineering Graduates section is aimed at international students and provides much of interest. Women in Engineering includes many links to Internet sites of value to women. Click on Site map at the bottom of screen to get started.

#### Ordre des ingénieurs du Québec

<http://www.oiq.qc.ca>

Click Student for information on the benefits of a student membership in Quebec's professional engineering corporation. Membership in such professional associations is a great way to make contacts, uncover jobs and advance your career.

### INTERNATIONAL

#### American Society of Mechanical Engineers

<http://www.asme.org/>

Under Career & Education find lots of interest to manage and develop your career including internships, mentoring, resumes etc. Try Job Board to search job openings across the North America.

#### National Society of Professional Engineers

<http://www.nspe.org/>

Try Career Centre for the following sections: Job Board, Salary Information, and Mentoring Programs. Also explore offerings under Students.

## CREATE YOUR AMAZING CAREER – CAREER RESOURCE CENTRE TITLES

For those who need more help with their career and educational planning, the Career Resource Centre (CRC) offers books, pamphlets, DVDs and recommended Internet sites. It is located in the Hall Building, H-440, at 1455 de Maisonneuve Blvd. West. The following titles are just a few of the titles available in the CRC.

- Ace the IT Interview
- L'Aérospatiale, notre choix d'avenir (DVD)
- Building a Winning Career in Engineering: 20 Strategies for Success After College
- Career Success in Engineering
- Careers in Aerospace (DVD format)
- Careers in Engineering
- Careers in Manufacturing and Public Utilities (DVD format)

**CON'T. – CREATE YOUR AMAZING CAREER  
CAREER RESROUCE CENTRE TITLES**

- Consulting Careers in Engineering and IT (DVD format)
- Fast-Tracking Your Career: Soft Skills for Engineering and IT Professionals
- Hired Minds: A Career Guide for Engineering Students and Graduates
- Is there an Engineer inside You?
- Land the Tech Job You Love
- Ready for Takeoff! A Winning Process for Launching Your Engineering Career
- So You Want to Be an Engineer?
- 21 Things Every Future Engineer Should Know