

WHAT CAN I DO WITH MY MAJOR IN

INDUSTRIAL ENGINEERING

OVERVIEW OF MAJOR

Concordia University's Department of Mechanical & Industrial Engineering offers a Bachelor of Industrial Engineering which is accredited by the Canadian Engineering Accreditation Board. It also offers a co-op program. At the graduate level, the Department offers both Masters and PhD programs. For the latest information on programs, go to the Department's web site at <http://www.me.concordia.ca>.

There is a wide diversity of job opportunities in the field not only in manufacturing sectors but also in the service industries. Moreover, industrial engineers work for many types of businesses and organizations. 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/>

- Analyste en simulation Arena
- Application Engineer
- Business Process Analyst
- Consultant – Supply Chain
- Continuous Improvement Engineer
- Engineering Analyst
- Gestionnaire de production
- Health, Safety and Environment Engineer
- Industrial Engineer (2141)
- Ingénieur de procédés
- Junior Maintenance Engineer
- Logistics Analyst
- Logistics Engineer
- Maintenance Analyst
- Manufacturing Engineer (2141)
- Materials Planner
- Process Engineer
- Process Engineering Analyst
- Product Systems Engineer
- Quality Assurance Coordinator
- Quality Assurance Inspector
- Quality Manager
- Superviseur de production
- Supply Chain and Logistics Engineer
- Technical Sales Representative
- Time Study Engineer
- Validation Engineer

CELEBRATED INDUSTRIAL ENGINEERS

Henry Gantt. Inventor.

Nancy Currie. Astronaut.

Lee Iacocca. CEO Chrysler.

Taiichi Ohno. Father of Toyota Production System.

William Swanson. Chairman and CEO of Raytheon Company.

Lillian and Frank Gilbreth. "Time and Motion Study"

Mah Bow Tan. Minister for National Development.
(Singapore)

MORE JOB TITLES

Industrial engineers often work in areas related to planning the operations process, the layout of new facilities, logistics, supply chain management and quality control. Many move readily into management positions. The titles below are not meant to be exhaustive but are representative of fields in which industrial engineers pursue careers. Keep in mind that some occupations require further education (e.g., a higher degree, second degree, diploma). Note that the numbers following each job title refer to Canada's National Occupational Classification (NOC) code. For details on these NOC titles go to <http://www5.hrsdc.gc.ca/NOC/>.

- Business Analyst
- Business Improvement Manager
- Business Process Design Manager
- City Auditor
- Consultant
- Cost Estimator (2233, 2234)
- Director of Manufacturing
- Director of Patient Financial Services
- Distribution Design Project Engineer
- Ergonomist (4161)
- Facilities Engineer
- Facility Safety Engineer
- Human Factors Engineer (4161)
- Human Systems Integration Engineer
- Improvement Advisor
- Integrator
- Manager, Corporate Quality Assurance
- Management Analyst (1122)
- Management Engineer
- Management Trainee
- Operations Analyst
- Operations Researcher (2161)
- Organizational Developer
- Planner (2153)
- Plant Engineer (2141)

- Power Plant Manager
- Process Engineer
- Product Engineer
- Production Scheduler (1473)
- Productivity Engineer
- Professor of Industrial Engineering (4121)
- Project Manager (0611)
- Project Consultant/Project Engineer
- Quality Assurance Engineer (2141)
- Quality Control Manager
- Quality Engineer
- Reliability Engineer
- Research Engineer
- Senior Recruiter (1223)
- Service Manager (0621)
- Spaceport Technology Development Manager
- Supply Quality Improvement Engineer
- Systems Engineer (2141)
- Vice President of Supply Chain (0113)

POTENTIAL WORK SETTINGS

Industrial engineers work in all types of businesses and manufacturing settings. Major sectors in which they work include commercial aviation, hospitals, banking, government, social service, transportation, accounting, consulting and construction. 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. Moreover, Concordia's Department of Mechanical & Industrial website <http://www.me.concordia.ca> lists Companies That Hire Concordia Industrial Engineering Graduates.

- Aircraft Manufacturers
- Amusement Parks
- Automobile Manufacturers
- Banks
- Commercial Aviation
- Communication Firms
- Computer Manufacturers
- Construction
- Consulting Firms
- Government Agencies
- Healthcare Institutions
- Hospitals
- Insurance Companies
- Management Consulting Firms
- Manufacturing Industries
- Railroads
- Service Industries
- Space Agencies
- Transportation Companies
- Universities

SKILLS AND CHARACTERISTICS

Industrial engineers must be knowledgeable about business management practices as well as production and processing. They must be practical in the application of engineering principles and possess the communication skills needed for convincing others of recommendations and training people in using new methods. It is also important to be able to handle the stress of decision-making and managing many tasks at once. Finally, students will find the following skills, interests, values and other characteristics valuable for succeeding in the field.

- Ability to Meet Deadlines
- Accuracy
- Active Learning
- Adaptability
- Attention to Details
- Authority
- Autonomy
- Creativity and Inventiveness
- Curiosity
- Decision-Making
- Diplomacy
- Efficiency
- Enterprising
- Ethics
- Good Judgment
- Inquisitive
- Investigative
- Knowledge of Equipment Selection
- Knowledge of Technology Design
- Leadership
- Mathematical and Science Ability
- Mechanical Aptitude
- Negotiation
- Oral Communication
- Oral Comprehension
- Organizational Skills
- Patience
- Persistence
- Persuasion or Salesmanship
- Problem Identification and Solving
- Production and Processing Knowledge
- Realistic
- Responsibility
- Strong Computer Skills
- Time Management Skills
- Troubleshooting
- Written Comprehension

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

Association pour le développement de la recherche et de l'innovation du Québec (ADRIQ)
<http://www.adriq.com/>

Aims to influence « les politiques et programmes relatifs à la recherche industrielle et favorisant l'innovation technologique ».

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

Institute of Industrial Engineers

<http://www.iienet2.org/>

Dedicated to the support of the industrial engineering profession. Includes sections for job hunting and career planning. Explore the Career Center. To show leadership, get involved with Concordia University's student chapter.

International Council on Systems Engineering

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

INCOSE provides opportunities for professional development which can help industrial engineers further career goals. Start by exploring Education & Careers.

Society of Manufacturing Engineers

<http://www.sme.org>

Click on For Students under Education & Careers to enter the Student Zone to learn about career planning, job hunting and more. Visit the SME Jobs Connection to search job postings.

Society of Women Engineers

<http://societyofwomenengineers.swe.org/>

SWE aims to empower women by providing workplace statistics, lists of scholarships/awards, a career center and more information.

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
- Building a Winning Career in Engineering: 20 Strategies for Success After College
- Career Opportunities in Engineering
- Career Success in Engineering
- Careers in Manufacturing and Public Utilities (DVD format)
- Consulting Careers in Engineering and IT (DVD format)
- Engineer's Career Guide
- 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
- Real Resumes for Engineering Jobs
- So You Want to Be an Engineer?
- 21 Things Every Future Engineer Should Know
- What Every Engineer Should Know About Career Management