

## WHAT CAN I DO WITH MY MAJOR IN

# CIVIL ENGINEERING & BUILDING ENGINEERING

### OVERVIEW OF MAJOR

Concordia University's Department of Building, Civil and Environmental Engineering offers a BEng in Building Engineering and a BEng in Civil Engineering. Both programs are also offered in the Co-operative format. The University offers a Master of/Magisteriate in Applied Science (Building Engineering), Master of/Magisteriate in Engineering (Building Engineering), a Doctor of/Doctorate in Philosophy (Building Engineering) and a Graduate Certificate in Building Engineering. It also offers a Master of/Magisteriate in Applied Science (Civil Engineering), a Master of/Magisteriate in Engineering (Civil Engineering) and a Doctor of/Doctorate in Philosophy (Civil Engineering).

For the latest information on programs, go to the Department of Building, Civil and Environmental Engineering's website at:  
<http://www.bcee.concordia.ca/>.

Working in Quebec normally requires registration with l'Ordre des ingénieurs du Québec (<http://www.oiq.qc.ca>), the professional corporation. Check with the Canadian Council of Professional Engineers at <http://www.peng.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/>

- Building Construction Inspector (2264)
- Building Envelope Engineer (2131)
- Building Restoration Specialist
- Civil Engineer (2131)
- Construction Manager (0711)
- Design Engineer (2133)
- Draftsman (2255)
- Field Engineer
- Geotechnical Engineer (2144)
- Hydraulics Engineer (2131)
- Infrastructure Engineer
- Junior Cost Controller
- Junior Engineer (2274)
- Junior Planner
- Junior Project Coordinator
- Project Engineer (2131)
- Project Manager (0211, 0711)
- Site Engineer (0711)
- Structural Engineer (2131)
- Survey Engineer (2131)
- Technical Sales Specialist (6221)
- Test Engineer (2133)
- Transportation Engineer (2131)



## CELEBRATED CIVIL & BUILDING ENGINEERS

**John Roebling.** Designed the Brooklyn Bridge. Civil Engineer

**C. J. Mackenzie.** Canadian. 1st President of Atomic Energy of Canada.

**Richard Birdsall Rogers.** Canadian. Designer of Peterborough Lift Lock.

**Pat Galloway.** 1st Female President of American Society of Civil Engineers.

**Hans Albert Einstein.** Professor of Hydraulic Engineering. Son of Albert Einstein.

- Traffic Engineer (2131)
- University Professor (4121)
- Urban Planner (2153)
- Water Management Engineer (2131)
- Water Treatment Engineer (2131)

## POTENTIAL WORK SETTINGS

A large percent of civil and building engineers work for government agencies and consulting firms. Many others work in construction, transportation, telecommunications, manufacturing, oil companies and utilities. 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.

## MORE JOB TITLES

The titles below are not meant to be exhaustive but are representative of fields which those in civil and building engineering pursue. 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 titles go to

<http://www5.hrsdc.gc.ca/NOC/>.

- Administrator (1224)
- Aerospace Engineer (2146)
- Architect (2151)
- Army Officer/Field Engineer (6464)
- Building Engineer (2131)
- Cartographer (2255)
- City Planner (2153)
- Concrete Engineer (2131)
- Development Engineer
- Geologist (2113)
- Hazardous Waste Specialist (2263)
- Highway Engineer (2131)
- Housing Construction Manager (0711)
- Hydrologist (2113)
- Independent Consultant
- Industrial Engineer (2141)
- Industrial Traffic Manager (0211)
- Landscape Architect (2152)
- Military Engineer (2131)
- Natural Resources Manager (4161)
- Oceanographer (2113)
- Principal Engineer
- Production Engineer (2141)
- Public Works Engineer (2131)
- Researcher (2115)
- Sanitary Engineer (2131)
- Staff Engineer
- Surveyor/ Mapper (2154)
- Aerospace Industry
- Air Transport Industry
- Architectural Firms
- Colleges and Universities
- Construction Companies
- Distribution Systems Firms
- Education
- Engineering Firms
- Environmental Engineering Firms
- Factories
- Geotechnical Engineering Firms
- Government Bodies (Municipal, Federal, Provincial)
- High Tech Industry
- Insurance Companies
- Irrigation and Drainage
- Marketing/ Sales and Management Companies
- Military
- Multinational Settings
- Non-profit Organizations
- Petrochemical Industry
- Planning and Design Firms
- Power Plants
- Real Estate Companies
- Retail Organizations
- Software Houses
- Waste Management Systems
- Waterways, Ports and Harbor

## SKILLS AND CHARACTERISTICS

Civil and building engineering professionals require mathematical, scientific, communication, problem solving skills and the ability to visualize spatial relationships. In addition, students will find the following skills, interests, values and other characteristics valuable for succeeding in the field.

- Ability to Conduct Scientific Research and Interpret Scientific Data
- Ability to Work Independently
- Communication Skills (Written and Oral)
- Computer Skills
- Creativity and Imagination
- Curiosity
- Decision Making/ Problem Solving
- Enjoyment of Outdoors
- Flexibility
- Good Technical Skills
- High Ethical Standards
- Interest in Seeing Ideas into Practical Use
- Keen Observation/ Accuracy
- Keeping Current with New Trends
- Leadership Skills
- Patience
- Public Dealing Skills
- Reliability
- Responsibility and Organization
- Sound Judgment
- Speed of Closure
- Team Playing Skills
- Willingness to Relocate

## 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 Civil Engineering

<http://www.csce.ca/>

Look into how you might get involved in the organization to enhance career opportunities. Click on Student under Membership to get started.

#### Concordia University Building, Civil and Environmental Engineering

<http://www.bcee.concordia.ca/>

Under Programs heading, click What is Building Engineering and/or What is Civil Engineering.

#### Engineering Institute of Canada

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

Provides information on continuing education and professional development opportunities. Also offers 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 information on immigrating as an engineer to Canada. Explore Women in Engineering as well as Career Focus.

#### IEEE Canada

<http://www.ieee.ca>

Besides its technical journal, the Canadian division of this worldwide organization offers a general interest magazine, electronic newsletter, annual conference, financial aid and web services. Concordia University's branch of IEEE Canada offers a chance for students to develop leadership skills.

#### 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 Civil Engineers

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

Includes much of interest to those entering the field – volunteerism, mentoring, career resources, salary surveys and job listings.

#### American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)

<https://www.ashrae.org>

Site affords opportunities to keep up to date with trends in the field and network with professionals. Society has a Montreal chapter. Start by exploring the Student Zone and Young Engineers in ASHRAE.

#### National Society of Professional Engineers

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

Try Career Center for the following sections: Job Board, Salary Information and Mentoring Programs.

## 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.

Beyond Talent: Creating a Successful Career in Music

- Ace the IT Interview
- Building a Winning Career in Engineering
- Career Opportunities in Engineering
- Career Success in Engineering
- Careers in Construction Panel Discussion – DVD format
- The Engineer's Career Guide
- Expert Resumes for Engineers
- 50 Carrières de la construction et du bâtiment
- Ready for Takeoff! A Winning Process for Launching Your Engineering Career
- Resumes for Engineering Careers
- So You Want to Be an Engineer?
- What Every Engineer Should Know About Career Management