

WHAT CAN I DO WITH MY MAJOR IN

COMPUTER ENGINEERING

OVERVIEW OF MAJOR

Concordia University's Department of Electrical and Computer Engineering offers a BEng in Computer Engineering. A Computer Engineering Co-op Program is also available. At the graduate level, Concordia offers a Master of/Magisteriate in Applied Science (Computer Engineering), a Master of/Magisteriate in Engineering (Computer Engineering) and a Doctor of/Doctorate in Philosophy (Computer Engineering). For the latest information on programs, go to the Department of Electrical and Computer Engineering's website at <http://ece.concordia.ca>.

A wide variety of industries employ computer engineers. Most computer engineers, however, work for employers who design and build computers in the private, for-profit sector. A large percent of those in the field pursue a master's degree. 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/>

- Business Analyst (2171)
- Developer Consultant
- Java Bet. Developer
- Junior Computer Hardware Engineer
- Junior QA Engineer
- Junior Software Engineer
- Programmer Analyst (2174)
- Software Sales Solutions Consultant
- Systems Engineer
- Web Developer (2175)

CELEBRATED COMPUTER ENGINEERS

G. Gordon Bell. Microcomputer Developer.

Seymour Cray. Creator of 1st Super Computer.

Douglas Engelbart. Bootstrap Institute Founder and Director.

Grace Murray Hopper. Developed COBOL. Popularized the term "bug."

Tim Berners Lee. Invented the Web (WWW). Developed URL and HTTP.

Julie Payette. 1st Canadian Astronaut to work on International Space Station.

MORE JOB TITLES

Computer engineers often do work related to Computer Design and Engineering, Computer Architecture, Software Engineering, Artificial Intelligence, Computer Theory, Operating Systems and Networks, Information Technology and Software Applications. The titles below are not meant to be exhaustive but are representative of fields which computer engineers 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 NOC titles go to

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

- Application Architect (2173)
- Application Specific
- Integrator Circuit (ASIC)
- Design Engineer (2147)
- Applications Engineer
- Computer Engineer (2147)
- Computer Hardware Engineer (2147)
- Computer Programmer (2174)
- Computer Software Engineer (2173)
- Computer Systems Analyst (2171)
- Computer Systems Engineer (2147)
- Design Engineer
- Electrical Engineer (2133)
- Electronics Engineer (2133)
- Embedded Software Engineer (2173)
- Entrepreneur
- Fiber-optic Network Designer (2147)
- Hardware Circuit Board Designer (2147)
- Hardware Design Engineer (2147)
- Hardware Development Engineer (2147)
- Hardware Engineer (2147)
- Hardware Systems Designer (2147)
- Hardware Technical Architect (2147)
- Information Systems Analyst (2171)
- Information Systems Scientist
- Network Systems Engineer (2147)
- Network Test Engineer (2147)
- Product Development Engineer
- Production Engineer (2141)
- Project Engineer
- Sales Engineer (6221)
- Software Architect (2173)
- Software Design Engineer (2173)
- Software Design
- Verification Engineer (2173)
- Software Designer (2173)
- Software Developer (2174)
- Software Engineer (2173)
- Software Systems
- Integration Engineer (2173)

- Software Technical Architect (2173)
- Software Testing Engineer (2173)
- Systems Architect (2173)
- Telecommunications
- Hardware Engineer (2147)
- Telecommunications Software Engineer (2173)
- Test Engineer
- Wireless Communications Network Engineer (2147)

POTENTIAL WORK SETTINGS

Among the wide variety of industries/organizations which employ computer engineers are computer manufacturing, electrical product manufacturing, consulting, hardware research and development, consumer electronics, process control and information and culture. Those in the field also work for education, government, business organizations and information technology units in the private and public sectors. 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.

- Banks
- Broadcasting and
- Telecommunications
- Communications Firms
- Computer Hardware
- Manufacturers
- Computer Laboratories
- Computer Systems Design
- Services
- Electronic Product
- Manufacturing
- Engineering Firms
- Information Technology
- Consulting Firms
- Insurance Carriers
- Machinery Equipment
- Management Consulting
- Services
- Manufacturing Firms
- Non-profit Organizations
- Public Administration
- Scientific Consulting
- Services
- Scientific Research and
- Development Services
- Software Publishers
- Supplies Wholesalers Distributors
- Technical Consulting Firms
- Technical Consulting
- Services

CON'T. – POTENTIAL WORK SETTINGS

- Telecommunication
- Hardware Manufacturers
- Universities
- Wired Telecommunications
- Carriers

SKILLS AND CHARACTERISTICS

This field requires individuals who are adept at working as a member of a team of professionals. They must enjoy the intellectual challenge of keeping pace with trends in a fast-growing field. In addition, students will find the following skills, interests, values and other characteristics valuable for succeeding in the field.

- Ability to Work Independently
- Active Learning
- Attention to Details
- Communication Skills (Written and Oral)
- Creative and Inventive Thinking
- Curiosity
- Dependability
- Entrepreneurial Approach
- Familiarity with Business and Management Principles
- Flexibility
- Interest in Research
- Knowledge of Computers and Electronics
- Logical Mind
- Math and Science Skills
- Patience
- Persistence
- Project Management Skills
- Strong Technical skills
- Systematic Approach to Troubleshooting
- Teaching Skills
- Teamworking
- Time Management 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

Engineering Institute of Canada

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

Provides information on continuing education and professional development opportunities. 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.

Institute of Electrical and Electronics Engineers Canada (IEEE)

<http://www.ieee.ca>

Offers a journal, electronic newsletter, annual conference, financial aid and web services. Involvement in Concordia University's branch of IEEE offers a chance for you to develop leadership skills.

Ordre des ingénieurs du Québec

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

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

INTERNATIONAL

Institute of Electrical and Electronics Engineers (IEEE)

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

One of the largest professional organizations for electrical engineers. Click on Education & Careers to get started.

National Society of Professional Engineers

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

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

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
- Ace the IT Resume
- Ace the Programming Interview
- Being Geek: The Software Developer's Career Handbook
- Building a Winning Career in Engineering: 20 Strategies for Success
- After College
- Career Opportunities in Computers and Cyberspace
- Career Success in Engineering
- Careers in High Tech
- Consulting Careers in Engineering and IT (DVD format)
- Get Your IT Career in Gear
- Hired Minds: A Career Guide for Engineering Students and Graduates
- Is There an Engineer Inside You?
- L'Aérospatiale, notre choix d'avenir (DVD)
- Land the Tech Job You Love
- Making It Big in Software
- Nomadic Developer