

Why Choose Electrical Engineering

ENGI 200W

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Outline

- ① Career Options
- ② Program/Courses
- ③ Resources

What *you* want to do?

- Make the world go 'round.
 - Power generation and distribution.
 - Sustainable energy.
 - Telecommunications.
- Design things that people use.
 - Computers, personal electronics.
 - Cars, planes etc. (e.g., Hybrid/Electric vehicles, control systems).
- Have an impact on peoples' lives.
 - Assistive technologies.
 - Biomedical.
 - Micro-hydro (see <http://www.ieee.org/portal/ieeetv/viewer.html?progId=124039>)
- Help people to learn.
 - Educational technologies
 - Distance education

What *you* want to do? (cont'd)

- Save lives.
 - Medical devices.
 - Power & telecommunications.
- Work with people.
 - Most jobs are in a team environment.
 - Many jobs involve interaction with customers.
- Make \$
 - The job market is still strong.
 - Salaries are higher than others: Avg. hourly earnings¹
 - EE: \$33.48
 - CoE: \$35.15
 - Civil: \$29.79
 - Mech.: \$29.83

Electrical Engineering Careers

Areas

- power generation, transmission, distribution, and utilization
- electronics, instrumentation and control
- communications and remote sensing

Sample Industries

- power utilities
- telecommunications
- oil & gas sector
- niche-technology companies

Employers

Utilities NL Hydro, NF Power, Aliant, Ontario Hydro

Resource/Heavy Industry Petro-Canada, Iron Ore Company, Hatch

High Tech Lotek Wireless, Rutter Technologies, Instrumar, Stratos Global, Cathexis, BlueLine, C-CORE, NavSim, Verafin, VMT, RIM, IBM, PMC Sierra, Alcatel, Cadence, Cisco, Google

Program Structure

- Significant commonality between EE and CoE, particularly up to Term 4.
- Mostly required courses in terms 3–6.
- Lots of electives in terms 7 and 8.
- Capstone team design project in terms 7–8.

Courses

- Analog and digital circuits
- Math
- Programming
- Signal processing, communications and networks
- Control systems and instrumentation
- Power systems and electrical machines
- Electromagnetics and antennas

Technical Courses Detail

Term 3

3424 Eng. Mathematics
3821 Circuit Analysis
3861 Digital Logic
3891 Adv. Programming
PHYS 3000 Phys. Device Mat.

Term 4

4430 Adv. Calculus for Engineering
4823 Intro. to Systems & Signals
4841 Electromechanical Devices
4854 Electronic Circuits I
4862 Microprocessors

Term 5

5420 Probability & Random Proc.
5800 EE Design
5812 Basic Electromagnetics
5821 Control Systems I
5854 Electronic Circuits II

Term 6

6813 Electromagnetic Fields
6843 Rotating Machines
6855 Ind. Controls & Inst.
6871 Communication Principles
technical elective (power, networks)

Technical Courses Detail (cont'd)

Term 7

7803 EE Design Project I

7824 Intro. to Digital Signal Processing

3 technical electives

Term 8

8853 EE Design Project II

8826 Filter Synthesis

2 technical electives

1 free elective

To Probe Further

- Dennis Peters dpeters@mun.ca 864-8929 — I'm happy to answer your questions.
- <http://www.ieee.org/> — the largest technical organization in the world.
- <http://www.tryengineering.org/> — info on all engineering disciplines, targeted at students.
- <http://www.ieee.org/portal/ieeetv/viewer.html?progId=46743> — “What's Out There: Careers for Electrical Engineers and Computer Scientists” (IEEE.tv)
- <https://www.engineeringforchange.org/> — engineers, . . . , who are dedicated to improving the quality of life all over the world