Why Choose Computer Engineering
ENGI 200W

Dr. Dennis Peters, Chair of ECE

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Outline

What do *you* want to do?

- Design things that people use.
    - Computers, personal electronics.
    - Cars, planes etc. — much of the innovation is in CoE areas.
- Have an impact on peoples' lives.
    - Assistive technologies.
    - Biomedical.
- Make the world go 'round.
    - Power generation and distribution (e.g., Smart Grid technologies).
    - Telecommunications.
- Help people to learn.
    - Educational technologies
    - Distance education

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

- Save lives.
  - Medical devices.
  - Simulation (see http://ca.youtube.com/watch?v=WKhrpu6UaXw).
- 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 earnings[1]
    - EE: \$33.48
    - CoE: \$35.15
    - Civil: \$29.79
    - Mech.: \$29.83

Computer Engineering Careers

Areas

- computer systems and digital hardware development
- communications and networks
- software development
- instrumentation and control

Sample industries

- computer manufacturing and services
- telecommunications and computer network manufacturing
- information technology
- oil & gas sector (or almost any modern industrial)
- 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,
Microsoft

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
- Software Design and software engineering
- Digital hardware design
- Computer architecture and operating systems

Technical Courses Detail

Term 3	Term 4
3424 Eng. Mathematics	4424 Discrete Math for CoE
3821 Circuit Analysis	4823 Intro. to Systems & Signals
3861 Digital Logic	4892 Data Structures
3891 Adv. Programming	4854 Electronic Circuits I
PHYS 3000 Phys. Device Mat.	4862 Microprocessors

Term 5	Term 6
5420 Prob. & Random Proc.	6861 Computer Architecture
5895 Software Design	6876 Communication Networks
5865 Digital Systems	6892 Alg., Complexity & Correctness
5821 Control Systems I	6871 Communicaiton Principles
5854 Electronic Circuits II	technical elective (inst., Comp. Sci.)

Technical Courses Detail (cont'd)

Term 7	Term 8
7804 CoE Design Project I	8854 CoE Design Project II
7824 Intro. to Digital Signal Processing	8894 Real-time Operating Sys.
3 technical electives	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