

Engineering in EECS: 2014-15

All Engineering programs offered by EECS comprise a Common Major component, the Core, and a Common General Education (Complementary Studies) component, as described below.

A. Complementary Studies Requirement (General Education):

A total of 12 credits of complementary studies courses must be taken, as identified below. At least 3 of the 12 credits must be taken in the humanities or social sciences, defined by the following areas: Anthropology, Humanities, English, History, Linguistics and Languages, Philosophy, Social Science, Modes of Reasoning and Women's Studies. (*Asterisked courses below are also considered to meet this requirement.*)

- **Entrepreneurship:** [SB/ENTR 3400 3.00](#); [SB/ENTR 3600 3.00](#); [SB/ENTR 4500 3.00](#); and 3 credits from Humanities/Social Sciences
- **Law:** Up to 9 credits of Osgoode 'Perspectives' courses; and 3 credits from Humanities/Social Sciences
- **Global Engineer:** One of:
 - Languages (e.g., Arabic, Chinese, German, Hindi, Japanese, Korean, Portuguese, Spanish): 12 credits of languages and culture courses with the same rubric, with a minimum of 6 credits of languages skills and a minimum of a 3 credit culture course*. (The culture course counts as a CEAB Humanities requirement.)
 - French Studies: 12-credit certificate in French or French for Business, and 3 credits from Humanities/Social Sciences. (Note; these pure language courses do not count for social science or humanities under the CEAB regulation B, therefore this option requires students to complete 15 credits instead of 12 credits.)
- **Public Policy:** Choose one of:
 - The Canadian State and Public Administration: [AP/PPAS 2110 3.00](#); AP/PPAS 3190 6.00; and 3 credits from Humanities/Social Sciences.
 - Law: [AP/PPAS 2200 3.00](#); and two of the following: [AP/PPAS 3000 3.00](#), [AP/PPAS 3135 3.00](#), or [AP/PPAS 3136 3.00](#); and 3 credits from Humanities/Social Sciences.
 - Science, Technology and Public Policy: [AP/PPAS 2110 3.00](#); [AP/PPAS 3120 3.00](#); [AP/PPAS 3122 3.00](#); and 3 credits from Humanities/Social Sciences.
- **Environmental Studies:** [ES/ENVS 2151 3.00](#) (following on [ES/ENVS 2150 3.00](#)); 3 credits from Humanities/Social Sciences; and 6 credits from the areas of:
 - Environmental Management: [ES/ENVS 3130 3.00](#); [ES/ENVS 3230 3.00](#); [ES/ENVS 3420 3.00](#); [ES/ENVS 3430 3.00](#); [ES/ENVS 3440 3.00](#); [ES/ENVS 3505 3.00](#); [ES/ENVS 3510 3.00](#); [ES/ENVS 3520 3.00](#); [ES/ENVS 4230 6.00](#); [ES/ENVS 4400 3.00](#); [ES/ENVS 4401 3.00](#); [ES/ENVS 4402 3.00](#); [ES/ENVS 4430 3.00](#); [ES/ENVS 4440 3.00](#); [ES/ENVS 4442 3.00](#); [ES/ENVS 4446 3.00](#); [ES/ENVS 4520 3.00](#); [ES/ENVS 4523 3.00](#)
 - Urban & Regional Environments: [ES/ENVS 3222 3.00](#); [ES/ENVS 3226 3.00](#); [ES/ENVS 3230 3.00](#); [ES/ENVS 3520 3.00](#); [ES/ENVS 3710 3.00](#); [ES/ENVS 3740 3.00](#); [ES/ENVS 4210 3.00](#); [ES/ENVS 4220 3.00](#); [ES/ENVS 4225 3.00](#); [ES/ENVS 4230 6.00](#); [ES/ENVS 4440 3.00](#); [ES/ENVS 4442 3.00](#); [ES/ENVS 4520 3.00](#); [ES/ENVS 4700 3.00](#); [ES/ENVS 4800 3.00](#)
 - Politics: [ES/ENVS 3151 3.00](#); [ES/ENVS 3160 3.00](#); [ES/ENVS 3340 3.00](#); [ES/ENVS 3410 3.00](#); [ES/ENVS 3420 3.00](#); [ES/ENVS 3510 3.00](#); [ES/ENVS 4011 3.00](#); [ES/ENVS 4161 3.00](#); [ES/ENVS 4210 3.00](#); [ES/ENVS 4312 3.00](#); [ES/ENVS 4315 3.00](#); [ES/ENVS 4320 3.00](#); [ES/ENVS 4440 3.00](#)
 - Environment & Culture: [ES/ENVS 3122 3.00](#); [ES/ENVS 3125 3.00](#); [ES/ENVS 3150 3.00](#); [ES/ENVS 3170 3.00](#); [ES/ENVS 3320 3.00](#); [ES/ENVS 4100 3.00](#); [ES/ENVS 4140 3.00](#); [ES/ENVS 4161 3.00](#); [ES/ENVS 4420 3.00](#)
- **Science & Technology Studies:** 6 credits from: [SC/STS 2210 3.00](#); [SC/STS 3500 3.00](#); [SC/STS 3600 3.00](#); [SC/STS 3726 3.00](#); [SC/STS 3765 3.00](#); [SC/STS 3790 3.00](#); and 6 credits from (counts as Humanities): [SC/STS 2110 3.00](#); [SC/STS 3170 3.00](#); [AP/HUMA 3226 3.00](#); [SC/STS 3561 3.00](#); [SC/STS 3725 3.00](#)
- **General Studies:** Choose 12 credits from any of the lists above, including a 3-credit Humanities/Social Sciences course.

Co-op. A Co-op or Internship option is highly recommended for all engineering students, but is not a degree requirement.

B. Major PROGRAM CORE (Common) Requirements

All Specialized Honours BEng degree candidates must complete the **Engineering Program Core** (60 credits):

- [SC/CHEM 1100 4.00](#);
- [LE/EECS 1011 3.00](#); [LE/EECS 1021 3.00](#);
- [LE/ENG 1101 4.00](#); [LE/ENG 1102 4.00](#); [LE/ENG 2001 3.00](#); [LE/ENG 2003 3.00](#); [LE/ENG 3000 3.00](#); [LE/ENG 4000 6.00](#);
- [ES/ENVS 2150 3.00](#);
- [SC/MATH 1013 3.00](#); [SC/MATH 1014 3.00](#); [SC/MATH 1025 3.00](#); [SC/MATH 2015 3.00](#); [SC/MATH 2930 3.00](#);
- [SC/PHYS 1800 3.00](#); [SC/PHYS 1801 3.00](#);
- All BEng degree candidates in computer, electrical and software engineering programs must complete: [LE/EECS 1028 3.00](#);
- All BEng degree candidates in civil, geomatics, mechanical and space engineering programs must complete: [LE/ESSE 1012 3.00](#)

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COMPUTER ENGINEERING

- Complementary Studies;
- The engineering Program Core;
- [SC/MATH 1090 3.00](#);
- [LE/EECS 2011 3.00](#); [LE/EECS 2021 4.00](#); [LE/EECS 2030 3.00](#); [LE/EECS 2031 3.00](#); [LE/EECS 2200 3.00](#); [LE/EECS 2210 3.00](#);
- [SC/PHYS 2020 3.00](#); [SC/PHYS 2211 1.00](#);
- At least six additional credits from [SC/BIOL 1000 3.00](#); [SC/BIOL 1001 3.00](#) or [SC/BIOL 1010 6.00](#); [SC/CHEM 1001 3.00](#); [SC/CHEM 2011 3.00](#); [LE/ESSE 1011 3.00](#); [SC/PHYS 1070 3.00](#); [SC/PHYS 2010 3.00](#); [SC/PHYS 2040 3.00](#); [SC/PHYS 2060 3.00](#);
- [LE/EECS 3101 3.00](#); [LE/EECS 3201 4.00](#); [LE/EECS 3213 3.00](#); [LE/EECS 3215 4.00](#); [LE/EECS 3221 3.00](#); [LE/EECS 3311 3.00](#); [LE/EECS 3451 4.00](#);
- Three additional credits from computer science courses at the 3000 or 4000 level;
- [LE/EECS 4201 3.00](#); [LE/EECS 4214 4.00](#); [LE/EECS 4312 3.00](#);
- 12 credits from: [LE/EECS 3214 3.00](#); [LE/EECS 3431 3.00](#); [LE/EECS 4210 3.00*](#); [LE/EECS 4211 3.00](#); [LE/EECS 4215 3.00*](#); [LE/EECS 4313 3.00](#); [LE/EECS 4352 3.00*](#); [LE/EECS 4404 3.00](#); [LE/EECS 4421 3.00*](#); [LE/EECS 4422 3.00*](#); [LE/EECS 4431 3.00*](#); [LE/EECS 4441 3.00](#); [LE/EECS 4452 3.00*](#); [LE/EECS 4471 3.00*](#); [LE/ENG 3320 3.00](#); [LE/ENG 4550 3.00](#).

* These 12 credits must include at least two courses with significant laboratory experience.

ELECTRICAL ENGINEERING

- Complementary Studies;
- The engineering program core;
- [LE/EECS 2021 4.00](#); [LE/EECS 2030 3.00](#); [LE/EECS 2031 3.00](#); [LE/EECS 2200 3.00](#); [LE/EECS 2210 3.00](#); [LE/EECS 2602 4.00](#); [SC/PHYS 2020 3.00](#); [SC/PHYS 2211 1.00](#);
- [LE/EECS 3201 4.00](#); [LE/EECS 3215 4.00](#); [LE/EECS 3602 4.00](#); [LE/EECS 3603 4.00](#); [LE/EECS 3604 4.00](#);
- [LE/ENG 4550 3.00](#);
- three credits chosen from: [SC/CHEM 1001 3.00](#); [SC/CHEM 2011 3.00](#); [LE/ESSE 1011 3.00](#); [SC/PHYS 1070 3.00](#); [SC/PHYS 1470 3.00](#); [SC/PHYS 2010 3.00](#); [SC/PHYS 2040 3.00](#); or [SC/PHYS 2060 3.00](#).

Options: At least 28 additional credits from the following five lists, subject to the conditions below:

- **Electronics option:** [*LE/EECS 3611 4.00](#); [*LE/EECS 4611 4.00](#); [LE/EECS 4612 4.00](#); [LE/EECS 4613 4.00](#); [LE/EECS 4614 4.00](#).
- **Power option:** [LE/EECS 4613 4.00](#); [*LE/EECS 4621 4.00](#); [*LE/EECS 4622 4.00](#); [LE/EECS 4623 4.00](#).
- **Communications and Signal Processing option:** [LE/EECS 3213 3.00](#); [LE/EECS 4210 3.00](#); [*LE/EECS 4214 4.00](#); [LE/EECS 4215 3.00](#); [LE/EECS 4452 3.00](#); [*LE/EECS 4631 4.00](#).
- **Medical and Assistive Devices option:** [LE/EECS 3213 3.00](#); [*LE/EECS 4641 4.00](#); [*LE/EECS 4642 4.00](#); [LE/EECS 4643 4.00](#); [LE/EECS 4644 4.00](#).
- **General option:** [LE/EECS 3214 3.00](#); [LE/EECS 3221 3.00](#); [LE/EECS 3311 3.00](#); [LE/EECS 3342 3.00](#); [LE/EECS 3431 3.00](#); [LE/EECS 3482 3.00](#); [LE/EECS 4201 3.00](#); [LE/EECS 4211 3.00](#); [LE/EECS 4312 3.00](#); [LE/EECS 4313 3.00](#); [LE/EECS 4352 3.00](#); [LE/EECS 4413 3.00](#); [LE/EECS 4421 3.00](#); [LE/EECS 4422 3.00](#); [LE/EECS 4431 3.00](#); [LE/EECS 4441 3.00](#); [LE/EECS 4481 4.00](#); [LE/EECS 4482 3.00](#).

Conditions

- Students selecting an option must complete at least 15 credits from a single option list (any list other than the "General list"), including all courses on that list with an asterisk (*); and at least seven credits in total from at least two other lists (24 credits in total).
- Students not selecting an option must complete credits from at least three lists, with no more than 12 credits selected from any single list; and at least two courses marked with an asterisk (*).
- If a student completes an option, a notation will be made on the student's transcript, indicating the option completed. No notation will be made for students not completing an option.
- Courses appearing on multiple lists may not be used to satisfy credit requirements simultaneously from more than one list.

SOFTWARE ENGINEERING

- Complementary Studies;
- The engineering program core;
- [SC/MATH 1090 3.00](#);
- [LE/EECS 2011 3.00](#); [LE/EECS 2021 4.00](#); [LE/EECS 2030 3.00](#); [LE/EECS 2031 3.00](#); [LE/EECS 2200 3.00](#); [LE/EECS 2311 3.00](#); [SC/PHYS 2020 3.00](#); [SC/PHYS 2211 1.00](#);
- [LE/EECS 3101 3.00](#); [LE/EECS 3201 4.00](#); [LE/EECS 3215 4.00](#); [LE/EECS 3221 3.00](#); [LE/EECS 3311 3.00](#); [LE/EECS 3342 3.00](#); [LE/EECS 3451 4.00](#);
- [LE/EECS 4312 3.00](#); [LE/EECS 4313 3.00](#); [LE/EECS 4314 3.00](#); [LE/EECS 4315 3.00](#); [LE/EECS 4413 3.00](#); [LE/ENG 4550 3.00](#);
- 12 additional credits from computer science courses at the 3000 and 4000 level. At least six of these credits must be from the following list: [LE/EECS 3214 3.00](#); [LE/EECS 3421 3.00](#); [LE/EECS 3461 3.00](#); [LE/EECS 3481 3.00](#); [LE/EECS 3482 3.00](#); [LE/EECS 4214 3.00](#); [LE/EECS 4215 3.00](#); [LE/EECS 4411 3.00](#); [LE/EECS 4412 3.00](#); [LE/EECS 4441 3.00](#); [LE/EECS 4481 3.00](#); [LE/EECS 4482 3.00](#); [LE/EECS 4404 3.00](#)
- **Security Option:** Students selecting the software security option must choose 4 of the following 5 courses from the list above: [LE/EECS 3214 3.00](#); [LE/EECS 3481 3.00](#); [LE/EECS 3482 3.00](#); [LE/EECS 4481 4.00](#); or [LE/EECS 4482 3.00](#)