<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>CIVE 281</td>
<td>Analytical Mechanics (3 cr, C - MATH 262 &amp; MATH 263)</td>
<td>3</td>
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<tr>
<td>ECSE 202</td>
<td>Intro. to Software Development (3 cr, P - PHYS 142 or CEGEP Equivalent, C - MATH 263)</td>
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<tr>
<td>ECSE 200</td>
<td>Electric Circuits 1 (3 cr)</td>
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<tr>
<td>MATH 262</td>
<td>Intermediate Calculus (3 cr, P - MATH 141 &amp; MATH 153 or equivalent, C - MATH 262)</td>
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<tr>
<td>MATH 263</td>
<td>ODEs for Engineers (3 cr)</td>
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<tr>
<td>ECSE 205</td>
<td>Probability &amp; Statistics for Eng. (4 cr)</td>
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<td>ECSE 206</td>
<td>Intro. to Signals &amp; Systems (3 cr, P - ECSE 200)</td>
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<td>ECSE 210</td>
<td>Electric Circuits 2 (3 cr, P - ECSE 200)</td>
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<td>ECSE 211</td>
<td>Design Principles and Methods (3 cr, P - ECSE 200 &amp; ECSE/COMP 202)</td>
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<tr>
<td>ECSE 251</td>
<td>Electric and magnetic fields (3 cr, P - MATH 262 &amp; ECSE 200)</td>
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<td>FACC 100</td>
<td>Intro. to Engineering Profession (1 cr)</td>
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<tr>
<td>COMP 250</td>
<td>Introduction to Computer Science (3 cr)</td>
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<td>ECSE 222</td>
<td>Digital Logic (3 cr, P - ECSE 202)</td>
<td>3</td>
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<td>ECSE 362</td>
<td>Fundamentals of Power Eng. (4 cr, P - ECSE 210, ECSE 251 &amp; CIVE 281)</td>
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<td>MIME 262</td>
<td>Properties of Materials in EE (3 cr)</td>
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<td>CCOM 206</td>
<td>Communication in Engineering (3 cr)</td>
<td>3</td>
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<tr>
<td>ECSE 307</td>
<td>Linear Systems &amp; Control (4 cr, P - ECSE 200 &amp; ECSE 210)</td>
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<td>ECSE 324</td>
<td>Computer Organization (4 cr, P - ECSE 200 &amp; ECSE 222)</td>
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<td>ECSE 331</td>
<td>Electronics (4 cr, P - ECSE 210)</td>
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<td>XXXX xxx</td>
<td>Humanities &amp; Social Sciences * (3 cr)</td>
<td>3</td>
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<tr>
<td>ECSE 308</td>
<td>Intro. Comm. Sys. &amp; Networks (4 cr, P - ECSE 205 &amp; ECSE 206)</td>
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<td>ECSE 4xx 41</td>
<td>Technical Complementary 1 (4 cr, P - ECSE 251)</td>
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<td>ECSE 354</td>
<td>Electromag. Wave Propagation (3 cr)</td>
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<td>FACC 300</td>
<td>Engineering Economy</td>
<td>3</td>
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<td>ECSE 456</td>
<td>ECSE Design Project 1 (3 cr, P - COM 206 &amp; ECSE 321)</td>
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<td>ECSE 4xx 42</td>
<td>Technical Complementary 2 (3 cr)</td>
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<td>ECSE 4xx t3</td>
<td>Technical Complementary 3 (3 cr)</td>
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<tr>
<td>ECSE 443</td>
<td>Intro to Numerical Methods in EE (3 cr, P - COMP 250, ECSE 331 &amp; ECSE 251 or ECSE 353)</td>
<td>3</td>
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<tr>
<td>XXXX xxx</td>
<td>Impact of Technology on Society ** (3 cr)</td>
<td>3</td>
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</tbody>
</table>

Courses shown in boldface above must be passed with a grade "C" or better. A "D" is only acceptable in the courses not in boldface. Also, a grade of "C" is required in all prerequisites in order to proceed with the follow-on courses. (Exception: A student who fails a course with a grade of D may take an ECSE course that has it as a prerequisite, provided that the failed course is retaken at the same time. Students thinking of doing this should meet with a Departmental advisor).

Technical Complementary courses are selected from the list given on the next page.

* For instructions on selecting valid “Humanities and Social Sciences” courses, see [www.mcgill.ca/ece](http://www.mcgill.ca/ece), then: Programs and Courses > Undergraduate > Complementary Studies.

** For instructions on selecting valid “Impact of Technology on Society” courses, see [www.mcgill.ca/ece](http://www.mcgill.ca/ece), then: Programs and Courses > Undergraduate > Complementary Studies.

This sample curriculum is for students who wish to complete their degree requirements in 7 semesters. Students may, at any time, deviate from this structure. However, it is the student’s responsibility to devise a study plan that has no course conflicts or prerequisite/corequisite violations. Academic advisors are available for help with course selection.

Revised 2016-02-01
ELECTRICAL ENGINEERING

Four-credit Technical Complementaries (2 courses) 8 credits

Two courses from this list:

ECSE 335  Microelectronics  (4 cr. P - ECSE 331)
ECSE 403  Control Systems  (4 cr. P - ECSE 307)
ECSE 408  Communication Systems  (4 cr. P - ECSE 205 & ECSE 308)
ECSE 416  Telecom. Networks  (4 cr. P - COMP 250, ECSE 205 & ECSE 308 or ECSE 316)
ECSE 433  Physical Basis of Transistor Devices  (4 cr. P - MIME 262, ECSE 331, ECSE 251)
ECSE 444  Microprocessors  (4 cr. P - ECSE 324)
ECSE 470  Electromechanical Systems  (4 cr. P - ECSE 362)

Remaining Technical Complementaries (5 courses) 15 credits

The remaining five technical complementary courses can be chosen from the previous list or the following:

ECSE 310  Thermodynamics of Computing  (3 cr. P - ECSE 200, ECSE 205 & ECSE 222)
ECSE 325  Digital Systems  (3 cr. P - ECSE 324)
ECSE 405  Antennas  (3 cr. P - ECSE 303 & ECSE 352)
ECSE 412  Discrete-Time Signal Processing  (3 cr. P - ECSE 304 or ECSE 306)
ECSE 413  Communications Systems 2  (3 cr. P - ECSE 411)
ECSE 415  Introduction to Computer Vision  (3 cr. P - ECSE 304 or ECSE 306)
ECSE 420  Parallel Computing  (3 cr. P - ECSE 427)
ECSE 421  Embedded Systems  (3 cr. P - ECSE 322 & ECSE 333)
ECSE 422  Fault Tolerant Computing  (3 cr. P - ECSE 352)
ECSE 423  Fundamentals of Photonics  (3 cr. P - ECSE 361)
ECSE 424  Human-Computer Interaction  (3 cr. P - ECSE 322)
ECSE 425  Computer Architecture  (3 cr. P - ECSE 324)
ECSE 427  Operating Systems  (3 cr. P - ECSE 324 or COMP 273)
ECSE 430  Photonic Devices & Systems  (3 cr. P - ECSE 352 & PHYS 271)
ECSE 431  Introduction to VLSI CAD.  (3 cr. P - ECSE 323 & ECSE 330)
ECSE 435  Mixed Signal Test Techniques  (3 cr. P - ECSE 322, ECSE 323 & ECSE 304 or ECSE 306)
ECSE 436  Signal Processing Hardware  (3 cr. P - ECSE 221, ECSE 334 & ECSE 352 or ECSE 353)
ECSE 450  Electromagnetic Compatability  (3 cr. P - ECSE 325)
ECSE 451  EM Transmission & Radiation  (3 cr. P - ECSE 352)
ECSE 460  Appareillage électrique  (3 cr. P - ECSE 361)
ECSE 463  Matériaux de l’électrotechnique  (3 cr. P - ECSE 361)
ECSE 464  Power Systems Analysis  (3 cr. P - ECSE 361)
ECSE 465  Power Electronic Systems  (3 cr. P - ECSE 361)
ECSE 466  Réseaux de distribution  (3 cr. P - ECSE 361)
ECSE 467  Comportement des réseaux électriques  (3 cr. P - ECSE 462 or ECSE 464)
ECSE 468  Electricité Industrielle  (3 cr. P - ECSE 361)
ECSE 469  Protection des réseaux électriques  (3 cr. P - ECSE 464)
PHYS 434  Optics  (3 cr. P - PHYS 342 or PHYS 352, or permission of the instructor)
PHYS 446  Majors quantum physics  (3 cr. P - PHYS 230 & PHYS 232, or PHYS 251)

It is recommended that the technical complementary courses be chosen according to a specialization area. Suggested courses appropriate to the primary specialization areas are given in the following lists.

Intelligent systems: control and automation
ECSE 325 Digital Systems (3)
ECSE 403 Control Systems (4)
ECSE 415 Intro to Computer Vision (3)
ECSE 444 Microprocessor Systems (4)
ECSE 421 Embedded Systems (3)
ECSE 422 Fault-Tolerant Computing (3)
ECSE 424 Human-Computer Interaction (3)
ECSE 425 Computer Architecture (3)
ECSE 427 Operating Systems (3)
ECSE 435 Mixed Signal Test Techniques (3)

Integrated circuits, electronics and photonics
ECSE 335 Introduction to Microelectronics (4)
ECSE 403 Control Systems (4)
ECSE 433 Physical Basis of Transistor Devices (4)
ECSE 325 Digital Systems (3)
ECSE 423 Fundamentals of Photonics (3)
ECSE 431 Introduction to VLSI CAD (3)
ECSE 435 Mixed Signal Test Techniques (3)

Power engineering
ECSE 403 Control Systems (4)
ECSE 470 Electromechanical Energy Conversion (4)
ECSE 460 Appareillage électrique (3)
ECSE 463 Matériaux de l’électrotechnique (3)
ECSE 464 Power System Analysis (3)
ECSE 465 Power Electronic Systems (3)
ECSE 466 Réseaux de distribution (3)
ECSE 467 Comportement des réseaux électriques (3)
ECSE 468 Electricité Industrielle (3)
ECSE 469 Protection des réseaux électriques (3)
ECSE 450 Electromagnetic Compatability (3)

Telecommunications
ECSE 408 Communication Systems 1 (4)
ECSE 413 Communication Systems 2 (3)
ECSE 416 Intro. to Telecommunication Networks (4)
ECSE 405 Antennas (3)
ECSE 412 Discrete Time Signal Processing (3)
ECSE 423 Fundamentals of Photonics (3)
ECSE 436 Signal Processing Hardware (3)
ECSE 450 Electromagnetic Compatability (3)
ECSE 451 EM Transmission and Radiation (3)