# Software Engineering Co-op Curriculum - Fall 2023

## 1st Term (Fall)
- **COMP 202** Foundations of Programming 3
  - Prerequisites/Co-requisites: P - a CEGEP level mathematics course
- **ECSE 200** Electric Circuits 3
  - Prerequisites/Co-requisites: P - PHYS 142; C - MATH 263
- **MATH 262** Intermediate Calculus 3
  - Prerequisites/Co-requisites: P - MATH 133 or equiv, MATH 141
- **MATH 263** ODEs for Engineers 3
  - Prerequisites/Co-requisites: C - MATH 262
- **WCOM 206** Communication in Engineering 3
  - Prerequisites/Co-requisites: Note: Must be passed two terms prior to ECSE 201

## 2nd Term (Winter)
- **ECSE 250** Fundamentals of Software Development 3
  - Prerequisites/Co-requisites: P - COMP 202 or equivalent
- **MATH 240** Discrete Structures 3
  - Prerequisites/Co-requisites: C - MATH 133
- **ECSE 205** Probability & Statistics for Eng. 3
- **ECSE 222** Digital Logic 3
  - Prerequisites/Co-requisites: P - COMP 202 or ECSE 202
- **FACC 100** Intro. to Engineering Profession 1
- **HSS 1** Humanities & Social Sciences 1*
  - Prerequisites/Co-requisites: 3

## 3rd Term (Summer)
- **ECSE 201** Software Engineering Co-op 1 2
  - Prerequisites/Co-requisites: P - (ECSE 250 or COMP 250 or ECSE 223) and WCOM 206

## 4th Term (Fall)
- **COMP 206** Introduction to Software Systems 3
  - Prerequisites/Co-requisites: P - (COMP 202 or ECSE 202) or (COMP 250 or ECSE 250)
- **COMP 251** Algorithms and Data Structures 3
  - Prerequisites/Co-requisites: P - (COMP 250 or ECSE 250) and MATH 240
- **ECSE 223** Model-based Programming 3
  - Prerequisites/Co-requisites: P - COMP 250 or ECSE 250
- **ECSE 211** Design Principles and Methods 3
  - Prerequisites/Co-requisites: P - ECSE 200 and (COMP 202 or ECSE 202)
- **Impact** Impact of Technology on Society **
  - Prerequisites/Co-requisites: 3
- **FACC 250** Resp. of the Prof. Engineer 0
  - Prerequisites/Co-requisites: P - FACC 100 or BREE 205

## 5th Term (Winter)
- **FACC 300** Engineering Economy 3
- **ECSE 310** Thermodynamics of Computing 3
  - Prerequisites/Co-requisites: P - ECSE 200, ECSE 250, ECSE 222
- **ECSE 321** Intro. to Software Engineering 3
  - Prerequisites/Co-requisites: P - ECSE 223 and (COMP 202 or COMP 208 or ECSE 202)
- **ECSE 324** Computer Organization 4
  - Prerequisites/Co-requisites: P - ECSE 200 and ECSE 222 and COMP 208
- **COMP 360** Algorithm Design 3
  - Prerequisites/Co-requisites: P - COMP 251, MATH 240

## 6th Term (Summer)
- **ECSE 301** Software Engineering Co-op 2 2
  - Prerequisites/Co-requisites: P - ECSE 201 and ECSE 321

## 7th Term (Fall)
- **ECSE 427** Operating Systems 3
  - Prerequisites/Co-requisites: P - (ECSE 324 or COMP 273)
- **COMP 302** Prog. Languages & Paradigms 3
  - Prerequisites/Co-requisites: P - (COMP 250 or ECSE 250) and MATH 240
- **ECSE 428** Software Engineering Practice 3
  - Prerequisites/Co-requisites: P - (ECSE 321 or COMP 335)
- **ECSE 316** Signals and Networks 3
  - Prerequisites/Co-requisites: P - MATH 263, ECSE 200, COMP 251
- **ECSE 326** Software Requirements Eng. 3
  - Prerequisites/Co-requisites: P - (ECSE 223 or COMP 303)

## 8th Term (Winter)
- **ECSE 401** Software Engineering Co-op 3 2
  - Prerequisites/Co-requisites: P - ECSE 301 and ECSE 326

## 9th Term (Summer)
- **ECSE 402** Software Engineering Co-op 4 2
  - Prerequisites/Co-requisites: P - ECSE 401

## 10th Term (Fall)
- **ECSE 458 D1** Capstone Design Project 3
  - Prerequisites/Co-requisites: P - ECSE 211, ECSE 324, WCOM 206, COMP 302
- **ECSE 429** Software Validation 3
  - Prerequisites/Co-requisites: P - (ECSE 321 or COMP 303)
- **ECSE 420** Parallel Computing 3
  - Prerequisites/Co-requisites: P - ECSE 427
- **FACC 400** Engineering Professional Practice 1
  - Prerequisites/Co-requisites: P - FACC 250, and 60 program credits
- **XXXX xxx** Technical Complementary 1 3

## 11th Term (Winter)
- **ECSE 458 D2** Capstone Design Project 3
  - Prerequisites/Co-requisites: P - ECSE 458 D1
- **COMP 421** Database Systems 3
  - Prerequisites/Co-requisites: P - COMP 206, COMP 251, COMP 302
- **XXXX xxx** Technical Complementary 2 3
- **XXXX xxx** Technical Complementary 3 3
- **Elective** Elective Course 3

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

*The Complementary Studies (CS) courses are Impact of Technology courses (Group A) and Humanities & Social Sciences, Management Studies and Law courses (Group B). Students must take one course (3 credits) from Group A and one course (3 credits) from Group B. The curriculum above includes suggested terms during which these courses can be taken. These must be chosen from an approved list of courses/departments, found in the program list under “Complementary Studies” in the Faculty of Engineering Undergraduate section of the Programs, Courses and University Regulations publication (www.mcgill.ca/study) (see your program listing in the “Browse Academic Units & Programs” section).

Elective course (3 credits) must be taken at the 200 level or higher from any department at McGill, approved by the Undergraduate Programs Office in the Department of Electrical and Computer Engineering. For approval, please contact undergrad.ece@mcgill.ca.

Students are responsible for satisfying pre-ico-requisites and verifying with their department that they are meeting the requirements of their program.

### Technical Complementary Courses - Software Engineering Co-op

#### Technical Complementsaries

- **9 - 12 credits (3 courses)** must be taken, chosen as follows:
List A

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Prerequisites/Co-requisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECSE 325</td>
<td>3</td>
<td>P - ECSE 324</td>
</tr>
<tr>
<td>ECSE 415</td>
<td>3</td>
<td>P - ECSE 205, (ECSE 206 or ECSE 316)</td>
</tr>
<tr>
<td>ECSE 416</td>
<td>4</td>
<td>P - (ECSE 250 or COMP 250) and ECSE 205 and (ECSE 308 or ECSE 316)</td>
</tr>
<tr>
<td>ECSE 422</td>
<td>3</td>
<td>P - ECSE 324 and (ECSE 250 or COMP 250)</td>
</tr>
<tr>
<td>ECSE 439</td>
<td>3</td>
<td>P - (ECSE 321 or COMP 303)</td>
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<tr>
<td>ECSE 444</td>
<td>4</td>
<td>P - ECSE 324</td>
</tr>
<tr>
<td>ECSE 544</td>
<td>4</td>
<td>P - ECSE 205, (ECSE 206 or ECSE 316)</td>
</tr>
</tbody>
</table>

List B

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Prerequisites/Co-requisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 330</td>
<td>3</td>
<td>P - COMP 251</td>
</tr>
<tr>
<td>COMP 350*</td>
<td>3</td>
<td>P - MATH 222 or MATH 262, MATH 223, (ECSE 202 or COMP 208 or COMP 250 or equiv)</td>
</tr>
<tr>
<td>COMP 409</td>
<td>3</td>
<td>P - COMP 251, COMP 302 &amp; COMP 310 or ECSE 427</td>
</tr>
<tr>
<td>COMP 417</td>
<td>3</td>
<td>P - COMP 251, MATH 223 &amp; (ECSE 321 or COMP 206)</td>
</tr>
<tr>
<td>COMP 424***</td>
<td>3</td>
<td>P - COMP 206 or ECSE 321, (MATH 323 or equivalent), COMP 251</td>
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<tr>
<td>COMP 445</td>
<td>3</td>
<td>P - COMP 250 and MATH 240 or permission of instructor</td>
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<tr>
<td>COMP 512</td>
<td>4</td>
<td>P - COMP 310, COMP 251 or equivalent</td>
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<tr>
<td>COMP 520</td>
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<td>P - COMP 273, COMP 302</td>
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<tr>
<td>COMP 521</td>
<td>4</td>
<td>P - COMP 251, MATH 223, (COMP 303 or COMP 361)</td>
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<tr>
<td>COMP 525</td>
<td>3</td>
<td>P - COMP 251, COMP 330</td>
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<tr>
<td>COMP 529</td>
<td>4</td>
<td>P - COMP 303</td>
</tr>
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<td>COMP 533</td>
<td>3</td>
<td>P - (ECSE 321 or COMP 303 or COMP 361)</td>
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<td>COMP 550</td>
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<td>P - (MATH 232 or ECSE 205) and (COMP 251 or COMP 252)</td>
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<td>COMP 551**</td>
<td>4</td>
<td>P - MATH 323 or ECSE 205 or equivalent</td>
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<tr>
<td>COMP 559</td>
<td>4</td>
<td>P - MATH 222, MATH 223, COMP 206, COMP 250</td>
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<td>COMP 575</td>
<td>3</td>
<td>P - COMP 310</td>
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<tr>
<td>COMP 579</td>
<td>4</td>
<td>P - A university level course in machine learning such as COMP 451 or COMP 551. Background in calculus, linear algebra, probability at the level of MATH 222, MATH 223, MATH 323, respectively.</td>
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<tr>
<td>ECSE 343*</td>
<td>3</td>
<td>P - ECSE 205 and (COMP 250 or ECSE 250) and MATH 263</td>
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<tr>
<td>ECSE 421</td>
<td>3</td>
<td>P - ECSE 324</td>
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<tr>
<td>ECSE 424</td>
<td>3</td>
<td>P - (ECSE 324 and ECSE 250) or (ECSE 324 and COMP 250) or (COMP 251 and COMP 273)</td>
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<td>ECSE 425</td>
<td>3</td>
<td>P - ECSE 324</td>
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<td>ECSE 437</td>
<td>3</td>
<td>P - (ECSE 321 or COMP 303)</td>
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<td>ECSE 446</td>
<td>3</td>
<td>P - (ECSE 205 and ECSE 250) or (ECSE 202 and ECSE 205 and COMP 250)</td>
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<tr>
<td>ECSE 507</td>
<td>3</td>
<td>P - (ECSE 343 or ECSE 543 or ECSE 501 or COMP 540 or permission of instructor)</td>
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<tr>
<td>ECSE 509</td>
<td>3</td>
<td>P - (ECSE 206 or ECSE 316), ECSE 205</td>
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<tr>
<td>ECSE 526***</td>
<td>3</td>
<td>P - ECSE 324</td>
</tr>
<tr>
<td>ECSE 532</td>
<td>4</td>
<td>P - ECSE 324</td>
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<tr>
<td>ECSE 551**</td>
<td>4</td>
<td>P - (ECSE 260 or COMP 250) and (ECSE 205 or MATH 323); C - ECSE 343 or ECSE 543 or MATH 247</td>
</tr>
<tr>
<td>ECSE 552</td>
<td>4</td>
<td>P - (ECSE 551 or COMP 551)</td>
</tr>
<tr>
<td>ECSE 557</td>
<td>3</td>
<td>P - (ECSE 202 or ECSE 250 or COMP 250) and (ECSE 205 or MATH 323); C - (COMP 451 or COMP 551</td>
</tr>
<tr>
<td>MATH 247</td>
<td>3</td>
<td>P - MATH 133 or equiv.</td>
</tr>
</tbody>
</table>

* COMP 350 and ECSE 343 cannot both be taken.
** ECSE 551 and COMP 551 cannot both be taken.
*** COMP 424 and ECSE 526 cannot both be taken.

3-4 credits (1 course) from List A
6 - 8 credits (2 courses) from List A or List B

3-12 credits from the following list:

0 - 8 credits from the following list:

Last update: Jun 05, 2023

For the official program listing, see the Programs, Courses and University Regulations publication (www.mcgill.ca/study).