March 17, 2023

Subject: Important Notes and Curriculum Changes in the 2023-2024 Undergraduate Calendar

Dear Student,

Each academic year, all students enrolled in our **Software Engineering** program are sent a letter advising them of curriculum changes that have occurred since their entry into the program. As such, the present letter is to advise you of changes to your program that will appear in the 2023 - 2024 Undergraduate Calendar.

It is important to read this entire letter, as these changes may affect your selection of courses or potentially your graduation. Students must meet the requirements of their program according to the calendar of their graduating year. This letter, as well as past ones, can be found on the following website under *Software Engineering Information and Forms, Curriculum Requirements Letters*:

https://www.concordia.ca/ginacody/computer-science-software-eng/students/undergraduate.html

Should you have any questions regarding this letter and any of the curriculum changes therein, please do not hesitate to contact your Undergraduate Program Assistants, Ms. Kayla Donovan and Ms. Natallia Lapko:

- By email at cse-ugrad@concordia.ca
- By phone at 514-848-2424 extensions 7915 and 3053; or
- In-person, ER Building, 10th floor

Please be reminded that you can always consult your program requirements and course descriptions by referring to the following website:

https://www.concordia.ca/academics/undergraduate/calendar/current/section-71-gina-cody-school-of-engineering-and-computer-science.html

and

https://www.concordia.ca/academics/undergraduate/calendar/current/section-71-gina-cody-school-of-engineering-and-computer-science/section-71-70-department-of-computer-science-and-software-engineering/section-71-70-9-degree-requirements-for-the-beng-in-software-engineering.html

Please read the following pages carefully.

VERY IMPORTANT:

1. Students must have completed all 200-level courses required for their program before they can register for any 400-level course.

2. All 200-level courses within the program, taken after September 1, 2012 which are prerequisites for other courses, must be completed with a C- grade or better. A 200- level course in which a student obtained a D+ grade or lower must be repeated before attempting any course for which this 200-level course is a prerequisite.

3. Any course(s) that you are required to repeat due to conditional standing or readmission conditions must be completed with a grade of C- or better prior to graduation. This requirement will NOT be waived.

4. Students are required to graduate having met the substantial equivalent of the curriculum in force in the winter term prior to their degree conferral.

5. Students may now submit a request to write a supplemental exam, conditional on meeting the requirements highlighted in section 71.10.3 of the 2023-2024 Undergraduate Calendar. Meeting the conditions does not guarantee the approval of the request.

6. In order to graduate, students must:

i. Satisfy all their program requirements;
ii. Be in acceptable standing in their last annual assessment; and
iii. Have a minimum final graduation GPA of 2.00.

The academic standings of potential graduates who have attempted less than 12 credits since their last assessment are determined on the basis that these credits constitute an extension of the last assessment period.

7. Graduation does NOT occur automatically and you must apply for graduation. The application form can be found at: https://www.concordia.ca/students/your-sis/apply-to-graduate.html

The deadlines to apply for graduation are:

- **January 15th for Spring Convocation; or**
- **July 15th for Fall Convocation.**

Changes to the Software Engineering Program:

1. Changes to the Engineering Core

No changes have been made to the Engineering core.

2. Changes to the Software Engineering Core

<u>Changes have been made to the Software Engineering core:</u>

a.) The credits for the following courses **have been increased as follows:**

- SOEN 341 Software Process and Practices – has increased from 3 to 4 credits.
  SOEN 341 Software Process and Practices is now a 4-credit course with a lab.

- SOEN 342 Software Requirements and Deployment – has increased from 3 to 4 credits.
  SOEN 342 Software Requirements and Deployment is now a 4-credit course with a lab.

- SOEN 343 Software Architecture and Design – has increased from 3 to 4 credits.
  SOEN 343 Software Architecture and Design is now a 4-credit course with a lab.

- SOEN 345 Software Testing, Verification and Quality Assurance – has increased from 3 to 4 credits.
  SOEN 345 Software Testing, Verification and Quality Assurance is now a 4-credit course with a lab.

- SOEN 490 Capstone Software Engineering Design Project – has increased from 4 to 6 credits.
  SOEN 490 Capstone Software Engineering Design Project is now a 6-credit course.

b.) The following course **has been removed** from the Software Engineering Core.

- SOEN 385 Control Systems has been **<u>removed</u>**.

- SOEN 385 Control Systems will be **<u>replaced</u>** by a 3-credit course from the new Engineering and Natural Science Group: Software Engineering. Students can select one of the following courses:
  - ENGR 245 Mechanical Analysis (3.00)
  - MIAE 221 Materials Science (3.00)

3. Changes to the Computer Science Group

No changes have been made to the Computer Science Group.

4. Basic and Natural Science Courses

Changes have been made to the Basic and Natural Science Courses

- This group has been **removed**.

- The Canadian Engineering Accreditation Board is now allowing additional Natural Science (NS) Accreditation Units to be claimed from CEGEP studies. Students no longer have to take the 6 credits in Basic and Natural Courses.

5. Engineering and Natural Science Group: Software Engineering

Changes have been made to the Engineering and Natural Science Group: Software Engineering

- This group has been **introduced to replace SOEN 385** from the Software Engineering Core. SOEN 385 will be replaced by a 3-credit course from this new Engineering and Natural Science Group: Software Engineering. Students can select one of the following courses:
    - ENGR 245 Mechanical Analysis (3.00)
    - MIAE 221 Materials Science (3.00)

6. Software Engineering Elective Course Groups

Changes have been made to the Software Engineering Elective Course Groups

- A new subheading has been created for the Software Engineering Elective Course Groups to separate them more clearly from the program requirements and to give them better visibility on the calendar page.

- COMP 438 Geometric Modelling and Processing (4.00) has been added to the Computer Games Group: Software Engineering

The following transition measures will apply for current Software Engineering Students admitted before Summer 2023 to the regular 120-credit program. Students in the ECP or MEP program should refer to Point 7 below.

I. Students currently in the program who have completed either SOEN 385 or a Basic Science course from Table 1 will get 3-credits for the Engineering and Natural Science group (Table 2) and do not need to complete courses from this group.

II. If you have not yet completed any Basic Science courses or SOEN 385, you need to complete 1 course (3-credits) from the Engineering and Natural Science group (Table 2).

III. Any extra credits accrued in Basic Science courses (Table 1) or missing credits from having done the 3-credit versions of SOEN 341, 342, 343, 345 will apply towards the Software Engineering Elective credits.

IV. **Students in the regular 120-credit program should consult Transition Table A for the exact number of SOEN elective credits that will be required.**

7. ECP and MEP requirements

<u>Changes have been made to the ECP and MEP requirements</u>

- The ECP and MEP requirements have increased from 24-credits to now 30-credits. This credit increase reflects changes from the Canadian Engineering Accreditation Board.

The following transition measures will apply for current Software Engineering Students admitted before Summer 2023 to the ECP or MEP programs.

I. Students currently in the program who have completed SOEN 385 will get 3-credits for the Engineering and Natural Science group (Table 2) and do not need to complete any courses from this group. If you have not yet completed SOEN 385, you need to complete 1 course (3-credits) from the Engineering and Natural Science group (Table 2).

II. Students are now required to complete 6-credits from Table 3. These credits will apply towards your Software Engineering Elective credits.

III. Any missing credits from having done the 3-credit versions of SOEN 341, 342, 343, 345 will also apply towards the Software Engineering Elective credits.

IV. Students in the ECP and MEP program should consult Transition Table B for the exact number of SOEN elective credits that will be required.

For Transition Tables A and B, it is assumed the student has *not completed* SOEN 490 before Summer 2023. Students who have completed SOEN 490 before Summer 2023 will need to add 2-credits to the elective credits in the Transition Tables A and B below.

Indicates an ***increase*** in credits	Indicates a ***decrease*** in credits

Transition Table A: For current Software Engineering Students admitted before Summer 2023 to the regular 120-credit program

Prior to Summer 2023		**As of Summer 2023**	
# of Basic Science courses completed (see Table 1)	SOEN 385 complete (Yes or No)	Total # of SOEN elective credits required	# of Engineering and Natural Science credits required (see Table 2)
Completed **4** courses out of SOEN 341, SOEN 342, SOEN 343, and SOEN 345, prior to Summer 2023:			
0	Yes	20 credits	0 credits
0	No	20 credits	3 credits
1	Yes	17 credits	0 credits
1	No	20 credits	0 credits
2	Yes	14 credits	0 credits
2	No	17 credits	0 credits
Completed **3** courses out of SOEN 341, SOEN 342, SOEN 343, and SOEN 345, prior to Summer 2023:			
0	Yes	19 credits	0 credits
0	No	19 credits	3 credits
1	Yes	16 credits	0 credits
1	No	19 credits	0 credits
2	Yes	13 credits	0 credits
2	No	16 credits	0 credits
Completed **2** courses out of SOEN 341, SOEN 342, SOEN 343, and SOEN 345, prior to Summer 2023:			
0	Yes	18 credits	0 credits
0	No	18 credits	3 credits
1	Yes	15 credits	0 credits
1	No	18 credits	0 credits
2	Yes	12 credits	0 credits
2	No	15 credits	0 credits
Completed **1** course out of SOEN 341, SOEN 342, SOEN 343, and SOEN 345, prior to Summer 2023:			
0	Yes	17 credits	0 credits
0	No	17 credits	3 credits
1	Yes	14 credits	0 credits
1	No	17 credits	0 credits
2	Yes	11 credits	0 credits
2	No	14 credits	0 credits
Completed **0** courses out of SOEN 341, SOEN 342, SOEN 343, and SOEN 345, prior to Summer 2023:			
0	Yes	16 credits	0 credits
0	No	16 credits	3 credits
1	Yes	13 credits	0 credits
1	No	16 credits	0 credits
2	Yes	10 credits	0 credits
2	No	13 credits	0 credits

Transition Table B: For current ECP and MEP Software Engineering Students admitted before Summer 2023

SOEN 385 complete (Yes or No)	Total # of SOEN elective credits required	# of Engineering and Natural Science credits required (see Table 2)	Total # of Basic Science credits required from Table 1 or 3
Completed **4** courses out of SOEN 341, SOEN 342, SOEN 343, and SOEN 345, prior to Summer 2023:			
Yes	14 credits	0 credits	6 credits
No	14 credits	3 credits	6 credits
Completed **3** courses out of SOEN 341, SOEN 342, SOEN 343, and SOEN 345, prior to Summer 2023:			
Yes	13 credits	0 credits	6 credits
No	13 credits	3 credits	6 credits
Completed **2** courses out of SOEN 341, SOEN 342, SOEN 343, and SOEN 345, prior to Summer 2023:			
Yes	12 credits	0 credits	6 credits
No	12 credits	3 credits	6 credits
Completed **1** course out of SOEN 341, SOEN 342, SOEN 343, and SOEN 345, prior to Summer 2023:			
Yes	11 credits	0 credits	6 credits
No	11 credits	3 credits	6 credits
Completed **0** courses out of SOEN 341, SOEN 342, SOEN 343, and SOEN 345, prior to Summer 2023:			
Yes	10 credits	0 credits	6 credits
No	10 credits	3 credits	6 credits

Table 1: Basic and Natural Science Courses: Software Engineering

BIOL 206 Elementary Genetics (3.00)
BIOL 261 Molecular and General Genetics (3.00)
CHEM 217 Introductory Analytical Chemistry I (3.00)
CHEM 221 Introductory Organic Chemistry I (3.00)
CIVI 231 Geology for Civil Engineers (3.00)
ELEC 321 Introduction to Semiconductor Materials and Devices (3.50)
ENGR 242 Statics (3.00)
ENGR 243 Dynamics (3.00)
ENGR 251 Thermodynamics I (3.00)
ENGR 361 Fluid Mechanics I (3.00)
MIAE 221 Materials Science (3.00)
PHYS 252 Optics (3.00)
PHYS 284 Introduction to Astronomy (3.00)
PHYS 385 Astrophysics (3.00)

Table 2: Engineering and Natural Science Group: Software Engineering

ENGR 245 Mechanical Analysis (3.00)
MIAE 221 Materials Science (3.00)

Table 3: Natural Science Electives (for ECP and MEP students)

BIOL 201 Introductory Biology (3.00)
BIOL 202 General Biology I (3.00)
BIOL 206 Elementary Genetics (3.00)
BIOL 261 Molecular and General Genetics (3.00)
BIOL 266 Cell Biology (3.00)
CHEM 206 Chemistry of Solutions (3.00)
CHEM 217 Introductory Analytical Chemistry I (3.00)
CHEM 221 Introductory Organic Chemistry I (3.00)
GEOL 206 Earthquakes, Volcanoes, and Plate Tectonics (3.00)
GEOL 208 The Earth, Moon and the Planets (3.00)
PHYS 206 Waves, Optics and Modern Physics (3.00)
PHYS 252 Optics (3.00)
PHYS 260 Introductory Biophysics (3.00)
PHYS 273 Energy and Environment (3.00)
PHYS 284 Introduction to Astronomy (3.00)
PHYS 367 Modern Physics and Relativity (3.00)
PHYS 385 Astrophysics (3.00)
PHYS 443 Quantitative Human Systems Physiology (3.00)
PHYS 445 Principles of Medical Imaging (3.00)