Academic Programs Committee of Council

University Course Challenge

Scheduled posting: January 2024

The following types of curricular and program changes are approved by the University Course Challenge -- additions and deletions of courses, lower levels of study and program options; straightforward program changes; and curricular changes which affect other colleges.

Contents include submissions for information and approval from the following colleges and schools:

College of Arts and Science
College of Engineering
College of Graduate and Postdoctoral Studies
College of Pharmacy and Nutrition
School of Environment and Sustainability

Approval: Date of circulation: **January 16, 2024**
                Date of effective approval if no challenge received: **January 31, 2024**

Next scheduled posting:

The next scheduled posting will be February 14, 2024, with a submission deadline of **February 9, 2024.** Urgent items can be posted on request.

Please direct challenges to both of the following: seanine.warrington@usask.ca in Registrarial Services and amanda.storey@usask.ca in the Governance Office.

University Course Challenge – January 2024
The curricular revisions listed below were approved through the Arts & Science College Course and Program Challenge, and by the relevant college-level Academic Programs Committee and are now submitted to the University Course Challenge for approval.

Contact: Alexis Dahl (alexis.dahl@usask.ca)

Computing - Certificate

Minor program revisions
Replace MATH 177.3 with MATH 176.3.

Computing - Certificate
Requirements (21 credit units)

- **CMPT 214.3** Programming Principles and Practice
- **CMPT 270.3** Developing Object-Oriented Systems
- **CMPT 280.3** Intermediate Data Structures and Algorithms

Choose **3 credit units** from the following:

- **CMPT 141.3** Introduction to Computer Science
- **CMPT 142.3** Introduction to Computer Science for Engineers

Choose **3 credit units** from the following:

- **CMPT 145.3** Principles of Computer Science
- **CMPT 146.3** Principles of Computer Science for Engineers

Choose **3 credit units** from the following:

- **CMPT 318.3** Data Analytics
- **CMPT 333.3** Software Security
- **CMPT 353.3** Full Stack Web Programming
- **CMPT 370.3** Intermediate Software Engineering
- **CMPT 381.3** Implementation of Graphical User Interfaces
- **CMPT 384.3** Information Visualization
- **CMPT 394.3** Simulation Principles

Choose **3 credit units** from the following:

- **MATH 110.3** Calculus I
- **MATH 133.4** Engineering Mathematics I
- **MATH 176.3** Advanced Calculus I
- ~~**MATH 177.3** Advanced Calculus II~~
- **STAT 242.3** Statistical Theory and Methodology
- **STAT 245.3** Introduction to Statistical Methods

Rationale: MATH 177 was included in this program in error. MATH 176 is the correct option to MATH 110 and 133, all three of which a student may enter directly from high school.

The curricular revisions listed below were approved through the Arts & Science College Course and Program Challenge and are now submitted to the University Course Challenge for information.

Corrections

<u>**French**</u>

FREN 214.3 (Advanced Conversational French) was proposed as a new course in the December 2023 University Course Challenge, but this course number is already being used. Instead, this course will be:

FREN 215.3 Advanced Conversational French

<u>**Art History**</u>

Minor program revisions
Bachelor of Arts Double Honours in Art History and Studio Art
Correct addition of newly split courses – corrections are shown in orange.

Bachelor of Arts Double Honours - Art History and Studio Art- Majors 1 and 2
D4 Major Requirement (75 credit units)

Program majors are strongly encouraged to declare a major as early as possible in their program and to complete foundation courses in the first and second year of their program. This will help facilitate course registration and progression through the program. Please consult with the department regarding course selection, as many courses are not offered every year.

Some ARTH courses may be used in lieu of ART courses. Students are strongly encouraged to work with an advisor to choose their courses.

- **ART 110.3** Art Today Ideas and Practices
- ~~ART 112.6 Drawing I Foundation~~
- ART 124.3 Foundation in Drawing I
- ART 125.3 Foundation in Drawing II
- **ART 141.3** Sculpture I Foundation
- **ARTH 120.3** Art and Visual Culture I
- **ARTH 121.3** Art and Visual Culture II

Choose two of the following (6 -12 credit units):

- ~~ART 111.6 Painting I Foundation~~
- ~~ART 124.3~~ ART 122.3 Foundation in Painting I
- ~~ART 125.3~~ ART 123.3 Foundation in Painting II
- **ART 136.3** Digital and Integrated Practice I Foundation
- **ART 151.3** Introductory Printmaking I
- **ART 152.3** Introductory Printmaking II
- **ART 161.3** Foundation in Photography I

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Studio Art
Minor program revisions
Bachelor of Arts Double Honours in Studio Art
Correct incorrect addition of newly split courses – corrections shown in orange.

Bachelor of Arts - Double Honours - Studio Art - Major 1
D4 Major Requirement (39 credit units)

Program majors are strongly encouraged to declare a major as early as possible in their program and to complete foundation courses in the first and second year of their program. This will help facilitate course registration and progression through the program. Please consult with the department regarding course selection, as many courses are not offered every year.

- **ART 110.3** Art Today Ideas and Practices

Art History (6 credit units)

- **ARTH 120.3** Art and Visual Culture I
- **ARTH 121.3** Art and Visual Culture II

Studio Areas (24 credit units)

- ~~**ART 112.6** Drawing I Foundation~~
- ART 124.3 Foundation in Drawing I
- ART 125.3 Foundation in Drawing II
- **ART 141.3** Sculpture I Foundation

Choose **9 credit units** from ~~two of~~ the following ~~courses (6-12 credit units)~~:

- ~~**ART 111.6** Painting I Foundation~~
- ~~ART 124.3~~ ART 122.3 Foundation in Painting I
- ~~ART 125.3~~ ART 123.3 Foundation in Painting II
- **ART 136.3** Digital and Integrated Practice I Foundation
- **ART 151.3** Introductory Printmaking I
- **ART 152.3** Introductory Printmaking II
- **ART 161.3** Foundation in Photography I

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Double Honours - Studio Art - Major 2
Requirements (39 credit units)

Program majors are strongly encouraged to declare a major as early as possible in their program and to complete foundation courses in the first and second year of their program. This will help facilitate course registration and progression through the program. Please consult with the department regarding course selection, as many courses are not offered every year.

- **ART 110.3** Art Today Ideas and Practices
- ~~**ART 112.6** Drawing I Foundation~~
- ART 124.3 Foundation in Drawing I

- ART 125.3 Foundation in Drawing II
- **ART 141.3** Sculpture I Foundation
- **ARTH 120.3** Art and Visual Culture I
- **ARTH 121.3** Art and Visual Culture II

Choose **9 credit units** from ~~two of~~ the following ~~courses (6-12 credit units)~~:

- ~~**ART 111.6** Painting I Foundation~~
- ~~ART 124.3~~ ART 122.3 Foundation in Painting I
- ~~ART 125.3~~ ART 123.3 Foundation in Painting II
- **ART 136.3** Digital and Integrated Practice I Foundation
- **ART 151.3** Introductory Printmaking I
- **ART 152.3** Introductory Printmaking II
- **ART 161.3** Foundation in Photography I

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Bachelor of Arts Double Honours - Studio Art and Art History- Majors 1 and 2
D4 Major Requirement (75 credit units)

Program majors are strongly encouraged to declare a major as early as possible in their program and to complete foundation courses in the first and second year of their program. This will help facilitate course registration and progression through the program. Please consult with the department regarding course selection, as many courses are not offered every year.

Some ARTH courses may be used in lieu of ART courses. Students are strongly encouraged to work with an advisor to choose their courses.

- **ART 110.3** Art Today Ideas and Practices
- ~~**ART 112.6** Drawing I Foundation~~
- ART 124.3 Foundation in Drawing I
- ART 125.3 Foundation in Drawing II
- **ART 141.3** Sculpture I Foundation
- **ARTH 120.3** Art and Visual Culture I
- **ARTH 121.3** Art and Visual Culture II

Choose two of the following (6 -12 credit units):

- ~~**ART 111.6** Painting I Foundation~~
- ~~ART 124.3~~ ART 122.3 Foundation in Painting I
- ~~ART 125.3~~ ART 123.3 Foundation in Painting II
- **ART 136.3** Digital and Integrated Practice I Foundation
- **ART 151.3** Introductory Printmaking I
- **ART 152.3** Introductory Printmaking II
- **ART 161.3** Foundation in Photography I

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College of Engineering - University Course Challenge Submission, January 2024

The following changes have been approved through the College of Engineering and are being submitted here for approval through the University Course Challenge process:

Computer Engineering Program:

i) **MOTION:** Change the prerequisites for *CME 334.3 Network Architecture and Protocols* from:
   - Old Prerequisite(s) or Corequisite(s): *CME 331.3*
     To
   - New Prerequisite(s): *CME466.3.*

   RATIONALE: To better reflect the new location of the course in the CME program. It also covers some network/Machine Learning applications; therefore, *CME466.3* is added as a prerequisite.

ii) **MOTION:** Change the prerequisites for *CME 342.3 Introduction to Digital Integrated Circuits and System on Chip* from:
   - Old Prerequisite(s) or Corequisite(s): *CME 341.3*
     To
   - New Prerequisite(s): *EE221.3.*

   RATIONALE: *EE221.3* is a core course in CME that is not listed as a prerequisite to any upper year courses. In addition, *EE221.3* is more appropriate as a prerequisite than *CME341.3* for *CME342.3.*

iii) **MOTION:** Change the prerequisites for *CME 465.3 Embedded Machine Learning*

   - Old Prerequisite(s): CME 332 and CME 334
     To
   - New Prerequisite(s): EE216

   RATIONALE: The course, CME 465.3, is moving to Year 3. Therefore, we need to update the prerequisites accordingly. In addition, EE216 serves as an appropriate prerequisite for this course.

iv) **MOTION:** Change the prerequisites for *CME 466.3 Design of an Advanced Digital System* from:

- Old Prerequisite(s) or Corequisite(s): CME 332, CME 334, CME 342, CME 433, and CME 435. CME 341

  To

- New Prerequisite(s): *CME465.3*

RATIONALE: To better reflect the new location of the course in the CME program and its intent.

v) **MOTION:** Starting in 2024-2025, remove the following courses from the list of electives in third year in DSP Focus Area of CME program:

- *CMPT 318 Data Analytics*
- *CMPT 332 Operating Systems Concepts*
- *CMPT 370 Intermediate Software Engineering*

RATIONALE: Since CME 465.3 becomes a mandatory course for the CME program, the choice of electives for DSP stream has been removed to even out the credit requirement for degree completion. *This will nullify the motion introduced on June 13, 2023, UAPC meeting.*

vi) **MOTION:** Move *CME 465.3 Embedded Machine* Learning from Y4T1 of the Computer Software focus area to Y3T1 as a mandatory course for CME program starting in 2024-25.

RATIONALE: We acknowledge the importance of machine learning in the CME program. This is the only Machine Learning (ML) course offered by the ECE department that focuses on the practical implementation and application of ML on embedded hardware devices. We want to make it a core course in the Digital Systems and Applications focus area, and therefore it becomes a core course for all CME students. Introducing ML concept earlier in the program will ensure that students can learn and use ML in upper year courses and Capstone design.

The course was mandatory for the Software focus area. Therefore, it does not affect the focus area. However, for DSP Focus Area, we will remove one elective course (changes approved in June 2023) to even out the move (see later).

vii) **MOTION:** Starting in 2024-2025, add the following course in the list of Group B Electives in third year (in first or second term, depending on the offering) in Computer Software Focus Area of CME program:

CMPT 317.3 Introduction to Artificial Intelligence

RATIONALE: The Dept of Computer Science has recently introduced this new course, CMPT317.3. It will teach the students essential Artificial Intelligence techniques and underlying theory and lead them to upper years Machine Learning (ML) courses such as *CMPT 489.3* (*Deep Learning and Applications*).

viii) **MOTION:** Starting in 2024-25 for Computer Software Focus Area, remove the requirements of "6 credit unit Group B Elective (choose from List B1 or B2)" in year 3 and "6 credit units Group C Elective (choose from List C1 or C2)" in year 4, and replace it with the **requirement of 12 credit units in year 3 or year 4 from Group B and/or C Electives with at least 6 credit units of CMPT courses with number 400 or higher**.

In addition, the department moves that all four elective lists - List B1, B2, C1 and C2 be merged into one unified list of electives (15 3-cu courses in the pool).

RATIONALE: Some CMPT courses are available in term 1 only, some are in term 2 only, and some are either term 1 or term 2 depending on the instructor's availability. Therefore, it is better to leave the option and flexibility to the students to choose their own specialization depending on the course offering.

ix) **MOTION:** Move *CME 342.3 Introduction to Digital Integrated Circuits and System on Chip* from Y3T1 to Y3T2 of the CME program starting in 2024-25.

RATIONALE: The course can be moved to Year 3, Term 2, without causing any prerequisite issues to make room for the *CME465.3* course.

x) **MOTION:** Move *CME 466.3 Design of an Advanced Digital System* from Y4T2 to Y3T2 of the CME program starting in 2024-25.
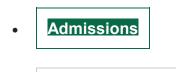
RATIONALE: The idea is to have two back-to-back machine learning courses in the program, one basic and another on applied/application level, so that the students can benefit in upper year courses including the capstone design. *CME465.3* will serve as the basic embedded ML course. *CME466.3* will offer the design project and application covering ML. The current description of *CME466.3* is general enough to serve the purpose. However, it may be modified in the future as the course evolves.

xi) **MOTION:** *Move CME 334.3 Network Architecture and Protocols* from Y3T2 to Y4T2 of the CME program starting in 2024-25.

RATIONALE: The course can be moved to Year 4, Term 2 without causing any prerequisite issues to make room for the *CME 466.3* course.

Computer Engineering

[Bachelor of Science in Engineering (B.E.) - Computer Engineering (144 credit units)](#)

- **Admissions**

- **Academic policies**

- **Year 1 (41-44 credit units)**
- **Year 2 (34 credit units)**
- **Year 3 (33 credit units)**
- **Year 4 (33 credit units)**
- **Focus Areas**
- **Electives**

- **Top**

The Computer Engineering program provides training in the software/hardware co-design of digital systems with an emphasis on embedded systems. The program shares courses with the Electrical Engineering Program that cover general electrical engineering, analog and digital electronics, signal processing, communications, and computers. Topics specific to Computer Engineering are studied in specialized focus areas in the third and fourth years.

All undergraduate students admitted to the College of Engineering are required to complete a common first-year of undeclared studies (known as the first-year common core). Once the first-year common core program has been completed, undergraduate students declare their preferences and compete for admission into an upper-year program. Students who are successful in securing admission into an upper-year program are required to follow the program of study that is prescribed at the time of their admission into the upper-year program.

Recognizing that course and program changes may result in a modification to the original program of study, it is recommended that undergraduate students consult an Academic Advisor within the Engineering Student Centre on a regular basis to confirm

their program of study, choose courses (including electives), and monitor their academic progress.

Year 1 (41-44 credit units)

All Engineering programs have a **common** first year.

Year 2 (34 credit units)

Fall Term

- **CMPT 214.3** Programming Principles and Practice
- **CMPT 270.3** Developing Object-Oriented Systems
- **EE 205.1** Safety and Stewardship in Electrical and Computer Engineering
- **EE 232.3** Digital Electronics
- **EE 265.3** Discrete Time Signals and Systems
- **MATH 223.3** Calculus III for Engineers

Winter Term

- **CMPT 280.3** Intermediate Data Structures and Algorithms
- **EE 216.3** Probability Statistics and Numerical Methods
- **EE 221.3** Analog Electronics
- **EE 271.3** Materials and Heat Transport in Electrical Engineering
- **EP 214.3** Analog Signals and Systems
- **MATH 224.3** Calculus IV for Engineers

Year 3 (33 credit units)

Focus Areas – Students must complete the Digital Systems Focus Area and one of the Digital Signal Processing and Applications Focus Area or Computer Software Focus Area.

Fall Term

- **CME 331.3** Microprocessor Based Embedded Systems
- **CME 341.3** Logic Design Using FPGAs
- **CME 465.3**

- **RCM 200.3** Effective Professional Communication
- 3 credit units Digital Systems Focus Area
- 3 credit units Second Focus Area
- 3 credit units Science Elective List 1 or List 2

Winter Term

- ~~**CME 334.3** Network Architecture and Protocols~~
- ~~**CMPT 332.3 Operating Systems Concepts**~~
- **GE 348.3** Engineering Economics
- ~~3~~ 9 credit units Digital Systems Focus Area **(specifically: CME 332, CME 342, and CME 466).**
- 3 credit units Second Focus Area

Year 4 (33 credit units)

Fall Term

- 3 credit units Senior Humanities/Social Elective
- 6 credit units Digital Systems Focus Area
- 6 credit units Second Focus Area

Winter Term

- **GE 449.3** Engineering in Society
- 3 credit units Digital Systems Focus Area
- 3 credit units Second Focus Area
- 3 credit units Complementary Studies Elective

Fall Term and Winter Term

6 credit units from the following:

- **CME 495.6** Capstone Design Project
- **GE 495.6** Technological Innovation Capstone Design Project

Focus Areas

Focus Areas – Students must complete Digital Systems Focus Area and one of the Digital Signal Processing and Applications Focus Area or Computer Software Focus Area.

Digital Systems

Year 3 - Fall Term

- ~~CME 342.3 Introduction to Digital Integrated Circuits and System on Chip~~
- **CME 465.3**

Year 3 - Winter Term

- **CME 332.3** Real Time Computing
- **CME 342.3**
- **CME 466.3**

Year 4 - Fall Term

- **CME 433.3** Digital Systems Architecture
- **CME 435.3** Verification of Digital Systems

Year 4 - Winter Term

- ~~CME 466.3 Design of an Advanced Digital System~~
- **CME 334.3**

Digital Signal Processing and Applications

Year 3 - Fall Term

- **EE 362.3** Digital Signal Processing

Year 3 - Winter Term

- **EE 365.3** Algorithms and Circuits with Finite Precision Arithmetics

Year 4 - Fall Term

- **EE 456.3** Digital Communication
- **EE 461.3** Digital Filter Design

Year 4 - Winter Term

- **EE 465.3** Design of a DSP System

Computer Software

Year 3 - Fall Term

- **CMPT 370.3** Intermediate Software Engineering

Year 3 **and/ or Year 4** - Fall or Winter Term

- **12 credit units in Year 3 or Year 4 from the Software Electives list, with at least 6 credit units of CMPT courses with a course number of 400 or higher.**

- 3 credit unit Group B Elective (choose from List B1 or B2)

Year 4 - Fall Term

- CME 465.3 Embedded Machine Learning

Year 4 - Fall or Winter Term

- 6 credit units Group C Elective (choose from List C1 or C2)

Group B Electives

Software Electives

- List B1
- **CMPT 317.3**
- **CMPT 318.3** Data Analytics
- **CMPT 332.3**
- List B2
- **CMPT 353.3** Full Stack Web Programming
- **CMPT 381.3** Implementation of Graphical User Interfaces

Group C Electives

- List C1
- **CMPT 423.3** Machine Learning
- **CMPT 436.3** Mobile and Cloud Computing
- **CMPT 481.3** Human Computer Interaction

- **CMPT 487.3** Image Processing and Computer Vision
- **CMPT 489.3** Deep Learning and Applications
- ~~List C2~~
- **CMPT 432.3** Advanced Operating Systems Concepts
- **CMPT 434.3** Computer Networks
- **CMPT 438.3** Introduction to Computer Security
- **CMPT 470.3** Advanced Software Engineering

Chemical and Biological Engineering Department:

xii)   **MOTION:** To change the wording in the Course and Program Catalogue for an Engineering Degree with a major in Chemical Engineering to reflect the changes that were made during the 2021-2022 academic year to the major (see attached file with new wording).

RATIONALE: The previous Chemical Engineering degree had one science elective (A) and three technical electives (B). The new Chemical Engineering degree has zero (A) and two (B). The reference to A and B was removed and electives are now called Technical Electives. The changes to the Course and Program Catalogue reflect this change in degree requirements.

xiii)   **MOTION:** To change the wording in the Course and Program Catalogue for an Engineering Degree with both a major in Chemical Engineering and the *Bioprocessing Option* to reflect the changes that were made during the 2021-2022 academic year to the major and option (see attached file with new wording).

RATIONALE: The previous Chemical Engineering degree had one science elective (A) and three technical electives (B). The new Chemical Engineering degree has zero (A) and two (B). The reference to A and B was removed and electives are now called Technical Electives. The changes to the Course and Program Catalogue reflect this change in degree requirements.

xiv)   **MOTION:** To change the wording in the Course and Program Catalogue for an Engineering Degree with both a major in Chemical Engineering and the *Mineral Processing Option* to reflect the changes that were made during the 2021-2022 academic year to the major and option (see attached file with new wording).

RATIONALE: The previous Chemical Engineering degree had one science elective (A) and three technical electives (B). The new Chemical Engineering degree has zero (A) and two (B). The

reference to A and B was removed and electives are now called Technical Electives. The changes to the Course and Program Catalogue reflect this change in degree requirements.

xv) **MOTION:** To change the number of credit units in the Course and Program Catalogue for an Engineering Degree with both a major in Chemical Engineering and the *Petroleum Option* from 21 to 15 credit units for the option (no change to the Chemical Engineering major) to reflect the changes that were made during the 2021-2022 academic year to the major and option (see attached file with new wording).

RATIONALE: Students in the Biochemical Engineering option were not required to take Chem 221 and Chem 231. All other CHE students were required to take these two courses. To ensure that all students in the Petroleum option took these courses Chem 221 and 231 became required courses in the option. In 2021-2022 the *Biochemical Engineering* option was eliminated and Chem 221 and 231 became core CHE courses, and thus they were removed from the option. Consequently, the required course CU was reduced from 21 to 15.

xvi) **MOTION:** To change the wording in the Course and Program Catalogue for an Engineering Degree with both a major in Chemical Engineering and the *Petroleum Option* to reflect the changes that were made during the 2021-2022 academic year to the major and option (see attached file with new wording).

RATIONALE: The previous Chemical Engineering degree had one science elective (A) and three technical electives (B). The new Chemical Engineering degree has zero (A) and two (B). The reference to A and B was removed and electives are now called Technical Electives. The changes to the Course and Program Catalogue reflect this change in degree requirements.

Chemical Engineering

Bachelor of Science in Engineering (B.E.) - Chemical Engineering (137 credit units)

- **Admissions**

Year 1 (41-44 credit units)

All Engineering programs have a **common** first year.

Note: Students in the Chemical Engineering Undergraduate Program cannot use ENVE 201 as a substitute for CHEM 242.

Year 2 (27 credit units)

Fall Term

- **CHE 220.3** Introduction to Chemical Process Engineering
- **CHEM 242.3** Thermodynamics and Kinetics
- **CHEM 250.3** Introduction to Organic Chemistry
- **GE 213.3** Mechanics of Materials
- **MATH 223.3** Calculus III for Engineers

Winter Term

- **CHE 210.3** Fluid Mechanics I
- **CHE 223.3** Chemical Thermodynamics
- **CHEM 221.3** Analytical Chemistry I
- **MATH 224.3** Calculus IV for Engineers

Year 3 (32 - 35 credit units)

Fall Term

- **CHE 323.3** Chemical Engineering Thermodynamics
- **CHE 325.3** Process Engineering and Design I
- **CHE 470.0** Industrial Site Visitation
- **CHEM 231.3** Inorganic Chemistry I
- **GE 210.3** Probability and Statistics

Winter Term

- **CHE 315.3** Equilibrium Stage Operations
- **CHE 322.3** Mathematical Modelling
- **CHE 324.3** Heat Transfer
- **CHE 326.3** Plant Design Project
- **CHE 333.2** Chemical Engineering Laboratory I

Fall Term or Winter Term

- 3 credit units Complementary Studies Elective (over year 3 or year 4)
- 3 credit units ~~Group B Technical~~ Elective (over year 3 or year 4)
- **GE 348.3** Engineering Economics
- **RCM 200.3** Effective Professional Communication

Year 4 (31-34 credit units)

Fall Term

- **CHE 411.3** Chemical Reaction Engineering
- **CHE 414.2** Chemical Engineering Laboratory II
- **CHE 421.3** Mass Transfer
- **CHE 423.3** Process Dynamics and Control

Winter Term

- ~~3 credit units Group B Elective or a 400-level approved Technical Elective from another Department~~
- **CHE 424.2** Chemical Engineering Laboratory III
- **GE 449.3** Engineering in Society

Fall Term or Winter Term

- **3 credit units Technical Elective**
- 3 credit units Senior Humanities or Social Science Elective

Fall Term and Winter Term

Choose 6 credit units from the following:

- **CHE 495.6** Process Engineering and Design II
- **GE 495.6** Technological Innovation Capstone Design Project

~~Elective Lists~~

~~Please consult an Academic Advisor. Some electives offered by other departments are given in alternate years.~~

~~Group B~~

Technical Elective List

- **CHE 369.3** Fundamentals of Mineral Processing and Hydrometallurgy
- **CHE 453.3** Corrosion Engineering
- **CHE 454.3** Design of Industrial Waste Treatment Systems
- **CHE 460.3** Oil and Natural Gas Upgrading
- **CHE 461.3** Biochemical Engineering
- **CHE 463.3** Bioprocess Industries and Bioproducts
- **CHE 464.3** Petroleum Production Engineering
- **CHE 469.3** Industrial Mineral Processing
- **GEOE 377.3** Fundamentals of Mining and Mineral Processing
- **GEOE 466.3** Petroleum Geomechanics
- **ME 478.3** Introduction to Fire Protection Engineering

Note: Some **~~Group B~~ technical** electives are offered in alternating years while others are offered annually. Consult with **an academic ~~faculty~~** advisor to determine the availability of specific electives.

Chemical Engineering

[Bioprocessing Option](#)

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- **Required Bioprocessing Electives (18 credit units)**

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An "Option" within the College of Engineering is a prescribed set of courses that provides a concentration of specialized training in one particular field of study of the Bachelor of Science in Engineering (B.E.) program. ~~Options are approved at the College level but are unique to Departments within the College, consisting of at least 15 credit units, none of which are core courses taken by all students within the Department.~~

This option is available to students pursuing the B.E. in Chemical Engineering program. It provides specialization in sciences and engineering courses that deal with food and biomaterial processing and biotechnology-based production.

~~Required~~ Requirements ~~Bioprocessing Electives~~ (18 credit units)

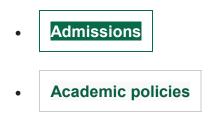Please consult an academic advisor for assistance in choosing electives.

The Bioprocessing option requires students to complete six courses, including the two technical electives already required for the Chemical Engineering degree. ~~electives, in addition to core Chemical Engineering courses.~~

Required Courses (18 credit units)

- **CHE 260.3** Introduction to Biomaterials ~~(Group A course)~~
- **CHE 454.3** Design of Industrial Waste Treatment Systems ~~(Group B course)~~
- **CHE 461.3** Biochemical Engineering ~~(Group B course)~~
- **CHE 462.3** Biomaterial Processing (~~Group B course)~~
- **CHE 463.3** Bioprocess Industries and Bioproducts ~~(Group B course)~~
- **CHE 468.3** Downstream Bioprocessing ~~(Group B course)~~

Chemical Engineering

[Mineral Processing Option](#)

- **Admissions**

- **Academic policies**

- **Requirements (18 credit units)**

- **Top**

An "Option" within the College of Engineering is a prescribed set of courses that provides a concentration of specialized training in one particular field of study in the Bachelor of Science in Engineering (B.E.) program. ~~Options are approved at the College level but are unique to Departments within the College, consisting of at least 15 credit units, none of which are core courses taken by all students within the Department.~~

This option is available to students pursuing the B.E. in Chemical Engineering program. It offers students the opportunity to take 6 courses within their Bachelor of Science in Engineering (B.E.) Chemical Engineering program that gives them a focus on ~~the discipline of~~ Mineral Processing. ~~This option can replace Group A and Group B electives in the regular Chemical Engineering Program but will require students to take 6 CU above the regular Chemical Engineering Program.~~

Requirements (18 credit units)

Please consult an academic advisor for assistance in choosing electives

The Mineral Processing option requires students to complete six courses, including the two technical electives already required for the Chemical Engineering degree. A student must complete the required courses below plus one of the two elective courses listed.

Required Courses (15 credit units)

- **CHE 369.3** Fundamentals of Mineral Processing and Hydrometallurgy ~~(replaces the Group B elective in Year 3 or 4)~~
- **CHE 469.3** Industrial Mineral Processing ~~(replaces the Group B elective in Year 3 or 4)~~
- **GEOE 377.3** Fundamentals of Mining and Mineral Processing ~~(replaces the Group B elective in Year 3 or 4)~~

- **GEOL 121.3** Earth Processes ~~(replaces the Group A elective in Year 2)~~
- **GEOL 224.3** Mineralogy

Elective Courses (choose 3 credit units)

- **CHE 453.3** Corrosion Engineering ~~(replaces the Group B elective in Year 3 or 4)~~
- **CHE 454.3** Design of Industrial Waste Treatment Systems ~~(replaces the Group B elective in Year 3 or 4)~~

Chemical Engineering

[Petroleum Option](#)

- **Admissions**

- **Academic policies**

- **Required Petroleum Electives (~~21~~ 15 credit units)**

- **Top**

An "Option" within the College of Engineering is a prescribed set of courses that provides a concentration of specialized training in one particular field of study in the Bachelor of Science in Engineering (B.E.) program. ~~Options are approved at the College level but are unique to Departments within the College, consisting of at least 15 credit units, none of which are core courses taken by all students within the Department.~~

This option is available to students pursuing the B.E. in Chemical Engineering program. It provides students the opportunity to take courses within the chemical engineering program that give them a focus on petroleum engineering, oil/gas engineering and bitumen upgrading. ~~Students wishing to complete this option must take CHEM 221.3 Analytical Chemistry I in year 2 of the program.~~

Required Petroleum Electives (~~21~~ 15 credit units)

Please consult an Academic Advisor for assistance in choosing electives.

~~The Petroleum Option courses can replace Group A and Group B electives in the regular Bachelor of Science in Engineering (B.E.) Chemical Engineering program.~~ The Petroleum option requires students to complete five specialized courses, including the two technical electives already required for the Chemical Engineering degree. A student must complete the required courses below plus three of the elective courses listed.

Required Courses (~~12~~ 6 credit units)

- **CHE 364.3** Petrochemical Engineering
- ~~**CHEM 221.3** Analytical Chemistry I~~
- ~~**CHEM 231.3** Inorganic Chemistry I~~
- **GEOL 108.3** The Earth and How It Works or **GEOL 121.3** Earth Processes

Elective Courses (9 credit units)

- **CHE 453.3** Corrosion Engineering
- **CHE 454.3** Design of Industrial Waste Treatment Systems
- **CHE 460.3** Oil and Natural Gas Upgrading
- **CHE 464.3** Petroleum Production Engineering
- **GEOE 466.3** Petroleum Geomechanics

University Course Challenge – January 2024
The curricular revisions listed below were approved through the Graduate Programs Committee of the College of Graduate and Postdoctoral Studies and are now submitted to the University Course Challenge for approval.

Contact: Chelsea Smith, CGPS Academic Affairs Specialist (chelsea.smith@usask.ca or gradprograms.academicaffairs@usask.ca)

JOHNSON SHOYAMA GRADUATE SCHOOL OF PUBLIC POLICY

Minor Program Revisions
Master of Public Policy – Thesis-based

Degree Requirements
Students in the M.P.P. program must achieve a minimum of 70% in each course to earn course credit and progress through program completion. Students must maintain continuous registration in the 994 course.

- **GPS 960.0** Introduction to Ethics and Integrity
- **GPS 961.0** Ethics and Integrity in Human Research, if research involves human subjects
- **GPS 962.0** Ethics and Integrity in Animal Research, if research involves animal subjects
- **JSGS 990.0** Public Policy Seminar
- **JSGS 994.0** Research – Thesis

Students must complete a minimum of 15 credit units, including:

a minimum of ~~6~~ 3 credit units from the following:

- ~~**JSGS 805.3** Economics for Public Policy Analysis~~
- ~~**JSGS 862.3** Political Economy~~
- **JSGS 865.3** Decision Making in Organizations
- **JSGS 869.3** Ideas in Public Policy

~~A minimum of 3~~ 6 credit units from the following:

- **JSGS 803.3** Quantitative Methods
- **JSGS 851.3** Qualitative Methods
- or another methods course as recommended by the Advisory Committee and approved by the Graduate Chair

~~a minimum of 3 credit units from the following:~~

- ~~**JSGS 806.3** Public Policy Analysis~~
- ~~**JSGS 867.3** Advanced Policy Analysis~~
- ~~or another course on policy analysis as recommended by the Advisory Committee and approved by the Graduate Chair~~

a minimum of 3 credit units from the following:

- ~~JSGS 817.3~~ ~~Health Policy~~
- ~~JSGS 846.3~~ ~~Cooperatives in the New Economy Institutions Governance and Policy~~
- ~~JSGS 849.3~~ ~~Foundations in Social Economy and Public Policy~~
- ~~JSGS 854.3~~
- ~~JSGS 859.3~~ ~~Innovation Policy~~
- ~~JSGS 863.3~~ ~~Indigenous Peoples and Public Policy~~
- ~~JSGS 864.3~~ ~~Social Policy Interdisciplinary Perspectives~~
- ~~JSGS 870.3~~ ~~Water Policy in an Age of Uncertainty~~
- ~~or another policy course as recommended by the Advisory Committee and approved by the Graduate Chair~~

a minimum of 6 credit units of elective courses offered by JSGS:
- Courses can be taken at either the University of Saskatchewan or University of Regina campuses (exceptions include MHA courses, JSGS 891, and JSGS 892).
- Elective courses outside of JSGS course offerings may be taken with pre-approval of the JSGS Graduate Chair. Such electives should be discussed with the supervisor prior to enrolment.

Rationale: To meet the needs of students, taking into account School capacity with respect to faculty expertise and supervision.

Doctor of Philosophy in Public Policy
Degree Requirements
All courses taken by students in this program have a minimum passing average grade of 70%. Students must maintain continuous registration in the 996 course.

- **GPS 960.0** Introduction to Ethics and Integrity
- **GPS 961.0** Ethics and Integrity in Human Research, if research involves human subjects
- **GPS 962.0** Ethics and Integrity in Animal Research, if research involves animal subjects

A minimum of 12 credit units of core courses, including:

- **JSGS 851.3** Qualitative Methods or ~~JSGS 803.3~~ ~~Quantitative Methods~~
- **JSGS 803.3** Quantitative Methods
- ~~JSGS 862.3~~ ~~Political Economy~~
- **JSGS 865.3** Decision Making in Organizations
- **JSGS 869.3** Ideas in Public Policy
- **JSGS 990.0** Public Policy Seminar
- **JSGS 996.0** Research – Dissertation

- Students may take additional courses in a particular subject area if they so wish. The decision to take additional courses over and above that required in the core rests with student's advisory committee.
- Candidacy Assessment
- ~~comprehensive examination~~
- ~~qualifying examination~~

- ~~thesis~~ Dissertation defence

Rationale: To meet the needs of students, taking into account School capacity with respect to faculty expertise and supervision.

New course proposal
JSGS 800.3 Métis Governance: Historical Legacy and Contemporary Transformation
Course Description: Grounded in the historical context, this course is forward looking, studying the Métis journey in creating uniquely Métis governance processes in the North-West that reflect the will of their people, examining current governance issues, and exploring the path to developing appropriate and effective governance frameworks necessary for sustained self-determination. The course spans from historical underpinnings to current Métis self-governance initiatives. As a distinctive component of the Canadian Indigenous governance landscape, Métis governance embodies a unique combination of influences from Indigenous and Western political traditions. The course first explores the birth of the Métis Nation, their interactions with colonial authorities, and the effects of historical policy and legislation on the Métis people, then critically examines Métis self-governance, exploring Métis law and policy, Indigenous rights and land claims, self-determination, and modern treaties. The course discusses how Métis self-governance has affected Canada's political, social, and economic fabric, exposing Indigenous self-governance's challenges and opportunities.
Prerequisite(s): n/a
Notes: n/a
Rationale: A gap in the JSGS program curriculum currently offered is the lack of content depicting the unique history and contemporary issues of Métis policy and governance.

KINESIOLOGY

Minor Program Revisions
Master of Science in Kinesiology

Degree Requirements
Students must maintain continuous registration in the 994 course.
- **GPS 960.0** Introduction to Ethics and Integrity
- **GPS 961.0** Ethics and Integrity in Human Research, if research involves human subjects
- **GPS 962.0** Ethics and Integrity in Animal Research, if research involves animal subjects
- residency requirement of two four-month terms

A minimum of 9 credit units, including the following:
- KIN 807.3 Research Methods in Kinesiology (or another course in research methods approved by the supervisor and advisory committee)
- KIN 808.3 Univariate Statistics (or another course in data analysis approved by the supervisor and advisory committee)
- KIN 990.0 Seminar
- KIN 994.0 Research – Thesis
- an additional 3 credit units, either from the College of Kinesiology or another college, related to the area of study and approved by the supervisor and advisory committee.

Rationale: Allowing substitution of KIN 807 with another research methods course, approved by the advisory committee, to meet course requirements facilitates tailoring of study programs based on the desired learning outcomes, research skills, and competencies of each M.Sc. student.

LARGE ANIMAL CLINICAL SCIENCES

Course Deletion
VLAC 883.6 Clinical Practice Interns
Rationale: VLAC 883 was not meeting the needs of the program or students and has not been offered since 2020. Students instead have been taking VLAC 980, which is a zero-credit course that serves to maintain full-time student status over the summer when they first arrive and while they are doing clinical training.

SCHOOL OF ENVIRONMENT AND SUSTAINABILITY

Minor Program Revisions
Master of Sustainability - Regenerative Sustainability
To return to 3 credit unit courses only in our Master of Sustainability program.

Degree Requirements
- **GPS 960.0** Introduction to Ethics and Integrity
- **GPS 961.0** Ethics and Integrity in Human Research, if research involves human subjects
- **GPS 962.0** Ethics and Integrity in Animal Research, if research involves animal subjects

All M.Ss. students must complete a total of **30 credit units.**

Regenerative Sustainability
Students in the Regenerative Sustainability field of study may choose to pursue either a project or course-based program of study. Students must take the following:
1) Required Courses (12 credit units)
- **ENVS 807.3** Sustainability in Theory and Practice
- ~~**ENVS 818.1** Introduction to Sustainability~~
- **ENVS 839.3** Ways of Knowing through the Concept of Sustainability
- ~~**ENVS 850.1** Systems Thinking for Sustainability~~
- ~~**ENVS 851.2** Design Thinking for Sustainability~~
- **ENVS 852.3** From Systems to Design Thinking
- **ENVS 853.3** Regenerative Sustainability
- ~~**ENVS 886.2** Building Understanding in the Age of Reconciliation~~
- **ENVS 990.0** Seminar in Environment and Sustainability

2) Electives (minimum 12 credit units): students must choose a minimum of 12 cu of course work from the available graduate courses offered in any given year—with the possibility of special permission to take courses outside of SENS. All electives much be pre-approved by the Program Director ~~through the completion of a "program of studies"~~.

3) Project or Additional Electives (6 credit units)

- **ENVS 992.6** Research - Project
  OR
- Additional Electives (6 credit units)

Rationale: Revising the courses to be all 3cu courses provides additional time for students to retain and apply the knowledge that they are learning. We have found that some of the requirements in a 1cu course sometimes approach those of a 3cu course which adds additional stress to students and more work for faculty/instructors. Additionally, by extending all courses over 6 weeks, instructors have more time to provide meaningful feedback on assignments before the next assignment is due.

New Course Proposal
ENVS 852.3 From Systems to Design Thinking
Course Description: This course lays a foundation to bridge systems thinking and design thinking. Students learn foundational knowledge of the concepts, components, and dynamics of complex systems, with emphasis on the interaction feedback mechanisms and emergence across systems of interacting elements. Design thinking harnesses insights from users to prototype innovative solutions. Students learn how products and services move through design thinking spaces of inspiration, ideation, and implementation to foster new products and services that are sustainably regenerative. Students develop a new product or service using design thinking tools to address a sustainability challenge.
Prerequisite(s): n/a
Notes: n/a
Instructors: Graham Strickert
Rationale: This course combines a 1cu and a 2cu course together (ENVS 850.1 and ENVS 851.2) to create a more comprehensive introductory (standardized) 3 credit unit course for the MSs in Regenerative Sustainability. Combining the courses to into a 3cu course provides additional time for students to retain and apply the knowledge that they are learning. We have found that often the work in a 1cu and 2cu can be almost as much as a 3cu course, which adds additional stress for students, especially in the compressed format that SENS delivers its courses in (2 weeks per 1 cu). Also, by extending all courses over 6 weeks, instructors have more time to provide meaningful feedback on assignments before the next assignment is due.

SOIL SCIENCE

Minor Program Revisions
Master of Science in Soil Science -Thesis-based
Reduce the total amount of required credit units from 15 to 9.

Soil Science Master of Science (M.Sc.) - Thesis-based

Degree Requirements
Students must maintain continuous registration in the 994 course.
- GPS 960.0 Introduction to Ethics and Integrity
- GPS 961.0 Ethics and Integrity in Human Research, if research involves human subjects
- GPS 962.0 Ethics and Integrity in Animal Research, if research involves animal subjects

A minimum of 9 credit units, including the following:

- **3 credit units in one of the following courses:**
  - SLSC 825.3 Field Studies and Research Design of Saskatchewan Soil Landscapes
  - SLSC 826.3 Physical Chemical and Biological Characterization of Soils
- SLSC 990.0 Seminar
- SLSC 994.0 Research – Thesis
- ~~a minimum 9~~ 5 credit units of electives
- ~~completion of~~ 1 credit unit in data analysis (univariate statistics or multivariate statistics, etc.)

Work-Integrated Learning Concentration
Students may choose to pursue a concentration in a professional work experience setting, while continuing work toward their thesis. Students must maintain continuous registration in the 994/996 course and complete the following course:
- AGRC 800.0 Work Integrated Learning Concentration

Rationale:
The rationale for the proposed reduction in required credit units for the Soil Science M.Sc. Program has arisen from three sources:
I. Extensive consultation with our graduate students and reviewing the required credit units of similar programs;
II. Addressing issues regarding time in program brought forth in the 2021 Academic Program Review and;
III. Maintaining high quality graduate teaching with a reduced number of faculty.

We have consulted with the Soil Science graduate students both formally through surveys and informally through meetings with students and graduate student representatives for over a year. M.Sc. graduate feedback has been consistent and indicated that the 15-credit unit requirement takes time away from research activities, which is in part extending their length of time in program. We have also examined similar programs in the College of Agriculture and Bioresources, other units within the University and other Universities in Canada and have observed that most programs have fewer required credit units. We believe that reducing the number of credit units will keep our M.Sc. program in line with others and allow us to attract top tier students.

In the Soil Science 2021 Academic Program Review, the extended time in program of our graduate students and specifically our M.Sc. students was identified as a concern. In our response to this review and at our Graduate Program Retreat in April 2021 the number of credit units was discussed, and future actions included reducing the number of required credit units.

Finally, our Department has recently had four retirements with no replacement of faculty members. In order to continue to provide high quality graduate teaching streamlining our graduate programs is essential.

ACCOUNTING

Master of Professional Accounting
MPAC 851.4: Advanced Management Accounting
Current Prerequisite(s): MPAC 831 or MPAC 811.
Proposed Prerequisite(s): MPAC 831, MPAC 833, MPAC 835, MPAC 837, MPAC 839, MPAC 992

MPAC 853.3: Advanced Financial Reporting
Current Prerequisite(s): MPAC 813 or MPAC 833.3.
Proposed Prerequisite(s): MPAC 831, MPAC 833, MPAC 835, MPAC 837, MPAC 839, MPAC 992

MPAC 855.3: Advanced Assurance
Current Prerequisite(s): MPAC 835 or MPAC 815.
Proposed Prerequisite(s): MPAC 831, MPAC 833, MPAC 835, MPAC 837, MPAC 839, MPAC 992

MPAC 858.3: Advanced Financial Planning
Current Prerequisite(s): MPAC 837 and MPAC 839.
Proposed Prerequisite(s): MPAC 831, MPAC 833, MPAC 835, MPAC 837, MPAC 839, MPAC 992

MPAC 891.3: Integrative Capstone
Current Prerequisite(s): Permission of department
Proposed Prerequisite(s): MPAC 831, MPAC 833, MPAC 835, MPAC 837, MPAC 839, MPAC 992 and Permission of department

MPAC 892.3: Integrative Capstone 2
Current Prerequisite(s): Permission of department
Proposed Prerequisite(s): MPAC 831, MPAC 833, MPAC 835, MPAC 837, MPAC 839, MPAC 992 and Permission of department

Master of Professional Accounting (M.P.Acc.) - Course-based
Degree Requirements
- **GPS 960.0** Introduction to Ethics and Integrity
- **GPS 961.0** Ethics and Integrity in Human Research, if research involves human subjects
- **GPS 962.0** Ethics and Integrity in Animal Research, if research involves animal subjects
- a residency requirement of 8 months

38 credit units, including:
Year 1
- **MPAC 831.3** Strategy and Governance
- **MPAC 833.4** Financial Reporting and Analysis
- **MPAC 835.3** Assurance
- **MPAC 837.3** Advanced Finance
- **MPAC 839.3** Advanced Taxation
- **MPAC 992.3** Research – Project

Year 2

- **MPAC 851.4** Advanced Management Accounting
- **MPAC 853.3** Advanced Financial Reporting
- **MPAC 855.3** Advanced Assurance
- **MPAC 858.3** Advanced Financial Planning
- **MPAC 891.3** Integrative Capstone
- **MPAC 892.3** Integrative Capstone 2

AGRICULTURAL AND RESOURCE ECONOMICS

Program Deletion
Postgraduate Diploma in Agricultural Economics
Rationale: This program was developed and offered over a decade ago by faculty who have retired. There was only little interest in the program while it was offered and currently no demand. The faculty voted to terminate the program given the lack of demand and because there are no faculty members working in this area. It will not negatively affect our programs or course offerings.

COMMUNITY HEALTH AND EPIDEMIOLOGY

CHEP 805.3 Biostatistics I
Current Description: Designed for life sciences students who wish to understand and apply commonly used advanced statistical methods which they are likely to encounter in their career. The emphasis is on the appropriate application of these research methods and the correct interpretation of their results. Topics covered are: analysis of variance, non-parametric methods, multiple regression and logistic regression. Computer software used: SPSS.
Proposed Description: Designed for life sciences students who wish to understand and apply commonly used advanced statistical methods which they are likely to encounter in their career. The emphasis is on the appropriate application of these research methods and the correct interpretation of their results. Topics covered are: multiple linear regression, logistic regression, model building strategies, survival analysis, and non-parametric methods. Computer software used: SPSS.

JOHNSON SHYOAMA GRADUATE SCHOOL OF PUBLIC POLICY

Preamble changes
Master of Public Policy (M.P.P.) - Thesis-based
Current Preamble: The Master of Public Policy (M.P.P.) program is a Master's-level research program at the Johnson-Shoyama Graduate School of Public Policy. The M.P.P. offers learning and research opportunities for highly qualified students who will advance knowledge and move the study of public policy forward. The M.P.P. is a research program - students graduating from this program will possess the research skills necessary to play integral roles in the civil service, research organizations, and industry associations. Top students from this program will also go on to doctoral programs in public policy. Students may complete the program on a full-time basis in approximately two years. The program involves a combination of course work, research, and the writing of a thesis. Each student will have a research advisor and an advisory committee. The School's faculty have significant research background and interest in three research areas: health and social policy; science, technology, and

innovation; and trade and transnational regulation. This provides opportunities for research students to explore topics in areas such as higher education, health, aboriginal people, the social economy, international trade agreements, innovation and science policy, and regulation and rural and remote areas. For more information, please visit the **School of Public Policy.**

Proposed Preamble: The JSGS Masters of Public Policy program prepares graduates to conduct policy research and analysis for use in the policy system. The MPP program trains students to apply their skills in the public policy domain. Graduates are prepared to work as policy researchers locally and globally in the public, not-for-profit, and corporate sectors and employ innovative strategies to address policy challenges. For more information, please visit the **School of Public Policy.**

Doctor of Philosophy (Ph.D.) in Public Policy

Current Preamble: The Ph.D. is a doctoral-level research program designed to offer learning and research opportunities for highly qualified students who will advance knowledge and move the study of public policy forward. Students graduating from this program will be in a position to train the next generation of public service professionals and to conduct public policy and management research for government, business, think tanks, and other research organizations. Students completing the program on a full-time basis can expect to receive financial support and to complete the program in approximately three years. The program involves a combination of course work (culminating in a comprehensive exam) and proposing, writing, and defending a dissertation. The School's faculty have significant research background and interest in three research areas: health and social policy; science, technology, and innovation; and trade and transnational regulation. This provides opportunities for research students to explore topics in areas such as higher education, health, aboriginal people, the social economy, international trade agreements, innovation and science policy, and regulation and rural and remote areas. For more information, please visit **School of Public Policy.**

Proposed Preamble: The JSGS Ph.D. in Public Policy program prepares graduates to conduct advanced policy research across a variety of sectors. Through inquiry and application of interdisciplinary knowledge, the Ph.D. in Public Policy program equips students to advance public policy knowledge. Graduates are prepared to work as advanced researchers locally and globally in the academic, public, not-for-profit, and corporate sectors to identify innovative strategies to address policy challenges. For more information, please visit **School of Public Policy.**

LINGUISTICS

LING 818.3 Topics in Second Language Studies

Current Note: This course has some overlapping content with ESOL 802. Students with credit for ESOL 802 may not complete this course for credit.

Proposed Note: n/a

Rationale: The content and set-up for LING 818 shifted and no longer overlaps with ESOL 802.

ESOL 802.3 Developing Language Proficiencies

Current Note: This course has some overlapping content with LING 818. Students with credit for LING 818 may not complete this course for credit.

Proposed Note: n/a

Rationale: The content and set-up for LING 818 shifted and no longer overlaps with ESOL 802.

NURSING

NURS 819.3 Concept Clarification in Advanced Nursing Practice
Current Title: Concept Clarification in Advanced Nursing Practice
Proposed Title: Philosophies and Theories of Nursing Science
Current Description: Considers the current stage of theory development in nursing, critical thinking, and clarification of concepts and relationships among them that are central to advanced nursing.
Proposed Description: Understanding the philosophies of science that influence nursing theories and their relationships to research and practice.

NURS 818.3 Statistical Methodology in Nursing
Current Title: Statistical Methodology in Nursing
Proposed Title: Applied Statistical Methods in Nursing
Current description: This course will assist student to apply commonly used intermediate statistical method as consumers of literature or as researchers. It will introduce selected epidemiologic statistics, parametric and non-parametric inferential tests, power analysis, analysis of variance and simple regression analyses. Applied statistics in health care and program evaluation will be emphasized.
Proposed description: This course empowers students to critically assess and conduct research effectively utilizing intermediate statistical concepts and techniques. This course covers essential topics including parametric and nonparametric statistical tests, diagnostic performance metrics, power analysis, selected epidemiological patterns and program evaluation. Through hands-on practice with SPSS, students will gain practical insights into applied health statistics.

POLITICAL STUDIES

POLS 819.3 Theoretical Readings in Political Studies
Current title: Theoretical Readings in Political Studies
Proposed title: Critical Concepts in Political Studies
Current description: A required course for all graduate students in Political Studies. Sub-disciplines are explored through an examination of theoretical and some attendant empirical literature by means of reading, student presentations, and seminar discussion. Seminars are led by faculty teaching and researching in the respective sub-disciplines.
Proposed description: A required course for all graduate students in Political Studies. Core concepts in the discipline of Political Studies are explored by means of reading, student presentations, and seminar discussion. Seminars are led by faculty teaching and researching in the respective sub-disciplines.
Current Note: Students with credit for POLS 818 or POLS 816 will not receive credit for this course.
Proposed Note: n/a

SCHOOL OF ENVIRONMENT AND SUSTAINABILITY

ENVS 841.3 Renewable Energy Systems
Current title: Renewable Energy Systems
Proposed title: Renewable and Clean Energy Systems
Current Description: This course introduces tools to assess renewable energy generation, site-specific application, and project development using in-depth case studies that require multi-disciplinary perspectives.

Proposed Description: This course introduces past, present, and future concepts of renewable energy generation specific to Indigenous, northern, remote, and rural communities. Students will be introduced to the concept of project development from multi-disciplinary perspectives.

ENVS 843.3 Energy Project Finance
Current title: Energy Project Finance
Proposed title: Introduction to Community Energy Development and Project Finance
Current Description: This introductory course provides basic knowledge of tools to organize, assess and monitor financial aspects of energy projects: project management, design, construction and timeline planning, financing options and regulatory requirements. Case studies will be used to understand the complex multidisciplinary perspectives of energy projects while developing an individual course project.
Proposed Description: This introductory course provides basic tools to organize, assess, and monitor financial aspects of energy projects: project management, design, construction and timeline planning, financing options and regulatory requirements. Case studies will be used to understand the complex multi- disciplinary perspectives of energy projects while developing an individual course project.

University Course Challenge – January 2024

The following curriculuar changes were approved by the College of Pharmacy and Nutrition – Pharmacy Program Advisory Committee and Division of Pharmacy and are being submitted to the January 2024 course challenge for approval.

Contact: Dr. Charity Evans (charity.evans@usask.ca)

New Course

PHAR 493.0
Title: Capstone Year 4
Catalogue Description: This course consists of a capstone (comprehensive) exam at the conclusion of Year 4 of the PharmD program to formatively assess the competencies across all four years of the program.
Restriction(s): Admission to the Pharm.D. program in the College of Pharmacy & Nutrition
Prerequisite(s): PHAR 490.0

Curriculum Changes

The proposed changes are as follows:

Course Deletions:

PHAR 487.1: Integrating Seminar
Senior students will discuss, debrief, and analyze experiences from advances practice experiences and issues in practice with peers and faculty in-person and/or remotely.
Weekly hours: 1 Lecture hours
Restriction(s): Completion of Year 3 of the Pharm.D. Program.
Prerequisite(s): PHAR 490.0.

PHAR 488.1: Integrating Seminar
Senior students will discuss, debrief, and analyze experiences from advances practice experiences and issues in practice with peers and faculty in-person and/or remotely.
Weekly hours: 1 Lecture hours
Restriction(s): Completion of Year 3 of the Pharm.D. Program.
Prerequisite(s): PHAR 490.0.

PHAR 489.1: Integrating Seminar
Senior students will discuss, debrief, and analyze experiences from advances practice experiences and issues in practice with peers and faculty in-person and/or remotely. This course will also include a comprehensive assessment of knowledge from all aspects of the PharmD program.
Weekly hours: 1 Lecture hours
Restriction(s): Completion of Year 3 of the Pharm.D. Program.
Prerequisite(s): PHAR 490.0.

1. **Removal of PHAR 487.1 (Integrating Seminar - May)**

This course solely contains First Aid and CPR training. This is not a requirement for accreditation or licensure, so will be removed.

2. Removal of PHAR 488.1 (Integrating Seminar – December)

This is a synchronous remote course held the week before the holiday break. The timing of the course has historically posed scheduling challenges for students and faculty/instructors as it is so close to the break (student burnout/wellness), and is during a time when residency interviews are conducted across Canada. There is no new content covered in this course that is not already sufficiently covered and assessed throughout the program.

3. Removal of PHAR 489.1 (Integrating Seminar –April)

This in-person course contains the Comprehensive Exam, a high-stakes, must pass assessment. The Doctor of Pharmacy program has begun implementing Capstone Courses at the end of each year, where students must complete a formative Capstone exam. The Year 4 Capstone Course (PHAR 493.0) will replace PHAR 489.1. Similar to the other Capstone exams, students must complete the exam, but it is for formative feedback purposes only, and will no longer be a must pass in order to graduate.

Rationale: Students in Year 4 of the Doctor of Pharmacy program currently complete four, 8-week rotations from May to April, and three, 1-credit unit integrating seminars (May, December, April). At the Pharmacy Curriculum Review on June 1, 2023, faculty and academic staff discussed the potential for changes to Year 4. These were primarily in response to student concerns about wellness in the final year of the program. At this review, a thorough discussion regarding the value of the integrating seminars was held. We have confirmed with Student Loans that removal of 3 credits from Year 4 will not affect student loan eligibility.

Further input was provided by the Pharmacy Division on December 6, 2023, and final approval was made by the Pharmacy Program Advisory Committee on January 2, 2024.

NOTE: The curriculum changes will be required in the PharmD program and the combined PharmD/MBA program and will be implemented in 2024-25.

Doctor of Pharmacy (Pharm.D.) (17~~0~~3 credit units)

Year 1 (49 credit units)

Fall Term

- PHAR 110.3 Introduction to Pharmacy and the Health Care System
- PHAR 121.3 Foundational Sciences 1: Foundational Pathophysiology & Pharmacology
- PHAR 122.3 Foundational Sciences 2: Medicinal Chemistry and Physical Pharmacy
- PHAR 153.4 Self-Care 1: Non-prescription Pharmaceuticals and Supplies
- PHAR 162.3 Pharmacy Practice 1: The Patient Care Process
- PHAR 170.3 Pharmacy Skills Development 1
- PHAR 190.0 Introduction to Year 1
- PHAR 191.1 IPE Activities

Winter Term

- PHAR 111.1 Foundations for Practice: Pharmacy Mathematics and Calculations
- PHAR 112.1 Pharmacy Law
- PHAR 123.3 Foundational Sciences 3: Foundational Pathophysiology and Pharmacology
- PHAR 124.3 Foundational Sciences 4: Introduction to Pharmaceutics

- [PHAR 152.6](#) Pharmacotherapeutics 1
- [PHAR 154.3](#) Self-Care 2: Non-prescription Pharmaceuticals and Supplies
- [PHAR 171.3](#) Pharmacy Skills Development 2
- [PHAR 192.1](#) IPE Activities

Fall and Winter Terms

- [PHAR 188.2](#) Experiential Learning 1
- [PHAR 189.2](#) Service Learning
- [PHAR 193.0](#) Capstone Year 1

Spring and Summer Terms

- [PHAR 185.4](#) Experiential Learning – Introductory Pharmacy Practice Experience: Community

Year 2 (47 credit units)

Fall Term

- [PHAR 224.3](#) Science of Pharmacotherapy 1: Pharmaceutics and Pharmaceutical Biotechnology
- [PHAR 226.3](#) Foundational Sciences 5 Pharmacokinetics and Biopharmaceutics
- [PHAR 253.6](#) Pharmacotherapeutics 2
- [PHAR 262.1](#) Pharmacy Practice 2
- [PHAR 271.3](#) Evidence Based Medicine
- [PHAR 272.3](#) Pharmacy Skills Development 3
- [PHAR 290.0](#) Introduction to Year 2
- [PHAR 291.1](#) IPE Activities

Winter Term

- 3 credit units of electives, as approved by the College of Pharmacy and Nutrition
- [PHAR 212.1](#) Pharmacy Ethics
- [PHAR 213.3](#) Management 1
- [PHAR 225.3](#) Science of Pharmacotherapy 2: Clinical Applications
- [PHAR 255.6](#) Pharmacotherapeutics 3
- [PHAR 263.1](#) Pharmacy Practice 3
- [PHAR 273.3](#) Pharmacy Skills Development 4
- [PHAR 292.1](#) IPE Activities

Fall and Winter Terms

- [PHAR 288.2](#) Experiential Learning 2
- [PHAR 293.0](#) Capstone Year 2~~II~~

Spring and Summer Terms

- [PHAR 285.4](#) Experiential Learning – Introductory Pharmacy Practice Experience: Hospital

Year 3 (42 credit units)

Fall Term

- 3 credit units of electives, as approved by the College of Pharmacy and Nutrition
- PHAR 324.3 Science of Pharmacotherapy 3: Toxicology
- PHAR 350.3 Applied Pharmacotherapy in Older Adults
- PHAR 358.6 Pharmacotherapeutics 4
- PHAR 367.1 Pharmacy Practice 5
- PHAR 374.3 Pharmacy Skills Development 5
- PHAR 390.0 Introduction to Year 3
- PHAR 391.1 IPE Activities

Winter Term

- 3 credit units of electives, as approved by the College of Pharmacy and Nutrition
- PHAR 315.3 Issues in Health Care and Pharmacy Practice
- PHAR 359.6 Pharmacotherapeutics 5
- PHAR 368.1 Pharmacy Practice 6
- PHAR 375.3 Pharmacy Skills Development 6
- PHAR 392.1 IPE Activities
- PHAR 395.3 Disease State Management Review and Update

Fall and Winter Terms

- PHAR 388.2 Experiential Learning 3

Year 4 (3~~2~~5 credit units)

- PHAR 481.8 Experiential Learning – Advanced Pharmacy Practice Experience 1: Hospital
- PHAR 482.8 Experiential Learning – Advanced Pharmacy Practice Experience 2: Community
- PHAR 483.8 Experiential Learning – Advanced Pharmacy Practice Experienence 3: Other Direct Patient Care
- PHAR 484.8 Experiential Learning – Advanced Pharmacy Practice Experience 4: Elective Practice or PHAR 485.4 and PHAR 486.4
- ~~PHAR 487.1 Integrating Seminar~~
- ~~PHAR 488.1 Integrating Seminar~~
- ~~PHAR 489.1 Integrating Seminar~~
- PHAR 490.0 Introduction to Year 4
- PHAR 493.0 Capstone Year 4

Pharm.D. and MBA Combined Program

Degree Requirements (~~200~~203 credit units)

Students must complete the following course requirements:

Business Administration Courses:

- **MBA 803.3** Business and Society

- **MBA 813.3** Strategic Human Resources Management
- **MBA 828.3** Tactical Strategy
- **MBA 830.3** Operations Management
- **MBA 846.3** Introduction to Entrepreneurship and Venture Development
- **MBA 859.4** Financial Reporting
- **MBA 862.4** Financial Management
- **MBA 863.2** International Business or an approved elective from an international partner institution or an Edwards "taught abroad" course
- **MBA 865.3** Accounting for Planning and Decision Making
- **MBA 866.2** Innovation Management
- **MBA 885.3** Essential Management Skills
- **MBA 992.3** Edwards MBA Capstone

Choose one of the following:

- **MBA 819.3** Marketing for Organizational Decision Making
- **MBA 870.3** Corporate Finance

Pharmacy Courses:

- **PHAR 110.3** Introduction to Pharmacy and the Health Care System
- **PHAR 111.1** Foundations for Practice: Pharmacy Mathematics and Calculations
- **PHAR 112.1** Pharmacy Law
- **PHAR 121.3** Foundational Sciences 1: Foundational Pathophysiology & Pharmacology
- **PHAR 122.3** Foundational Sciences 2: Medicinal Chemistry and Physical Pharmacy
- **PHAR 123.3** Foundational Sciences 3: Foundational Pathophysiology and Pharmacology
- **PHAR 124.3** Foundational Sciences 4: Introduction to Pharmaceutics
- **PHAR 152.6** Pharmacotherapeutics 1
- **PHAR 153.4** Self-Care 1: Non-prescription Pharmaceuticals and Supplies
- **PHAR 154.3** Self-Care 2: Non-prescription Pharmaceuticals and Supplies
- **PHAR 162.3** Pharmacy Practice 1: The Patient Care Process
- **PHAR 170.3** Pharmacy Skills Development 1
- **PHAR 171.3** Pharmacy Skills Development 2
- **PHAR 185.4** Experiential Learning Introductory Community Pharmacy Practice Experience
- **PHAR 188.2** Experiential Learning 1
- **PHAR 189.2** Service Learning
- **PHAR 190.0** Introduction to Year 1
- **PHAR 191.1** IPE Activities
- **PHAR 192.1** IPE Activities
- **PHAR 193.0** Capstone Year 1
- **PHAR 212.1** Pharmacy Ethics
- **PHAR 213.3** Management 1
- **PHAR 224.3** Science of Pharmacotherapy 1: Pharmaceutics and Pharmaceutical Biotechnology
- **PHAR 225.3** Science of Pharmacotherapy 2: Clinical Applications
- **PHAR 226.3** Foundational Sciences 5 Pharmacokinetics and Biopharmaceutics
- **PHAR 253.6** Pharmacotherapeutics 2
- **PHAR 255.6** Pharmacotherapeutics 3
- **PHAR 262.1** Pharmacy Practice 2
- **PHAR 263.1** Pharmacy Practice 3
- **PHAR 271.3** Evidence Based Medicine

- **PHAR 272.3** Pharmacy Skills Development 3
- **PHAR 273.3** Pharmacy Skills Development 4
- **PHAR 285.4** Experiential Learning Hospital Pharmacy Practice Experience
- **PHAR 288.2** Experiential Learning 2
- **PHAR 290.0** Introduction to Year 2
- **PHAR 291.1** IPE Activities
- **PHAR 292.1** IPE Activities
- **PHAR 315.3** Issues in Health Care and Pharmacy Practice
- **PHAR 324.3** Science of Pharmacotherapy 3: Toxicology
- **PHAR 350.3** Applied Pharmacotherapy in Older Adults
- **PHAR 358.6** Pharmacotherapeutics 4
- **PHAR 359.6** Pharmacotherapeutics 5
- **PHAR 367.1** Pharmacy Practice 5
- **PHAR 368.1** Pharmacy Practice 6
- **PHAR 374.3** Pharmacy Skills Development 5
- **PHAR 375.3** Pharmacy Skills Development 6
- **PHAR 388.2** Experiential Learning 3
- **PHAR 390.0** Introduction to Year 3
- **PHAR 391.1** IPE Activities
- **PHAR 392.1** IPE Activities
- **PHAR 395.3** Disease State Management Review and Update
- **PHAR 481.8** Advanced Practice Experience 1: Acute Care (Hospital) Experience
- **PHAR 482.8** Advanced Practice Experience 2: Community Pharmacy Experience
- **PHAR 483.8** Advanced Practice Experience 3: Other Direct Patient Care Experience
- ~~**PHAR 487.1** Integrating Seminar~~
- ~~**PHAR 488.1** Integrating Seminar~~
- ~~**PHAR 489.1** Integrating Seminar~~
- **PHAR 490.0** Introduction to Year 4
- **PHAR 493.0** Capstone Year 4

Choose either of the following 2 options:

1) **PHAR 484.8** Advanced Practice Experience 4: Elective Practice Experience
2) PHAR 485.4 and PHAR 486.4

School of Environment and Sustainability – January 2024

<u>**For Information**</u>:
Changes to the Certificate in Sustainability were approved through University Course Challenge in December 2023. The motion to remove PLAN 329 from a list of electives was made due to the understanding that the course was closed. However, this course was not closed; rather, it was simply relabeled as PLAN 429.3. As such, it will be retained in the electives list under the new label. This change is illustrated in yellow below. All other changes noted here in red were previously approved in December 2023.

Certificate in Sustainability

Contact: Carolyn Pytlyk (carolyn.pytlyk@usask.ca)

<u>Certificate in Sustainability (21 credit units)</u>

1) Required Courses (6 credit units):

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~~2)~~ Indigenous Learning for Sustainability (3 credit units):
………………………………………………………..

3) Restricted Electives (6 credit units)

Students must choose at least 6 credit units of course from the list of electives below.

Choose at least **6 credit units** from the following elective course options:
- ANBI 375.3 Animals and the Environment
- ANSC 301.3 Animal Production Tour
- ANTH 329.3 Environmental Anthropology
- ~~ARCH 357.3~~
- ~~AREC 330.3~~
- ~~AREC 330.3~~
- AREC 348.3 Food Economics and Consumer Behaviour
- BIOL 373.3 Community Ecology
- CHEM 375.3 Environmental Chemistry
- ECON 376.3 Energy Economics
- ENVE 381.3 Sustainability and Environmental Assessment
- EVSC 380.3 Grassland Soils and Vegetation
- FABS 371.3 Food Biotechnology
- GEOG 333.3 Global Climate Change
- ~~GEOG 340.3~~
- GEOG 351.3 Northern Environments
- ~~GEOG 352.3~~

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- GEOG 364.3 Geography of Environment and Health
- GEOG 380.3 Environmental Geography of the Circumpolar North
- GEOG 381.3 Development in the Canadian North Issues and Challenges
- GEOG 385.3 Analysis of Environmental Management and Policy Making
- GEOG 386.3 Environmental Impact Assessment
- HIST 365.3 Recipes for a Nation Food History in Canada
- HIST 371.3 Power and Change The History of Energy
- ~~PLAN 329.3~~ PLAN 429.3 Integrated Water Resource Planning
- PLAN 341.3 Urban Planning
- ~~PLAN 342.3~~
- PLAN 346.3 Introduction to Urban Design
- PLAN 350.3 Transportation Planning and Geography
- PLSC 345.3 Pesticides and Crop Protection
- POLS 326.3 Comparative Public Policy
- POLS 328.3 Public Policy Analysis
- RRM 312.3 Natural Resource Management and Indigenous Peoples
- RRM 323.2 Resource Data and Environmental Modeling and RRM 201.1 Geographical Information Systems
- SLSC 313.3 Environmental Soil Chemistry
- SLSC 342.3 Agronomic Soil Microbiology
- SLSC 350.3 Terrestrial Restoration
- SOC 309.3 Theories of Social Change
- ~~SOC 344.3~~
- SOC 360.3 Globalization and Social Justice
- TOX 301.3 Environmental Toxicology

- ANBI 475.3 Field Studies in Arctic Ecosystems and Indigenous Peoples
- ANTH 401.3 Independent Research in Anthropology
- AREC 428.3 Case Studies in Agribusiness Management
- AREC 430.3 Advanced Natural Resource Economics
- AREC 451.3 Agricultural Policy Analysis
- AREC 432.3 Rural Development Theory and Applications
- BIOL 410.3 Current Perspectives in Environmental Biology
- BIOL 412.3 Limnology
- BIOL 470.3 Conservation Biology
- BIOL 475.3 Ecological Toxicology
- CHEP 402.3 Global Health and Local Communities Issues and Approaches
- CPSJ 400.3 Critical Perspectives on Social Justice and the Common Good
- ENVE 432.3 Land Management and Reclamation
- EVSC 421.3 Contaminated Site Management and Remediation
- ~~EVSC 430.3~~
- EVSC 492.3 Research and Term Paper
- EVSC 494.3 Research and Thesis
- FABS 401.3 Dairy Science and Technology
- ~~FABS 436.3~~
- ~~FABS 450.3~~
- FABS 492.3 Literature Thesis
- FABS 494.3 Research Thesis

- ~~GEOG 464.3~~
- GEOG 490.3 Honours Thesis in Hydrology or Geomatics
- GEOG 491.3 Honours Thesis in Environment and Society
- GEOL 464.3 Geoscience of Green Energy and the Digital Economy
- ~~HIST 445.3~~
- ~~HIST 459.3~~
- ~~INDG 451.6~~
- LAW 444.3 Environmental Law
- PLAN 441.3 Challenges in Urban Development
- PLAN 445.3 Planning with Indigenous Communities
- PLAN 446.3 Advanced Urban Design Studio
- PLSC 401.3 Sustainable Crop Production
- PLSC 413.3 Advanced Plant Ecology
- PLSC 418.3 Management of Arable Grassland
- PLSC 422.3 Rangeland Ecology and Management
- ~~PLSC 423.3~~
- PLSC 425.3 Forest Ecology
- PLSC 492.3 Project Thesis in Plant Sciences
- PLSC 494.6 Research Thesis in Plant Sciences
- POLS 403.3 Advanced Topics in Public Law and Public Policy
- POLS 422.3 Indigenous Governance and Self Determined Sustainable Development
- SLSC 444.3 Soil Ecology
- SLSC 492.3 Research and Term Paper
- SLSC 494.6 Research and Thesis
- SOC 402.3 Sociology of Agriculture and Food
- ~~SOC 421.3~~
- WGST 411.3 Situated Transnational Feminisms

Note ~~in each area of focus there are thesis and/or research course options listed~~. If a student chooses to use a thesis and/or research course towards the completion of the certificate it must be demonstrated to the certificate coordinator that the thesis pursued has a focus on sustainability ~~and the theme of the chosen area of focus~~.

4) Open Electives (6 credit units)

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