



Academic Programs Committee of Council

University Course Challenge

Scheduled posting: September 2022

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:

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

Approval: Date of circulation: September 15, 2022
 Date of effective approval if no challenge received: September 30, 2022

Next scheduled posting:

The next scheduled posting will be October 17, 2022, with a submission deadline of **October 13, 2022**. 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 – September 2022

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)

Art History

Minor program revisions

Bachelor of Arts Honours, Double Honours, Four-year, Three-year and Minor in Art History

Add ENG 307.3 (Digital Literature and New Media) as an optional course in the Art History programs.

Bachelor of Arts Honours (B.A. Honours) - Art History

D4 Major Requirement (48 credit units)

- [ARTH 120.3](#) Art and Visual Culture I
- [ARTH 121.3](#) Art and Visual Culture II

Choose at least **6 credit units** from the following:

- [ARTH — 400-Level](#)

Choose at least **18 credit units** from the following:

- [ART 340.3](#) Contemporary Performance Art Theory and Praxis
- [ARTH — 300-Level, 400-Level](#)
- [ENG 307.3](#) Digital Literature and New Media
- [HIST 308.6](#) Rome Building and Living in the Ancient City
- [HIST 433.6](#) Visions of Empire Architecture and Power in Ancient Rome and Fascist Italy
- [WGST 324.3](#) Rebels With A Cause Feminism and the Visual Arts

Choose **12 senior credit units** from the following:

- [ART 340.3](#) Contemporary Performance Art Theory and Praxis
- [ARTH — 200-Level, 300-Level, 400-Level](#)
- [CLAS 240.3](#) Ancient Art and Architecture I Bronze Age to Classical Greece
- [CLAS 242.3](#) Ancient Art and Architecture II Graeco Roman World
- [ENG 307.3](#) Digital Literature and New Media
- [HIST 308.6](#) Rome Building and Living in the Ancient City
- [HIST 433.6](#) Visions of Empire Architecture and Power in Ancient Rome and Fascist Italy
- [WGST 324.3](#) Rebels With A Cause Feminism and the Visual Arts

Choose **6 credit units** from the following:

- [ART — 100-Level](#)

Bachelor of Arts Four-year (B.A. Four-year) - Art History

D4 Major Requirement (36 credit units)

- [ARTH 120.3](#) Art and Visual Culture I
- [ARTH 121.3](#) Art and Visual Culture II

Choose **24 senior credit units** from the following:

- [ART 340.3](#) Contemporary Performance Art Theory and Praxis
- [ARTH — 200-Level, 300-Level, 400-Level](#)
- [CLAS 240.3](#) Ancient Art and Architecture I Bronze Age to Classical Greece
- [CLAS 242.3](#) Ancient Art and Architecture II Graeco Roman World
- [ENG 307.3](#) Digital Literature and New Media
- [HIST 308.6](#) Rome Building and Living in the Ancient City
- [HIST 433.6](#) Visions of Empire Architecture and Power in Ancient Rome and Fascist Italy
- [WGST 324.3](#) Rebels With A Cause Feminism and the Visual Arts

Choose **6 credit units** from the following:

- [ART — 100-Level](#)

Bachelor of Arts Three-year (B.A. Three-year) - Art History

D4 Major Requirement (30 credit units)

- [ARTH 120.3](#) Art and Visual Culture I
- [ARTH 121.3](#) Art and Visual Culture II

Choose **24 senior credit units** from the following:

- [ART 340.3](#) Contemporary Performance Art Theory and Praxis
- [ARTH — 200-Level, 300-Level, 400-Level](#)
- [CLAS 240.3](#) Ancient Art and Architecture I Bronze Age to Classical Greece
- [CLAS 242.3](#) Ancient Art and Architecture II Graeco Roman World
- [ENG 307.3](#) Digital Literature and New Media
- [HIST 308.6](#) Rome Building and Living in the Ancient City
- [HIST 433.6](#) Visions of Empire Architecture and Power in Ancient Rome and Fascist Italy
- [WGST 324.3](#) Rebels With A Cause Feminism and the Visual Arts

Choose **6 credit units** from the following:

- [ART — 100-Level](#)

Bachelor of Arts Double Honours - Art History - Major 1

D4 Major Requirement (36 credit units)

- [ARTH 120.3](#) Art and Visual Culture I
- [ARTH 121.3](#) Art and Visual Culture II

Choose **24 senior credit units** from the following:

- [ART 340.3](#) Contemporary Performance Art Theory and Praxis
- [ARTH — 200-Level, 300-Level, 400-Level](#)
- [CLAS 240.3](#) Ancient Art and Architecture I Bronze Age to Classical Greece
- [CLAS 242.3](#) Ancient Art and Architecture II Graeco Roman World
- [ENG 307.3](#) Digital Literature and New Media
- HIST 433.6
- [HIST 308.6](#) Rome Building and Living in the Ancient City
- [WGST 324.3](#) Rebels With A Cause Feminism and the Visual Arts

Double Honours - Art History - Major 2

Requirements (36 credit units)

- [ARTH 120.3](#) Art and Visual Culture I
- [ARTH 121.3](#) Art and Visual Culture II

Choose **24 senior credit units** from the following:

- [ART 340.3](#) Contemporary Performance Art Theory and Praxis
- [ARTH — 200-Level, 300-Level, 400-Level](#)
- [CLAS 240.3](#) Ancient Art and Architecture I Bronze Age to Classical Greece
- [CLAS 242.3](#) Ancient Art and Architecture II Graeco Roman World
- [ENG 307.3](#) Digital Literature and New Media
- HIST 433.6
- [HIST 308.6](#) Rome Building and Living in the Ancient City
- [WGST 324.3](#) Rebels With A Cause Feminism and the Visual Arts

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 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 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

Choose **15 - 21 credit units** from the following:

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Choose **30 senior credit units** from the following:

- [ART 340.3](#) Contemporary Performance Art Theory and Praxis
- [ARTH — 200-Level, 300-Level, 400-Level](#)
- [CLAS 240.3](#) Ancient Art and Architecture I Bronze Age to Classical Greece
- [CLAS 242.3](#) Ancient Art and Architecture II Graeco Roman World
- [ENG 307.3](#) Digital Literature and New Media
- [HIST 308.6](#) Rome Building and Living in the Ancient City
- [HIST 433.6](#) Visions of Empire Architecture and Power in Ancient Rome and Fascist Italy
- [WGST 324.3](#) Rebels With A Cause Feminism and the Visual Arts

Rationale: ENG 307.3: Digital Literature and New Media will improve offerings in the major. The course is currently popular with Art students and includes a consideration of art works and installations within its course description. The inclusion of media theory in the course will assist art history students with their understanding of digital and new media studies. This course makes an excellent fit with the existing ARTH 250.3 (Introduction to Visual Culture) and ART 251.3 (Art of the Internet).

Catholic Studies

Minor program revisions

Certificate in Catholic Studies

Add CMRS 111.3 and ARTH 306.3 to the Catholic Thought and Culture list.

Requirements (18 credit units)

The certificate may be completed in conjunction with any degree in another subject area in the College of Arts and Science.

- [RLST 112.3](#) Western Religions in Society and Culture
- [CTST 200.3](#) Introduction to Catholic Studies
- [CTST 300.3](#) Critical Perspectives on Catholic Studies

Choose **9 credit units** from the following:

3 credit units must be chosen from each of Area 1, 2, and 3. At least 3 credit units must be taken at the 300-level or higher. Students must choose courses from at least 2 different subject codes.

Area 1: Catholicism and History

- *No change*

Area 2: Catholic Thought and Culture

- [ARTH 306.3](#) Medieval Art and Architecture
- [CMRS 111.3](#) Medieval and Renaissance Civilization
- [DRAM 303.3](#) Advanced Studies in Theatre History I 600 BCE to 1850 CE
- ENG 293.3
- [ENG 311.3](#) The Canterbury Tales
- [ENG 314.3](#) Early British Drama
- [ENG 316.3](#) Middle English Literature of Defiance and Dissent
- [PHIL 210.3](#) Medieval Philosophy I From Rome to Baghdad and Paris
- [PHIL 211.3](#) Philosophy and Faith Medieval Philosophy II
- [PHIL 412.3](#) Philosophy of Thomas Aquinas I
- [RLST 219.3](#) Bible and Western Culture
- [RLST 225.3](#) Perspectives on Jesus
- [RLST 229.3](#) Religion and Sport
- [RLST 365.3](#) Bible and Film

Area 3: Catholicism and the Modern World

- *No change*

Rationale: These courses were unintentionally left out of the initial submission for the certificate. These courses fit the program well and will give students a greater selection from which to choose.

Chemistry

Minor course revisions

CHEM 344.3 Introductory Chemical Quantum Mechanics

Prerequisite change:

Old prerequisite(s): CHEM 242 and (MATH 112, MATH 116, MATH 124, or MATH 177 (MATH 116 preferred)) and (PHYS 117 or PHYS 125 (PHYS 125 preferred)).

New prerequisite(s): CHEM 242.3 and (MATH 116.3, MATH 124.3, MATH 134.3 or MATH 177.3 (MATH 116 preferred)) and (PHYS 117.3 or PHYS 125.3 (PHYS 125 preferred)).

Rationale: MATH 134 covers the core integral calculus concepts in MATH 116, and should adequately serve as a calculus prerequisite for this course. MATH 112 has been removed as it has not been offered in 15 years.

Classical, Medieval and Renaissance Studies

New course(s):

CMRS 300.0 Directors Colloquy

The Director's colloquy is a non-credit course that ensures Students and Director are in regular communication as a community of scholars. The colloquy is designed to support student success in the completion of their degree and future career path. Three meetings of two hours each will be held over the semester. Each meeting will be focussed on different aspects of scholarly preparedness and post-degree career planning. Topics include successful research and writing strategies, meeting graduates of the program and learning about their post-degree employment experiences, planning for post-graduate life, whether it be joining the workforce or further education in professional programs. Students will meet our U of S research librarians, successful CMRS graduates (published writers, managers, teachers, lawyers, professors, administrators, archivists, museum directors, theatre directors), and will take part in facilitated discussions on how to use their humanist education to create a meaningful life in a challenging world.

Prerequisite(s): 30 credit units of courses within the College of Arts and Science

Instructor(s): Sharon Wright

Rationale: This course has been designed in response to student requests for a more focused and regular meetings with the program Director, specifically aimed at career path planning.

College

Minor program revisions

All Degree Programs

Add CMRS 110.3 and CMRS 111.3 to the list of courses eligible to be included in the English Language Writing requirement.

While the following list illustrates all courses eligible to be used in the College's English Language Writing requirement, some fields of study will use a subset of this list. This is necessary to account for the variety of disciplines taught across the college. Specific options for each major will be shown in the Course and Program Catalogue, and programmed in Degree Works.

English Language Writing

Choose **6 credit units** from the following:

- [ANTH 302.3](#) The Practice of Ethnography
- [ANTH 310.3](#) Anthropology of Gender
- [ANTH 405.3](#) Anthropology of Disaster and Disruption
- [ANTH 421.3](#) Anthropology in Time: Early Influences
- [CMRS 110.3](#) **The Graeco Roman Tradition Evolution and Reception**
- [CMRS 111.3](#) **Medieval and Renaissance Civilization**
- [CPSJ 203.3](#) Cultivating Humanity
- [ENG 110.6](#) Literature and Composition
- [ENG 111.3](#) Literature and Composition Reading Poetry
- [ENG 112.3](#) Literature and Composition Reading Drama
- [ENG 113.3](#) Literature and Composition Reading Narrative
- [ENG 114.3](#) Literature and Composition Reading Culture
- [ENG 120.3](#) Introduction to Creative Writing
- [ENG 210.3](#) Literary Canons and Cultural Power
- [ENG 211.3](#) History and Future of the Book
- [ENG 212.3](#) A History of English Words
- [ENG 213.3](#) A History of English Sounds and Spelling
- [ENG 394.3](#) Literary and Cultural Theory
- [ESL 116.3](#) Reading and Writing of Academic Texts
- [HIST 115.3](#) History Matters Ideas and Culture
- [HIST 125.3](#) History Matters Indigenous Colonial and Post Colonial Histories
- [HIST 135.3](#) History Matters Gender Sex and Society
- [HIST 145.3](#) History Matters War Violence and Politics
- [HIST 155.3](#) History Matters Science and Environment
- [HIST 165.3](#) History Matters Health and Society
- [HIST 175.3](#) History Matters Identities and Communities in Transition
- [HIST 185.3](#) History Matters Conflict Law Politics and the State
- [HIST 193.3](#) History Matters Topics in Canadian History
- [HIST 194.3](#) History Matters Topics in European History
- [MUS 155.3](#) Music in History and the Present
- PHIL 115.3
- [PHIL 120.3](#) Knowledge Mind and Existence
- [PHIL 121.3](#) Introduction to World Philosophies

- [PHIL 133.3](#) Introduction to Ethics and Values
- [PHIL 208.3](#) Ancient Philosophy Presocratics to Plato
- [PHIL 233.3](#) Ethical Theory
- [POLS 236.3](#) History of Political Theory
- [POLS 237.3](#) Modern Political Theory
- [POLS 333.3](#) Theory and Politics of Law
- [POLS 336.3](#) Justice and Democracy
- [POLS 461.3](#) Topics in Global Politics
- [PSY 323.3](#) Qualitative Study of Lives and Social Practices
- [PSY 355.3](#) Research in Advanced Cognitive Science
- [RLST 280.3](#) Methodologies and Approaches to Study of Religions
- [RLST 362.3](#) Monsters and Mischief Makers

Rationale: Each of the additional courses meets the criteria for inclusion in this requirement (<https://artsandscience.usask.ca/about/curriculum-renewal/appendix-b1.php>). More choice on this list, especially at the 100-level, benefits students, who will have more flexibility to select a course that fits with their schedule and aligns with their interests.

Computer Science

Minor course revisions

CMPT 215.3 Introduction to Computer Organization and Architecture

Prerequisite change:

Old prerequisite(s): CMPT 214 and one of MATH 104, MATH 110, MATH 121, MATH 123, MATH 125, MATH 176 or STAT 245 (or equivalent).

New prerequisite(s): CMPT 214.3 and one of MATH 104.3, MATH 110.3, MATH 123.3, MATH 125.3, MATH 133.4, MATH 176.3, or STAT 245.3 (or equivalent).

Rationale: MATH 133.4 is the new introductory MATH course for Engineering students, and it provides appropriate preparation for this course.

CMPT 260.3 Mathematical Logic and Computing

Prerequisite change:

Old prerequisite(s): MATH 110 or MATH 176; and one of CMPT 145, CMPT 115, or CMPT 117.

New prerequisite(s): One of CMPT 145.3, CMPT 146.3, CMPT 115.3, or CMPT 117.3; and one of MATH 110.3, or MATH 123.3, or MATH 133.4, or MATH 176.3.

Rationale: CMPT 146.3 and MATH 133.4 are the new introductory courses for Engineering students, and they provide appropriate preparation for this course. MATH 123.3 is the old introductory MATH course for Engineering students, and has been added to the prerequisites for clarity (MATH 123.3 and 133.4 are not equivalent).

CMPT 270.3 Developing ObjectOriented Systems

Prerequisite change:

Old prerequisite(s): CMPT 145 or CMPT 115 or CMPT 117; and one of MATH 104, MATH 110, MATH 121, MATH 123, MATH 125, MATH 176 or STAT 245 (or equivalent).

New prerequisite(s): One of CMPT 145.3, CMPT 146.3, CMPT 115.3, or CMPT 117.3; and one of MATH 104.3, MATH 110.3, MATH 121.3, MATH 123.3, MATH 125.3, MATH 133.4, MATH 176.3, or STAT 245.3 (or equivalent).

Rationale: CMPT 146.3 and MATH 133.4 are the new introductory courses for Engineering students, and they provide appropriate preparation for this course.

CMPT 400.3 Research Topics in Computer Science

New Note: Students with credit for CMPT 405.3 or CMPT 407.3 may not receive credit for this course. CMPT 400 and 405 to be made mutually exclusive (CMPT 400 and 407 already have this relationship).

Rationale: There is already a Note on CMPT 407 that indicates that students can only have credit for one of CMPT 400, 405, or 407, but this information was not added to the other courses when CMPT 407 was introduced.

CMPT 405.3 Project Design and Implementation

New Note: Students with credit for CMPT 400.3 or CMPT 407.3 may not receive credit for this course. CMPT 400 and 405 to be made mutually exclusive (CMPT 400 and 407 already have this relationship).

Rationale: See CMPT 400 above.

CMPT 487.3 Image Processing and Computer Vision

Prerequisite change:

Old prerequisite(s): MATH 164.3, MATH 266.3, EE 216.3 or CE 318.3; and one of CMPT 317.3, CMPT 332.3, CMPT 340.3 or CMPT 370.3.

New prerequisite(s): One of CMPT 317.3, CMPT 332.3, CMPT 340.3 or CMPT 370.3; and one of MATH 164.3, EE 216.3 or CE 318.3.

Delete Note: ~~Students with credit for CMPT 424.3 may not take this course for credit.~~

Rationale: As MATH 164 is the prerequisite for MATH 266, MATH 266 does not need to be listed as an option. CMPT 424 ((Computer Network Technologies and Analysis) last appeared in the 2003-4 (then) Calendar (https://wwwapps.usask.ca/calendar/archive/2003_22AUG/cmpt/400-699/results11-20/index.html), and therefore was never added to Banner and is not an "official" equivalent of CMPT 487. As it is likely that this number will be reused in the not too distant future, we want to remove the existing course note, to avoid confusion. If a student with credit for CMPT 424 returns to take courses, the development of the discipline over the last 20 years will mean that there will now be very little overlap in content between the two courses, and we would have no concerns about them receiving credit for both.

Economics

Minor course revisions

ECON 273.3 Intermediate Microeconomic Theory

Prerequisite change:

Old prerequisite(s): ECON 111, and one of MATH 104, MATH 110, MATH 121, MATH 123, or MATH 125.

New prerequisite(s): ECON 111.3, and one of MATH 104.3, MATH 110.3, MATH 121.3, MATH 123.3, MATH 133.4, MATH 125.3, or MATH 176.3.

Rationale: MATH 133 covers the core differential calculus concepts in MATH 110, and should adequately serve as a calculus prerequisite for this course. MATH 110 and MATH 176 are equivalent, so MATH 176 is added for clarity.

ECON 274.3 Intermediate Macroeconomic Theory

Prerequisite change:

Old prerequisite(s): ECON 114; ECON 211 or ECON 273; and one of MATH 104, MATH 110, MATH 121, MATH 123, MATH 125, or MATH 176.

New prerequisite(s): ECON 114.3; ECON 211.3 or ECON 273.3; and one of MATH 104.3, MATH 110.3, MATH 121.3, MATH 123.3, MATH 125.3, MATH 133.4, or MATH 176.3.

Rationale: MATH 133 covers the core differential calculus concepts in MATH 110, and should adequately serve as a calculus prerequisite for this course.

ECON 305.3 Quantitative Methods in Economics I

Prerequisite change:

Old prerequisite(s): ECON 111; ECON 114; and one of MATH 104, MATH 110, MATH 121, MATH 123, MATH 125, or MATH 176.

New prerequisite(s): ECON 111.3; ECON 114.3; and one of MATH 104.3, MATH 110.3, MATH 121.3, MATH 123.3, MATH 125.3, MATH 133.3, or MATH 176.3.

Rationale: See ECON 274 above.

ECON 306.3 Quantitative Methods in Economics II

Prerequisite change:

Old prerequisite(s): ECON 111; ECON 114; one of MATH 104, MATH 110, MATH 121, MATH 123, MATH 125, or MATH 176; and one of ECON 305, MATH 164 (formerly MATH 264), MATH 266.

New prerequisite(s): ECON 111.3; ECON 114.3; one of MATH 104.3, MATH 110.3, MATH 121.3, MATH 123.3, MATH 125.3, MATH 133.4, or MATH 176.3; and one of ECON 305.3, MATH 164.3 (formerly MATH 264), MATH 266.3.

Rationale: See ECON 274 above.

ECON 307.3 Economic Forecasting

Prerequisite change:

Old prerequisite(s): ECON 214 or ECON 274; and one of MATH 104, MATH 110, MATH 121, MATH 123, MATH 125, or MATH 176.

Old prerequisite(s) or co-requisite(s): 3 cu in STAT or one of PLSC 214, GE 210, COMM 104, EPSE 441, PSY 233, SOC 225.

New prerequisite(s): ECON 214.3 or ECON 274.3; and one of MATH 104.3, MATH 110.3, MATH 121.3, MATH 123.3, MATH 125.3, MATH 133.4, or MATH 176.3.

New prerequisite(s) or co-requisite(s): 3 cu in STAT or one of PLSC 214.3, GE 210.3, COMM 104.3, EPSE 441.3, PSY 233.3, SOC 225.3.

Rationale: See ECON 274 above.

ECON 316.3 Portfolio Theory and Investment Analysis

Prerequisite change:

Old prerequisite(s): ECON 114; ECON 204 (or equivalent courses in statistics); one of ECON 211 or ECON 213; and one of MATH 104 (formerly MATH 101), MATH 110, MATH 121, MATH 123, or MATH 125.

New prerequisite(s): ECON 114.3; ECON 204.3 (or equivalent courses in statistics); one of ECON 211.3 or ECON 213.3; and one of MATH 104.3, MATH 110.3, MATH 121.3, MATH 123.3, MATH 125.3, MATH 133.4, or MATH 176.3.

Rationale: MATH 133 and MATH 176 cover the core differential calculus concepts in MATH 110, and should adequately serve as calculus prerequisites for this course. The current MATH 101 (Quantitative Reasoning) is not the MATH 101 (Elementary Calculus) course that became MATH 104.3. References to this older course have been removed from other prerequisites to avoid confusion.

ECON 343.3 Industrial Organization

ECON 350.3 Economics of Public Expenditures

ECON 351.3 Public Economics

ECON 352.3 Economics of Taxation

ECON 354.3 International Trade and Commercial Policy

ECON 373.3 Topics in Intermediate Microeconomic Theory

ECON 450.3 Strategic Choice

Prerequisite change:

Old prerequisite(s): ECON 211 or ECON 273; and one of MATH 104, MATH 110, MATH 121, MATH 123, MATH 125, or MATH 176.

New prerequisite(s): ECON 211.3 or ECON 273.3; and one of MATH 104.3, MATH 110.3, MATH 121.3, MATH 123.3, MATH 125.3, MATH 133.4, or MATH 176.3.

Rationale: See ECON 274 above.

ECON 356.3 International Monetary Economics

ECON 376.3 Energy Economics

ECON 412.3 Welfare Economics and General Equilibrium

ECON 473.3 Mathematical Introduction to Micro Theory

Prerequisite change:

Old prerequisite(s): ECON 114; ECON 211 or ECON 273; and one of MATH 104, MATH 110, MATH 121, MATH 123, MATH 125, or MATH 176.

New prerequisite(s): ECON 114.3; ECON 211.3 or ECON 273.3; and one of MATH 104.3, MATH 110.3, MATH 121.3, MATH 123.3, MATH 125.3, MATH 133.4, or MATH 176.3.

Rationale: See ECON 274 above.

ECON 374.3 Topics in Intermediate Macroeconomic Theory

ECON 380.3 History of Economic Thought after 1870

ECON 414.3 Economic Growth

ECON 470.3 Economics of Behaviour and Behavioural Economics

ECON 489.3 Research Project in Economics

Prerequisite change:

Old prerequisite(s): ECON 214 or ECON 274; and one of MATH 104, MATH 110, MATH 121, MATH 123, MATH 125, or MATH 176.

New prerequisite(s): ECON 214.3 or ECON 274.3; and one of MATH 104.3, MATH 110.3, MATH 121.3, MATH 123.3, MATH 125.3, MATH 133.4, or MATH 176.3.

Rationale: See ECON 274 above.

ECON 389.3 Research Project in Economics

ECON 411.3 Monetary Theory

Prerequisite change:

Old prerequisite(s): ECON 214 or ECON 274; one of MATH 104, MATH 110, MATH 121, MATH 123, MATH 125, or MATH 176; and permission of the department.

New prerequisite(s): ECON 214.3 or ECON 274.3; one of MATH 104.3, MATH 110.3, MATH 121.3, MATH 123.3, MATH 125.3, MATH 133.4, or MATH 176.3; and permission of the department.

Rationale: See ECON 274 above.

ECON 408.3 Econometrics 1

Prerequisite change:

Old prerequisite(s): ECON 304; ECON 214 or ECON 274; and one of MATH 104, MATH 110, MATH 121, MATH 123, MATH 125, or MATH 176.

New prerequisite(s): ECON 304.3; ECON 214.3 or ECON 274.3; and one of MATH 104.3, MATH 110.3, MATH 121.3, MATH 123.3, MATH 125.3, MATH 133.4, or MATH 176.3.

Rationale: See ECON 274 above.

Food Science

Minor program revisions:

Bachelor of Science Honours in Food Science

Add new requirement to choose 3 credit units from FABS 222.3 or the list of 300-level and above FABS courses already listed in the C4 Major Requirement. Remove AREC 292.3 from C5 Elective list.

Bachelor of Science Honours (B.Sc. Honours) - Food Science

C4 Major Requirement (~~57~~ 60 credit units)

- [BLE 303.3](#) Principles of Food and Bioproducts Engineering
- [BMSC 200.3](#) Biomolecules
- [BMSC 230.3](#) Metabolism
- [CHEM 250.3](#) Introduction to Organic Chemistry
- [FABS 110.3](#) The Science of Food
- [FABS 211.3](#) Introductory Bioproduct Science
- [FABS 212.3](#) Agrifood and Resources Microbiology
- [FABS 315.3](#) Food Chemistry
- [FABS 317.3](#) Food and Bioproducts Analysis
- [FABS 325.3](#) Food Microbiology and Safety
- [FABS 345.3](#) Unit Operations in Food Processing
- [FABS 452.3](#) Quality Assurance and HACCP
- [FABS 494.6](#) Research Thesis

Choose **15 credit units** from the following:

- [FABS 323.3](#) Food Additives and Toxicants
- [FABS 334.3](#) Industrial Microbiology
- [FABS 360.3](#) Water Microbiology and Safety
- [FABS 362.3](#) Functional Foods and Nutraceuticals
- [FABS 366.3](#)
- [FABS 371.3](#) Food Biotechnology
- [FABS 401.3](#) Dairy Science and Technology
- [FABS 411.3](#) Lipid Science and Technology
- [FABS 457.3](#) Meat Science and Technology
- [FABS 460.3](#) Protein Science and Technology
- [FABS 474.3](#) Food Enzymology
- [FABS 486.3](#) **Sensory Science**
- [FABS 493.3](#) Product Development

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

- [FABS 222.3](#) Food Security
- [FABS 323.3](#) Food Additives and Toxicants
- [FABS 334.3](#) Industrial Microbiology
- [FABS 360.3](#) Water Microbiology and Safety
- [FABS 362.3](#) Functional Foods and Nutraceuticals
- [FABS 366.3](#) Physiochemical properties of food
- [FABS 371.3](#) Food Biotechnology
- [FABS 401.3](#) Dairy Science and Technology
- [FABS 411.3](#) Lipid Science and Technology
- [FABS 457.3](#) Meat Science and Technology
- [FABS 460.3](#) Protein Science and Technology
- [FABS 474.3](#) Food Enzymology
- [FABS 486.3](#) **Sensory Science**
- [FABS 493.3](#) Product Development

C5 Electives Requirement (12 9 credit units)

Arts and Science courses, or those from other Colleges that have been approved for Arts and Science credit, to complete the requirements for 120 credit unit Honours program, of which at least 66 credit units must be at the 200-level or higher.

If you require further assistance, please contact the Arts and Science Undergraduate Student Office.

Students are encouraged to choose from the following list of recommended courses:

- [BIOL 226.3](#) Genes to Genomics (formerly BIOL 211)
- [BMIS 310.3](#) Proteins and Enzymes
- [BMSC 230.3](#) Metabolism
- [BMSC 240.3](#) Laboratory Techniques
- [AREC 292.3](#) (Course is closed)
- [CHEM 115.3](#) General Chemistry II Chemical Processes
- [CHEM 221.3](#) Analytical Chemistry I
- [CHEM 231.3](#) Inorganic Chemistry I

- **CHEM 242.3** Thermodynamics and Kinetics (if not taken as part of C6 or as a required cognate course)
- **CHEM 255.3** Bio Organic Chemistry
- **COMM 204.3** Introduction to Marketing or **AREC 230.3** Innovation and Entrepreneurship or ENT 210.3
- 200 and 300-level NUTR courses (**NUTR 221.3** Advanced Nutrition Micronutrients, **NUTR 305.3** Research Methods, **NUTR 310.3** Food Culture and Human Nutrition, **NUTR 321.3** Advanced Nutrition Macronutrients and Energy, and **NUTR 322.3** Nutrition Throughout the Lifespan recommended). Please note that not all NUTR courses may be used for credit in Arts & Science programs. See **Electives** for additional details.
- Other courses at the discretion of the undergraduate student advisor

Rationale: Adding FABS 222.3 (Food Security) as an option in the Major Requirements will allow students to receive credit for this emerging topic area. AREC 292.3 (Economics of Biotechnology) was closed in 202105.

Geology

Minor course revisions

GEOL 206.3 Earth Systems

Prerequisite change:

Old prerequisite(s): One course from GEOL 121.3, GEOL 122.3; GEOG 120.3; BIOL 108.6, BIOL 120.3, BIOL 121.3, ARCH 112.3, CHEM 112.3, PHYS 115.3, or permission of the department.

New prerequisite(s): One course from GEOL 121.3, GEOL 122.3; GEOG 120.3; BIOL 108.6, BIOL 120.3, BIOL 121.3, ARCH 112.3, CHEM 112.3, CHEM 146.3, PHYS 115.3, PHYS 156.3, or permission of the department.

Rationale: Students need only to have taken a 3 credit unit introductory science course to be prepared for GEOL 206. Given this, adding CHEM 146 and PHYS 156 (new courses for Engineering) increases flexibility for students.

GEOL 224.3 Mineralogy

Prerequisite change:

Old prerequisite(s): GEOL 121; and PHYS 115 or PHYS 155; and CHEM 112 or CHEM 114; and MATH 110, MATH 123, or MATH 176.

New prerequisite(s): GEOL 121.3; and PHYS 115.3, PHYS 155.3, or PHYS 156.3; and CHEM 112.3, CHEM 114.3, or CHEM 146.3; and MATH 110.3, MATH 123.3, MATH 133.3, or MATH 176.3.

Rationale: PHYS 156.3 (new course for Engineering) and PHYS 155.3 are equivalent. CHEM 146.3 is the new Chemistry course for Engineering, and will provide students with adequate preparation to be successful in this course. MATH 133 covers the core differential calculus concepts in MATH 110, and should adequately serve as a calculus prerequisite for this course.

GEOL 229.3 Introductory Geochemistry

Prerequisite change:

Old prerequisite(s): GEOL 121; and CHEM 112; and MATH 110, MATH 123, or MATH 176.

New prerequisite(s): GEOL 121.3; and CHEM 112.3 or CHEM 146.3; and MATH 110.3, MATH 123.3, MATH 133.3, or MATH 176.3.

Rationale: MATH 133 covers the core differential calculus concepts in MATH110, and should adequately serve as a calculus prerequisite for this course. Students with credit for CHEM 146.3 are expected to have adequate preparation to be successful in this course.

GEOL 245.3 Introduction to Sedimentary Rocks

Prerequisite change:

Old prerequisite(s): GEOL 121; and PHYS 115 or PHYS 155; and CHEM 112 or CHEM 114; and MATH 110, MATH 123, or MATH 176.

New prerequisite(s): GEOL 121.3; and PHYS 115.3, PHYS 155.3, or PHYS 156.3; and CHEM 112.3, CHEM 114.3, or CHEM 146.3; and MATH 110.3, MATH 123.3, MATH 133.4 or MATH 176.3.

Rationale: PHYS 156 is equivalent to PHYS 155. MATH 133 covers the core differential calculus concepts in MATH110, and should adequately serve as a calculus prerequisite for this course. Students with credit for CHEM 146.3 are expected to have adequate preparation to be successful in this course.

GEOL 258.3 Structural Geology

Prerequisite change:

Old prerequisite(s): GEOL 121; and PHYS 115 or PHYS 155; and CHEM 112 or CHEM 114; and MATH 110, MATH 123, or MATH 176.

New prerequisite(s): GEOL 121.3; and PHYS 115.3, PHYS 155.3, or PHYS 156.3; and CHEM 112.3, CHEM 114.3, or CHEM 146.3; and MATH 110.3, MATH 123.3, MATH 133.3, or MATH 176.3.

Rationale: See GEOL 245 above.

GEOL 282.3 Earth Physics

Prerequisite change:

Old prerequisite(s): MATH 112 or 116 or 124; PHYS 115 (PHYS 111, 121) or GE 124; PHYS 117 or 125 (PHYS 111, 121, 128) or PHYS 155 (EP 155).

New prerequisite(s): MATH 112.3, MATH 116.3, MATH 124.3, MATH 134.3, or MATH 177.3; PHYS 115.3, GE 123.3 or GE 124.3; PHYS 117.3, PHYS 125.3, or PHYS 155.3, or PHYS 156.3.

Rationale: MATH 134 and MATH 177 cover the core integral calculus concepts in MATH116, and should adequately serve as a calculus prerequisite for this course. GE 123.3 is equivalent to GE 124.3. PHYS 156.3 is equivalent to PHYS 155.3.

GEOL 308.3 Field School Sedimentary Rocks

Prerequisite change:

Old prerequisite(s): GEOL 226, GEOL 247, GEOL 258 and permission of the department.

New prerequisite(s): GEOL 226, GEOL 245, GEOL 247, GEOL 258 and permission of the department.

Rationale: Previously GEOL 245 was a prerequisite to GEOL 247 and thus students would have normally already taken GEOL 245 when they were ready to take GEOL 308. This changed this year when GEOL 245 was dropped as a prerequisite for GEOL 247, meaning a student could conceivably take GEOL 308 without GEOL 245. This would put the student at a major disadvantage as the content of GEOL 245 is crucial to understanding the mapping exercises that students undertake as part of GEOL 308. We therefore would like to implement GEOL 245 as a prerequisite for GEOL 308 going forward.

GEOL 324.3 Igneous Petrology

GEOL 325.3 Metamorphic Petrology

Prerequisite change:

Old prerequisite(s): GEOL 226, GEOL 229, and CHEM 115.

New prerequisite(s): GEOL 226; GEOL 229; and CHEM 115 or CHEM 146.

Rationale: CHEM 146 is equivalent to CHEM 115.

GEOL 334.3 Gravity Magnetics Electromagnetic and Radiation Methods

GEOL 335.3 Seismology and Ground Penetrating Radar Methods

Prerequisite change:

Old prerequisite(s): CMPT 116 or 111 or 141 or 146; MATH 223 or 225 or 276; MATH 224 or 226 or 238; (PHYS 115 and PHYS 117) or (PHYS 115 and 125) or PHYS 155

New prerequisite(s): CMPT 111.3, CMPT 116.3, CMPT 141.3, or CMPT 146.3; and MATH 223.3, MATH 225.3, or MATH 276.3; and MATH 224.3, MATH 226.3, or MATH 238.3; and (PHYS 115.3 and PHYS 117.3), (PHYS 115.3 and PHYS 125.3), or PHYS 155.3, or PHYS 156.3.

Rationale: PHYS 156 is equivalent to PHYS 155.

GEOL 350.3 Organic Geochemistry

Prerequisite change:

Old prerequisite(s): Any one or more of the following courses are recommended as prerequisites for this course: GEOL 226, GEOL 229, CHEM 115, CHEM 221, SLSC 313, EVSC 220, ENVE 201, or by permission of the instructor.

New prerequisite(s): Any one or more of the following courses are recommended as prerequisites for this course: GEOL 226.3, GEOL 229.3, CHEM 115.3, CHEM 146.3, CHEM 221.3, SLSC 313.3, EVSC 220.3, ENVE 201.3, or by permission of the instructor.

Rationale: CHEM 146 is equivalent to CHEM 115.

GEOL 384.3 Introduction to Applied Geophysics

Prerequisite change:

Old prerequisite(s): GEOL 258.3; MATH 110.3 or MATH 176.3; MATH 116.3, or MATH 177.3; PHYS 117.3, PHYS 125.3, or PHYS 155.3.

New prerequisite(s): GEOL 258.3; MATH 110.3, MATH 133.4 or MATH 176.3; MATH 116.3, MATH 134.3, or MATH 177.3; PHYS 117.3, PHYS 125.3, PHYS 155.3, or PHYS 156.

Rationale: MATH 133 covers the core differential calculus concepts in MATH110. Likewise, MATH 134 covers the core integral calculus concepts in MATH116. Thus, these courses should adequately serve as calculus prerequisites for this course. PHYS 156 is equivalent to PHYS 155.

GEOL 413.3 Aqueous Geochemistry

Prerequisite change:

Old prerequisite(s): GEOL 229, CHEM 115, and (MATH 110 or MATH 176); or permission of the department.

New prerequisite(s): GEOL 229.3; and CHEM 115 or CHEM 146.3; and MATH 110, MATH 133.4, or MATH 176; or permission of the department.

Rationale: See GEOL 384 above.

Mathematics

Minor course revisions

MATH 116.3 Calculus II

Prerequisite change:

Old prerequisite(s): MATH 110.3

New prerequisite(s): MATH 110.3, MATH 133.4, or MATH 176.3

Rationale: MATH 133 and MATH 176 cover the core differential calculus concepts in MATH 110, and should adequately serve as calculus prerequisites for this course.

MATH 225.3 Intermediate Calculus I

MATH 226.3 Intermediate Calculus II

Prerequisite change:

Old prerequisite(s): MATH 116.3 or MATH 177.3.

New prerequisite(s): MATH 116.3, MATH 133.4, or MATH 177.3.

Rationale: MATH 134 covers the core integral calculus concepts in MATH 116, and should adequately serve as a calculus prerequisite for this course.

Physics

Minor course revisions

EP 202 Electric and Magnetic Fields and Circuits

Prerequisite change:

Old prerequisite(s): (MATH 123, MATH 110, or MATH 176), (MATH 124, MATH 116, or MATH 177), and (PHYS 155 or PHYS 115).

New prerequisite(s): MATH 123.3, MATH 133.4, MATH 110.3, or MATH 176.3; and MATH 124.3, MATH 134.3, MATH 116.3, or MATH 177.3; and PHYS 155.3, PHYS 156.3, or PHYS 115.3.

Rationale: Add new introductory courses for Engineering by replacing prerequisite (MATH 123) by (MATH 123 or MATH 133), replace (MATH 124) by (MATH 124 or MATH 134), and replace (PHYS 155) by (PHYS 155 or PHYS 156). The old courses are left in the prerequisite so students who already have the credits of these courses can take EP 202. After several years, we will remove the old courses.

EP 370.3 Heat Kinetic Theory and Thermodynamics

New course number: **EP 271.3**

Change to Note:

Old Note: Students with credit for EP 271 will not receive credit for this course. This course was labeled EP 271 until 2014.

New Note: Students with credit for EP 370 will not receive credit for this course. This course was labeled EP 370 from 2014 to 2022.

Rationale: This class 'Heat Kinetic Theory and Thermodynamics' was formerly labeled EP 271 and taken by Engineering Physics students in their 2nd year. In 2014, this course was moved to the 3rd year in EP program and accordingly renumbered as EP 370. In 2022, EP 370 was moved back to year 2 in the EP program, to fill a 3 credit unit opening left by the deletion of CMPT 161 (which is replaced by CMPT 142 in year 1). We would like to restore the old course number, EP 271, to match the year in which it is taken by the students.

PHYS 481.3 Quantum Mechanics II

Prerequisite change:

Old prerequisite(s): PHYS 383; and MATH 164 (formerly MATH 264) or MATH 266; and EP 320 or MATH 339.

New prerequisite(s): PHYS 383.3; and MATH 164.3 (formerly MATH 264.3) or MATH 266.3; and EP 320.3, MATH 331.3, or MATH 339.3.

Rationale: The proposed revision results from the separation of MATH 331 and MATH 339, formerly a sequence of courses on applied differential equations with MATH 331 being the sole prerequisite for MATH 339. Now MATH 331 and MATH 339 are independent of each other and the prerequisites for MATH 339 are one of the three combinations of second-year courses; MATH 223 and MATH 224; or MATH 225 and MATH 226; or MATH 238 and MATH 276. Physics students can take any one of these three combinations in their second year, depending on their course schedule. Either one of MATH 331 and MATH 339 provides Physics students with knowledge and skills for solving differential equations that are necessary for PHYS 481, while MATH 339 has more applications in mathematical physics. Starting in 2022-2023, MATH 339 as well as MATH 331 will be offered in T1, so that Physics students can take either course depending on their preference and course schedule.

Statistics

Minor course revisions

STAT 241.3 Probability Theory

Prerequisite change:

Old prerequisite(s): MATH 110 and MATH 116; or MATH 176 and MATH 177.

New prerequisite(s): MATH 110.3, MATH 133.4 or MATH 176.3; and MATH 116, MATH 134 or MATH 177.

Rationale: MATH 133 covers the core differential calculus concepts in MATH 110. Likewise, MATH 134 covers the core integral calculus concepts in MATH 116. Thus, these courses should adequately serve as calculus prerequisites for this course.

STAT 245.3 Introduction to Statistical Methods

Prerequisite change:

Old prerequisite(s): One of MATH 100, MATH 104, MATH 110, MATH 121, MATH 123, MATH 125, MATH 176, or STAT 103.

New prerequisite(s): One of MATH 100.6, MATH 104.3, MATH 110.3, MATH 121.3, MATH 123.3, MATH 125.3, MATH 133.4, MATH 176.3, or STAT 103.3.

Rationale: MATH 133 covers the core differential calculus concepts in MATH 110/123, and should adequately serve as a calculus prerequisite for this course.

College of Graduate and Postdoctoral Studies, University Course Challenge – September 2022

The following new courses and curricular changes have been approved by the College of Graduate and Postdoctoral Studies and are now being submitted to University Course Challenge for approval.

Contact: Melissa Kyrejto (melissa.kyrejto@usask.ca)

Chemical and Biological Engineering

New Course

CHE 869

This course is intended for in-depth study of theoretical fundamentals in the context of their application in advanced industrial mineral processing. Both physical and chemical separation processes for the extraction of minerals from their resources are particular focuses. An introduction to process modeling, safety/control, and environmental aspects are also covered.

Instructor: Dr. Shafiq Alam

Rationale: Mining is one of Canada's primary industries. The mining and mineral processing industry is booming locally, Canada-wide, and internationally. Many graduate students from the Engineering program at the University of Saskatchewan work in the mining and mineral processing industries. However, further training with a specialty in mining and mineral processing is necessary to meet the demand of the industry. As such, in the past, the "Advanced Mineral Processing (CHE 898)" course has been taught twice as a Special Topic Course.

Plant Science

New Course

PLSC 875.3

This course will investigate important concepts in insect ecology with an emphasis on species interactions. Topics covered will include plant-insect interactions, behavioural ecology, evolutionary ecology, the impact of climate change on insects, and multi-trophic interactions. The course places a heavy emphasis on critical analysis of primary scientific literature and interpretation of scientific literature within the greater body of ecological knowledge.

Note(s): This course is a hybrid course with PLSC 475, and this course cannot be taken for credit after previously taking PLSC 475.

Instructor: Dr. Sean Prager

Rationale: This course is aimed at graduate students (MSc and PhD) who will be conducting research involving insects and/or arthropods. Insects are the most diverse group of animals and are probably the most diverse group of multicellular organisms. They are important pests of crops, urban forests, and buildings. They transmit disease to humans and animals. Insects also provide critical ecosystem services and are frequently used as bioindicators. As such, their ecology is complex, spans numerous sub-disciplines, and is important to a wide range of biological and environmental jobs. There is currently no graduate level course in entomology

routinely offered at the USask. This is particularly problematic for students focused plant-insect interactions and pest management. A previous version of this course was twice offered as a special topics course.

Items For Information

The following new courses and curricular changes have been approved by the College of Graduate and Postdoctoral Studies and are now being submitted to University Course Challenge for information.

Biochemistry, Microbiology and Immunology

Course revision

BMIS 830.3

Title change:

Old title: Cell Biochemistry

New title: Advanced Topics in the Biochemistry of Cancer

Rationale: Previous title was not reflective of the course objectives.

Mutually exclusive to (and cross-listed with): BMIS 430

Rationale: Course has long been hybrid with BMIS 430 but was not previously submitted to UCC.

Economics

Course revision

ECON 804.3

Title change:

Old title: Research in Econometrics

New title: Advanced Empirical Economics

Rationale: The department passed the motion in February 2021 but forgot to submit proposal to CGPS. The new title is more reflective of the course material.

Mutually exclusive to (and cross-listed with): ECON 408

Rationale: Course has long been hybrid with ECON 408 but was not previously submitted to UCC.

Food and Bioproduct Sciences

Corrections to August UCC submission.

FDSC 855.3 should have been written as **FDSC 851.3**. This was a typo.

Physics

Course revision

PHYS 828.3

Mutually exclusive to (and cross-listed with): EP 428

Rationale: This was accidentally submitted incorrectly into the June 2022 UCC. The course should be cross-listed with **EP 428** and not PHYS 428.

School and Counselling Psychology

Course revision

SCP 990.0

Title change:

Old title: Professional Identity Seminar

New title: Seminar in School and Counselling Psychology and Professional Identity

Old course description: This seminar, which occurs during the first three weeks of year 1, Term 1 and involves a set of classroom and community experience, introduces each new cohort of students to the profession of Psychology and the practice of School and Counselling Psychology.

New Course description: This non-credit seminar course for graduate students in School and Counselling Psychology in the Department of Educational Psychology and Special Education introduces the academic and nonacademic aspects of graduate studies, the profession and practice of school and counselling psychology, and the concept of professional identity.

Rationale: The Department of Educational Psychology & Special Education (EPSE) is seeking to make minor changes to title and calendar description for SCP 990 in our Master of Education (M.Ed.) School and Counselling Psychology program to more clearly highlight the content that is already being taught in this course.

College of Pharmacy and Nutrition - University Course Challenge - September 2022

The following curricular change was approved by the College of Pharmacy & Nutrition Pharmacy Program Advisory Committee and is being submitted to the September 2022 University Course Challenge for approval.

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

New Course

PHAR 332.3

Directed Research

The student will complete a research project under the supervision of a faculty member. A report is to be submitted at the completion of the project; additional assessments at various time points throughout the term are appropriate. Generally, the report should include a literature review, a description of the research or project methodology and a discussion of the results of the project.

Restriction(s): Completion of Year 1 of the PharmD. Program

Rationale: The PharmD offers a number of electives for students to take. This course will add to the number and breadth of the electives currently available to both 2nd year and 3rd year Pharmacy students.

Submission for University Course Challenge SENS Undergraduate Certificate in Sustainability

On 4 February 2022, the School of Environment and Sustainability Faculty Council approved six additional courses to the UCS program

Motion: That **HIST 243, HIST 292, HIST 293, HIST 365, HIST 371** and **HIST 445** be added as elective courses to the Communities focus area of the Certificate in Sustainability.

The additions have been added to the program description below in red.

The Certificate in Sustainability is intended to give students theoretical, methodological, strategic, and substantive exposure to sustainability-related concepts and practice. Students will choose either a natural resources, community, or food systems focus for their sustainability studies towards the certificate. The certificate will allow students to engage in problem-based, experiential learning across a broad range of sustainability topics. The program will begin in the student's second year with ENVS 201.

Certificate in Sustainability (21 credit units)

Required Courses (6 credit units):

- [ENVS 201.3](#) Foundations of Sustainability
- [ENVS 401.3](#) Sustainability in Action

Indigenous Learning for Sustainability (3 credit units):

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

- [ANTH 202.3](#) Anthropology and Indigenous Peoples in Canada
- [ANTH 480.3](#) Indigenous Peoples and Mental Health Anthropological and Related Perspectives
- [ARCH 350.3](#) Introduction to Boreal Forest Archaeology
- [AREC 220.3](#) History of Indigenous Agriculture in Canada
- [COMM 347.3](#) Indigenous Business in Canada
- [DRAM 111.3](#) Practicum I Indigenous Performance Methods
- [ENG 242.3](#) Indigenous Storytelling of the Prairies
- [ENG 243.3](#) Introduction to Indigenous Literatures
- [ENG 335.3](#) The Emergence of Indigenous Literatures in Canada
- [HIST 195.3](#) History Matters Indigenous Perspectives on Canadian History
- [HIST 266.3](#) History Wars Issues in Native Newcomer Relations
- [INDG 107.3](#) Introduction to Canadian Indigenous Studies
- [KIN 306.3](#) Introduction to Indigenous Wellness
- [LING 253.3](#) Indigenous Languages of Canada
- [PLAN 445.3](#) Planning with Indigenous Communities*
- [POLS 222.3](#) Indigenous Governance and Politics

- INDG 200-Level, 300-Level, 400-level*

*These courses may not be used to count as credit for both Indigenous Learning and Area of Focus electives

Techniques and Tools for Sustainability (3 credit units)

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

- [ENVE 381.3](#) Sustainability and Environmental Assessment
- [EVSC 203.3](#) Sampling and Laboratory Analysis
- [GEOG 290.3](#) Field Methods and Laboratory Analysis
- [GEOG 385.3](#) Analysis of Environmental Management and Policy Making
- [GEOG 386.3](#) Environmental Impact Assessment
- [INDG 210.3](#) Indigenous Ways of Knowing
- [POLS 256.3](#) Understanding Political Science Research
- [PSY 235.3](#) Research Methods and Design
- [RRM 323.2](#) Resource Data and Environmental Modeling and [RRM 201.1](#) Geographical Information Systems
- [SOC 225.3](#) An Introduction to Survey Research and Data Analysis in Sociology
- [SOC 232.3](#) Methods of Social Research

Areas of Focus (9 credit units)

Students must choose one of the following three areas of focus, in consultation with an advisor:

Please note in each area of focus there are thesis and/or research course options listed. If a student chooses to use one of these courses 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.

Natural Resources and Sustainability Focus

Elective Course (9 credit units):

Choose one of:

- [BIOL 228.3](#) An Introduction to Ecology and Ecosystems
- [ECON 275.3](#) Economics of Natural Resources
- [ECON 277.3](#) Economics of the Environment
- [ENVE 201.3](#) Principles of Environmental Engineering
- [ENVE 212.2](#) Physical Principles of Plant Biosystems
- [EVSC 210.3](#) Environmental Physics
- [EVSC 220.3](#) Environmental Soil Science

- [GEOG 280.3](#) Environmental Geography
- [PHIL 226.3](#) Environmental Philosophy
- [PHIL 231.3](#) Moral Problems
- [PHIL 236.3](#) Ethics and Technology
- [PLSC 213.3](#) Principles of Plant Ecology
- [TOX 200.3](#) Poisons and Pollutants

Choose one of:

- [ANBI 375.3](#) Animals and the Environment
- AREC 330.3
- [BIOL 373.3](#) Community Ecology
- [CHEM 375.3](#) Environmental Chemistry
- [ECON 376.3](#) Energy Economics
- [EVSC 380.3](#) Grassland Soils and Vegetation
- [GEOG 333.3](#) Global Climate Change
- [GEOG 351.3](#) Northern Environments
- [PLAN 329.3](#) Integrated Water Resource Planning
- [RRM 312.3](#) Natural Resource Management and Indigenous Peoples
- [SLSC 342.3](#) Agronomic Soil Microbiology
- [SLSC 350.3](#) Terrestrial Restoration
- [TOX 301.3](#) Environmental Toxicology

Choose one of:

- [AREC 430.3](#) Advanced Natural Resource Economics
- [BIOL 410.3](#) Current Perspectives in Environmental Biology
- [BIOL 412.3](#) Limnology
- [BIOL 470.3](#) Conservation Biology
- [BIOL 475.3](#) Ecological Toxicology
- [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
- [GEOG 490.3](#) Honours Thesis in Hydrology or Geomatics
- [PLSC 413.3](#) Advanced Plant Ecology
- [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
- [PLSC 492.3](#) Project Thesis in Plant Sciences
- [PLSC 494.3](#) Research Thesis in Plant Sciences

Community and Sustainability Focus

Elective Course (9 credit units):

Choose one of:

- [ANTH 240.3](#) Cultural Landscapes and Environments
- [ANTH 244.3](#) Political Ecology Anthropology and Global Environmental Issues
- [CPSJ 203.3](#) Cultivating Humanity
- [ECON 275.3](#) Economics of Natural Resources
- [ECON 277.3](#) Economics of the Environment
- [GEOG 208.3](#) World Regional Development
- [GEOG 240.3](#) Sustainable Cities and Regions
- [GEOG 280.3](#) Environmental Geography
- [HIST 243.3](#) The Reverberations of the Industrial Revolution 1750 to today
- [HIST 257.3](#) The Canadian Prairie to 1905
- [HIST 258.3](#) The Canadian Prairies since 1905
- HIST 263.3
- [HIST 290.3](#) Topics in Environmental History
- [HIST 292.3](#) The Menace of Progress I Enlightenment Colonialism Dispossession
- [HIST 293.3](#) The Menace of Progress II The Promise and Failure of Development
- [PHIL 226.3](#) Environmental Philosophy
- [PHIL 231.3](#) Moral Problems
- [PHIL 236.3](#) Ethics and Technology
- [POLS 226.3](#) Canadian Public Policy
- PLST 210.3
- [SOC 202.3](#) Environmental Sociology
- [SOC 204.3](#) Rural Sociology
- [SOC 206.3](#) Sociology of Communities and Community Development
- [SOC 227.3](#) Critical Issues in Canadian Society
- [WGST 210.3](#) Gendered Perspectives on Current Events

Choose one of:

- [ANTH 329.3](#) Environmental Anthropology
- [ARCH 357.3](#) The Archaeology of Prairie Settlement
- AREC 330.3
- GEOG 340.3
- GEOG 352.3
- [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
- [HIST 365.3](#) Recipes for a Nation Food History in Canada
- [HIST 371.3](#) Power and Change: The History of Energy
- [PLAN 341.3](#) Urban Planning
- PLAN 342.3
- [PLAN 346.3](#) Introduction to Urban Design
- [POLS 326.3](#) Comparative Public Policy
- [POLS 328.3](#) Public Policy Analysis
- [SOC 309.3](#) Theories of Social Change
- [SOC 344.3](#) Sociology of Women Gender and Development
- [SOC 360.3](#) Globalization and Social Justice

Choose one of:

- [ANBI 475.3](#) Field Studies in Arctic Ecosystems and Aboriginal Peoples
- [ANTH 401.3](#) Independent Research in Anthropology
- [AREC 430.3](#) Advanced Natural Resource Economics
- [AREC 432.3](#) Rural Development Theory and Applications
- [CHEP 402.3](#) Global Health and Local Communities Issues and Approaches
- [CPSJ 400.3](#) Critical Perspectives on Social Justice and the Common Good
- GEOG 464.3
- [GEOG 491.3](#) Honours Thesis in Environment and Planning
- [HIST 445.3](#) British Cities Empire and Global Environmental Change
- 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
- [POLS 403.3](#) Advanced Topics in Public Law and Public Policy
- [POLS 422.3](#) Indigenous Governance and Self Determined Sustainable Development
- [SOC 409.3](#) Sociology of Development
- SOC 421.3
- [WGST 411.3](#) Situated Transnational Feminisms

Food Systems and Sustainability Focus

Elective Course (9 credit units):

Choose one of:

- [AREC 251.3](#) Introduction to Agricultural Policy
- [AGRC 211.3](#) Global Food Security
- [PLSC 235.3](#) Urban Agriculture

Choose one of:

- [ANBI 375.3](#) Animals and the Environment
- [ANSC 301.3](#) Animal Production Tour
- AREC 330.3
- [EVSC 380.3](#) Grassland Soils and Vegetation
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- [PLSC 345.3](#) Pesticides and Crop Protection
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Choose one of:

- [AREC 432.3](#) Rural Development Theory and Applications
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- [EVSC 492.3](#) Research and Term Paper
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- FABS 436.3
- FABS 450.3
- [FABS 492.3](#) Literature Thesis
- [FABS 494.3](#) Research Thesis
- [GEOG 491.3](#) Honours Thesis in Environment and Planning
- [PLSC 401.3](#) Sustainable Crop Production
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- [PLSC 422.3](#) Rangeland Ecology and Management
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- [PLSC 494.6](#) Research Thesis in Plant Sciences
- [SLSC 492.3](#) Research and Term Paper
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- [SOC 402.3](#) Sociology of Agriculture and Food

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