

# **Academic Programs Committee of Council**

# **University Course Challenge**

Scheduled posting: October, 2019

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 Agriculture and Bioresources College of Arts and Science College of Education

**Approval:** Date of circulation: October 17, 2019

Date of effective approval if no challenge received: October 31, 2019

#### Next scheduled posting:

The next scheduled posting will be November 14, 2019, with a submission deadline **November 12**, **2019.** Urgent items can be posted on request.

Please direct challenges to both of the following: <a href="mailto:seanine.warrington@usask.ca">seanine.warrington@usask.ca</a> in Registrarial Services and <a href="mailto:amanda.storey@usask.ca">amanda.storey@usask.ca</a> in the Office of the University Secretary.

# College of Agriculture and Bioresources, Submission to October 2019 Course Challenge

The following items have been approved by the College of Agriculture and Bioresources and are now being submitted for approval:

#### **New Course Proposals:**

#### **AREC 220.3 History of Indigenous Agriculture in Canada** 1(3L)

This course traces the major development periods of Indigenous agriculture in Canada, from prehistory to the present. This course provides a comprehensive reference for students interested in the agricultural history of Canada's First Peoples.

**Prerequisite(s):** Successful completion of 30 credit units of university-level courses or permission of the instructor.

**Rationale:** The development and delivery of this course addresses an important and overlooked dimension in Canada's agricultural history. This course will introduce students to the cultural, economic and environmental impacts that have influenced Indigenous involvement in agricultural systems. This course will make an important contribution to the College of Agriculture and Bioresources' continuing commitment to the Indigenization of its curriculum.

#### SLSC 342.3 Agronomic Soil Microbiology 2(3L)

An introduction to the principles of soil microbiology in agroecosystems. The bacteria, archaea and fungi that live in soil have many critical roles in agroecosystems. They affect crop growth through their roles in nutrient cycling and acquisition, by regulating soil physical and chemical characteristics and by protecting plants from pathogens. They are responsible for the nutrient transformations that can lead to nutrient losses as runoff, leaching or gaseous emissions. Impacts of on-farm management practices that affect the abundance and activity of microbes in the soil will be discussed. Approaches for optimizing soil health and crop productivity will be explored.

Prerequisite(s): SLS240.3 or EVSC 220.3 or FABS 212.3 or BMSC 210.3

Rationale: This course will serve as an introduction to the principles of soil microbiology in agroecosystems. The bacteria, archaea and fungi that live in soil have many critical roles in agroecosystems. They affect crop growth through their roles in nutrient cycling and acquisition, by regulating soil physical and chemical characteristics and by protecting plants from pathogens. They are responsible for the nutrient transformations that can lead to nutrient losses as runoff, leaching or gaseous emissions. Impacts of on-farm management practices that affect the abundance and activity of microbes in the soil will be discussed. Approaches for optimizing soil health and crop productivity will be explored. The foundations of soil microbiology taught in this course will be applicable to agroecoystems, forested and grassland ecosystems as well as in restoration and reclamation applications. It is expected that there will be demand from students enrolled in Soil Science, Environmental Science, Renewable Resource Management, Plant Science, Agronomy and Applied Microbiology.

#### **Changes to Course Prerequisites:**

AREC 315.3 1(3L-2P)

**Application of Microeconomic Theory to Agriculture** 

A calculus-based treatment of microeconomic theory as it applies to optimal resource allocation in agriculture, individual consumer choice, and the behaviour of competitive markets.

Formerly: BPBE 315.

Prerequisite(s): ECON 211; MATH 104 or 110 or 121 or 125; AREC 272.

Note: Students with credit for AGEC 315 or BPBE 315 cannot take this course for credit.

**Rationale:** These changes align the prerequisites with the preparation required for these courses, as determined by the Agricultural and Resource Economics department.

PLSC 340.3 - 2(3L-2P)

## **Weed Biology and Ecology**

Growth, reproduction and spread of weeds, influence of agronomic and edaphic factors on weed community structure, weed-crop competition, and biological and mechanical control of weeds. Concludes with a discussion of the use of combined control methods (biological, mechanical and chemical) in integrated weed management.

Prerequisite(s): AGRC 111 or one of BIOL 202, 222 or 205.

PLSC 450.3 —  $\frac{1}{3}$ 

#### **Applied Entomology**

This course will address aspects of entomology from an economic and applied perspective. Class covers topics including: survey methods, insect pest management, Integrated Pest Management (IPM), beneficial insects, pollination biology, insect derived products, and insect vectors of plant disease. Throughout the course, insect biodiversity will be addressed relative to these concepts.

#### Prerequisite(s):

BIOL 120 and one of PLSC 260, PLSC 350 or BIOL 365. One of BIOL 365.3, PLSC 311.3, or PLSC 350.3, or instructor's permission.

**Rationale:** These changes align the prerequisites with the preparation required for these courses, as determined by the Plant Science department.

#### **Changes to Program Requirements:**

#### **Applied Plant Ecology**

Bachelor of Science in Agriculture (B.S.A.)

#### Year 2 (30 credit units)

Requirements

BIOL 222.3 BIOL 226.3 EVSC 220.3 or SLSC 240.3 MATH 104.3 or MATH 110.3 or MATH 125.3 PLSC 213.3 or BIOL 228.3 (PLSC 213.3 is preferred) PLSC 220.3 or PLSC 222.3

#### PLSC 260.3

RCM 300.3

RRM 215.3

# Choose 3 credit units from the following:

- ENG 111.3
- ENG 112.3
- ENG 113.3
- ENG 114.3
- ENG 120.3

#### **Open Electives**

- Choose 3 credit units open electives
  - 3 credit units open electives

# Years 3 & 4 (60 credit units)

# Choose 18 credit units of restricted electives from the following:

Students can choose courses for a minor or choose from the following selection of courses in consultation with an advisor.

- AGRC 211.3
- ANBI 375.3
- ANBI 475.3
- BIOL 324.3
- BIOL 326.3
- BIOL 331.3
- BIOL 342.3
- BIOL 345.3
- BIOL 373.3
- BIOL 470.3
- GEOG 222.3
- GEOG 322.3
- GEOG 323.3
- GEOG 351.3
- GEOG 380.3
- GEOG 386.3
- PLSC 335.3
- PLSC 340.3
- PLSC 345.3
- PLSC 405.3
- PLSC 450.3
- PLSC 494.6
- SLSC 232.3
- SLSC 344.3
- SLSC 350.3
- SLSC 460.3
- SLSC 480.3

**Rationale:** The addition and deletion of required courses reflects changes to the Applied Plant Ecology major approved by the Plant Science department, based on course availability, area of study, and the incorporation of PLSC 260 "Principles of Plant Protection.

# **Applied Plant Ecology Minor**

#### Requirements

- EVSC 380.3
- RRM 215.3 or BIOL 323.3 or EVSC 380.3
- PLSC 213.3 or BIOL 228.3 (PLSC 213.3 is preferred)
- DISC /112 2
- Choose two of: PLSC 413.3, PLSC 422.3, PLSC 423.3 or PLSC 425.3

#### Choose 9 6 credit units from the following:

- BIOL 323.3
- RRM 215.3 or BIOL 323.3 or EVSC 380.3
- BIOL 373.3
- BIOL 424.3
- PLSC 413.3
- PLSC 422.3
- PLSC 423.3
- PLSC 425.3
- RRM 215.3
- SLSC 480.3

**Rationale:** The addition and deletion of required courses reflects changes to the Applied Plant Ecology minor approved by the Plant Science department.

# **Rangeland Resources Minor**

### Requirements (18 credit units)

- ANSC 410.3
- PLSC 213.3 or BIOL 228.3 (PLSC 213.3 is preferred)
- PLSC 422.3
- RRM 215.3
- RRM 215.3 or BIOL 323.3 or EVSC 380.3

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

- RRM 215.3 or BIOL 323.3 or EVSC 380.3
- BIOL 323.3
- BIOL 424.3
- EVSC 380.3
- PLSC 413.3
- PLSC 418.3
- PLSC 423.3

**Rationale:** The addition and deletion of required courses reflects changes to the Rangeland Resources minor approved by the Plant Science department.

# Agronomy

Bachelor of Science in Agriculture (B.S.A.)

## Year 2 (30 credit units)

- BIOL 222.3
- BIOL 226.3
- MATH 104.3, MATH 110.3, or MATH 125.3
- One of PLSC 213.3 or BIOL 228.3 (PLSC 213.3 is preferred); or PLSC 220.3
- PLSC 214.3 or STAT 245.3
- PLSC 222.3
- PLSC 260.3
- RCM 300.3
- SLSC 240.3

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

- ENG 111.3
- ENG 112.3
- ENG 113.3
- ENG 114.3
- ENG 120.3

# **Open Electives**

• Choose 3 credit units of open electives

**Rationale:** This change incorporates PLSC 260.3 "Principles of Plant Protection" into the Agronomy degree program.

### Agronomy

Diploma, Dip.(Agrn.)

# Year 1 - Winter Term (15 credit units)

- AGRC 113.3
- BIOL 222.3
- BLE 205.3
- PLSC 201.3
- PLSC 260.3
- SLSC 240.3

# Year 2 - (30 credit units)

- AGRC 113.3
- PLSC 375.3
- RCM 300.3
- SLSC 312.3

#### **Choose 9 credit units from the following Plant Protection restricted electives:**

- PLSC 234.3
- PLSC 335.3
- PLSC 340.3
- PLSC 345.3
- PLSC 350.3

# Choose 12 9 credit units from the following restricted electives:

- AGRC 112.3
- AGRC 211.3
- AREC 230.3
- AREC 251.3
- AREC 343.3
- AREC 347.3
- PLSC 213.3
- PLSC 214.3
- PLSC 220.3
- PLSC 234.3 PLSC 235.3
- PLSC 311.3
- PLSC 330.3
- PLSC 333.3
- PLSC 335.3
- PLSC 340.3
- PLSC 345.3
- PLSC 350.3
- PLSC 408.3
- PLSC 418.3
- PLSC 420.3
- SLSC 232.3
- SLSC 343.3 or SLSC 344.3

Rationale: This change incorporates PLSC 260.3 "Principles of Plant Protection" into the Agronomy diploma program.

## **Crop Science**

Bachelor of Science in Agriculture (B.S.A.)

#### Year 2 (30 credit units)

- BIOL 222.3
- BIOL 226.3
- MATH 104.3 or MATH 110.3 or MATH 125.3
- PLSC 214.3 or STAT 245.3
- PLSC 220.3
- PLSC 222.3
- PLSC 240.3
- PLSC 260.3
- RCM 300.3

# Choose 3 credit units from the following:

- ENG 111.3
- ENG 112.3
- ENG 113.3
- ENG 114.3
- ENG 120.3

# **Open Electives**

#### • Choose 3 credit units open electives

**Rationale:** This change incorporates PLSC 260.3 "Principles of Plant Protection" into the Crop Science degree program.

# **Field Crop Production**

Minor

Requirements (18 credit units)

- PLSC 222.3 or PLSC 201.3
- PLSC 382.3
- PLSC 260.3
- SLSC 240.3

Choose 9 credit units from the following:

- BIOL 345.3
- PLSC 220.3
- PLSC 234.3
- PLSC 235.3
- PLSC 333.3
- PLSC 335.3
- PLSC 340.3
- PLSC 345.3
- PLSC 350.3
- PLSC 375.3
- PLSC 382.3
- PLSC 401.3 (strongly recommended)
- PLSC 420.3
- SLSC 312.3

**Rationale:** This change incorporates PLSC 260.3 "Principles of Plant Protection" into the Field Crop Production minor, which replaces the requirement of PLSC 382.3 and adds it to the minor electives program.

## **Horticulture Science**

Bachelor of Science in Agriculture (B.S.A.)

# Year 2 (30 credit units)

- BIOL 222.3
- BIOL 226.3
- MATH 104.3 or MATH 110.3 or MATH 125.3
- PLSC 213.3
- PLSC 214.3 or STAT 245.3
- PLSC 220.3
- PLSC 222.3
- PLSC 240.3
- PLSC 260.3
- RCM 300.3
- SLSC 240.3

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

- ENG 111.3
- ENG 112.3
- ENG 113.3
- ENG 114.3
- ENG 120.3

# Years 3 & 4 (60 credit units)

- BIOL 331.3 or PLSC 411.3
- PLSC 214.3 or STAT 245.3
- PLSC 235.3
- PLSC 240.3
- PLSC 330.3
- PLSC 335.3
- PLSC 433.3
- PLSC 435.3 or PLSC 461.3
- PLSC 441.3
- PLSC 451.3
- PLSC 470.3
- PLSC 492.3 or PLSC 494.6 (3 credit units count as restrictive elective)

#### Choose 18 credit units of restricted electives:

Students can choose courses to complete a minor in an unrelated subject or choose courses selected from the following list: AGRC 211.3, AGRC 311.3, ANBI 375.3, BIOL 365.3, BLE 205.3, AREC 254.3, AREC 346.3, AREC 347.3, FABS 211.3, FABS 212.3, FABS 432.3, GEOG 240.3, NUTR 120.3, RRM 215.3, any 200-level or above course in Plant Science, Environmental or Soil Science not required for the major, or courses approved by an advisor. If a student chooses to register in PLSC 494.6, 3 credit units will be applied here.

#### **Open Electives**

• Choose 12 credit units open electives

# **Applied Microbiology**

Minor

Requirements (18 credit units)

- FABS 212.3 or BMSC 210.3
- FABS 325.3 or FABS 334.3

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

- BIOL 226.3
- BIOL 228.3
- BMSC 220.3
- BMSC 230.3
- FABS 325.3
- FABS 334.3
- FABS 360.3
- FABS 430.3
- FABS 432.3
- FABS 450.3
- FABS 452.3
- MCIM 321.3

- MCIM 390.3
- MCIM 391.3
- MCIM 487.3
- PLSC 335.3
- SLSC 344.3
- VLAC 411.3
- other courses as approved by the Department of Food and Bioproduct Sciences

Please note that students can count 6 credit units from their major toward this minor.

**Rationale:** The addition and deletion of elective courses reflects changes to the Applied Microbiology minor approved by the Plant Science department.

#### **Biotechnology**

Minor

Students enrolled in the B.S.A. degree may take a minor. A minor consists of 18 credit units in a field of study outside the student's major. At least 12 credit units in the minor must be courses that are not specifically listed as required in a student's B.S.A. major. Please note that a minor will often include classes that require prerequisites which are not part of a given B.S.A. program. These prerequisites may be used to satisfy Open Elective requirements in a degree program. The Biotechnology minor is offered through the department of Food and Bioproduct Sciences.

### Requirements

#### **Category A**

Choose 6 credit units from the following:

- COMM 345.3 (prerequisites required)
- COMM 346.3 (prerequisites required)
- PHIL 236.3
- SOC 323.3

#### **Category B**

Choose 6 credit units from the following:

- ANBI 470.3
- BIOC 311.3
- BIOC 436.3
- BIOL 316.3
- BIOL 420.3
- BMSC 230.3
- FABS 325.3
- FABS 371.3
- FABS 430.3
- FABS 450.3
- PLSC 408.3
- PLSC 416.3
- SLSC 344.3

#### **Electives**

Choose 6 additional credit units from Category A or B

#### **Food and Bioproduct Sciences**

Bachelor of Science in Agriculture (B.S.A.)

#### Year 3 and 4 (60 credit units)

- BLE 303.3
- COMM 204.3 or AREC 230.3 or ENT 210.3
- FABS 315.3
- FABS 325.3
- FABS 334.3
- FABS 345.3
- FABS 417.3
- FABS 452.3
- FABS 492.3 or FABS 494.6 (3 credit units of FABS 494.6 count as restricted electives)

#### Choose 21 credit units of restricted electives from the following:

To fulfill this requirement, students can choose courses for a minor or choose from the following selection of courses in consultation with an advisor:

- BIOC 300.3
- BMSC 240.3
- CHEM 115.3
- CHEM 221.3
- CHEM 231.3
- CHEM 242.3
- CHEM 255.3
- FABS 222.3
- FABS 298.3
- FABS 323.3
- FABS 360.3
- FABS 362.3
- FABS 366.3
- FABS 371.3
- FABS 398.3
- FABS 401.3
- FABS 411.3
- FABS 430.3
- FABS 436.3
- FABS 450.3
- FABS 457.3FABS 460.3
- FABS 474.3
- FABS 486.3
- FABS 493.3
- FABS 494.6
- FABS 498.3
- NUTR 310.3
- NUTR 322.3
- PLSC 420.3

**Rationale:** This revision reflects current course offerings approved by the Food and Bioproduct Sciences department.

# Changes to Program Requirements Approved by Agricultural and Resource Economics Department

Addition of MATH 125 to list of acceptable courses to meet Mathematics requirement for BSc. Agribusiness, BSc. Agribusiness Honours, B.S.A. Honours in Agricultural Economics, and B.S.A. in Agricultural Economics

**Rationale:** The addition of MATH 125.3 accommodates students who may have completed this course before transferring to these programs. The note encourages students who might be interested in pursuing graduate studies or other career opportunities to take the MATH 110.3 as preparation.

#### Bachelor of Science in Agribusiness [B.Sc.(Agbus.)]

Year 2 (30 credit units)

- AREC 272.3
- COMM 101.3
- COMM 203.3
- COMM 204.3
- ECON 211.3
- MATH 104.3 or MATH 110.3 or MATH 121.3 or MATH 125.3
- PLSC 214.3 or STAT 245.3
- RCM 300.3

Note: If you excel in mathematics and wish to be challenged, you are encouraged to take MATH 110.3 rather than MATH 104.3.

#### Bachelor of Science in Agribusiness - Honours [B.Sc.(Agbus.) Honours]

Year 2 (30 credit units)

- AREC 272.3
- COMM 101.3
- COMM 203.3
- COMM 204.3
- ECON 211.3
- MATH 104.3 or MATH 110.3 or MATH 121.3 or MATH 125.3
- PLSC 214.3 or STAT 245.3
- RCM 300.3

Note: If you excel in mathematics and wish to be challenged, you are encouraged to take MATH 110.3 rather than MATH 104.3.

#### Bachelor of Science in Agriculture (B.S.A.) Agricultural Economics

Year 2 (30 credit units)

- AREC 272.3
- COMM 101.3
- ECON 211.3
- ECON 214.3
- MATH 104.3, MATH 110.3, or MATH 121.3 or MATH 125.3
- PLSC 214.3 or STAT 245.3
- RCM 300.3

Note: If you excel in mathematics and wish to be challenged, you are encouraged to take MATH 110.3 rather than MATH 104.3.

## Bachelor of Science in Agriculture (B.S.A.) Honours Agricultural Economics

Year 2 (30 credit units)

- AREC 272.3
- COMM 101.3
- ECON 211.3
- ECON 214.3
- MATH 104.3, MATH 110.3, or MATH 121.3 or MATH 125.3
- PLSC 214.3 or STAT 245.3
- RCM 300.3

Note: If you excel in mathematics and wish to be challenged, you are encouraged to take MATH 110.3 rather than MATH 104.3.

Addition of AREC 220.3 "History of Indigenous Agriculture in Canada" to restricted electives for Diploma in Agribusiness, BSc. Agribusiness, BSc. Agribusiness Honours, B.S.A. Honours in Agricultural Economics, and B.S.A. in Agricultural Economics; addition of AGRC 445.3 as an alternate restricted elective of a 3 credit unit 400-level RCM course to the BSc. Agribusiness; addition of areas of study to restricted electives for the B.S.A. in Agricultural Economics.

**Rationale:** The addition of AREC 220.3 supports college and university-wide efforts to incorporate Indigenous content into program curricula, and the addition of AGRC 445.3 into restricted electives for the B.Sc. AgBus recognizes the relevance of this course to this area of study. The addition to the restricted electives for the B.S.A. in Agricultural Economics provides additional relevant options to meet program requirements.

#### Diploma in Agribusiness, Dip.(Agbus.)

Year 2 - Fall Term (15 credit units)

## Choose 3 credit units from the following restricted electives:

- AREC 220.3
- AREC 251.3
- AREC 254.3
- AREC 272.3
- AREC 343.3
- AREC 344.3
- AREC 346.3
- AREC 347.3
- AREC 354.3
- AREC 395.3
- AREC 400.3

Year 2 - Winter Term (15 credit units)

# Choose 9 credit units from the following restricted electives:

- AREC 220.3
- AREC 251.3
- AREC 254.3
- AREC 272.3
- AREC 343.3
- AREC 344.3
- AREC 346.3
- AREC 347.3
- AREC 354.3
- AREC 395.3
- AREC 400.3

# Bachelor of Science in Agribusiness [B.Sc.(Agbus.)]

Years 3 and 4 (60 credit units)

#### **Restricted Electives**

Choose 21 credit units restricted electives from the following:

Note: Minimum 12 credit units must be at the 400-level. Maximum of 6 credit units of 400-level RCM classes may be taken to fulfill this requirement. Of the 21 cu of restricted electives, students may take a maximum of 6 cu of 400-level RCM classes OR AGRC 445.3 and 3 cu of 400-level RCM classes.

- AGRC 445.3
- AREC 220.3
- AREC 230.3
- AREC 251.3
- AREC 254.3

- AREC 330.3
- AREC 344.3
- AREC 346.3
- AREC 354.3
- AREC 356.3 (can be used as an AREC 400-level restricted elective)
- AREC 395.3
- AREC 400.3
- AREC 420.3
- AREC 428.3
- AREC 430.3
- AREC 432.3
- AREC 433.3
- AREC 434.3
- AREC 435.3
- AREC 440.3
- AREC 445.3
- AREC 451.3
- AREC 459.3
- AREC 495.3
- COMM 105.3
- COMM 210.3
- COMM 304.3
- COMM 340.3
- COMM 342.3
- COMM 345.3
- COMM 347.3
- COMM 354.3
- COMM 357.3
- COMM 363.3
- COMM 368.3
- COMM 456.3
- RCM 400.3
- RCM 401.3
- RCM 402.3
- RCM 404.3
- RCM 406.3
- RCM 407.3
- RCM 408.3
- RCM 409.3
- RCM 410.3RCM 495.3
- RRM 312.3

# Bachelor of Science in Agribusiness - Honours [B.Sc.(Agbus.) Honours]

Years 3 and 4 (60 credit units)

#### **Restricted Electives**

Choose 18 credit units restricted electives from the following: 12 of the 18 credit units must be AREC

400-level. Note: Students in the AgBus B. Sc. Honours program will be required to take Econ 214.3 as an open or restricted elective prior to taking <u>ECON 408.3</u>.

- AREC 220.3
- AREC 230.3
- AREC 251.3
- AREC 254.3
- AREC 330.3
- AREC 344.3
- AREC 346.3
- AREC 354.3
- AREC 356.3 (can be used as an AREC 400-level restricted elective)
- AREC 395.3
- AREC 400.3
- AREC 420.3
- AREC 428.3
- AREC 430.3
- AREC 432.3
- AREC 433.3
- AREC 434.3
- AREC 435.3
- AREC 440.3
- AREC 445.3
- AREC 451.3
- AREC 459.3
- AREC 495.3
- COMM 105.3
- COMM 210.3
- COMM 304.3
- COMM 340.3
- COMM 342.3
- COMM 345.3
- COMM 347.3
- COMM 354.3
- COMM 357.3
- COMM 363.3
- COMM 368.3
- COMM 456.3
- ECON 214.3
- RCM 400.3
- RCM 401.3
- RCM 402.3
- RCM 404.3
- RCM 406.3
- RCM 407.3
- RCM 408.3RCM 409.3
- RCM 410.3

- RCM 495.3
- RRM 312.3

# Bachelor of Science in Agriculture (B.S.A.) Honours Agricultural Economics Years 3 and 4 (60 credit units)

#### Choose 12 credit units restricted electives from the following:

AREC — 400-Level

Note: AREC 256.3 356.3 can be used toward this requirement

#### Choose 6 credit units restricted electives from the following:

- ANTH 100-Level, 200-Level, 300-Level, 400-Level
- ARCH 100-Level, 200-Level, 300-Level, 400-Level
- AREC --- 100-Level, 200-Level, 300-Level, 400-Level
- BIOL 100-Level, 200-Level, 300-Level, 400-Level
- CHEM 100-Level, 200-Level, 300-Level, 400-Level
- CHIN 100-Level, 200-Level, 300-Level, 400-Level
- CLAS 100-Level, 200-Level, 300-Level, 400-Level
- COMM --- 100-Level, 200-Level, 300-Level, 400-Level
- CREE 100-Level, 200-Level, 300-Level, 400-Level
- ENG 100-Level, 200-Level, 300-Level, 400-Level
- FREN 100-Level, 200-Level, 300-Level, 400-Level
- GEOG 130.3 or equivalent
- GEOL 100-Level, 200-Level, 300-Level, 400-Level
- GERM 100-Level, 200-Level, 300-Level, 400-Level
- GRK 100-Level, 200-Level, 300-Level, 400-Level
- HEB 100-Level, 200-Level, 300-Level, 400-Level
- HIST 100-Level, 200-Level, 300-Level, 400-Level
- INDG 100-Level, 200-Level, 300-Level, 400-Level
- JPNS 100-Level, 200-Level, 300-Level, 400-Level
- LATN 100-Level, 200-Level, 300-Level, 400-Level
- LING 100-Level, 200-Level, 300-Level, 400-Level
- PHIL 100-Level, 200-Level, 300-Level, 400-Level
- PHYS 100-Level, 200-Level, 300-Level, 400-Level
- POLS 100-Level, 200-Level, 300-Level, 400-Level
- PSY 100-Level, 200-Level, 300-Level, 400-Level
- RLST 100-Level, 200-Level, 300-Level, 400-Level
- RUSS 100-Level, 200-Level, 300-Level, 400-Level
- SNSK 100-Level, 200-Level, 300-Level, 400-Level
- SOC 100-Level, 200-Level, 300-Level, 400-Level
- SPAN 100-Level, 200-Level, 300-Level, 400-Level
- UKR 100-Level, 200-Level, 300-Level, 400-Level
- WGST 100-Level, 200-Level, 300-Level, 400-Level

If applicable, a specialization minor course can be used.

# Bachelor of Science in Agriculture (B.S.A.) Agricultural Economics Years 3 and 4 (60 credit units)

#### Choose 12 credit units restricted electives from the following:

AREC — 400-Level

Note: AREC 256.3 356.3 can be used toward this requirement

#### Choose 12 credit units restricted electives from the following:

- ANTH 100-Level, 200-Level, 300-Level, 400-Level
- ARCH 100-Level, 200-Level, 300-Level, 400-Level
- AREC --- 100-Level, 200-Level, 300-Level, 400-Level
- BIOL 100-Level, 200-Level, 300-Level, 400-Level
- CHEM 100-Level, 200-Level, 300-Level, 400-Level
- CHIN 100-Level, 200-Level, 300-Level, 400-Level
- CLAS 100-Level, 200-Level, 300-Level, 400-Level
- COMM --- 100-Level, 200-Level, 300-Level, 400-Level
- CREE 100-Level, 200-Level, 300-Level, 400-Level
- ENG 100-Level, 200-Level, 300-Level, 400-Level
- FREN 100-Level, 200-Level, 300-Level, 400-Level
- GEOG 130.3 or equivalent
- GEOL 100-Level, 200-Level, 300-Level, 400-Level
- GERM 100-Level, 200-Level, 300-Level, 400-Level
- GRK 100-Level, 200-Level, 300-Level, 400-Level
- HEB 100-Level, 200-Level, 300-Level, 400-Level
- HIST 100-Level, 200-Level, 300-Level, 400-Level
- INDG 100-Level, 200-Level, 300-Level, 400-Level
- JPNS 100-Level, 200-Level, 300-Level, 400-Level
- LATN 100-Level, 200-Level, 300-Level, 400-Level
- LING 100-Level, 200-Level, 300-Level, 400-Level
- PHIL 100-Level, 200-Level, 300-Level, 400-Level
- PHYS 100-Level, 200-Level, 300-Level, 400-Level
- POLS 100-Level, 200-Level, 300-Level, 400-Level
- PSY 100-Level, 200-Level, 300-Level, 400-Level
- RLST 100-Level, 200-Level, 300-Level, 400-Level
- RUSS 100-Level, 200-Level, 300-Level, 400-Level
- SNSK 100-Level, 200-Level, 300-Level, 400-Level
- SOC 100-Level, 200-Level, 300-Level, 400-Level
- SPAN 100-Level, 200-Level, 300-Level, 400-Level
- UKR 100-Level, 200-Level, 300-Level, 400-Level
- WGST 100-Level, 200-Level, 300-Level, 400-Level
- If applicable, a specialization minor course can be used.

Change to program requirements for the Diploma in Agribusiness

Rationale: This change aligns program requirements with current course scheduling for AREC 230.3.

## Diploma in Agribusiness, Dip.(Agbus.)

Year 1 - Fall Term (12 credit units)

- AGRC 111.3
- AREC 230.3
- COMM 101.3
- ECON 111.3

Choose 3 6 credit units of open electives:

Please note that students planning to ladder the Diploma in Agribusiness towards a Bachelor of Science in Agribusiness are advised to register in MATH 104.3 (or an approved equivalent) and ECON 211.3 as open electives and meet with an advisor as soon as possible to plan their program.

Year 1 - Winter Term (15 credit units)

- AGRC 112.3
- AGRC 113.3
- AREC 230.3
- COMM 204.3

Choose 6 3 credit units of Open Electives:

Please note that students planning to ladder the Diploma in Agribusiness towards a Bachelor of Science in Agribusiness are advised to register in MATH 104.3 (or an approved equivalent) and ECON 211.3 as open electives and meet with an advisor as soon as possible to plan their program.

#### For Information:

ANSC 480 was submitted to the August 2019 UCC as a new course in Swine Production and Management; however, the number was not available. The course will be numbered as follows:

#### ANSC 485.3 ANSC 480.3 Swine Production and Management 2(3L-2P)

This course covers the basics of swine production and management, with a focus on current practices in North America. Emphasis will be on production techniques involved in intensive pork production and the underlying scientific principles. Lectures include the role of pork production in the global, Canadian and Saskatchewan economies, types of production systems, breeding, management and feeding, diseases, behaviour and challenges facing modern pork production.

Prerequisite(s): ANSC 315.3; ANSC 340.3 is recommended

#### **University Course Challenge - October 2019**

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)

## **College**

# Minor program revisions All Degree Programs

Add HIST 165, 175, and 185; PHIL 121, 208, and 233; POLS 333, 336, and 461; and RLST 280 and 362 to the list of courses eligible to be included in the English Language Writing requirement.

Add DRAM 111, LING 253, and all courses labeled "INDG" to the list of courses eligible to be included in the Indigenous Learning requirement.

Add MATH 101, 176, and 177; and PSY 233 to the list of courses eligible to be included in the Quantitative Reasoning requirement.

While the following lists illustrate <u>all</u> courses eligible to be used in the College Requirements of "English Language Writing," "Indigenous Learning," and "Quantitative Reasoning," most fields of study will use subsets of these lists. 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**

- ANTH 302.3
- ANTH 310.3
- ANTH 405.3
- ANTH 421.3
- ENG 110.6
- ENG 111.3
- ENG 112.3
- ENG 113.3
- ENG 114.3
- ENG 120.3
- ENG 202.6
- ENG 203.3
- ENG 204.3
- ENG 253.6
- ENG 290.6
- ESL 116.3
- HIST 115.3
- HIST 125.3
- HIST 135.3
- HIST 145.3
- HIST 155.3
- HIST 165.3
- HIST 175.3

- HIST 185.3
- INTS 203.3
- PHIL 115.3
- PHIL 120.3
- PHIL 121.3
- PHIL 133.3
- PHIL 208.3
- PHIL 233.3
- POLS 245.3
- POLS 323.3
- POLS 328.3
- **POLS 333.3**
- POLS 336.3
- POLS 422.3
- POLS 461.3
- PSY 323.3
- PSY 355.3
- **RLST 280.3**
- **RLST 362.3**

# **Indigenous Learning**

- ANTH 202.3
- ANTH 480.3
- ARCH 350.3
- **DRAM 111.3**
- ENG 242.3
- ENG 335.3
- HIST 266.3 INDG 107.3
- LING 253.3
- PLAN 445.3
- POLS 222.3
- 200-level, 300-level, and 400-level INDG courses

# **Quantitative Reasoning**

- **CMPT 140.3**
- **ECON 111.3**
- ECON 114.3
- MATH 100.6
- MATH 101.3
- MATH 102.3
- MATH 104.3
- MATH 110.3
- MATH 121.3
- MATH 123.3
- MATH 125.3
- MATH 164.3
- MATH 176.3
- MATH 177.3
- STAT 103.3
- STAT 244.3

- STAT 246.3
- PHYS 115.3
- PSY 233.3
- SOC 225.3

Rationale: Each of the additional courses has been recommended for inclusion in the respective list, by the working/advisory group for that requirement.

More choice on each list will benefit students, who will have more flexibility to select a class which fits their schedule, and aligns with their areas of interest.

#### **Anatomy and Cell Biology**

# Course deletion(s):

## **ACB 333.3 Cellular Neurobiology**

Rationale: The faculty member who taught this course retired in 2018-19. Much of the course content is covered in other courses, such as PHPY 301 and HSC 350.

## **Archaeology and Anthropology**

#### Minor program revisions:

# Bachelor of Arts Honours, Double Honours, Four-year and Three-year in Archaeology and Anthropology

In the Major Requirement, add requirement to take one of ANTH 202, ANTH 480, or ARCH 350, and reduce the number of unspecified ARCH/ANTH courses by 3cu. Reorganize the information regarding requirements for 300/400 level courses, to accommodate the above change.

Bachelor of Arts Honours (B.A. Honours) - Archaeology and Anthropology

# **B4 Major Requirement (48 credit units)**

Of the 48 credit units required for the major, at least 21 credit units must be at the 300-level or above, with a minimum of 9 credit units at the 400-level (including ANTH 400.3).

- ANTH 111.3
- ARCH 112.3
- ANTH 400.3

Choose 9 credit units from the following:

- ANTH 231.3
- ANTH 240.3
- ARCH 250.3
- ARCH 270.3

Choose 3-6 credit units from the following:

- ANTH 302.3
- ARCH 361.6

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

- ANTH 202.3
- ANTH 480.3
- ARCH 350.3

# Choose 21-24 24-27 credit units from the following:

At least 15 credit units must be at the 300- or 400-level, and 6 credit units must be at the 400-level.

- <u>ANTH 200-Level, 300-Level, 4</u>00-Level
- <u>ARCH 200-Level, 300-Level, 400-Level</u>

Bachelor of Arts Four-year (B.A. Four-year) - Archaeology and Anthropology

#### B4 Major Requirement (42 credit units)

Of the 42 credit units required for the major, at least 21 credit units must be at the 300-level or above, with a minimum of 6 credit units at the 400-level (including ANTH 400.3).

- ANTH 111.3
- ARCH 112.3
- ANTH 400.3

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

- ANTH 231.3
- ANTH 240.3
- ARCH 250.3
- ARCH 270.3

#### Choose **3-6 credit units** from the following:

- ANTH 302.3
- ARCH 361.6

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

- ANTH 202.3
- ANTH 480.3
- ARCH 350.3

# Choose 15-18 18-21 credit units from the following:

At least 15 credit units must be at the 300- or 400-level, and 3 credit units must be at the 400-level.

- ANTH 200-Level, 300-Level, 400-Level
- ARCH 200-Level, 300-Level, 400-Level

#### Bachelor of Arts Three-year (B.A. Three-year) - Archaeology and Anthropology

#### **B4 Major Requirement (30 credit units)**

- ANTH 111.3
- ARCH 112.3

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

- ANTH 231.3
- ANTH 240.3

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

- ARCH 250.3
- ARCH 270.3

# Choose 3-6 credit units from the following:

- ANTH 302.3
- ARCH 361.6

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

- ANTH 202.3
- ANTH 480.3
- ARCH 350.3

### Choose 9-12 12-15 credit units from the following:

- ANTH 200-Level, 300-Level, 400-Level
- ARCH 200-Level, 300-Level, 400-Level

#### Bachelor of Arts Double Honours (B.A. Honours) - Archaeology and Anthropology - Major 1

# **B4 Major Requirement (42 credit units)**

Of the 42 credit units required for the major, at least 21 credit units must be at the 300-level or above, with a minimum of 6 credit units at the 400-level (including ANTH 400.3).

- ANTH 111.3
- ANTH 400.3
- ARCH 112.3

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

- ANTH 231.3
- ANTH 240.3
- ARCH 250.3

• ARCH 270.3

Choose **3-6 credit units** from the following:

- ANTH 302.3
- ARCH 361.3

Choose 3 credit units from the following:

- ANTH 202.3
- ANTH 480.3
- ARCH 350.3

Choose 15-18 18-21 credit units from the following:

At least 15 credit units must be at the 300- or 400-level, and 3 credit units must be at the 400-level.

- ANTH 200-Level, 300-Level, 400-Level
- ARCH 200-Level, 300-Level, 400-Level

Bachelor of Arts Double Honours (B.A. Honours) - Archaeology and Anthropology - Major 2

#### Requirements (42 credit units)

Of the 42 credit units required, at least 21 credit units must be at the 300-level or above, with a minimum of 6 credit units at the 400-level (including ANTH 400.3).

- ANTH 111.3
- ANTH 400.3
- ARCH 112.3

Choose 9 credit units from the following:

- ANTH 231.3
- ANTH 240.3
- ARCH 250.3
- ARCH 270.3

Choose **3-6 credit units** from the following:

- ANTH 302.3
- ARCH 361.6

Choose 3 credit units from the following:

- ANTH 202.3
- ANTH 480.3
- ARCH 350.3

#### Choose 15-18 18-21 credit units from the following:

At least 15 credit units must be at the 300- or 400-level, and 3 credit units must be at the 400-level.

- ANTH 200-Level, 300-Level, 400-Level
- ARCH 200-Level, 300-Level, 400-Level

Rationale: This change will allow students majoring in Archaeology and Anthropology to take one of the ARCH/ANTH courses to meet the Indigenous Learning Requirement. Without making this change, these students would not be able to count these courses toward that requirement.

#### **Biochemistry, Microbiology and Immunology**

#### New course(s):

#### **BMIS 308.3 An Introduction to Microbial Pathogens**

1 (3L) This course will cover introductory concepts of bacterial and viral pathogens and their interactions with their host. Humans live in constant contact with bacteria and viruses but few cause symptoms. Viral pathogens are distinct from the normal flora in that they cause diseases. Bacterial pathogens are sometimes distinct from the normal flora and sometimes depending on the host environment, normally commensal bacteria can become pathogenic. Bacteria often gain entry to normally sterile locations in the body, and viruses are obligate intracellular parasites and must exploit the host cell for all aspects of their life cycle.

Prerequisite(s): BMSC 200 and BMSC 210

Note: Students can take no more than two of the three following courses for credit: BMIS 308.3, MCIM 308.3, and MCIM 309.3.

Instructor(s): Sylvia van den Hurk

Rationale: This course combines the topics covered in the former MCIM 308 and 309 courses of medical microbiology and medical virology. By combining these two into one course, multiple pathogen types can be presented at once.

#### **BMIS 340.3 Introductory Molecular Biology**

1/2 (3L-4P) Molecular biology, the manipulation of organisms at the genetic level, has been essential for many of the key biological discoveries of the late 20<sup>th</sup>century and will drive the future of research and medicine for generations to come. This course will prepare students to view various techniques not as individual experiments, but as the steps and tools which can be linked together to make new discoveries and solve long standing problems of biology. An introduction to the underlying fundamental aspects of living systems: covering cell biology, genetics and the evolutionary processes which lead to complex, multi-cellular life forms.

Prerequisite(s): BMSC 240.3; BMSC 210.3; and BMSC 220.3 or BIOL 226.3

Note: Students with credit for BIOC 311.3 or MCIM 391.3 may not take this course for credit. Instructor(s): BMIS faculty

Rationale: The former departments of Biochemistry and Microbiology & Immunology both offered molecular biology-based lab courses (BIOC 311 and MCIM 391). In fact, both of these courses were seen to be so similar that students were not allowed to take both for credit. Now that the two aforementioned departments have merged, it was decided to merge the two courses to streamline the program offerings.

# **BMIS 380.3 Team Based Experimental Microbiology**

2 (2L-3-P) This is a Course-based Undergraduate Research Experience (CURE) course. Students will be provided with a collection of results and observations from suitable experimental systems provided by local faculty. In teams of up to four, students will be coached in developing a "next step" hypothesis and designing protocols to test their hypothesis. Once the experiment has been acceptably designed, each team will determine reagents required, prepare necessary reagents, set up equipment, carry out the experiment, analyze the results and prepare a formal journal-style report that describes the experimental purpose, the methods, the results and the conclusions.

Prerequisite(s): BMSC 210.3 and BMSC 240.3

Pre- or Co-requisite(s): BMIS 340.3

Note: BMSC 320.3, MCIM 326.3 or BIOC 300.3 recommended. Students will be required to successfully complete the online U of S Safety Resources "WHMIS 2015" and "Laboratory Safety" courses prior to initiating individual laboratory work. Some time will be available in the first week lab session. Students may be required to complete these courses outside of scheduled course time during week 1. Students with credit for MCIM 398.3 Team Based Experimental Microbiology may not take this course for credit.

## BMIS 400.0 Seminar in Biochemistry Microbiology and Immunology

1&2 (1S) Students in their final year of the Biochemistry, Microbiology and Immunology program are required to attend the seminar series sponsored by the Department.

Prerequisite(s): 9 credit units of BIOC, BMIS and/or MCIM courses

Note: BIOC 490.0 or MCIM 490.0 fulfill program requirements for this course.

Instructor(s): BMIS faculty

Rationale: The two departments of Biochemistry and Microbiology & Immunology merged into one department in July 2018. Both departments had honours seminar courses. This course will replace the two previous seminar classes, BIOC 490 and MCIM 490.

#### BMIS 489.6 Research Project in Biochemistry Microbiology Immunology

1&2 (8P) A research project is selected in consultation with a faculty supervisor in whose laboratory the research will be carried out. Students will become familiar with the scientific literature and the laboratory techniques pertinent to the project. Experimental work will be undertaken and data compiled and analyzed. To complete the research project, a written report will be submitted and a short oral presentation will be given to the department.

Prerequisite(s): Admission to the Honours program in Biochemistry, Microbiology and Immunology. Note: Permission of the department is required. Students with credit for BIOC 489.6 or MCIM 491.6 may not take this course for credit.

Instructor(s): BMIS faculty

Rationale: The two departments of Biochemistry and Microbiology & Immunology merged into one department in July 2018. Both departments had honours research projects. This course will replace the two previous research project classes, BIOC 489 and MCIM 491.

#### BMSC 320.3 Nucleic Acids From Central Dogma to Human Disease

1/2 (3L) This course deals with the role of nucleic acids as the information storage molecule of living things, from bacteria to humans. Nucleic acid structure, DNA replication, recombination and repair, transcription of genes, and translation of mRNA in both prokaryotes and eukaryotes are covered along with a diversity of methods used in living things for regulation of expression. Genome structure and composition will be explored, especially as it relates to human diversity and disease. Finally, human genetic testing and the future of personalized medicine will be discussed.

Prerequisite(s): BMSC 210 and BMSC 220

Note: BMSC 240 is recommended. Students with credit for BIOC 300.3 or MCIM 326.3 may not take this course for credit.

Instructor(s): Kyle Anderson, Kerry Kobryn

Rationale: This course has been created to replace MCIM 326 and BIOC 300. The core concepts and materials of the two aforementioned courses are covered in this new course. It also makes sense to reduce redundancy now that the two departments that formerly housed these two courses have merged to become one department.

### Course deletion(s):

#### **BIOC 300.3 Information Transfer DNA to Proteins**

#### MCIM 326.3 Introductory Prokaryotic Genetics and Physiology

Rationale: With the merger of the departments of Biochemistry and Microbiology & Immunology, and through course review of the two departments, it was recognized that MCIM 326 and BIOC 300 had significant course overlap. In order to streamline the course offerings and reduce redundancies, the department decided to offer a new BMSC 320: Nucleic Acids from Central Dogma to Human Disease course that will replace the two aforementioned courses.

#### **BIOC 311.3 Introductory Molecular Biology**

# MCIM 391.3 Experimental Molecular Microbiology

Rationale: With the merger of the departments of Biochemistry and Microbiology & Immunology, and since MCIM 391 and BIOC 311 had significant course overlap the department decided to streamline the course offerings and reduce redundancies. The new department of Biochemistry, Microbiology and Immunology decided to offer a single new course BMIS 340: Introductory Molecular Biology course that will replace the two aforementioned courses.

# BIOC 490.0 Seminar MCIM 490.0 Seminar

Rationale: With the merger of the departments of Biochemistry and Microbiology & Immunology, and through course review of the two departments, it was decided that the department would offer a single undergraduate seminar course to replace the seminar courses that were offered by the two departments prior to the merger. These courses will be replaced by BMIS 400.0.

# BIOC 489.6 Extended Research Approaches in Biochemistry MCIM 491.6 Research Project in Microbiology and Immunology

Rationale: With the merger of the departments of Biochemistry and Microbiology & Immunology, and through course review of the two departments, it was decided that the department would offer a single undergraduate research course to replace the research courses that were offered by the two departments prior to the merger. These courses will be replaced by BMIS 489.6.

# MCIM 308.3 Medical Bacteriology MCIM 309.3 Medical Virology

Rationale: These courses will be replaced by BMIS 308.3: Introduction to Pathogens. The new course combines the topics covered in MCIM 308 and 309, and by combining them into one course, multiple pathogen types can be presented at once, giving students a better understanding of the how bacteria and viruses act separately and together.

#### Minor course revisions:

# **BIOC 436.3 Advanced Molecular Biology**

Prerequisite change:

Old prerequisite: BIOC 311 or MCIM 391

New prerequisite: BMIS 340

Rationale: With the merger of the departments of Biochemistry and Microbiology & Immunology, and since MCIM 391 and BIOC 311 had significant course overlap. In fact they were considered to be equivalent because of the high degree of content overlap, the department decided to streamline the course offerings and reduce redundancies. The new department of Biochemistry, Microbiology and Immunology decided to offer a single new course BMIS 340: Introductory Molecular Biology course that will replace the two aforementioned courses.

# MCIM 425.3 Molecular Basis of Microbial Pathogens MCIM 487.3 Microbial Genetic Systems

Prerequisite change:

Old prerequisite: MCIM 326 New prerequisite: BMSC 320

Rationale: With the merger of the departments of Biochemistry and Microbiology & Immunology, and through course review of the two departments, it was recognized that MCIM 326 and BIOC 300 had significant course overlap. In order to streamline the course offerings and reduce redundancies, the department decided to propose a new BMSC 320: Nucleic Acids from Central Dogma to Human Disease course that will replace the two aforementioned courses.

#### **Bioinformatics**

# Minor program revisions Bachelor of Science Honours and Four-year in Bioinformatics

In C6 Major Requirements replace "CMPT 355" with "CMPT 355 or CMPT353", and in List 2 replace CMPT 350.3 with CMPT 384.3.

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

#### C6 Major Requirement (66 credit units)

- BINF 200.3
- BINF 300.3
- BINF 400.3 \*
- BIOC 310.3
- <u>BIOC 311.3</u> or <u>MCIM 391.3</u> or <u>BIOL 420.3</u>
- BIOL 226.3 or MCIM 326.3
- BMSC 200.3
- BMSC 240.3
- CHEM 250.3
- CMPT 260.3
- CMPT 270.3
- CMPT 280.3
- CMPT 353.3 or CMPT 355.3
- CMPT 360.3
- <u>STAT 242.3</u> or <u>STAT 245.3</u> or <u>STAT 246.3</u> (STAT 242 recommended)

### Choose 21 credit units from the following lists:

A minimum of 3 credit units must be completed from each list. At least 6 of the 21 credit units must be at the 300-level or higher.

#### List 1

No change

#### List 2

- CMPT 214.3
- CMPT 215.3
- CMPT 317.3
- CMPT 350.3
- CMPT 364.3
- CMPT 370.3
- CMPT 381.3
- CMPT 384.3

<sup>\*</sup> Requires completion of a research project (undergraduate thesis) on a bioinformatics topic. Students also have to attend the research seminars as determined by their project supervisor. With permission of the Academic Coordinator, project courses from other relevant departments may be used to fulfill this requirement, providing a bioinformatics project is pursued.

- CMPT 394.3
- CMPT 423.3
- CMPT 463.3

#### List 3

No change

#### List 4

No change

Bachelor of Science Four-year (B.Sc. Four-year) - Bioinformatics

# C6 Major Requirement (63 credit units)

- BINF 200.3
- BINF 300.3
- BIOC 310.3
- BIOC 311.3 or MCIM 391.3 or BIOL 420.3
- BIOL 226.3 or MCIM 326.3
- BMSC 200.3
- BMSC 240.3
- CHEM 250.3
- CMPT 260.3
- CMPT 270.3
- CMPT 280.3
- CMPT 353.3 or CMPT 355.3
- CMPT 360.3
- <u>STAT 242.3</u> or <u>STAT 245.3</u> or <u>STAT 246.3</u> (STAT 242 recommended)

#### Choose 21 credit units from the following lists:

A minimum of 3 credit units must be completed from each list.

#### List 1

No change

#### List 2

- CMPT 214.3
- CMPT 215.3
- CMPT 317.3
- CMPT 350.3
- CMPT 364.3
- CMPT 370.3
- CMPT 381.3
- CMPT 384.3
- CMPT 394.3
- CMPT 423.3

CMPT 463.3

#### List 3

No change

#### List 4

No change

Rationale: The Department of Computer Science is phasing out CMPT355, replacing it with CMPT353. The proposed program change reflects this modification to the course offerings from Computer Science.

CMPT 355 is being replaced by the Department of Computer Science with CMPT 353. However, students cannot receive credit in both CMPT 350 and CMPT 353. Hence once a student fulfills the requirement of CMPT 353 he or she will not have the option of taking CMPT 350 for credit. This reduces course selection options for the restricted electives in requirement C6. To maintain the number of options in List 2 it is necessary to add another senior computer science course. CMPT 384, "Information Visualization" is an excellent choice since bioinformatics typically involves analysis and manipulation of extremely large datasets and effective visualization of both data and results is very important in the field.

#### **Canadian Literature in English**

Minor program revision
Minor in Canadian Literature in English

Replace ENG 256.3 with ENG 255.3; reduce required credit units by 3.

#### Canadian Literature in English - Minor

Canadian literature is an essential part of the cultural history of this country. The Minor in Canadian Literature in English allows you to learn about all facets of our national literatures published in the English language. Our foundational course, <u>ENG-253.6 Canadian Literature in English</u> ENG 255.3 Mapping Canadian Literature, provides an introduction to Canadian fiction, poetry, <u>drama, life-writing</u>, and oral narratives. Our other courses permit you to investigate particular areas of interest, including Indigenous literatures in Canada, Western Canadian literature, <u>Canadian plays</u>, and Canadian speculative fiction.

. . .

Requirements (24 credit units) (21 credit units)

# Requirement One:

Choose 6 credit units from the following:

ENG — 100-Level

#### Requirement Two:

- ENG 253.6 Canadian Literature in English
- ENG 255.3 Mapping Canadian Literature

#### Requirement Three:

Choose 12 credit units from the following:

- ENG 242.3 Indigenous Storytelling of the Prairies
- ENG 254.3 Canadian Speculative Fiction
- ENG 294.3 Techniques of Canadian Poetry From Sonnet to Spoken Word
- ENG 305.3 Canadian Fiction from Beginnings to 1960
- ENG 335.3 The Emergence of Indigenous Literature in Canada
- ENG 338.3 Contemporary North American Indigenous Literatures
- ENG 358.3 Canadian Drama
- ENG 359.3 Western Canadian Literature
- ENG 382.3 Canadian Fiction from 1960 to the Present
- ENG 418.3 Topics in 19th Century Canadian Literature
- ENG 466.3 Topics in 20th Century Canadian Literature

Rationale: ENG 255.3 Mapping Canadian Literature is being proposed to replace ENG 253.6 Canadian Literature in English. We find that enrollments have dropped in 6-cu courses, and believe that a 3-cu Canadian Literature course will be an excellent core course for our Canadian Literature in English minor and will provide a solid introduction to our more specialized second-, third-, and fourth-year courses.

#### Cellular, Physiological and Pharmacological Sciences

#### New course(s)

#### **CPPS 417.3 The Business of Health Care**

1/2 (3L)This course will provide an overview of the business-oriented aspects of health care, from the inner workings of the pharmaceutical industry and how business considerations impact the mix of therapies we see approved for sale in the clinic, to issues related to health care administration, including the concepts of opportunity cost and rationing.

Prerequisite(s): PHPY 308.3

Note: It is recommended that students have completed both PHPY 304.3 and 305.3 prior to taking this course.

Instructor: Stan Bardal

Rationale: This course is a reflection of the interests and background of the instructor and fills a unique niche at the U of S.

#### Drama

#### Minor program revisions

# Bachelor of Arts Honours, Double Honours, Four-year and Three-year and Bachelor of Fine Arts in Drama

Add DRAM 111 as a required course in the Major Requirement, and reduce the number of electives by 3cu.

Bachelor of Fine Arts Honours (B.F.A. Honours) - Acting

#### F4 Major Requirement (69 72 credit units)

- DRAM 110.3
- DRAM 111.3
- DRAM 113.3
- DRAM 118.3

- DRAM 119.3
- DRAM 203.3
- DRAM 204.3
- DRAM 210.3
- DRAM 213.3
- DRAM 218.3
- DRAM 219.3
- DRAM 324.3
- DRAM 325.3
- DRAM 362.3
- DRAM 363.3
- DRAM 366.3
- DRAM 368.3
- DRAM 418.3
- DRAM 419.3
- DRAM 462.3
- DRAM 463.3
- DRAM 468.3
- DRAM 469.3

# Choose 3 credit units from the following:

- DRAM 303.3
- DRAM 304.3
- DRAM 309.3
- DRAM 401.3
- DRAM 402.3

# F5 Electives Requirement (24 18 credit units)

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

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

B.F.A. students are encouraged to use these electives for further Drama credit.

# Bachelor of Fine Arts Honours (B.F.A. Honours) - Design

# F4 Major Requirement (63 66 credit units)

- DRAM 110.3
- DRAM 111.3
- DRAM 113.3
- DRAM 118.3
- DRAM 119.3
- DRAM 203.3
- DRAM 204.3
- DRAM 210.3
- DRAM 213.3
- DRAM 220.3

- DRAM 221.3
- DRAM 309.3
- DRAM 320.3 and DRAM 321.3; or DRAM 322.3 and DRAM 323.3
- DRAM 401.3
- DRAM 402.3
- DRAM 420.3
- DRAM 421.3

#### Choose 12 credit units from the following:

- ART 111.6
- ART 112.6
- ART 161.3
- ART 211.6
- ART 212.6
- ART 216.6
- ARTH 120.3
- ARTH 121.3

# F5 Electives Requirement (27 24 credit units)

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

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

B.F.A. students are encouraged to use these electives for further Drama credit.

# Bachelor of Arts Honours (B.A. Honours) - Drama

#### D4 Major Requirement (45 48 credit units)

- DRAM 110.3
- DRAM 111.3
- DRAM 113.3
- DRAM 118.3
- DRAM 119.3
- DRAM 203.3
- DRAM 204.3
- DRAM 210.3 and DRAM 213.3 or DRAM 218.3 and DRAM 219.3
- DRAM 303.3
- DRAM 304.3
- DRAM 309.3
- DRAM 401.3
- DRAM 402.3
- ENG 224.3
- ENG 225.3

Students must also pass an Honours examination set by the Drama Department.

# D5 Electives Requirement (45 12 credit units)

Arts and Science courses, or those from other Colleges which have been approved for Arts and Science credit, to complete the requirements for 120 credit unit Honours program. Of the 120 credit units required at least 66 must be at the 200-level or higher and no more than 60 in one subject.

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

# Bachelor of Arts Four-year (B.A. Four-year) - Drama

#### D4 Major Requirement (36 39 credit units)

- DRAM 110.3
- DRAM 111.3
- DRAM 113.3
- DRAM 118.3
- DRAM 119.3
- DRAM 203.3
- DRAM 204.3
- DRAM 303.3
- DRAM 304.3

# Choose 6 credit units from the following:

- DRAM 210.3
- DRAM 213.3
- DRAM 218.3
- DRAM 219.3
- DRAM 309.3
- DRAM 401.3
- DRAM 402.3

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

- CLAS 227.3
- DRAM 210.3
- DRAM 213.3
- DRAM 218.3
- DRAM 219.3
- DRAM 220.3
- DRAM 221.3
- DRAM 236.3
- DRAM 320.3
- DRAM 321.3
- DRAM 322.3
- DRAM 323.3
- DRAM 330.3
- ENG 224.3
- ENG 225.3
- ENG 288.3
- ENG 314.3
- ENG 327.3

• ENG 358.3

#### D5 Electives Requirement (54 51 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 Four-year program. Of the 120 credit units required at least 66 must be at the 200-level or higher and no more than 60 in one subject.

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

# Bachelor of Arts Three-year (B.A. Three-year) - Drama

## D4 Major Requirement (30 33 credit units)

- DRAM 110.3
- DRAM 111.3
- DRAM 113.3
- DRAM 118.3
- DRAM 203.3
- DRAM 204.3
- DRAM 210.3 or DRAM 213.3
- DRAM 309.3

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

- DRAM 303.3
- DRAM 304.3
- DRAM 401.3
- DRAM 402.3

#### D5 Electives Requirement (30 27 credit units)

Arts and Science courses, or those from other Colleges which have been approved for Arts and Science credit, to complete the requirements for 90 credit unit Three-year program. Of the 90 credit units required at least 42 must be at the 200-level or higher and no more than 42 in one subject.

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

#### Bachelor of Arts Double Honours - Drama - Major 1

#### D4 Major Requirement (36 39 credit units)

- DRAM 110.3
- DRAM 111.3
- DRAM 113.3
- DRAM 118.3
- DRAM 119.3
- DRAM 210.3 or DRAM 213.3

## Choose one of the following options:

## Option 1: Theatre History (21 credit units)

- DRAM 203.3
- DRAM 204.3
- DRAM 303.3
- DRAM 304.3
- DRAM 309.3
- DRAM 401.3
- DRAM 402.3

## Option 2: Acting (21 credit units)

- DRAM 218.3
- DRAM 219.3
- DRAM 324.3
- DRAM 325.3
- DRAM 362.3
- DRAM 366.3
- Choose 3 credit units from the following: DRAM 363.3, DRAM 368.3, or DRAM 418.3

## D5 Electives Requirement (54 51 credit units)

## Major 2 (36 - 42 credit units)

Double Honours requirements in second discipline

## Open Electives (12 – 18 9-15 credit units)

Arts and Science courses, or those from other Colleges which have been approved for Arts and Science credit, to complete the requirements for 120 credit unit Double Honours program. Of the 120 credit units required at least 66 must be at the 200-level or higher and no more than 60 in one subject.

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

## Double Honours - Drama - Major 2

## Requirements (39 42 credit units)

- DRAM 110.3
- DRAM 111.3
- DRAM 113.3
- DRAM 118.3
- DRAM 119.3
- DRAM 210.3 or DRAM 213.3
- ENG 112.3

## Choose one of the following options

## Option 1: Theatre History (21 credit units)

- DRAM 203.3
- DRAM 204.3
- DRAM 303.3
- DRAM 304.3
- DRAM 309.3
- DRAM 401.2
- DRAM 402.3

## Option 2: Acting (21 credit units)

- Choose 3 credit units from the following: DRAM 363.3, DRAM 368.3, or DRAM 418.3
- DRAM 218.3
- DRAM 219.3
- DRAM 318.3
- DRAM 319.3
- DRAM 362.3
- DRAM 366.3

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

Rationale: This change will allow students majoring in Drama to meet the Indigenous Learning requirement by taking DRAM 111. Without making this change, these students would not be able to use this course to meet the requirement.

#### **English**

#### Minor program revisions

## Bachelor of Arts Honours, Double Honours, Four-year and Three-year

Revise the "Further A4 Major Requirements" to require that students take one of ENG 242.3 (Indigenous Storytelling of the Prairies) or ENG 335.3 (The Emergence of Indigenous Literatures in Canada). Replace ENG 253.6 (Canadian Literature in English) with ENG 255.3 (Mapping Canadian Literature) in the Canadian course requirement.

Bachelor of Arts Honours (B.A. Honours) - English

#### A4 Major Requirement (60 credit units)

. . .

## Further A4 Major Requirements:

- (a) 12 of the 54 senior credit units must be at the 300-level
- (b) 12 of the 54 senior credit units must be at the 400-level
- (c) At least 3 credit units from ENG 242.3 or ENG 335.3 to meet the Indigenous Learning requirement

- (d) 3 6 of the 54 senior credit units must be a Canadian course (<u>ENG 242.3</u>, <u>ENG 253.6</u>, ENG 255.3, <u>ENG 254.3</u>, <u>ENG 305.3</u>, <u>ENG 305.3</u>, <u>ENG 338.3</u>, <u>ENG 358.3</u>, <u>ENG 359.3</u>, <u>ENG 382.3</u>, <u>ENG 418.3</u>, ENG 466.3)
- (e) Honours students must enroll in ENG 497.0 in their final year.
- (f) No more than 6 credit units of non-ENG courses may be used to fulfill the Major Requirement.

#### Recommendations

Honours students who contemplate proceeding to graduate studies in the discipline should pay early attention to acquiring skills in a language other than English.

Honours students should make an appointment with the English Department's Undergraduate Chair or advising designate for academic advising.

Bachelor of Arts Four-year (B.A. Four-year) - English

A4 Major Requirement (36 credit units)

. . .

## Further A6 Major Requirements:

- (a) At least 15 of the 30 senior credit units must be at the 300-level
- (b) At least 3 credit units from ENG 242.3 or ENG 335.3 to meet the Indigenous Learning requirement
- (c) At least 3 of the 30 senior credit units must be a Canadian course (<u>ENG 242.3</u>, <u>ENG 253.6</u>, ENG 255.3, <u>ENG 254.3</u>, <u>ENG 294.3</u>, <u>ENG 305.3</u>, <u>ENG 335.3</u>, <u>ENG 338.3</u>, <u>ENG 358.3</u>, <u>ENG 359.3</u>, <u>ENG 382.3</u>, <u>ENG 418.3</u>, <u>ENG 466.3</u>)
- (d) Although not required, 400-level classes may be taken after consultation with the Department's Undergraduate Chair.

Bachelor of Arts Three-year (B.A. Three-year) - English

A4 Major Requirement (30 credit units)

. . .

#### **Further A4 Major Requirements:**

- (a) At least 12 of the 24 senior credit units must be at the 300-level
- (b) At least 3 credit units from ENG 242.3 or ENG 335.3 to meet the Indigenous Learning requirement
- (c) At least 3 of the 24 senior credit units must be a Canadian course (<u>ENG 242.3</u>, <u>ENG 253.6</u>, <u>ENG 255.3</u>, <u>ENG 254.3</u>, <u>ENG 294.3</u>, <u>ENG 305.3</u>, <u>ENG 335.3</u>, <u>ENG 338.3</u>, <u>ENG 358.3</u>, <u>ENG 359.3</u>, <u>ENG 382.3</u>, <u>ENG 418.3</u>, <u>ENG 466.3</u>)

## Bachelor of Arts Double Honours - English - Major 1

#### A4 Major Requirement (36 credit units)

. . .

## Further A4 Major Requirements:

- a) 12 of the required 30 credit units must be at the 300-level
- (b) 6 of the required 30 credit units must be at the 400-level
- (c) At least 3 credit units from ENG 242.3 or ENG 335.3 to meet the Indigenous Learning requirement
- (d) 3 of the required 30 credit units must be a Canadian course (<u>ENG 242.3</u>, <u>ENG 253.6</u>, ENG 255.3, <u>ENG 254.3</u>, <u>ENG 305.3</u>, <u>ENG 305.3</u>, <u>ENG 338.3</u>, <u>ENG 358.3</u>, <u>ENG 359.3</u>, <u>ENG 382.3</u>, <u>ENG 466.3</u>)
- (e) Honours students must enroll in ENG 497.0 in their final year.

#### Recommendations

Honours students who contemplate proceeding to graduate studies in the discipline should pay early attention to acquiring skills in a language other than English.

In order to gain admission to a graduate program in English, students may need to take more English courses than a Double Honours Program requires.

Double Honours - English - Major 2

#### Requirements (36 credit units)

. . .

#### Additional Requirements:

- (a) 12 of the required 36 credit units must be at the 300-level
- (b) 6 of the required 36 credit units must be at the 400-level
- (c) At least 3 credit units from ENG 242.3 or ENG 335.3 to meet the Indigenous Learning requirement
- (d) 3 of the required 30 credit units must be a Canadian course (<u>ENG 242.3</u>, <u>ENG 253.6</u>, ENG 255.3, <u>ENG 254.3</u>, <u>ENG 394.3</u>, <u>ENG 305.3</u>, <u>ENG 335.3</u>, <u>ENG 338.3</u>, <u>ENG 358.3</u>, <u>ENG 359.3</u>, <u>ENG 382.3</u>, <u>ENG 466.3</u>)
- (e) Honours students must enroll in ENG 497.0 in their final year.

#### Recommendations

Honours students who contemplate proceeding to graduate studies in the discipline should pay early attention to acquiring skills in a language other than English.

In order to gain admission to a graduate program in English, students may need to take more English courses than a Double Honours Program requires.

Rationale: This revision will allow students majoring in English to meet the Indigenous Learning requirement by taking one of ENG 242 or 335. Without this change, these students would have to take a non-ENG course to meet this requirement.

ENG 255.3 Mapping Canadian Literature is being proposed to replace ENG 253.6 Canadian Literature in English. We find that enrollments have dropped in 6-cu courses, and believe that a 3-cu Canadian Literature course will provide a good introduction to our more specialized third- and fourth-year courses. It will remain just one of several courses that can be used to fulfill our programs' Canadian Literature requirements.

## New course(s):

## **ENG 255.3 Mapping Canadian Literature**

1/2 (3L) This course investigates works of prose and poetry that map not only geographical place in Canada, but also social and cultural positioning. Areas of study include Canadian regional literatures; explorer-settler perspectives on Canada; Indigenous literatures; Canadian nationalism after Confederation; Canadian manifestations of modernism and postmodernism; and literary contributions by diasporic writers.

Prerequisite(s): 6 credit units of 100-level ENG

Note: Students with credit for ENG 253 or ENG 353 may not take this course for credit.

Instructor(s): Wendy Roy, Kevin Flynn, Francis Zichy, Jeanette Lynes

Rationale: See program revision above.

#### Course deletion(s):

# **ENG 253.6 Canadian Literature in English**

Rationale: See program revision above.

#### **Environment & Society**

# Minor program revisions Bachelor of Arts & Science Honours and Four-year in Environment & Society

Remove BIOL 121.3 from J2 recommended courses; add CMPT 140.3 to J2 recommended courses.

Remove all current J4 requirement categories; add new organization of J4 requirements (21 cu core courses, 54 cu selected from six new categories).

Honours only: Add 3 cu Honours thesis requirement in J4.

Bachelor of Arts and Science Honours (B.A.& Sc. Honours) - Environment & Society Bachelor of Arts and Science Four-year (B.A.& Sc. Four-year) - Environment & Society

#### J2 Science Distribution Requirement (9 credit units)

Choose 9 credit units from the following:

BIOL 121.3 or BIOL 228.3 is recommended

BIOL 228.3 and CMPT 140.3 are recommended

## **Biological Science**

- BIOL 120.3
- BIOL 121.3
- BIOL 228.3

## Chemistry

- CHEM 112.3
- CHEM 115.3
- CHEM 250.3

## Computer Science

- CMPT 140.3
- CMPT 141.3
- CMPT 145.3

## Earth Science

- GEOL 121.3
- GEOL 122.3

#### Mathematics and Statistics

- MATH 116.3
- MATH 164.3

## Physics and Astronomy

- ASTR 113.3
- PHYS 117.3 or PHYS 125.3

Bachelor of Arts and Science Four-year (B.A.& Sc. Four-year) - Environment & Society

## J4 Major Requirement (72 75 credit units)

#### Junior courses:

- GEOG 120.3
- GEOG 125.3
- GEOG 130.3

## Senior courses:

Some course options may require prerequisites that are not listed among the required courses.

- ENVS 401.3
- GEOG 222.3
- GEOG 280.3

- GEOG 302.3
- GEOG 322.3

## Science (24 senior credit units)

At least 9 credit units from the following two categories must be at the 300 level or above.

## Category A - Principles of the Physical Environment

## Choose 21 credit units from the following:

- EVSC 203.3
- TOX 200.3 or TOX 301.3

## Hydrology

- GEOG 225.3
- GEOG 325.3
- GEOG 328.3
- GEOG 427.3

## **Climatology**

- GEOG 233.3
- GEOG 333.3

#### **Vegetation**

- BIOL 228.3
- BIOL 324.3

## Geomorphology

- GEOG 235.3
- GEOG 335.3

#### **Northern Environments**

- GEOG 351.3
- GEOG 380.3

## **Category B - Tools and Applications**

## Choose 3 credit units from the following:

- EVSC 203.3
- GEOG 290.3
- GEOG 420.3
- GEOG 423.3

## Social Sciences or Humanities (24 senior credit units)

## At least 9 credit units must be at the 300 level or above.

- HIST 290.3 or PHIL 226.3
- POLS 226.3
- POLS 256.3 or SOC 232.3

## Choose 15 credit units of the following:

- ANTH 240.3
- ANTH 244.3
- ANTH 329.3
- ECON 277.3
- ENVS 201.3
- GEOG 240.3
- GEOG 340.3
- GEOG 342.3
- GEOG 348.3
- GEOG 364.3
- GEOG 381.3
- GEOG 385.3
- GEOG 386.3
- INCC 310.3
- PLAN 341.3
- POLS 328.3
- Or other courses approved by the program advisor.
- GEOG 120.3
- GEOG 125.3
- GEOG 130.3
- GEOG 222.3
- GEOG 280.3
- GEOG 302.3
- ENVS 401.3

#### Choose 9 credit units from:

- CHEM 375.3
- GEOG 322.3
- GEOG 323.3
- GEOG 420.3
- GEOG 423.3
- SOC 232.3

## Choose 3 credit units from:

- EVSC 203.3
- GEOG 290.3
- GEOG 390.3

#### Choose 3 credit units from:

GEOG 202.3

- GEOG 204.3
- GEOG 208.3

## Choose 3 credit units from:

- PLAN 329.3
- PLAN 341.3
- PLAN 346.3
- PLAN 350.3
- PLAN 360.3
- PLAN 441.3
- PLAN 442.3

## Choose 36 credit units from either Option A or Option B:

Some course options may require prerequisites that are not listed among the required courses.

# Option A - Environmental Change

#### Choose 24 credit units from:

- BIOL 412.3
- ENVS 201.3
- GEOG 225.3
- GEOG 233.3
- GEOG 235.3
- GEOG 325.3
- GEOG 328.3
- GEOG 335.3
- GEOG 351.3
- GEOG 380.3
- GEOG 427.3
- TOX 301.3
- TOX 320.3

#### Choose 12 credit units from:

- ANTH 329.3
- GEOG 150.3
- GEOG 240.3
- GEOG 333.3
- GEOG 348.3
- GEOG 352.3
- GEOG 364.3
- GEOG 381.3
- GEOG 385.3
- GEOG 386.3
- GEOG 464.3
- LAW 444.3
- PHIL 226.3
- POLS 226.3
- SOC 202.3

## **Option B – Environmental Management**

#### Choose 15 credit units from:

- BIOL 412.3
- ENVS 201.3
- GEOG 225.3
- GEOG 233.3
- GEOG 235.3
- GEOG 325.3
- GEOG 328.3
- GEOG 335.3
- GEOG 351.3
- GEOG 380.3
- GEOG 427.3
- TOX 301.3
- TOX 320.3

#### Choose 21 credit units from:

- ANTH 329.3
- GEOG 150.3
- GEOG 240.3
- GEOG 333.3
- GEOG 348.3
- GEOG 352.3
- GEOG 364.3
- GEOG 381.3
- GEOG 385.3
- GEOG 386.3
- GEOG 464.3
- LAW 444.3
- PHIL 226.3
- POLS 226.3
- SOC 202.3

## J5 Electives Requirement (48 15 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.

Bachelor of Arts and Science Honours (B.A.& Sc. Honours) - Environment & Society

J4 Major Requirement (72 78 credit units)

## Junior courses:

GEOG 120.3

- GEOG 125.3
- GEOG 130.3

#### Senior courses:

Some course options may require prerequisites that are not listed among the required courses.

- ENVS-401.3
- GEOG 222.3
- GEOG 280.3
- GEOG 302.3
- GEOG 322.3

Science (24 senior credit units)

At least 9 credit units from the following two categories must be at the 300 level or above.

Category A - Principles of the Physical Environment

Choose 21 credit units from the following:

- EVSC 203.3
- TOX 200.3 or TOX 301.3

## **Hydrology**

- GEOG 225.3
- GEOG 325.3
- GEOG 328.3
- GEOG 427.3

## Climatology

- GEOG 233.3
- GEOG 333.3

## **Vegetation**

- BIOL 228.3
- BIOL 324.3

# Geomorphology

- GEOG-235.3
- GEOG 335.3

## **Northern Environments**

- GEOG 351.3
- GEOG 380.3

# **Category B - Tools and Applications**

## Choose 3 credit units from the following:

- EVSC 203.3
- GEOG 290.3
- GEOG 420.3
- GEOG 423.3

## Social Sciences or Humanities (24 senior credit units)

#### At least 9 credit units must be at the 300 level or above.

- HIST 290.3 or PHIL 226.3
- POLS 226.3
- POLS 256.3 or SOC 232.3

## Choose 15 credit units of the following:

- ANTH 240.3
- ANTH 244.3
- ANTH 329.3
- ECON 277.3
- ENVS 201.3
- GEOG 240.3
- GEOG 340.3
- GEOG 342.3
- GEOG 348.3
- GEOG 364.3
- GEOG 381.3
- GEOG 385.3
- GEOG 386.3
- INCC 310.3
- PLAN 341.3
   POLS 328.3
- Or other courses approved by the program advisor.
- GEOG 120.3
- GEOG 125.3
- GEOG 130.3
- GEOG 222.3
- GEOG 280.3
- GEOG 302.3
- ENVS 401.3

#### Choose 9 credit units from:

- CHEM 375.3
- GEOG 322.3
- GEOG 323.3
- GEOG 420.3
- GEOG 423.3

• SOC 232.3

## Choose **3 credit units** from:

- EVSC 203.3
- GEOG 290.3
- GEOG 390.3

# Choose 3 credit units from:

- GEOG 202.3
- GEOG 204.3
- GEOG 208.3

#### Choose 3 credit units from:

- PLAN 329.3
- PLAN 341.3
- PLAN 346.3
- PLAN 350.3
- PLAN 360.3
- PLAN 441.3
- PLAN 442.3

## Choose **36 credit units** from either Option A or Option B:

Some course options may require prerequisites that are not listed among the required courses.

# **Option A – Environmental Change**

• GEOG 490.3

## Choose 24 credit units from:

- BIOL 412.3
- ENVS 201.3
- GEOG 225.3
- GEOG 233.3
- GEOG 235.3
- GEOG 325.3
- GEOG 328.3
- GEOG 335.3
- GEOG 351.3
- GEOG 380.3
- GEOG 427.3
- TOX 301.3
- TOX 320.3

## Choose 12 credit units from:

- ANTH 329.3
- GEOG 150.3
- GEOG 240.3
- GEOG 333.3
- GEOG 348.3
- GEOG 352.3
- GEOG 364.3
- GEOG 381.3
- GEOG 385.3
- GEOG 386.3
- GEOG 464.3
- LAW 444.3
- PHIL 226.3
- POLS 226.3
- SOC 202.3

## **Option B – Environmental Management**

• GEOG 491.3

## Choose 15 credit units from:

- BIOL 412.3
- ENVS 201.3
- GEOG 225.3
- GEOG 233.3
- GEOG 235.3
- GEOG 325.3
- GEOG 328.3
- GEOG 335.3
- GEOG 351.3
- GEOG 380.3
- GEOG 427.3
- TOX 301.3
- TOX 320.3

## Choose 21 credit units from:

- ANTH 329.3
- GEOG 150.3
- GEOG 240.3
- GEOG 333.3
- GEOG 348.3
- GEOG 352.3
- GEOG 364.3
- GEOG 381.3
- GEOG 385.3
- GEOG 386.3
- GEOG 464.3LAW 444.3

- PHIL 226.3
- POLS 226.3
- SOC 202.3

## J5 Electives Requirement (48 12 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.

Rationale: These program changes represent a wholesale change to the organization of the J4 Major Requirements in the Environment & Society program (both 4YR and Hons.). Generally, the changes update the required and optional courses to include new courses applicable to the program and remove courses no longer offered or not applicable to the proposed program options. GEOG 222.3 and GEOG 280.3 continue to serve as integrative interdisciplinary courses, and ENVS 401.3 add to this category. GEOG 322.3 is an optional, interdisciplinary course which students may choose as part of the major. All students will be required to complete 21 credit units of "core" courses. Students will then choose between two "options": the Environmental Change option features a stronger requirement for science courses, with the intention to focus learning on the process and pattern of Earth's changing environments; the Environmental Management option features a stronger requirement for social science courses, with the intention to focus learning on human involvement in environmental decision making. It is important to note here that both options retain a strong interdisciplinary flavour, and students in both options are required to take a suite of science and social science courses. There are no difference between the courses offered in each option, only the number of credit units required from each subcategory.

Subcategories within each option group courses into 6 groups - science, social science, technical, fieldwork, regional, and planning - each with specific credit requirements. The required credit units from the remaining subcategories are the same between the 2 options. This is intended to simplify course selection for students and promote organization and progression through the program. It is also anticipated that these changes will alleviate some pressures on popular courses with limited enrollment. The Honours program also adds a required Honours thesis course, with a focus consistent with the option selected.

An additional change to the recommended courses in J2 to remove BIOL 121.3 and add CMPT 140.3 is in response to an increased desire for students with a stronger computer science background in senior level GEOG courses.

GEOG 302 is now counted among the science course options, which is appropriate given that the current delivery of this course is focused on data science in particular to the discipline of geography. These changes do not require any new courses to be developed, nor do we anticipate any significant impacts on existing courses.

## **Food Science**

#### Minor program revisions

## Bachelor of Science Honours and Four-year in Food Science

Add FABS 211.3 to the Major Requirement C6, which will increase by 3 credit units. Reduce Electives Requirement C7 will be reduced by 3 credit units to compensate.

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

C6 Major Requirement (54 57 credit units)

- <u>BLE 303.3</u> 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 325.3 Food Microbiology and Safety
- FABS 345.3 Unit Operations in Food Processing
- FABS 417.3 Food and Bioproducts Analysis
- 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 Physicochemical Properties of Food Macromolecules
- 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 Evaluation of Food
- FABS 493.3 Product Development
- Other courses at the discretion of the undergraduate student advisor

C7 Electives Requirement (21 24 credit units)

## Required Cognate Courses (9 credit units)

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

- <u>CHEM 221.3</u> Analytical Chemistry I or <u>CHEM 231.3</u> Inorganic Chemistry I or <u>CHEM 242.3</u> Thermodynamics and Kinetics or <u>CHEM 255.3</u> Bio Organic Chemistry
- NUTR 120.3 Basic Nutrition
- STAT 245.3 Introduction to Statistical Methods or PLSC 214.3 Statistical Methods

## Open Electives (12 45 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 must be at the 200-level or higher. Students are encouraged to choose from the following list of recommended courses.

- 200 and 300-level NUTR courses (<u>NUTR 221.3</u> Advanced Nutrition Micronutrients, <u>NUTR 305.3</u>Research Methods, <u>NUTR 310.3</u> Food Culture and Human Nutrition, <u>NUTR 321.3</u> Advanced Nutrition Macronutrients and Energy, and <u>NUTR 322.3</u> Nutrition Throughout the Lifespan recommended)
- AREC 292.3
- BIOC 310.3 Proteins and Enzymes
- BIOL 226.3 Genes to Genomics (formerly BIOL 211)
- BMSC 230.3 Metabolism
- BMSC 240.3 Laboratory Techniques
- CHEM 115.3 General Chemistry II Chemical Processes
- CHEM 221.3 Analytical Chemistry I
- CHEM 231.3 Inorganic Chemistry I
- <u>CHEM 242.3</u> Thermodynamics and Kinetics (if not taken as part of C6 or as a required cognate course)
- CHEM 255.3 Bio Organic Chemistry
- <u>COMM 204.3</u> Introduction to Marketing or <u>AREC 230.3</u> Innovation and Entrepreneurship or <u>ENT 210.3</u>Marketing for Entrepreneurial Ventures
- Other courses at the discretion of the undergraduate student advisor.

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

#### Bachelor of Science Four-year (B.Sc. Four-year) - Food Science

C6 Major Requirement (36-39 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 325.3 Food Microbiology and Safety
- FABS 345.3 Unit Operations in Food Processing
- FABS 417.3 Food and Bioproducts Analysis
- FABS 452.3 Quality Assurance and HACCP
- FABS 492.3 Literature Thesis

C7 Electives Requirement (39 42 credit units)

## Required Cognate Courses (9 credit units)

## Choose 9 credit units from the following:

- NUTR 120.3 Basic Nutrition
- STAT 245.3 Introduction to Statistical Methods or PLSC 214.3 Statistical Methods

<u>CHEM 221.3</u> Analytical Chemistry I or <u>CHEM 231.3</u> Inorganic Chemistry I or <u>CHEM 242.3</u> Thermodynamics and Kinetics or <u>CHEM 255.3</u> Bio Organic Chemistry

## Open Electives (33 30credit 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 Four-year program, of which at least 66 must be at the 200-level or higher. Students are encouraged to choose from the following list of recommended courses:

- 200 and 300-level NUTR courses (<u>NUTR 221.3</u> Advanced Nutrition Micronutrients, <u>NUTR 305.3</u>Research Methods, <u>NUTR 310.3</u> Food Culture and Human Nutrition, <u>NUTR 321.3</u> Advanced Nutrition Macronutrients and Energy, and <u>NUTR 322.3</u> Nutrition Throughout the Lifespan recommended)
- AREC 292.3
- BMSC 240.3 Laboratory Techniques
- 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
- CHEM 255.3 Bio Organic Chemistry
- <u>COMM 204.3</u> Introduction to Marketing or <u>AREC 230.3</u> Innovation and Entrepreneurship or <u>ENT 210.3</u>Marketing for Entrepreneurial Ventures
- 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 Physicochemical Properties of Food Macromolecules
- 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 Evaluation of Food
- FABS 493.3 Product Development
- PLSC 420.3 Grain Chemistry and Technology
- Other courses at the discretion of the undergraduate student advisor

Rationale: FABS 211.3 (Introductory Bioproduct Science) is currently a required course in our B.S.A. Food and Bioproduct Science degree core, due to its foundational content in the area of agricultural and microbial bioproducts. Since there are significant similarities between our Food and Bioproduct Science /B.S.A. and Food Science/Arts & Science degree programs, we believe this course is essential to the core of both programs. We consequently propose to add this course to C6 category of our B.Sc. 4-yr Food Science program degree core as a "major requirement". We similarly will add it to our B.Sc. Honours degree in Food Science as a C6 category as a major requirement as well.

#### **Geophysics**

## Minor program revisions

# Bachelor of Science Honours and Four-year in Geophysics

This change is a result of prerequisite changes to MATH 266. Currently, MATH 266 is a C7 Cognate requirement of the Geophysics Programs. As a result of changes, MATH 266 now requires MATH 164 as a prerequisite which is not in the Geophysics Programs. In order to accommodate this change, we are dropping MATH 266 from the requirements for the Geophysics program and adding MATH 164. Geophysics students will still be getting exposure to linear algebra but not at the same level as previously.

#### Bachelor of Science Honours (B.Sc. Honours) - Geophysics

#### C7 Electives Requirement (30-33 credit units)

Students following the Geophysics program should seek advice from a geophysics program advisor so that electives can be chosen to satisfy the Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS) standards for registration as a Professional Geoscientist.

#### **Required Cognate Courses**

Choose 15 credit units from the following:

- EP 320.3
- MATH 164.3 MATH 266.3
- MATH 331.3 & MATH 339.3
- PHYS 356.3 or EE 301.3

#### Open Electives (15-18 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 must be at the 200-level or higher.

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

Bachelor of Science Four-year (B.Sc. Four-year) - Geophysics

#### C7 Electives Requirement (30-33 credit units)

Students following the Geophysics program should seek advice from a geophysics program advisor so that electives can be chosen to satisfy the Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS) standards for registration as a Professional Geoscientist.

## **Required Cognate Courses**

Choose 9 credit units from the following:

- EP 320.3
- MATH 164.3 MATH 266.3
- PHYS 356.3 or EE 301.3

## Choose 3 credit units from the following:

• 200-Level, 300-Level, 400-Level courses in science

#### Open Electives (18-21 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 Four-year program, of which at least 66 must be at the 200-level or higher.

Students are advised to take MATH 331.3 & MATH 339.3

Rationale: Accommodation for the changes in MATH classes.

## **Health Studies**

#### Minor program revisions

## Bachelor of Arts and Science Honours and Four-year in Health Studies

Remove ENG 242.3 from list #6 in the Major Requirement, for all 3 streams.

<u>Bachelor of Arts and Science Honours (B.A.&Sc. Honours) - Health Studies - Biology, Development and Health</u>

<u>Bachelor of Arts and Science Honours (B.A.&Sc. Honours) - Health Studies - Individual, Society and Health</u>

Bachelor of Arts and Science Honours (B.A.&Sc. Honours) - Health Studies - Culture, Environment and Health

Bachelor of Arts and Science Four-year (B.A.&Sc. Four-year) - Health Studies- Biology, Development and Health

Bachelor of Arts and Science Four-year (B.A.&Sc. Four-year) - Health Studies- Individual, Society and Health

Bachelor of Arts and Science Four-year (B.A.&Sc. Four-year) - Health Studies- Culture, Environment and Health

#### J4 Major Requirement

## 6. Choose 6 credit units from the following Health Studies Arts courses:

At least 3 credit units chosen to fulfill requirements 4, 5 or 6 must be at the 300-level or higher. PHIL 234 is strongly recommended for all students.

- ANTH 231.3
- ANTH 332.3
- ANTH 403.3
- ANTH 480.3
- ARCH 270.3
- ARCH 470.3
- ARCH 471.3
- ARCH 472.3
- ECON 234.3
- ENG 242.3
- GEOG 364.3
- GEOG 464.3

- HIST 253.3
- HIST 303.3
- •
- SOC 420.3
- SOC 421.3
- SOC 428.3

Rationale: Removing this class from the Major requirement will allow it to be included in the Indigenous Learning requirement, providing students more variety in that requirement.

## **History**

#### New course(s):

## HIST 195.3 History Matters Indigenous Perspectives on Canadian History

1/2(2L-1S) This course addresses and challenges settler-colonialism from Indigenous perspectives. It examines Indigenous societies, with specific focus on Plains communities in what became Canada. We focus on a broad historical span from the distant past to the early twentieth century. Drawing on Indigenous voices and perspectives, the course focuses on how historic and ongoing events and structures have displaced Indigenous peoples from their lands, forced change and re-enforced continuity for Indigenous peoples, while simultaneously highlighting the way Indigenous peoples have shaped those events and structures.

Note: Attention: A maximum of nine credit units of 100-level HIST may be taken for credit. Only sic of these credit units may count toward a History major or minor. The remaining three credit units will count as a junior elective in Requirement 7. Students who take one version of this course may not take a second version of it. To see which specific topic(s) will be offered each term, click on the CRN for each lecture in the Class Search to see the specific description for that class.

Instructor(s): Cheryl Troupe

Rationale: Improves the department's offerings in the field, reflects the research interests of the instructor, and responds to student demands. This course will also be submitted to the college to be part of the Indigenous Requirement. If approved for inclusion, a program revision will follow.

#### **HIST 311.3 Mapping History**

1/2(1.5L-1.5S) This course focuses on the methods, approaches, and research of scholars who merge a historian's interest in time with geographer's interest in place and space. It will provide students with an overview of the potential and challenges this kind of research poses and provide them with the technical expertise necessary to conduct research of their own in this field of study. The course is organized in a series of thematic topics aimed at demonstrating the applicability of Historical GIS and other spatial history approaches at the local, regional, national, and transnational scales.

Prerequisite(s): 3 credit units 200-level HIST courses, or 60 credit units of university studies, or at the permission of the instructor

Instructor(s): Benjamin Hoy

Rationale: The department has a specialisation in GIS mapping and this class builds on classes in that field at a 200 and 400 level. It also adds to our growing course offering on historical methodology.

#### Course deletion(s):

## HIST 251.3 History of the Civil War in the US

Rational: The faculty member who taught this course left the university some years ago and no-one else can or wants to teach the course.

## HIST 330.3 Humanist Thought in Renaissance Italy

Rationale: Faculty member who taught this course is no longer at the university and there is no one else who specialises in this area.

## **Hydrology**

# Minor program revisions Bachelor of Science Honours and Four-year in Hydrology

Add a Co-Operative Education Option to the BSc 4YR and BSc Hons Hydrology programs.

## **Co-operative Education Option**

This five-year program is available to students in the B.Sc. Four-year and Honours programs. Entrance Requirements for Hydrology majors:

Students must hold a Cumulative Weighted Average of 70% or higher (or have permission of the department) and must have completed no fewer than 54 and no more than 84 credit units of course work. To qualify for participation in the Co-operative Education Program, students must have successfully completed the following courses: GEOG 120.3 or GEOL 121.3, GEOG 222.3, GEOG 225.3 or GEOG 290.3; PHYS 115.3; STAT 245.3 or PLSC 214.3; MATH 110.3; 9 credit units of electives in the sciences (CMPT 141.3 is recommended).

Satisfactory completion of each work term is required prior to registration in the next work term. Each work term is graded on a Pass/Fail basis. Courses are taken in the following sequence: University courses (54 to 84 credit units), two years or more; Work placement GEOG 272.0, summer (May to August); Work placement GEOG 372.0, Term 1 (September to December); University courses (partial third year), Term 2 (January to April); Work placement GEOG 373.0, summer (May to August); University courses (remainder of third year), Term 1 (September to December); Work placement GEOG 472.0, Term 2 (January to April); Work placement GEOG 473.0 (if desired), summer (May to August); University courses (fourth year), Term 1 and 2 (September to April).

Rationale: The addition of a co-operative education option to the 4YR and Honours programs in Hydrology provides students with the opportunity to enhance their program primarily through experiential learning. The co-op option was included in Environmental Earth Sciences programs, which was the precursor to the Hydrology program. Anecdotal evidence speaks to the positive learning experiences of students participating in co-op placements.

#### **Indigenous Studies**

#### New course(s):

## INDG 454.3 Resistance and Resurgence in the International Indigenous World

(SP/SU) The Department of Indigenous Studies, in collaboration with Swinburne University of Technology, the University of North Carolina at Pembroke, and the University of Hawaii, offer this field-based experiential learning course that rotates location yearly between Saskatchewan, Australia, North Carolina, and Hawaii. Designed to bring together Indigenous studies students from around the world, this course explores the many ways in which Indigenous peoples in the host country experience colonization and how their resistance has led to a contemporary Indigenous resurgence. Students from these institutions to learn from local Elders, knowledge keepers, and community members in a variety of field-based learning activities.

Prerequisite(s): 12 credit units INDG courses

Note: Students with credit for INDG 498.3 Remembering Resistance: Memory, History, and Indigenous Resurgence or INDG 498.3 Remembering Resistance: Australia may not take this course for credit. Costs in addition to tuition may apply to this course. Please contact the Department for details. Instructor(s): Winona Wheeler

Rationale: This course was created in partnership with 3 international universities that will act to contribution to the department's goals to provide our students with experiential learning opportunities and to increase internationalization.

## **Interactive Systems Design**

# Minor program revisions Bachelor of Arts and Science Four-year in Interactive Systems Design

Add one more unspecified senior Computer Science course to the Major Requirement, move PHIL 232.3 to the Arts Requirement section of the Major Requirement, and reduce by one course the number of required electives under the Electives requirements.

Bachelor of Arts and Science Four-year (B.A. & Sc. Four-year) - Interactive Systems Design

J3 Major Requirement (54 57 credit units)

## Science Requirement (30 credit units)

- <u>CMPT 270.3</u> Developing Object-Oriented Systems
- CMPT 281.3 Website Design and Development
- CMPT 381.3 Implementation of Graphical User Interfaces
- CMPT 406.3 Game Design Workshop or CMPT 405.3 Project Design and Implementation
- CMPT 481.3 Human Computer Interaction
- PHIL 232.3 Ethics and Professional Responsibility in Computer Science

## Choose 42 15 credit units from the following:

At least 3 credit units must be chosen at the 300-level or above

- Appropriate Special Topics courses may also be available in some terms.
- <u>CMPT 214.3</u> Programming Principles and Practice, <u>CMPT 352.3</u> An Introduction to Information Security, <u>CMPT 353.3</u> Full Stack Web Programming, <u>CMPT 370.3</u> Intermediate Software Engineering, and <u>CMPT 394.3</u> Simulation Principles are recommended choices.
- CMPT 200-Level, 300-Level, 400-Level

## Art Requirement (24 27 credit units)

PHIL 232.3 Ethics and Professional Responsibility in Computer Science

## Choose one of the following options:

- ART 211.6 Painting and Related Work II and ART 311.6 Painting and Related Work III
- ART 212.6 Drawing and Related Work II and ART 312.6 Drawing and Related Work III
- ART 214.6 Sculpture and Related Work, or (ART 241.3 Sculpture and Related Work II A and ART 242.3 Sculpture and Related Work II B); and ART 341.3 Sculpture and Related Work III A and 3 credit units senior ART or ARTH courses
- ART 216.6 Photography II and ART 316.6 Photography III.
- ART 236.3 Digital and Integrated Practice II A and ART 237.3 Digital and Integrated Practice II B and ART 338.3 Digital and Integrated Practice III A; and ARTH 250.3 Introduction to Visual Culture or ARTH 251.3 Art of the Internet
- ART 251.3 Intermediate Printmaking and ART 313.6 Printmaking III and 3 credit units senior ART or ARTH courses
- ARTH 250.3 Introduction to Visual Culture or <u>ARTH 251.3</u> Art of the Internet; and 9 credit units senior ARTH courses including at least 3 credit units at the 300-level or above.

## Choose 9 credit units from the following:

- PSY 213.3 Child Development
- PSY 214.3 Adolescent Development
- PSY 216.3 Psychology of Aging
- PSY 226.3 Individual Processes in Social Psychology
- PSY 252.3 Perceptual Processes
- PSY 253.3 Introduction to Cognitive Psychology
- PSY 255.3 Human Memory
- PSY 256.3 Psychology of Language

## Choose 3 credit units from the following:

<u>ARTH 250.3</u> Introduction to Visual Culture may only be chosen to fulfill this requirement if not taken as part of the ART/ARTH requirements above.

- ARTH 250.3 Introduction to Visual Culture
- HIST 284.3 Society and Rise of Science from the Industrial Revolution to 20th Century
- PHIL 236.3 Ethics and Technology
- SOC 244.3 Sociology of Mass Media in Canada
- SOC 246.3 Ideology and Mass Communication
- WGST 201.3 Images of Gender and Sexuality in Popular Culture

#### J4 Electives Requirement (30 27 credit units)

## **Required Cognate Courses (6 credit units)**

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

## Open Electives (24 21 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 4-year program subject to the condition that not more than 54 credit units may be at the junior level; at least 66 credit units must be at the 200 or higher level.

Rationale: Number of required Science courses for the degree was 1 short of conforming to degree program rules for a Bachelor of Arts & Science degree.

#### Linguistics

## Minor program revisions

#### Bachelor of Arts Honours, Four-year and Three-year in Linguistics

Add LING 253 as a required course, lowering the amount of unspecified LING courses in the major. For the Language and Speech Sciences stream only, remove research methods/statistical analysis requirement from the major. This is replaced by the newly introduced Quantitative requirement, which has been tailored to include courses appropriate to this major.

## Bachelor of Arts Honours (B.A. Honours) - Linguistics

## **B4 Major Requirement (54 credit units)**

No more than 12 credit units at the 100-Level may be used to satisfy the Major Requirements.

- LING 111.3
- One of LING 110.3, LING 112.3, or LING 113.3
- LING 253.3 (Indigenous Languages of Canada)
- LING 403.3
- LING 478.3

Choose 24 18 credit units from the following:

- LING 200-Level, 300-Level, 400-Level
- LING 110.3 (The 100-level LING courses are included as options, not required courses)

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

...

Bachelor of Arts Four-year (B.A. Four-year) - Linguistics - General and Applied Linguistics Stream

## **B4 Major Requirement (42 credit units)**

- LING 111.3
- One of LING 110.3, LING 112.3, or LING 113.3
- LING 253.3 (Indigenous Languages of Canada)

Choose 24 18 credit units from the following:

- LING 200-Level, 300-Level, 400-Level
- LING 110.3 (The 100-level LING courses are included as options, not required courses)

Choose 15 credit units from the following:

• • •

Bachelor of Arts Four-year (B.A. Four-year) - Linguistics - Language and Speech Sciences Stream

## **B1 College Requirement (9 credit units)**

## **English Language Writing**

Choose 3 credit units from the following:

Approved list

## **Quantitative Reasoning**

Choose 3 credit units from the following:

- CMPT 140.3
- PSY 233.3
- STAT 244.3
- STAT 246.3

## **B4 Major Requirement (42 credit units)**

- LING 111.3
- One of <u>LING 110.3</u>, <u>LING 112.3</u>, or <u>LING 113.3</u>

## Part A. Linguistics courses requirement:

- LING 241.3
- LING 242.3
- LING 243.3 or LING 340.3
- LING 253.3 (Indigenous Languages of Canada)
- LING 343.3
- LING 370.3

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

LING 403 is recommended for students who plan to apply to Graduate School.

• LING — 200-Level, 300-Level, 400-Level

## Part B. Cognate disciplines requirement:

#### 15 12 credit units as follows:

- 3 credit units Child Development PSY 213.3
- 3 credit units Psychology selected from: PSY 252.3, PSY 253.3, PSY 256.3
- 3 credit units Neuroanatomy or Neuropsychology selected from: <u>PSY 242.3</u>, <u>PSY 246.3</u>; or 3 credit units 200-level, 300-Level, or 400-Level LING
- 3 credit units research methods or statistical analysis selected from <u>LING 403.3</u> Research
  Methods in Linguistics; <u>PSY 233.3</u> Statistical Methods in Behavioural Sciences, <u>PSY 234.3</u>
  Statistical Methods in Behavioural Sciences, <u>PSY 235.3</u> Research Methods and Design; <u>STAT 242.3</u> Statistical Theory and Methodology, <u>STAT 244.3</u> Elementary Statistical Concepts, <u>STAT 245.3</u> Introduction to Statistical Methods <u>STAT 246.3</u> Introduction to Biostatistics

## Choose **3 senior LING credit units** from the following:

- 200-Level, 300-Level or 400-Level LING Courses or
- ACB 310.3; ACB 334.3; BIOL 224.3; BIOL 317.3

<sup>\*</sup> Students are advised to monitor the entrance requirements for SLP/Audiology programs for which they intend to apply. If their chosen program requires biology/anatomy courses, these should be chosen in their undergraduate program. If the chosen undergraduate program contains no such requirements, students are recommended to take 3 additional credit units senior LING instead.

#### Bachelor of Arts Three-year (B.A. Three-year) - Linguistics

#### **B4 Major Requirement (36 credit units)**

- LING 111.3
- One of <u>LING 110.3</u>, <u>LING 112.3</u>, or <u>LING 113.3</u>
- LING 253.3 (Indigenous Languages in Canada)

## Choose 48 15 credit units from the following:

- LING 200-Level, 300-Level, 400-Level
- LING 110.3 (The 100-level LING courses are included as options, not required courses)

## Choose 12 credit units from the following:

. . .

Rationale: Adding LING 253 as a required course will allow students majoring in Linguistics to meet the Indigenous Learning requirements within the Major requirement. Without these changes, these students would be required to take non-LING courses to meet these requirements. The additional change to the Language and Speech Sciences stream reduces duplication between the new Quantitative requirement and courses required in the major.

## **Mathematics**

#### Minor program revisions

#### **Bachelor of Science four-year and Three-year in Mathematics**

Major Requirement (C6): Revise to require both of MATH 164 and MATH 266; require one of MATH 226 or 277; add CMPT 141 as an alternate to MATH 211; remove all STAT courses except STAT 242. Electives Requirement (C7): Reduce credit units by 3 to accommodate addition to C6. Four-year program only: Add lists of courses by category to help students select courses according to their interests.

## Bachelor of Science Four-year (B.Sc. Four-year) - Mathematics

## C6 Major Requirement (36 39 credit units)

- MATH 163.3 Introduction to Mathematical Reasoning
- MATH 164.3 Introduction to Linear Algebra (formerly MATH 264.3) or MATH 266.3 Linear Algebra II
- MATH 266.3 Linear Algebra II
- STAT 241.3 Probability Theory

## Choose 3 credit units from the following:

- MATH 225.3 Intermediate Calculus I
- MATH 276.3 Vector Calculus I (recommended)

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

- MATH 226.3 Intermediate Calculus II
- MATH 277.3 Vector Calculus II (recommended)

Chose the remaining 24 21 credit units from the following, using the following rules:

Choose at least 12 credit units that are at the 300-level or higher. In total, at least 24 of the 36 senior credit units required for the major must be designated MATH. Courses in mathematics and statistics at the 200-level other than those listed in this section are not acceptable as part of a major in mathematics.

- 300-Level or 400-Level MATH Courses
- 300-Level or 400-Level STAT Courses
- MATH 211.3 Numerical Analysis I (Students contemplating Honours should take this course) or CMPT 141.3 Introduction to Computer Science
- MATH 226.3 Intermediate Calculus II
- MATH 238.3 Introduction to Differential Equations (Students contemplating Honours should take this course)
- MATH 258.3 Euclidean Geometry
- MATH 266.3 Linear Algebra II
- MATH 277.3 Vector Calculus II
- STAT 242.3 Statistical Theory and Methodology

Students with interest in the following areas are recommended to take the courses below as part of their C6 Requirements:

## Computational Mathematics

- MATH 211.3
- MATH 238.3
- MATH 313.3
- MATH 314.3
- MATH 439.3

## **Discrete Mathematics**

- MATH 325.3
- MATH 327.3
- MATH 328.3
- MATH 364.3
- MATH 485.3

## **Pure Mathematics**

- MATH 238.3
- MATH 361.3
- MATH 362.3
- MATH 371.3
- MATH 379.3

## C7 Electives Requirement (45 42 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 Four-year program, of which at least 66 must be at the 200-level or higher.

Bachelor of Science Three-year (B.Sc. Three-year) - Mathematics

C6 Major Requirement (24 27 credit units)

- MATH 163.3 Introduction to Mathematical Reasoning
- MATH 164.3 Introduction to Linear Algebra (formerly MATH 264.3) or MATH 266.3 Linear Algebra II
- MATH 266.3 Linear Algebra II
- STAT 241.3 Probability Theory

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

- MATH 225.3 Intermediate Calculus I
- MATH 276.3 Vector Calculus I (recommended)

## Choose 3 credit units from the following:

- MATH 226.3 Intermediate Calculus II
- MATH 277.3 Vector Calculus II (recommended)

Choose the remaining 42 9 credit units from the following, using the following rules:

At least 6 credit units must be at the 300-level or higher. Courses in mathematics and statistics at the 200-level other than those listed in this section are not acceptable as part of a major in mathematics.

Students contemplating Honours should take MATH 211 and MATH 238, and MATH 277.

- 300-Level or 400-Level MATH Courses
- MATH 211.3 Numerical Analysis I (Students contemplating Honours should take this course) or CMPT 141.3 Introduction to Computer Science
- MATH 226.3 Intermediate Calculus II
- MATH 238.3 Introduction to Differential Equations (Students contemplating Honours should take this course)
- MATH 258.3 Euclidean Geometry
- MATH 266.3 Linear Algebra II
- MATH 277.3 Vector Calculus II (Students contemplating Honours should take this course)
- STAT 242.3 Statistical Theory and Methodology

## C7 Electives Requirement (27 24 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 the 90 credit unit Three-year program, of which at least 42 must be at the 200-level or higher.

Rationale: The changes made above are in line with the previous changes to the Honours program. We will now require all of our students in our programs to have the same set of core courses: MATH 163, MATH 176 (or MATH 110), MATH 177 (or MATH 116), MATH 164, MATH 266, MATH 276 (or MATH 225), MATH 277 (or MATH 226), STAT 241. These changes are in line with the updated pre-requisite changes made in past years. These changes necessitated modifying the number of required credits in C6 and C7.

Students may take both of CMPT 141 and MATH 211 for credit, but only one can be counted toward the major requirements.

Statistics courses other than STAT 242 can no longer be used to meet the C6 requirement of the three-year and four-year degree. Due to the limited number of credits in C6 for which students may choose any course, the department feels it appropriate that for a math degree, each of these courses should be in mathematics.

#### Music

#### **Deletion of concentrations**

## **Bachelor of Music – Composition and Theory; and Musicology concentrations**

Rationale: This proposal is to delete the concentrations in **Composition and Theory**, and in **Musicology** only. (The Bachelor of Music degree will remain, with the Performance (Honours) and Individualized concentrations. As well, the BMus-MusEd programs remain unchanged.)

Each of the concentrations proposed for deletion has not accepted students for many years, starting in 2012-13, and the department does not have the resources available to offer the courses needed to revive a specific concentration in either area.

The department is in the process of revitalizing teaching in the area of composition, and will work with students to develop their training in this area, in either the BA in Music or in the BMus Individualized program options. Using these existing and more flexible program options will allow students the freedom to pursue their areas of interest, while also allowing the department to offer an array of courses relevant to the research and performance areas of faculty members.

In its current form, the BMus Individualized provides students wishing to pursue graduate degrees in musicology or in music theory with the necessary skillsets.

No active students are currently pursuing either of these concentrations. Deletion of these concentrations is not anticipated to have any internal or external impact.

## **Palaeobiology**

## Minor program revisions

#### Bachelor of Science Honours and Four-year in Palaeobiology

Add GEOL 442.3 (Sedimentary Petrology) and GEOL 447.3 (Ichnology) to Category C lists, and add GEOL 448.3 (Sequence Stratigraphy) and GEOL 450.3 (Limnolgeology) to the Category C list in the Honours program.

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

#### C6 Major Requirement (48 credit units)

- <u>BIOL 222.3</u> (formerly BIOL 205)
- BIOL 224.3 or PBIO 230.3
- GEOL 206.3
- GEOL 245.3
- GEOL 247.3

Choose 33 credit units to be selected from Categories A, B, C, and D, such that at least 18 credit units are chosen at the 300-400 level, of which at least 12 credit units must be at the 400-level. Students must complete a minimum of 6 credit units from each of Categories A, B, and C.

#### Category A

Choose minimum 6 credit units from the following:

- ARCH 250.3
- ARCH 251.3
- ARCH 270.3
- ARCH 361.6

- ARCH 458.6
- ARCH 459.3
- ARCH 462.3
- ARCH 470.3
- ARCH 471.3

## **Category B**

Choose minimum 6 credit units from the following:

- <u>BIOL 226.3</u> (formerly BIOL 211)
- <u>BIOL 228.3</u> (formerly BIOL 253)
- BIOL 302.3 (formerly BIOL 263)
- BIOL 302.3 (formerly BIOL 401)
- BIOL 323.3
- BIOL 324.3
- BIOL 325.3
- BIOL 326.3
- BIOL 361.3
- BIOL 451.3
- BIOL 455.3
- BIOL 458.3

## **Category C**

Choose minimum 6 credit units from the following:

- GEOL 308.3
- GEOL 343.3
- GEOL 442.3
- GEOL 446.3
- GEOL 447.3
- GEOL 448.3
- GEOL 450.3

## **Category D**

- GEOL 490.3
- GEOL 492.6
- PBIO 489.6

Bachelor of Science Four-year (B.Sc. Four-year) - Palaeobiology

## C6 Major Requirement (48 credit units)

- <u>BIOL 222.3</u> (formerly BIOL 205)
- BIOL 224.3 or PBIO 230.3
- GEOL 206.3
- GEOL 245.3
- GEOL 247.3

Choose 33 credit units to be selected from Categories A, B, C, and D, such that at least 18 credit units are chosen at the 300-400 level, of which at least 12 credit units must be at the 400-level. Students must complete a minimum of 6 credit units from each of Categories A, B, and C.

## **Category A**

Choose minimum 6 credit units from the following:

- ARCH 250.3
- ARCH 251.3
- ARCH 270.3
- ARCH 361.6
- ARCH 458.6
- ARCH 459.3
- ARCH 462.3
- ARCH 470.3
- ARCH 471.3

## Category B

Choose minimum 6 credit units from the following:

- BIOL 226.3 (formerly BIOL 211)
- BIOL 228.3 (formerly BIOL 253)
- <u>BIOL 302.3</u> (formerly BIOL 263)
- <u>BIOL 302.3</u> (formerly BIOL 401)
- BIOL 323.3
- BIOL 324.3
- BIOL 325.3
- BIOL 326.3
- BIOL 361.3
- BIOL 451.3
- BIOL 455.3
- BIOL 458.3

## **Category C**

Choose minimum 6 credit units from the following:

- GEOL 308.3
- GEOL 343.3
- GEOL 442.3
- <u>GEOL 446.3</u>
- GEOL 447.3
- GEOL 448.3
- GEOL 450.3

## Category D

- GEOL 490.3
- GEOL 492.6
- PBIO 489.6

Rationale: These new courses deal with Sedimentary Petrology and Ichnology. Both will be extremely useful for Paleobiology students. Geol 442.3 will provide the students with the conceptual and methodological tools needed to describe and interpret sedimentary rocks. Geol 447.3 deals with animal-substrate interactions and will allow the students to become familiar with a multidisciplinary field having broader implications for understanding the history of life.

Adding GEOL 448.3 and GEOL 450.3 to the Category C list in the Honours program will align the lists for the two levels, making it easier for students to switch from the Four-year to the Honours program.

## **Political Studies**

## Minor program revisions

Bachelor of Arts Honours, Double Honours, Four-year and Three-year in Political Studies Add POLS 222.3 (Indigenous Governance and Politics) to the list of required courses in the Major requirement, and reduce the requirement for 400-level/unspecified POLS courses to accommodate. Honours, Four-year and Double Honours programs: Remove POLS 328 as an option to POLS 256. Three-year program: Require that students take one of POLS 245, 323, 328, or 422 as part of the courses selected in the Major requirement.

Bachelor of Arts Honours (B.A. Honours) - Political Studies

## **B4 Major Requirement (57 credit units)**

Within the 57 credit units required for this requirement, students must take one of POLS 245.3, POLS 323.3, POLS 328.3, and POLS 422.3 to meet the English Language Writing requirement. The course selected may also be used to fulfill requirements below, as appropriate.

- POLS 204.3
- POLS 205.3
- POLS 222.3
- POLS 236.3
- POLS 237.3
- POLS 261.3
- POLS 262.3
- POLS 256.3 or POLS 328.3

## Choose 6 credit units from the following:

- POLS 111.3
- POLS 112.3
- IS 110.3

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

POLS — 300-Level

Choose 6 3 credit units from the following:

POLS — 400-Level

**Governance and Public Law** 

# Choose 6 credit units from the following:

- POLS 222.3
- POLS 225.3
- POLS 226.3
- POLS 302.3
- POLS 303.3
- POLS 304.3
- POLS 305.3
- POLS 306.3
- POLS 307.3
- POLS 322.3
- POLS 323.3
- POLS 327.3
- POLS 329.3
- POLS 403.3
- POLS 404.3
- POLS 405.3
- POLS 422.3
- POLS 425.3

## **Comparative Politics**

Choose 6 credit units from the following:

• No change to list

## Ideas and Global Issues

Choose 6 credit units from the following:

• No change to list

Bachelor of Arts Four-year (B.A. Four-year) - Political Studies

## B4 Major Requirement (45 credit units)

Within the 45 credit units required for this requirement, students must take one of POLS 245.3, POLS 323.3, POLS 328.3, and POLS 422.3 to meet the English Language Writing requirement. The course selected may also be used to fulfill requirements below, as appropriate.

- POLS 204.3
- POLS 205.3
- POLS 222.3
- POLS 236.3
- POLS 237.3
- POLS 261.3
- POLS 262.3
- POLS 256.3 or POLS 328.3

## Choose 6 credit units from the following:

- POLS 111.3
- POLS 112.3
- IS 110.3

## Choose 6 credit units from the following:

- POLS 300-Level
- POLS 400-Level

## Choose 3 credit units from the following:

• 400-Level POLS Courses

# **Governance and Public Law**

# Choose 3 credit units from the following:

- POLS 222.3
- POLS 225.3
- POLS 226.3
- POLS 302.3
- POLS 303.3
- POLS 304.3
- POLS 305.3
- POLS 306.3
- POLS 307.3
- POLS 322.3
- POLS 323.3
- POLS 327.3
- POLS 329.3
- POLS 403.3
- POLS 404.3
- POLS 405.3POLS 422.3
- POLS 425.3

## **Comparative Politics**

## Choose 3 credit units from the following:

No change to list

#### Ideas and Global Issues

# Choose 3 credit units from the following:

No change to list

## Bachelor of Arts Three-year (B.A. Three-year) - Political Studies

## B4 Major Requirement (30 credit units)

At least 6 credit units must be at the 300-level. Students are advised that a second language is a valuable asset. French, in particular, should be considered by students, especially if they intend to pursue a career in the federal public service.

POLS 222.2

## Choose 6 credit units from the following:

- POLS 111.3
- POLS 112.3
- IS 110.3

## Choose 3 credit units from the following:

- POLS 204.3
- POLS 205.3

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

- POLS 236.3
- POLS 237.3

## Choose 3 credit units from the following:

- POLS 261.3
- POLS 262.3

# Choose 3 credit units from the following:

- POLS 245.3
- POLS 323.3
- POLS 328.3
- POLS 422.3

## Choose 45 9 credit units from the following:

At least 6 credit units must be at the 300-level. Students are advised that a second language is a valuable asset. French, in particular, should be considered by students, especially if they intend to pursue a career in the federal public service.

• POLS — 200-Level, 300-Level, 400-Level

#### Bachelor of Arts Double Honours - Political Studies - Major 1

#### B4 Major Requirement (36 credit units)

Within the 36 credit units required for this requirement, students must take one of POLS 245.3, POLS 323.3, POLS 328.3, and POLS 422.3 to meet the English Language Writing requirement. The course selected may also be used to fulfill requirements below, as appropriate.

- POLS 222.2
- POLS 256.3

## Choose 6 credit units from the following:

- POLS 111.3
- POLS 112.3
- IS 110.3

## Choose 3 credit units from the following:

- POLS 204.3
- POLS 205.3

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

- POLS 236.3
- POLS 237.3

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

- POLS 261.3
- POLS 262.3

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

- POLS 256.3
- POLS 328.3

#### Choose 6 3 credit units from the following:

POLS — 400-Level

## Choose 12 credit units from the following:

POLS — 200-Level, 300-Level, 400-Level

#### Double Honours - Political Studies - Major 2

#### Requirements (36 credit units)

Within the 36 credit units required, students must take one of POLS 245.3, POLS 323.3, POLS 328.3, and POLS 422.3 to meet the English Language Writing requirement. The course selected may also be used to fulfill requirements below, as appropriate.

- POLS 222.2
- POLS 256.3

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

- IS 110.3
- POLS 111.3
- POLS 112.3

## Choose 3 credit units from the following:

- POLS 204.3
- POLS 205.3

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

- POLS 236.3
- POLS 237.3

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

- POLS 261.3
- POLS 262.3

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

- POLS 256.3
- POLS 328.3

#### Choose 6 3 credit units from the following:

POLS — 400-Level

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

• POLS — 200-Level, 300-Level, 400-Level

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

Rationale: These revisions will allow students majoring in Political Studies to meet the English Language Writing and Indigenous Learning requirements within the Major requirement. Without these changes, these students would be required to take non-POLS courses to meet these requirements.

#### **Physics**

#### New course(s):

# PHYS 473.3 High Energy Particle Accelerators for Physics Research

SP/SU CERN is the world's premier particle accelerator laboratory with research achievements such as the discovery of the Higgs Boson particle and the invention of the World Wide Web. The mission of CERN is Science for Peace and their goal is to build and operate the best possible particle accelerators to conduct fundamental and applied research. This course taught at CERN during a few weeks in the summer term is designed to help students understand how accelerators can be used for their research in a very broad field from high energy particle physics to medical applications. Dr. Boland will combine with experts from CERN to lecture on the physics of particle accelerators with emphasis on how these impact the research that can be conducted with them in the fields of high energy particle and nuclear physics. Prerequisite(s): EP 253 and PHYS 356

Note: This is a taught abroad course that will be delivered at CERN, Switzerland, over two weeks during the summer term. Costs in addition to tuition may apply to this course. Please contact the Department for details.

Instructor(s): Mark Boland, Les Dallin, Drew Bertwistle

Rationale: This taught abroad course is aimed to complement existing courses like PHYS472 on particle accelerators and provide additional experiential learning for students. The location of the taught abroad course is the world's premier particle accelerator laboratory the European Centre for Nuclear Research (CERN), in Geneva, Switzerland. CERN has on site many heavy particle accelerators dating back to the 1950s which are for colliding particles and creating new particles, including the 27 km circumference Large Hadron Collider (LHC) which discovered the Higgs Boson particle back in 2012, completing the search for last particle in the Standard Model of Particle Physics that was predicted back in the 1960s. The CERN facility and research mission compliments that of the Canadian Light Source (CLS) on campus at the UofS and accelerates light particle electrons to produce synchrotron radiation for research in a broad range of areas, including medicine, agriculture, advanced materials and the environment. The emphasis, examples and laboratory classes for the existing PHYS472 course are around the CLS, while this new proposal is for PHYS473 is for a course covering accelerators at CERN for particle and nuclear physics research and aimed at students interested in these fields and who will not use the CLS in the future.

While at CERN, the students will be on the campus of around 10,000 staff and students and be exposed to the busy excitement one of the world's largest scientific experimental facilities, the 27 km round LHC. The taught abroad course it designed to coincide with other CERN and European summer schools and will be able to socialise and network with other students from around the world after hours during the course and into the future. The location will also allow many guest lecturers to be performed by world experts located at CERN who design, build and operate these giant particle accelerators. There will also be the rare opportunity to visit some of the experimental facilities since the LHC will be in a long shutdown until the end of 2020 – normally the accelerator tunnels which are 100 m underground are closed and inaccessible for several years at a time. It is also hoped that this course will attract other Canadian university students studying particle physics, who could take the course through the UofS and transfer credits.

#### Course deletion(s):

## PHYS 497.15 Research Term in Physics

Rationale: From the PHYS 497.15 course description:

"Course allows students to get credit for spending a term as a member of a research group, or for participation in international exchange programs with a strong research component. The student is expected to engage full time in a physics research project at a research facility or a university under the supervision of a faculty member or a research scientist from the host institution."

The department has tended to reserve this course as a potential option for students going on an international exchange. (Tri-Council regulations do not allow a student to receive credit for any research supported by Tri-Council funds, so this has effectively eliminated this course as an option for students working as a summer research student in Canada.)

The requirements of the course are as follows (from the course description): "The student's contribution to the research project must be significant enough to justify co-authorship in a journal or conference paper on the research project."

There are two major problems with the requirements of the course. The requirement to have publishable results exceeds the requirements for a M.Sc. degree in the department. The 12-16 week time frame for PHYS 497.15 makes it very unlikely to have publishable work done by an undergraduate student. The department would like to revisit the concept of providing students a way to achieve U of S credit for a research exchange term, but this would be done through a new course with better defined and more appropriately scoped learning outcomes. If a new course were to be approved by the department, the new course would be proposed through a separate College Challenge process.

#### **Physiology**

# Course split PHSI 208.6 Human Body Systems

#### BMSC 207.3 Human Body Systems I

1 (3L) The first of two courses introducing the major organ systems of the body and how they work. BMSC 207.3 focuses of the nervous system, musculoskeletal system and cardiovascular system. Prerequisite(s): BIOL 120.3 and CHEM 112.3

Formerly: PHSI 208; HSC 208; PHSI 212.

NOTE: BMSC 200.3 is recommended. Students with credit for PHSI 208.6 or HSC 208.6 will not receive credit for this course. Students will be able to receive credit for both BIOL/BMSC 224.3 and BMSC 207.3.3 only if BIOL/BMSC 224.3 is completed first. The two courses may not be taken concurrently. Instructor(s): Landon Baillie

#### and

#### BMSC 208.3 Human Body Systems II

2 (3L) The second of two courses introducing the major organ systems of the body and how they work. BMSC 208.3 focuses on the respiratory system, urinary system, digestive system and reproductive system.

Prerequisite(s): BMSC 207.3

Formerly: PHSI 208; HSC 208; PHSI 212.

NOTE: BMSC 200.3 is recommended. Students with credit for PHSI 208.6 or HSC 208.6 will not receive credit for this course. Students will be able to receive credit for both BIOL/BMSC 224.3 and BMSC 207.3.3 only if BIOL/BMSC 224.3 is completed first. The two courses may not be taken concurrently. Instructor(s): Landon Baillie

Rationale: As the Biomedical Sciences are undergoing curricular change, to streamline the administration of courses, and in preparation of the changes to registration in multi-term courses, this course will be split into two 3 credit unit courses.

# Regional and Urban Planning

## Minor program revisions:

#### Bachelor of Arts Honours and Four-year in Regional and Urban Planning

Delete PLAN 342.3 and INCC 210.3, and add PLAN 360.3, ART 230.3 and ART 231.3 in Major Requirement B6 (see below for placement).

Delete SOC 217.3, WGST 235.3 and WGST 335.3 from, and add GEOG 348.3, ARTH 230.3, ART 231.3, ARTH 235.3, ARTH 236.3, ART 330.3, ART 331.3, and ARTH 306.3 to, the Communities stream in the Electives Requirement B7. Delete ARTH 261.3, ARTH 324.3, and GEOG 340.3 from the Design stream, and INDG 271.3 from the Indigenous and Northern stream in B7.

## <u>Bachelor of Arts Honours (B.A. Honours) - Regional and Urban Planning</u> <u>Bachelor of Arts Four-year (B.A. Four-year) - Regional and Urban Planning</u>

## B6 Major Requirement (57 credit units)

- AREC 432.3 or ECON 347.3 or ECON 348.3
- ECON 211.3
- GEOG 222.3
- GEOG 240.3
- GEOG 280.3
- INCC 210.3 or ART 235.3 or ART 236.3
- PLAN 341.3
- PLAN 342.3
- PLAN 343.3
- PLAN 346.3
- PLAN 360.3
- PLAN 390.3
- PLAN 395.3
- PLAN 442.3
- PLAN 490.3
- PLAN 495.3
- POLS 306.3
- <u>SOC 204.3</u> or <u>SOC 206.3</u>

## Choose 3 credit units from the following:

- INCC 210.3
- ART 230.3
- ART 231.3
- ART 235.3
- ART 236.3

## Choose 3 credit units from the following:

- COMM 104.3
- EPSE 441.3
- GE 210.3
- PLSC 214.3
- PSY 233.3
- SOC 225.3
- STAT 242.3
- STAT 244.3
- STAT 245.3
- STAT 246.3

# Choose 3 credit units from the following:

- POLS 225.3
- POLS 226.3
- POLS 328.3
- POLS 425.3

## **B7 Electives Requirement (27 credit units)**

## Required Cognate Courses (12 credit units)

Students must complete one of the following streams of concentration:

#### **Communities**

• PLAN 441.3

Choose 9 credit units from the following:

- <u>CE 329.3</u> (see Note 3 below)
- CE 467.3 (see Note 3 below)
- GEOG 348.3
- INTS 201.3
- PLAN 350.3
- PLSC 235.3
- SOC 202.3
- SOC 203.3
- SOC 206.3
- SOC 214.3
- <u>SOC 217.3</u>
- SOC 309.3
- SOC 321.3
- <u>SOC 402.3</u>
- SOC 409.3
- WGST 235.3
- WGST 335.3

#### Design

• PLAN 446.3

Choose 6 credit units from the following:

- ART 111.6
- ART 112.6
- ART 136.3
- ART 141.3
- ART 151.3
- ART 152.3
- ART 161.3
- ART 230.3
- ART 231.3
- ART 235.3
- ART 236.3
- ART 330.3ART 331.3
- INTS 111.3

## Choose 3 credit units from the following:

- ARTH 253.3
- ARTH 255.3
- ARTH 257.3
- ARTH 260.3
- ARTH 261.3
- ΔRTH 32/13
- ARTH 306.3
- ARTH 325.3
- ARTH 329.3
- CLAS 240.3
- CLAS 242.3
- GEOG 340.3

#### **Environment**

PLAN 329.3

## Choose 9 credit units from the following:

- ECON 275.3
- ECON 277.3
- ENVE 381.3
- ENVS 201.3
- GEOG 235.3
- GEOG 322.3
- GEOG 385.3
- GEOG 386.3
- GEOG 420.3
- PLSC 235.3
- RRM 312.3
- SOC 202.3

## **Indigenous and Northern**

PLAN 445.3

## Choose 9 credit units from the following:

- GEOG 150.3
- INDG 210.3
- INDG 212.3
- INDG 214.3
- INDG 215.3
- <u>INDG 220.3</u>
- INDG 221.3
- <u>INDG 230.3</u>
- INDG 255.3INDG 256.3
- INDG 261.3
- INDG 262.3

- INDG 264.3
- INDG 265.3
- INDG 271.3
- INDG 273.3
- INDG 281.3
- INDG 331.3
- INDG 340.3
- INDG 351.3
- INDG 373.3
- INDG 410.3
- INDG 430.3
- POLS 222.3
- POLS 322.3
- POLS 323.3
- POLS 422.3
- RRM 312.3

## **Planning Touchstones**

- PLAN 329.3
- PLAN 441.3
- PLAN 445.3
- PLAN 446.3

#### **Open Electives (15 credit units)**

Arts and Science courses, or those from other Colleges which have been approved for Arts and Science credit, to complete the requirements for 120 credit unit Honours program. Of the 120 credit units required at least 66 must be at the 200-level or higher and no more than 60 in one subject.

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

Rationale: Regarding changes to B6 category:

PLAN 342.3 is being deleted from catalogue.

PLAN 360.3 is a new course by new faculty member that is offered instead of PLAN 342.3, resulting in no net increase in credit units required.

INCC 210.3 is no longer offered.

ART 230.3 and ART 231.3 are added to ART 235.3 and ART 236.3, now a suite of four courses (instead of three) from which students must choose one, resulting in no increase in credit units required.

#### Regarding changes to B7 category:

SOC 217.3, WGST 235.3, WGST 335.3, ARTH 261.3, ARTH 324.3, GEOG 340.3, and INDG 271.3 are being removed as a house-keeping measure. These courses are moribund and no longer display in the Catalogue.

GEOG 348.3 is a new course that the RUP Program Committee, in consultation with the instructor, agreed to add as an option to the Communities stream of electives.

The six ART courses (230.3, 231.3, 235.3, 236.3, 330.3, 331.3) are added as options to the Design stream to account for the growing value of this area of focus to the field of professional planning, and their inclusion was agreed to by the RUP Program Committee and by the Head of the Department of Art and Art History, and one of this suite of courses' principal faculty instructors.

ARTH 306.3 (Medieval Art and Architecture) was added as an option under the Design stream as well to bolster relevant subject matter in this theoretical area of importance to understand design in planning.

#### Course deletion(s):

## PLAN 342.3 Demographic Analysis in Planning

Rationale: Both the long-time faculty instructor of the course and the Regional and Urban Planning Program Committee (April 29, 2019 meeting) have agreed to discontinue this course. This has been done for two reasons: a new faculty member in the unit is teaching a new course in place of this course, starting September 2019 (PLAN 360.3 Urban Data Analysis and Visualization); and, the faculty member who had been the long-time instructor of this course is teaching a new course instead, on a related topic (i.e., GEOG 348.3 Introduction to Demography).

#### Sociology

Minor program revisions
Bachelor of Arts Three-year in Sociology

Add SOC 225, PSY 233 or STAT 244 to the Major requirement.

Bachelor of Arts Three-year (B.A. Three- year) - Sociology

#### B4 Major Requirement (30 credit units)

- SOC 111.3
- SOC 112.3
- SOC 225.3 or PSY 233.3 or STAT 244.3
- SOC 232.3\*
- SOC 233.3\*\*
- \* Should be taken as early as possible in the program and before any course at the 300- or 400-level
- \*\* Recommended to be taken as early as possible in the program and before any course at the 300- or 400-level

Choose 48 15 credit units from the following:

At least 6 credit units must be at the 300- or 400-level

- POLS 250.3
- SOC 200-Level, 300-Level, 400-Level

Rationale: This revision will allow all students majoring in Sociology to meet the Quantitative Reasoning requirement in the major, aligning the Three-year program more closely with the Four-year, Honours, and Double Honours.

#### Items for Information

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.

#### Chemistry

#### CHEM 100.3 Problem Solving Foundations for University Chemistry - Correction

This course was approved in the November 16, 2017 University Course Challenge. That submission accidentally omitted the following Note: "May be taken as an elective only in all Arts & Science degree programs."

This course exists to help students prepare for CHEM 112, and was not intended to fulfill distribution requirements for other majors.

#### **Indigenous Studies**

#### Minor course revisions

## INDG 351.3 Indigenous Oral Histories Research

Prerequisite change:

Old prerequisite: INDG 210.3, plus 6 credit units of 200-level Indigenous Studies

New prerequisite: INDG 252.3

Rationale: With the deletion of INDG 350.6 (Indigenous Studies Research Methods), and it's replacement in our program by INDG 252.3 ((Introduction to Indigenous Studies Research Methods), and one of INDG 351.3 (Indigenous Oral Histories Research) and INDG 352.3 (Historical Research Methods in Indigenous Studies), we want to update the prerequisites for INDG 351 to match those for INDG 352. This will also prevent students from taking INDG 351 before they take INDG 252.

#### Linguistics

Minor course revisions

**LING 241.3 Introduction to Syntax** 

LING 242.3 Phonetics

LING 340.3 Principles of Phonology

LING 349.3 Computational Linguistics

Change course hours from "3 Lecture hours and 1 Practicum/Lab hours" to "3 Lecture hours".

Rationale: The department has not offered a lab in any of these courses for many years, and does not have resources to do so.

#### LING 346.3 Language in Time and Space

Prerequisite change:

Old prerequisite: LING 112

New prerequisite: LING 111 and LING 112

Rationale: The course requires knowledge of core areas of Linguistics, which are taught in LING 111.

## LING 403.3 Research Methods in Linguistics

Prerequisite change:

Old prerequisite: LING 112 and a minimum of 9 credit units of LING courses at the 200-level or higher New prerequisite: LING 111, LING 112 and a minimum of 9 credit units of LING courses at the 200-level or higher

Rationale: The core areas of Linguistics as taught in LING 111 must have been taken to be able to do research in Linguistics.

## **Regional and Urban Planning**

# Minor course revisions PLAN 413.0 Practicum in Planning

Prerequisite change:

Old prerequisite: Two of PLAN 341, 342 or 346. New prerequisite: Two of PLAN 341, 346 or 360.

Rationale: PLAN 342 is being deleted from calendar and therefore can no longer be a prerequisite in future for PLAN 413.0. PLAN 360 is a new course that is replacing PLAN 342 and therefore replaces PLAN 342 in the list of prerequisites.

# College of Education - October 2019 University Course Challenge

The curricular revisions listed below were approved by the College of Education Faculty Council on Friday, September 27, 2019 and are now submitted to the University Course Challenge for approval.

Contact: Arvelle Van Dyck (arvelle.vandyck@usask.ca)

## Minor program revision:

#### **Bachelor of Education - Technical Vocational Stream**

- To update EPSE 302.3: Situated Learners Contexts of Learning and Development to EPSE 202.3: Psychological Foundations of Teaching and Learning to be consistent with the direct entry program. EPSE 302.3 and 202.3 are equivalent.
- To replace 6 credit units of open electives with EFDT 101.3: Introduction to Education and ECUR 165.3: Introduction to Teaching in Secondary Schools.
- To replace 6 credit units of Education elective coursework with either EFDT 265.3
   Foundations for First Nations, Métis, and Inuit Teaching and Learning or ECUR

   265.3 Teaching for Reconciliation in the K to 12 Curricula and EPSE 348.3:
   Assessing Learning in the Classroom.

# Bachelor of Education (B.Ed.) - Technical Vocational Stream

## Year 1 - 30 credit units

• Journey Person Certificate (The Journey Person Certificate is equivalent to 30 credit units of the Technical Vocational Degree and is the Teaching Area 1).

**Please note**: the following list of acceptable Saskatchewan Journeyperson's Certificates: Agricultural Mechanic, Automotive Service Technician, Carpentry, Commercial Cook, Electrician, Electronics (formerly Radio and Television Repair), Hairstylist, Heavy Duty Equipment Mechanic, Industrial Mechanic (Millwright), Ironworker, Machinist, Plumbing, and Welding. Among acceptable Diplomas in Technology or the Applied Arts are: Civil Technology, Drafting Technology, Electrical Technology, Electronics Technology, and Mechanical and Architectural Technology.

## Year 2 - 30 credit units

- EFDT 101.3: Introduction to Education
- ECUR 165.3: Introduction to Teaching in Secondary Schools
- INDG 107.3 Introduction to Canadian Indigenous Studies

## **Choose 6 credit units of junior-level English:**

• <u>ENG — 100-Level</u>

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

Teaching Area 2
 (Choose from approved Secondary Teaching Area 2 options)

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

 Open electives 100 400 level (Open electives must be compiled using 6 or 3 credit unit courses)

# Year 3 - 30 credit units

- EPSE 202.3:Psychological Foundations of Teaching and Learning
- ECUR 320.3 Literacy Across the Secondary Curriculum
- ECUR 325.3 Relational Curriculum Making in the Secondary Context
- <u>ECUR 340.3</u> Introduction to Teaching Practical and Applied Arts
- <u>ECUR 341.3</u> Curriculum and Evaluation in Practical and Applied Arts
- EDST 321.3 Field Experience Learning in Contexts
- <u>EDST 322.3</u> Field Experience Relational Curriculum Making in Practice Planning Adapting and Assessing

- EFDT 301.3 Educator Identity in Contexts Anti Oppressive and Ethical Beginnings
- EFDT 315.3 Pedagogies of Place Context Based Learning Secondary
- <u>EPSE 302.3</u> Situated Learners Contexts of Learning and Development

# **Choose 3 credit units of Teaching Area 2 methods from the following:**

- EART 331.3 Methods in Secondary Visual Art
- ECUR 318.3 Methods in Secondary Mathematics
- ECUR 326.3 Methods for Teaching Science in Secondary School
- ECUR 349.3 Methods in Middle Years and Secondary Drama
- ECUR 362.3 Introduction to Principles and Practices of Second Language Teaching
- ECUR 379.3 Introductory Methods in Secondary English Language Arts
- ECUR 386.3 Methods in Secondary Social Studies

#### Year 4 - 30 credit units

#### **Education Courses:**

- EFDT 265.3 Foundations for First Nations Metis and Inuit Teaching and Learning or ECUR 265.3 Teaching for Reconciliation in the K to 12 Curricula
- <u>EADM 303.3</u> Education in Society Structures Systems and Stakeholders
- EPSE 390.3 Exceptional Learners
- EPSE 348.3: Essentials of Assessing Student Learning

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

- EADM 411.3 Inquiry Project and Community Learning Field Experience
- ECUR 411.3 Inquiry Project and Community Learning Field Experience
- EFDT 411.3 Inquiry Project and Community Learning Field Experience
- EPSE 411.3 Inquiry Project and Community Learning Field Experience

#### **Extended Practicum**

- EXPR 422.15 Professional Extended Practicum OR
- <u>EXPR 423.3</u> Alternative Field Experiences Practicum I Adult Learning and Community
  Based Educational Settings AND <u>EXPR 425.12</u> Alternative Field Experiences Practicum II
  Saskatchewan Schools OR
- <u>EXPR 424.3</u> Alternative Field Experiences Practicum I International Opportunities <u>AND EXPR 425.12</u> Alternative Field Experiences Practicum II Saskatchewan Schools

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

- EADM 100-Level, 200-Level, 300-Level, 400-Level
- ECUR 100-Level, 200-Level, 300-Level, 400-Level
- EFDT 100-Level, 200-Level, 300-Level, 400-Level
- EPSE 100 Level, 200 Level, 300 Level, 400 Level
- ETAD 100 Level, 200 Level, 300 Level, 400 Level