

University of Waterloo
SENATE UNDERGRADUATE COUNCIL
Notice of Meeting

DATE: Tuesday, September 14, 2021
TIME: 12:30 p.m. – 2:30 p.m.
PLACE: Teams – See meeting invitation or contact the secretary

Open Session

| Item | Action |
|---|---------------------------------------|
| 1. Declarations of Conflict of Interest - Excerpt from Senate Bylaw 1* | Information |
| 2. Chair's Remarks | Information |
| 3. Curricular Items for Approval & Information | |
| a. Arts* | 3, 4, 6 SEN-R; 2.2, 5 SEN-C; rest UGC |
| b. Engineering* | 4 SEN-C; rest UGC |
| c. Science* | 6, Memo SEN-R; 5 SEN-C; rest UGC |
| d. Renison University College* | UGC |
| 4. Registrar's Office | |
| a. Blended Class* | Information |
| b. Undergraduate Communication Requirement* | SEN-C |
| c. Aegrotat (AEG) Grades* | SEN-C |
| d. Academic Calendar Dates for 2022-2023* | SEN-R |
| e. New Undergraduate Scholarships, Awards, and Bursaries* | Information |
| 5. Strategic Plan Implementation Update – None this month due to substantial number of curricular items | |
| 6. Other Business | |
| 7. Next Meeting: Tuesday, October 5, 2021, 12:30 to 2:30 p.m. via Teams | |

*material attached/to be distributed**

"SEN-C" to be recommended to Senate for approval (consent agenda)

"SEN-R" to be recommended to Senate for approval (regular agenda)

"UGC" to be approved on behalf of Senate & sent to Senate for information

10 September 2021

Danielle Jeanneault
Interim Secretary to Council

Excerpt from Senate Bylaw 1

8. Declarations of conflict of interest

| | |
|------|---|
| 8.01 | At the beginning of each meeting of Senate or any of Senate's committees or councils, the chair will call for members to declare any conflicts of interest with regard to any agenda item. For agenda items to be discussed in closed session, the chair will call for declarations of conflict of interest at the beginning of the closed portion of the meeting. Members may nonetheless declare conflicts at any time during a meeting. |
| 8.02 | A member shall be considered to have an actual, perceived or potential conflict of interest, when the opportunity exists for the member to use confidential information gained as a member of Senate, or any of Senate's committees or councils, for the personal profit or advantage of any person, or use the authority, knowledge or influence of the Senate, or a committee or council thereof, to further her/his personal, familial or corporate interests or the interests of an employee of the university with whom the member has a marital, familial or sexual relationship. |
| 8.03 | Members who declare conflicts of interest shall not enter into debate nor vote upon the specified item upon which they have declared a conflict of interest. The chair will determine whether it is appropriate for said member to remove themselves from the meeting for the duration of debate on the specified item(s). |
| 8.04 | Where Senate or a committee or council of Senate is of the opinion that a conflict of interest exists that has not been declared, the body may declare by a resolution carried by two-thirds of its members present at the meeting that a conflict of interest exists and a member thus found to be in conflict shall not enter into debate on the specified item upon which they have declared a conflict of interest. The chair will determine whether it is appropriate for said member to remove themselves from the meeting for the duration of debate on the specified item(s). |

FACULTY OF ARTS – UNDERGRADUATE AFFAIRS GROUP

Curricular items approved: April 08, 2021

REPORT TO SENATE UNDERGRADUATE COUNCIL

June 15, 2021

1. NEW COURSES [for approval]

- Communication Arts: SPCOM
- Classical Studies: CLAS/PHIL/SCI
- English Language and Literature: ENGL
- Sociology and Legal Studies: LS, SOC, LS/SOC
- Renison University College: SI/RS
- Religious Studies: RS/INDG, RS/SI
- St. Paul's University College: HRTS, INDG/RS.....

2. COURSE CHANGES [for approval]

- Conrad Grebel University College: MUSIC
- Classical Studies: CLAS.....
- Communication Arts: SPCOM, SPCOM/ENGL, SPCOM/LS
- English Language and Literature: ENGL
- Germanic & Slavic Studies: GER/REES, GER/JS/RS
- Political Science: PSCI
- Renison University College: SDS, SOCWK.....
- Religious Studies: JS/RS/GER, JS/RS
- Sociology and Legal Studies: LS/SOC, LS, SOC, LS/SPCOM
- St. Jerome's University: ITALST/SMF, ITALST
- St. Paul's University College: HRTS.....

2.1 COURSE REACTIVATIONS [for approval]

- Germanic & Slavic Studies: REES

2.2 PLAN TITLE CORRECTION IN QUEST

- St. Jerome's University: Sexuality, Marriage and Family Studies – Diploma.....

3. NEW ACADEMIC PLANS [for approval]

- 3.1. Political Science

4. ACADEMIC PLAN CHANGES – MAJOR MODIFICATIONS [for approval]

- 4.1. St. Paul's University College
 - 4.1.1. Human Rights

5. ACADEMIC PLAN CHANGES – MINOR MODIFICATIONS [for approval]

- 5.1. English Language and Literature
- 5.2. Germanic & Slavic Studies
- 5.3. History
- 5.4. Sociology & Legal Studies
- 5.5. Political Science
- 5.6. Renison University College
 - 5.6.1. Applied Language Studies

5.7. St. Paul's University College

5.7.1. Canadian Studies

5.7.2. Indigenous Studies

6. ACADEMIC PLAN INACTIVATIONS [for approval]

6.1. Political Science

:mt

NEW COURSES (for approval)

Classical Studies

Effective 01-SEP-2022

CLAS 260 (0.50) LEC Ancient Science

The ancient Greeks developed scientific theories that were influential for over a thousand years. Their worldview was different from ours, but they sought to explain some of the same phenomena that we grapple with today. In this course, we will study ancient Greek theories and methodologies in the sciences, which may include physics, astronomy, mathematics, meteorology, cosmology, astrology, and geography.

Requisites : Antireq: PHIL 271 taken winter 2019

Cross-listed as: PHIL 260 SCI 266

Rationale : This course will introduce students to ancient Greek science, where science in antiquity was a type of philosophy. The course will examine the ancient theories and methodologies of science in the ancient Greek world. It will be an elective for both philosophy students and students in other plans. This course will complement existing course offerings in contemporary philosophy of science and ancient philosophy. Classics was consulted to confirm that there will be minimal overlap with CLAS 384 (Science and Technology of Ancient Greece and Rome). As the course descriptions for the two courses make clear, PHIL 260 is differentiated by (a) focusing on science rather than science and technology, and on different fields of science than CLAS 384, (b) excluding Roman science, and (c) being at a lower level. The temporal scope of this course is ancient Greece. The study of ancient Greek science and scientific theories falls under the purview of Classical Studies (as well as of Philosophy). The study of ancient physics, math, and geography is appropriate for the science discipline. The course will teach students about how science was done in a different time period and in a different cultural context. Many of the other 200-level SCI courses share the same aim of introducing science to non-majors or topics in science that are outside of a student's major. This course will teach Science students about the historical roots of their own discipline.

Communication Arts

Effective 01-SEP-2022

SPCOM 301 (0.50) SEM Topics in Gender and Sexuality in Communication

This course offers a sustained engagement with theories and methods used to study communication practices related to gender and sexuality through looking at a specific topic. This course emphasizes how communication practices influence relationships between social conceptions of gender, sexuality, power, identity, and culture. Subject to different content, the course may concentrate on a topic in-depth, such as

gender and science, masculinity and race, colonial and non-Western feminisms, queer theory. [Note: This is a repeatable course, subject to different content; it may be completed a total of two times.]

Requisites : Prereq: SPCOM 201
Rationale : This course responds to the pressing social need to include different voices and perspectives in communication education and expands on the program and faculty's existing strengths. This course will be an intermediate level course between Intro (SPCOM 201) and Advanced (SPCOM 401) Gender and Sexuality in Communication. Short title: Topics Gender, Sex & Comm.

Effective 01-SEP-2022

SPCOM 302 (0.50) SEM Topics in Race, Culture, and Communication

This course analyzes whiteness, race, and ethnicity with special emphasis on language, media, discourse, rhetoric, and performance through looking at a specific topic. This course will enrich student understanding of the conceptions and impacts of race on communicative practices. [Note: This is a repeatable course, subject to different content; it may be completed a total of two times.]

Requisites : Prereq: Level at least 3A
Rationale : This course responds to the pressing social need to include different voices and perspectives in communication education and expands on the program and faculty's existing strengths. This course will be an intermediate level course between Intro and Advanced Race, Culture, and Communication. Short title: Topics in Race, Culture & Comm.

Effective 01-SEP-2022

SPCOM 435 (0.50) SEM Games and Culture

This course examines the relationships between games and culture. Students will consider the social, political, and economic dimensions of games and acquire ways of thinking about how games communicate by transmitting, contextualizing, and contesting culturally situated meanings.

Requisites : Prereq: SPCOM 101; Level at least 3A
Rationale : Communication Arts teaches several classes on game design and development that emphasize how the medium of the game must be considered in design processes, but lacks a complementary class that emphasizes how the medium of the game implicates communication and meaning-making processes. This course fills this gap. It also expands the department's offering in two areas: 1. game and interactive media design and 2. media and public culture. Fusing concerns for design and for communicative agency for the public good, the course furthers the department's long-term agenda to better integrate its disciplinarily distinct areas of study.

English Language & Literature

Effective 01-SEP-2022

ENGL 200C (0.50) LEC English Literatures 3

An introduction to literature written by people of colour and Indigenous and Black authors. Using a postcolonial and anti-racist framework, this course examines historical and contemporary issues of race, racism, and colonialism in a variety of literary texts.

Requisites : Prereq: Level at least 2A

Rationale : ENGL 200C places anti-racist and decolonizing literary practices at the center of the curriculum, preparing students for more advanced courses in those areas.

Philosophy

Effective 01-SEP-2022

PHIL 260 (0.50) LEC Ancient Science

The ancient Greeks developed scientific theories that were influential for over a thousand years. Their worldview was different from ours, but they sought to explain some of the same phenomena that we grapple with today. In this course, we will study ancient Greek theories and methodologies in the sciences, which may include physics, astronomy, mathematics, meteorology, cosmology, astrology, and geography.

Requisites : Antireq: PHIL 271 taken winter 2019

Cross-listed as: CLAS 260 SCI 266

Rationale : This course will introduce students to ancient Greek science, where science in antiquity was a type of philosophy. The course will examine the ancient theories and methodologies of science in the ancient Greek world. It will be an elective for both philosophy students and students in other plans. This course will complement existing course offerings in contemporary philosophy of science and ancient philosophy. Classics was consulted to confirm that there will be minimal overlap with CLAS 384 (Science and Technology of Ancient Greece and Rome). As the course descriptions for the two courses make clear, PHIL 260 is differentiated by (a) focusing on science rather than science and technology, and on different fields of science than CLAS 384, (b) excluding Roman science, and (c) being at a lower level. The temporal scope of this course is ancient Greece. The study of ancient Greek science and scientific theories falls under the purview of Classical Studies (as well as of Philosophy). The study of ancient physics, math, and geography is appropriate for the science discipline. The course will teach students about how science was done in a different time period and in a different cultural context. Many of the other 200-level SCI courses share the same aim of introducing science to non-majors or topics in science that are outside of a student's major. This course will teach Science students about the historical roots of their own discipline.

Renison University College

Effective 01-SEP-2022

SI 310R (0.50) LEC Digital Spirituality: New Media Art in the Middle East/North Africa
Diaspora

This course examines how Muslims and those influenced by Islam give spiritual expression to their lives through the digital arts. Using critical approaches, we will examine contemporary art of the Middle East/North Africa diaspora in the West to explore the relationship of Islam to the digital realm.

Requisites : Prereq: Level at least 3A
Cross-listed as: RS 310
Rationale : Digital devices provide connection and creativity, but also surveillance and trauma for Muslims and those with proximity to Islam in the West. Artists from this community increasingly turn to New Media Art for expression and resistance. The goal of the Studies in Islamic and Arab Cultures (SIAC) program for students to extend their thinking beyond their education and situate their knowledge into a broader context aligns well with the intent of this new course. There is an urgent need for 300-level courses in the SIAC program. Short title: Digital Spirituality.

Religious Studies

Effective 01-SEP-2022

RS 226 (0.50) LEC Introduction to Indigenous Spirituality

This course introduces the plurality of Indigenous spiritual traditions in Canada and the diversity, complexity, and strength of these traditions. Included is an understanding of traditional ceremonies, world views, creation stories, cultural values, healers, and medicine. Special attention is given to Anishinaabe and Haudenosaunee nations.

Cross-listed as: INDG 226
Rationale : This course fills a gap in learning opportunities for Religious Studies undergraduates by providing exposure to spiritualities as understood and practiced by the First Peoples in the nation currently known as Canada. These spiritual traditions predate colonization and are still contemporarily practiced by Indigenous peoples. The course contributes to the university-wide Indigenization of the curriculum and rounds out the offerings of the Department of Religious Studies. Short title: Indigenous Spirituality.

Effective 01-SEP-2022

RS 310 (0.50) LEC Digital Spirituality: New Media Art in the Middle East/North Africa
Diaspora

This course examines how Muslims and those influenced by Islam give spiritual expression to their lives through the digital arts. Using critical approaches, we will examine contemporary art of the Middle East/North Africa diaspora in the West to explore the relationship of Islam to the digital realm.

Requisites : Prereq: Level at least 3A
Cross-listed as: SI 310R
Rationale : Digital devices provide connection and creativity, but also surveillance and trauma for Muslims and those with proximity to Islam in the West. Artists from this community increasingly turn to New Media Art for expression and resistance. The goal of the Studies in Islamic and Arab Cultures (SIAC) program for students to extend their thinking beyond their education and situate their knowledge into a broader context aligns well with the intent of this new course. There is an urgent need for 300-level courses in the SIAC program. Short title: Digital Spirituality.

Sociology and Legal Studies

Effective 01-SEP-2022

LS 213 (0.50) LEC Surveillance Studies

An introduction to the central role of surveillance in shaping power relations and knowledge across a range of social and cultural contexts. Foundational historical, theoretical, and empirical texts that define the field of surveillance studies will be explored.

Requisites : Prereq: SOC 101/101R or LS 101; Level at least 2A. Antireq: LS 203 taken in fall 2020
Cross-listed as: SOC 213
Rationale : This course is intended to provide an introduction to foundational theories, concepts, approaches, and studies that have shaped the field of Surveillance Studies. It will provide a foundational resource for students that advance in the program to take SOC/LS 305 Socio-legal Approaches to Privacy, SOC/LS 413 Surveillance and Society, and SOC/LS 433 Crime, Law, and Technoscience. As such, it builds on current faculty strengths and complements current courses in the department of Sociology & Legal Studies at the 300- and 400-level. It supports both the program learning outcomes of Sociology in relation to the development of critical thinking, problem-solving, research, communication (oral and written), and collaboration skills (Depth and Breadth of Knowledge and Application of Knowledge), and the Legal Studies program learning outcomes of: 1) Define, differentiate, and use foundational concepts and theories to examine legal phenomena, behaviours, processes, institutions, and trends (Depth & Breadth of Knowledge, Application of Knowledge); and 2) developing ideas, arguments, and strategies from interdisciplinary perspectives that recognize the strengths and limits of law in addressing social problems

(Depth and Breadth of Knowledge, Application of Knowledge, and Awareness of Limits of Knowledge).

Effective 01-SEP-2022

LS 305 (0.50) LEC Socio-Legal Approaches to Privacy in Contemporary Contexts

An introduction to privacy as a socio-legal concept and to major debates surrounding privacy in contemporary contexts. National and international frameworks for the regulation of privacy will be examined and may include analysis of major cases in privacy law.

Requisites : Prereq: SOC 101/101R or LS 101; Level at least 3A

Cross-listed as: SOC 305

Rationale : This course is intended to provide students with in-depth knowledge of the strengths and limitations existing privacy regulations in Canada, the USA, and the EU. It builds on current faculty strengths and complements current courses in the department of Sociology & Legal Studies. It supports the program learning outcome of Sociology to develop critical thinking, problem-solving, research, communication (oral and written), and collaboration skills (Depth and Breadth of Knowledge and Application of Knowledge), and the Legal Studies program learning outcomes of 1) developing ideas, arguments, and strategies from interdisciplinary perspectives on law and recognize the strengths and limitations of the law to address social problems (Depth and Breadth of Knowledge, Application of Knowledge, and Awareness of Limits of Knowledge). Short title: Privacy in Socio-Legal Context.

Effective 01-SEP-2022

LS 404 (0.50) SEM Law of the Environment

This seminar questions where, and why, the lines are drawn between environment, ecology, politics, economics, and law. Students debate and assess selected topics in Canadian and international environmental law to critically consider the significance of "law of the environment" as our world navigates crises of climate and change.

Requisites : Prereq: Level at least 4A Legal Studies majors. Antireq: LS 496 taken in fall 2020

Rationale : By exploring current environmental laws and their impact in Canada and internationally this course challenges students to consider the role of law not only in matters of climate change that receive international attention (such as international legal attempts to stem the rapid increase of climate change, including carbon emissions), but in the complexities of disputes involving Indigenous communities and sovereignty, issues of consent in contracts negotiated for access to land for resource extraction, and global value chains of waste, impacting on international economic law (trade and resources). This seminar builds on faculty strengths, further complementing the theoretically rigorous foundation of existing Legal Studies courses at the 1st, 2nd, and 3rd year levels. It supports Legal Studies program

learning outcomes by developing a local, national, and global awareness of the social, cultural, and political diversity of law; applying legal knowledge and reflexive analytical skills to critically evaluate the relationship between the law and inequality (both socially and ecologically understood); and to develop ideas, arguments, and strategies from interdisciplinary perspectives on law to recognize the strengths and limitations of the law to address social (and environmental) problems (Depth and Breadth of Knowledge, Application of Knowledge, and Awareness of Limits of Knowledge, Diversity).

Effective 01-SEP-2022

LS 405 (0.50) SEM Democracy, Revolution, Law

This course examines the theory and practice of revolution from a range of social, political, and legal perspectives. Students will study different historical and contemporary instances of revolution and democracy with a focus on such concepts as citizenship, nationalism, liberation, and criminality.

Requisites :

Prereq: Level at least 4A Legal Studies majors

Rationale :

With reference to selected historical and contemporary case studies, this course offers an in-depth examination of the connections between constitutional law and popular sovereignty, citizenship as imagined belonging and as a legal status, the myths and realities of national liberation, and the roles of criminalization and social exclusion in deciding movement and nation-state membership. The seminar format provides a forum for students to advance their understanding of concepts covered in LS 386 Law and Violence, namely sovereign legitimacy, obedience, and dissent. In this fourth-year course, students will benefit from the global scope, helping them develop more varied and critical perspectives on the relation between state and popular sovereignty (Depth and Breadth of Knowledge, Application of Knowledge, Awareness of Limits of Knowledge, and Diversity). UG Associate Chair in PSCI (Mariam Mufti) was contacted and has no reservations to move forward with this LS course.

Effective 01-SEP-2022

LS 435 (0.50) SEM Cybercrime and Digital Harm

An examination of theoretical perspectives and empirical developments surrounding cybercrime, digitally-mediated harms, and associated regulatory responses. A range of topics may be explored, including hacking, technology facilitated abuse, (dis)information, censorship, human rights, and cybersecurity.

Requisites :

Prereq: Level at least 4A Legal Studies students. Antireq: LS 496 taken in fall 2020

Cross-listed as:

SOC 435

Rationale :

This course examines theoretical approaches and empirical developments surrounding cybercrimes and digitally-mediated harms, and to critically evaluate an array of regulatory responses to them. It also builds on

current faculty strengths and complements current courses in the department of Sociology & Legal Studies. It supports both the program learning outcomes of Sociology in relation to the development of critical thinking, problem-solving, research, communication (oral and written), and collaboration skills (Depth and Breadth of Knowledge and Application of Knowledge), and the Legal Studies program learning outcomes of developing ideas, arguments, and strategies from interdisciplinary perspectives that recognize the strengths and limits of law in addressing social problems (Depth and Breadth of Knowledge, Application of Knowledge, and Awareness of Limits of Knowledge).

Effective 01-SEP-2022

SOC 213 (0.50) LEC Surveillance Studies

An introduction to the central role of surveillance in shaping power relations and knowledge across a range of social and cultural contexts. Foundational historical, theoretical, and empirical texts that define the field of surveillance studies will be explored.

Requisites : Prereq: SOC 101/101R or LS 101; Level at least 2A. Antireq: LS 203 taken in fall 2020

Cross-listed as: LS 213

Rationale : This course is intended to provide an introduction to foundational theories, concepts, approaches, and studies that have shaped the field of Surveillance Studies. It will provide a foundational resource for students that advance in the program to take SOC/LS 305 Socio-legal Approaches to Privacy, SOC/LS 413 Surveillance and Society, and SOC/LS 433 Crime, Law, and Technoscience. As such, it builds on current faculty strengths and complements current courses in the department of Sociology & Legal Studies at the 300- and 400-level. It supports both the program learning outcomes of Sociology in relation to the development of critical thinking, problem-solving, research, communication (oral and written), and collaboration skills (Depth and Breadth of Knowledge and Application of Knowledge), and the Legal Studies program learning outcomes of: 1) Define, differentiate, and use foundational concepts and theories to examine legal phenomena, behaviours, processes, institutions, and trends (Depth & Breadth of Knowledge, Application of Knowledge); and 2) developing ideas, arguments, and strategies from interdisciplinary perspectives that recognize the strengths and limits of law in addressing social problems (Depth and Breadth of Knowledge, Application of Knowledge, and Awareness of Limits of Knowledge).

Effective 01-SEP-2022

SOC 305 (0.50) LEC Socio-Legal Approaches to Privacy in Contemporary Contexts

An introduction to privacy as a socio-legal concept and to major debates surrounding privacy in contemporary contexts. National and international frameworks for the regulation of privacy will be examined and may include analysis of major cases in

privacy law.

Requisites : Prereq: SOC 101/101R or LS 101; Level at least 3A
Cross-listed as: LS 305
Rationale : This course is intended to provide students with in-depth knowledge of the strengths and limitations existing privacy regulations in Canada, the USA, and the EU. It builds on current faculty strengths and complements current courses in the department of Sociology & Legal Studies. It supports the program learning outcome of Sociology to develop critical thinking, problem-solving, research, communication (oral and written), and collaboration skills (Depth and Breadth of Knowledge and Application of Knowledge), and the Legal Studies program learning outcomes of 1) developing ideas, arguments, and strategies from interdisciplinary perspectives on law and recognize the strengths and limitations of the law to address social problems (Depth and Breadth of Knowledge, Application of Knowledge, and Awareness of Limits of Knowledge). Short title: Privacy in Socio-Legal Context.

Effective 01-SEP-2022

SOC 435 (0.50) SEM Cybercrime and Digital Harm

An examination of theoretical perspectives and empirical developments surrounding cybercrime, digitally-mediated harms, and associated regulatory responses. A range of topics may be explored, including hacking, technology facilitated abuse, (dis)information, censorship, human rights, and cybersecurity.

Requisites : Prereq: Level at least 4A Sociology students. Antireq: LS 496 taken in fall 2020
Cross-listed as: LS 435
Rationale : This course examines theoretical approaches and empirical developments surrounding cybercrimes and digitally-mediated harms, and to critically evaluate an array of regulatory responses to them. It also builds on current faculty strengths and complements current courses in the department of Sociology & Legal Studies. It supports both the program learning outcomes of Sociology in relation to the development of critical thinking, problem-solving, research, communication (oral and written), and collaboration skills (Depth and Breadth of Knowledge and Application of Knowledge), and the Legal Studies program learning outcomes of developing ideas, arguments, and strategies from interdisciplinary perspectives that recognize the strengths and limits of law in addressing social problems (Depth and Breadth of Knowledge, Application of Knowledge, and Awareness of Limits of Knowledge).

St Paul's University College

Effective 01-SEP-2022

HRTS 390 (0.50) LEC Special Topics in Human Rights

Course topics vary. This course will allow students to engage in an in-depth analysis of selected topics in Human Rights and develop greater awareness of the realities of human rights in a national and/or global context. [Note: This is a repeatable course, subject to different content; it may be completed a total of two times.]

Requisites : Prereq: HRTS 101
Rationale : Because human rights is a field that is constantly developing and in which new issues emerge continuously, this special topics course was created as an opportunity both to test out potential new courses and to allow instructors to offer students a more advanced and intensive look at a particular issue depending on the expertise of the instructor.

Effective 01-SEP-2022

HRTS 490 (0.50) SEM Advanced Topics in Human Rights

Course topics vary. An advanced investigation of selected topics in Human Rights, this course will provide students with an opportunity to engage in a detailed interdisciplinary examination of a particular subject and develop their analytical and critical capabilities. [Note: This is a repeatable course, subject to different content; it may be completed a total of two times.]

Requisites : Prereq: HRTS 101; Level at least 3A
Rationale : This special topics course was created to provide upper-year students with an opportunity to engage in an in-depth, interdisciplinary study of a single focused topic. Both the 3A level enrolment requirement and the seminar format of this course (the only seminar currently proposed by the Human Rights Programme) will ensure that this course offers a forum for high-level critical analysis of a current human rights issue. Short title: Adv. Topics in Human Rights.

Effective 01-SEP-2022

INDG 226 (0.50) LEC Introduction to Indigenous Spirituality

This course introduces the plurality of Indigenous spiritual traditions in Canada and the diversity, complexity, and strength of these traditions. Included is an understanding of traditional ceremonies, world views, creation stories, cultural values, healers, and medicine. Special attention is given to Anishinaabe and Haudenosaunee nations.

Cross-listed as: RS 226
Rationale : This course fills a gap in learning opportunities for Religious Studies undergraduates by providing exposure to spiritualities as understood and practiced by the First Peoples in the nation currently known as Canada. These spiritual traditions predate colonization and are still contemporarily practiced by Indigenous peoples. The course contributes to the university-wide Indigenization of the curriculum and rounds out the offerings of the Department of Religious Studies. Short title: Indigenous

Spirituality.

COURSE CHANGES (for approval)

Conrad Grebel University College

Current Catalog Information

MUSIC 416 (0.25) ENS Music Ensemble

The study of selected music literature through rehearsals and performance in one of the Music Department ensembles: Chamber Choir, Chapel Choir, University Choir, Vocal Techniques, Orchestra, Instrumental Chamber Ensembles, Jazz Ensemble, World Music Ensemble. Regular attendance at rehearsals and performances is required. [Note: For musical reasons, admission to any particular ensemble is at the discretion of the director. Audition required for some ensembles. Contact music department prior to first day of class. Course will be graded on a CR/NCR basis.]

No Special Consent Required

Requisites :

Prereq: MUSIC 317

Effective 01-SEP-2022

Rationale :

To remove "Offered at Conrad Grebel University College" attribute (does not show on report). In Fall 2019 UGAG approved the addition of two new ensemble courses to the MUSIC program, MUSIC 416 and 417 that would allow students to earn credit for music ensemble participation throughout their undergraduate careers. The course attribute "offered at Conrad Grebel University College" was added, however, it does not exist in the other ensemble offerings (116, 117, 216, 217, 316, 317) so it is being removed so that it is consistent with other course descriptions but also to take into consideration that some ensembles may be offered elsewhere.

Current Catalog Information

MUSIC 417 (0.25) ENS Music Ensemble

The study of selected music literature through rehearsals and performance in one of the Music Department ensembles: Chamber Choir, Chapel Choir, University Choir, Vocal Techniques, Orchestra, Instrumental Chamber Ensembles, Jazz Ensemble, World Music Ensemble. Regular attendance at rehearsals and performances is required.

[Note: For musical reasons, admission to any particular ensemble is at the discretion of the director. Audition required for some ensembles. Contact music department prior to first day of class. Course will be graded on a CR/NCR basis.]

No Special Consent Required

Requisites :

Prereq: MUSIC 416

Effective 01-SEP-2022

Rationale :

To remove "Offered at Conrad Grebel University College" attribute (does not show on report). In Fall 2019 UGAG approved the addition of two new ensemble courses to the MUSIC program, MUSIC 416 and 417 that would allow students to earn credit for music ensemble participation throughout their

undergraduate careers. The course attribute "offered at Conrad Grebel University College" was added, however, it does not exist in the other ensemble offerings (116, 117, 216, 217, 316, 317) so it is being removed so that it is consistent with other course descriptions but also to take into consideration that some ensembles may be offered elsewhere.

Classical Studies

Current Catalog Information

CLAS 230 (0.50) LEC Classical Roots of English Vocabulary

This course offers an introduction to the etymology of the English language, in particular that part which has been derived from Latin and ancient Greek. The main focus will be the most important classical roots from which the vocabulary of the life sciences and other academic disciplines derives.

No Special Consent Required

Effective 01-SEP-2022

Title Change:

Greek and Latin Scientific Terminology

Description Change:

This course is an introduction to decoding the vocabulary of many modern scientific, technical, and medical disciplines. The main focus will be on learning the important Greek and Latin word elements found in technical vocabulary, as well as the rules by which words take shape.

Course Attribute Change:

Also offered Online

Rationale :

To change title and description, and add attribute. The new title and description reflect a widening in the scope of this course beyond etymology of the English language to include scientific and technical terminology. This change will benefit the increasing number of students keen to understand the form and meaning of specialized diction in their discipline of study. No courses on the meaning and origin of scientific jargon are offered currently in the Faculties of Science, Engineering, and Health. The course will be offered online and on campus to meet the needs of co-op students in Classical Studies and other departments. Short title: Greek & Latin Scientific Terms.

Communication Arts

Current Catalog Information

SPCOM 226 (0.50) LEC Introduction to Intercultural Communication

This course introduces the basic theories and practices for communicating among people of different racial, ethnic, and cultural backgrounds. This class provides an opportunity for discussion of variations within and among cultures and encourages students to examine their cultural heritage.

No Special Consent Required

Requisites :

Prereq: SPCOM 101; Level at least 2A

Effective 01-SEP-2022

Title Change:

Introduction to Race, Culture, and Communication

Description Change:

This course introduces theories and practices central to the relationship

Rationale : between communication and race/ethnicity. Students gain theoretical and practical understanding of the opportunities and obstacles that exist for racialized equity-deserving groups. Students are prompted to recognize their positionality in relation to race and how communication can be meaningfully used toward anti-racist ends.

These changes to the title and description will better guide student expectations of the class and clarify that its scope concerns how culture is constructed through the communication of race/ethnicity. Additionally, these changes reflect changes already taking place in the classroom as disciplinary and social imperatives require teaching race. Short title: Intro Race, Culture & Comm.

Current Catalog Information

SPCOM 323 (0.50) LEC Speech Writing

The analysis, writing, and editing of speeches. Analysis will focus on the reading and viewing of several famous 20th-century speeches using theories of communication.

Writing and editing will focus on implementing oral/aural communication strategies.

No Special Consent Required

Requisites : Prereq: Level at least 3A

Cross-listed as: ENGL 309E

Effective 01-SEP-2022

Description Change: The analysis, writing, and editing of speeches. This course considers how genre and style impact the creation, reception, and implications of meaning. Students practice writing, as form and style, in the construction of arguments and other genres of speech making.

Rationale : To change description. This change will enable this course to address a gap in the curriculum concerning how communication and argumentation are not only reasoned endeavors but also stylized practices defined by genre conventions. Incorporating these elements is now possible given changes and additions to 200 level SPCOM course offerings. The Department of English Language and Literature has been consulted and is in agreement with these changes.

Current Catalog Information

SPCOM 402 (0.50) LEC Advanced Intercultural Communication

This course is designed to study the intersection of communication and culture. In this course, culture is defined broadly to include a variety of contexts, such as race, ethnicity, nationality, gender, age, and class. Students gain theoretical and practical understanding of the opportunities and obstacles that exist as individuals and communities communicate within and across cultures.

No Special Consent Required

Requisites : Prereq: SPCOM 226; Level at least 3A

Effective 01-SEP-2022

Title Change: Advanced Race, Culture, and Communication

Description Change: This course is an advanced study of the intersection of communication and race that develops theoretical, critical, and historical perspectives on

whiteness and race, racist language and communicative practices, and anti-racist critiques of communication. Students will further explore their own relationships to cultural conceptions of whiteness, race, and ethnicity.

Rationale :

To change title and description. These changes to the title and description will better guide student expectations of the class and clarify that its scope concerns how culture is constructed through the communication of race/ethnicity. Additionally, these changes reflect changes already taking place in the classroom as disciplinary and social imperatives require teaching race. Short title: Adv. Race Culture & Comm.

Current Catalog Information

SPCOM 430 (0.50) SEM Communication and Social Justice

An examination of the ways in which communication on the part of individuals, groups, and institutions contributes to fostering justice in social contexts. Areas of focus include communication and justice in interpersonal, workplace, community, and national/international contexts.

No Special Consent Required

Requisites : Prereq: Level at least 3A

Cross-listed as: LS 492

Effective 01-SEP-2022

Description Change:

An examination of how communication on the part of individuals, groups, and institutions implicates social justice. Students examine the relationship between communication and justice to understand how the representation and performance of gender, race, ethnicity, and other cultural constructs contribute to social and political conditions.

Rationale :

To change description. This description change brings the topic of the course into better focus and alleviates student perceptions of overlap with other courses, particularly vis-à-vis SPCOM 471. It more strongly aligns the course with program strengths in media and public culture. The Department of Sociology and Legal Studies was consulted and agrees to this change.

Current Catalog Information

SPCOM 431 (0.50) LEC Crisis Communication

This case study course examines the communication strategies involved in a public response to crisis, using such fields as sports, the entertainment world, politics, and business.

No Special Consent Required

Requisites : Prereq: Level at least 3A

Effective 01-SEP-2022

Description Change:

This course examines practical and theoretical dimensions of communication in times of crisis. It examines case studies and communication strategies and conducts critical and conceptual analysis of how crisis disrupts and transforms various forms of communication.

Rationale :

To change description. This revised description allows instructors more

flexibility by removing the dependence on case studies.

Current Catalog Information

SPCOM 471 (0.50) LEC Communication, Resistance, and Social Change

This course explores the function of communication in advocating for, and generating social change, mostly through practices of resistance, protest, and other forms of dissent and collective action. Students will examine historical and/or contemporary examples of resistance and social change, and will imagine how communication might be used effectively to challenge the status quo.

No Special Consent Required

Requisites : Prereq: SPCOM 101; Level at least 3A

Effective 01-SEP-2022

Subject/Catalog Nbr Change: SPCOM 471

Unit Change: (0.50)

Component Change: LEC

Title Change: Communication, Resistance, and Social Change

Description Change: This course explores the function of communication in advocating for and generating social change, mostly through practices of resistance, protest, and other forms of dissent and collective action. Students will consider how the broader assemblage of media, social, and civic institutions resist change, and will imagine how communication might be used effectively to challenge the status quo.

Consent Change: No Special Consent Required

New Cross Listing : LS 471

Rationale : To change description and add cross-listing to SPCOM 471 thereby creating LS 471. This description change brings the topic of the course into better focus and alleviates Communication Arts' student perceptions of overlap with other courses, particularly vis-à-vis SPCOM 430. It more strongly aligns the course with program strengths in organization communication and public culture. This course supports the Legal Studies program learning outcomes of 1) developing ideas, arguments, and strategies from interdisciplinary perspectives on law and recognizing the strengths and limitations of the law to address social problems (Depth and Breadth of Knowledge, Application of Knowledge, Awareness of Limits of Knowledge); and 2) applying socio-legal knowledge, ethical reasoning, and reflexive analytical skills to critically evaluate the relationship between the law and inequality (Application of Knowledge, Awareness of Limits of Knowledge, Diversity). The Department of Sociology and Legal Studies has been consulted and agrees with these changes.

English Language & Literature

Current Catalog Information

ENGL 200A (0.50) LEC, TUT Survey of British Literature 1

An historical survey of major figures, types, and trends in British literature from the Middle Ages to the late 18th century.

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No Special Consent Required
Requisites : Prereq: Level at least 2A
Effective 01-SEP-2022
Title Change: English Literatures 1
Description Change: An introduction to the diverse forms and voices of literature written in English from the Middle Ages to the late 18th century, focussing on key writers and works, including works by women and people of colour. Students will explore literary techniques, historical and cultural contexts, and the question of the canon.
Rationale : To change title and description. The above changes respond to antiracism initiatives across the University by shifting away from British Literature as the gateway into advanced literary study. ENGL 200A and ENGL 200B introduce students to English literature's origins in the British Isles while also tracing its migration across nations and cultures.

Current Catalog Information

ENGL 200B (0.50) LEC, TUT Survey of British Literature 2

An historical survey of major figures, types, and trends in British literature from the late 18th century to the present.

No Special Consent Required

Requisites : Prereq: Level at least 2A

Effective 01-SEP-2022

Title Change: English Literatures 2
Description Change: An introduction to the diverse forms and voices of literature written in English from the late 18th century to the present, focussing on key writers and works from Britain and North America, and including works by women and people of colour. Students will explore literary techniques, historical and cultural contexts, and the question of the canon.
Rationale : The above changes respond to antiracism initiatives across the University by shifting away from British Literature as the gateway into advanced literary study. ENGL 200A and ENGL 200B introduce students to English literature's origins in the British Isles while also tracing its migration across nations and cultures.

Current Catalog Information

ENGL 309E (0.50) LEC Speech Writing

The analysis, writing, and editing of speeches. Analysis will focus on the reading and viewing of several famous 20th-century speeches using theories of communication.

Writing and editing will focus on implementing oral/aural communication strategies.

No Special Consent Required

Requisites : Prereq: Level at least 4A English Rhetoric and Professional Writing or English Rhetoric, Media, and Professional Communication

Cross-listed as: SPCOM 323

Effective 01-SEP-2022

Description Change: The analysis, writing, and editing of speeches. This course considers how

Rationale :

genre and style impact the creation, reception, and implications of meaning. Students practice writing, as form and style, in the construction of arguments and other genres of speech making.
To change description. This change will enable this course to address a gap in the curriculum concerning how communication and argumentation are not only reasoned endeavors but also stylized practices defined by genre conventions. Incorporating these elements is now possible given changes and additions to 200 level SPCOM course offerings. The Department of English Language and Literature has been consulted and is in agreement with these changes.

Germanic & Slavic Studies

Current Catalog Information

GER 220 (0.50) LEC, TUT Once Upon a Fairy Tale: Fairy Tales, Then and Now

This course studies fairy tales in the broader context of the history of childhood and practices of education and socialization. The course will concentrate on the German and Russian context and in particular on the work of the Brothers Grimm and Alexander Afanasyev, and will also consider fairy tales drawn from a number of different national traditions and historical periods. [Note: Taught in English.]

No Special Consent Required

Cross-listed as: REES 220

Effective 01-SEP-2022

Subject/Catalog Nbr Change: GER 120

Description Change: This course studies fairy tales in the broader context of the history of childhood and practices of education and socialization. The course will focus on fairy tales of German and Russian origins and consider their interpretations and reinterpretations in different historical periods. This may include figures from the Brothers Grimm and Alexander Afanasyev, such as Snow White, Sleeping Beauty, Red Riding Hood, and the Firebird. [Note: Taught in English.]

Rationale :

The course content is well suited for a first-year course. Our most recent offerings GER 220/REES 220 Once Upon a Fairy Tale have moved toward making the course more accessible to first-year students, both in the selection of readings and in updating the course structure and assignments. The new number and adjusted description reflect this.

Current Catalog Information

(0.00)

Effective 01-SEP-2022

Subject/Catalog Nbr Change: GER 283

Unit Change: (0.50)

Component Change: LEC

Title Change: The Holocaust and Film

Description Change: An examination of the Holocaust as portrayed in feature films and documentaries. Do cinematic attempts capture the horror of the Holocaust faithfully, or trivialize it? The background to anti-semitism, use of religious imagery in propaganda films, and what counts as success or failure in cinematic representations are discussed. [Note: This course fulfils an Area 3 requirement for Religious Studies majors.]

Consent Change: No Special Consent Required

New Cross Listing : JS 233 RS 272

Rationale : To add cross-listing to JS 233/RS 272 thereby creating GER 283. This course contains significant German Studies content, covering German feature films and documentaries such as Triumph of the Will, Der Ewige Jude, The Wannsee Conference, and The Nasty Girl, as well as issues that relate to German history and German thinkers. In its focus on cinematic portrayals of the Holocaust, it takes up film analysis tools that are part of our German Studies curriculum. Cross-listing JS 233/RS 272 with GER 283 would thus also contribute to maintaining a substantial film studies offering in Germanic and Slavic Studies. Germanic faculty have in the past contributed to teaching JS 233/RS 272 through guest lectures. The cross-listing was suggested by Jewish Studies and both departments involved (Germanic and Slavic Studies, Religious Studies) support the cross-listing.

Current Catalog Information

GER 304 (0.50) LAB, LEC Reading and Translating
Students learn strategies for understanding a variety of texts such as newspaper reports, manuals, and fiction. Translation exercises are used to improve language skills.

No Special Consent Required

Requisites : Prereq: One of GER 202, 211, 212

Effective 01-SEP-2022

Requisite Change : Prereq: GER 202 or GER 211

Rationale : To change prerequisites. GER 212 has been inactivated. Hence we are changing the prerequisites for this course.

Current Catalog Information

GER 307 (0.50) LEC, TUT German for Professional Purposes
This language course teaches students the skills needed to function in German business and professional environments. Praxis-oriented language and intercultural training are combined with a discussion of the German business world.

No Special Consent Required

Requisites : Prereq: One of GER 202, 211, 212

Effective 01-SEP-2022

Requisite Change : Prereq: GER 202 or GER 211

Rationale : To change prerequisites. GER 212 has been inactivated. Hence we are changing the prerequisites for this course.

Current Catalog Information

GER 308 (0.50) LEC, TUT German through Comics
German-language comic strips and graphic novels enable students to explore modern language use. Colloquial German language skills are sharpened in this course, and the place of the comic strip and graphic novel in society is discussed.
No Special Consent Required

Requisites : Prereq: One of GER 202, 211, 212

Effective 01-SEP-2022

Requisite Change :

Prereq: GER 202 or GER 211

Rationale :

To change prerequisites. GER 212 has been inactivated. Hence we are changing the prerequisites for this course.

Current Catalog Information

GER 331 (0.50) SEM Exploring the German Language
An introduction to the study of linguistics with a focus on developing the German language skills necessary for linguistic analysis.

No Special Consent Required

Requisites : Prereq: One of GER 211, 212

Effective 01-SEP-2022

Title Change:

Exploring German Language and Literature

Description Change:

An introduction to German studies through close engagement with one specific topic. This course prepares students for advanced undergraduate courses in German studies by developing historical, theoretical, and methodological knowledge as well as the language skills necessary for reading literature and analyzing language. [Note: This is a repeatable course, subject to different content; it may be completed a total of three times.]

Requisite Change :

Prereq: One of GER 211, GER 299, GER 303, GER 304, GER 307, GER 308, GER 350, GER 399

Rationale :

To change title, description, description notes, repeat rules, and prerequisites. This new version of GER 331 replaces GER 334 Exploring German Literature (inactivated) and the former version of GER 331 Exploring the German Language, which focused more narrowly on linguistic analysis. A more broadly conceptualized version of GER 331 as a 300-level topics seminar allows us to include interdisciplinary topics. As topics will vary, students will be allowed to repeat the course. This course prepares students for 400-level seminars, notably GER 431 Senior Seminar. We are also changing the prerequisites for this course since GER 212 has been inactivated. Short title: Exploring German Lang and Lit.

Current Catalog Information

REES 220 (0.50) LEC, TUT Once Upon a Fairy Tale: Fairy Tales, Then and Now
This course studies fairy tales in the broader context of the history of childhood and practices of education and socialization. The course will concentrate on the

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German and Russian context and in particular on the work of the Brothers Grimm and Alexander Afanasyev, and will also consider fairy tales drawn from a number of different national traditions and historical periods. [Note: Taught in English.]

No Special Consent Required

Cross-listed as: GER 220

Effective 01-SEP-2022

Subject/Catalog Nbr Change: REES 120

Description Change: This course studies fairy tales in the broader context of the history of childhood and practices of education and socialization. The course will focus on fairy tales of German and Russian origins and consider their interpretations and reinterpretations in different historical periods. This may include figures from the Brothers Grimm and Alexander Afanasyev, such as Snow White, Sleeping Beauty, Red Riding Hood, and the Firebird. [Note: Taught in English.]

Rationale : The course content is well suited for a first-year course. Our most recent offerings GER 220/REES 220 Once Upon a Fairy Tale have moved toward making the course more accessible to first-year students, both in the selection of readings and in updating the course structure and assignments. The new number and adjusted description reflect this.

Political Science

Current Catalog Information

PSCI 493 (0.50) FLD Field Course

A combination of academic study and field experience in topics of political science.

Field experience may include the International Monetary Fund/World Bank meetings in Washington, D.C. [Note: This is a repeatable course, subject to different content; it may be completed a total of two times. Course will be graded on a CR/NCR basis.

Additional fees required.]

Instructor Consent Required

Effective 01-SEP-2022

Description Change: A combination of academic study and field experience that expose students to "real-world" political scenarios, including important political gatherings, such as the meetings of the International Monetary Fund/World Bank in Washington, DC; or sites of political significance, such as Israel/Palestine. [Note: This is a repeatable course, subject to different content; it may be completed a total of two times. Course will be graded on a CR/NCR basis. Additional fees required.]

Consent Change: Department Consent Required

Rationale : To change description and consent. The description is being updated to reflect course offerings in department. Consent is being changed to ease the administration of approving students to take the course. Department consent is required because there are both travel and safety issues that sometimes need to be attended to and which the individual instructor may not be handling. (e.g., forms that need to be completed for Waterloo International and the Safety Office).

Current Catalog Information

PSCI 499A (0.50) ESS, SEM Special Honours Essay
Honours Political Science students wishing to undertake a senior honours essay in their fourth year should consult the department's undergraduate officer. [Note: A numeric grade for PSCI 499A will be submitted only after the completion of PSCI 499B.]

Department Consent Required

Requisites : Prereq: PSCI 299; Level at least 3B Political Science majors. Political Science average at least 75%

Effective 01-SEP-2022

Requisite Change : Prereq: Level at least 3B Political Science majors; Political Science average at least 75%

Rationale : To change prerequisites to remove PSCI 299 as it is no longer a requirement.

Renison University College

Current Catalog Information

SDS 251R (0.50) LEC Social Research
Introduction to the philosophy and methodology of applied social science research, including treatment of the problems and strategies of research design and execution. [Note: SWREN 251R is available only to students who have been given conditional admission to the BSW program; such students must have already completed their first undergraduate degree.]

No Special Consent Required

Requisites : Prereq: SDS/ISS 250R. Not open to students in the Faculty of Mathematics. Antireq: ISS 251R, LS/SOC 221, LS/SOC 321, PSYCH 291, REC 270, SMF 220 SWREN 251R

Cross-listed as:

Effective 01-SEP-2022

Requisite Change : Prereq: Level at least 2A; Not open to students in the Faculty of Mathematics. Antireq: ISS 251R, LS/SOC 221, LS/SOC 321, PSYCH 291, REC 270, SMF 220

Rationale : To change prerequisites. The department determined that there is no need for students to have SDS 250R completed prior to SDS 251R anymore due to some recent revisions of courses. Both are required for major students and removal of this prerequisite will provide more scheduling flexibility for both department and students. It also better aligns with how similar programs offer their core research methods course prior to their statistics course, which will now be an option. The Level 2A prerequisite is added to replace a core function of the prior prerequisite (i.e. ensure access by students 2nd year onwards).

Current Catalog Information

SOCWK 120R (0.50) LEC Introduction to Social Work

Presentation of the values, knowledge, and skill base; principles and purposes of the profession; and an examination of methods of practice. Traditional and innovative social work settings are discussed. Historic development of social work and its influence on contemporary practice are reviewed. [Note: SWREN 120R is available only to students who have been given conditional admission to the BSW program; such students must have already completed their first undergraduate degree.]

No Special Consent Required

Cross-listed as: SWREN 120R

Effective 01-SEP-2022

Description Change:

This course provides an overview of the social work profession as part of the social welfare system in Canada, emphasizing Indigenous and Eurocentric histories, worldviews, values, ethics, and practice approaches, including individual, family, community, and structural settings. [Note: SWREN 120R is available only to students who have been given conditional admission to the BSW program; such students must have already completed their first undergraduate degree.]

Rationale :

To change description. The description had not been updated for some time. New version better fits more recent revisions to overall course scope and content.

Religious Studies

Current Catalog Information

JS 233 (0.50) LEC The Holocaust and Film

An examination of the Holocaust as portrayed in feature films and documentaries. Do cinematic attempts capture the horror of the Holocaust faithfully, or trivialize it?

The background to anti-semitism, use of religious imagery in propaganda films, and what counts as success or failure in cinematic representations are discussed. [Note:

This course fulfils an Area 3 requirement for Religious Studies majors.]

No Special Consent Required

Cross-listed as: RS 272

Effective 01-SEP-2022

Subject/Catalog Nbr Change: JS 233

Unit Change: (0.50)

Component Change: LEC

Title Change: The Holocaust and Film

Description Change: An examination of the Holocaust as portrayed in feature films and documentaries. Do cinematic attempts capture the horror of the Holocaust faithfully, or trivialize it? The background to anti-semitism, use of religious imagery in propaganda films, and what counts as success or failure in cinematic representations are discussed. [Note: This course fulfils an Area 3 requirement for Religious Studies majors.]

Consent Change: No Special Consent Required

New Cross Listing : RS 272 GER 283

Rationale :

To add cross-listing to JS 233/RS 272 thereby creating GER 283. This course

contains significant German Studies content, covering German feature films and documentaries such as Triumph of the Will, Der Ewige Jude, The Wannsee Conference, and The Nasty Girl, as well as issues that relate to German history and German thinkers. In its focus on cinematic portrayals of the Holocaust, it takes up film analysis tools that are part of our German Studies curriculum. Cross-listing JS 233/RS 272 with GER 283 would thus also contribute to maintaining a substantial film studies offering in Germanic and Slavic Studies. Germanic faculty have in the past contributed to teaching JS 233/RS 272 through guest lectures. The cross-listing was suggested by Jewish Studies and both departments involved (Germanic and Slavic Studies, Religious Studies) support the cross-listing.

Current Catalog Information

RS 272 (0.50) LEC The Holocaust and Film
An examination of the Holocaust as portrayed in feature films and documentaries. Do cinematic attempts capture the horror of the Holocaust faithfully, or trivialize it? The background to anti-semitism, use of religious imagery in propaganda films, and what counts as success or failure in cinematic representations are discussed. [Note: This course fulfils an Area 3 requirement for Religious Studies majors.]
No Special Consent Required
Cross-listed as: JS 233

Effective 01-SEP-2022

Subject/Catalog Nbr Change: RS 272
Unit Change: (0.50)
Component Change: LEC
Title Change: The Holocaust and Film
Description Change: An examination of the Holocaust as portrayed in feature films and documentaries. Do cinematic attempts capture the horror of the Holocaust faithfully, or trivialize it? The background to anti-semitism, use of religious imagery in propaganda films, and what counts as success or failure in cinematic representations are discussed. [Note: This course fulfils an Area 3 requirement for Religious Studies majors.]
Consent Change: No Special Consent Required
New Cross Listing : JS 233 GER 283
Rationale : To add cross-listing to JS 233/RS 272 thereby creating GER 283. This course contains significant German Studies content, covering German feature films and documentaries such as Triumph of the Will, Der Ewige Jude, The Wannsee Conference, and The Nasty Girl, as well as issues that relate to German history and German thinkers. In its focus on cinematic portrayals of the Holocaust, it takes up film analysis tools that are part of our German Studies curriculum. Cross-listing JS 233/RS 272 with GER 283 would thus also contribute to maintaining a substantial film studies offering in Germanic and Slavic Studies. Germanic faculty have in the past contributed to teaching JS 233/RS 272 through guest lectures. The cross-listing was suggested by Jewish Studies and both departments involved (Germanic and Slavic Studies, Religious Studies) support the cross-listing.

Sociology and Legal Studies

Current Catalog Information

LS 221 (0.50) LEC Research Methods

An introductory survey of the research techniques commonly employed by sociologists, criminologists, and legal studies researchers. The formulation of research designs appropriate to various kinds of intellectual problems in social science is stressed.

No Special Consent Required

Requisites : Prereq: SOC 101/101R or 120R; Not open to students in the Faculty of Mathematics. Antireq: ISS/SDS 251R, KIN 330, SOC 321/LS 321, PSYCH 291, REC 270, SMF 220, SWREN 251R
SOC 221

Cross-listed as:

Effective 01-SEP-2022

Requisite Change : Prereq: One of LS 101, SOC 101/101R, 120R; Level at least 2A; Not open to students in the Faculty of Mathematics. Antireq: ISS/SDS 251R, KIN 330, PSYCH 291, REC 270, SOC 321/LS 321, SMF 220, SWREN 251R

Rationale : To change prerequisites (LS offering only). There are no changes for SOC 221 as LS 101 is not a required course for any Sociology academic plans. The prerequisite of "Level at least 2A" is proposed because first year students try to enrol in this course. The prospective major charts explicitly tells students to take these courses in second year. This issue was brought up by the Registrar's Office. Additionally, LS 280 has a prerequisite of "One of LS 101, SOC 101/101R or 120R", while LS 221 currently only has a prerequisite of "SOC 101/101R or 120R". To correct this inconsistency, the department is proposing adding LS 101 to the list of "one of" prerequisites for LS 221. SJU Soc & LS department members proposed a friendly amendment that addresses this inconsistency.

Current Catalog Information

LS 280 (0.50) LEC Social Statistics

A basic course in statistics used in social science research including sampling, central tendency, probability, and covariance, as illustrated in specifically sociological and criminological data.

No Special Consent Required

Requisites : Prereq: One of LS 101, SOC 101/101R or 120R; Not open to Math students. Antireq: ARTS 280, ECON 221, ENVS 278, ISS/ 250A/B, ISS/SDS 250R, KIN 222, PSCI 314, PSYCH 292, REC 371, SMF 230, STAT 202, 206, 211, 221, 231, 241, SWREN 250A/B, 250R
SOC 280

Cross-listed as:

Effective 01-SEP-2022

Requisite Change : Prereq: One of LS 101, SOC 101/101R, 120R; Level at least 2A; Not open to Math students. Antireq: ARTS 280, ECON 221, ENVS 278, ISS/ 250A/B, ISS/SDS 250R, KIN 222, PSCI 314, PSYCH 292, REC 371, SMF 230, STAT 202, 206, 211, 221, 231, 241, SWREN 250A/B, 250R

Rationale : To change prerequisites. The prerequisite of "Level at least 2A" is proposed because first year students request enrolment in this required course. The prospective major charts explicitly tells students to take these courses in second year. This issue was brought up by the Registrar's Office.

Current Catalog Information

(0.00)

Effective 01-SEP-2022

Subject/Catalog Nbr Change: LS 471
Unit Change: (0.50)
Component Change: LEC
Title Change: Communication, Resistance, and Social Change
Description Change: This course explores the function of communication in advocating for and generating social change, mostly through practices of resistance, protest, and other forms of dissent and collective action. Students will consider how the broader assemblage of media, social, and civic institutions resist change, and will imagine how communication might be used effectively to challenge the status quo.

Consent Change: No Special Consent Required
Requisite Change : Prereq: Level at least 3A
New Cross Listing : SPCOM 471
Rationale : To change description and add cross-listing to SPCOM 471 thereby creating LS 471. This description change brings the topic of the course into better focus and alleviates Communication Arts' student perceptions of overlap with other courses, particularly vis-à-vis SPCOM 430. It more strongly aligns the course with program strengths in organization communication and public culture. This course supports the Legal Studies program learning outcomes of 1) developing ideas, arguments, and strategies from interdisciplinary perspectives on law and recognizing the strengths and limitations of the law to address social problems (Depth and Breadth of Knowledge, Application of Knowledge, Awareness of Limits of Knowledge); and 2) applying socio-legal knowledge, ethical reasoning, and reflexive analytical skills to critically evaluate the relationship between the law and inequality (Application of Knowledge, Awareness of Limits of Knowledge, Diversity). The Department of Sociology and Legal Studies has been consulted and agrees with these changes.

Current Catalog Information

LS 492 (0.50) SEM Communication and Social Justice
An examination of the ways in which communication on the part of individuals, groups, and institutions contributes to fostering justice in social contexts. Areas of focus include communication and justice in interpersonal, workplace, community, and

national/international contexts.

No Special Consent Required

Requisites :

Cross-listed as:

Prereq: Level at least 3A

SPCOM 430

Effective 01-SEP-2022

Description Change:

An examination of how communication on the part of individuals, groups, and institutions implicates social justice. Students examine the relationship between communication and justice to understand how the representation and performance of gender, race, ethnicity, and other cultural constructs contribute to social and political conditions.

Rationale :

To change description. This description change brings the topic of the course into better focus and alleviates student perceptions of overlap with other courses, particularly vis-à-vis SPCOM 471. It more strongly aligns the course with program strengths in media and public culture. The Department of Sociology and Legal Studies was consulted and agrees to this change.

Current Catalog Information

LS 496 (0.50) LEC Special Topics in Legal Studies

This course will deal with selected topics in Legal Studies. Subjects will be dependent upon the research and/or instructional interests of faculty. [Note: This is a repeatable course, subject to different content; it may be completed a total of two times.]

No Special Consent Required

Requisites :

Prereq: LS 101; Level at least 4A

Effective 01-SEP-2022

Component Change:

SEM

Rationale :

To change components. Consistent with Legal Studies courses at the 400-level, this special topics course is taught in a seminar format rather than as a lecture course.

Current Catalog Information

LS 498 (0.50) LEC Directed Readings in Legal Studies

Selected study and assignments under the direction of a faculty member who teaches courses in legal studies and criminology. [Note: This is a repeatable course, subject to different content; it may be completed a total of two times.]

Instructor Consent Required

Requisites :

Prereq: Level at least 3A

Effective 01-SEP-2022

Component Change:

RDG

Rationale :

To change components. This course is typically taught one-on-one with a student. The instructor creates a syllabus with assigned readings for the student. A reading component matches the way the course is taught rather than a lecture format.

Current Catalog Information

SOC 202 (0.50) LEC Classical Sociological Theory

An examination of the nature and function of sociological theory and the types of theory that founded the discipline in the 19th and early 20th centuries.

No Special Consent Required

Requisites : Prereq: SOC 101/101R or 120R

Effective 01-SEP-2022

Requisite Change : Prereq: SOC 101/101R or 120R; Level at least 2A

Rationale : To change prerequisites to be consistent with other required second year courses.

Current Catalog Information

SOC 221 (0.50) LEC Research Methods

An introductory survey of the research techniques commonly employed by sociologists, criminologists, and legal studies researchers. The formulation of research designs appropriate to various kinds of intellectual problems in social science is stressed.

No Special Consent Required

Requisites : Prereq: SOC 101/101R or 120R; Level at least 2A; Not open to students in the Faculty of Mathematics. Antireq: ISS/SDS 251R, KIN 330, PSYCH 291, REC 270, SOC 321/LS 321, SMF 220, SWREN 251R
LS 221

Cross-listed as:

Effective 01-SEP-2022

Rationale : To change prerequisites (LS offering only). There are no changes for SOC 221 as LS 101 is not a required course for any Sociology academic plans. The prerequisite of "Level at least 2A" is proposed because first year students try to enrol in this course. The prospective major charts explicitly tells students to take these courses in second year. This issue was brought up by the Registrar's Office. Additionally, LS 280 has a prerequisite of "One of LS 101, SOC 101/101R or 120R", while LS 221 currently only has a prerequisite of "SOC 101/101R or 120R". To correct this inconsistency, the department is proposing adding LS 101 to the list of "one of" prerequisites for LS 221. SJU Soc & LS department members proposed a friendly amendment that addresses this inconsistency.

Current Catalog Information

SOC 280 (0.50) LEC Social Statistics

A basic course in statistics used in social science research including sampling, central tendency, probability, and covariance, as illustrated in specifically sociological and criminological data.

No Special Consent Required

Requisites : Prereq: One of LS 101, SOC 101/101R or 120R; Not open to Math students.
Antireq: ARTS 280, ECON 221, ENV5 278, ISS/ 250A/B, ISS/SDS 250R, KIN 222, PSCI 314, PSYCH 292, REC 371, SMF 230, STAT 202, 206, 211, 221, 231, 241, SWREN 250A/B, 250R

Cross-listed as:
LS 280

Effective 01-SEP-2022

Requisite Change : Prereq: One of LS 101, SOC 101/101R, 120R; Level at least 2A; Not open to Math students. Antireq: ARTS 280, ECON 221, ENVS 278, ISS/ 250A/B, ISS/SDS 250R, KIN 222, PSCI 314, PSYCH 292, REC 371, SMF 230, STAT 202, 206, 211, 221, 231, 241, SWREN 250A/B, 250R

Rationale : To change prerequisites. The prerequisite of "Level at least 2A" is proposed because first year students request enrolment in this required course. The prospective major charts explicitly tells students to take these courses in second year. This issue was brought up by the Registrar's Office.

Current Catalog Information

SOC 401 (0.50) SEM Theoretical Perspectives on Gender

An examination of sociological theories of gender and gender relations. Emphasis is placed on tracing historical changes in interpretations of gender, with a particular consideration of contemporary theoretical debates. Approaches to be considered include feminist theories as well as political economy and cultural studies.

No Special Consent Required

Requisites : Prereq: Level at least 4A Sociology majors

Effective 01-SEP-2022

Requisite Change : Prereq: SOC 302; Level at least 4A Sociology majors

Rationale : To change prerequisites. This change adds SOC 302 to be consistent with other 400-level SOC theory courses.

Current Catalog Information

SOC 430 (0.50) LEC Special Topics in Sociology

An in-depth analysis of research in selected topics in Sociology. [Note: This is a repeatable course, subject to different content; it may be completed a total of two times.]

No Special Consent Required

Requisites : Prereq: SOC 101/101R; Level at least 4A Sociology majors

Effective 01-SEP-2022

Component Change: SEM

Rationale : To change components. Change course component from LEC to SEM to be consistent with other fourth year seminar courses.

St Jerome's University

Current Catalog Information

ITALST 111 (0.50) LEC Marriage and Family Traditions in Italy

This course explores the contributions of Italian women artists, writers, and intellectuals from the Medieval times through the Renaissance to the Baroque period.

The focus will be on the institutions of marriage and of the family.

No Special Consent Required

Effective 01-SEP-2022

Subject/Catalog Nbr Change: ITALST 111

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Undergraduate Catalog Report
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Run Date 17-JUN-2021
Meeting Number(s) 16

Unit Change: (0.50)
Component Change: LEC
Title Change: Sex, Marriage, and Family Traditions in Italy
Description Change: This course explores the contributions of Italian women artists, writers, and intellectuals from the Medieval times through the Renaissance to the Baroque period. The focus will be on the institutions of marriage and of the family.
Consent Change: No Special Consent Required
New Cross Listing : SMF 111
Rationale : To change title and add cross-listing to ITALST 111 thereby creating SMF 111. Formerly titled Women, Family, Sex and Tradition in Italy, ITALST 111 has been on the approved list of courses for Sexuality, Marriage, and Family Studies (SMF) for a number of years and has been a popular choice. The course content offers SMF students a cultural perspective not provided in other SMF courses. The title is being revised to possibly draw SMF students more readily to the course, and we hope the proposed cross-listing will increase the demand even more. The Department of SMF has been consulted and is in agreement with the cross-listing. This course supports Italian Studies and SMF learning outcomes (Depth and Breadth of Knowledge, Application of Knowledge, Awareness of Limits of Knowledge, Communication Skills). SMF learning outcomes include the ability to describe and critically evaluate key concepts in the interdisciplinary study of sexuality and relationships. These intersect with ITALST 111 goals to articulate informed arguments about gender roles and the development of the institution of marriage in Italy from the late Medieval to the Baroque era.
Short title: Sex, Marriage, Family in Italy.

Current Catalog Information

ITALST 112 (0.50) LEC Sexual Identities and Relationships in Italy

This course explores the contributions of Italian women artists, writers, and intellectuals from the Enlightenment until contemporary times. The focus will be on the expression of sexual identities, the nature of relationships, and the influence of family ties.

No Special Consent Required

Effective 01-SEP-2022

Subject/Catalog Nbr Change: ITALST 112
Unit Change: (0.50)
Component Change: LEC
Title Change: Sexual Identities and Relationships in Italy
Description Change: This course explores the contributions of Italian women artists, writers, and intellectuals from the Enlightenment until contemporary times. The focus will be on the expression of sexual identities, the nature of relationships, and the influence of family ties.
Consent Change: No Special Consent Required
New Cross Listing : SMF 112

Rationale : To add cross-listing to ITALST 112 thereby creating SMF 112. This new course (first offering in winter 2022) expands on material formerly covered in ITALST 111, a course which has long stood on the list of approved Sexuality, Marriage, and Family Studies (SMF) courses. Its exploration of sexual identities and gender roles as portrayed in Italian art and literature offers cultural enrichment and perspectives not provided in other SMF courses. The proposed cross-listing will make the course more accessible to SMF students and increase interest in Italian Studies. The Department of SMF has been consulted and is in agreement with the cross-listing. This course supports Italian Studies and SMF learning outcomes (Depth and Breadth of Knowledge, Application of Knowledge, Awareness of Limits of Knowledge, Communication Skills). SMF learning outcomes include the ability to describe and critically evaluate key concepts in the interdisciplinary study of sexuality and relationships. These intersect with ITALST 112 goals to understand concepts that mark the development of the Italian female imaginary from the 18th to the 21st century. Students must demonstrate effective communication skills when articulating informed arguments about sexual identities as portrayed in the works of Italian women writers/artists from those periods.

Current Catalog Information

ITALST 291 (0.50) LEC Italian Culture and Civilization 1

A survey of developments in Italian culture - history, literature, and the arts - up to and including the Renaissance.

No Special Consent Required

Requisites :

Prereq: Level at least 2A

Effective 01-SEP-2022

Course Attribute Change:

Also offered Online

Rationale :

To add attribute. ITALST 291 and ITALST 292 are the core culture courses in Italian Studies. Online versions of the courses will be prepared for the growing demand of online learning and to provide the possibility for growth in the program, as recommended in the recent Italian Studies program review. The Centre for Extended Learning (CEL) has been consulted.

Current Catalog Information

ITALST 292 (0.50) LEC Italian Culture and Civilization 2

A survey of developments in Italian culture - history, literature, painting, and music - in the post-Renaissance period, with emphasis on modern Italy.

No Special Consent Required

Requisites :

Prereq: Level at least 2A

Effective 01-SEP-2022

Course Attribute Change:

Also offered Online

Rationale :

To add attribute. ITALST 291 and ITALST 292 are the core culture courses in Italian Studies. Online versions of the courses will be prepared for the growing demand of online learning and to provide the possibility for growth

in the program, as recommended in the recent Italian Studies program review. The Centre for Extended Learning (CEL) has been consulted.

Current Catalog Information

(0.00)

Effective 01-SEP-2022

Subject/Catalog Nbr Change: SMF 111
Unit Change: (0.50)
Component Change: LEC
Title Change: Sex, Marriage, and Family Traditions in Italy
Description Change: This course explores the contributions of Italian women artists, writers, and intellectuals from the Medieval times through the Renaissance to the Baroque period. The focus will be on the institutions of marriage and of the family.
Consent Change: No Special Consent Required
New Cross Listing : ITALST 111
Rationale : To change title and add cross-listing to ITALST 111 thereby creating SMF 111. Formerly titled Women, Family, Sex and Tradition in Italy, ITALST 111 has been on the approved list of courses for Sexuality, Marriage, and Family Studies (SMF) for a number of years and has been a popular choice. The course content offers SMF students a cultural perspective not provided in other SMF courses. The title is being revised to possibly draw SMF students more readily to the course, and we hope the proposed cross-listing will increase the demand even more. The Department of SMF has been consulted and is in agreement with the cross-listing. This course supports Italian Studies and SMF learning outcomes (Depth and Breadth of Knowledge, Application of Knowledge, Awareness of Limits of Knowledge, Communication Skills). SMF learning outcomes include the ability to describe and critically evaluate key concepts in the interdisciplinary study of sexuality and relationships. These intersect with ITALST 111 goals to articulate informed arguments about gender roles and the development of the institution of marriage in Italy from the late Medieval to the Baroque era.
Short title: Sex, Marriage, Family in Italy.

Current Catalog Information

(0.00)

Effective 01-SEP-2022

Subject/Catalog Nbr Change: SMF 112
Unit Change: (0.50)
Component Change: LEC
Title Change: Sexual Identities and Relationships in Italy
Description Change: This course explores the contributions of Italian women artists, writers,

Consent Change:
New Cross Listing :
Rationale :

and intellectuals from the Enlightenment until contemporary times. The focus will be on the expression of sexual identities, the nature of relationships, and the influence of family ties.

No Special Consent Required

ITALST 112

To add cross-listing to ITALST 112 thereby creating SMF 112. This new course (first offering in winter 2022) expands on material formerly covered in ITALST 111, a course which has long stood on the list of approved Sexuality, Marriage, and Family Studies (SMF) courses. Its exploration of sexual identities and gender roles as portrayed in Italian art and literature offers cultural enrichment and perspectives not provided in other SMF courses. The proposed cross-listing will make the course more accessible to SMF students and increase interest in Italian Studies. The Department of SMF has been consulted and is in agreement with the cross-listing. This course supports Italian Studies and SMF learning outcomes (Depth and Breadth of Knowledge, Application of Knowledge, Awareness of Limits of Knowledge, Communication Skills). SMF learning outcomes include the ability to describe and critically evaluate key concepts in the interdisciplinary study of sexuality and relationships. These intersect with ITALST 112 goals to understand concepts that mark the development of the Italian female imaginary from the 18th to the 21st century. Students must demonstrate effective communication skills when articulating informed arguments about sexual identities as portrayed in the works of Italian women writers/artists from those periods.

St Paul's University College

Current Catalog Information

HRTS 201 (0.50) LEC Human Rights Theory 1

A historical and cross-cultural overview of definitions of personhood and rights. It examines comparative foundational precepts from sociality to dignity, and comparative forms of action, remedy, restitution, obligation, and justice.

No Special Consent Required

Requisites : Prereq: HRTS 101

Effective 01-SEP-2022

Title Change:

Foundations and Critiques of Human Rights

Description Change:

A historical and cross-cultural overview and critique of the bases for human rights. This course will allow students to explore key questions related to justice, dignity, liberty, equality, solidarity, and morality. Students will be introduced to a variety of interdisciplinary perspectives through which they will develop an understanding of philosophical and political critiques of human rights.

Rationale :

To change title and description. Under the previous academic plan, students were required to take two human rights theory courses. As the new plan requires only one theory course, the title and description of this course has been modified to include a more critical perspective (which students

would previously have received in the second course) and to avoid excessive overlap with PHIL 328/LS 352. Short title: Foundations of HR.

Current Catalog Information

HRTS 203 (0.50) LEC The Canadian Charter of Rights and Freedoms

An examination of the Canadian Charter of Rights and Freedoms as the central mechanism for the determination and application of human rights with respect to government action. The course will proceed by means of the study of leading decisions of the Supreme Court of Canada.

No Special Consent Required

Requisites : Prereq: HRTS 101

Effective 01-SEP-2022

Description Change:

This course will introduce students to the Canadian Charter of Rights and Freedoms as the central mechanism for the determination and application of human rights with respect to government action. By studying leading decisions of the Supreme Court of Canada, students will gain a greater appreciation of the Charter as a defining feature of the social, political, and legal landscape of Canada, and a better understanding of the role judiciary in interpreting and enforcing rights.

Requisite Change :

Prereq: HRTS 101 or LS 101

Rationale :

To change description and prerequisites. LS 101 is being added as a possible prerequisite in order to increase the accessibility of this course to students who might be interested in it as either LS 101 or HRTS 101 will provide students with the foundational knowledge that they require to succeed in this course.

Current Catalog Information

HRTS 102 (0.50) LEC Human Rights Codes, Commissions, and Policies

An introduction to Canadian human rights codes, commissions, and policies as instruments for the application and enforcement of human rights. Special attention will be given to the Ontario Human Rights Code and Ontario Human Rights Commission.

No Special Consent Required

Effective 01-SEP-2022

Subject/Catalog Nbr Change: HRTS 204

Title Change: Discrimination, Rights, and Canadian Law

Description Change:

This course will introduce students to historical and contemporary discrimination disputes and controversies through an intersectional analysis of protected grounds of diversity such as gender, race, disability, and sexual orientation. Through this course, students will learn about the role that the Ontario Human Rights Code, the Ontario Human Rights Tribunal, and the Ontario Human Rights Commission play as mechanisms that enforce human rights. [Note: Formerly HRTS 102.]

Requisite Change :

Prereq: HRTS 101 or LS 101. Antireq: HRTS 102

Rationale :

To change number, title, description, and prerequisite, and add description note and antirequisite. The name and description of this course have been updated to better reflect the content that is currently being taught under

this heading and to make that content clearer to students. LS 101 is being added as a possible prerequisite in order to increase the accessibility of this course to students as either LS 101 or HRTS 101 will provide students with the foundational knowledge that they require to succeed in this course. Given the presence of a prerequisite, it was felt that it would be more appropriate to have this course at the 200-level rather than the 100-level. The previous number is added as an antirequisite. The description note is added to identify the previous course number. Short title: Disc., Rights, and Can. Law.

Current Catalog Information

HRTS 202 (0.50) LEC Human Rights Theory 2

An overview of contemporary debates in human rights theory. The course critically analyzes the jurisprudence and politics underpinning key international human rights conventions from a variety of theoretical lenses, including feminist and queer theory, theories of indigeneity, anti-racism and decolonization, and radical re-readings of the European Enlightenment.

No Special Consent Required

Effective 01-SEP-2022

Subject/Catalog Nbr Change:

HRTS 302

Title Change:

Critical Approaches to Contemporary Human Rights Issues

Description Change:

This course offers students an opportunity to engage in advanced critical examination of philosophical, legal, and political debates underpinning some key contemporary human rights issues. Students will explore these issues through a variety of different methodological approaches and using diverse theoretical frameworks, such as feminist and queer theory, theories of indigeneity, and anti-racism and decolonization. [Note: Formerly HRTS 202.]

Requisite Change :

Prereq: HRTS 201. Antireq: HRTS 202

Rationale :

To change number, title, description, and add description note and antirequisite. As this course is no longer a required course under the new academic plan, the title and description were revised to avoid overlap with HRTS 201 and to offer students a more advanced version of the original content. The course number change was made to reflect the change in teaching level. The previous number is added as an antirequisite. The description note is added to identify the previous course number. Short title: Critical Approaches to HR.

COURSE REACTIVATIONS (for approval)

Germanic & Slavic Studies

Current Catalog Information

REES 260 (0.50) LEC Special Topics

Selected topics in Russian and East European Studies chosen by the instructor in consultation with the department. The topics chosen introduce students to important issues in eastern European culture. [Note: This is a repeatable course, subject to different content; it may be completed a total of three times.]

No Special Consent Required

Effective 01-JAN-2022

Rationale :

To reactivate REES 260 with an earlier effective date, so that it can be offered Winter 2022. This course was inactivated recently as part of a more general reduction and refocusing of offerings in REES. There has been more interest than expected in REES culture and/or study abroad from students in the meantime. The department is planning a new study abroad initiative, and REES 260 would help to prepare students for this. Alternate short-term solutions have been explored (e.g. using an ARTS 290 topics course to offer it in the interim), but these will cause more issues for students with regard to breadth requirements and averages. So we are requesting special permission to reactivate the course with an earlier effective date, to ensure students are not disadvantaged.

End of Report

2.2 Plan Title Correction In Quest [for approval]

Department/Academic Unit: St. Jerome's University

Plan Title(s): Diploma in Sexuality, Marriage, and Family Studies

Change: Correction to plan description in Quest, to match plan title in the Undergraduate Calendar

Effective Date: September 01, 2022

Rationale:

While reviewing the June 2021 convocation drafts, an oddity regarding the SMF diploma was discovered.

- In the Undergraduate Calendar, it is listed as "Diploma in Sexuality, Marriage, and Family Studies"
- In the plan description in Quest, it is listed as "Diploma in Sexuality, Marriage, and the Family"

This discrepancy is likely a long-standing error. The plan name change for all SMF plans was previously approved and effective 2006, but the diploma title change was not mentioned specifically in the submission. Therefore it did not change in what is coded in Quest, which is the version that shows up on diplomas, transcripts, convocation programs. Since the Undergraduate Calendar should reflect actuality, this motion is to request that the the official title of the diploma in Quest be corrected to: "Diploma in Sexuality, Marriage, and Family Studies", to match the Undergraduate Calendar.

3. New Academic Plans [for approval]

3.1. Department/Academic Unit: Political Science

New Academic Plans [for approval]

Effective Date: September 01, 2022

Plan Title(s): Canadian Politics and Public Policy Minor

Rationale: We are inactivating the Canadian Politics specialization and the Public Policy and Public Administration Minor, and instead offering a new minor which combines both. It will be open to students in any major except Political Science. The Canadian Politics and Public Policy minor would provide a rigorous introduction to these fields. It will prepare non-PSCI majors for careers in policy, government, or government relations where a knowledge of politics and policy making / analysis will be valuable. It would also result in a more efficient use of department resources.

The new minor incorporates courses from the to-be-inactivated Public Policy and Administration and Canadian Politics minors, but has removed the duplication between those two programs. We have expanded the list of courses available to give students maximum flexibility to successfully complete the new minor.

New Plan Requirements (calendar text):

The Canadian Politics and Public Policy Minor requires successful completion of a minimum of four academic units (eight courses) with a minimum cumulative average of 65%, including:

- PSCI 100 and PSCI 260/LS 206
- Four of PSCI 301, PSCI 302, PSCI 303, PSCI 331, PSCI 334/SOC 334, PSCI 360, PSCI 362, PSCI 363, PSCI 373, PSCI 431, PSCI 433, PSCI 434, PSCI 461, PSCI 462/LS 462, PSCI 463/LS 463, PSCI 472
- Two of ECON 241, ECON 256, ECON 361, ECON 363, ECON 366, ECON 441, ECON 457, SDS 210R/LS 273, SDS 231R, SDS 310R, SDS 311R/LS 373, SDS 312R, SDS 331R, SDS 400R

PSCI 100 Power, Politics, and Policy: An Introduction

PSCI 260/LS 206 Canadian Government & Politics

Four of

PSCI 301 Canadian Political Economy

PSCI 302 Local Government

PSCI 303 Political Economy of the Environment

PSCI 331 Public Administration

PSCI 334/SOC 334 Public Policy

PSCI 360 Topics in Canadian Government and Politics

PSCI 363 Canadian Constitutional Law
PSCI 373 Political Parties, Elections and Political Marketing
PSCI 431 Canadian Public Policy
PSCI 433 Topics in Canadian Public Administration
PSCI 434 Comparative Public Administration
PSCI 461 Canadian National Politics
PSCI 461/LS 462 Government and Politics of Indigenous Peoples
PSCI 463/LS 463 Rights and Public Policy
PSCI 472 Women and Public Policy

Two of

ECON 241 Introduction to Public Economics
ECON 256 Introduction to Health Economics
ECON 361 Cost-Benefit Analysis and Project Evaluation
ECON 363 The Economics of Social Problems
ECON 366 Gender and Economics
ECON 441 Public Economics
ECON 457 Environmental Economics
SDS 210R/LS 273 Children's Rights in Canada
SDS 231R Introduction to Social Policy Processes
SDS 310R Disability and Society
SDS 311/LS 373 Indigenous Peoples and Canadian Public Policy
SDS 312R Homelessness and Public Policy
SDS 331R Social Inequality, Social Justice, and Social Action
SDS 400R Comparative Social Policy

4. Academic Plan Changes – Major Modifications [for approval]

4.1. Department/Academic Unit: St. Paul's University College

Academic Plan Changes [for approval]

Effective Date: September 01, 2022

Plan Title(s): Human Rights Minor

Rationale:

The changes outlined below have been proposed in order to make the Human Rights minor more flexible and thus more accessible to students. There was concern that 7 required courses, including 3 that had to be taken in sequence, would make it too difficult for students who also have to fulfill the requirements for their Majors to actually complete the requirements for the Minor. Reducing the number of required courses (while still maintaining the integrity of the program through the 4 required courses) and expanding the list of accepted electives provides an added level of flexibility in the scheduling, while also allowing students to better customize the minor to suit their particular interests in the field of human rights. In addition, the revision of existing courses, including their prerequisites, and addition of several new courses will result in a better course sequence that will contribute to the integrity of the minor as a whole.

The courses that are to be added to the list of approved electives are the following:

- CI 250 Truth – Reconciliation – Story
- HIST 271 – Global Indigenous Issues
- HIST 314 – The American Civil Rights Movement
- PACS 325 – Refugees and Forced Migration
- PSCI 421/LS 464 – Justice and Gender
- SDS 210R/LS 273 – Children's Rights in Canada
- SDS 449R – Race and Gender Equality
- SPAN 400 – Memory, Human Rights, and Reconciliation

Each of these courses has been reviewed to confirm its human rights content and approval to list them as electives has been received from the relevant departments and programs (Cultural Identities, History, Legal Studies and Sociology, Peace and Conflict Studies, Political Science, Social Development Studies, and Spanish and Latin American Studies). These courses address areas of key concern to the study of human rights including race, gender, and indigenous issues, and their inclusion will further enhance the program's ability to provide students with an interdisciplinary perspective on human rights.

Students interested in applying to the Essex Law program will be advised to take specific courses within the Human Rights minor requirements, including at least one indigenous-related course, and meet a basic minimum overall average that is required by the agreement signed between University of Waterloo, Faculty of Arts and the University of Essex Law School. These changes will

help to ensure that students representing University of Waterloo abroad have an advanced level of knowledge concerning issues of relevance to Canadian society, specifically indigenous rights. The minimum overall average required for the Essex option is set out in the agreement signed between the University of Waterloo, Faculty of Arts and the University of Essex Law School. University of Essex has been consulted regarding these programmatic changes and has approved them.

Calendar text, including additions and ~~deletions~~:

Human Rights Minor:

Students enrolled in any degree program may pursue a minor designation in Human Rights.

The Human Rights Minor requires successful completion of a minimum of four academic course units (eight courses) with a minimum cumulative average of 65%, including:

- HRTS 101, ~~HRTS 102~~, HRTS 201, ~~HRTS 202~~, HRTS 203, **HRTS 204**, ~~HRTS 301~~, ~~HRTS 305/INDG 305~~
- ~~One~~ **Four electives to be chosen from the following list** of the following approved courses:
 - **CI 250**, GSJ 102, GSJ 206/LS 201, HIST 221, **HIST 271**, **HIST 314**, HIST 321/LS 331, **HRTS 301**, **HRTS 302**, **HRTS 305/INDG 305**, **HRTS 3XX**, **HRTS 4XX**, INDG 201/CDNST 201, PACS 318, PACS 324, **PACS 325**, PHIL 328/LS 352, **PSCI 421/LS 464**, PSCI 463/LS 463, **SDS 210R/LS 273**, **SDS 449R**, **SPAN 400**

5. Academic Plan Changes – Minor Modifications [for approval]

5.1. Department/Academic Unit: English Language and Literature

Academic Plan Changes [for approval]

Effective Date: September 01, 2022

Plan Title(s): Three-Year General English - Language and Literature
 Four-Year General English – Literature
 Honours English – Literature

Rationale: We are replacing the Survey of British Literature requirement in all three plans. The proposed changes introduce students to English literature’s origins in the British Isles while also tracing its migration across nations and cultures, with the option to focus on anti-racist and decolonizing historical frameworks for literary study.

Calendar text, including additions and ~~deletions~~:

...

- at least six academic course units (12 courses) in English, including:
 - two ENGL courses at the 100-level, excluding ENGL 119, ENGL 129R/EMLS 129R, ENGL 191/SPCOM 191, ENGL 192/SPCOM 192, and ENGL 193/SPCOM 193 (see Notes 1 and 3)
 - ~~Survey of British Literature: ENGL 200A, ENGL 200B~~
 - **Advanced Introduction to Literature: ENGL 200A; one of ENGL 200B, ENGL 200C**
 - Criticism: ENGL 251

...

Academic Plan Changes [for approval]

Effective Date: September 01, 2022

Plan Title(s): Three-Year General English - Literature and Rhetoric
 Four-Year General English – Literature and Rhetoric
 Honours English – Literature and Rhetoric

Rationale: We are replacing the Survey of British Literature requirement in all three plans. The proposed changes introduce students to English literature’s origins in the British Isles while also tracing its migration across nations and cultures, with the option to focus on anti-racist and decolonizing historical frameworks for literary study.

Calendar text, including additions and ~~deletions~~:

...

- at least eight academic course units (16 courses) in English, including:
 - two ENGL courses at the 100-level, excluding ENGL 119, ENGL 129R/EMLS 129R, ENGL 191/SPCOM 191, ENGL 192/SPCOM 192, ENGL 193/SPCOM 193 (see Note 1)
 - ~~Survey of British Literature: ENGL 200A, ENGL 200B~~
 - **Advanced Introduction to Literature: ENGL 200A; one of ENGL 200B, ENGL 200C**
 - Criticism: ENGL 251

...

Academic Plan Changes [for approval]

Effective Date: September 01, 2022

Plan Title(s): Three-Year General English - Rhetoric, Media, and Professional Communication
 Four-Year General English - Rhetoric, Media, and Professional Communication
 Honours English - Rhetoric, Media, and Professional Communication

Rationale: We are replacing the Survey of British Literature requirement in all three plans. The proposed changes introduce students to English literature's origins in the British Isles while also tracing its migration across nations and cultures, with the option to focus on anti-racist and decolonizing historical frameworks for literary study.

Calendar text, including additions and ~~deletions~~:

...

- at least eight academic course units (16 courses) in English, including:
 - two ENGL courses at the 100-level, excluding ENGL 119, ENGL 129R/EMLS 129R, ENGL 191/SPCOM 191, ENGL 192/SPCOM 192, ENGL 193/SPCOM 193 (see Note 1)
 - ~~Survey of British Literature: one of ENGL 200A, ENGL 200B~~
 - **Advanced Introduction to Literature: one of ENGL 200A, ENGL 200B, ENGL 200C**
 - Criticism: ENGL 251

...

Academic Plan Changes [for approval]

Effective Date: September 01, 2022

Plan Title(s): English Minor

Rationale: The proposed changes introduce students to English literature's origins in the British Isles while also tracing its migration across nations and cultures, with the option to focus on anti-racist and decolonizing historical frameworks for literary study.

Calendar text, including additions and ~~deletions~~:

...

- no more than two ENGL courses at the [100-level](#) (see Note 4)
- **Advanced Introduction to Literature: two of** [ENGL 200A](#), [ENGL 200B](#), [ENGL 200C](#), ~~[ENGL 251](#)~~
- **Criticism: ENGL 251**
- three additional ENGL courses, one of which must be at the [300-level](#) or above

5.2. Department/Academic Unit: Germanic & Slavic Studies

Academic Plan Changes [for approval]

Effective Date: September 01, 2022

Rationale (all plans): We are adding cross-listing of GER 283 to JS 233 / RS 272. Hence JS 233 / RS 272 no longer needs to be part of the list of courses which count in place of GER electives.

Calendar text, including additions and ~~deletions~~:

Plan Title(s): Three-year General German

Notes

1. Students with advanced language skills should take GER electives in place of lower-level required courses. See the undergraduate advisor for details.
2. A number of German language courses can be taken concurrently, for example GER 201 and GER 211 together; GER 202 and GER 211 together; GER 331 together with any of GER 303, GER 304, GER 307, GER 308.
3. It is strongly recommended that all students take GER 331 because it serves as the basis of advanced studies in our field.
4. Students may elect to take up to two courses from the following list in place of GER electives for any German academic plan: DUTCH 101, DUTCH 102, FINE 112, HIST 223, HIST 247, HIST 265, HIST 341, HIST 358, MUSIC 254, MUSIC 255, MUSIC 260, MUSIC 261, RS 211/JS 203, ~~RS 272/JS 233~~. Grades achieved in these courses will be included in the calculation of the German major average.
5. Many German (GER) courses are taught in English and require no knowledge of German; these courses are so identified by their course descriptions.

Plan Title(s): Honours German

...

Notes

1. Students with advanced language skills should take GER electives in place of lower-level required courses. See the undergraduate advisor for details.
2. A number of German language courses can be taken concurrently, for example GER 201 and GER 211 together; GER 202 and GER 211 together; GER 331 together with any of GER 303, GER 304, GER 307, GER 308.
3. It is strongly recommended that all students take GER 331 because it serves as the basis of advanced studies in our field.
4. Students may elect to take up to two courses from the following list in place of GER electives for any German academic plan: DUTCH 101, DUTCH 102, FINE 112, HIST 223, HIST 247, HIST 265, HIST 341, HIST 358, MUSIC 254, MUSIC 255, MUSIC 260, MUSIC 261, RS 211/JS 203, RS 272/JS 233. Grades achieved in these courses will be included in the calculation of the German major average.
5. Many German (GER) courses are taught in English and require no knowledge of German; these courses are so identified by their course descriptions.

...

Plan Title(s): German Minor

...

Notes

1. A number of German language courses can be taken concurrently, for example: GER 201 and GER 211 together; GER 202 and GER 211 together; GER 331 together with any of GER 303, GER 304, GER 307, GER 308.
2. German approved courses: DUTCH 101, DUTCH 102, FINE 112, HIST 223, HIST 247, HIST 265, HIST 341, HIST 358, MUSIC 254, MUSIC 255, MUSIC 260, MUSIC 261, RS 211/JS 203, RS 272/JS 233. Grades achieved in these courses will be included in the calculation of the German Minor average.
3. Many German (GER) courses are taught in English and require no knowledge of German; these courses are so identified by their course descriptions.

5.3. Department/Academic Unit: History

Academic Plan Changes [for approval]

Effective Date: September 01, 2022

Rationale (all plans):

Responding to Registrar's request that we make all plan requirements transparent. Doing so required the History department to modify our breadth requirements, which appeared in Note 2. Our modified breadth requirements are now listed under the History plan level requirements as opposed to in a note. The post 1800 history requirement has been removed, as course offerings are mainly in the modern time period, so it would be fulfilled as students progress through their studies.

Calendar text, including additions and deletions:

Plan Title: Honours History

...

1. History plan-level requirements:

- a minimum cumulative History major average of 70%
- at least eight academic course units (16 courses) in History, including:
 - HIST 250
 - one course in each of three fields:
 - Canadian: HIST 253, HIST 254, HIST 269
 - American: HIST 257, HIST 258
 - European: HIST 260/MEDVL 260, HIST 262, HIST 263
 - International: HIST 268, HIST 271, HIST 274, HIST 275
 - four HIST courses at the 300-level
 - 1.5 units at the 400-level from HIST 421, HIST 422, HIST 450
 - **one course in Canadian History from the following: HIST 103, HIST 106, HIST 113, HIST 209, HIST 221, HIST 224, HIST 225/SDS 205R, HIST 226, HIST 231R/EASIA 220R, HIST 234/RS 245, HIST 253, HIST 254, HIST 255, HIST 256, HIST 269, HIST 277/LS 237, HIST 350, HIST 351, HIST 374, HIST 380, HIST 385, HIST 388, HIST 389**
 - **one course in pre-1800 History from the following: HIST 110, HIST 115/MEDVL 115, HIST 201, HIST 210/CLAS 210/LS 235, HIST 211, HIST 236/LS 236, HIST 237/CLAS 237, HIST 242/CLAS 251, HIST 252/CLAS 252, HIST 260/MEDVL 260, HIST 262, HIST 304/RS 342/MEDVL 304, HIST 317/SMF 317, HIST 329/LS 236, HIST 347/GSJ 347, HIST 348/RS 344, HIST 379/RS 343**

Notes

1. Students may use no more than two HIST courses at the 100-level to fulfil History plan requirements.
- ~~2. History students in all major plans are required to have: at least one course focused on Canadian history, at least one course focused on pre-1800 history, and at least one course focused on post-1800 history. These requirements will usually (but not always) be satisfied as a student advances through the major. Check with the History academic advisor to ensure that all requirements are met.~~

3. Students pursuing the co-op system are strongly recommended to complete two of HIST 203, HIST 302, HIST 303.

....

Plan Title: Four-Year General History

...

1. Appropriate program-level requirements. See Bachelor of Arts Degree Requirements.
2. History plan-level requirements:
 - o a minimum cumulative History major average of 65%
 - o at least eight academic course units (16 courses) in History, including:
 - HIST 250
 - one course in each of three fields:
 - Canadian: HIST 253, HIST 254, HIST 269
 - American: HIST 257, HIST 258
 - European: HIST 260/MEDVL 260, HIST 262, HIST 263
 - International: HIST 268, HIST 271, HIST 274, HIST 275
 - four HIST courses at the 300-level
 - 1.5 units at the 400-level from HIST 421, HIST 422, HIST 450
 - **one course in Canadian History from the following: HIST 103, HIST 106, HIST 113, HIST 209, HIST 221, HIST 224, HIST 225/SDS 205R, HIST 226, HIST 231R/EASIA 220R, HIST 234/RS 245, HIST 253, HIST 254, HIST 255, HIST 256, HIST 269, HIST 277/LS 237, HIST 350, HIST 351, HIST 374, HIST 380, HIST 385, HIST 388, HIST 389**
 - **one course in pre-1800 History from the following: HIST 110, HIST 115/MEDVL 115, HIST 201, HIST 210/CLAS 210/LS 235, HIST 211, HIST 236/LS 236, HIST 237/CLAS 237, HIST 242/CLAS 251, HIST 252/CLAS 252, HIST 260/MEDVL 260, HIST 262, HIST 304/RS 342/MEDVL 304, HIST 317/SMF 317, HIST 329/LS 236, HIST 347/GSJ 347, HIST 348/RS 344, HIST 379/RS 343**

Notes

1. Students may use no more than two HIST courses at the 100-level to fulfil History plan requirements.
2. ~~History students in all major plans are required to have: at least one course focused on Canadian history, at least one course focused on pre-1800 history, and at least one course focused on post-1800 history. These requirements will usually (but not always) be satisfied as a student advances through the major. Check with the History academic advisor to ensure that all requirements are met.~~

Plan Title: Three-Year General History

...

1. Appropriate program-level requirements. See Bachelor of Arts Degree Requirements.
2. History plan-level requirements:
 - a minimum cumulative History major average of 65%
 - at least six academic course units (12 courses) in History, including:
 - HIST 250
 - one course in each of two fields:
 - Canadian: HIST 253, HIST 254, HIST 269
 - American: HIST 257, HIST 258
 - European: HIST 260/MEDVL 260, HIST 262, HIST 263
 - International: HIST 268, HIST 271, HIST 274, HIST 275
 - three HIST courses at the 300-level
 - **one course in Canadian History from the following: HIST 103, HIST 106, HIST 113, HIST 209, HIST 221, HIST 224, HIST 225/SDS 205R, HIST 226, HIST 231R/EASIA 220R, HIST 234/RS 245, HIST 253, HIST 254, HIST 255, HIST 256, HIST 269, HIST 277/LS 237, HIST 350, HIST 351, HIST 374, HIST 380, HIST 385, HIST 388, HIST 389**
 - **one course in pre-1800 History from the following: HIST 110, HIST 115/MEDVL 115, HIST 201, HIST 210/CLAS 210/LS 235, HIST 211, HIST 236/LS 236, HIST 237/CLAS 237, HIST 242/CLAS 251, HIST 252/CLAS 252, HIST 260/MEDVL 260, HIST 262, HIST 304/RS 342/MEDVL 304, HIST 317/SMF 317, HIST 329/LS 236, HIST 347/GSJ 347, HIST 348/RS 344, HIST 379/RS 343**

Notes

1. Students may use no more than two HIST courses at the 100-level to fulfil History plan requirements.
- ~~2. History students in all major plans are required to have: at least one course focused on Canadian history, at least one course focused on pre-1800 history, and at least one course focused on post-1800 history. These requirements will usually (but not always) be satisfied as a student advances through the major. Check with the History academic advisor to ensure that all requirements are met.~~

5.4. Department/Academic Unit: Sociology and Legal Studies

Academic Plan Changes [for approval]

Effective Date: September 01, 2022

Plan Title(s): Legal Studies Minor

Rationale:

Allowing 400-level LS courses to count towards the minor requirements provides greater flexibility for students to complete the minor. Many students request to substitute 400-level courses in place of 300-level courses to complete the minor due to interest in these courses.

Calendar text, including additions and ~~deletions~~:

Students enrolled in any degree program may pursue a minor designation in Legal Studies.

The Legal Studies Minor requires successful completion of a minimum of four academic course units (eight courses) with a minimum cumulative minor average of 65%, including:

- LS 101
- SOC 101/SOC 101R
- three LS courses at the 200-level
- three LS courses at the 300-level or above

Note

At least two academic course units (four courses) taken to fulfil the requirements of this academic plan must be unique to the plan, meaning they cannot be used to satisfy the requirements of any other plan (major, minor, etc.).

5.5. Department/Academic Unit: Political Science

Academic Plan Changes [for approval]

Effective Date: September 01, 2022

Plan Title(s): International Studies Minor

Rationale: International Studies is popular with non-PSCI majors. We view it as an introduction to a set of global processes, globalization, colonialism, transnationalism, diplomacy, international organization, migration, and environmental change that serve to highlight the complexities of the social and political world. Therefore, we have reassessed the courses that are approved as minor requirements. We have added new courses to provide students with more robust options to complete minor requirements. The course changes also reflect new courses added to the calendar since the last time we reviewed this minor, according to the following principles:

1. Courses in the international studies minor must contain substantial global content.
2. Courses may be from any subject area.
3. "Global content" means that the course must engage directly with global processes such as globalization, migration, cross-border trade & finance, global governance, colonialism, global justice, transnationalism, or diplomacy. Courses that study a single country or a single region, or are comparative without engaging global processes, do not qualify. This includes courses that study a single country's interactions with the world (ie, a foreign policy course; a course about migrant integration in a particular country).

4. "Substantial" means that at least 3/4 of the course material (encompassing lectures, assignments, readings, and other course activities) should address global content.
We have also deleted courses which have become inactive or which departments have indicated they do not offer.

Calendar text, including additions and ~~deletions~~:

Requirements

Students enrolled in any degree program may pursue a minor designation in International Studies. The International Studies Minor requires successful completion of a minimum of four academic course units (eight courses) with a minimum cumulative minor average of 65%, including:

- INTST 101 or PSCI 150
- **One of PSCI 281**, PSCI 387, **PSCI 389**
- ~~two language or culture courses from the same language or culture grouping~~
- **Two courses in the same subject from any of the following language and culture subject codes: ARABIC, ASL, CHINA, CI, CROAT, DUTCH, EASIA, FR, GER, GRK, ITAL, ITALST, JAPAN, JS, KOREA, LAT, MOHAWK, PORT, REES, RUSS, SI, SPAN**
- four electives to be chosen, with at least two from the 200-level or above, and a maximum of two courses from the same subject field, from:
 - Accounting and Financial Management: AFM 121, AFM 333/ARBUS 301, **AFM 334**, AFM 434, AFM 478
 - Anthropology: ANTH 202, ANTH 347, ANTH 348, ANTH 465
 - Applied Language Studies: APPLS 301/GER 301
 - Arts and Business: ARBUS 301/AFM 333
 - Economics: ECON 231, ECON 332, ECON 436
 - English: ENGL 280, ENGL 290, ENGL 291, ENGL 463/GSJ 463
 - Environment, Resources and Sustainability: ERS 404/PSCI 432, ERS 462/GEOG 462/PSCI 488
 - Fine Arts: FINE 102/VCULT 100
 - Gender and Social Justice: GSJ 261/RS 284, GSJ 331/PACS 321, **GSJ 401/HLTH 401**, GSJ 463/ENGL 463
 - Geography and Environmental Management: GEOG 202, GEOG 203, GEOG 462/ERS 462/PSCI 488
 - German: GER 301/APPLS 301
 - History: HIST 232/PACS 203, HIST 268, HIST 271, HIST 275, HIST 311, HIST 369/PSCI 369
 - Health Studies: HLTH 401
 - **Human Rights: HRTS 301, HRTS 305**
 - Legal Studies: **LS 352/PHIL 328**, LS 365/PSCI 375, ~~LS 366/PSCI 389~~, LS 425/SOC 425, LS 461/SOC 461
 - Music: MUSIC 232, MUSIC 392
 - Peace and Conflict Studies: PACS 203/HIST 232, **PACS 316/PHIL 329**, PACS 321/GSJ 331, **PACS 325**, PACS 328
 - Philosophy: PHIL 227, PHIL 329/**PACS 316**

- Political Science: PSCI 252, ~~PSCI 281~~, PSCI 282, PSCI 283, PSCI 350, PSCI 369/HIST 369, PSCI 375/LS 365, ~~PSCI 389/LS 366~~, **PSCI 380, PSCI 384**, PSCI 402, PSCI 404, PSCI 420, PSCI 432/ERS 404, **PSCI 439, PSCI 481, PSCI 482**, PSCI 485, PSCI 486, PSCI 487, PSCI 488/ERS 462/GEOG 462
- Religious Studies: **RS 121, RS 220, RS 221**, RS 283, RS 284/GSJ 261, **RS 325, RS 380, RS 383**
- Science: SCI 201
- Social Development Studies: SDS 215R, **SDS 323R, SDS 330R**, SDS 388R, SDS 405R
- Sociology: SOC 270, **SOC 320**, SOC 425/LS 425, SOC 451, SOC 461/LS 461
- Speech Communication: SPCOM 226
- Studies in Islam: SI 121R, SI 221R/RS 221, **SI 240R, SI 288R**
- Visual Culture: VCULT 100/FINE 102

Academic Plan Changes [for approval]

Effective Date: September 01, 2022

Plan Title(s): International Trade Minor

Rationale: We are making a few changes to the minor requirements in order to make it more flexible for students.

The first change is including INTST 101 as an alternative to PSCI 150. This minor is quite popular with students and attracts non-PSCI majors, particularly from ECON and ARBUS. PSCI 150 is normally offered only in Winter term, while INTST 101 is normally offered in every term. To make the minor requirements more easily attainable, we have revised the requirements to INTST 101 or PSCI 150.

Additionally, we have noted that PSCI 402, which is currently taught as a seminar course, is unable to meet student demand even though it is offered several times a year. This is why we are replacing it with a new course, PSCI 380, which will be a lecture/discussion-based course with higher enrollment capacity. PSCI 380 and PSCI 402 will be antirequisites. PSCI 380 was approved at UGAG on March 4 as was the inactivation of PSCI 402.

Lastly, we are adding clarity to the language or culture requirement by including all subject codes that count towards it, to respond to the need for transparency in plan requirements in the calendar.

Calendar text, including additions and ~~deletions~~:

International Trade Minor

The International Trade Minor requires successful completion of a minimum of four academic course units (eight courses) with a minimum cumulative average of 65%, including:

- one of ECON 100, ECON 101, ECON 201, ECON 290
- ECON 102, ECON 231
- **INTST 101 or PSCI 150**
- PSCI 283, ~~PSCI 402~~, **PSCI 380**
- ~~two language or culture courses from the same language/culture group~~

- two courses in the same subject from any of the following language and culture subject
codes: ARABIC, ASL, CHINA, CI, CROAT, DUTCH, EASIA, FR, GER, GRK, ITAL, ITALST, JAPAN, JS, KOREA, LAT, MOHAWK, PORT, REES, RUSS, SI, SPAN

5.6. Department/Academic Unit: Renison University College

Academic Plan Changes [for approval]

Effective Date: September 01, 2022

Plan Title(s): Applied Language Studies Minor

Rationale: These revisions include the addition of new language courses from within the language departments. The revisions are necessary so the Applied Language Studies approved language course list accurately reflects courses that are available to students.

CROAT 299 - Croatian Abroad

GER 250 - Performance German 1

GER 299 - German Abroad

GER 350 - Performance German 2

Calendar text, including additions and ~~deletions~~:

Students enrolled in any degree program may pursue a minor designation in Applied Language Studies.

The Applied Language Studies Minor requires successful completion of a minimum of four academic course units (eight courses) in APPLS core and approved language courses with a minimum cumulative minor average of 65%, including:

- APPLS 205R, APPLS 301/GER 301, APPLS 304R, APPLS 306R
- four approved language courses (all in one language that is not the student's first language, or two in each of two languages that are not the student's first language):
 - ARABIC 101R, ARABIC 102R, ARABIC 120R, ARABIC 201R, ARABIC 202R, ARABIC 301R, ARABIC 302R
 - ASL 101R, ASL 102R
 - CHINA 101R, CHINA 102R, CHINA 120R, CHINA 200R, CHINA 201R, CHINA 202R, CHINA 301R, CHINA 302R, CHINA 310R, CHINA 320R, CHINA 390R, CHINA 391R, CHINA 401R, CHINA 402R
 - CROAT 101, CROAT 102 , **CROAT 299**
 - DUTCH 101, DUTCH 102
 - EMLS 101R, EMLS 102R, EMLS 103R, EMLS 104R, EMLS 105R, EMLS 110R, EMLS 129R/ENGL 129R
 - FR 101, FR 151, FR 152, FR 192A, FR 192B, FR 203, FR 250, FR 251, FR 252, FR 255, FR 303, FR 351, FR 353, FR 355, FR 373, FR 400, FR 403, FR 452, FR 473
 - GER 101, GER 102, GER 201, GER 202, GER 211, **GER 250, GER 299**, GER 303, GER 304, GER 307, GER 308, GER 331 , **GER 350**

- GRK 101/RS 101, GRK 102/RS 102, GRK 105, GRK 201/RS 223, GRK 202/RS 224, GRK 351, GRK 451
- ITAL 101, ITAL 102, ITAL 155, ITAL 201, ITAL 202, ITAL 251
- JAPAN 101R, JAPAN 102R, JAPAN 111R, JAPAN 112R, JAPAN 201R, JAPAN 202R, JAPAN 301R, JAPAN 302R, JAPAN 391R
- KOREA 101R, KOREA 102R, KOREA 201R, KOREA 202R, KOREA 301R, KOREA 302R, KOREA 391R
- LAT 101, LAT 102, LAT 201, LAT 202, LAT 351, LAT 451
- MOHAWK 101R/INDG 101, MOHAWK 102R/INDG 102
- PORT 101, PORT 102
- RUSS 101, RUSS 102
- SPAN 101, SPAN 102, SPAN 201A, SPAN 201B, SPAN 210, SPAN 301A, SPAN 301B

5.7. Department/Academic Unit: St. Paul's University College

Academic Plan Changes [for approval]

Effective Date: September 01, 2022

Plan Title(s): Canadian Studies Minor

Rationale:

The changes outlined below have been proposed in order to make the Canadian Studies minor more comprehensive and methodologically broader. The addition of CDNST 101 Introduction to Canadian Studies as a required course offers a broad survey-based introduction to the field in order to provide a comprehensive knowledge and a critical understanding of the historical developments, issues and contemporary challenges that face Canada as nation.

In order not to increase the number of required courses, students can choose between either CDNST 211 Canada: Conflict and Unity or CDNST 212 Narratives of Canadian Identity. At the request of the Department of Religious Studies, the course CDNST/RS 244 Religion in Canada will be added to the list of elective courses.

All these changes will make the minor in Canadian Studies stronger from the perspective of a more comprehensive curriculum while at the same time not increasing the course load for the students.

*Calendar text, including **additions and deletions:***

Canadian Studies Minor:

Students enrolled in any degree program may pursue a minor designation in Canadian Studies.

The Canadian Studies Minor requires successful completion of a minimum of four academic course units (eight courses) with a minimum cumulative minor average of 65%, including:

- **CDNST 101**, CDNST 201/INDG 201
- CDNST 211 **OR** CDNST 212

- one of HIST 253, HIST 254
- four electives to be chosen, with a maximum of two courses from the same subject code, from: **CDNST 244/RS 244**, ENGL 313, ENGL 315, ENGL 316, ENGL 318, FR 276, HIST 103, HIST 106, HIST 113, HIST 221, HIST 226, HIST 305, HIST 351, HIST 388, INDG 216/FINE 216, INDG 272/ANTH 272, PSCI 260/LS 206, PSCI 360, PSCI 461

Academic Plan Changes [for approval]

Effective Date: September 01, 2022

Plan Title(s): Indigenous Studies Minor

Rationale:

The changes outlined below have been proposed in order to make the Indigenous Studies minor more comprehensive and inclusive of Canadian content. The addition of the courses INDG 101 and INDG 102, Mohawk Language 1 and 2, focus on Mohawk as a living Indigenous language and are offered by Renison University College. These courses are cross-listed but not yet included in the Indigenous Studies minor.

The two courses on Indigenous Spiritualities (INDG 226, INDG 318) are designed cooperatively with the Department of Religious Studies and have already been cross-listed. They are now also included in the minor in Indigenous Studies.

The addition of INDG electives will broaden the selection of courses in the minor in Indigenous Studies without increasing the course load for the students.

*Calendar text, including **additions and deletions:***

Indigenous Studies Minor:

Students enrolled in any degree program may pursue a minor designation in Indigenous Studies.

The Indigenous Studies Minor requires successful completion of a minimum of four academic course units (eight courses) with a minimum cumulative minor average of 65%, including:

- INDG 201/CDNST 201, INDG 272/ANTH 272, INDG 216/FINE 216, INDG 301
- four **courses from the following: any additional INDG courses**, ANTH 233, ENGL 211/GSJ 211, HIST 269, HIST 271, HIST 380, PSCI 362, PSCI 462/LS 462, SDS 311R/SWREN 311R/LS 373

6. Academic Plan Inactivations [for approval]

6.1. Department/Academic Unit: Political Science

Effective Date: September 01, 2022

Plan Title(s): Public Policy and Administration Minor

Rationale: The requirements for this minor are being merged with those of the Canadian Politics specialization to be offered as a new Canadian Politics and Public Policy minor, which replaces both plans. Therefore the Public Policy and Administration Minor is being inactivated.

Plan Title(s): Canadian Politics Specialization

Rationale: The requirements for this minor are being merged with those of the Canadian Politics specialization to be offered as a new Canadian Politics and Public Policy minor, which replaces both plans. Therefore the Canadian Politics Specialization is being inactivated.

Plan Title(s): Global Governance Specialization

Rationale: The specialization is being discontinued in light of course requirements changes to International Studies minor and International Trade minor. Political Science has had two specializations in the field of global politics: it was confusing for students and complicated for advising. The international relations specialization, which is joint with History, remains in the plan, and students will be able to complete the IR specialization, the International Studies Minor, or the International Trade Minor if they wish to pursue a plan with global content.

Plan Title(s): Politics and Business Specialization

Rationale: The specialization is being discontinued in light of the proposal to offer a Politics and Business minor instead – forthcoming.

WATERLOO | ENGINEERING

Engineering Undergraduate Office

MEMORANDUM

June 17, 2021

TO: Rebecca Wickens, Associate University Secretary, Secretariat

FROM: Dan Davison, Associate Dean, Undergraduate Studies, Faculty of Engineering

SUBJECT: Items for Approval at September 14, 2021 Senate Undergraduate Committee

ALL CHANGES ARE EFFECTIVE SEPTEMBER 2022 UNLESS OTHERWISE NOTED.

1. New Courses

1.1 Nanotechnology Engineering (NE 102B, 110, 201A, 202B, 281, 301A)

2. Course Changes

2.1 Conrad School of Entrepreneurship and Business (BET 210, 411)

2.2 Chemical Engineering (CHE 565)

2.3 Nanotechnology Engineering (NE 109, 113, 140, 241, 242, 318, 330L, 335, 381, 466, 481, 486, 487, 488)

2.4 Mechanical Engineering (ME 574)

2.5 Management Sciences (MSCI 121, 240, 251, 253, 311, 332, 334, 422, 431, 432, 446, 452, 454, 541, 546, 551)

3. Course Inactivations

3.1 Nanotechnology Engineering (NE 224, 250, 350, 450)

3.2 Management Sciences (MSCI 444)

4. Minor Plan Modifications

4.1 Nanotechnology Engineering

4.2 Entrepreneurship Minor

4.3 Management Sciences Option

4.4 Interdisciplinary Alternatives



Daniel E. Davison
Associate Dean, Undergraduate Studies
Faculty of Engineering

NEW COURSES (for approval)

Dean of Engineering

Effective 01-SEP-2022

NE 102B (0.00) SEM Nanotechnology Engineering Practice

Areas of research and professional practice in nanotechnology engineering; exposure to concepts from other engineering plans; support material for the 1B academic term, including aspects of co-operative education and professional or career development.
[Offered: W]

Requisites : Prereq: Level at least 1B Nanotechnology Engineering
Rationale : This new course is impacted as part of a larger series of seminar courses called Nanotechnology Engineering Practice. One-hour time slots are scheduled into student calendars to facilitate the scheduling of meetings, to provide information sessions such as due dates, lab updates, invited speaker's presentation, meeting with class professor, or simply Q&A about options, study abroad or other plans.
[Short title: Nanotechnology Eng. Practice]

Effective 01-SEP-2022

NE 110 (0.50) LEC Introduction to Nanomaterials Health Risks

Nanomaterial impacts on worker, consumer, and environmental health. Engineered nanomaterials and ultrafines. Chemical risk assessment. Nanomaterial exposure characterization. Introductory nanotoxicology. Environmental chemical impacts, transport, and bio-accumulation. Human risks, and benefits. Introductory epidemiology, including study design, strength of association, bias, confounding and causal inference. [Offered: W]

Requisites : Prereq: Level at least 1B Nanotechnology Engineering
Rationale : This new course is meant to better prepare students to be in a position to protect themselves and others by having a better understanding of the potential health outcomes associated to chemical or nanomaterial exposure. This could impact their lives, their future employees, the consumers of products developed, and the environment. This aligns with the Professional Engineers Ontario (PEO) mission to protect the public. This content is not found anywhere else in the curriculum.

This content is currently covered in four courses (NE 102, 201, 202, and 301) with 0.13 weight over 1B-3A terms, and is currently suffering from fragmentation over many years, and from a (Degree Requirement, Not in Average, Not in Fail Count) DRNC coding. Both of these aspects have decreased the student's ability to recall material, as well as their ability to remain engaged and motivated to learn more than the minimum.

Students have difficulty engaging in what some perceive as a health and safety course, with the fragmentation removing their ability to coalesce the different aspects of public health.

[Short Title: Intro to Nano Health Risks]

Effective 01-SEP-2022

NE 201A (0.00) SEM Nanotechnology Engineering Practice

Areas of research and professional practice in nanotechnology engineering; exposure to concepts from other engineering plans; support material for the 2A academic term, including aspects of co-operative education and professional or career development. [Offered: F, first offered Fall 2023]

Requisites : Prereq: Level at least 2A Nanotechnology Engineering
Rationale : This new course is impacted as part of a larger series of seminar courses called Nanotechnology Engineering Practice. One-hour time slots are scheduled into student calendars to facilitate the scheduling of meetings, to provide information sessions such as due dates, lab updates, invited speaker's presentation, meeting with class professor, or simply Q&A about options, study abroad or other plans.
[Short title: Nanotechnology Eng. Practice]

Effective 01-SEP-2022

NE 202B (0.00) SEM Nanotechnology Engineering Practice

Areas of research and professional practice in nanotechnology engineering; exposure to concepts from other engineering plans; support material for the 2B academic term, including aspects of co-operative education and professional or career development. [Offered: S, first offered Spring 2024]

Requisites : Prereq: Level at least 2B Nanotechnology Engineering
Rationale : This new course is impacted as part of a larger series of seminar courses called Nanotechnology Engineering Practice. One-hour time slots are scheduled into student calendars to facilitate the scheduling of meetings, to provide information sessions such as due dates, lab updates, invited speaker's presentation, meeting with class professor, or simply Q&A about options, study abroad or other plans.
[Short title: Nanotechnology Eng. Practice]

Effective 01-SEP-2022

NE 281 (0.50) LAB, LEC, TUT Biology for Nanotechnology Engineers

Introduction to cell biology. Cell structure and components. Critical molecular processes of living organisms. Applications to nanobiotechnology. [Offered: S, first offered Spring 2024]

Requisites : Prereq: Level at least 2A Nanotechnology Engineering. Antireq: BIOL 130, CHE 161, BME 285

Rationale : This new course will replace NE 224 in the 2B term, and will be an introduction to cell biology. The majority of Nanotechnology Engineering students typically do not have any high school background in biology. The biochemistry content that is deemed important for the engineering of nanobiotechnology devices has been moved from NE 224 and incorporated into the technical elective NE 381 (NE 224 does not need to be made an antirequisite as the content of the new course has changed).

[Short title: Biology for Nanotech Engineers]

Effective 01-SEP-2022

NE 301A (0.00) SEM Nanotechnology Engineering Practice

Areas of research and professional practice in nanotechnology engineering; exposure to concepts from other engineering plans; support material for the 3A academic term, including aspects of co-operative education and professional or career development. [Offered: S, first offered Spring 2025]

Requisites : Prereq: Level at least 3A Nanotechnology Engineering

Rationale : This new course is impacted as part of a larger series of seminar courses called Nanotechnology Engineering Practice. One-hour time slots are scheduled into student calendars to facilitate the scheduling of meetings, to provide information sessions such as due dates, lab updates, invited speaker's presentation, meeting with class professor, or simply Q&A about options, study abroad or other plans.

[Short title: Nanotechnology Eng. Practice]

COURSE CHANGES (for approval)

Conrad School of Entrepreneurship and Business

Current Catalog Information

BET 210 (0.50) LEC Business Technology and Infrastructure

Modern organizations increasingly rely on a technological infrastructure that informs what can be accomplished, the prospects for long-term growth, and its overall competitiveness. In this course, students will learn about technologies such as enterprise resource management and platform management, understand how to plan for new technologies, evaluate existing systems, and obtain third party industry certifications on some in-demand business applications. [Offered: F,W,S]

No Special Consent Required

Effective 01-SEP-2022

Description Change: Modern organizations increasingly rely on a technological infrastructure that informs what can be accomplished, the prospects for long-term growth, and its overall competitiveness. In this course, students will learn about

Rationale : underlying technologies, gain insights into planning for new technologies, evaluate existing systems, and understand the various roles and issues related to corporate information systems management. [Offered: F,W,S]
Now that we have run this course a few times, the wording in the Academic Undergraduate Calendar needs to be revised to better reflect what is actually being offered. Specifically, we are not pursuing micro-certification in specific technical applications. Instead, the course is more strategically focused.

Current Catalog Information

BET 411 (0.50) LEC Capstone Entrepreneurship Planning and Execution

This course taken concurrently with a non-engineering capstone project, consists of workshops, seminars, and online content. Topics include goal setting and project planning, team building, understanding your competitive landscape and customers, patents and patent searches, commercialization options and developing a business model, legal issues, creating a business case for the capstone project, presentation skills and "pitching", post-mortem and root cause analysis. [Note: This is a requirement for the corporate entrepreneurship track of the Entrepreneurship Minor, supporting the efforts of capstone project teams to develop a commercialization strategy. Not open to engineering students. Offered F,W,S]

Instructor Consent Required

Effective 01-SEP-2022

Component Change:

PRJ

Title Change:

Milestone Planning and Execution

Description Change:

This course, taken concurrently with a capstone project or entrepreneurial milestone, consists of workshops, seminars, and online content. Topics can include goal setting and project planning, team building, understanding your competitive landscape and customers, patents and patent searches, commercialization options and developing a business model, legal issues, creating a business case for the capstone project, presentation skills and "pitching", post-mortem and root cause analysis. [Note: Students interested in this course are responsible for finding an instructor willing to supervise it. Course plans must be approved by the Entrepreneurship Minor/Option academic co-ordinator.]

Consent Change:

No Special Consent Required

Rationale :

The commercialization option that the course was originally created for is no longer offered. The two streams of option, venture and commercialization were blended into a single stream with common courses. However, we do have a gap for some students (mostly outside engineering) need a project course to complete their milestone and a number of departments do not offer such a course. The new title and description is useful for students who want to do a substantial project to finish their milestone project requirement but do not have another way of doing so (example, last year the co-ordinator supervised a student in accounting who wanted to find out how to set-up a small accounting firm). The component is changed to reflect the project component which more suitable. It can also be used by students who want

additional support for a start-up they are currently working on such as turning their capstone into a business. This course will only be offered if a student can find a suitable supervisor for their project. The term of offering is removed. Also, it is important that this course still satisfy the requirements of the plan, hence the need for approval by the Entrepreneurship co-ordinator. Since a student already has to find a faculty member to supervise it, the requirement of instructor consent is now redundant so it is removed.

Chemical Engineering

Current Catalog Information

CHE 565 (0.50) PRJ, TUT Synthetic Biology Project Design

Synthetic biology involves developing new approaches, based on engineering principles, for genetic engineering of biological systems. Students will prepare a comprehensive research proposal for a synthetic biology project of their own design, under the supervision of a faculty member. Attendance at a weekly journal club focused on synthetic biology will be mandatory [Offered: F,W,S].

Instructor Consent Required

Cross-listed as: BIOL 349

Effective 02-SEP-2022

Requisite Change :

Prereq: Level at least 3A Engineering

Rationale :

This new course (cross listed with BIOL 349) was approved at SUC on April 13. The prerequisites were missed in the meeting report. There are no changes to BIOL 349. Science approves of the prerequisites for CHE 565.

Dean of Engineering

Current Catalog Information

NE 109 (0.50) LEC, TUT Societal and Environmental Impacts of Nanotechnology

An introduction to the field of nanotechnology and its ability to impact society and affect sustainability. How utilization of nanotechnology has simultaneously improved societal standards of living and introduced new ethical, health, and environmental concerns will be examined. Topics covered will include: the history of changing perceptions of and attention devoted to developments in nanotechnology; special health and environmental concerns associated with nanomaterials; the development and means of implementation of regulations to deal with the use of nanomaterials; ethical issues associated with nanotechnology and its applications. Intellectual property issues in general, and those pertaining to nanotechnology specifically, will also be discussed briefly. Relevant case studies will be presented and discussed. [Offered: F]

No Special Consent Required

Requisites :

Prereq: Level 1A Nanotechnology Engineering

Effective 01-SEP-2022

Description Change:

Nanotechnology in society; health and environmental sustainability; engineering ethics, policies and regulations; Canadian legal system, tort

and intellectual property; examples of nanotechnology innovation and commercialization. [Offered: F]

Rationale : The course description changes are meant for clarity to explicitly state engineering law content that is present in the course, and to facilitate evaluation of the plan for accreditation requirements. This content is already present in the course and is described in the course syllabus, but it is not included in the calendar description. This update is to include the terms Canadian Legal system and tort, and also points to innovation and commercialization, as this is important for new emerging nanotechnologies.

Current Catalog Information

NE 113 (0.50) LAB, LEC, TST, TUT Introduction to Computational Methods
Spreadsheets for problem solving, plotting, fitting data. Problem solution plotting, and creating complex programs in an engineering prototypical programming environment. Elementary numerical methods: Taylor-series summations, roots of equations, roots of polynomials, direct and indirect solution methods for systems of linear, and nonlinear algebraic equations, integration. Applications in nanotechnology engineering. [Offered: W]
No Special Consent Required
Requisites : Prereq: Level at least 1B Nanotechnology Engineering. Antireq: CHE 121, CIVE 121, CS 115, 123, 134, 135, 145, ECE 150, MTE 121/GENE 121, PHYS 139, SYDE 121

Effective 01-SEP-2022

Requisite Change : Prereq: Level at least 1B Nanotechnology Engineering. Antireq: CIVE 121, CS 115, 135, 145, ECE 150, MTE 121, SYDE 121

Rationale : The antirequisites are updated removing courses that are no longer offered or deemed appropriate.

Current Catalog Information

NE 140 (0.50) LAB, LEC, TUT Linear Circuits
Charge, current and voltage. Resistance, Ohm's Law, Kirchhoff's voltage and current laws. Nodal, mesh analysis and source transformation. Superposition, Thévenin and Norton equivalents. Capacitance, inductance, electrical energy dissipation and first-order transient response circuits. Phasors, impedances and alternating current (AC) steady state analysis. Signals, amplifier concepts and nonlinear circuit analysis. Diodes circuit applications. Ideal operational amplifier circuits. Frequency filter types and active filter circuits' configuration. [Offered: W]
No Special Consent Required
Requisites : Prereq: Level at least 1B Nanotechnology Engineering. Antireq: BME 392, ECE 140, 240, GENE 123, MTE 120, SYDE 292

Effective 01-SEP-2022

Description Change: Charge, current, and voltage. Resistance, Ohm's Law, Kirchhoff's voltage, and current laws. Nodal, mesh analysis, and source transformation. Superposition, Thévenin, and Norton equivalents. Capacitance, inductance, electrical energy dissipation, and first-order transient response circuits. Phasors, impedances, and alternating current (AC) steady state analysis.

Diodes circuit applications. Ideal operational amplifier circuits.
Frequency filter types, and active filter circuits' configuration.
[Offered: W]

Requisite Change : Prereq: Level at least 1B Nanotechnology Engineering. Antireq: BME 392, ECE 140, GENE 123, MTE 120, SYDE 292

Rationale : The course description is updated to reduce overlap with higher level courses, by removing content listed that is advanced material already captured within higher level courses: NE 344, Electronic circuits (TE), and NE 242, Semiconductor Physics and Devices (2B). The removal of signals, amplifier concepts and nonlinear circuit analysis as well as diode applications reduce overlap between courses. ECE 240 is also removed as an antireq, since ECE 140 is a more appropriate antirequisite.

Current Catalog Information

NE 241 (0.50) LAB, LEC, TUT Electromagnetism
Coulomb's law, electric field and electric flux, Gauss's law, electric potential, potential and field, magnetic field, Ampere's law, solenoid, electromagnetic induction, magnetic flux, Lenz' law, Faraday's law, capacitors and capacitance, inductors and inductance, Maxwell's equations, electromagnetic fields and waves, polarization. [Offered: F]
No Special Consent Required
Requisites :

Prereq: Level at least 2A Nanotechnology Engineering. Antireq: ECE 106, GENE 123, MTE 120, SYDE 283

Effective 01-SEP-2022

Requisite Change : Prereq: Level at least 2A Nanotechnology Engineering. Antireq: ECE 106, MTE 120, SYDE 283

Rationale : The antirequisites are updated removing courses that are no longer offered or deemed appropriate.

Current Catalog Information

NE 242 (0.50) LAB, LEC, TUT Semiconductor Physics and Devices
Introduction to the physical principles and electrical behavior of semiconductor materials and devices: electronic band structure, charge carriers, doping, carrier transport, pn-junctions, metal-oxide-semiconductor capacitors, transistors, and related optoelectronic devices (photodetectors, light emitting diodes, solar cells).
[Offered: S]
No Special Consent Required
Requisites :

Prereq: Level at least 2B Nanotechnology Engineering. Antireq: ECE 331

Effective 01-SEP-2022

Requisite Change : Prereq: Level at least 2B Nanotechnology Engineering. Antireq: ECE 231

Rationale : The antirequisites are updated removing ECE 331. The content in the course has changed and replaced with content in ECE 231.

Current Catalog Information

NE 318 (0.50) LEC, TUT Continuum Mechanics for Nanotechnology Engineering
Scaling analysis of differential equations. Tensor operations and tensor calculus.

Kinematics of a continuum: material and spatial frames, strain and displacement, conservation of mass. Stress, conservation of momentum and energy. Linear elastic solids: Hooke's Law, infinitesimal elasticity theory and the Navier-Cauchy equation. Newtonian viscous fluids: hydrostatics, Navier-Stokes equations, flow regimes, and the Reynolds number. Engineering applications: plane elastic waves and vibrations, buoyancy forces, Couette, Poiseuille, and Stokes flows. [Offered: S]

No Special Consent Required

Requisites :

Prereq: NE 216, 217; 3A Nanotechnology Engineering

Effective 01-SEP-2022

Description Change:

Tensor operations. Kinematics of a continuum: material and spatial frames, strain and displacement, conservation of mass. Stress, conservation of momentum, energy, and mass. Linear elastic solids: Hooke's Law, infinitesimal elasticity theory. Introduction to Newtonian viscous fluids: hydrostatics, Navier-Stokes equations, flow regimes, and the Reynolds number. Engineering applications in anisotropy, heat transfer, and fluid mechanics will be discussed. [Offered: S]

Rationale :

The course description is updated to decrease student workload. Instructors feel that the current course description lists topics that cannot be covered in one course without significantly impacting students' workload. The repeated material listed is removed (buoyancy forces, Stokes flow), and the material for which there is insufficient time to cover: plane elastic waves and vibration, Navier-Cauchy equation. In addition, a clarification is included that specifies that the section on Newtonian viscous fluids is being covered only to an introductory depth.

Current Catalog Information

NE 330L (0.25) LAB Macromolecular Science Laboratory

Labs associated with NE 333 (Macromolecular Science 1) course. Lab exercises exploring the kinetics of radical co-polymerization, the analysis of copolymer composition, concepts in the determination and control of polymer molecular weight distribution, and the kinetics and particle size development in emulsion polymerization. [Offered: F]

No Special Consent Required

Requisites :

Prereq: NE 333; 3B Nanotechnology Engineering. Antireq: CHEM 471L

Effective 01-SEP-2022

Description Change:

Lab exercises exploring the synthesis and characterization of polymers, copolymers, and soft nanomaterial structures. [Offered: F]

Requisite Change :

Prereq: Level at least 3B Nanotechnology Engineering

Rationale :

The course description is updated to provide students with a better laboratory experience by presenting them with material for which they have the needed background. Many of the specific topics currently listed (e.g., polymerization kinetics) are no longer sufficiently covered in lectures, as there is now only one core polymer course offered within the Nanotechnology Engineering plan. The topics covered allow for flexibility within the laboratory and allow this course to cover emerging polymer applications, and better align with the material covered in lectures. The content for

this 3B lab is covered in NE 333 (Macromolecular Science, 3A) and NE 352 (Soft Materials, 3A), and the lab currently covers both topics. The prerequisite is updated removing NE 333 as it is redundant with the 3B level already in place. The antirequisite CHEM 471L is removed, as it is no longer offered.

Current Catalog Information

NE 335 (0.50) LEC Soft Nanomaterials
Introduction to the applications of macromolecules in nanotechnology. Block copolymers and self-assembled polymerization. Micelles and colloids. Dendrimers and molecular brushes. Supramolecular polymers, polymeric blends and macromolecular nanocomposites. Polymer templates. Applications in the manufacturing of nanostructured materials and nanoscale devices. [Offered: F]
No Special Consent Required
Requisites : Prereq: NE 333; Level at least 3B Nanotechnology Engineering. Antireq: CHE 541, CHEM 471

Effective 01-SEP-2022

Requisite Change : Prereq: NE 333; Level at least 3B Nanotechnology Engineering. Antireq: CHE 541

Rationale : The antirequisites are updated removing courses that are no longer offered or deemed appropriate.

Current Catalog Information

NE 381 (0.50) LEC Introduction to Nanoscale Biosystems
Specific aspects of biosystems required for the engineering of nanobiotechnological applications: topics to be covered may include surface and bulk science concepts needed for the development of lab-on-chip systems and those aspects of molecular biology of the cell necessary for application to medical diagnostics. Elements of design required for the development of modern instrumentation may also be covered, thereby providing a solid foundation for more advanced topics and applications. [Offered: F]
No Special Consent Required
Requisites : Prereq: Level at least 3B Nanotechnology Engineering

Effective 01-SEP-2025

Description Change: Molecular biology and biochemistry required for the engineering of nanobiotechnological applications. Structure and characterization of nucleic acids, proteins and lipids. Introduction to lab-on-chip systems and microfluidic devices. Application to medical diagnostics, protein and nucleic acid tools including polymerase chain reaction and blotting techniques. Elements of design required for the development of modern instrumentation and biosensors. [Offered: F]
Requisite Change : Prereq: Level at least 3B Nanotechnology Engineering. Antireq: CHEM 233, 237

Rationale : The course description is updated to address a student gap in background in the field of molecular biology and biochemistry. This revision is to explicitly incorporate the molecular biology and introductory biochemistry

background needed to understand nanobiotechnology applications. NE 381 is a continuation from NE 281 (new 2A course), and prepares students for several nano biology focused technical electives. Specific applications and techniques are listed to reduce overlap, including (Polymerase Chain Reaction) PCR and blotting. Lab-on-chip and microfluidics concepts are specified to be kept to introductory-level discussions, with the background theory and some devices presented. In order to succeed in these technical electives, students will need a better understanding of the structure and function of important biological molecules than can't be covered in NE 281.

The antirequisites are updated due to the incorporation of biochemistry content from NE 224 into NE 381.

Current Catalog Information

NE 466 (0.50) LEC Tactile Sensors and Transducers

Tactile sensors, wearable sensors and applications. Principles of transduction including capacitive, piezoelectric, piezoresistive, percolation, and tunneling-based sensing. Designing bendable and stretchable sensors, and self-powered sensors.

Applications including robotics, electronic skin, biometrics, and bio-vitals.

[Offered: W]

No Special Consent Required

Requisites :

Prereq: Level at least 3B Biomedical Engineering or Electrical Engineering or Nanotechnology Engineering. Antireq: NE 469 (Topic: Tactile Sensors)

Effective 01-SEP-2022

Requisite Change :

Prereq: Level at least 3B Biomedical Engineering or Chemical Engineering or Electrical Engineering or Nanotechnology Engineering

Rationale :

The prerequisites are updated adding Chemical Engineering to allow these students to enrol as core courses within Chemical Engineering are determined to have sufficient background for this technical elective. The antirequisite NE 469 is removed as it is no longer offered.

Current Catalog Information

NE 481 (0.50) LEC Nanomedicine and Nanobiotechnology

Overview of biomedical engineering principles, and their utilization in understanding how our bodies interact with nano- and biomaterials: topics related to innate and acquired inflammatory response, cellular and humoral immunity, complement systems and thrombosis, biocompatibility, and toxicity will be covered. Route of administered nanoparticles will be introduced. This course will also study the formulation and manufacturing process for producing nanoparticles in the biotechnology and pharmaceutical industries. [Offered: F]

No Special Consent Required

Requisites :

Prereq: NE 381; 4A Nanotechnology Engineering

Effective 01-SEP-2022

Description Change:

Overview of biomedical engineering principles. Formulation and manufacturing processes for production of nanoparticles for medical applications. Pharmacokinetics, toxicity, and human physiology in drug

administration. Route of administration and controlled delivery strategies. Formulation and manufacturing process for drug delivery in the biotechnology and pharmaceutical industries. [Offered: F]
Requisite Change : Prereq: (NE 381 - for Nanotechnology Engineering); 4A Biomedical Engineering or Chemical Engineering or Nanotechnology Engineering

Rationale : The course description is updated to remove material listed for which Nanotechnology Engineering students do not have sufficient immunology background (inflammatory response, cellular and humoral immunity), as introductory level discussions in this area are captured within the broader category of toxicity outcomes. The description is expanded to include the more generalized application of nanoparticles used in drug delivery, including the needed background of drug pharmacokinetics and human physiology. Nanotechnology Engineering students would have a better background in the role of nanomaterials in pharmaceuticals, drug delivery and therapeutics if this course is refocused on the role of nanobiotechnology in medicine.

The prerequisites are updated to expand the description for NE 381 as a specified prerequisite for Nanotechnology Engineering students. Adding 4A Chemical Engineering and Biomedical Engineering students as they are allowed to enrol because these students have the needed background from their core studies.

Current Catalog Information

NE 486 (0.50) LEC Biosensors

Introduction to biosensors. Chemical, optical, and pattern recognition-based sensing. Sensors for metal ions, small molecules, proteins, cancer cells. Deoxyribonucleic acid/ribonucleic acid (DNA/RNA) properties and chemical synthesis. DNA aptamer-based sensors and devices. Combinatorial selection of functional DNA. Applications in drug screening and diagnostics. [Offered: W]

No Special Consent Required

Requisites : Prereq: Level at least 3B Biomedical Engineering or Nanotechnology Engineering. Antireq: NE 469 (Topic: DNA Biosensors and Nanotechnology)

Effective 01-SEP-2022

Description Change: Introduction to biosensors. Chemical, optical, and pattern recognition-based sensing. Sensors for metal ions, small molecules, proteins, cancer cells. Deoxyribonucleic acid/ribonucleic acid (DNA/RNA) properties and chemical synthesis. DNA aptamer-based sensors and devices. Combinatorial selection of functional DNA. Applications in drug screening and diagnostics. [Offered: F]

Requisite Change : Prereq: (NE 381 - for Nanotechnology Engineering); Level at least 4A Biomedical Engineering or Chemical Engineering or Nanotechnology Engineering

Rationale : The term of offering moves from winter to fall to increase the number of biotechnology-related technical electives offered to students in the fall term (currently only 481 is offered). This change would decrease

competition between similar courses offered in the winter (there are 3 other winter technical electives with a biotechnology focus).

The prerequisites are updated to allow Chemical Engineering students to enrol, and the level is changed so that all students will have the opportunity to take prerequisites; NE 381 is specified as a prerequisite for Nanotechnology Engineering students.

The antirequisites are removed as this course is no longer offered.

Current Catalog Information

NE 487 (0.50) LEC Microfluidic and Nanobiotechnological Systems

Principles and design of lab-on-a-chip (LOC) devices and systems. Bottom up/top-down LOC chip fabrication methods. Adaptive and evolutionary mechanisms in biological systems. Extremophiles. Lateral gene transfer. Plasmids. In-vitro-evolution. Design, manufacture, and use of engineered organisms, aptamers, and deoxyribonucleic acid (DNA) computing. Molecular analysis methods and reagent design. Microfluidic sensor devices and cell-based sensing. Recent advances in nanobiotechnological systems in academia and industry. [Offered: W]

No Special Consent Required

Requisites :

Prereq: NE 381; Level at least 3B Biomedical Engineering or Nanotechnology Engineering. Antireq: NE 479 (Topic: Microfluidic and Nanobiotechnological Systems)

Effective 01-SEP-2022

Description Change:

Principles, design and fabrication methods for biomedical devices. Techniques for disease diagnosis, including enzyme-linked immunosorbent assays, current state-of-the-art technologies, lab-on-a-chip devices and biosensors. Microfluidic device design and fabrication. Cleanroom fabrication, soft lithography, hot embossing, micro-milling, and testing. [Offered: W]

Requisite Change :

Prereq: (NE 381 - for Nanotechnology Engineering); Level at least 4A Biomedical Engineering or Chemical Engineering or Nanotechnology Engineering

Rationale :

The course description is updated to remove material listed for which Nanotechnology Engineering students do not have sufficient microbiology background (plasmids, lateral gene transfer). Other content is removed to reduce overlap with other courses: aptamers within Nanotechnology with drug delivery content, and (Deoxyribonucleic acid) DNA computing within NE 486 with DNA sensors design. The new description will focus on microfluidic nanobiotechnological applications, yet provide some specific examples of such device/techniques to decrease overlap.

The prerequisites are updated adding Chemical Engineering access as it is deemed that these students have the needed background from their core studies. NE 381 is specified as a prerequisite for Nanotechnology Engineering students as it covers the needed background.

The antirequisite is removed as there are no enrolled students who have taken this course topic.

Current Catalog Information

NE 488 (0.50) LEC Biomaterials and Biomedical Design

An overview of nanomedicine and nanotechnology-based biomedical devices. Strategies and technologies for designing, testing, and manufacturing biomaterials and tissue-engineering products. Biological and clinical applications. Manufacturing challenges and regulatory procedures for commercialization. [Offered: W]

No Special Consent Required

Requisites : Prereq: NE 481; Level at least 3B Biomedical Engineering or Chemical Engineering or Nanotechnology Engineering. Antireq: BME 489 (Topic: Biocompatibility and Biomaterial Engineering); NE 489 (Topic: Biomaterials and Tissue Engineering)
CHE 561

Cross-listed as:

Effective 01-SEP-2022

Requisite Change : Prereq: NE 481; Level at least 3B Biomedical Engineering or Nanotechnology Engineering. Antireq: BME 489 (Topic: Biocompatibility and Biomaterial Engineering), CHE 561

Rationale : The prerequisites are updated removing Chemical Engineering as a prerequisite as this course is cross listed with CHE 561. The antirequisites are updated removing NE 489 as it is no longer offered. Note: there are no changes to the requisites for CHE 561.

Mechanical and Mechatronics Engineering

Current Catalog Information

ME 574 (0.50) LEC, TUT Engineering Biomechanics

Introduction to engineering technologies applicable to the field of biomechanics.

Specific topics covered may include biological growth, form and function; biomaterials; kinematics and neurology of gait; biotribology; joint anatomy, function and repair; occupational biomechanics; trauma prevention. [Offered: W]

No Special Consent Required

Cross-listed as: CIVE 460

Effective 02-SEP-2022

Requisite Change: Prereq: Level at least 4A Biomedical, Mechanical, Mechatronics, or Systems Design Engineering

Rationale : This course was approved (cross listed with CIVE 460) at SUC on April 13, but Quest did not print the prerequisites in the meeting report. There is no change to the requisites for CIVE 460.

Management Sciences

Current Catalog Information

MSCI 121 (0.50) LEC, TUT Introduction to Computer Programming

An introduction to computer programming using a high level programming language.

Concepts and topics covered include the basic components of algorithms (primitive

operations, variables, sequencing operations, conditionals/branching, repetition/loops, subroutines/functions), problem decomposition, abstraction, testing and debugging, pseudo-code, file based input and output, use of a modern development environment including a symbolic debugger, good coding style, pointers/references, and basic data structures (arrays, records, objects). [Offered: W]

No Special Consent Required

Requisites : Prereq: Level at least 1B Management Engineering. Antireq: CHE 121, CIVE 121, ECE 150, MTE 121/GENE 121, SYDE 121

Effective 01-SEP-2022

Requisite Change : Prereq: Level at least 1B Management Engineering. Antireq: BME 121, ECE 150, MTE 121/GENE 121, SYDE 121

Rationale : The antirequisites are updated adding BME 121 Digital Computation due to overlapping course content. The courses removed CHE 121 and CIVE 121 do not have enough overlapping content.

Current Catalog Information

MSCI 240 (0.50) LEC, TUT Algorithms and Data Structures

Design and analysis of data structures and algorithms with an emphasis on further development of computer programming skills. Topics include algorithms for searching, sorting, stacks, queues, trees, and graphs. Comparison of algorithms on different data structures. Solutions to common engineering problems in computer science using algorithms and data structures. Introduction to mathematical analysis of space and time complexity with a focus on designing solutions that can scale to large input sizes. [Offered: F]

No Special Consent Required

Requisites : Prereq: MSCI 121; Level at least 2A Management Engineering. Antireq: CS 240, ECE 250, MTE 140 and SYDE 223

Effective 01-SEP-2022

Requisite Change : Prereq: MSCI 121; Level at least 2A Management Engineering. Antireq: BME 122, CS 240, ECE 250, MTE 140 and SYDE 223

Rationale : The antirequisites are updated adding BME 122 Data Structures due to overlapping course content.

Current Catalog Information

MSCI 251 (0.50) LAB, LEC, TUT Probability and Statistics 1

A first of a two-course sequence that introduces fundamental concepts in probability and statistics. It covers probability concepts, random variables, graphical display of distributions and data, discrete and continuous probability distributions, sampling, estimation, confidence intervals, experimental design, hypothesis testing, and simple linear regression and correlation. Students learn how to graphically explore data, conduct, and analyze a two-treatment experiment, and model data with linear regression, and interpret its fit. Students learn to use statistical computing software (e.g., R) to perform data analyses. Emphasis is placed on gaining experience with data collected from student-conducted experiments. [Offered: F]

No Special Consent Required

Requisites : Prereq: Level at least 2A Management Engineering. Antireq: AE 224, BME 213,

CHE 220, CIVE 224, ECE 306, 316, ECON 221, ENVE 224, ME 202, MTE 201, NE 215, STAT 231, SYDE 212

Effective 01-SEP-2022

Requisite Change :

Prereq: Level at least 2A Management Engineering. Antireq: AE 224, BME 213, CHE 220, CIVE 224, ECE 203, 306, ECON 221, ENVE 224, ME 202, MTE 201, NE 215, STAT 231, SYDE 212

Rationale :

The antirequisites are updated adding ECE 203 Probability Theory and Statistics 1 which replaced ECE 306 Probability Theory and Statistics in fall 2020. Remove ECE 316 which is no longer offered and was last taught in winter 2009.

Current Catalog Information

MSCI 253 (0.50) LAB, LEC, TUT Probability and Statistics 2

The second of a two-course sequence that introduces probability and statistics. It covers quantitative information displays, conditional probability and Bayes' rule, transforms, joint distributions, special discrete and continuous distributions (t, F, chi-square, Poisson), fitting distributions to data, maximum likelihood estimation, multiple regression, experimental design (blocking, factorial), paired hypothesis tests, analysis of variance, non-parametric statistics, and computer intensive statistics (bootstrap). In addition, students learn how to clean data, handle missing values, smooth data, and perform the statistical techniques covered in the course using a statistical computing package, (e.g., R). Emphasis is placed on working with actual data collected from student experiments and other sources such as industrial partners. [Offered: S]

No Special Consent Required

Requisites :

Prereq: MSCI 251; Level at least 2B Management Engineering. Antireq: STAT 332

Effective 01-SEP-2022

Requisite Change :

Prereq: MSCI 251; Level at least 2B Management Engineering. Antireq: ECE 307, STAT 332

Rationale :

The antirequisites are updated adding ECE 307 Probability and Statistics 2 due to overlapping course content.

Current Catalog Information

MSCI 311 (0.50) LEC Organizational Design and Technology

The focus of this course is on the procedures and variables involved in the design and redesign of organizations. Issues such as departmentation, differentiation, integration, internal politics, innovation, authority and control are discussed in the context of the underlying technology of the organization. Emphasis will be placed on how one designs both the technical and the organizational systems to ensure their compatibility, noting the effects that one has on the other. [Offered: F, W]

No Special Consent Required

Effective 01-SEP-2022

Description Change:

The focus of this course is on the procedures and variables involved in the design and redesign of organizations. Issues such as departmentation, differentiation, integration, internal politics, innovation, authority and

control are discussed in the context of the underlying technology of the organization. Emphasis will be placed on how one designs both the technical and the organizational systems to ensure their compatibility, noting the effects that one has on the other. [Offered: F, W, S]

Rationale :

The term of offering is updated adding a spring offering. The department is combining the winter 2021 option and management sections so this will allow them to offer another section.

Current Catalog Information

MSCI 332 (0.50) LEC, TUT Deterministic Optimization Models and Methods

This course builds on the material presented in MSCI 331, and explores more advanced optimization techniques and applications. Methods, such as integer optimization, dynamic programming, and heuristics are introduced and used to design solution alternatives for applications from management engineering. This may include network and process design in logistics, transportation, telecommunications, and healthcare.

[Offered: F]

No Special Consent Required

Requisites :

Prereq: One of BME 411, CHE 521, CIVE 332, CO 250, ENVE 320, 335, MSCI 331, SYDE 411

Effective 01-SEP-2022

Requisite Change :

Prereq: One of BME 411, CHE 521, CIVE 332, CO 250, ENVE 320, 335, MSCI 331, SYDE 411. Antireq: CO 327

Rationale :

The addition of an antirequisite CO 327 Deterministic OR Models (Non-Specialist Level) . Management Engineering students have taken this course to clear MSCI 332.

Current Catalog Information

MSCI 334 (0.50) LAB, LEC, TUT Operations Planning and Inventory Control

This course exposes students to production planning and inventory control approaches in industrial and service systems. Production planning topics cover capacity and resources planning, production scheduling, manufacturing resource planning, just-in-time and lean manufacturing. Inventory control topics cover lot sizing policies, deterministic and stochastic inventory policies. The course involves a design project of a production and/or inventory system. [Offered: W]

No Special Consent Required

Requisites :

Prereq: MSCI 131; One of CHE 220, CIVE 224, ECE 306, 316, ENVE 224, ME 202, MSCI 252, 253, MTE 201, STAT 206, 231, 241, SYDE 212. Antireq: MSCI 432

Effective 01-SEP-2022

Requisite Change :

Prereq: MSCI 131; One of CHE 220, CIVE 224, ECE 306, 307, ENVE 224, ME 202, MSCI 252, 253, MTE 201, STAT 206, 231, 241, SYDE 212. Antireq: MSCI 432

Rationale :

The prerequisites are updated adding ECE 307 Probability Theory and Statistics 2 which replaced ECE 306 Probability Theory and Statistics in fall 2020. Removing ECE 316 which is no longer offered and was last taught in winter 2009.

Current Catalog Information

MSCI 422 (0.50) LEC Economic Impact of Technological Change and Entrepreneurship

This course is designed to analyze the impact of technological change and entrepreneurship at a firm and societal level, primarily in terms of the economic antecedents and consequences of new technology. The scope of the course ranges from the study of the determination of productivity and its effect on economic growth to the determination of innovative activity and performance. Prereq: (One of AE 392, BME 364, CIVE 392, ECON 101, ENVE 392, GEOE 392, MSCI 261, SYDE 262) and (One of AE 224, BME 213, CHE 220, CIVE 224, ECE 306, 316, ECON 221, ENVE 224, ENVS 278, MSCI 251 or 252, ME 202, MTE 201, NE 215, PSCI 314, PSYCH 292, REC 371, SDS 250R, SOC 280, STAT 202, 206, 211, 221, 231, 241, SYDE 212). [Offered: F]

No Special Consent Required

Requisites :

See course description for prerequisite details.

Effective 01-SEP-2022

Description Change:

This course is designed to analyze the impact of technological change and entrepreneurship at a firm and societal level, primarily in terms of the economic antecedents and consequences of new technology. The scope of the course ranges from the study of the determination of productivity and its effect on economic growth to the determination of innovative activity and performance. Prereq: (One of AE 392, BME 364, CIVE 392, ECON 101, ENVE 392, GEOE 392, MSCI 261, SYDE 262) and (One of AE 224, BME 213, CHE 220, CIVE 224, ECE 203, 306, ECON 221, ENVE 224, ENVS 278, MSCI 251 or 252, ME 202, MTE 201, NE 215, PSCI 314, PSYCH 292, REC 371, SDS 250R, SOC 280, STAT 202, 206, 211, 221, 231, 241, SYDE 212). [Offered: F]

Rationale :

The prerequisites are updated adding ECE 203 Probability Theory and Statistics 1 which replaced ECE 306 Probability Theory and Statistics. Removing ECE 316 which is no longer offered and was last taught in winter 2009.

Current Catalog Information

MSCI 431 (0.50) LEC, TUT Stochastic Models and Methods

Introduction to operations research models and methods for problems with random, stochastic and probabilistic components. Topics include birth and death processes, branching processes, waiting line models, and Markov decision processes. Applications include the design, modelling, and analysis of service and manufacturing systems, with emphasis on important functions such as queueing, inventory, reliability, equipment replacement, and maintenance. [Offered: W]

No Special Consent Required

Requisites :

Prereq: (One of BME411, CHE521, CIVE332, CO250, ENVE335, MSCI331, SYDE411) and (One of AE224, BME213, CHE220, CIVE224, ECE306, 316, ENVE224, MSCI251, 252, ME202, MTE201, NE215, STAT206, 211, 231, 241, SYDE212); Not open to Math students except Software Engineering

Effective 01-SEP-2022

Requisite Change :

Prereq: (One of BME411, CHE521, CIVE332, CO250, ENVE335, MSCI331, SYDE411) and (One of AE224, BME213, CHE220, CIVE224, ECE203, 306, ENVE224, MSCI251, 252, ME202, MTE201, NE215, STAT206, 211, 231, 241, SYDE212); Not

Rationale : open to Math students except Software Engineering. Antireq: STAT 333
The prerequisites are updated adding ECE 203 which replaced ECE 306, and removing ECE 316 which is no longer offered, and was last taught in winter 2009. The antirequisites are updated adding STAT 333; Management Engineering students have taken this course to replace MSCI 431 when necessary due to Exchange abroad deficiencies.

Current Catalog Information

MSCI 432 (0.50) LEC, TUT Production and Service Operations Management

Introduction to management, planning, and control decisions in manufacturing and service settings using quantitative approaches. Topic areas include production, inventory, distribution, quality control, facilities layout, and process design.

Students are exposed to a number of examples and case studies, and work on a project that involves analysis and discussion of improved designs. [Offered: F, W]

No Special Consent Required

Requisites : Prereq: (One of AE 224, BME 213, CHE 220, CIVE 224, ECE 306, 316, ENVE 224, ME 202, MTE 201, NE 215, STAT 206, 211, 231, 241, SYDE 212); Not open to Management Engineering students. Antireq: MSCI 334

Effective 01-SEP-2022

Requisite Change : Prereq: (One of AE 224, BME 213, CHE 220, CIVE 224, ECE 203, 306, ENVE 224, ME 202, MTE 201, NE 215, STAT 206, 211, 231, 241, SYDE 212); Not open to Management Engineering students. Antireq: MSCI 334

Rationale : The prerequisites are updated adding ECE 203 which replaced ECE 306, and removing ECE 316 which is no longer offered and was last taught in winter 2009.

Current Catalog Information

MSCI 446 (0.50) LEC, TUT Introduction to Machine Learning

This course provides an introduction to machine learning, including supervised and unsupervised learning. Emphasis is placed on proper procedures for the training and testing of models. Topics covered may include data cleaning and transformation, overfitting and generalization, n-fold cross validation, regression, decision trees, neural networks, rule finding, and clustering. Students learn to apply machine learning methods to management engineering problems using common tools such as R and Python. [Offered: W]

No Special Consent Required

Requisites : Prereq: (One of CS 240, ECE 250, MSCI 240, MTE 140, SYDE 223); (One of BME 213, CHE 220, CIVE 224, ECE 306, 316, ENVE 224, MSCI 252, 253, ME 202, MTE 201, NE 215, STAT 206, 231, 241, SYDE 212); Level at least 3A

Effective 01-SEP-2022

Requisite Change : Prereq: (One of BME 122, CS 240, ECE 250, MSCI 240, MTE 140, SYDE 223); (One of BME 213, CHE 220, CIVE 224, ECE 306, 307, ENVE 224, MSCI 252, 253, ME 202, MTE 201, NE 215, STAT 206, 231, 241, SYDE 212); Level at least 3A.
Antireq: CS 480, ECE 457B, SYDE 522

Rationale : The prerequisites are updated adding BME 122, and ECE 307 which replaced ECE 306 in fall 2020. Removing ECE 316 which is no longer offered and was

last taught in winter 2009. The antirequisites are updated adding CS 480, ECE 457B, and SYDE 522 due to overlapping course content.

Current Catalog Information

MSCI 452 (0.50) LEC, TUT Decision Making Under Uncertainty

This course deals with normative, descriptive, and prescriptive theories and models of decision making under uncertainty. The course focuses on concepts such as, risk measures, Bayes theorem, and basic and multi-attribute utility theories. The course uses these concepts to build analytical decision-making models considering the randomness and/or risk-attitude of the decision-makers. Various forms of decision analysis techniques will be covered and typically include, expected utility maximization, the value of information analysis, one/two-way sensitivity analysis, and sequential Bayesian inference. Practical uses and limitations of the models and techniques will be illustrated. [Offered: S]

No Special Consent Required

Requisites :

Prereq: One of AE 224, BME 213, CHE 220, CIVE 224, ECE 306, 316, ENVE 224, MSCI 251, 252, ME 202, MTE 201, NE 215, STAT 206, 211, 231, 241, SYDE 212

Effective 01-SEP-2022

Requisite Change :

Prereq: One of AE 224, BME 213, CHE 220, CIVE 224, ECE 203, 306, ENVE 224, MSCI 251, 252, ME 202, MTE 201, NE 215, STAT 206, 211, 231, 241, SYDE 212

Rationale :

The prerequisites are updated adding ECE 203 which replaced ECE 306, and removing ECE 316 which is no longer offered and was last taught in winter 2009.

Current Catalog Information

MSCI 454 (0.50) LEC Technical Entrepreneurship

Technical entrepreneurship is examined considering the role of independent business, entrepreneurial behaviour, types of business and enterprises, business structure, sources of venture concepts and capital, company operation and control, and business start up. [Offered: W]

No Special Consent Required

Requisites :

Prereq: One of AE 392, BME 364, CIVE 392, ECE 390, ENVE 392, GEOE 392, MSCI 261, SYDE 262; Level at least 3A Engineering

Effective 01-SEP-2022

Requisite Change :

Prereq: Level at least 3A

Rationale :

The prerequisite is updated removing the economics courses, as economics isn't necessary for understanding the content; the Engineering requirement is also removed, as this course may be of interest to students in other faculties.

Current Catalog Information

MSCI 541 (0.50) LEC, TUT Search Engines

This course provides an opportunity for students to learn the engineering behind search engines and how to optimize search engines to provide higher quality user experiences. This course focuses on text retrieval and web search. Topics include design and construction of retrieval systems, retrieval models, and evaluation of

search engines. [Offered: F]
No Special Consent Required
Requisites :

Prereq: (One of BME 122, CS 240, ECE 250, MSCI 240, MTE 140, SYDE 223) and
(One of AE 224, BME 213, CHE 220, CIVE 224, ECE 306, 316, ENVE 224, MSCI
251, 252, ME 202, MTE 201, NE 215, STAT 206, 231, 241, SYDE 212)

Effective 01-SEP-2022

Requisite Change :

Prereq: (One of BME 122, CS 240, ECE 250, MSCI 240, MTE 140, SYDE 223) and
(One of AE 224, BME 213, CHE 220, CIVE 224, ECE 203, 306, ENVE 224, MSCI
251, 252, ME 202, MTE 201, NE 215, STAT 206, 231, 241, SYDE 212)

Rationale :

The prerequisites are updated adding ECE 203 which replaced ECE 306, and
removing ECE 316 which is no longer offered and was last taught in winter
2009.

Current Catalog Information

MSCI 546 (0.50) LEC, TUT Advanced Machine Learning

This course provides a deeper understanding of machine learning (ML) techniques by
utilizing students' prior background in ML and operations research to understand the
drivers of ML methodologies rather than using black-box processes. The course first
reviews supervised and unsupervised learning methods, and then dives deeper into
their assumptions, mathematical models, and underlying algorithms to help students
systematically develop and enhance ML processes. Using the same approach, the course
covers more advanced topics in ML, such as neural networks and reinforcement
learning. Application areas within this course may include, but are not limited to
healthcare, energy, sports, transportation, and manufacturing. [Offered: W, first
offered Winter 2023]

No Special Consent Required

Requisites :

Prereq: MSCI 332, 446. Antireq: MSCI 445

Effective 02-SEP-2022

Requisite Change :

Prereq: MSCI 332; One of CS 480, ECE 457B, MSCI 446, SYDE 522

Rationale :

The prerequisites are updated adding CS 480, ECE 457B, and SYDE 522. These
courses are antirequisites to MSCI 446. The antirequisite is removed as it
was originally added in error (MSCI 445 is not equivalent to MSCI 546).
This is an amendment to our previous submission also effective September 1,
2022.

Current Catalog Information

MSCI 551 (0.50) LEC, TUT Quality Management and Control

The course focuses on the analysis, evaluation, and improvement of quality based on
statistical tools. Topics include process capability analysis, statistical process
control, experimental design and the Taguchi method, and acceptance sampling. The
emphasis is on the assessment of quality and the design of alternate processes and/or
quality assessment schemes to improve quality. [Offered: F]

No Special Consent Required

Requisites :

Prereq: One of AE 224, BME 213, CHE 220, CIVE 224, ECE 306, 316, ENVE 224,
MSCI 251, 252, ME 202, MTE 201, NE 215, STAT 206, 231, 241, SYDE 212

Effective 01-SEP-2022

Requisite Change : Prereq: One of AE 224, BME 213, CHE 220, CIVE 224, ECE 203, 306, ENVE 224, MSCI 251, 252, ME 202, MTE 201, NE 215, STAT 206, 231, 241, SYDE 212
Rationale : The prerequisites are updated adding ECE 203 which replaced ECE 306, and removing ECE 316 which is no longer offered and was last taught in winter 2009.

COURSE INACTIVATIONS (for approval)

Dean of Engineering

Effective 01-SEP-2023
NE 224 (0.50)
Rationale :

Biochemistry for Nanotechnology Engineers
This course is inactivated and replaced with a new course NE 281. The proposed changes are meant to address a foundational gap in the Nanotechnology Engineering plan in the area of biology impacting biotechnology courses. The majority of Nanotechnology Engineering students typically do not have any high school background in biology.

Effective 01-SEP-2022
NE 250 (0.13)
Rationale :

Work-term Report 1
The proposed inactivation is meant to reduce student stress and workload. Currently, the Nanotechnology Engineering plan requires 3 technical reports, with grades counting towards the student's term average and fail count. The NE 250/350/450 technical report courses were created to provide clear guidance and feedback with increasing expectations, assuming this would lead to increased proficiency in technical writing. While report quality increases, this has not come without a cost. We have observed many students failing to progress based on a failing work-term report grade, with sometimes as many as 10-15% failures in a term reported.

Nanotechnology Engineering students have long complained that these courses are not in alignment with Nanotechnology's (NE) contributing departments Chemical Engineering (CHE), and Computer and Electrical Engineering (ECE). Students indicate that, in comparison to the students in CHE and ECE departments, the NE work-term report structure is adding high workload demands and is increased stress, and for some are impacting their ability to progress.

This course is last offered spring 2022.

Effective 01-SEP-2024
NE 350 (0.13)
Rationale :

Work-term Report 2
The proposed inactivation is meant to reduce student stress and workload.

Currently, the Nanotechnology Engineering plan requires 3 technical reports, with grades counting towards the student's term average and fail count. The NE 250/350/450 technical report courses were created to provide clear guidance and feedback with increasing expectations, assuming this would lead to increased proficiency in technical writing. While report quality increases, this has not come without a cost. We have observed many students failing to progress based on a failing work-term report grade, with sometimes as many as 10-15% failures in a term reported.

Nanotechnology Engineering students have long complained that these courses are not in alignment with Nanotechnology's (NE) contributing departments Chemical Engineering (CHE), and Computer and Electrical Engineering (ECE). Students indicate that, in comparison to the students in CHE and ECE departments, the NE work-term report structure is adding high workload demands and is increased stress, and for some are impacting their ability to progress.

This course is last offered fall 2023.

Effective 01-SEP-2025
NE 450 (0.13)
Rationale :

Work-term Report 3

The proposed inactivation is meant to reduce student stress and workload. Currently, the Nanotechnology Engineering plan requires 3 technical reports, with grades counting towards the student's term average and fail count. The NE 250/350/450 technical report courses were created to provide clear guidance and feedback with increasing expectations, assuming this would lead to increased proficiency in technical writing. While report quality increases, this has not come without a cost. We have observed many students failing to progress based on a failing work-term report grade, with sometimes as many as 10-15% failures in a term reported.

Nanotechnology Engineering students have long complained that these courses are not in alignment with Nanotechnology's (NE) contributing departments Chemical Engineering (CHE), and Computer and Electrical Engineering (ECE). Students indicate that, in comparison to the students in CHE and ECE departments, the NE work-term report structure is adding high workload demands and is increased stress, and for some are impacting their ability to progress.

This course is last offered winter 2025.

Management Sciences

Effective 01-SEP-2022
MSCI 444 (0.50)
Rationale :

Information Systems Analysis and Design

This course was removed from the Management Engineering curriculum for the

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2018-2019 Calendar, and would not have a high enough enrolment for the Management Sciences option to continue offering it.

End of Report

4. Minor Plan Modifications

4.1 Nanotechnology Engineering [for approval]

Summary:

1. Plan Modifications:

- a. Create Work-term and Reflective Milestones to replace work term reports.
- b. Add new course NE 110 to the core curriculum, and eliminate milestones in four 0.13 credit courses.
- c. Add new course NE 281 to the core curriculum and eliminate NE 224 which is inactivated.

Background & Rationale:

The proposed modifications to the Nanotechnology Engineering (NE) curriculum by the creation of a new Work-term Reports and Reflective Milestone will decrease student workload as NE remains one of the heavier engineering programs. This change will align NE with its parent departments, Chemical Engineering and Electrical and Computer Engineering, and allow students to clear work term reports by relying on reflective reports, requiring the inactivation of the technical report courses NE 250/350/450. The new NE 110 course will provide a better learning experience for chemical health risks content, which targets accreditation graduate attributes, will require the removal of the milestone associated to four 0.13 credit courses (NE 102/201/202/301), aggregating these instead into one course. These four courses are being recreated as new courses NE 102B, 201A, 202B and 301A to differentiate them from their previous versions.

Other proposed modifications include the creation of a new NE 281 course which will address a gap in biology background, and will require the inactivation of NE 224, where this biochemistry content is moved to a later term, as well as the editing to course calendar descriptions to remove antirequisites that are no longer offered, to better reflect the content that can be delivered in the course, to decrease overlap or gaps in content between courses, or to change the term of offering of a technical elective to increase choices for students.

Nanotechnology Engineering

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Curriculum for Nanotechnology Engineering

The curriculum in Nanotechnology Engineering is designed to teach those fundamental physical and engineering sciences that form the basis of the work of nanotechnology engineers. The curriculum in Nanotechnology Engineering consists of a set of core courses complemented by eight technical elective courses, ~~plus three non-technical elective courses that include a communication elective, in addition to NE 109 and MSCI 261 in order to satisfy the Complementary Studies Requirements for Engineering Students.~~

The normal recommended curriculum shown below typically involves a course load (excluding seminars) of five to six lecture courses per term. Permission from the associate director of nanotechnology engineering (students), will be required for departures from the normal load in any given term. Permission to carry more than

the regular load in any given term will normally be approved only for students who have attained an 80% or higher average in the preceding term.

The sequence of co-op work terms for Nanotechnology Engineering students comprises of two four-month work terms following the 1B and 2A terms, and two eight-month work terms following the 2B and 3B terms. The rules of the Co-operative Education System apply, as further described in the Engineering Work Terms section. Three credited work reports are required for graduation.

The promotion criteria used to determine progression through the Nanotechnology Engineering plan is described in the Engineering Examinations and Promotions section of this Calendar.

Complementary Studies Electives (CSEs)

A total of five Complementary Studies Electives (CSEs), in addition to a communications elective, must be taken. Two of the CSE choices must be NE 109 and MSCI 261, and other choices must satisfy the Complementary Studies Requirements for Engineering Students.

Undergraduate Communication Requirement

Strong communication skills are essential to academic, professional, and personal success. To satisfy the communication elective requirement, Nanotechnology Engineering students must successfully complete a foundational course on communication. This course is scheduled into the 2A term, must be completed prior to enrolling in the 3A term, and can be selected from the following list below. These courses cannot be taken online.

- ENGL 109 Introduction to Academic Writing
- ENGL 129R/EMLS 129R Written Academic English
- EMLS 101R Oral Communications for Academic Purposes
- EMLS 102R Clear Communication in English Writing
- SPCOM 100 Interpersonal Communication
- SPCOM 223 Public Speaking

Work-term Reports and Reflection Milestone

Reflection is an integral part of work-integrated learning. To achieve the Work-term Reports and Reflection Milestone, Nanotechnology Engineering students must complete four reflective reports. These reflective reports are to be associated with each work-term, and are to be submitted immediately following the work-term. Alternately, students can clear this requirement with credit in a PD course requiring a reflective report, with the approval of their academic advisor, and if that PD course was taken during the work term. Reflective reports are typically short, structured reports offering the opportunity to reflect on experience obtained in the context of their academic learning or work.

Students are also required to submit one technical communication report by taking PD 11 (Processes for Technical Report Writing) as one of their PD electives.

Technical Electives

The Nanotechnology Engineering plan may be divided broadly into four areas of concentration, identified herein as micro and nano-instrumentation, nano-electronics, nanobiosystems, and nanomaterials. A set of eight technical elective course choices is provided in the curriculum to enable students to focus upon at least two of these areas of concentration. The eight technical elective courses may be chosen from amongst approximately

20 Nanotechnology-Engineering-specific technical elective courses that are normally offered annually. ~~In addition, students may obtain permission from the Nanotechnology Engineering academic advisor (normally the associate director, internal) to employ up to four courses (one each in the 3B and 4A terms, two in the 4B term), appropriate to their choices of areas of concentration, that are offered under other Faculty of Engineering academic plans. Of the eight technical electives required, students may choose up to four courses from outside the Nanotechnology Engineering plan to complement their studies.~~

~~The normal recommended curriculum shown below typically involves a course load (excluding seminars) of five to six lecture courses per term. Permission from the associate director of nanotechnology engineering internal, will be required for departures from the normal load in any given term. Permission to carry more than the regular load in any given term will normally be approved only for students who have attained an 80% or higher average in the preceding term.~~

~~The sequence of co-op work terms for Nanotechnology Engineering students comprises two four-month work terms following the 1B and 2A terms, and two eight-month work terms following the 2B and 3B terms. The rules of the Co-operative Education System apply, as further described in the Engineering Work Terms section. Three credited work reports are required for graduation.~~

~~The promotion criteria used to determine progression through the Nanotechnology Engineering plan is described in Examinations and Promotions.~~

Available Options

Students wishing to enrich their education further may elect to follow a Faculty of Engineering designated option. Students who complete the requirements for an option will have a designation of completion of that option recorded on their transcripts. Students should be aware that an option normally requires additional courses to be completed. ~~A minimum average of 80% is required to enter the Life Sciences Option or Physical Sciences Option.~~ Faculty options of special interest to Nanotechnology Engineering students are described in the [Options, Specializations and Electives for Engineering Students](#) of this section of the Calendar.

Academic Curriculum

Legend for the Next Tables

| Key | Description |
|------|--|
| Cls | Class or seminar |
| Tut | Tutorial |
| Lab | Laboratory |
| 0-10 | Number of hours per week for Class, Tutorial, or Laboratory |
| ‡ | NE 102, NE 201, NE 202, and NE 301 provide milestones that must be passed before a student may proceed in the academic plan. Successful completion is required by the end of the academic term following that having the scheduled meets. Specifically, a student will not be allowed to enrol in any academic term beyond 2A without credit for NE 102, beyond 2B without credit for NE 201, beyond 3A without credit for NE 202, beyond 3B without credit for NE 301. |
| ** | The Communication Elective represents a milestone that must be completed prior to enrolling in the 3A term. The milestone can be completed by passing one course from the following list: ENGL 109, ENGL 129R/EMLS 129R, EMLS 101R, EMLS 102R, SPCOM 100, SPCOM 223. The course cannot be taken online. |
| + | For some of these courses the number of contact hours for the tutorial or laboratory are unknown; there may be more components than the class (Cls) section. |

The term-by-term academic component of the curriculum is as follows:

| Term | Course and Title | Cls | Tut | Lab |
|-----------|---|--------------|--------------|----------------|
| 1A Fall | MATH 117 Calculus 1 for Engineering | 3 | 2 | 0 |
| | NE 100 Introduction to Nanotechnology Engineering | 3 | 1 | 2 |
| | NE 101 Nanotechnology Engineering Practice | 1 | 0 | 0 |
| | NE 109 Societal and Environmental Impacts of Nanotechnology | 3 | 1 | 0 |
| | NE 111 Introduction to Programming for Engineers | 2 | 0 | 0 |
| | NE 112 Linear Algebra for Nanotechnology Engineering | 3 | 1 | 0 |
| | NE 121 Chemical Principles | 3 | 1 | 0 |
| 1B Winter | MATH 119 Calculus 2 for Engineering | 3 | 2 | 0 |
| | NE 102B Introduction to Nanomaterials Health Risk; Nanotechnology Engineering Practice ‡ | 1 | 0 | 0 |
| | NE 110 Introduction to Nanomaterials Health Risks | <u>3</u> | <u>0</u> | <u>0</u> |
| | NE 113 Introduction to Computational Methods | 3 | 1 | 2 |
| | NE 125 Introduction to Materials Science and Engineering | 3 | 1 | 0 |
| | NE 131 Physics for Nanotechnology Engineering | 4 | 1 | 0 |
| | NE 140 Linear Circuits | 3 | 2 | 1.5 |
| 2A Fall | NE 201A Nanotoxicology; Nanotechnology Engineering Practice ‡ | 1 | 0 | 0 |
| | NE 215 Probability and Statistics | 3 | 1 | 0 |
| | NE 216 Advanced Calculus and Numerical Methods 1 | 3 | 1 | 2 |
| | NE 220L Materials Science and Engineering Laboratory | 0 | 0 | 1.5 |
| | NE 222 Organic Chemistry for Nanotechnology Engineers | 3 | 1 | 1.5 |
| | NE 241 Electromagnetism | 3 | 2 | 1.5 |
| | Communication Elective** | 3 | + | + |
| 2B Spring | NE 202B Nanomaterials and Environmental Impact; Nanotechnology Engineering Practice ‡ | 1 | 0 | 0 |
| | NE 217 Advanced Calculus and Numerical Methods 2 | 3 | 1 | 2 |
| | NE 224 Biochemistry for Nanotechnology Engineers | 3 | 1 | 1.5 |
| | NE 225 Structure and Properties of Nanomaterials | 3 | 1 | 0 |
| | NE 226 Characterization of Materials | 3 | 1 | 0 |
| | NE 226L Laboratory Characterization Methods | 0 | 0 | 1.5 |
| | NE 242 Semiconductor Physics and Devices | 3 | 2 | 1.5 |
| | NE 281 Biology for Nanotechnology Engineers | <u>3</u> | <u>1</u> | <u>1.5</u> |
| | NE 250 Work-term Report 1 | | | |
| 3A Spring | MSCI 261 Engineering Economics: Financial Management for Engineers | 3 | 1 | 0 |
| | NE 301A Nanomaterials and Human Risks, Benefits; Nanotechnology Engineering Practice ‡ | 1 | 0 | 0 |
| | NE 318 Continuum Mechanics for Nanotechnology Engineering | 3 | 1 | 0 |

| | | | | |
|---|--|---|-----|-----|
| | NE 320L Characterization of Materials Laboratory | 0 | 0 | 1.5 |
| | NE 332 Quantum Mechanics | 3 | 1 | 0 |
| | NE 333 Macromolecular Science | 3 | 1 | 0 |
| | NE 343 Microfabrication and Thin-film Technology | 3 | 1 | 0 |
| 3B Fall | NE 302 Nanotechnology Engineering Practice | 1 | 0 | 0 |
| | NE 307 Introduction to Nanosystems Design | 2 | 0 | 0 |
| | NE 330L Macromolecular Science Laboratory | 0 | 0 | 1.5 |
| | NE 334 Statistical Thermodynamics | 3 | 1 | 0 |
| | NE 336 Micro and Nanosystem Computer-aided Design | 3 | 1 | 1.5 |
| | NE 340L Microfabrication and Thin-film Technology Laboratory | 0 | 0 | 1.5 |
| | NE 350 Work-term Report 2 | | | |
| | NE 352 Surfaces and Interfaces | 3 | 0 | 0 |
| | Two Technical Electives | | | |
| 4A Fall | NE 408 Nanosystems Design Project | 0 | 0 | 10 |
| | CSE Complementary Studies Elective | | | |
| | Three Technical Electives | | | |
| | Two senior laboratory course electives selected from: | | | |
| | NE 454A Nano-electronics Laboratory 1 | 0 | 0 | 1.5 |
| | NE 454B Nano-instrumentation Laboratory 1 | 0 | 0 | 1.5 |
| | NE 454C Nanobiosystems Laboratory 1 | 0 | 0 | 1.5 |
| | NE 454D Nanostructured Materials Laboratory 1 | 0 | 0 | 1.5 |
| 4B Winter | NE 409 Nanosystems Design Project and Symposium | 0 | 0 | 10 |
| | NE 450 Work-term Report 3 | | | |
| | CSE Complementary Studies Elective | | | |
| | Three Technical Electives | | | |
| | Two senior laboratory course electives selected from: | | | |
| | NE 455A Nano-electronics Laboratory 2 | 0 | 0 | 1.5 |
| | NE 455B Nano-instrumentation Laboratory 2 | 0 | 0 | 1.5 |
| | NE 455C Nanobiosystems Laboratory 2 | 0 | 0 | 1.5 |
| NE 455D Nanostructured Materials Laboratory 2 | 0 | 0 | 1.5 | |

Technical Electives [List](#)

The following courses are normally offered annually. For a list of courses available on a specific term, consult the nanotechnology engineering undergraduate co-ordinator. The plan has the right, where the number of students enrolled in a course at the end of the Course Selection Period is 10 or less, to cancel the course.

Note: For [NE 453](#), more than one course may be offered simultaneously under this course number.

| Course and Title | Cls | Tut | Lab |
|---|-----|-----|-----|
| NE 335 Soft Nanomaterials | 3 | 0 | 0 |

| | | | |
|---|---|---|---|
| NE 344 Electronic Circuits | 3 | 0 | 0 |
| NE 345 Photonic Materials and Devices | 3 | 0 | 0 |
| NE 353 Nanoprobng and Lithography | 3 | 0 | 0 |
| NE 381 Introduction to Nanoscale Biosystems | 3 | 0 | 0 |
| NE 451 Simulation Methods | 3 | 0 | 0 |
| NE 452 Special Topics in Nanoscale Simulations | 3 | 0 | 0 |
| NE 453 Special Topics in Nanotechnology Engineering | 3 | 0 | 0 |
| NE 459 Nanotechnology Engineering Research Project | 9 | 0 | 0 |
| NE 461 Micro and Nano-instrumentation | 3 | 0 | 0 |
| NE 466 Tactile Sensors and Transducers | 3 | 0 | 0 |
| NE 471 Nano-electronics | 3 | 0 | 0 |
| NE 476 Organic Electronics | 3 | 0 | 0 |
| NE 481 Nanomedicine and Nanobiotechnology | 3 | 0 | 0 |
| NE 486 Biosensors | 3 | 0 | 0 |
| NE 487 Microfluidic and Nanobiotechnological Systems | 3 | 0 | 0 |
| NE 488 Biomaterials and Biomedical Design | 3 | 0 | 0 |
| NE 491 Nanostructured Materials | 3 | 0 | 0 |
| NE 496 Nanomaterials for Electrochemical Energy Systems | 3 | 0 | 0 |

The following lists below are new.

Students may choose up to a maximum of four non-NE technical elective courses from the lists below.

List 1 – 200-level

Maximum of one technical elective from the following list.

| Course | Course Title |
|--------------------------|--|
| CHE 225 | Strategies for Process Improvement and Product Development |
| ECE 222 | Digital Computers |
| ECE 224 | Embedded Microprocessor Systems |
| ECE 250 | Algorithms and Data Structures |
| ECE 252 | Systems Programming and Concurrency |
| ECE 254 | Operating Systems and Systems Programming |
| ECE 260 | Electromechanical Energy Conversion |
| ME 262 | Introduction to Microprocessors and Digital Logic |
| MSCI 240 | Algorithms and Data Structures |
| MSCI 245 | Databases and Software Design |
| MTE 241 | Introduction to Computer Structures & Real-Time Systems |
| MTE 262 | Introduction to Microprocessors and Digital Logic |
| SYDE 223 | Data Structures and Algorithms |

List 2 – Non-NE

| Course | Course Title |
|--------------------------|--|
| BME 386 | The Physics of Medical Imaging |
| BME 393 | Digital Systems |
| BME 550 | Sports Engineering |
| BME 587 | Special Topics in Biomedical Signals |
| CHE 331 | Electrochemical Engineering |
| CHE 361 | Bioprocess Engineering |
| CHE 480 | Process Analysis and Design |
| CHE 514 | Fundamentals of Petroleum Production |
| CHE 516 | Energy Systems Engineering |
| CHE 521 | Process Optimization |
| CHE 543 | Polymer Production: Polymer Reaction Engineering |
| CHE 571 | Industrial Ecology |
| CHE 572 | Air Pollution Control |
| CHE 574 | Industrial Wastewater Pollution Control |
| CIVE 204 | Solid Mechanics 1 |
| CIVE 310 | Introduction to Structural Design |
| CIVE 460 | Engineering Biomechanics |
| CIVE 512 | Rehabilitation of Structures |
| ECE 327 | Digital Hardware Systems |
| ECE 340 | Electronic Circuits 2 |
| ECE 350 | Real-Time Operating Systems |
| ECE 356 | Database Systems |
| ECE 358 | Computer Networks |
| ECE 360 | Power Systems and Smart Grids |
| ECE 373 | Radio Frequency and Microwave Circuits |
| ECE 375 | Electromagnetic Fields and Waves |
| ECE 406 | Algorithm Design and Analysis |
| ECE 409 | Cryptography and System Security |
| ECE 416 | Advanced Topics in Networking |
| ECE 417 | Image Processing |
| ECE 423 | Embedded Computer Systems |
| ECE 444 | Integrated Analog Electronics |
| ECE 457A | Cooperative and Adaptive Algorithms |
| ECE 457B | Fundamentals of Computational Intelligence |
| ECE 459 | Programming for Performance |

| | |
|--------------------------|---|
| ECE 474 | Radio and Wireless Systems |
| ECE 477 | Photonic Devices and Systems |
| ECE 484 | Digital Control Applications |
| ECE 488 | Multivariable Control Systems |
| ME 340 | Manufacturing Processes |
| ME 435 | Industrial Metallurgy |
| ME 459 | Energy Conversion |
| ME 526 | Fatigue and Fracture Analysis |
| ME 531 | Physical Metallurgy Applied to Manufacturing |
| ME 533 | Non-metallic and Composite Materials |
| MSCI 331 | Introduction to Optimization |
| MSCI 332 | Deterministic Optimization Models and Methods |
| MSCI 342 | Principles of Software Engineering |
| MSCI 343 | Human-Computer Interaction |
| MSCI 431 | Stochastic Models and Methods |
| MSCI 432 | Production and Service Operations Management |
| MSCI 435 | Advanced Optimization Techniques |
| MSCI 444 | Information Systems Analysis and Design |
| MSCI 446 | Introduction to Machine Learning |
| MSCI 452 | Decision Making Under Uncertainty |
| MTE 322 | Electromechanical Machine Design |
| MTE 325 | Microprocessor Systems and Interfacing for Mechatronics Engineering |
| MTE 360 | Automatic Control Systems |
| MTE 420 | Power Electronics and Motor Drives |
| MTE 544 | Autonomous Mobile Robots |
| MTE 545 | Introduction to MEMS Fabrication |
| SE 464 | Software Design and Architectures |
| SYDE 322 | Software Design |
| SYDE 334 | Applied Statistics |
| SYDE 522 | Foundations of Artificial Intelligence |
| SYDE 531 | Design Optimization Under Probabilistic Uncertainty |
| SYDE 533 | Conflict Resolution |
| SYDE 542 | Interface Design |
| SYDE 543 | Cognitive Ergonomics |
| SYDE 544 | Biomedical Measurement and Signal Processing |
| SYDE 548 | User Centred Design Methods |
| SYDE 552 | Computational Neuroscience |
| SYDE 556 | Simulating Neurobiological Systems |
| SYDE 572 | Introduction to Pattern Recognition |

Nanotechnology Engineering

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Curriculum for Nanotechnology Engineering

The curriculum in Nanotechnology Engineering is designed to teach those fundamental physical and engineering sciences that form the basis of the work of nanotechnology engineers. The curriculum in Nanotechnology Engineering consists of a set of core courses complemented by eight technical elective courses.

The normal recommended curriculum shown below typically involves a course load (excluding seminars) of five to six lecture courses per term. Permission from the associate director of nanotechnology engineering (students), will be required for departures from the normal load in any given term. Permission to carry more than the regular load in any given term will normally be approved only for students who have attained an 80% or higher average in the preceding term.

The sequence of co-op work terms for Nanotechnology Engineering students comprises of two four-month work terms following the 1B and 2A terms, and two eight-month work terms following the 2B and 3B terms. The rules of the [Co-operative Education](#) System apply, as further described in the Engineering [Work Terms](#) section. Three credited work reports are required for graduation.

The promotion criteria used to determine progression through the Nanotechnology Engineering plan is described in the Engineering [Examinations and Promotions](#) section of this Calendar.

Complementary Studies Electives (CSEs)

A total of five Complementary Studies Electives (CSEs), in addition to a communications elective, must be taken. Two of the CSE choices must be [NE 109](#) and [MSCI 261](#), and other choices must satisfy the [Complementary Studies Requirements for Engineering Students](#).

Undergraduate Communication Requirement

Strong communication skills are essential to academic, professional, and personal success. To satisfy the communication elective requirement, Nanotechnology Engineering students must successfully complete a foundational course on communication. This course is scheduled into the 2A term, must be completed prior to enrolling in the 3A term, and can be selected from the following list below. These courses cannot be taken online.

- [ENGL 109](#) Introduction to Academic Writing
- [ENGL 129R/EMLS 129R](#) Written Academic English
- [EMLS 101R](#) Oral Communications for Academic Purposes
- [EMLS 102R](#) Clear Communication in English Writing

- [SPCOM 100](#) Interpersonal Communication
- [SPCOM 223](#) Public Speaking

Work-term Reports and Reflection Milestone

Reflection is an integral part of work-integrated learning. To achieve the Work-term Reports and Reflection Milestone, Nanotechnology Engineering students must complete four reflective reports. These reflective reports are to be associated with each work-term, and are to be submitted immediately following the work-term. Alternately, students can clear this requirement with credit in a PD course requiring a reflective report, with the approval of their academic advisor, and if that PD course was taken during the work term. Reflective reports are typically short, structured reports offering the opportunity to reflect on experience obtained in the context of their academic learning or work.

Students are also required to submit one technical communication report by taking [PD 11](#) (Processes for Technical Report Writing) as one of their PD electives.

Technical Electives

The Nanotechnology Engineering plan may be divided broadly into four areas of concentration, identified herein as micro and nano-instrumentation, nano-electronics, nanobiosystems, and nanomaterials. A set of eight technical elective course choices is provided in the curriculum to enable students to focus upon at least two of these areas of concentration. The eight technical elective courses may be chosen from amongst approximately 20 Nanotechnology-Engineering-specific technical elective courses that are normally offered annually. Of the eight technical electives required, students may choose up to four courses from outside the Nanotechnology Engineering plan to complement their studies. The list of approved courses is listed below.

Available Options

Students wishing to enrich their education further may elect to follow a Faculty of Engineering designated option. Students who complete the requirements for an option will have a designation of completion of that option recorded on their transcripts. Students should be aware that an option normally requires additional courses to be completed. Faculty options of special interest to Nanotechnology Engineering students are described in the [Options, Specializations and Electives for Engineering Students](#) of this section of the Calendar.

Academic Curriculum

Legend for the Next Tables

| Key | Description |
|------|---|
| Cls | Class or seminar |
| Tut | Tutorial |
| Lab | Laboratory |
| 0-10 | Number of hours per week for Class, Tutorial, or Laboratory |
| + | For some courses the number of contact hours for the tutorial or laboratory are unknown; there may be more components than the class (Cls) section. |

The term-by-term academic component of the curriculum is as follows:

| Term | Course and Title | Cls | Tut | Lab |
|-----------|--|-----|-----|-----|
| 1A Fall | MATH 117 Calculus 1 for Engineering | 3 | 2 | 0 |
| | NE 100 Introduction to Nanotechnology Engineering | 3 | 1 | 2 |
| | NE 101 Nanotechnology Engineering Practice | 1 | 0 | 0 |
| | NE 109 Societal and Environmental Impacts of Nanotechnology | 3 | 1 | 0 |
| | NE 111 Introduction to Programming for Engineers | 2 | 0 | 0 |
| | NE 112 Linear Algebra for Nanotechnology Engineering | 3 | 1 | 0 |
| | NE 121 Chemical Principles | 3 | 1 | 0 |
| 1B Winter | MATH 119 Calculus 2 for Engineering | 3 | 2 | 0 |
| | NE 102B Nanotechnology Engineering Practice | 1 | 0 | 0 |
| | NE 110 Introduction to Nanomaterials Health Risks | 3 | 0 | 0 |
| | NE 113 Introduction to Computational Methods | 3 | 1 | 2 |
| | NE 125 Introduction to Materials Science and Engineering | 3 | 1 | 0 |
| | NE 131 Physics for Nanotechnology Engineering | 4 | 1 | 0 |
| | NE 140 Linear Circuits | 3 | 2 | 1.5 |
| 2A Fall | NE 201A Nanotechnology Engineering Practice | 1 | 0 | 0 |
| | NE 215 Probability and Statistics | 3 | 1 | 0 |
| | NE 216 Advanced Calculus and Numerical Methods 1 | 3 | 1 | 2 |
| | NE 220L Materials Science and Engineering Laboratory | 0 | 0 | 1.5 |
| | NE 222 Organic Chemistry for Nanotechnology Engineers | 3 | 1 | 1.5 |
| | NE 241 Electromagnetism | 3 | 2 | 1.5 |
| | Communication Elective | 3 | + | + |
| 2B Spring | NE 202B Nanotechnology Engineering Practice | 1 | 0 | 0 |
| | NE 217 Advanced Calculus and Numerical Methods 2 | 3 | 1 | 2 |
| | NE 225 Structure and Properties of Nanomaterials | 3 | 1 | 0 |
| | NE 226 Characterization of Materials | 3 | 1 | 0 |
| | NE 226L Laboratory Characterization Methods | 0 | 0 | 1.5 |
| | NE 242 Semiconductor Physics and Devices | 3 | 2 | 1.5 |
| | NE 281 Biology for Nanotechnology Engineers | 3 | 1 | 1.5 |
| 3A Spring | MSCI 261 Engineering Economics: Financial Management for Engineers | 3 | 1 | 0 |
| | NE 301A Nanotechnology Engineering Practice | 1 | 0 | 0 |
| | NE 318 Continuum Mechanics for Nanotechnology Engineering | 3 | 1 | 0 |
| | NE 320L Characterization of Materials Laboratory | 0 | 0 | 1.5 |
| | NE 332 Quantum Mechanics | 3 | 1 | 0 |
| | NE 333 Macromolecular Science | 3 | 1 | 0 |
| | NE 343 Microfabrication and Thin-film Technology | 3 | 1 | 0 |
| 3B Fall | NE 302 Nanotechnology Engineering Practice | 1 | 0 | 0 |
| | NE 307 Introduction to Nanosystems Design | 2 | 0 | 0 |
| | NE 330L Macromolecular Science Laboratory | 0 | 0 | 1.5 |

| | | | | |
|-----------|--|---|---|-----|
| | NE 334 Statistical Thermodynamics | 3 | 1 | 0 |
| | NE 336 Micro and Nanosystem Computer-aided Design | 3 | 1 | 1.5 |
| | NE 340L Microfabrication and Thin-film Technology Laboratory | 0 | 0 | 1.5 |
| | NE 352 Surfaces and Interfaces | 3 | 0 | 0 |
| | Two Technical Electives | | | |
| 4A Fall | NE 408 Nanosystems Design Project | 0 | 0 | 10 |
| | CSE Complementary Studies Elective | | | |
| | Three Technical Electives | | | |
| | Two senior laboratory course electives selected from: | | | |
| | NE 454A Nano-electronics Laboratory 1 | 0 | 0 | 1.5 |
| | NE 454B Nano-instrumentation Laboratory 1 | 0 | 0 | 1.5 |
| | NE 454C Nanobiosystems Laboratory 1 | 0 | 0 | 1.5 |
| | NE 454D Nanostructured Materials Laboratory 1 | 0 | 0 | 1.5 |
| 4B Winter | NE 409 Nanosystems Design Project and Symposium | 0 | 0 | 10 |
| | CSE Complementary Studies Elective | | | |
| | Three Technical Electives | | | |
| | Two senior laboratory course electives selected from: | | | |
| | NE 455A Nano-electronics Laboratory 2 | 0 | 0 | 1.5 |
| | NE 455B Nano-instrumentation Laboratory 2 | 0 | 0 | 1.5 |
| | NE 455C Nanobiosystems Laboratory 2 | 0 | 0 | 1.5 |
| | NE 455D Nanostructured Materials Laboratory 2 | 0 | 0 | 1.5 |

Technical Electives List

The following courses are normally offered annually. For a list of courses available on a specific term, consult the nanotechnology engineering undergraduate co-ordinator. The plan has the right, where the number of students enrolled in a course at the end of the Course Selection Period is 10 or less, to cancel the course.

Note: For [NE 453](#), more than one course may be offered simultaneously under this course number.

| Course and Title | Cls | Tut | Lab |
|---|-----|-----|-----|
| NE 335 Soft Nanomaterials | 3 | 0 | 0 |
| NE 344 Electronic Circuits | 3 | 0 | 0 |
| NE 345 Photonic Materials and Devices | 3 | 0 | 0 |
| NE 353 Nanoprobng and Lithography | 3 | 0 | 0 |
| NE 381 Introduction to Nanoscale Biosystems | 3 | 0 | 0 |
| NE 451 Simulation Methods | 3 | 0 | 0 |
| NE 452 Special Topics in Nanoscale Simulations | 3 | 0 | 0 |
| NE 453 Special Topics in Nanotechnology Engineering | 3 | 0 | 0 |
| NE 459 Nanotechnology Engineering Research Project | 9 | 0 | 0 |
| NE 461 Micro and Nano-instrumentation | 3 | 0 | 0 |

| | | | |
|---|---|---|---|
| NE 466 Tactile Sensors and Transducers | 3 | 0 | 0 |
| NE 471 Nano-electronics | 3 | 0 | 0 |
| NE 476 Organic Electronics | 3 | 0 | 0 |
| NE 481 Nanomedicine and Nanobiotechnology | 3 | 0 | 0 |
| NE 486 Biosensors | 3 | 0 | 0 |
| NE 487 Microfluidic and Nanobiotechnological Systems | 3 | 0 | 0 |
| NE 488 Biomaterials and Biomedical Design | 3 | 0 | 0 |
| NE 491 Nanostructured Materials | 3 | 0 | 0 |
| NE 496 Nanomaterials for Electrochemical Energy Systems | 3 | 0 | 0 |

Students may choose up to a maximum of four non-NE technical elective courses from the lists below.

List 1 - 200-level

Maximum of one technical elective from the following list.

| Course | Course Title |
|--------------------------|--|
| CHE 225 | Strategies for Process Improvement and Product Development |
| ECE 222 | Digital Computers |
| ECE 224 | Embedded Microprocessor Systems |
| ECE 250 | Algorithms and Data Structures |
| ECE 252 | Systems Programming and Concurrency |
| ECE 254 | Operating Systems and Systems Programming |
| ECE 260 | Electromechanical Energy Conversion |
| ME 262 | Introduction to Microprocessors and Digital Logic |
| MSCI 240 | Algorithms and Data Structures |
| MSCI 245 | Databases and Software Design |
| MTE 241 | Introduction to Computer Structures & Real-Time Systems |
| MTE 262 | Introduction to Microprocessors and Digital Logic |
| SYDE 223 | Data Structures and Algorithms |

List 2 - Non-NE

| Course | Course Title |
|-------------------------|--------------------------------------|
| BME 386 | The Physics of Medical Imaging |
| BME 393 | Digital Systems |
| BME 550 | Sports Engineering |
| BME 587 | Special Topics in Biomedical Signals |
| CHE 331 | Electrochemical Engineering |
| CHE 361 | Bioprocess Engineering |
| CHE 480 | Process Analysis and Design |

| | |
|--------------------------|--|
| CHE 514 | Fundamentals of Petroleum Production |
| CHE 516 | Energy Systems Engineering |
| CHE 521 | Process Optimization |
| CHE 543 | Polymer Production: Polymer Reaction Engineering |
| CHE 571 | Industrial Ecology |
| CHE 572 | Air Pollution Control |
| CHE 574 | Industrial Wastewater Pollution Control |
| CIVE 204 | Solid Mechanics 1 |
| CIVE 310 | Introduction to Structural Design |
| CIVE 460 | Engineering Biomechanics |
| CIVE 512 | Rehabilitation of Structures |
| ECE 327 | Digital Hardware Systems |
| ECE 340 | Electronic Circuits 2 |
| ECE 350 | Real-Time Operating Systems |
| ECE 356 | Database Systems |
| ECE 358 | Computer Networks |
| ECE 360 | Power Systems and Smart Grids |
| ECE 373 | Radio Frequency and Microwave Circuits |
| ECE 375 | Electromagnetic Fields and Waves |
| ECE 406 | Algorithm Design and Analysis |
| ECE 409 | Cryptography and System Security |
| ECE 416 | Advanced Topics in Networking |
| ECE 417 | Image Processing |
| ECE 423 | Embedded Computer Systems |
| ECE 444 | Integrated Analog Electronics |
| ECE 457A | Cooperative and Adaptive Algorithms |
| ECE 457B | Fundamentals of Computational Intelligence |
| ECE 459 | Programming for Performance |
| ECE 474 | Radio and Wireless Systems |
| ECE 477 | Photonic Devices and Systems |
| ECE 484 | Digital Control Applications |
| ECE 488 | Multivariable Control Systems |
| ME 340 | Manufacturing Processes |
| ME 435 | Industrial Metallurgy |
| ME 459 | Energy Conversion |
| ME 526 | Fatigue and Fracture Analysis |
| ME 531 | Physical Metallurgy Applied to Manufacturing |
| ME 533 | Non-metallic and Composite Materials |
| MSCI 331 | Introduction to Optimization |

| | |
|--------------------------|---|
| MSCI 332 | Deterministic Optimization Models and Methods |
| MSCI 342 | Principles of Software Engineering |
| MSCI 343 | Human-Computer Interaction |
| MSCI 431 | Stochastic Models and Methods |
| MSCI 432 | Production and Service Operations Management |
| MSCI 435 | Advanced Optimization Techniques |
| MSCI 444 | Information Systems Analysis and Design |
| MSCI 446 | Introduction to Machine Learning |
| MSCI 452 | Decision Making Under Uncertainty |
| MTE 322 | Electromechanical Machine Design |
| MTE 325 | Microprocessor Systems and Interfacing for Mechatronics Engineering |
| MTE 360 | Automatic Control Systems |
| MTE 420 | Power Electronics and Motor Drives |
| MTE 544 | Autonomous Mobile Robots |
| MTE 545 | Introduction to MEMS Fabrication |
| SE 464 | Software Design and Architectures |
| SYDE 322 | Software Design |
| SYDE 334 | Applied Statistics |
| SYDE 522 | Foundations of Artificial Intelligence |
| SYDE 531 | Design Optimization Under Probabilistic Uncertainty |
| SYDE 533 | Conflict Resolution |
| SYDE 542 | Interface Design |
| SYDE 543 | Cognitive Ergonomics |
| SYDE 544 | Biomedical Measurement and Signal Processing |
| SYDE 548 | User Centred Design Methods |
| SYDE 552 | Computational Neuroscience |
| SYDE 556 | Simulating Neurobiological Systems |
| SYDE 572 | Introduction to Pattern Recognition |
| SYDE 584 | Physiological Systems and Biomedical Design |

4.2 Entrepreneurship Minor

Summary:

Plan Modification: Open up the BET Minor in Entrepreneurship to Engineering students.

Background & Rationale:

Engineering students have shown an interest in taking the BET Minor in Entrepreneurship and not being restricted to the Option. As a consequence, we are allowing Engineering students to either obtain the Option or Minor (but not both). While not many will have enough room in their program to take the Minor, this will allow those who do to engage even more fully in the entrepreneurship program. For this reason, we have eliminated the wording that disallows engineering students from taking the Minor. It is also useful to give students more ideas of how they might satisfy the milestone component of the Minor, and the wording of the milestone has been updated to reflect this. It is useful to clarify that the elective courses have to be at the third or fourth year level.

Entrepreneurship Minor

The Conrad School of Entrepreneurship and Business offers an eight-course Entrepreneurship Minor that can be taken by undergraduate students in all faculties (~~the exception is Engineering, which has the Entrepreneurship Option~~). It is designed for students with a passion for entrepreneurship who wish to leverage their academic and technical background with the business skills required to move ideas from concept to commercial, organizational, or social success. It is built upon a uniquely Waterloo approach to entrepreneurship education that integrates academic and experiential learning to develop an individual's capabilities. This is achieved through a combination of co-operative or capstone project educational experiences and academic content. **Engineering students can take either the minor or the option, but not both.**

While it is common to associate entrepreneurship with venture creation, there is an increasing demand for students who can act as 'entrepreneurs within organizations', sometimes referred to as corporate entrepreneurs, or intrapreneurs. As well, many students are interested in social entrepreneurship. The Minor is designed to allow students to focus on any of these vital aspects of entrepreneurship.

Experiential education is a critical component of the Minor. As such, students must participate in a milestone related to entrepreneurship. One possible milestone is an [Enterprise Co-op](#) (E Co-op) credit or Entrepreneurial Experience Term for non co-op students, pursuing opportunities that lead to the formation of commercial or social venture. Other milestones include a capstone-style: project, thesis, major project course, or a senior course containing a major assignment that could lead to a corporate enhancement or social contribution. Approval of capstone milestones as an appropriate entrepreneurial experience will rest with the [minor's academic co-ordinator](#). This approval will be based on whether the proposed capstone satisfies the experiential intent of the plan, as well as, having a suitable faculty supervisor for the project.

Three Core Courses

- [BET 100](#)
- [BET 320](#)
- [BET 340](#)

Five Electives

1. A minimum of three additional [BET](#) courses.
2. Up to two more [BET](#) courses or **approved third or fourth year** electives available through the student's home faculty. A guiding principle for approval of discipline-based elective courses is that they support the experiential milestone.

Successful Completion of the Entrepreneurship Minor

To be awarded the Entrepreneurship Minor, students must complete all courses (core and electives) with a minimum overall average of 65% and no course with a grade less than 60%, as well as completing milestone requirements.

Specification for the Milestone Associated with the Entrepreneurship Minor

E Co-op Milestone: This milestone is only available to students in co-op and requires successful completion of the following:

1. Completion of an approved E Co-op term, approval based on an application and interview with the co-ordinator, and demonstration that there is an accessible market, realistic potential to create and deliver the proposed product or service, and a suitable work plan.
2. 100% attendance of workshops and presentations during the initial week of the term.
3. Submission of acceptable regular progress reports based on the agreed term work plan as assessed by the E Co-op co-ordinator.
4. Submission of an acceptable end-of-term progress report as assessed by the E Co-op co-ordinator.

Entrepreneurship Experience Term: This milestone is available to any student engaged in starting a business. It requires:

1. Approval of the entrepreneurial experience based upon an application and interview with the E Co-op co-ordinator. There must be an accessible market, realistic potential to create and deliver the proposed product or service, and a work plan. Note: It is expected that the experiential portion of this term will require engagement in the venture for 35 hours per week for a full 12- to 16-week term.
2. 100% attendance of workshops and presentations during the initial week of the term.
3. Submission of acceptable regular progress reports based on the agreed work plan as assessed by the E Co-op co-ordinator.
4. Submission of an acceptable end-of-term progress report as assessed by the E Co-op co-ordinator.

Capstone, Thesis, or Project/Senior-Level Course with Major Assignment: This milestone is available to any student. It requires:

1. A capstone project, thesis, or project/senior-level course with a major assignment satisfying the entrepreneurial experience requirement of the plan, as determined by the minor academic co-ordinator.
2. The milestone must have a faculty supervisor.
3. The milestone must be able to lead to a potential commercial or social application.
4. Students choosing the capstone design milestone must participate in the Esch Awards competition, the Hult Prize competition, Concept Grants, Velocity Fund Finals, or an equivalent as approved by the minor academic co-ordinator.

4.3 Management Sciences Option

Background & Rationale:

Due to its upcoming inactivation, MSC1444 is being removed from the MSCI Option. The reference to the MSCI Option Substitution form is being removed, as the RO Course Substitution form and transcript notes are used.

Management Sciences Option

The Management Sciences Option prepares students for decision-making roles in business and technology management. The Option complements an engineer's technical training with a well-rounded education in management sciences, including studies of economics, organizational behaviour and design, decision analysis and operations research, production and service operations, information systems design, innovation, and technology strategy. Courses develop a conceptual understanding of management and organizational processes, practical skills to analyze and solve decision problems and implement business solutions, and an awareness of the impact of technology and innovation on organizations and society.

The Management Sciences Option is not available to Management Engineering students.

Legend

| Key | Description |
|---------|--|
| F,W,S | F=fall term, W=winter term, S=spring term |
| A,B,C,D | These courses count toward Complementary Studies Requirements : A- Impact, B- Engineering Economics, C- Humanities and Social Sciences, D- Other. |
| † | These courses may count towards technical elective (or technical breadth elective) requirements. Engineering students should consult the undergraduate advisor in their home department for specific rules that apply to their plan. |

The Option consists of six courses, including two required courses (or their equivalents) and four elective courses (or equivalents).

The two required courses and equivalents are:

| Course | Title and Notes |
|--|--|
| MSCI 211 ^C | Organizational Behaviour (F,W,S) - may be replaced by PSYCH 238 |
| or MSCI 311 ^C | Organizational Design and Technology (F,W, S) |
| MSCI 331 [†] | Introduction to Optimization (F,W,S) - may be replaced by BME 411 , CHE 521 , CIVE 332 , CO 250 , ENVE 335 , or SYDE 411 |

Plus four of the following elective courses or equivalents:

| Course | Title and Notes |
|---------------------------------------|--|
| MSCI 211 ^C | Organizational Behaviour (F,W,S) - may be replaced by PSYCH 238 |
| MSCI 261 ^B | Engineering Economics: Financial Management for Engineers (F,W,S) - may be replaced by AE 392 , BME 364 , CIVE 392 , ENVE 392 , GEOE 392 , or SYDE 262 |
| MSCI 263 ^C | Managerial Economics (S) - may be replaced by ECON 201 |
| MSCI 311 ^C | Organizational Design and Technology (F,W, S) |
| MSCI 332 [†] | Deterministic Optimization Models and Methods (F) |

| | |
|---------------------------------------|--|
| MSCI 411 ^C | Leadership and Influence (S) - may be replaced by BET 450 |
| MSCI 422 ^A | Economic Impact of Technological Change and Entrepreneurship (F) |
| MSCI 431 ⁺ | Stochastic Models and Methods (W) |
| MSCI 432 ⁺ | Production and Service Operations Management (F,W) |
| MSCI 433 ⁺ | Applications of Management Engineering (W) |
| MSCI 435 ⁺ | Advanced Optimization Techniques (W) |
| MSCI 442 ^A | Impact of Information Systems on Organizations and Society (W) |
| MSCI 444 [±] | Information Systems Analysis and Design (W) — may be replaced by CS 430 or CS 490 |
| MSCI 446 ⁺ | Introduction to Machine Learning (W) |
| MSCI 452 ⁺ | Decision Making Under Uncertainty (S) |
| MSCI 454 ^D | Technical Entrepreneurship (W) |
| MSCI 531 ⁺ | Stochastic Processes and Decision Making (S) |
| MSCI 541 ⁺ | Search Engines (F) |
| MSCI 543 ⁺ | Analytics and User Experience (S beginning 2022) |
| MSCI 546 ⁺ | Advanced Machine Learning (W beginning 2023) |
| MSCI 551 ⁺ | Quality Management and Control (F) |
| MSCI 555 ⁺ | Scheduling: Theory and Practice (W) |
| MSCI 597 | Complementary Studies Topics in Management Sciences |
| MSCI 598 ⁺ | Special Topics in Management Engineering |
| CIVE 596 | Construction Engineering (S) |
| ECON 371 | Business Finance 1 (F,W,S) |
| HRM 200 ^C | Basic Human Resources Management (F,W,S) |
| SYDE 531 ⁺ | Design Optimization Under Probabilistic Uncertainty (W) |
| SYDE 533 | Conflict Resolution (F) |

Requirements

- At least three of the six courses must be MSCI courses from the Department of Management Sciences.
- A maximum of one course from outside the approved list may be counted toward the Option, subject to ~~written~~ approval of the [option co-ordinator](#) ~~and the associate chair of undergraduate studies in the student's home department. The student must complete a [Course Substitution Request form](#) to obtain course approval.~~
- Students may take both [MSCI 211](#) and [MSCI 311](#), in which case, one will count toward the required courses and the other toward the elective courses.
- For the designation of Management Sciences Option to be shown on the transcript, the student must achieve a minimum cumulative average of 60% in the six courses.

Students have a wide degree of flexibility in course selection within the Option. For students who wish to focus on a particular theme within Management Sciences, the Department suggests the following selection of courses beyond the required set:

| Theme | Courses |
|--------------------------|--|
| Operations Research | Two or more of MSCI 332 , MSCI 431 , MSCI 432 , MSCI 433 , MSCI 435 , MSCI 452 , MSCI 531 , MSCI 555 |
| Information Systems | Two or more of MSCI 442 , MSCI 444 , MSCI 446 , MSCI 541 , MSCI 543 , MSCI 546 |
| Management of Technology | Two or more of MSCI 311 , MSCI 411 , MSCI 422 , MSCI 454 |

Note

Refer to the University of Waterloo's official [Schedule of Classes](#) for confirmation of actual course offerings each term.

For further information about the Management Sciences Option, contact the [option co-ordinator](#) in the Management Sciences Department.

4.4 Interdisciplinary Alternatives [for approval]

Background & Rationale:

Opening the Entrepreneurship Minor up to Engineering students requires revisions to the Interdisciplinary Alternatives page of the Calendar.

~~Interdisciplinary Alternatives for Engineering Students~~

~~Many engineering students seek to enhance their degree with material from other disciplines and plans. There are several officially recognized alternatives available to engineering students:~~

- ~~Options within the Faculty of Engineering, open to Bachelor of Applied Science (BASc) and Bachelor of Software Engineering (BSE) students only, are described in the [Options](#) of this section of the Calendar.~~
- ~~Interdisciplinary options are described within the faculty section of the Calendar of the faculty offering the option. There is also the [Society, Technology and Values Option](#) offered by the Centre for Society, Technology and Values within Engineering available to students from all faculties.~~
- ~~Minors are offered by other faculties and described in that faculty section of the Calendar. All engineering students can pursue minors; however, a significant number of extra courses may be required.~~
- ~~Information regarding joint honours alternatives between Engineering and other faculties is described in [Joint Honours](#).~~

~~It should be noted that for all of these alternatives, Engineering students must meet the criteria for their degree (BAS, BASc, or BSE) as well as the requirement of the option, minor, or joint. This usually requires courses in addition to their degree.~~

~~Interdisciplinary Alternatives for non-Engineering Students~~

~~In addition to the courses taught by the Faculty of Engineering that are part of various plans across campus, Engineering offers two credentials available to other students on campus.~~

- ~~The [Society, Technology and Values Option](#) is designed to help students with many of the major questions we face in a sophisticated technological society.~~
- ~~The [Entrepreneurship Minor](#) is open to all non-engineering students on campus. Engineering students interested in entrepreneurship should consult the [Entrepreneurship Option](#).~~

New version – clean (combined)

Interdisciplinary Alternatives

Many engineering students seek to enhance their degree with material from other disciplines and plans. There are several officially recognized alternatives available to engineering students.

- [Options](#) within the Faculty of Engineering, open to Bachelor of Applied Science (BASc) and Bachelor of Software Engineering (BSE) students only, are described in the Options of this section of the Calendar. Interdisciplinary options are described within the faculty section of the Calendar of the faculty offering the option. There is also the [Society, Technology and Values Option](#) offered by the Centre for Society, Technology and Values within Engineering available to students from all faculties.
- [Minors](#) are offered by other faculties and described in that faculty section of the Calendar. All engineering students can pursue minors. The [Entrepreneurship Minor](#) is open to all students from all faculties.

- Information regarding joint honours alternatives between Engineering and other faculties is described in [Joint Honours Plans in Engineering](#).

It should be noted that for all of these alternatives, Engineering students must meet the criteria for their degree (BAS, BAsC, or BSE) as well as the requirement of the option, minor, or joint. This usually requires extra courses in addition to their degree.

SCIENCE UNDERGRADUATE STUDIES COMMITTEE REPORT FOR
FOR SUBMISSION TO SEPTEMBER 2021 SENATE UNDERGRADUATE COUNCIL (SUC)

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NEW COURSES (for approval)

Pharmacy - School of

Effective 01-SEP-2022

PHARM 226 (0.50) LEC Pharmacy Management

This course introduces management principles in the context of pharmacy practice.

[Offered: S]

Requisites :

Prereq :PHARM 228; Pharmacy students only

Rationale :

PHARM 226 is a new course being added to the PharmD program as part of a re-designed business curriculum within the PharmD renewal plan.

Effective 01-SEP-2022

PHARM 230 (0.25) LEC Culturally Safe Patient Care

This course builds on PHARM 120 with a focus on providing care in a culturally safe manner. Special attention is given to optimizing care to Indigenous patients in

Canada. [Offered: F]

Requisites :

Prereq: PHARM 120; Pharmacy students only

Rationale :

PHARM 230 is a new course being added to the PharmD program as part of a redesigned institutional curriculum within the PharmD renewal plan.

Effective 01-SEP-2022

PHARM 392 (0.13) SEM Seminars in Pharmacy 3

Through the Seminar Series of courses students are exposed to a number of speakers who address relevant topics within a content area. Speakers may include subject-matter experts, patients, and health care professionals. [Note: Course will be graded on a CR/NCR basis. Offered: F]

Requisites :

Prereq: Pharmacy students only

Rationale :

PHARM 392 is added as an additional seminar course in third year to cover the research seminar content normally covered in PHARM 391, allowing new leadership content to be put into the PHARM 391 seminar course, as part of a re-designed business curriculum within the PharmD renewal plan.

Dean of Science Office

Effective 01-SEP-2022

SCI 266 (0.50) LEC Ancient Science

The ancient Greeks developed scientific theories that were influential for over a thousand years. Their worldview was different from ours, but they sought to explain some of the same phenomena that we grapple with today. In this course, we will study ancient Greek theories and methodologies in the sciences, which may include physics,

astronomy, mathematics, meteorology, cosmology, astrology, and geography.

Requisites : Antireq: PHIL 271 taken winter 2019
Cross-listed as: PHIL 260 CLAS 260
Rationale : This course will introduce students to ancient Greek science, where science in antiquity was a type of philosophy. The course will examine the ancient theories and methodologies of science in the ancient Greek world. It will be an elective for both philosophy students and students in other plans. This course will complement existing course offerings in contemporary philosophy of science and ancient philosophy. Classics was consulted to confirm that there will be minimal overlap with CLAS 384 (Science and Technology of Ancient Greece and Rome). As the course descriptions for the two courses make clear, PHIL 260 is differentiated by (a) focusing on science rather than science and technology, and on different fields of science than CLAS 384, (b) excluding Roman science, and (c) being at a lower level. The temporal scope of this course is ancient Greece. The study of ancient Greek science and scientific theories falls under the purview of Classical Studies (as well as of Philosophy). The study of ancient physics, math, and geography is appropriate for the science discipline. The course will teach students about how science was done in a different time period and in a different cultural context. Many of the other 200-level SCI courses share the same aim of introducing science to non-majors or topics in science that are outside of a student's major. This course will teach Science students about the historical roots of their own discipline.

COURSE REACTIVATIONS (for approval)

Earth and Environmental Sciences

Current Catalog Information

EARTH 355 (0.50) LEC Statistical Methods in Geology

No Special Consent Required

Effective 01-SEP-2022

Title Change: Water: Data to Decisions
Description Change: This course explores approaches for interpreting environmental data to support water decisions using theoretical and computational techniques. These approaches focus on statistical methods, including descriptive statistics, probability, hypothesis testing, frequency and time series analyses, point patterns, and correlation and regression, and also include discussion of analytical and numerical approaches. [Offered: F]
Requisite Change : Prereq: EARTH 121, EARTH 123, and EARTH 221. Antireq: EARTH 491 (Topic: Data to Decisions) taken winter 2021
Rationale : The Department of Earth and Environmental Sciences has decided that having

more statistical analysis course options would benefit students, and as such, have assigned a new instructor to update the content and title, and to suggest appropriate prerequisites, for this inactive course which has been inactive for almost 20 years. The updated description better represents how the course will be taught going forward, and students would benefit from having EARTH 121, 123 and 221 prior to enrollment.

COURSE CHANGES (for approval)

Biology

Current Catalog Information

BIOL 465 (0.50) LEC, TUT Structural Bioinformatics

Functional and structural analysis of proteins using bioinformatics tools. Topics include protein structure visualization, structure comparison and prediction, prediction of protein function and interactions, molecular dynamics, and protein design. [Offered: W]

No Special Consent Required

Requisites :

Prereq: CHEM 233 or CHEM 237; BIOL 266/366 or BIOL 365

Effective 01-SEP-2022

Component Change:

LAB, LEC

Description Change:

Analysis of proteins using structural and bioinformatics approaches. Topics include methods of protein structure determination and visualization, structure comparison and prediction, prediction of protein function and interactions, molecular dynamics, and protein design. [Offered: W]

Requisite Change :

Prereq: BIOL 266/366 or BIOL 365; CHEM 233 or CHEM 237 or BCS

Bioinformatics Specialization or BMath (CS) Bioinformatics Specialization

Rationale :

The tutorial component of BIOL 465 has been run as a computational lab for several years, therefore the TUT component is replaced by a LAB component, and the course description has been changed to reflect this. No additional TAs or resources are needed for the lab. BIOL 465 is a required course for BCS and BMath(CS) students in the Bioinformatics Specialization but neither CHEM 237 nor CHEM 233 are required within the specialization, therefore the prerequisites are updated to include CS students so that requisite overrides are no longer required.

Earth and Environmental Sciences

Current Catalog Information

EARTH 121 (0.50) LEC Introductory Earth Sciences

This course explores the geological processes of the Earth's interior and surface. These include volcanism, earthquakes, mountain building, glaciation and weathering. Students will gain an appreciation of how these processes have controlled the evolution of our planet and the role of geology in meeting society's current and

future demand for sustainable energy and mineral resources. [Note: EARTH 121L is recommended. Offered: F]

No Special Consent Required

Requisites :

Antireq: CIVE 153, EARTH 153, ENVE 153, GEOE 153

Effective 01-SEP-2022

Description Change:

This course will provide students with the foundational knowledge to become earth science literate, understanding Earth's influence on humans and human influence on the Earth. Students will learn to think like a geoscientist by adopting four ways of thinking that take into account a systems approach, a variety of spatial and temporal scales, and field thinking. Systematically learning about rocks, geological time, natural resources, natural hazards, and water in this course will prepare students to address many challenges currently facing society and to identify future potential opportunities.

[Note: EARTH 121L is recommended. Offered: F]

Rationale :

There have been no updates to this course in over 10 years. The description is updated to better represent current course content.

Current Catalog Information

EARTH 123 (0.50) LEC, TUT Introductory Hydrology

Introduction to the main components of the hydrologic cycle including precipitation processes, evapotranspiration, soil water and groundwater flow, and surface water features. Emphasis will be placed on the atmospheric and geologic processes controlling water movement in the cycle at the global and local scales. Examples related to environmental impacts of urbanization and land-use management will be stressed. [Offered: F]

No Special Consent Required

Effective 01-SEP-2022

Description Change:

This course is intended to provide students with a practical overview of the hydrologic cycle and all of the interesting ways water flows and interacts with its environment, both surface and subsurface. The material is both qualitative and quantitative in nature and focuses on the circulation of water through the atmosphere, soil, groundwater aquifers, as well as looking at both the global fresh and marine water systems. Emphasis is placed on the physical aspects of hydrology, and the geologic and environmental factors that control the occurrence and cycling of water on Earth, as well as the impacts caused by population growth, contamination, urbanisation or land use management, and climate change. [Offered: F]

Rationale :

There have been no updates to this course in six years. The description is updated to better represent current course content.

Current Catalog Information

EARTH 221 (0.50) LEC, TUT Geochemistry 1

Origin, abundance, and geochemistry of elements. Introduction to stable isotope geology and radiometric dating. Basic aqueous geochemistry. [Offered: W,S]

No Special Consent Required

Requisites :

Prereq: CHEM 123, 125 or level at least 2A Geological Engineering

Effective 01-SEP-2022

Title Change: Introductory Geochemistry
Description Change: Origin, abundance, and geochemistry of elements. Introduction to environmental isotope geochemistry and radiometric dating. Basic aqueous geochemistry: pH, carbonate equilibrium, and common ions in natural waters. [Offered: W,S]
Rationale : The title is updated and description expanded slightly, to better represent what the course is about and what topics it will cover. The short title reflects recommendations for short titles moving forward.

Current Catalog Information

EARTH 223 (0.50) LAB, LEC Field Methods in Hydrology

This course consists of field exercises, lectures and laboratory experiments designed to provide students with hands-on experience with a variety of hydrological monitoring techniques. Emphasis will be on the practical aspects of collecting, interpreting, and reporting of groundwater, surface water, meteorological, and water quality data. [Note: Additional field trip fees will apply; Offered: F]

No Special Consent Required

Requisites : Coreq: EARTH 123; Antireq: EARTH 123L

Effective 01-SEP-2022

Description Change: This course consists of field exercises and lectures designed to provide students with practical hands-on experience conducting a variety of hydrological monitoring techniques. Emphasis will be placed on the collection, analysis, and interpretation of field measurements. Field exercises will cover groundwater, surface water, meteorological, and water quality. [Note: Additional field trip fees will apply; Offered: F]
Rationale : The description for this lab is updated slightly, in order to more accurately reflect the course content.

Current Catalog Information

EARTH 232 (0.50) LAB, LEC Petrography

An introduction to optical mineralogy. Basic theory of the behaviour of light through minerals; concept of indicatrices; understanding relief, retardation, birefringence, interference figures and other optical properties of minerals. Microscopic examination of important rock forming minerals and the identification of igneous, metamorphic, and sedimentary rocks. Introduction to silicate phase equilibria; use of mineral stability diagrams to understand igneous and metamorphic petrogenesis.

[Offered: W,S]

No Special Consent Required

Requisites : Prereq: EARTH 231

Effective 01-SEP-2022

Title Change: Introductory Petrography
Description Change: This course provides an introduction to the petrogenesis of igneous, metamorphic, and sedimentary rocks. Overview of textural, mineralogical, and chemical classification schemes for rocks. Introduction to silicate

Rationale : phase equilibria and the use of mineral stability diagrams to understand petrogenetic processes. Major relationships between tectonic setting and rock types. Laboratory work focuses on using a transmitted light microscope to study the optic properties of minerals in order to identify them as well as observe rock textures and interpret geological histories. [Offered: W,S]
There have been no updates to this course in over 20 years. The description is updated to better represent current course content and the title now includes the word "Introductory". The short title reflects recommendations for short titles going forward.

Current Catalog Information

EARTH 235 (0.50) LAB, LEC Stratigraphic Approaches to Understanding Earth's History

An introduction to stratigraphic principles and methods used in deciphering geological history. The development of stratigraphic sequences as controlled by global and regional tectonics and sea level fluctuations. Interrelating aspects of Earth's physical, chemical and biological history. Examples are drawn primarily from Canadian geology. Laboratory work will include construction and interpretation of various types of maps and cross sections. [Offered: F]

No Special Consent Required

Requisites :

Prereq: One of (EARTH 121, 121L), EARTH 153, CIVE 153, GEOE 153, ENVE 153

Effective 01-SEP-2022

Description Change:

An introduction to stratigraphic principles and methods used in deciphering geological history. Techniques of collecting surface and subsurface geologic data and representation of stratigraphic data. Procedures applicable to the classification and nomenclature of stratigraphic units using the North American Stratigraphic Code. The development of stratigraphic sequences as controlled by global and regional tectonics and sea level fluctuations. Interrelating aspects of Earth's physical, chemical, and biological history. Examples are drawn primarily from Canadian geology. Laboratory work will include construction and interpretation of various types of learning media such as traditional maps, cross sections, new physical and digital models, as well as extended reality. [Offered: F]

Rationale :

The description for this course is updated slightly, in order to more accurately reflect the course content.

Current Catalog Information

EARTH 238 (0.50) LAB, LEC, TUT Introductory Structural Geology

Concepts of stress and strain; elementary rock mechanics; description and classification of folds, faults, foliations, lineations and joints; use of primary structures; introduction to geometrical analysis. Labs will emphasize geometrical problems, including geological maps and cross sections, and stereographic projection. [Offered: W]

No Special Consent Required

Requisites :

Prereq: One of (EARTH 121 and 121L), (EARTH 122 and 122L), EARTH 153, CIVE 153, GEOE 153, ENVE 153

Effective 01-SEP-2022

Requisite Change :

Prereq: (EARTH 121 and 121L) or EARTH 153/CIVE 153/GEOE 153/ENVE 153

Rationale :

EARTH 121 and EARTH 121L better prepare students for content covered in EARTH 238, over EARTH 122 and EARTH 122L, therefore, the latter is removed from the list of prerequisite course options.

Current Catalog Information

EARTH 260 (0.50) FLD, LEC, TUT Applied Geophysics 1

An introduction to seismic, gravity, electric, electromagnetic and magnetic methods of exploration geophysics. [Offered: F]

No Special Consent Required

Requisites :

Prereq: One of PHYS 112, 122, 125

Effective 01-SEP-2022

Title Change:

Introductory Applied Geophysics

Description Change:

Applied geophysics provides geoscientists with a wide-range of non-invasive methods for characterizing the Earth's interior. This course is an introduction to the physical principles underlying field acquisition, processing, and data interpretation for commonly used applied geophysical techniques (seismic, electrical, electromagnetic induction, gravity, and magnetic methods). This course is not only pertinent for geoscientists but also for engineers and others interested in learning how physics can be used to explore the Earth's interior or perform non-destructive testing. [Offered: F]

Rationale :

The description is updated with more detail to better represent current course content, and the title now includes the word "Introductory". The short title reflects recommendations for short titles moving forward.

Current Catalog Information

EARTH 321 (0.50) LEC Introduction to Geomicrobiology

This course will provide an overview of how microbial life has affected Earth's environment through time. Emphasis will be on geomicrobial processes in the lithosphere and hydrosphere. Geomicrobial interactions with key elements will be discussed. [Offered: F]

No Special Consent Required

Requisites :

Prereq: EARTH 221

Effective 01-SEP-2022

Component Change:

LAB, LEC

Description Change:

This course will explore how microbial life influences geochemical cycles in natural environments and engineered systems. Emphasis will be on the interactions between microbial activity and environment geochemistry. Topics will include microbial life on early Earth, biomineralization, biosignature preservation, bioremediation, and geomicrobiological research methods. [Offered: F]

Rationale :

The description is updated to better describe the topics covered in the course, and a lab component is added to the course and will directly link

to topics covered in lecture, including formation of banded iron formations, bioleaching of metals, bioremediation of oil spills and acid mine drainage. Through the laboratory activities students will develop skills in microbial culturing, light microscopy, and experimental design and reporting. The laboratory component is crucial for students to gain an understanding of the industrial applications of geomicrobiology.

Current Catalog Information

EARTH 331 (0.50) LAB, LEC Volcanology and Igneous Petrology

The principles and theories of the origins of volcanic and plutonic igneous rocks.

Physics and chemistry of magma; controls of volcanic eruptions, magmatic differentiation, and the distribution and occurrence of magma types. [Offered: F]

No Special Consent Required

Requisites : Prereq: EARTH 232

Effective 01-SEP-2022

Description Change: Principles and theories of the origins of volcanic and plutonic igneous rocks. Topics include the physics and chemistry of magma; igneous hazards and implications; magmatic differentiation; and igneous tectonic associations. Laboratories focus on the identification, description, and classification of igneous rocks [Offered: F]

Rationale : The description is updated slightly to provide more information regarding topics covered in both the lecture and lab component of this course.

Current Catalog Information

EARTH 332 (0.50) LAB, LEC Metamorphic Petrology

Principles and theories of metamorphic rock genesis. Static, dynamic, and polyphasal crystalloblastic growth. Processes of solid-state crystallization in metamorphic environments. Zonal and facies classifications; facies series and the place of metamorphism in global tectonics. Introduction to metasomatism. [Offered: W]

No Special Consent Required

Requisites : Prereq: EARTH 232

Effective 01-SEP-2022

Description Change: Principles and theories of metamorphic rock genesis. Topics include static and dynamic metamorphism, recrystallization, metamorphic facies, thermodynamic equilibrium, metasomatism, and metamorphic signatures of global tectonics. Laboratories focus on the description, classification, and interpretation of metamorphic rocks. [Offered: W]

Rationale : The description is updated slightly to provide more information regarding topics covered in both the lecture and lab component of this course.

Current Catalog Information

EARTH 333 (0.50) LAB, LEC Introductory Sedimentology

The origin and physical properties of sediments. Fluid flow, glacier motion, and sediment transport processes. Mechanical and chemical erosion rates, sediment fluxes and budget. Facies models of the major depositional environments. Diagenetic processes. Laboratories focussed on the description and interpretation of sediments

and sedimentary rocks. [Offered: W]

No Special Consent Required

Requisites :

Prereq: EARTH 232, 235

Effective 01-SEP-2022

Description Change:

An introduction to sediment properties, sedimentation processes and sedimentary deposits in a variety of depositional environments and climatic conditions. Processes affecting sediments after initial deposition, such as those involved in the transformation of sediments into sedimentary rocks are also examined. Laboratories will focus on the different methods to describe and interpret sediments and sedimentary rocks. [Offered: W]

Rationale :

The description is updated slightly to provide more information regarding topics covered in both the lecture and lab component of this course.

Current Catalog Information

EARTH 421 (0.50) LAB, LEC Geochemistry 2

The application of chemical thermodynamics to geochemical problems. Development of the three laws of Thermodynamics; Gibbs free energy and equilibria constants.

Introduction to various topics in aqueous geochemistry such as mineral equilibria, ion exchange, and redox equilibria. Laboratory session will involve various experiments related to mineral solubility, chemical kinetics, acid-base equilibria, and chemical modelling. [Offered: F]

No Special Consent Required

Requisites :

Prereq: EARTH 221

Effective 01-SEP-2022

Title Change:

Advanced Geochemistry

Rationale :

The prerequisite course, EARTH 221, will become Introductory Geochemistry versus Geochemistry 1, effective September 1, 2022. Therefore, EARTH 421 will also change titles, to reflect that it is the next level, or advance course, in Geochemistry.

Current Catalog Information

EARTH 458L (0.25) LAB Field Methods in Hydrogeology

This course exposes students to a wide variety of field and laboratory techniques for collecting hydrogeologic data and to gain experience in interpreting the data.

Advantages and limitations of various measurement and data reduction techniques for evaluating groundwater flow systems are demonstrated in a set of field exercises carried out at the groundwater demonstration facility located on the university North Campus. These exercises illustrate the complexity of natural systems and the need for good data collection and interpretation skills when characterizing such systems .

[Offered: F,S]

No Special Consent Required

Requisites :

Coreq: EARTH 458

Effective 01-SEP-2022

Description Change:

An introduction to the principles and theories of mineral deposit genesis. Basic technical, economic, legal, and ethical aspects of mineral exploration and responsible development of natural resources are also

Rationale : covered. Laboratories involve hand sample and ore petrology of suites from diverse deposits. [Offered: F,S]
There have been no updates to this course in over 7 years. The description is updated to better represent current course content.

Current Catalog Information

EARTH 460 (0.50) LEC, TUT Applied Geophysics 2

A detailed examination of selected topics in exploration geophysics, with an emphasis on data processing, time series analysis and computer modelling of geophysical responses. [Note: A full credit in first year Calculus is recommended as a prerequisite. Offered: W]

No Special Consent Required

Requisites :

Prereq: EARTH 260

Effective 01-SEP-2022

Title Change:

Geophysical Data Analysis

Description Change:

Geophysical data sets require the application of specialized analysis methods to extract information about the Earth's interior. This course covers commonly used concepts and techniques used in geophysical data analysis including spectral analysis, convolution, filtering, and sampling. Emphasis is given to the analysis and processing of radar and seismic reflection profiling data sets. [Note: A full credit in first-year Calculus is recommended as a prerequisite. Offered: W]

Rationale :

EARTH 460 has not been updated in approximately 20 years. The updated title and description better fit current course content.

Current Catalog Information

EARTH 461 (0.50) LEC, TUT Applied Geophysics 3

An application-oriented course emphasizing current methodology in near-surface geophysics, including electrical, electromagnetic, ground penetrating radar, seismic refraction and magnetic methods. The basic theory for geophysical data acquisition and interpretation is studied and applied to field data. The application of geophysical techniques to archeological, forensics, geotechnical and hydrogeological problems is discussed. [Offered: F]

No Special Consent Required

Requisites :

Prereq: EARTH 260

Effective 01-SEP-2022

Title Change:

Near-Surface Geophysics

Description Change:

Near-surface geophysics is used to characterize the shallow subsurface for a wide-spectrum of applications. This application-oriented course covers current methodology in near-surface geophysics, including electrical, electromagnetic, ground penetrating radar, seismic refraction, and well-logging methods. Techniques for geophysical data acquisition and interpretation are studied and applied to field data. Examples of the application of geophysical techniques to archeological, forensics, geotechnical, glaciology, and hydrogeological problems are examined. [Offered: F]

Rationale : EARTH 461 was last updated in 2009. Course content has since been updated and a new title and updated description better fit the current course content.

Pharmacy - School of

Current Catalog Information

PHARM 120 (0.25) LEC Introduction to the Profession of Pharmacy

This course introduces students to the profession of pharmacy with its many opportunities. Topics include Canadian and global health care systems, the roles of health care professionals, the social determinants of health and the current and future practice of pharmacy. [Offered: W]

No Special Consent Required

Requisites :

Prereq: PHARM students only. Antireq: PHARM 120A

Effective 01-SEP-2022

Unit Change: (0.50)

Title Change: Pharmacy in an Evolving Health Care System

Description Change: This course introduces students to the profession of pharmacy within the larger context of healthcare delivery in Canada. [Offered: W]

Requisite Change : Prereq: Pharmacy students only.

Rationale : The course content in PHARM 120 is refocused based on student recommendations, to consolidate and streamline material currently taught in multiple courses. The new content combines material currently taught in PHARM 120, as well as content from PHARM 227 (Health Systems in Society) which is inactive. As such, the course is renamed, with the short title reflecting recommendations for short titles moving forward, the description is updated, and the course weight is increased to a 0.5 unit versus 0.25, as part of a PharmD curriculum renewal plan. In addition, an old antirequisite is removed and the prerequisite changes from "PHARM students only" to Pharmacy students only" for consistency.

Current Catalog Information

PHARM 228 (0.25) LAB Professional Practice 3

Professional Practice 3 is a lab-based course where knowledge acquired in the introductory Professional Practice courses is applied to simulated pharmacy situations and patient case scenarios. This provides students with the opportunity to demonstrate their technical skill and clinical knowledge in a practical way and helps prepare students for their first co-op work experience. [Offered: F]

No Special Consent Required

Requisites :

Prereq: PHARM 130; Pharmacy students only. Coreq: PHARM 220, 221

Effective 01-SEP-2022

Unit Change: (0.50)

Component Change: LAB, LEC

Description Change: Professional Practice 3 combines lab and lecture components. It applies knowledge acquired in the introductory Professional Practice courses to

Rationale : simulated pharmacy situations and patient case scenarios. Additionally, it introduces students to important concepts in prioritizing and managing patient safety. [Offered: F]
As part of the PharmD renewal plan, PHARM 228 will re-focus on patient safety. As such, the description for this course is updated, a lecture component is added, and the unit weight increases from 0.25 unit to 0.5 unit.

Current Catalog Information

PHARM 252 (0.50) LEC Institutional Pharmacy Practice

This course offers insight into how organizations/institutions manage patient health.

It examines the structure, governance and delivery of services within health systems such as primary care, family health teams, acute care, home care and long-term care facilities. Processes within health care institutions for optimizing management of patients, operations, facilities and medications are all addressed. [Offered: S]

No Special Consent Required

Effective 01-SEP-2022

Subject/Catalog Nbr Change:

PHARM326

Description Change:

This course offers insight into how organizations/institutions manage patient health. It examines the structure, governance and delivery of services within health systems such as primary care, family health teams, acute care, home care, and long-term care facilities. Processes within health care institutions for optimizing management of patients, operations, facilities, and medications are all addressed. [Offered: W]

Requisite Change :

Prereq: Pharmacy students only

Rationale :

As part of the PharmD renewal plan, PHARM 252 will move into year three winter term. The course is renumbered to reflect its offering in third year and the description note is updated to reflect a winter term versus spring term offering. PHARM 227 will no longer be a prerequisite course as content from this course will become part of a first year PHARM course, 120, taken by all Pharmacy students.

Current Catalog Information

PHARM 352 (0.25) LEC Management Issues in Pharmacy Practice in Organizations

This business course leverages concepts presented in PHARM 350 and applies them to the specific opportunities and challenges found in institutional settings. Topics that will be addressed include business planning and human resource management in hospitals and long-term care facilities. [Note: Selective Business Course; Offered: F]

No Special Consent Required

Requisites :

Prereq: PHARM 350; Pharmacy students only

Effective 01-SEP-2022

Title Change:

Pharmacy Management in Institutional Settings

Description Change:

This business course leverages concepts presented in PHARM 226 and applies them to the specific opportunities and challenges found in institutional settings. Topics that will be addressed include business planning and human

resource management in hospitals and long-term care facilities. [Offered: F,W,S]
Requisite Change : Prereq: PHARM 226; Pharmacy students only
Rationale : A re-designed business curriculum introduces a new Pharmacy Management course, PHARM 226, and removes the selective business requirement. PHARM 352 will no longer be a selective business elective but rather one of several third year electives, offered all three terms, as reflected in the description note update. The title is updated to better reflect the refocused institutional curriculum plan for third year and the description and prerequisite are updated to add the new PHARM 226 course versus PHARM 350, which will become inactive as some of its content is part of the new PHARM 226. The short title reflects recommendations for short titles moving forward.

Current Catalog Information

PHARM 353 (0.25) LEC Entrepreneurship in Pharmacy

This business course leverages concepts presented in PHARM 350 and applies them to the specific opportunities and challenges facing entrepreneurs and/or individuals creating innovative solutions within more traditional pharmacy environments. Topics that will be addressed include business planning and relationship management for entrepreneurs. [Note: Selective Business Course; Offered: F]

No Special Consent Required

Requisites : Prereq: PHARM 350; Pharmacy students only

Effective 01-SEP-2022

Description Change: This business course leverages concepts presented in PHARM 226 and applies them to the specific opportunities and challenges facing entrepreneurs and/or individuals creating innovative solutions within more traditional pharmacy environments. Topics that will be addressed include business planning and relationship management for entrepreneurs. [Offered: W, S, F]
Requisite Change : Prereq: PHARM 226; Pharmacy students only
Rationale : A redesigned business curriculum introduces a new Pharmacy Management course, PHARM 226, and removes the selective business requirement. PHARM 353 will no longer be a selective business elective but rather one of several third year electives, offered all three terms, as reflected in the description note update. The description and prerequisite are updated to add the new PHARM 226 course versus PHARM 350, which will become inactive as some of its content is part of the new PHARM 226.

Current Catalog Information

PHARM 361 (0.50) LAB, TUT Advanced Compounding

Building upon experiences gained in Pharmacy 124 and 125 (Pharmaceutics 1 and 2), Advanced Compounding introduces the student to more complex formulations and their use in specific patient populations. Example topics include compounding for geriatric and pediatric patients, veterinary products, USP <795> and its application to extemporaneous compounding, and stability and QC testing. [Offered: W, S, F]

No Special Consent Required

Requisites : Prereq: PHARM 124, 125; Pharmacy students only
Effective 01-SEP-2022
Unit Change: (0.25)
Rationale : As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms.

Current Catalog Information

PHARM 362 (0.50) LEC, TUT Advanced Patient Self Care

Advanced Patient Self Care teaches students to critically evaluate the use of self-care therapeutic options such as Natural Health Products, Schedule II and III drugs and functional foods in various disease states and populations. Other topics include: the Natural Health Product approval process, regulatory issues for self-selection products and reimbursement for self-care services. [Offered: W, S, F]

No Special Consent Required

Requisites : Prereq: PHARM 220, 228; Pharmacy students only
Effective 01-SEP-2022

Unit Change: (0.25)
Rationale : As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms.

Current Catalog Information

PHARM 363 (0.50) LEC, TUT Global Infectious Disease Management

This course addresses global infectious diseases from a public health perspective in an integrated case study format. It focuses on the role of the pharmacist, mode of transmission of these diseases, prevention, control, emergency preparedness, appropriate use of vaccines and vaccine administration. [Offered: W, S, F]

No Special Consent Required

Requisites : Prereq: PHARM 220, 232/232L; Pharmacy students only
Effective 01-SEP-2022

Unit Change: (0.25)
Requisite Change : Prereq: PHARM 220, 232; Pharmacy students only
Rationale : As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms. In addition, the old PHARM 232L, renumbered PHARM 232 in 2014, is removed from the requisite.

Current Catalog Information

PHARM 364 (0.50) LEC, TUT The Pharmacist as Educator

This course will introduce the basic learning theory and practice that pharmacists use as educators of specific audiences, such as patients, other healthcare providers, other pharmacists, etc. [Offered: W, S, F]

No Special Consent Required

Requisites : Prereq: PHARM 127; Pharmacy students only

Effective 01-SEP-2022

Unit Change: (0.25)

Rationale : As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms.

Current Catalog Information

PHARM 366 (0.50) LEC, TUT Concepts in Nutritional Sciences

This course focuses on the role of nutrition in the attainment of optimal patient health. Topics include nutrition for optimal growth and risk reduction of chronic disease; nutrition in special populations; functional foods and nutraceuticals; enteral and parenteral nutrition; and the role of the pharmacist in nutrition counseling. [Offered: W,S, F]

No Special Consent Required

Requisites : Prereq: PHARM 220; Pharmacy students only

Effective 01-SEP-2022

Unit Change: (0.25)

Rationale : As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms.

Current Catalog Information

PHARM 367 (0.50) LEC, TUT Pediatric Pharmacy

This course introduces the student to the more complex pediatric therapeutics and pharmacy-specific issues associated with a pediatric population. [Offered: W, S, F]

No Special Consent Required

Requisites : Prereq: PHARM 220, 221, 229; Pharmacy students only

Effective 01-SEP-2022

Unit Change: (0.25)

Rationale : As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms.

Current Catalog Information

PHARM 368 (0.50) LEC, TUT Advanced Drug Information & Evidence-Based Medicine

This course builds on the knowledge and skills students have acquired about the retrieval, analysis and use of drug information. Students will apply the principles of evidence-based medicine and critically appraise literature in responding to the needs of a variety of patient and professional audiences. [Offered: W, S, F]

No Special Consent Required

Requisites :

Prereq: PHARM 223, 229; Pharmacy students only

Effective 01-SEP-2022

Unit Change:

(0.25)

Rationale :

As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms.

Current Catalog Information

PHARM 370 (0.50) LEC, TUT Personal & New Venture Financial Management

This course covers topics that are relevant to the financial decision making of individuals, with a particular focus on future professionals who have any interest in being involved in new business ventures. Knowledge and skills learned will allow students to take advantage of the career diversity and resulting business opportunities related to pharmacy. [Offered: W, S, F]

No Special Consent Required

Requisites :

Prereq: Pharmacy students only. Coreq: PHARM 350

Effective 01-SEP-2022

Unit Change:

(0.25)

Requisite Change :

Prereq: PHARM 226; Pharmacy students only.

Rationale :

As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms. In addition, PHARM 350 will become inactive, as there will be a new PHARM 226, Pharmacy Management course, added to the curriculum which will incorporate some content from PHARM 350. PHARM 226 will be sequenced a term ahead of PHARM 370, therefore, PHARM 226 will become the required prerequisite.

Current Catalog Information

PHARM 372 (0.50) LEC, TUT Strategic Global Health & Pharmacy Practice

This course focuses on the challenges of providing health care and pharmacy-related services within a global context. The course will examine how cultural variations and socio-political factors affect drug therapy and patient care. The specific impact of pharmaceuticals/vaccinations on global health will be featured. [Offered:

W, S, F]

No Special Consent Required

Requisites :

Prereq: Pharmacy students only. Coreq: PHARM 350

Effective 01-SEP-2022

Unit Change:

(0.25)

Requisite Change :

Prereq: PHARM 226; Pharmacy students only.

Rationale :

As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms. In addition, PHARM 350 will become inactive, as there will be a new PHARM 226, Pharmacy Management course, added to the curriculum which will incorporate some content from PHARM 350. PHARM 226 will be sequenced a term ahead of PHARM 370, therefore, PHARM 226 will become the required prerequisite.

Current Catalog Information

PHARM 373 (0.50) LEC, TUT Healthcare Delivery in Rural and Underserved Populations

This course will develop students' understanding of the unique challenges and opportunities in providing healthcare to rural and underserved populations. Through lectures and field work, students will examine topics such as health care disparities, interprofessional collaboration, the role of the rural pharmacist, and underserved patient case studies. [Offered: W, S, F]

No Special Consent Required

Requisites :

Prereq: Pharmacy students only

Effective 01-SEP-2022

Unit Change:

(0.25)

Rationale :

As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms.

Current Catalog Information

PHARM 374 (0.50) LEC Complementary and Alternate Medicine

This Complementary and Alternate Medicine course is designed to give the student an overview of complementary and alternative healing practices and will heighten student awareness that CAM is multifactorial and often includes belief systems and practices other than drug therapy. [Offered: W, S, F]

No Special Consent Required

Requisites :

Prereq: PHARM 228; Pharmacy students only

Effective 01-SEP-2022

Unit Change:

(0.25)

Rationale :

As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced

student work load and in an effort to standardize instruction hours within the program across all terms.

Current Catalog Information

PHARM 375 (0.50) LEC, TUT Substance Abuse & Chemical Dependency

This course serves as an overview of addiction, chemical abuse and chemical dependency and how pharmacists can impact those affected. Topics include prevention, identification, treatment options, clinical aspects of treatment, and an understanding of support systems available for those in recovery. [Offered: W, S, F]

No Special Consent Required

Requisites : Prereq: PHARM 220, 221. Pharmacy students only.

Effective 01-SEP-2022

Unit Change: (0.25)

Rationale : As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms.

Current Catalog Information

PHARM 376 (0.50) LEC, TUT Practicing Pharmacy with Diverse Populations

This course will provide students with tools to optimize patient care when working with diverse communities. Diversity will be defined in its broadest sense encompassing a discussion in how differences in ethnicity, gender, sexual orientation, physical or mental ability etc. impact patient care. Students will learn about the unique needs of different populations and through a combination of lectures and case studies learn how to sensitively and effectively work with a variety of patients. [Offered: W, S, F]

No Special Consent Required

Requisites : Prereq: PHARM 220, 221. Pharmacy students only.

Effective 01-SEP-2022

Unit Change: (0.25)

Rationale : As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms.

Current Catalog Information

PHARM 377 (0.50) LEC, TUT Drug-Induced Disease

Drug-Induced Disease will explore the most appropriate interventions for prevention, detection and management of drug-induced diseases. Emphasis will be placed on the role of the pharmacist as a proactive practitioner in minimizing morbidity and mortality from drug-induced diseases. [Offered: W, S, F]

No Special Consent Required

Requisites : Prereq: Pharmacy students only

Effective 01-SEP-2022

Unit Change: (0.25)

Rationale : As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms.

Current Catalog Information

PHARM 378 (0.50) LEC Advanced Women's Health Pharmacotherapeutics

This course will examine the pharmacotherapy of health conditions commonly experienced by women across their lifespan. Topics will include menstrual and reproductive disorders; contraception, pregnancy and childbirth; and common diseases that may be experienced differently by women. The course will also explore the ethics, commercialization and medicalization of women's health. [Offered W, S, F]

No Special Consent Required

Requisites : Prereq: PHARM 222; Pharmacy students only

Effective 01-SEP-2022

Unit Change: (0.25)

Rationale : As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms.

Current Catalog Information

PHARM 379 (0.50) LEC Ethical Decision-Making in Pharmacy Practice

This course explores the principles of ethical decision-making in healthcare and applies them to various scenarios and actual cases in different pharmacy practice settings. Discussion will focus on ethical dilemmas where a variety of stakeholders and implications must be considered. [Offered: W, S, F]

No Special Consent Required

Requisites : Prereq: Pharmacy students only

Effective 01-SEP-2022

Unit Change: (0.25)

Rationale : As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms.

Current Catalog Information

PHARM 380 (0.50) LEC, TUT Landmark Clinical Trials

This course is designed to further student's understanding of selected pharmacotherapeutic topics by reading and appraising landmark clinical trials.

Therapeutic topics may vary per course offering. In addition, this course will review the fundamentals of clinical trials including planning and design, conduct, reporting, issues in data analysis, and regulatory issues. [Offered: F]

No Special Consent Required

Requisites :

Prereq: PHARM 155, 222, 223; Pharmacy students only

Effective 01-SEP-2022

Unit Change:

(0.25)

Rationale :

As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms.

Current Catalog Information

PHARM 401 (0.50) LAB, TUT Independent Study 2

This elective is designed to permit students to pursue areas of personal interest and/or to gain personal experience scientific research through a research project.

PHARM 401 requires a research based project and will typically include a review of pertinent scientific literature and generation and analysis of new data. Research may be conducted in the School of Pharmacy, in a hospital, community pharmacy, pharmaceutical company, etc. A maximum of 1.0 credit may be taken as Independent Study courses.

Instructor Consent Required

Requisites :

Prereq: Pharmacy students only

Effective 01-SEP-2022

Unit Change:

(0.25)

Rationale :

As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM electives is reduced from 0.5 unit to 0.25 unit with only 2 hours of course instruction, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms, to include third year where all four electives will now be sequenced.

Current Catalog Information

PHARM 460 (0.50) LEC, TUT Leadership in Pharmacy

This course focuses on application of leadership principles, human, organizational and motivational behaviour, and power relationships in the healthcare workplace.

[Offered: W, S, F]

No Special Consent Required

Requisites :

Prereq: PHARM 350; Pharmacy students only

Effective 01-SEP-2022

Unit Change:

(0.25)

Requisite Change :

Prereq: PHARM 226; Pharmacy students only

Rationale :

As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced

student work load and in an effort to standardize instruction hours within the program across all terms. In addition, PHARM 350 will become inactive, as there will be a new PHARM 226, Pharmacy Management course, added to the curriculum which will incorporate some content from PHARM 350. Therefore PHARM 226 will be required as a prerequisite.

Current Catalog Information

PHARM 461 (0.50) LEC, TUT Advanced Patient Safety

This course focuses on applying the Canadian Patient Safety Institute's domains to projects with community partners and local health care agencies. Students will learn to develop strategies to integrate medication safety updates and implement recommendations into their practices. [Offered: W, S, F]

No Special Consent Required

Requisites : Prereq: PHARM 329, 350; Pharmacy students only

Effective 01-SEP-2022

Unit Change: (0.25)

Requisite Change : Prereq: PHARM 226, 329; Pharmacy students only

Rationale : As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms. In addition, PHARM 350 will become inactive, as there will be a new PHARM 226, Pharmacy Management course, added to the curriculum which will incorporate some content from PHARM 350. Therefore PHARM 226 will be required as a prerequisite.

Current Catalog Information

PHARM 462 (0.50) LEC, TUT Interprofessional Case Management

This course focuses on developing the enhanced communication and teamwork skills necessary for working in interprofessional teams to optimize patient care. [Offered: W, S, F]

No Special Consent Required

Requisites : Coreq: PHARM 323/420; Pharmacy students only

Effective 01-SEP-2022

Unit Change: (0.25)

Rationale : As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms.

Current Catalog Information

PHARM 464 (0.50) LEC, TUT Advanced Therapeutic Concepts in Oncology

This course examines advanced oncology therapeutic concepts required as foundation for patient management in the inpatient, ambulatory, and community settings. Topics include a comprehensive review of cancer epidemiology and pathophysiology,

therapeutic agents used in the oncology setting, management of cancer therapy toxicities, and treatment and palliation of cancer symptoms. [Offered: W, S, F]

No Special Consent Required

Requisites :

Coreq: PHARM 323/420; Pharmacy students only

Effective 01-SEP-2022

Unit Change:

(0.25)

Rationale :

As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms.

Current Catalog Information

PHARM 465 (0.50) LEC, TUT Critical Care & Emergency Medicine for Pharmacists

This course focuses on the types of care provided by interdisciplinary health team members involved in caring for critical care and emergency room patients. Invited respiratory therapists, nurses, dietitians, pharmacists, social workers and intensivists will discuss critical care topics such as sepsis, respiratory insufficiency, toxicology, ethical deliberations and end of life care. [Offered: W, S, F]

No Special Consent Required

Requisites :

Prereq: PHARM 321; Pharmacy students only.

Effective 01-SEP-2022

Unit Change:

(0.25)

Rationale :

As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms.

Current Catalog Information

PHARM 466 (0.50) LEC, TUT Advanced Geriatric Care

This course focuses on key concepts of ageing that are related to geriatric pharmacotherapy. Topics include: the biology and demography of ageing, optimal medication use in older people, disease presentation, geriatric assessment, roles for pharmacists and challenges and complexity of geriatric care. [Offered: W, S, F]

No Special Consent Required

Requisites :

Prereq: Pharmacy students only. Coreq: PHARM 323/420, 324/421

Effective 01-SEP-2022

Unit Change:

(0.25)

Requisite Change :

Prereq: Pharmacy students only. Coreq: PHARM 323, 324

Rationale :

As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms. In addition, PHARM 420 and 421 were

renumbered in 2016, therefore, these expired numbers are removed from the requisites.

Current Catalog Information

PHARM 467 (0.50) LEC Management of Oral Anticoagulation Therapy

This course provides students with the knowledge and skills to effectively and safely manage oral anticoagulation therapy under a medical directive. It contains both an online, self-paced learning module and computer simulated patient interactions that are designed to recreate the experience of practicing in an anticoagulation clinic.

[Offered: W, F]

No Special Consent Required

Requisites :

Prereq: PHARM 321; Pharmacy students only

Effective 01-SEP-2022

Unit Change: (0.25)

Rationale : As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms.

Current Catalog Information

PHARM 469 (0.50) LEC, TUT Pharmacoepidemiology and Pharmacy Practice

The course aims to promote an enhanced understanding of conceptual and methodological issues essential for effective critical appraisal of the relevant clinical literature and ultimately, improved patient care. Key topics to be covered will include: basic concepts of epidemiology; data sources and measures, study design and methodological issues in pharmacoepidemiology; and, applications relevant to population-based research and pharmacy. [Offered: W, S, F]

No Special Consent Required

Requisites :

Prereq: Level at least 3B PHARM students.

Effective 01-SEP-2022

Unit Change: (0.25)

Rationale : As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms.

Current Catalog Information

PHARM 470 (0.50) LEC, TUT Advanced Medical Writing

This course will refine students' writing skills. Students will have opportunities to produce a variety of different documents with a focus on preparing documents suitable for publication. Topics will include audience analysis, modification of content to conform to the requirements of different journals, succinct and clear representation of data and study findings, coordinating the editing process with multiple authors etc. [Offered: W, S, F]

No Special Consent Required
Requisites : Coreq: PHARM 324/421
Effective 01-SEP-2022
Unit Change: (0.25)
Requisite Change : Coreq: PHARM 324
Rationale : As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms. In addition, PHARM 421 was renumbered in 2016, therefore, this expired number is removed from the requisite.

Current Catalog Information

PHARM 472 (0.50) LEC, TUT Community Practice in a Changing Environment

This course will prepare pharmacy students to provide services in an advanced community pharmacy practice environment. Students will explore, critique and develop innovative clinical services for the community setting. Students will also develop change management and critical thinking skills. [Offered: W, S, F]

No Special Consent Required

Requisites : Prereq: Level at least 3B PHARM students.

Effective 01-SEP-2022

Unit Change: (0.25)
Rationale : As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms.

Current Catalog Information

PHARM 473 (0.50) LEC Advanced Infectious Disease

This course is designed to expand upon students' understanding of infectious disease pharmacotherapy, with a focus on syndromes requiring a higher degree of medical intervention than commonly seen in primary care. The aim of the course is to develop practicing pharmacists with the knowledge, skills and critical dispositions necessary for optimizing the use of anti-infectives in challenging infectious syndromes.

[Offered: W, S, F]

No Special Consent Required

Requisites : Prereq: PHARM 232 or 233L. Coreq: PHARM 320, 321; Pharmacy students only

Effective 01-SEP-2022

Unit Change: (0.25)
Requisite Change : Prereq: PHARM 232; Pharmacy students only. Coreq: PHARM 320, 321
Rationale : As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within

the program across all terms. In addition, the old PHARM 232L, renumbered as PHARM 232 in 2014, is removed from the prerequisites. The "Pharmacy students only" requisite is moved from corequisite to prerequisite for consistency with other PHARM courses.

Current Catalog Information

PHARM 474 (0.50) LEC Advanced Pharmacotherapeutics in the Hospital Setting

This course will provide students the opportunity to apply clinical knowledge and skills to manage pharmacotherapy problems commonly encountered in hospitalized patients. The focus will be on disease states not covered in the Integrated Patient Focused Care Series. Additionally, problems unique to delivery of care in the hospital setting, such as formulary management, utilization review, and medication problems relating to transitions among care settings will be explored. [W, S, F]

No Special Consent Required

Requisites :

Prereq: Pharmacy students only. Coreq: PHARM 323/420

Effective 01-SEP-2022

Unit Change:

(0.25)

Description Change:

This course will provide students the opportunity to apply clinical knowledge and skills to manage pharmacotherapy problems commonly encountered in hospitalized patients. The focus will be on disease states not covered in the Integrated Patient Focused Care Series. Additionally, problems unique to delivery of care in the hospital setting, such as formulary management, utilization review, and medication problems relating to transitions among care settings will be explored. [Offered: F,W,S]

Requisite Change :

Prereq: Pharmacy students only. Coreq: PHARM 323

Rationale :

As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms. In addition, the description note was missing the word "Offered" and the old PHARM 420 course, renumbered as PHARM 323 in 2016, is removed from the requisite.

Current Catalog Information

PHARM 475 (0.50) LEC Advanced Pharmacotherapeutics in the Ambulatory Care Setting

This course will provide students the opportunity to apply clinical knowledge and skills to manage pharmacotherapy problems commonly encountered by pharmacists practicing in an outpatient environment. The focus will be on disease states not covered in the Integrated Patient Focused Care Series. Additionally, problems unique to delivery of care in the ambulatory setting, such as coordination of care within an interdisciplinary team, working within the constraints of the Ontario Drug Benefit (ODB) program and insurance plan formularies, and provision of best practice care with limited resources. [Offered: W, S, F]

No Special Consent Required

Requisites :

Prereq: Pharmacy students only. Coreq: PHARM 323/420

Effective 01-SEP-2022

Unit Change: (0.25)
Requisite Change : Prereq: Pharmacy students only. Coreq: PHARM 323
Rationale : As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms. In addition, the old PHARM 420 course, renumbered as PHARM 323 in 2016, is removed from the requisites.

Current Catalog Information

PHARM 476 (0.50) LEC Advanced Skills in Patient Engagement

Research shows that patients actively involved in managing their health report better outcomes. This course is an innovative skills-based program that combines theory and practical techniques to help learners develop the ability to assess readiness, motivate, and support patients in improving their health. Relevant clinical tools will be introduced along with opportunities for hands-on practice. [W, S, F]

No Special Consent Required

Requisites : Prereq: PHARM 222; Pharmacy students only

Effective 01-SEP-2022

Unit Change: (0.25)
Description Change: Research shows that patients actively involved in managing their health report better outcomes. This course is an innovative skills-based program that combines theory and practical techniques to help learners develop the ability to assess readiness, motivate, and support patients in improving their health. Relevant clinical tools will be introduced along with opportunities for hands-on practice. [Offered: F,W,S]
Rationale : As part of the PharmD renewal plan, the credit weight for all 300- and 400-level PHARM elective courses is reduced from 0.5 unit to 0.25 unit with only 2 hours of instruction per course, per week, in order to help reduced student work load and in an effort to standardize instruction hours within the program across all terms. In addition, the description note was missing the word "Offered".

Current Catalog Information

PHARM 491 (0.13) SEM Seminars in Pharmacy 3

Through the Seminar Series of courses students are exposed to a number of speakers who address relevant topics within a content area. Speakers may include subject-matter experts, patients, and health care professionals. [Note: Course will be graded on a CR/NCR basis. Offered: W, S]

No Special Consent Required

Requisites : Prereq: Pharmacy students only

Effective 01-SEP-2022

Title Change: Seminars in Pharmacy 4
Rationale : A refocused institutional curriculum in year three, as part of the PharmD renewal plan introduces a new Seminars in Pharmacy course, PHARM 392, to

third year, such that the Seminars in Pharmacy course in year four, PHARM 491, becomes the fourth in this series and therefore a title change is required to reflect this.

Physics & Astronomy

Current Catalog Information

PHYS 256L (0.25) LAB Optics Laboratory

For students who have taken or are taking PHYS 256. [Note: Lab alternates weeks.

Offered: F]

No Special Consent Required

Effective 01-SEP-2022

Requisite Change : Coreq: PHYS 256

Rationale : Although the course description indicated that PHYS 256L is for students who were taking or had taken PHYS 256, there were no requisites to enforce this, therefore, a PHYS 256 corequisite is added to the lab.

Current Catalog Information

PHYS 260L (0.25) LAB, LEC Intermediate Physics Laboratory

Experiments in selected physics topics. [Note: Lab alternates weeks. Approximately a week before a particular lab is held, a one hour lecture will be given on the material to be covered in the lab. Offered W,S]

No Special Consent Required

Effective 01-SEP-2022

Description Change: Experiments in selected physics topics. [Note: Lab alternates weeks. Approximately a week before a particular lab is held, a one hour lecture will be given on the material to be covered in the lab. Students in programs joint with Physics should see department for enrolment access. Offered W,S]

Requisite Change : Prereq: PHYS 232L or 256L; Honours Physics, Physics and Astronomy, and Materials and Nanosciences. Coreq: PHYS 242

Rationale : Prerequisites and a corequisite are added to PHYS 260L to ensure students have the required background needed to be successful in the lab, as well as to limit the lab to specific programs within and joined with the Department of Physics. The description note is updated to inform students outside of science, pursuing a joint degree with Physics, enrollment information.

Current Catalog Information

PHYS 360A (0.25) LAB Modern Physics Laboratory 1

Selected experiments in mechanics, optics, electronics, atomic, molecular, nuclear and solid state physics. [Note: There will be 18 hours of experiments. Three year-two physics labs will have to be completed before this lab course is undertaken. Offered: F,W,S]

No Special Consent Required

Effective 01-SEP-2022

Description Change: Selected experiments in mechanics, optics, electronics, atomic, molecular,

nuclear, and solid state physics. [Note: Students in programs joint with Physics should see department for enrolment access. Offered: F,W,S]
Requisite Change : Prereq: One of MNS 201, PHYS 260L, 270L; Honours Physics, Physics and Astronomy, and Materials and Nanosciences
Rationale : Prerequisites are added to PHYS 360A to ensure students have the required background needed to be successful in the lab, as well as to limit the lab to specific programs within and joined with the Department of Physics. The description note is updated to inform students outside of science, pursuing a joint degree with Physics, enrollment information.

Current Catalog Information

PHYS 360B (0.25) LAB Modern Physics Laboratory 2
Continuation of 360A. [Note: 18 hours of experiments. Offered: F,W,S]
No Special Consent Required

Effective 01-SEP-2022

Requisite Change : Prereq: PHYS 360A
Rationale : A prerequisite of PHYS 360A is added to PHYS 360B to ensure students have the required background needed to be successful in the lab.

Current Catalog Information

PHYS 460A (0.25) LAB Advanced Laboratory 1
Selected advanced experiments in mechanics, optics, electronics, atomic, molecular, nuclear and solid state physics. [Note: 18 hours of experiments. Offered: F,W]
No Special Consent Required

Requisites : Prereq: PHYS 360A; Fourth Year Physics Majors only

Effective 01-SEP-2022

Requisite Change : Prereq: PHYS 360A
Rationale : Requisites for PHYS 360A are also being updated to include specific program prerequisites. As a result, the prerequisite for PHYS 460A only requires PHYS 360A, as this will already limit which programs may enroll in the lab.

Current Catalog Information

PHYS 467 (0.50) LEC, TST Introduction to Quantum Information Processing
Basics of computational complexity; basics of quantum information; quantum phenomena; quantum circuits and universality; relationship between quantum and classical complexity classes; simple quantum algorithms; quantum Fourier transform; Shor factoring algorithm; Grover search algorithm; physical realization of quantum computation; error-correction and fault-tolerance; quantum key distribution.
[Offered: W]

No Special Consent Required
Requisites : Prereq: One of MATH 114, 115, 235, 245; Level at least 4A
Cross-listed as: CO 481 CS 467

Effective 01-SEP-2022

Requisite Change : Prereq: One of MATH 114, 115, 235, 245, PHYS 334; Level at least 3A
Rationale : As part of the computational physics renewal plan within the Department of Physics and Astronomy, approved during October 2020 SUC, MATH 114 was

removed as a requirement for physics plans, replaced by a new course, PHYS 249, which contains some content previously covered in MATH 114. The Faculty of Math has been consulted and accepts the addition of PHYS 334 as a adequate alternative prerequisite for PHYS 467. PHYS 334 requires PHYS 234, which requires MATH 114 or PHYS 249 and as such, will provide sufficient background needed for PHYS 467. (The level prerequisite from 4A to 3A was previously approved at SUC and will become effective Sept. 1, 2021).

COURSE INACTIVATIONS (for approval)

Biology

Effective 01-SEP-2022
BIOL 488 (0.50)
Rationale :

Ecotoxicology from a Watershed Perspective
This course has not been offered since 2014 and there are no current plans to offer it in future terms. The material in this course overlaps somewhat with several other courses currently offered in Biology, including Biol 470 Methods of Aquatic Ecology (LAB, LEC), Biol 455 Ecological Risk Assessment and Management (LEC, TUT), and the recently implemented Biol 312 The Natural History of Aquatic Organisms (LAB, LEC). Some content and concepts taught within Biol 488 may be integrated with Biol 455 course materials.

Pharmacy - School of

Effective 01-SEP-2022
PHARM 227 (0.25)
Rationale :

Health Systems in Society
Some content from this course is being added to an updated and refocused PHARM 120 as part of a PharmD renewal plan. PHARM 227 will become inactive as part of that plan.

Effective 01-SEP-2022
PHARM 350 (0.50)
Rationale :

Fundamentals of Business Administration and Management
A new Pharmacy Management course is being added to year two of the Pharmacy curriculum, which incorporates some content from PHARM 350 as well as PHARM 351, as part of the PharmD renewal plan which includes a re-designed business curriculum. As such, PHARM 350 will become inactive.

Effective 01-SEP-2022
PHARM 351 (0.25)
Rationale :

Management Issues in Community Pharmacy Practice
A redesigned business curriculum introduces a new Pharmacy Management course, PHARM 226, and removes the selective business requirement, as part of the PharmD renewal plan. Content from the PHARM 351 selective business elective has formed the basis of the new Management course and therefore

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PHARM 351 will become inactive.

End of Report

5. ACADEMIC PLAN CHANGES (Minor)

5.1. Honours Environmental Sciences, Water Science Specialization (Regular and Co-op)

Effective Date: September 1, 2022

Background and Rationale: Currently, BIOL 361 and BIOL 450 are required winter courses for the [Honours Environmental Science, Water Science Specialization](#), and students must choose a 0.5-unit EARTH elective among EARTH 439, 456 or 459, also offered in the winter term. Removing BIOL 361 and 450 as required courses and adding them to the EARTH electives, requiring students to choose 1.5 versus 0.5 units of program electives among EARTH 439, EARTH 456, EARTH 459, BIOL 361 and BIOL 450, allows all students in the specialization more choice in the program, and allows International 2+1+1 China partner students an option to select more EARTH courses, while at Waterloo, so there are less EARTH requirements in their final year in their home university.

Total number of required units for the Water Science Specialization remains unchanged. Total required BIOL units decreases by 1.0, while the program elective requirement, which now includes BIOL or EARTH options, increases by 1.0 unit as shown in the required Calendar changes below:

- ~~4.25~~ ~~5-25~~ BIOL units: BIOL 150, BIOL 165, BIOL 240, BIOL 240L, BIOL 241, BIOL 350, BIOL 351, BIOL 354, ~~BIOL 361~~, and BIOL 447, ~~BIOL 450~~
- ~~1.5~~ ~~0.5~~ BIOL or EARTH elective units chosen from: BIOL 361, BIOL 450, EARTH 439, EARTH 456, and EARTH 459

5.2. Optometry – Doctor of Optometry Academic Regulations

Effective Date: September 1, 2022

Background and Rationale: The statement indicating that students failing to demonstrate clinical competence, as evident by a failing grade in clinical course, will not be allowed to continue in the Doctor of Optometry program, is a historic one going back to at least the 1980-1981 Calendar. The rule existed under the [Academic Course Requirements](#) page and moved to the [Academic Regulations](#) page in the 2021-2022 Calendar, as a more fitting location. It is unknown why the rule is in place, but it is not currently enforced in practice, and has not been enforced for many years. Students who fail a clinical course are permitted to register for the course to repeat it when it is next offered. As such, this statement should be removed from the Calendar

Calendar text to correct:

The factors considered in academic standings in Optometry are the term average, the overall average, the number of failures, and the student standing (e.g., Satisfactory, Conditional). The minimum overall and term averages needed to remain in the Optometry program are 60%. The minimum passing course grade in Optometry is 60% except for OPTOM 348A, OPTOM 348B, OPTOM 458, OPTOM 468, and OPTOM 478 in which 70% is a passing grade. Grades below the specified passing grade result in a course failure. ~~A student who fails to demonstrate clinical competence as evidenced by a failing grade in a clinical course will not be allowed to continue in the Doctor of Optometry program.~~

5.3. Pharmacy – Degree Requirements

While the current PharmD curriculum continues to exceed Accreditation standards and receives high marks from student evaluations, the school of Pharmacy is putting forward a curricular renewal plan for the PharmD program, which will align with the school's strategic plan, enrich the student learning experience (enhanced integration of classroom and experiential integration, improved course coordination within a term, longitudinal as well as blended learning opportunities), balance the student workload and contact hours, and reduce classroom hours where possible. The changes are a result of:

- Analysis of feedback from students, faculty and staff acquired over the past nine years.
- Review of best practices and consultation with colleagues in other similar programs.
- Changes in the Pharmacy landscape.

There are changes in each year of the program that impact the [Degree Requirement](http://ugradcalendar.uwaterloo.ca/page/SCI-PHARMACY-Degree-Requirements4) page (<http://ugradcalendar.uwaterloo.ca/page/SCI-PHARMACY-Degree-Requirements4>) of the Calendar as they are related to course changes, additions, and inactivation. Some courses will be refocused and re-named, others will become more flexible, and/or will change credit weight. Some courses are being eliminated or renumbered and/or refocused and moved to a different term within the degree, while new ones are being introduced, all as part of this curriculum renewal plan.

There are three major changes associated with the curriculum renewal plan:

- A re-designed business curriculum with built in potential for leadership designation with a new course, a new leadership seminar and the opportunity to add business and/or leadership electives:
 - PHARM 226, Pharmacy Management (new for 2B)
 - PHARM 391, Seminars in Pharmacy 2 (new leadership content for 3A; research content normally covered in PHARM 391 will move into a newly added seminar course, PHARM 392 in 3B)
 - PHARM electives in 3B could be used for business/leadership courses.
- A re-focused institutional curriculum: introduction of a cultural safety course which will support efforts in adding indigenous curricular content to the PharmD program as well as a focus on institutional pharmacy practice in 3A.
 - PHARM 230, Culturally Safe Patient Care (new in 2A)
 - 3A winter term will have emphasis on institutional practice with a newly renumbered Institutional Practice course, PHARM 326, a revised Professional Practice 5 course, PHARM 329, and Integrated Patient Focused Care (IPFC) courses oriented to conditions commonly found in hospital and long-term care.
- A change in elective course weights and contact hours to be used potentially for specializing in other areas of interest.

Year One Change Summary

- PHARM 120 is updated and refocused (title, description, and unit weight plus an old antirequisite is removed) with some content from PHARM 227 incorporated (the latter will become inactive).

Year 2 Change Summary

- Two new courses are added: PHARM 230, Culturally Safe Patient Care, to fall, and PHARM 226, Pharmacy Management, to spring.
- One course is inactivated: PHARM 227.
- One course is renumbered and removed from year two: PHARM 252 becomes PHARM 326 and moves to year three.
- PHARM 228 is updated (description and unit weight change to 0.5 from 0.25).

Year 3 Change Summary

- The selective business elective requirement (one of: PHARM 351, 352, or 353) is removed and no longer required; PHARM 351 will become inactive while PHARM 352 and 353 become PHARM electives, with description changes, term of offerings changes, and a prerequisite update.
- One course is inactivated: PHARM 350.
- An additional PHARM elective (four vs three total at 0.25 unit each) is added.
- A renumbered course moves to year 3: PHARM 326, Institutional Pharmacy Practice (was PHARM 252).
- One new course is added: PHARM 392, Seminars in Pharmacy 3, to house research content from PHARM 391 so that PHARM 391 can cover new leadership content.
- Course weight on all 300-level PHARM elective courses is changed from 0.5 to 0.25 units: PHARM 361, 362, 363, 364, 366, 367, 368, 370, 372, 373, 374, 375, 376, 377, 378, 379, 380.

Year 4 Change Summary

- The 32 weeks are reconfigured to allow more flexibility with integration between in-class and patient care.
- PHARM 491 becomes the 4th Seminars in Pharmacy, versus 3rd, with the addition of a new seminar (PHARM 392), therefore requires a title change.
- Course weights on all 400-level PHARM elective courses is changed from 0.5 to 0.25 units: PHARM 401, 460, 461, 462, 464, 465, 466, 467, 469, 470, 472, 473, 474, 475, 476.

5.3.1. Pharmacy- Degree Requirements (Calendar page update)

Notes

1. The final year will be composed of three clinical rotations starting with the winter term and running through the spring term. ~~Each of the three clinical rotations is eight weeks long, for a total of 24 weeks of clinical experience toward the end of the degree program. There are also eight weeks of classroom work in the final year of the program at the start of winter term (4A). Students must complete a total of no less than 960 hours of direct patient care distributed over three distinct rotations in Ontario-based practice settings. During this period students also complete coursework assigned to the fourth year of study. To In order to accommodate clinical rotations, students are advised that the 4A academic term classes may begin earlier than what is described by the University's Calendar of Events and Academic Deadlines. Additionally, the 4A academic term is excluded from the University's winter term study days.~~
2. The maximum duration allowed for a student to complete the Doctor of Pharmacy (PharmD) program is six years from the initial registration.
3. Normally PHARM electives are taken beginning in Year Three. ~~For students who enter Pharmacy and qualify for transfer credits, electives may be selected earlier in consultation with the associate director, curriculum and assessment (or delegate). Independent study electives require permission of the associate director (or delegate). A student may take a maximum of 1.0~~ 0.5 unit as independent study electives.
4. ~~Selective business courses (PHARM 351, PHARM 352, and PHARM 353) are elective courses focusing on a range of business topics and management issues within different practice settings. These courses will be identified as such in the course catalog. Prior to course registration for the fall term of Year Three, students will be provided with a list of selective courses that will be offered for their cohort.~~

Curriculum

Year One

Winter

[PHARM 110](#) Systems Approach to the Study of the Human Body 1

[PHARM 120](#) ~~Introduction to the Profession of Pharmacy~~ Pharmacy in an Evolving Health Care System

[PHARM 124](#) Pharmaceutics 1

[PHARM 126](#) Pharmaceutical Calculations

[PHARM 127](#) Professional Communication Skills in Pharmacy Practice

[PHARM 129](#) Professional Practice 1

Spring

[PHARM 111](#) Systems Approach to the Study of the Human Body 2
[PHARM 125](#) Pharmaceutics 2
[PHARM 130](#) Professional Practice 2
[PHARM 141](#) Introduction to Medicinal Chemistry, Toxicology and Pharmacology
[PHARM 151](#) Foundation and Application of Health Informatics
[PHARM 155](#) Introduction to Drug Information Fundamentals

Year Two

Fall

[PDPHRM 1](#) Co-op Fundamentals
[PHARM 220](#) Integrated Patient Focused Care 1
[PHARM 221](#) Integrated Patient Focused Care 2
[PHARM 224](#) Pharmacokinetic Fundamentals
[PHARM 227](#) ~~Health Systems in Society~~
[PHARM 228](#) Professional Practice 3
[PHARM 230](#) Culturally Safe Patient Care
[PHARM 232](#) Medical Microbiology

~~Year Two~~

Winter

Work Term 1

Spring

[PHARM 222](#) Integrated Patient Focused Care 3
[PHARM 223](#) Integrated Patient Focused Care 4
[PHARM 226](#) Pharmacy Management
[PHARM 229](#) Professional Practice 4
[PHARM 252](#) ~~Institutional Pharmacy Practice~~
[PHARM 290](#) Seminars in Pharmacy 1

Fall

Work Term 2

Year Three

Winter

[PHARM 320](#) Integrated Patient Focused Care 5
[PHARM 321](#) Integrated Patient Focused Care 6
[PHARM 326](#) Institutional Pharmacy Practice
[PHARM 329](#) Professional Practice 5
[PHARM 350](#) ~~Fundamentals of Business Administration and Management~~
[PHARM 391](#) Seminars in Pharmacy 2
Two One PHARM electives (0.5 unit)

Spring

Work Term 3

Fall

[PHARM 323](#) Integrated Patient Focused Care 7

[PHARM 324](#) Integrated Patient Focused Care 8

[PHARM 330](#) Professional Practice 6

[PHARM 392](#) Seminars in Pharmacy 3

One selective business course (0.25 unit) from: [PHARM 351](#), [PHARM 352](#), [PHARM 353](#)

Two PHARM electives (1.0 0.5 unit)

Year Four

Each Term: Winter, Spring

[PHARM 422](#) Integrated Patient Focused Care 9

[PHARM 425](#) Symposium

[PHARM 430](#) Clinical Rotation 1: Primary Care

[PHARM 440](#) Clinical Rotation 2: Institutional

[PHARM 450](#) Clinical Rotation 3: Elective

[PHARM 491](#) Seminars in Pharmacy 3 4

One PHARM elective (0.5 unit)

5.4. Plan Requirement Clarifications

Effective Date: September 1, 2022

Motion: to explicitly state all plan requirements, permitted to count toward any given plan, in the Calendar, and/or remove anything listed as a requirement that is not actually a requirement for the degree.

Background and Rationale: All plan requirements listed in the Calendar should be specific and not open for interpretation by students, advisors, auditors, Registrar staff, etc. Several plans across various faculties were identified as requiring update to specifically outline requirements. Five plans were identified within science that require update.

The [Honours Biomedical Sciences plan](#) requires 2.0 program electives that can be chosen from a list of courses which includes "PHIL 226 (or any other introductory ethics course)". The exact permitted ethic courses need to be identified. A change is made to identify the acceptable courses. The following list of introductory ethics courses has been identified and approved as acceptable by both the Departments of Biology and Philosophy:

PHIL 121 Moral Issues
PHIL 215 Professional and Business Ethics
PHIL 218J Foundations of Ethics
PHIL 219J Practical Ethics
PHIL 221 Ethics
PHIL 224 Environmental Ethics
PHIL 226 Biomedical Ethics
PHIL 227 Culture and Ethics
PHIL 319J Ethics of End-of-Life Care
PHIL 321J The Philosophy of Palliative Care

The [Pharmacy degree requirements](#) include a section for non-academic requirements, which are actually not requirements for the degree but rather requirements for co-op employment placement. As such, this section will be removed as there is a link to the information in the undergraduate handbook within the Pharmacy co-op web pages.

Lastly, three joint programs with science, for students whose home faculty is outside science, indicate that an equivalent is permitted for an identified requirement. When stated this way, the equivalent courses are not specifically listed. The joint with Biology, joint with Earth, and joint with Physics options, on the [Joint Honours Programs with Science \(Home Faculty: Outside Science\)](#) page, will either state an equivalent, or remove the “or equivalent” statement, recognizing that if required, a substitution can be made when needed for each student on an individual case bases.

Calendar changes:

5.4.1. Honours Biomedical Sciences

2.0 program elective units from: CS 200, HLTH 101, HLTH 102, HLTH 320, HLTH 340, HLTH 341, HLTH 407, MATH 127, MATH 128, ~~PHIL 226 (or any other introductory ethics course)~~, PSYCH 101, PSYCH 261, SOC 101, SOC 248, SOC 249, STAT 202, one of (PHIL 121, PHIL 215, PHIL 218J, PHIL 219J, PHIL 221, PHIL 224, PHIL 226, PHIL 227, PHIL 319J, or PHIL 321J)

5.4.2. Pharmacy- Degree Requirements

~~Added Non-Academic Requirements~~

~~In addition to the academic requirements there are a number of non-academic or post-admission requirements that must be completed prior to proceeding to the first co-op term. These requirements are mandated by the OCP and/or most co-op employers and clinical placement sites. Students are held individually accountable for submission of required documentation, and should review the [current requirements](#).~~

5.4.3. Joint Honours X with Biology

8.0 units distributed as follows:

- ~~1.5 CHEM units: CHEM 120, CHEM 120L, CHEM 123, CHEM 123L (or their equivalents)~~
- 1.5 CHEM units: CHEM 120 or CHEM 121, CHEM 120L or CHEM 121L, CHEM 123 or CHEM 125, CHEM 123L or CHEM 125L
- 2.5 BIOL lecture units, any level
- 4.0 BIOL lecture units, 300- or 400-level

Notes

- ~~1. If the home faculty academic plan requires CHEM 120, CHEM 120L, CHEM 123, CHEM 123L, an additional 1.0 of BIOL lecture units must be taken.~~
2. If the home faculty academic plan requires CHEM 120 or CHEM 121, CHEM 120L or CHEM 121L, CHEM 123 or CHEM 125, CHEM 123L or CHEM 125L, an additional 1.0 BIOL lecture unit must be taken.
- ~~3. CHEM 266, CHEM 266L and CHEM 237, CHEM 237L can substitute a 0.5 or 1.0 BIOL unit provided they are not requirements of the home faculty academic plan.~~
4. CHEM 266 or CHEM 264, CHEM 266L and CHEM 237 or CHEM 233, CHEM 237L or CHEM 233L, can substitute a 0.5 or 1.0 BIOL unit provided they are not requirements of the home faculty academic plan.
5. BIOL units required for the home faculty academic plan do not count towards this plan.

5.4.4. Joint Honours X with Earth

9.75 units distributed as follows:

- 1.5 EARTH units: EARTH 121, EARTH 121L, EARTH 122, EARTH 122L
- 2.0 EARTH units chosen from: EARTH 123, EARTH 221, EARTH 231, EARTH 232, EARTH 235, EARTH 238, EARTH 260
- 0.5 EARTH unit, 200-level or higher
- 2.5 EARTH units, 300-level or higher
- 0.75 PHYS unit: PHYS 111 and PHYS 111L or PHYS 121 and PHYS 121L
- ~~1.5 CHEM units: CHEM 120, CHEM 120L, CHEM 123, CHEM 123L (or equivalents)~~
- 1.5 CHEM units: CHEM 120 or CHEM 121, CHEM 120L or CHEM 121L, CHEM 123 or CHEM 125, CHEM 123L or CHEM 125L
- 0.5 MATH unit: MATH 127 (or equivalent)
- 0.5 STAT unit: STAT 202 (or equivalent)

5.4.5. Joint Honours X with Physics

13.75 units distributed as follows:

- 2.0 MATH units: MATH 127, MATH 128, MATH 227, MATH 228 (or equivalents)
- 9.5 PHYS units: PHYS 121, PHYS 121L, PHYS 122, PHYS 122L, PHYS 124, PHYS 160L, PHYS 232L, PHYS 234, PHYS 242, PHYS 242L, PHYS 249, PHYS 256, PHYS 256L, PHYS 260L, PHYS 263, PHYS 334, PHYS 342, PHYS 358, PHYS 359, PHYS 360A, PHYS 363, PHYS 364, PHYS 365
- 1.5 PHYS lecture units, 400-level
- 0.25 PHYS lab unit, 300-level or higher
- 0.5 CS unit: CS 114

5.5. EP3 Diploma Inactivation

Effective Date: September 1, 2022

Motion: Inactive the Education Program for Photonics Professionals (EP3).

Background and Rationale: In March 2004, SUC approved the [Education Program for Photonics Professionals](#) (EP3) Diploma program within the Faculty of Science. This program was introduced to re-skill existing scientists and engineers in optics and photonics as there was a lack of specialized optics and photonics programs, and this sector was rapidly growing, outpacing the ability of educators to produce graduates with skills in photonics. The EP3 program was set up as series of six non-degree courses and two laboratory sessions. By the time the program was set up and approved and money received from the Ontario government, the large photonics industry was gone. Only one complete offering of the program was done and then a few more courses were offered after that point. There is no plan to continue offering courses under this diploma program.

6. ACADEMIC REGULATIONS CHANGES

6.1. Transfer Students

Effective Date: September 1, 2022

Background and Rationale: With a 50% rule in place, at least 50% of academic units required to be awarded a degree, major, minor, option or specialization, must have numeric grades. As such, some internal or faculty transfer students could have transfer credits from their original program included in cumulative average calculations, where as transfer credits for external transfer students from other post-secondary institutions would never be included in cumulative average calculations. To make this clear, the statement about the transfer credits not being included in the averages, is relocated to the section specific to external transfer students.

Calendar Changes:

External Transfer Students

Students may be accepted for transfer from other post-secondary institutions. Transfer credit will be evaluated in terms of the University of Waterloo's [common degree requirements](#) and the number of units remaining for a degree. Consideration for transfer credit will be given for relevant courses. Normally, only courses completed within the last 10 years are considered. Professional program courses (e.g., medicine, dentistry) are not considered for transfer credit. Credits transferred to any Science program are not included in cumulative average calculations.

~~Internal and External~~ and Faculty Transfer Students

~~Credits transferred to any Science program are not included in cumulative average calculations.~~

Students applying for transfer to a co-operative program in the Faculty of Science normally will not be admitted above the 2A term level. Only 5.0 transfer credit units are allowed for new students entering Science and Aviation programs.

Students currently holding a Bachelor of Science degree will normally be considered for admission into post-degree studies only.

Memorandum

To: Senate Undergraduate Council

From: Faculty of Science

Date: September 3, 2021 (for September 2021 SUC meeting)

Re: Motion to correct the effective date for the Optometry Advance Standing Program to September 1, 2021.

The new Optometry Advanced Standing Program was approved at the Senate meeting February 2021 with the effective date of September 1, 2022 (terms: fall 2022, winter 2023, spring 2023).

The first intended admission cycle was not clear in the original documentation. The Advanced Standing Optometry Preparatory Program (ASOPP) was intended to start in the spring 2022 term which is a term prior to the effective date, so in fact the effective date should have been Sept 1, 2021 (terms: fall 2021, winter 2022, spring 2022).

The ASOPP program is already available for applications on the OUAC site with the expected date of enrollment of spring 2022 (May), prior to the effective date approved by Senate. To facilitate admissions for this desired term, the Faculty of Science is putting forward a motion to change the approved effective date from Sept. 1, 2022, to Sept. 1, 2021.

This matter has been discussed with the RO, who agrees with the retro-active correction and has agreed to change the effective date so that the admissions process for May 2022 can continue. The RO will amend the 2021-22 Calendar to include the program information added to the 2022-23 Calendar.

**RENISON UNIVERSITY COLLEGE REPORT TO SENATE UNDERGRADUATE COUNCIL (SUC)
For June 15, 2021**

CONTENT

1. COURSE CHANGE (MINOR MODIFICATION)

1.1. Bachelor of Social Work2

COURSE CHANGES (for approval)

Renison University College

Current Catalog Information

SWREN 120R (0.50) LEC Introduction to Social Work
Presentation of the values, knowledge, and skill base; principles and purposes of the profession; and an examination of methods of practice. Traditional and innovative social work settings are discussed. Historic development of social work and its influence on contemporary practice are reviewed. [Note: SWREN 120R is available only to students who have been given conditional admission to the BSW program; such students must have already completed their first undergraduate degree.]
No Special Consent Required
Cross-listed as: SOCWK 120R

Effective 01-SEP-2022

Description Change: This course provides an overview of the social work profession as part of the social welfare system in Canada, emphasizing Indigenous and Eurocentric histories, worldviews, values, ethics, and practice approaches, including individual, family, community, and structural settings. [Note: SWREN 120R is available only to students who have been given conditional admission to the BSW program; such students must have already completed their first undergraduate degree.]

Rationale : To change description. The description had not been updated for some time. New version better fits more recent revisions to overall course scope and content.

Current Catalog Information

SWREN 251R (0.50) LEC Social Research
Introduction to the philosophy and methodology of applied social science research, including treatment of the problems and strategies of research design and execution. [Note: SWREN 251R is available only to students who have been given conditional admission to the BSW program; such students must have already completed their first undergraduate degree.]
No Special Consent Required
Requisites : Prereq: SDS/ISS 250R; Level at least 2A; Not open to students in the Faculty of Mathematics. Antireq: ISS 251R, LS/SOC 221, LS/SOC 321, PSYCH 291, REC 270, SDS 251R, SMF 220
Cross-listed as: SDS 251R

Effective 01-SEP-2022

Requisite Change : Prereq: Level at least 2A; Not open to students in the Faculty of Mathematics. Antireq: ISS 251R, LS/SOC 221, LS/SOC 321, PSYCH 291, REC 270, SDS 251R, SMF 220

Rationale :

To change prerequisites. The department determined that there is no need for students to have SDS 250R completed prior to SDS 251R anymore due to some recent revisions of courses. Both are required for major students and removal of this prerequisite will provide more scheduling flexibility for both department and students. It also better aligns with how similar programs offer their core research methods course prior to their statistics course, which will now be an option. The Level 2A prerequisite is added to replace a core function of the prior prerequisite (i.e. ensure access by students 2nd year onwards).

End of Report

**OFFICE OF THE REGISTRAR REPORT TO
SENATE UNDERGRADUATE COUNCIL**
September 2021

1. REGULATIONS

- 1.1.** Definition of Blended Class
- 1.2.** Undergraduate Communication Requirement
- 1.3.** Aegrotat (AEG) Grades
- 1.4.** Academic Calendar Dates for 2022-2023

1. REGULATIONS

1.1. Definition of Blended Class

Effective date: September 1, 2021

Note: Change due to COVID, for information only

Background and rationale: The Office of the Registrar promoted the use of “blended” class scheduling options for fall 2021. Faculties were provided guidance and examples on how to use this new concept. Accordingly, changes were needed in Quest to allow students to see and understand these options when selecting courses and viewing their schedules. As a result, a definition of “blended class” was created in order to help communicate these changes to students (current and new).

Undergraduate Calendar text:

Blended class: A class normally scheduled with both an online and in-person activity (students must be available to come to campus).

1.2. Undergraduate Communication Requirement

Effective date: September 1, 2022

Background and rationale: It was the recommendation of the Stublely Report in 2012 that the University move from administering the English Language Proficiency Exam (ELPE) to confirm minimum standards of communication proficiency in graduates from degree-granting undergraduate programs, to a course-based system of education of communication competencies, tailored to disciplinary needs and delivered by experts in the field. In July 2020, at the recommendation of the Vice President Academic and Provost, Deans' Council approved a governance, operational, and budgetary framework for the continuing delivery of this education. During winter 2021 term, both SUC and Senate passed motions calling for the development of calendar language that reflects that the Undergraduate Communications Outcomes are an institutional academic priority, and that such language should be brought forward for approval. To mark the commitment and ensure consistency going forward, we seek approval of the proposed academic calendar text describing the common requirement and the particular forms it takes in the six faculties; the proposed is included below. Please note that the exclusion of Renison’s Bachelor of Social Work is intentional; although it is an undergraduate degree, it also requires a previous degree for admission, and as such the program does not currently include the Undergraduate Communication Requirement.

Undergraduate Calendar text:

Page: <https://ugradcalendar.uwaterloo.ca/page/Acad-Regs-Common-Degree-Requirements>

Undergraduate Communication Requirement

All graduates from degree-granting programs must meet minimum standards for written and oral communication proficiency through successful completion of an approved course or set of courses. The requirements for each program are articulated in the program description.

- [Faculty of Arts](#)
- Faculty of Engineering (landing page to be created for fall 2022)
- [Faculty of Environment](#)

- Faculty of Health
- Faculty of Mathematics
- Faculty of Science

Existing references in the Undergraduate Studies Academic Calendar will be changed to reflect this new consistent terminology:

| Faculty | Current terminology | Proposed terminology |
|-------------|---|---|
| Arts | Undergraduate Communication Requirement | No change |
| Engineering | Not applicable | Undergraduate Communication Requirement |
| Environment | Undergraduate Communication Requirement | No change |
| Health | Communication Requirement | Undergraduate Communication Requirement |
| Mathematics | Communication Skills Requirement | Undergraduate Communication Requirement |
| Science | Communication Requirement | Undergraduate Communication Requirement |

1.3. Aegrotat (AEG) Grades

Effective date: September 1, 2022

Background and rationale:

The definition of the AEG (Aegrotat) grade was changed for September 2018 from “Aegrotat: Credit granted due to illness or extenuating circumstances” to “Aegrotat: Credit granted due to illness or extenuating circumstances. More than 50% of the course work must have been completed with a passing grade.” Although this definition expansion helped, it also created additional confusion regarding its interpretation in and across faculties. Stakeholders from across campus came together to once again attempt to redefine an Aegrotat grade and to develop some harmony regarding the processes used to evaluate and assign the grade, which is rarely granted. The proposed definition below was created in an effort to provide guidance, but keeping some vagueness to allow discretion by the associate dean when reviewing case-by-case scenarios.

Details and information about the processes will be housed on the Registrar’s Office website (for students) and on the Registrar Resources for Staff and Faculty website (for advisors, instructors, and associate deans).

Undergraduate Calendar text: <https://ugradcalendar.uwaterloo.ca/page/Acad-Regs-Grades>

~~AEG - Aegrotat: Credit granted due to illness or extenuating circumstances. More than 50% of the course work must have been completed with a passing grade.~~ **Credit granted under extraordinary circumstances in which course elements have been substantially completed, the completion of further assessments is not possible, and the student would otherwise receive a pass grade. An AEG is assigned by the associate dean, undergraduate of the student’s faculty and only in rare and persistent circumstances when assigning an INC grade is not appropriate.**

The following additional changes to the Undergraduate Calendar will be made:

Environment (<https://ugradcalendar.uwaterloo.ca/page/ENV-Courses-Enrolment-and-Grades>): Text to be removed:

An Aegrotat (AEG) grade may be awarded in extraordinary circumstances or when a prolonged recovery from illness is expected. Students must submit a **Petition for Exception to Academic Regulations** to be considered for an AEG grade. Students are normally required to have successfully completed half of the course requirements and demonstrated understanding of the course content to the extent that the instructor is satisfied that the student should receive credit for the course, even though a numerical grade could not be given.

Transcript legend notation: <https://uwaterloo.ca/registrar/transcripts/transcript-legend>

AEG: Aegrotat, credit granted ~~due to illness or extenuating~~ **under extraordinary** circumstances

1.4. Academic Calendar Dates for 2022-2023

| | Fall 2022 | Winter 2023 | Spring 2023 |
|---|--------------------------|---------------------------|--|
| Co-operative Work Term Begins | Sept. 6 (T) | Jan. 3 (T) | May 1 (M) |
| Classes Begin | Sept. 7 (W) | Jan. 4 (W) | May 1 (M) |
| Holidays | Oct. 10 (M) | Feb. 20 (M) Apr. 7 (F) | May 22 (M) July 3 (M) Aug. 7 (M) |
| Reading Week | Oct. 8-16 (S-U) | Feb. 18-26 (S-U) | N/A |
| Convocation | Oct. 21, 22 (F,S) | N/A | June 13-17 (T-S) |
| Classes End | Dec. 6 (T) | Apr. 4 (T) | July 25 (T) |
| Make-up Day(s) for in-term holidays | N/A | N/A | May 23 (T) for May 22 (M schedule) July 24 (M) for July 3 (M) July 25 (T) for May 23 (T) |
| Pre-Examination Study Day(s) | Dec. 7, 8 (W,R) | Apr. 5,6 (W,R) | July 26, 27 (W,R) |
| Examinations Begin | Dec. 9 (F) | Apr. 10 (M) | July 28 (F) |
| In-Person Exam Days for Online/Remote Courses | TBD | TBD | TBD |
| Examinations on Sunday | Dec. 11 (U) | N/A | N/A |
| Examinations End (including Emergency Day) | Dec. 23 (F) | Apr. 25 (T) | Aug. 12 (S) |
| Co-operative Work Term Ends | Dec. 23 (F) | Apr. 21 (F) | Aug. 18 (F) |
| Teaching days | 60 | 60 | 60 |
| Pre-examination Study Day(s) | 2 | 2 | 2 |
| Examination days | 13 (+1 Emergency Day) | 13 (+1 Emergency Day) | 11 (+1 Emergency Day) |

Symbols and abbreviations:

(M) Monday, (T) Tuesday, (W) Wednesday, (R) Thursday, (F) Friday, (S) Saturday, (U) Sunday, N/A – Not Applicable

Guidelines for Determining Academic Calendar of Dates

The following are principles and guidelines either formally agreed upon by Senate or adopted as common practice in determining the dates for the academic year.

1. That the practice of setting dates for each academic year continues to be an annual exercise.
2. That there be no fewer than **60 teaching days** (12 weeks) in a term. A clear rationale for fewer than 60 teaching days must be communicated to Senate at the time calendar dates are approved. In calculating teaching days in a term, Saturdays, Sundays, and public or University holidays are excluded.
3. That attention be given to **balancing the number of meets** in courses. Where an imbalance may occur because of public holidays, the class schedule for a day different than the calendar day can be used to balance the number of course meets.
4. That **fall convocation** be the Friday and Saturday that fall in the third full week (beginning Sunday) of October.
5. That **spring convocation** be the Tuesday to Saturday in the second full week (beginning Sunday) in June.
6. That the **reading weeks** occur in all faculties in the fall and winter terms. They must begin on the Saturday before the public holidays of Thanksgiving Day and Family Day and will end on the following Sunday.
7. That **fall term** classes begin on the Wednesday following the public holiday of Labour Day.
Exception: The fall term begins on Tuesday, September 8 when Labour Day is September 7.
8. That the start date for **winter term** be set as follows:
 - If January 1 is a Sunday, then start of classes is Wednesday, January 4.
 - If January 1 is a Monday, then start of classes is Wednesday, January 3.
 - If January 1 is a Tuesday, then start of classes is Monday, January 7.
 - If January 1 is a Wednesday, then start of classes is Monday, January 6.
 - If January 1 is a Thursday, then start of classes is Monday, January 5.
 - If January 1 is a Friday, then start of classes is Tuesday, January 5.
 - If January 1 is a Saturday, then start of classes is Wednesday, January 5.
9. The start date for **spring term** be set as follows:
 - If May 1 is a Sunday, then start of classes is Monday, May 2.
 - If May 1 is a Monday, then start of classes is Monday, May 1.
 - If May 1 is a Tuesday, then start of classes is Tuesday, May 1.
 - If May 1 is a Wednesday, then start of classes is Wednesday, May 1.
 - If May 1 is a Thursday, then start of classes is Monday, May 5.
 - If May 1 is a Friday, then start of classes is Monday, May 4.
 - If May 1 is a Saturday, then start of classes is Monday, May 3.
10. That there be no fewer than one **pre-examination study day** and when possible, two pre-examination study days (excluding Saturday, Sunday, and public holidays) between the end of classes and the beginning of examinations. A clear rationale for using fewer than two days or

Saturday, Sunday, and holidays as pre-examination study days, must be communicated to Senate at the time calendar dates are approved.

11. That there be no fewer than 13 **examination days** in the fall and winter terms, and 11 examination days in the spring term. In addition, one Emergency Day with no scheduled examinations is added to the end of the examination period.
12. In calculating **examination days**, Saturdays which fall within the period are included, whereas Sundays and public or University holidays are excluded.

Exceptions:

- Examinations will not be scheduled on the Saturday following Good Friday when that day falls within the examination schedule or the Saturday of the Civic Day weekend.
 - The first Sunday within the examination period may be used when required to accommodate the prescribed number of examination days in the fall term.
13. That for the **fall term's examination period**, no examinations be scheduled beyond December 22. The Emergency Day cannot be scheduled beyond December 23.
 14. That **online course examination days** in each term be the first consecutive Friday and Saturday in the examination period.
 15. **Grades due dates** for on campus courses are normally scheduled seven days from the date of the final examination. Grades for online (Centre for Extended Learning) courses that have a scheduled final examination are due on the last day of the grades submission period. Grades for all courses without a scheduled final examination are normally due 14 days after the start of examinations.
 16. **Co-op work terms** are expected to be 16 week in duration. Actual start and end dates may vary depending on employer or student requirements in consultation with Co-operative Education.

Prepared by:

C. Newell Kelly, Registrar

June 2021

Rules that Require Exceptions with Rationale:

Rule 12

... The first Sunday within the examination period may be used when required to accommodate the prescribed number of examination days in the fall term.

With fall term classes beginning September 7, 2022, and the scheduling of two study days prior to the fall final exam period, the first Sunday within the exam period was required for scheduling exams to accommodate the prescribed number of examination days.

... Examinations will not be scheduled on the Saturday following Good Friday when that day falls within the examination schedule or the Saturday of the Civic Day weekend.

The first day of the 2023 winter final exam schedule will begin on Monday, April 10, 2023 instead of Saturday, April 8, 2023 as it is the Saturday following Good Friday. Saturday, August 5, 2023 will not be used for schedule of examinations during the 2023 spring term final exam period, as it is the Saturday of the Civic Day weekend.

Rule 14

... That online course examination days in each term be the first consecutive Friday and Saturday in the examination period.

At the time of preparation of this document, it is unknown as to when online course examination days will resume, as there has been a hold on in-person exams for online courses due to the COVID-19 pandemic. Considerations will be made at a future date.

For information, some fall 2022 and winter 2023 dates lack synchronicity with Laurier dates (their spring 2023 dates are not yet finalized):

| Date | Waterloo | Laurier |
|------------------|---|--------------------------------------|
| Sept. 7, 2022 | First day of fall term classes | No classes |
| Sept. 8, 2022 | N/A | First day of fall term classes |
| Dec. 7, 2022 | Study day | Regular classes |
| Dec. 9, 2022 | First day of fall term final exams | Study day |
| Dec. 22, 2022 | Fall term final exams | Closed |
| Dec. 23, 2022 | Emergency Day for fall term final exams | Closed |
| Jan. 3, 2023 | No classes | First day of winter term classes |
| Jan. 4, 2023 | First day of winter term classes | N/A |
| Apr. 4, 2023 | Regular classes | Study day |
| Apr. 6, 2023 | Study day | First day of winter term final exams |
| Apr. 26-29, 2023 | N/A | Winter term final exams |

NEW UNDERGRADUATE SCHOLARSHIPS, AWARDS, and BURSARIES

to be added to the Undergraduate Awards Database

- submitted for the September 14, 2021 meeting of Senate Undergraduate Council -

ENTRANCE AWARDS

Betty Bell Bursary

A bursary, valued at up to \$3,000, will be awarded annually to a full-time undergraduate student entering Year One of any program in the Faculty of Engineering who has a demonstrated financial need, as determined by the University of Waterloo. To be considered, students must complete the Waterloo Entrance Bursary application by April 15. This fund was created in memory of Betty Bell, who loved school but was unable to pursue higher education because of financial hardship.

Method of Financing: endowment

Vasu Chanchlani-Canada India Foundation Entrance Scholarship

Scholarships, valued at \$1,000 or \$2,000, will be awarded annually to international undergraduate students from India entering Year One of any program in the Faculty of Arts (excluding Accounting and Financial Management). Selection will be based on academic excellence (minimum 85% admission average) among students who are studying on an international study permit, are a resident of India, and are not receiving other major entrance scholarship funding. This fund is made possible by the late Vasu Chanchlani, who was a founding member of the Canada India Foundation, an NGO established to promote bi-lateral relations between Canada and India.

Method of Financing: endowment

Class of 1985 Mechanical Engineering Entrance Bursary

A bursary, valued at up to \$2,200, is awarded annually to a full-time undergraduate student entering Year One of Mechanical Engineering who has a demonstrated financial need, as determined by the University of Waterloo. To be considered, students must complete the Waterloo Entrance Bursary application by April 15. This fund is made possible by donations from alumni of the Mechanical Engineering class of 1985 to support future generations of Mechanical Engineering students.

Method of Financing: endowment

Stephen Connelly Memorial Scholarship

A scholarship, valued at \$2,000, will be awarded annually to a full-time undergraduate student entering Year One of Biomedical Engineering. This fund is made possible by a donation from Jeff and Tina Meisner in loving memory of a friend and colleague, Stephen Connelly, to encourage the next generation of engineers in the field of medicine. Stephen was a proud and successful Waterloo alumnus (BSc '85 and MSc '87, Kinesiology) whose passions led him to a career in medical device technology.

Method of Financing: annual donation (five-year pledge)

Engineering Entrance Awards for Black and Indigenous Students

Up to five awards, valued at \$5,000 each, will be provided to full-time undergraduate students who self-identify as Black or Indigenous and who are entering Year One of any program in the Faculty of Engineering. To be eligible for consideration, candidates must be Canadian citizens or permanent residents. For the purpose of this scholarship, an Indigenous person is a person who self-identifies as First Nations (Status/Non-Status), Métis, or Inuit as defined in the Canadian Constitution Act 1982. Selection will be based on a combination of academic excellence as well as extracurricular and leadership involvement as assessed through the Admission Information Form (AIF) and the online video interview. Recipients will be encouraged to engage in outreach activities in their community and/or high school to create pathways for future students and additional financial incentives will be provided to support these endeavours. The online application form must be submitted by April 15. This award is made possible by numerous donors that contributed to the Engineering Diversity Fund established by the Faculty of Engineering.

Method of Financing: pooled donations from various donors

NEW UNDERGRADUATE SCHOLARSHIPS, AWARDS, and BURSARIES

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- submitted for the September 14, 2021 meeting of Senate Undergraduate Council -

Hari Johri Entrance Award

An award, valued at \$5,000, will be provided annually to a full-time female international student entering Year One of any program in the Faculty of Engineering wherein women are underrepresented. This fund is made possible by a donation from Hari Johri to support and encourage women in the field of Engineering.

Method of Financing: annual donation (five-year pledge)

Kelvyn Lo Memorial Scholarship

One scholarship, valued at up to \$8,250, will be awarded annually to an outstanding full-time undergraduate student entering Year One of Electrical Engineering. This fund is made possible by donations from family, friends, and former classmates of Kelvyn Lo in honour of his constant quest for learning.

Method of Financing: endowment

Planning Class of 1995 Entrance Scholarship

A scholarship, valued at \$2,000, will be awarded annually to a full-time undergraduate student entering Year One of the School of Planning. Selection will be based on academic excellence combined with extracurricular and leadership involvement as assessed through the Admissions Information Form. This fund is made possible by donations from the Planning Class of 1995 to inspire and support the next generation of students in the School of Planning.

Method of Financing: one-time donation plus additional funding expected through pledges and monthly gifts (to support scholarship for a minimum of 11 years)

Tao Shang Award

An award, valued at \$2,000, will be provided annually to a full-time undergraduate student entering Year One of any program in the Faculty of Environment. Selection is to be based on academic achievement combined with extracurricular involvement and participation in volunteer activities as assessed through the Admission Information Form. This fund is made possible by a donation from Dr. Jiali Shang in loving memory of her paternal grandfather, Tao Shang, a medical doctor, to inspire the next generation of students.

Method of Financing: one-time donation plus faculty matching (to support scholarship for ten years)

Thiruchelvam Scholarship for Women in Technology

A scholarship, valued at \$1,200, will be awarded annually to a full-time female undergraduate student entering Year One of any program in the David R. Cheriton School of Computer Science in the Faculty of Mathematics wherein women are underrepresented. Selection will be based on academic excellence, the Admission Information Form, and contest scores as assessed through CEMC. This fund is made possible by a donation from Anusha Shanmugarajah (BMath '01) to honour her father who encouraged her to pursue a career in technology.

Method of Financing: endowment

AWARDS FOR CURRENT STUDENTS

Rod Barr Award

One award, valued at \$1,000, will be provided to a returning student enrolled in any program who has contributed to the life of St. Paul's University College. Rod Barr was a resident of the College in the 1960's. He went on to become a nationally recognized leader in the field of accounting. In 2009, Mr. Barr was appointed as President and Chief Executive Officer (CEO) of the Institute of Chartered Accountants of Ontario and helped lead the unification of various accounting professional bodies under one designation - the Chartered Professional Accountants of Ontario (CPA). Mr. Barr served on the Board of St. Paul's for over a decade, including a term as chair.

Method of Financing: St. Paul's University College funds

NEW UNDERGRADUATE SCHOLARSHIPS, AWARDS, and BURSARIES

to be added to the Undergraduate Awards Database

- submitted for the September 14, 2021 meeting of Senate Undergraduate Council -

Olive Carrick Scholarship in English

A scholarship, valued at \$2,000, will be awarded annually to a full-time undergraduate student enrolled in Year Three or Four of the Literature program in the Department of English Language and Literature in the Faculty of Arts. Selection is based on academic excellence (minimum 80% cumulative average) combined with extracurricular involvement in the arts and culture sector. Interested students should submit an application by February 15. This fund is made possible by a donation from Joe and Nancy Mattes (BA'89, MEDI '21) in honour of Nancy's mother, in celebration of her 96th birthday, and to honour her passion for higher education.

Method of Financing: annual donation (five-year pledge)

CISC Excellence Award in Steel Design

An award, valued at \$3,000, is provided annually to a full-time undergraduate student enrolled in Year Three or Four in the School of Architecture who has demonstrated outstanding work in the area of steel design. Selection will be based on project work in a third- or fourth-year Design Studio course. This fund is made possible by a donation from the Canadian Institute of Steel Construction.

Method of Financing: renewed annual donation (five-year pledge)

Co-operators Award for Black and Indigenous Students

An award, valued at \$2,500, is presented annually to a Black or Indigenous undergraduate student who is engaged in activities that are having a positive impact on the sustainability of our future and who is enrolled in Year Three or Four of one of the following programs: Accounting and Financial Management or Economics in the Faculty of Arts, Environment and Business, International Development or Environment, Resources and Sustainability in the Faculty of Environment, Kinesiology in the Faculty of Health, Computer Science or Mathematics/Chartered Professional Accountancy in the Faculty of Mathematics, Biotechnology/Chartered Professional Accountancy in the Faculty of Science, Computing and Financial Management, or Software Engineering. To be eligible for consideration, students must be Canadian citizens or permanent residents of Canada. Selection will be based on academic achievement (minimum 75% cumulative average) combined with an essay wherein students describe three ways they are making a difference today that will make our world a better, healthier place for generations to come through extracurricular and/or volunteer involvement. Interested students should submit an application by October 15.

Method of Financing: annual donation (five-year pledge)

Intellijoint Surgical Capstone Design Award

Five awards, valued at \$2,000 each, will be provided to full-time undergraduate students enrolled in Year Four of any program in the Faculty of Engineering and undertaking a fourth-year Capstone Design project. Selection will be based on proposals that, in the opinion of the selection committee, seek to improve patients' musculoskeletal health outcomes (e.g., surgical robotics and navigation, surgical planning, digital health, infection control, implant technology, wearables, rehabilitation, biologics, etc.). Interested students are to apply through the Faculty of Engineering's Capstone Design website: <https://uwaterloo.ca/engineering/capstone-design-awards-application-form>. This fund is made possible by a donation from Intellijoint Surgical.

Method of Financing: one-time donation

Konrad Group Digital Innovation Scholarship

A scholarship, valued at \$2,000, will be provided annually to a full-time undergraduate student enrolled in Year Three or Four of Computer, Electrical, Management, Software, or Systems Design Engineering. Selection will be based on academic excellence (minimum 80% cumulative average) combined with a demonstrated interest in pursuing a career in digital technology through work-term experiences, extracurricular activities, and/or project work. Interested students should submit an online application by October 1. This fund is made possible by a donation from Konrad Group, a global digital consulting firm with services in strategy, design, and development.

Method of Financing: annual donation (five-year pledge)

NEW UNDERGRADUATE SCHOLARSHIPS, AWARDS, and BURSARIES

to be added to the Undergraduate Awards Database

- submitted for the September 14, 2021 meeting of Senate Undergraduate Council -

Konrad Group Women in Technology Scholarship

A scholarship, valued at \$2,000, will be provided annually to a full-time female undergraduate student enrolled in Year Three or Four of Computer, Electrical, Management, Software, or Systems Design Engineering wherein women are underrepresented. Selection is based on academic excellence (minimum 80% cumulative average) combined with a demonstrated interest in pursuing a career in digital technology through work-term experiences, extracurricular activities, and/or project work. Interested students should submit an online application by October 1. This fund is made possible by a donation from Konrad Group, a global digital consulting firm with services in strategy, design, and development.

Method of Financing: annual donation (five-year pledge)

Ethan Latifpoor-Keparoutis Award

An award, valued at \$2,000, is provided annually to a full-time female undergraduate student enrolled in Year Two, Three, or Four of the Aviation program in the Faculty of Environment or the Faculty of Science. Selection will be based on academic achievement (minimum 75% cumulative average), successful completion of AVIA 101 and 102, and must be in progress of completing AVIA 203 and their Private Pilot License while enrolled in a Waterloo Aviation program. This fund is made possible by a donation from Vlas Keparoutis and Maryam Latifpoor-Keparoutis to inspire and support the next generation of Aviation students.

Method of Financing: annual donation (five-year pledge renewal)

Ethan Latifpoor-Keparoutis International Award

One award, valued at \$2,000, is provided annually to an international undergraduate student enrolled in Year Two, Three, or Four of the Aviation program in the Faculty of Environment or the Faculty of Science. Selection will be based on academic achievement (minimum 75% cumulative average), demonstrated financial need as determined by the University of Waterloo, successful completion of AVIA 101 and 102, and must be in progress of completing AVIA 203 and their Private Pilot License while enrolled in a Waterloo Aviation program. Students must complete a bursary application by February 28. This fund is made possible by a donation from Vlas Keparoutis and Maryam Latifpoor-Keparoutis to inspire and support the next generation of Aviation students.

Method of Financing: annual donation (five-year pledge)

LEA Engineering Award

Two awards, valued at \$2,500 each, will be awarded annually to full-time female undergraduate students enrolled in Year One of Civil or Geological Engineering who have either completed or are currently completing their first co-op work term. Selection will be based on academic achievement (minimum 70% cumulative average) combined with extracurricular involvement and work integrated learning aspirations in the area of civil or geological engineering. Preference will be given to students who are enrolled in the WE Accelerate Program. Interested students should submit an online application, including a current resume, by August 1. This award is made possible by a donation from LEA Consulting Ltd. to encourage more women to pursue a career in civil or geological engineering.

Method of Financing: annual donation (two-year pledge)

NEW UNDERGRADUATE SCHOLARSHIPS, AWARDS, and BURSARIES

to be added to the Undergraduate Awards Database

- submitted for the September 14, 2021 meeting of Senate Undergraduate Council -

MHBC Award for Black and Indigenous Students

An award, valued at \$2,500, will be provided annually to a Black or Indigenous undergraduate student enrolled in Year One or Two in the School of Planning. For the purpose of the award, an Indigenous person is a person who self-identifies as First Nations (Status/Non-Status), Métis, or Inuit/Inuk as defined in the Canadian Constitution Act 1982. Selection will be based on academic achievement (minimum 70% cumulative average) combined with an essay wherein students describe the positive impact they have had on their community through extracurricular and/or volunteer involvement. Preference will be given to students who have demonstrated involvement in the School of Planning and/or the planning profession. Interested students should submit an online application by March 15. This fund is made possible by a donation from MHBC Planning Limited to support Black and Indigenous students to pursue a career in planning.

Method of Financing: annual donation (five-year pledge)

Bob Rosehart Award

One award, valued at \$1,000, will be provided to a returning student in the Faculty of Engineering who has contributed to the life of St. Paul's University College. Bob Rosehart was a resident at St. Paul's in the very first year it opened. He holds a doctorate in Engineering and has had a very distinguished career in university administration, including appointments as President of Lakehead University and President of Wilfrid Laurier University. Bob Rosehart also spent over a decade on the Board of St. Paul's, including a term as chair.

Method of Financing: St. Paul's University College funds

Pearl Sullivan Hack the North Scholarship

Six awards, valued at \$3,333 each, will be provided annually (three awards in Winter term and three awards in Fall term) to undergraduate students enrolled in Year One or Two of any program at the University of Waterloo. Selection is based on participation in or attendance at Hack the North and demonstrated interest and experience in building technology and the potential for helping others in building communities. Interested students should submit an application by February 1 or October 1 to the Faculty of Engineering. This fund is made possible by a donation from Kevin Lau, Kartik Talwar, and Liam Horne in honour of Pearl Sullivan, former Dean, Faculty of Engineering, with the purpose of supporting students in their journey into the technology industry and helping them understand how to form a community around their own interests.

Method of Financing: annual donation (two-year pledge)

Women in Engineering Bursary

A bursary, valued at \$2,000, will be awarded annually to a full-time female undergraduate student enrolled in Year Two, Three, or Four of any program in the Faculty of Engineering wherein women are underrepresented, who has a demonstrated financial need. To be considered, students must complete a bursary application by October 15. This fund was created by Alistair Baker to support women in the Faculty of Engineering who need financial support.

Method of Financing: annual donation (five-year pledge)

STUDENT-ATHLETE AWARDS

Matrix Fitness Athletic Excellence Award

One award valued at \$2,000, or two awards valued at \$1,000 each, will be given to student-athletes on any women's varsity team, with preference to student-athletes who are employed by the Department of Athletics and Recreation. This award recognizes leadership, athletic talent and contribution to Warrior Athletics and Recreation, their team, the school and their community. This fund is supported by Matrix Fitness.

Method of Financing: annual donation + matching funds (five-year pledge)