



Academic Programs Committee of Council

University Course Challenge

Scheduled posting: June 2021

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

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

College of Arts and Science
College of Education
College of Graduate and Postdoctoral Studies
College of Pharmacy & Nutrition

Approval: Date of circulation: June 16, 2021
 Date of effective approval if no challenge received: June 30, 2021

Next scheduled posting:

The next scheduled posting will be August 17, 2021, with a submission deadline of **August 13, 2021**. Urgent items can be posted on request.

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

University Course Challenge – June 2021

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

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

Archaeology and Anthropology

Update: The revisions below were included in the May 2021 University Course Challenge, but are being withdrawn. The Department of Archaeology and Anthropology plan instead to delete ANTH 233, 236, and 354. New courses focussing on Ukrainian culture in Canada and Ukraine will be created with the UKR label. The old and new courses will not be equivalent in Banner. These proposals are expected to be submitted to the University Course Challenge in fall 2021.

ANTH 233.3 Anthropological Perspectives on Contemporary Ukraine

New subject code: UKR 233.3

Prerequisite change:

Old prerequisite(s): A 100-level course in the social sciences.

New prerequisite(s): 18 credit units at the university level, including 3 credit units from Humanities or Social Sciences.

New Note: Students with credit for ANTH 233 Anthropological Perspectives on Contemporary Ukraine may not take this course for credit.

*New title: **From the Forge Socio Cultural Perspectives on Contemporary Ukraine***

New course description: This course explores the effects of post-Soviet transition in today's Ukraine on the lives, identities and practices of its people. The emphasis is placed on how ethnography - a key research tool - helps to account for the changes that Ukrainian society has undergone since the late 1980s.

Rationale: Archaeology and Anthropology has asked STM to transfer this and two other anthropology courses to UKR. The changes to prerequisites will standardise these courses with each other and the changes to the catalogue entry/title reflect the move from anthropology.

ANTH 236.3 Ethnicity in Action Ukrainian Canadian Experience

New subject code: UKR 236.3

Prerequisite change:

Old prerequisite(s): ANTH 111; or 30 credit units of university courses including 3 credit units from 100-level ARCH, ECON, GEOG, INDG, LING, NS, POLS, PSY, SOC, or WGST

New prerequisite(s): 18 credit units at the university level, including 3 credit units from Humanities or Social Sciences.

New Note: Students with credit for ANTH 236 Ethnicity in Action Ukrainian Canadian Experience may not take this course for credit.

New course description: This course introduces students to Ukrainian Canadian culture and ethnicity from the perspective of ethnic and diaspora studies. Examining the cultural practices and heritage of Ukrainians in Canada, we will look at Ukrainian Canadian community development and the spiritual and material culture of the early settlers. We will discuss major social and cultural changes in the community life of Ukrainian Canadians as they were taking place throughout the last century, and place those in broader historical context. To deal with the questions of cultural vitality and continuity and change, we will look at Ukrainian Canadian folklore and art as cultural practice, and analyze the relationship between the cultural heritage, cultural practice, and ethnic identity of Ukrainians in Canada.

Rationale: See ANTH 233 above.

ANTH 354.3 Ritual Spaces in Ukrainian Culture

New subject code: UKR 354.3

Prerequisite change:

Old prerequisite(s): Any ANTH course numbered 200 to 235 or permission of the instructor.

New prerequisite(s): A 200-level course in UKR or ANTH, or permission of the department.

New Note: Students with credit for ANTH 354 Ritual Spaces in Ukrainian Culture may not take this course for credit.

New course description: By applying ritual and symbolic analysis to the study of culture, this course investigates selected examples of Ukrainian traditional and contemporary culture in which ritual plays a prominent role. A comparative perspective is applied with the objective to better comprehend complex processes of cultural continuity and change against the backdrops of Eastern Europe and multicultural Canada.

Rationale: See ANTH 233 above.

College of Education – June 2021 University Course Challenge

The curricular revisions listed below were approved by the College of Education Faculty Council on Friday, June 11, 2021 and are now submitted to the University Course Challenge for a approval.

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

Bachelor of Education (B.Ed.) – Early/Middle Years Program Routes

Given changes to the College of Arts and Science Biomedical Science course subject labels, the following changes are being made to the Science breadth requirement, Science Teaching Area 1 and Science Teaching Area 2:

- To allow **BMIS, CPPS, and NEUR** courses as acceptable options for the Science breadth requirement, Science Teaching Area 1 requirements, and Science Teaching Area 2 requirements for the B.Ed. program routes at the Early/Middle Years level.
- To remove **BIOC, HSC, MICIM, PCOL, and PHPY** subjects codes as options for the Science breadth requirements, Science Teaching Area 1, and Science Teaching Area 2 requirements for the B.Ed. program routes at the Early/Middle Years level since they will no longer be offered by the College of Arts and Science.

Course and Program Catalogue Entries

Early/Middle Years

Science

Choose **3 credit units** of Science

Please Note: not required if Science is a Teaching Area.

*[PLSC 214.3](#) Statistical Methods Statistical Methods is not acceptable toward this requirement.

- [ACB — 200-Level, 300-Level, 400-Level](#)
- [ARCH — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [ASTR — 100-Level, 200-Level, 300-Level, 400-Level](#)
- ~~[BIOC — 200-Level, 300-Level, 400-Level](#)~~
- [BIOL — 100-Level, 200-Level, 300-Level, 400-Level](#)
- ~~[BMIS — 100-Level, 200-Level, 300-Level, 400-Level](#)~~
- [BMSC — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [CHEM — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [CMPT — 100-Level, 200-Level, 300-Level, 400-Level](#)
- ~~[CPPS — 100-Level, 200-Level, 300-Level, 400-Level](#)~~
- [EVSC — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [GEOL — 100-Level, 200-Level, 300-Level, 400-Level](#)
- ~~[HSC — 100-Level, 200-Level, 300-Level, 400-Level](#)~~

- ~~MCIM — 100-Level, 200-Level, 300-Level, 400-Level~~
- [NEUR — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [PHYS — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [PLSC — 100-Level, 200-Level, 300-Level, 400-Level](#)
- ~~BMSC 207.3 Human Body Systems I~~
- ~~BMSC 208.3 Human Body Systems II~~
- ~~CPPS 304.3 Introduction to Pharmacology~~
- ~~CPPS 306.3 Systems Pharmacology I Cardiorespiratory Renal Gastrointestinal and Neuropharmacology~~
- ~~CPPS 307.3 Systems Pharmacology II Chemotherapy Immune and Endocrine Pharmacology~~
- [GEOG 375.3 Engineering Hydrogeology](#)
- [GEOG 120.3 Introduction to Global Environmental Systems](#)
- [GEOG 125.3 Environmental Science and Society](#)
- [GEOG 233.3 Introduction to Weather and Climate](#)
- [GEOG 235.3 Earth Processes and Natural Hazards A Canadian Perspective](#)
- [GEOG 271.3](#)
- [GEOG 280.3 Environmental Geography](#)
- [GEOG 322.3 Introduction to Geographic Information Systems](#)
- [GEOG 323.3 Remote Sensing](#)
- [GEOG 325.3 River Systems](#)
- [GEOG 328.3 Groundwater Hydrology](#)
- [GEOG 335.3 Glacial Geomorphology](#)
- [GEOG 351.3 Northern Environments](#)
- [GEOG 423.3 Advanced Remote Sensing](#)
- [GEOG 490.3 Honours Thesis in Hydrology or Geomatics](#)
- [INDG 241.3 Weaving Indigenous Science and Western Science](#)
- [NUTR 120.3 Basic Nutrition](#)
- ~~PHPY 301.3~~
- ~~PHPY 302.3 Human Physiology Transport Systems~~
- ~~PHPY 303.3 Human Physiology Reproduction Growth and Energy Homeostasis~~
- ~~PHPY 308.3 Experimental Basis of Physiology and Pharmacology~~
- ~~PHPY 401.3 Animal Surgery and Experimentation~~
- ~~PHPY 403.3 Physiological Genomics and Pharmacogenetics~~
- ~~PHPY 405.3 Advances in Cardiovascular Physiology and Pharmacology~~
- [TOX 300.3 General Principles of Toxicology](#)

Commented [VDA1]: Encompassed as part of general subject code above.

Teaching Area 1 [Science](#)

Please Note: [PLSC214.3](#) Statistical Methods cannot be used to fulfill this requirement. Also, please note that any 100-level course taken after the first 6 credit units will be counted as a senior course.

Choose 18 credit units from the following Science courses:

- [ACB — 200-Level, 300-Level, 400-Level](#)
- [ARCH — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [ASTR — 100-Level, 200-Level, 300-Level, 400-Level](#)
- ~~[BIOC — 200-Level, 300-Level, 400-Level](#)~~
- [BIOL — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [BMIS — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [BMSC — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [CHEM — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [CMPT — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [CPPS — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [EVSC — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [GEOL — 100-Level, 200-Level, 300-Level, 400-Level](#)
- ~~[HSC — 100-Level, 200-Level, 300-Level, 400-Level](#)~~
- ~~[MCIM — 100-Level, 200-Level, 300-Level, 400-Level](#)~~
- [NEUR — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [PHYS — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [PLSC — 100-Level, 200-Level, 300-Level, 400-Level](#)
- ~~[BMSC 207.3 Human Body Systems I](#)~~
- ~~[BMSC 208.3 Human Body Systems II](#)~~
- ~~[CPPS 304.3 Introduction to Pharmacology](#)~~
- ~~[CPPS 306.3 Systems Pharmacology I Cardiorespiratory Renal Gastrointestinal and Neuropharmacology](#)~~
- ~~[CPPS 307.3 Systems Pharmacology II Chemotherapy Immune and Endocrine Pharmacology](#)~~
- [GEOE 375.3 Engineering Hydrogeology](#)
- [GEOG 120.3 Introduction to Global Environmental Systems](#)
- [GEOG 125.3 Environmental Science and Society](#)
- [GEOG 233.3 Introduction to Weather and Climate](#)
- [GEOG 235.3 Earth Processes and Natural Hazards A Canadian Perspective](#)
- [GEOG 271.3](#)
- [GEOG 280.3 Environmental Geography](#)
- [GEOG 322.3 Introduction to Geographic Information Systems](#)
- [GEOG 323.3 Remote Sensing](#)
- [GEOG 325.3 River Systems](#)
- [GEOG 328.3 Groundwater Hydrology](#)
- [GEOG 335.3 Glacial Geomorphology](#)
- [GEOG 351.3 Northern Environments](#)
- [GEOG 423.3 Advanced Remote Sensing](#)
- [GEOG 490.3 Honours Thesis in Hydrology or Geomatics](#)
- [INDG 241.3 Weaving Indigenous Science and Western Science](#)
- [NUTR 120.3 Basic Nutrition](#)
- ~~[PHPY 301.3](#)~~

Commented [VDA2]: Encompassed as part of general subject code above.

- ~~PHPY 302.3 Human Physiology Transport Systems~~
- ~~PHPY 303.3 Human Physiology Reproduction Growth and Energy Homeostasis~~
- ~~PHPY 308.3 Experimental Basis of Physiology and Pharmacology~~
- ~~PHPY 401.3 Animal Surgery and Experimentation~~
- ~~PHPY 403.3 Physiological Genomics and Pharmacogenetics~~
- ~~PHPY 405.3 Advances in Cardiovascular Physiology and Pharmacology~~
- [TOX 300.3](#) General Principles of Toxicology

Teaching Area 2 - [Science](#)

Please Note: [PLSC214.3](#) Statistical Methods cannot be used to fulfill this requirement. Also, please note that any 100-level course taken after the first 6 credit units will be counted as a senior course.

Choose 12 credit units from the following Science courses:

- [ACB — 200-Level, 300-Level, 400-Level](#)
- [ARCH — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [ASTR — 100-Level, 200-Level, 300-Level, 400-Level](#)
- ~~[BIOC — 200-Level, 300-Level, 400-Level](#)~~
- [BIOL — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [BMIS — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [BMSC — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [CHEM — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [CMPT — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [CPPS — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [EVSC — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [GEOL — 100-Level, 200-Level, 300-Level, 400-Level](#)
- ~~[HSC — 100-Level, 200-Level, 300-Level, 400-Level](#)~~
- ~~[MCIM — 100-Level, 200-Level, 300-Level, 400-Level](#)~~
- [NEUR — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [PHYS — 100-Level, 200-Level, 300-Level, 400-Level](#)
- [PLSC — 100-Level, 200-Level, 300-Level, 400-Level](#)
- ~~[BMSC 207.3 Human Body Systems I](#)~~
- ~~[BMSC 208.3 Human Body Systems II](#)~~
- ~~[CPPS 304.3 Introduction to Pharmacology](#)~~
- ~~[CPPS 306.3 Systems Pharmacology I Cardiorespiratory Renal Gastrointestinal and Neuropharmacology](#)~~
- ~~[CPPS 307.3 Systems Pharmacology II Chemotherapy Immune and Endocrine Pharmacology](#)~~
- [GEOE 375.3](#) Engineering Hydrogeology

Commented [VDA3]: Encompassed as part of general subject code above.

- [GEOG 120.3](#) Introduction to Global Environmental Systems
- [GEOG 125.3](#) Environmental Science and Society
- [GEOG 233.3](#) Introduction to Weather and Climate
- [GEOG 235.3](#) Earth Processes and Natural Hazards A Canadian Perspective
- [GEOG 271.3](#)
- [GEOG 280.3](#) Environmental Geography
- [GEOG 322.3](#) Introduction to Geographic Information Systems
- [GEOG 323.3](#) Remote Sensing
- [GEOG 325.3](#) River Systems
- [GEOG 328.3](#) Groundwater Hydrology
- [GEOG 335.3](#) Glacial Geomorphology
- [GEOG 351.3](#) Northern Environments
- [GEOG 423.3](#) Advanced Remote Sensing
- [GEOG 490.3](#) Honours Thesis in Hydrology or Geomatics
- [INDG 241.3](#) Weaving Indigenous Science and Western Science
- [NUTR 120.3](#) Basic Nutrition
- ~~[PHPY 301.3](#)~~
- ~~[PHPY 302.3](#) Human Physiology Transport Systems~~
- ~~[PHPY 303.3](#) Human Physiology Reproduction Growth and Energy Homeostasis~~
- ~~[PHPY 308.3](#) Experimental Basis of Physiology and Pharmacology~~
- ~~[PHPY 401.3](#) Animal Surgery and Experimentation~~
- ~~[PHPY 403.3](#) Physiological Genomics and Pharmacogenetics~~
- ~~[PHPY 405.3](#) Advances in Cardiovascular Physiology and Pharmacology~~
- [TOX 300.3](#) General Principles of Toxicology

College of Graduate and Postdoctoral Studies, University Course Challenge – June 2021

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

New Course Proposals

ANSC 863.3: Advanced Ruminant Nutritional Management

This course is designed to expose and build capacity in the students' ability to develop, evaluate, and implement nutritional and management programs for dairy cattle. Students will act as nutritional consultants for livestock operations owned by the UofS to build experience with inventory management, ration formulation, and pricing. This activity will also build inter-personal skills and communication ability.

Restriction: Must be enrolled in a graduate program in Animal Science or have permission of the instructor.

Rationale: Students in the Department of Animal and Poultry Science have ample opportunity to learn advanced concepts related to animal nutrition, physiology, and management; however, there are few courses that provide the opportunity to apply those concepts and to practice these skills. In addition, many of our graduate students gain employment working as nutritional consultants, but few have had the opportunity to identify challenges and opportunities, implement changes, and evaluate those changes. This course provides a unique opportunity for students to build problem solving skills, provide practice for students to apply biological modeling systems to help refine nutritional management, and to build communication skills related to nutritional management of livestock.

CMPT 828.3: Advanced Deep Learning

A survey of Deep Learning research topics in computer vision and data science. Deep learning techniques may include Deep Neural Networks, Convolutional Neural Networks, Recurrent Networks, Deep Generative Models and Reinforcement Learning. Application domains will focus on computer vision problems, including image classification, object detection and image segmentation. Additional application domains relevant to graduate students taking the course will be included. Software tools will be introduced for practical application.

Instructor: Ian Stavness, PhD

Notes: Instructor approval required. Students may not receive credit for CMPT 489 and CMPT 828.

Rationale: Machine learning is a rapidly expanding research area of Computer Science and within the past five years a new sub-discipline, broadly called "Deep Learning," has emerged as the dominant technique in a large class of data science problems. Most notably in computer vision, deep learning approaches, including convolutional neural networks, have demonstrated state-of-the-art task performance across many categories of tasks. Deep learning is quickly expanding in related application domains. The demand for graduate student trainees who have experience with deep learning methods is also rapidly growing. This course will serve the research demands of graduate students within the Dept. of Computer Science and related data science disciplines on campus.

CMPT 838.3: Foundations of Computer Security

Computer security is an essential requirement of any software system. This course covers the fundamental principles, mechanisms and models of security. More specifically, the course introduces students to security management, defense, and exploitation techniques including vulnerability discovery and exploitation, malicious code analysis, network traffic interception and manipulation, reconnaissance and information gathering, social engineering, intrusion detection and prevention. This is a hands-on

course that gives students an opportunity to assess current security threats and their countermeasures, explore recent advancements in computer security.

Note: Students may not receive credit for CMPT 438 and CMPT 838.

Rationale: This course will fill a historic weakness in the department in the area of computer and information security.

CMPT 854.3: Empirical Software Engineering

Experimentation is important in the software engineering discipline to build a corpus of knowledge based on empirical studies. This course will explore different methods for designing and conducting empirical studies in software engineering. It will cover the various steps of conducting a research project including identifying a research problem, critically review the existing body of literature pertaining to the research area, formulating research questions, collecting, analyzing and interpreting data, building models, assessing validity and reporting the results. In this course, we will evaluate different research methods such as case studies, surveys, grounded theory, ethnographies, and experiments among others.

Instructor: Zadia Codabux, PhD

Rationale: This course will prepare students for advanced software engineering research by exposing them to different techniques for designing and conducting empirical studies in software engineering. The students will learn how to formulate research questions and hypotheses, collect, analyze and interpret data. Then they will be able to build machine learning models and report any threats to validity. Students will also learn how to conduct systematic literature reviews by reviewing the state of the art.

GEOG 836.3: Ecohydrology

This course explores the dynamic and reciprocal interplay between hydrological processes and ecological pattern and processes.

Instructor: Cherie Westbrook, PhD

Restriction: An undergraduate degree in a natural resources field plus permission of the instructor.

Rationale: Demand for graduate training in hydrology is estimated to be high as we are in the midst of a global water crisis that affects all aspects of economy, society and environment around the world, including in Canada. This crisis has created a strong appetite for a postgraduate level training in hydrology throughout the Canadian and international environmental science, geoscience, geography and engineering communities that is not matched by current offerings. National and international graduate students and postdoctoral scholars, who need to incorporate hydrology in their research, and practicing engineers, environmental scientists and geoscientists will benefit substantially from the suite of graduate hydrology classes offered by USask, and by GEPL specifically. Demand for graduate training in hydrology is high - over the past decade, GEPL had 48 graduate theses (4.8/year) in hydrology. Further, two of our graduate-level courses in hydrology (GEOG 825, 827) "went viral" during the Covid-19 pandemic providing evidence of high student interest. Not covered by these existing courses is the rapidly growing area of ecohydrology. Ecohydrology contributes to building an important bridge between hydrology and ecology and environmental management. It is expected that ecohydrology will have increasing application in efforts to solve formidable global challenges such as abating aquatic ecosystem eutrophication and utilizing wetlands better to control the global and regional carbon, water and nutrient cycling that hinder efforts to increase the sustainability of the social and economic developments. Very few universities in the world yet offer a graduate-level course in ecohydrology, positioning USask to be a leader in this area.

GEOG 881.3: Land Use and Transportation Planning

The course introduces the emerging land use and transportation planning issues, policies, trends, modelling, and analytical tools. It focuses on the areas of land use and transportation systems integration, public transport planning and operations, and planning for active transportation and shared-mobility options. Students will understand and learn how to adapt evidence-based approaches to evaluate land use and transportation systems performance.

Instructor: Ehab Diab, PhD

Rationale: This course will focus on a timely topic related to the fast-emerging technological and social changes that are affecting the field of land use and transportation planning. It provides students with a good understanding of various emerging issues, technologies, trends, modelling, and analytical tools used in the field. This will help students to recognize the importance of land use and transport systems integration to achieve the overarching goals of improving the community's well-being and quality of life. Currently, there are no graduate courses at USask that prepare students to conduct land use and transportation planning research or to work professionally in this area. The course will be of interest to not only planning students but also other students who want to work on issues related to cities from sociology, engineering, and public health. The course will be also of interest to practitioners working in this area.

GEOG 882.3: Professional Skills in Environmental Planning

Professional skills development for the environmental planner. A focus on personal and professional capacity development in a variety of professional skills including Indigenous engagement and ethical conduct, policy, plan, and program evaluation, environment and planning legislation and regulation, and principles of data management. Students complete a series of self-guided modules.

Instructors: Jill Blakley, PhD; Bram Noble, PhD; or Ehab Diab, PhD

Rationale: At present, there is no similar courses offered at USASK that focus on developing students' personal and professional capacity in a variety of skills including Indigenous engagement and ethical conduct, policy, plan, and program evaluation, environment and planning legislation and regulation, and principles of data management. This course aims at fostering the development of professional skills utilized within the field of environmental planning.

GEOG 884.3: Water Resource Planning and Management

A graduate course providing topics relating to water planning and management in Canada. Concepts and theory will be augmented with practical, applied learning to prepare students to engage as practitioners in the field. Themes covered include water law and governance, planning process models, watershed assessments, source water protection, innovation in urban stormwater management, Indigenous water issues and integrated water resource management.

Instructor: Robert Patrick, PhD

Rationale: At present, there is no similar course on offer at USASK with a focus on the processes and practices of water resource planning and management in the urban and rural land use contexts covering topics such as Indigenous water issues in Canada, water and land use policy, water governance, principles and practices of integrated watershed planning and management, source water protection, and innovation in urban stormwater and wastewater management.

Approved by CGPS May 18, 2021

PHAR 871.3: Molecular Pharmacology

Students will learn to identify, evaluate, and analyze molecular pharmacology data in order to gain insight into drug mechanism(s) of action, pharmacodynamics, pharmacokinetics, and drug-drug interactions. Learning will utilize real-world data and primary literature to help students learn drug

mechanism(s) of action in conjunction with pathophysiological processes of the major body systems. Using knowledge from previous foundational sciences courses, students will learn to integrate knowledge to assess and critique data, information, and pharmacological principles.

Prerequisite: BSc in natural or medical sciences

Instructor: Robert Laprairie, PhD

Rationale: Students training in the pharmaceutical and biomedical sciences regularly encounter large datasets and molecular pharmacology data in their personal experiments and reading of the scientific literature. An exact and comprehensive understanding of the terminology and experimental design is necessary to succeed in modern biomedical research and drug discovery. However, the highly technical nature of terminology used - as well as the volume of data often presented with such experiments - represents a barrier to entry and advancement for many students. This course aims to overcome this barrier by providing students with access to real world data and data analysis techniques while exploring and understanding the drug discovery process. The long-term goal of this course is to equip trainees so that they have the knowledge and analytical skills to operate in a pharmaceutical industry research setting.

Approved by CGPS June 9, 2021

BMIS 825.3: Advances in Molecular Bacterial Pathogenesis

Explores the molecular mechanism of bacterial pathogenesis through landmark articles and current research papers. Topics include molecular mechanisms in bacterial pathogen, their genetic regulation, and cutting edge approaches and various model systems to study pathogenesis.

Instructor: Jenny-Lee Thomassin, PhD

Notes: Permission of the course instructor is required. Students with credit for MICR 425, MCIM 425, or MCIM 825 may not take this course for credit.

Rationale: This course was previously delivered as MCIM 825. It had gone moribund and it has been updated for currency with a new label.

For Information

Course Modifications

NURS 814.3: Indigenous Health Policies

This course examines the health of Indigenous populations in Canada. Health and illness concepts will be embedded within historical, social, cultural and political realities. The student will have the opportunity to critically examine and reflect on Indigenous health policies and health care practices.

Weekly hours: 3 Seminar/Discussion hours

Prerequisite(s): Enrolment in a graduate program and completion of at least one graduate-level foundational course.

~~Deleted: Aboriginal~~

~~Deleted: Issues~~

~~Deleted: Examines issues and challenges related to the health of Aboriginal populations in Canada. Health and illness concepts will be embedded within historical, social, cultural, and political realities. The student will have the opportunity to critically examine and reflect on Aboriginal health issues and health care practices.~~

College of Pharmacy and Nutrition – University Course Challenge, June 2021

The following curricular changes were approved by the College of Pharmacy & Nutrition Pharmacy Program Committee and are being submitted to the June 2021 University Course Challenge for approval:

New Courses

PHAR 220.3

Drug Discovery and Development

Students will learn the processes of drug discovery and development from initial identification of a drug-like molecule; in vitro and in vivo pharmacodynamic and pharmacokinetic evaluation; pre-clinical assessment; and clinical trial design and considerations. Students will also learn about intellectual property protection for new chemical entities. Learning will utilize real-world data and primary literature to help students learn drug mechanism(s) of action in conjunction with pathophysiological processes of the major body systems. Using knowledge from previous foundational sciences courses, students will learn integrate knowledge to assess and critique data, information, and pharmacological principles.

Restriction: Completion of Year 1 of the Pharm.D. program

Prerequisite or Corequisite: PHAR 121.3, PHAR 122.3, PHAR 123.3, PHAR 124.3

Rationale: Year 2 of the Pharm.D. program requires students complete 3 credit unit PHAR elective in Term 2. PHAR 220.3 is one of the elective courses that will be offered to students.

PHAR 320.3

Research Methods

This elective intends to provide students hands-on experience with various instruments and techniques commonly used in pharmaceutical science research. Students are introduced to basic techniques and instruments in drug formulation, pharmaceutical analysis, pharmacology, cellular and molecular biology, and medicinal chemistry to provide practical insights into the research that turns a compound into a drug product.

Restriction: Completion of Year 2 of the Pharm.D. program

Rationale: Year 3 of the Pharm.D. program requires students complete 3 credit unit PHAR electives in Term 1 and Term 2. PHAR 320.3 is one of the elective courses that will be offered to students.

PHAR 350.3

Applied Pharmacotherapy in Older Adults

With Canada's aging population, as well as the accumulation of morbidity that often accompanies aging, it is imperative that pharmacists are adept at identifying and addressing medication-related problems in older adults. Through a mixture of didactic and case-based

discussions, students will integrate learning on geriatric-specific issues with previous pharmacotherapeutic knowledge to develop the necessary skills to provide pharmaceutical care to older adults. Students will be expected to develop and demonstrate competence in optimizing drug therapy for older adults with multiple medications and medical issues

Restriction: Completion of Year 2 of the Pharm.D. program

Prerequisite or Corequisite: PHAR 255.6, PHAR 263.1, PHAR 273.3, PHAR 285.4, PHAR 359.6

Rationale: Year 3 of the Pharm.D. program requires students complete 3 credit unit PHAR electives in Term 1 and Term 2. PHAR 350.3 is one of the elective courses that will be offered to students.

PHAR 370.3

Complex Cases I

This course allows students the opportunity to work through complex therapeutic problems in a case-based format. Generally patient cases will focus on one or two main therapeutic problems that are complicated by comorbid conditions and/or lack of response. The key to student success will be to come prepared for weeks 2 and 3 of every module.

Restriction: Completion of Year 2 of the Pharm.D. program

Prerequisite or Corequisite: PHAR 255.6

Rationale: Year 3 of the Pharm.D. program requires students complete 3 credit unit PHAR electives in Term 1 and Term 2. PHAR 370.3 is one of the elective courses that will be offered to students.

PHAR 371.3

Complex Cases II

This course allows students the opportunity to work through complex therapeutic problems in a case-based format. Generally patient cases will focus on one or two main therapeutic problems that are complicated by comorbid conditions and/or lack of response. The key to student success will be to come prepared for weeks 2 and 3 of every module.

Restriction: Completion of Year 2 of the Pharm.D. program

Prerequisite or Corequisite: PHAR 255.6

Rationale: Year 3 of the Pharm.D. program requires students complete 3 credit unit PHAR electives in Term 1 and Term 2. PHAR 371.3 is one of the elective courses that will be offered to students.