

COURSES OF INSTRUCTION

ANAT 100 Anatomy of the Human Body Units: 3.00

This anatomy course is designed to introduce students to the basic structure and functional relationship of the human body. Through a series of weekly learning modules, students will learn about the basic language of Gross Anatomy and Histology in order to understand the working of various body systems. This course is also suitable for individuals who have a general interest in human anatomy.

Requirements: Exclusion ANAT 101/3.0; IDIS 150/6.0 One-Way Exclusion May not be taken with or after: ANAT 215/3.0; ANAT 216/3.0; ANAT 312/3.0; ANAT 315/3.0; ANAT 316/3.0

Offering Faculty: Faculty of Health Sciences

ANAT 309 Functional Histology Units: 3.00

Introduction to mammalian histology, or microscopic anatomy, a branch of anatomical sciences focusing on structures and functions of tissues and cells at the light and electron microscope level. Structure-function relationships within many tissues and organs at the cell and tissue level will be a focus.

NOTE Priority will be given to students registered in a LISC Specialization Plan or Health Sciences plan.

LEARNING HOURS 120 (36L;24Lb;60P)

Requirements: Prerequisite Level 3 or above and (PHGY 170 or BIOL 102 or BIOL 103 or BIOL 202).

Offering Faculty: Faculty of Health Sciences

ANAT 380 Clinically Relevant Human Anatomy Units: 3.00

ANAT 380 will explore regional anatomy of the human body focusing on the major organ systems, their components, and the relationships between them. In this course, students will apply anatomical knowledge to collaboratively solve case-based clinical scenarios, and develop a realistic clinical case based on an underlying anatomical issue.

Note: Also offered online.

LEARNING HOURS may vary 120(48O;72P)

Requirements: Minimum 3rd year standing one of: ANAT 100 OR ANAT 101 OR ANAT 215/216 OR ANAT 315/316 AND one of: PHGY 215/216 OR KNPE 125/225

Offering Faculty: Faculty of Health Sciences

ANAT 391 Introduction to Cadaveric Dissection Units: 3.00

ANAT 391 is a course on human macro and microdissection that uses a series of carefully curated online modules, group learning activities, assignments, and inquiry-based learning to enable students to explore the process of human dissection and discover the value of teaching anatomy using dissected human specimens. Through active and collaborative learning, students will need to apply knowledge from previous anatomy courses in addition to practical skills taught via online modules and in-person sessions, to dissect an assigned human cadaveric specimen. The function of dissection is to reveal all possible structures and associated anatomical landmarks of a named dissection goal. Students will need to think critically to complete their dissections and present their findings to their peers. A focus will be on contextualizing the dissected work in the broader field of anatomical education. The course has various types of assessments including low stakes quizzes, a dissection plan, a study proposal, a presentation, and a dissection defense.

Requirements: Minimum 3rd year standing Minimum standing of B+ 3.3 in one of: I. ANAT 100 AND ANAT 380 OR II. ANAT 101 AND ANAT 380 OR III. ANAT 215 and ANAT 216 OR IV. ANAT 315 and ANAT 316

Offering Faculty: Faculty of Health Sciences

ANAT 471 Human Embryology Units: 3.00

In ANAT 471, students work individually/collaboratively to explore stages of normal human embryonic and fetal development and how changes in underlying mechanisms link to common congenital or developmental abnormalities. Various assessments include quizzes, a journal club, a PBL investigating a developmental abnormality, a midterm and final exam.

LEARNING HOURS 120 (48O;72P).

Requirements: Prerequisite Level 3 or above and one of ([ANAT 100 and ANAT 380] or [ANAT 101 and ANAT 380] or [ANAT 215 and ANAT 216] or [ANAT 315 and ANAT 316]).

Course Equivalencies: ANAT 417, ANAT 471

Offering Faculty: Faculty of Health Sciences

**BCHM 218 Molecular Biology Units: 3.00**

Molecules and macromolecules that participate in the replication and expression of genes. Current methods for exploring the structure, function, and manipulation of genetic material.

NOTE Also offered online. Consult the Bachelor of Health Sciences program office.

LEARNING HOURS may vary. 120 (36L;12T;72P)

EQUIVALENCY MBIO 218/3.0.

Requirements: Minimum 2nd year (Level 2) standing and one of (BIOL 102/3.0; PHGY 170/3.0) and one of (CHEM 112/6.0; CHEM 114/3.0).

Course Equivalencies: BCHM218; MBIO218;MBIO318

Offering Faculty: Faculty of Health Sciences

BCHM 270 Biochemical Basis of Health and Disease Units: 3.00

This course will introduce general biochemical concepts that will allow for an understanding of the biological and chemical principles underlying human physiology, health and disease. The course will provide self-paced learning and utilize evidence-based teaching principles, small group learning, peer-learning and guided-independent learning methodologies to provide an inclusive learning environment. Students will gain an enhanced appreciation of general applications of biochemistry as applied in day to day healthy life and during the disease states, diagnosis and clinical management of metabolic disorders.

NOTE Also offered online. Consult the Bachelor of Health Sciences program office.

NOTE This introductory biochemistry online course is intended for prospective students in Nursing, Environmental Sciences, Engineering, Commerce, and general science programs.

NOTE May not be taken for credit towards the Plan requirements of the BCHM or LISC Specialization or Major Plans.

LEARNING HOURS may vary 126 (66O;60P)

Requirements: Minimum 2nd year (Level 2) standing and [(PHGY 170/3.0) or (BIOL 102/3.0 and BIOL 103/3.0)], or permission of the instructor. Exclusion BCHM 102/3.0 One-Way exclusion May not be taken with or after BCHM 310/6.0; BCHM 315/3.0.

Offering Faculty: Faculty of Health Sciences

BCHM 370 Genetics and Genomics Units: 3.00

An introduction to the field of applied genomics for identifying genes underlying multi-factorial traits, diseases, and drug treatment outcomes. Basic principles of gene mapping studies will be covered in the context of recent advances in the field including statistical methods, and integrative analyses of biological datasets.

Notes: Also offered online

LEARNING HOURS may vary: 120(48O;72P)

Requirements: Minimum 3rd year (Level 3) standing and one of (BCHM 218/3.0; BCHM 270/3.0) or permission of the instructor. . Exclusion BIOL 331/3.0.

Offering Faculty: Faculty of Health Sciences

BCHM 482 Proteomics and Metabolomics Units: 3.00

This course will focus on the principles of proteomics and metabolomics and their application in the new systems biology `omics approach to scientific discovery. This course will emphasize both the methodologies used in proteomics and metabolomics, as well as their applications in both research, medical diagnostics, and disease management.

NOTE: Only offered online. Consult the Bachelor of Health Sciences program office.

LEARNING HOURS may vary: 114 (36O;78P)

Requirements: - 4th year (Level 4) standing - BCHM 310 OR BCHM 315 BCHM 316 OR BCHM 218, BCHM 270, BCHM 370 - a Cumulative GPA of 2.5 - registration in a Health Sciences Program or a BCHM/LISC MAJ or SSP Plan

Offering Faculty: Faculty of Health Sciences

BMED 390 Integrative Laboratory Course Units: 3.00

This course will be a two-week intensive multidisciplinary laboratory course conducted in-person on the Queen's University Campus. Students will participate in a variety of laboratories, including in the disciplines of physiology, pharmacology, anatomy, microbiology, and biochemistry. Students will learn a number of different laboratory techniques, developing skills in scientific methodology, data acquisition and interpretation. Students will also attain skills in critical thinking and hypothesis development, as well as gain experience in writing laboratory reports, anatomy bell-ringers, presenting their results in posters, debates and in oral presentations.

Requirements: Minimum 3rd year (Level 3) standing and (one of PHGY 210/6.0 OR PHGY 214/6.0 OR [PHGY 215/3.0 and PHGY 216/3.0]), and (one of PHAR 230/3.0; PHAR 270/3.0; PHAR 370/3.0; PHAR 340/3.0), or permission from the instructor. Equivalency LISC 390/3.0

Offering Faculty: Faculty of Health Sciences

BMED 470 Principles of 'Omics' Units: 3.00

BMED 470 Principles of 'Omics' will build on information learned in BCHM 370 as well as explore the integration of genomics with other 'omics' such as transcriptomics, epigenomics, proteomics, and metabolomics data in the study of mechanisms controlling biological processes and disease risk. This course will cover technological advances in omics data collection, computer systems for management and processing, as well methods for the integrative analysis of large-scale omics data in biomedical research.

Requirements: Minimum 4th year (Level 4) standing and one of (BCHM 370/3.0; BIOL 331/3.0) or permission of the instructor.

Offering Faculty: Faculty of Health Sciences

BMED 483 Advanced Topics In Infectious Diseases Units: 3.00

This course will examine basic principles of infectious diseases such as Pathophysiology, Epidemiology and Transmission, and Control of Infectious Agents including an emphasis on Antimicrobial Therapy and Resistance. Selected Infectious Disease syndromes will be examined to explore unique host microbe interactions. Students will work through the topics online using interactive multimedia modules. Student assessment will include weekly online quizzes, group, and individual assignments. Active participation will also form part of student assessment. At the completion of the course, students will have an understanding of the key concepts of emerging topics in infectious diseases.

Requirements: Minimum 4th year (Level 4) standing and one of (MICR 320/3.0; MICR 270/3.0; MICR 221/3.0; MICR 271/3.0), or permission from the instructor.

Offering Faculty: Faculty of Health Sciences

CANC 380 Evolutionary Biology of Cancer Units: 3.00

This online course is designed to introduce students to cancer as an evolutionary problem. The material is unique in that it emphasizes the impact of the immune system in fighting cancer while at the same time shaping tumour cell evolution. Students will need to synthesize the impact of factors present in the tumour microenvironment.

NOTE Also offered online.

LEARNING HOURS may vary 120 (720;48P)

Requirements: Minimum 3rd year (Level 3) standing and one of (MICR 270/3.0; MICR 360/3.0; MICR 386/3.0) and one of (BCHM 270/3.0; BCHM 218/3.0).

Offering Faculty: Faculty of Health Sciences

CRSS 454 Cardiovascular Sciences Units: 3.00

A study of the physiology, pharmacology and anatomy of the cardiovascular system. Topics include integrative mechanisms of control and pharmacotherapy involved in short-term and long-term control of the circulation in health and disease. NOTE Also offered online. Consult the Bachelor of Health Sciences program office.

LEARNING HOURS may vary: 138 (18L;10S;10G;100P)

Requirements: Minimum 4th year (Level 4) standing and (registration in a LISC or BCHM MAJ or SSP Plan or BHSc program) and a GPA of 2.50. Exclusion LISC 454.

Course Equivalencies: CRSS454; LISC454

Offering Faculty: Faculty of Health Sciences

GLPH 171 Social and Physical Determinants of Health and Disease Units: 3.00

Social and Physical Determinants of Health and Disease will use evidence-based practices to address the impact of social and environmental sources on health at both an individual and population level. Students will focus how the contexts of peoples' lives affect their health, methods for measuring contextual effects, and the role of medical systems in creating health. Students will gain skills to understand and evaluate scientific literature and become community advocates for health by researching and preparing a PSA as a cumulative assessment.

NOTE: Also offered online. Consult the Bachelor of Health Sciences program office.

Note: LEARNING HOURS may vary: 120 (480;72P)

Requirements: Exclusion HLTH 101/3.0; GPHY 339/3.0

Offering Faculty: Faculty of Health Sciences

GLPH 271 Global and Population Health Units: 3.00

In this course, the learning emphasis will be on global and population health, instead of the health of individuals. As a discipline, global and population health prioritizes partnerships and resource sharing, instead of unilateral relationships, as well as having an important focus on advocacy.

NOTE Also offered online.

LEARNING HOURS may vary: 114 (360;78P)

Requirements: Minimum 2nd year (Level 2) standing or permission of the instructor.

Offering Faculty: Faculty of Health Sciences

**GLPH 281 Racism and Health in Canada Units: 3.00**

Students explore the impact of racism on the health of individuals and equity-deserving communities in Canada. A framework conceptualizing the social determinants of Indigenous Peoples' health, progressing from historical data to now are used. Reflection on biases, positionality, and skill development to support positive change are key components. LEARNING HOURS 120 (360;84P).

Requirements: Minimum 2nd year (Level 2) standing or permission of the instructor.

Offering Faculty: Faculty of Health Sciences

GLPH 385 Biohacking & Gerontechnology Units: 3.00

This course introduces and encourages the use of a global perspective to critically analyze technology developed to support/biohack human aging ranging from basic gerontechnologies that are currently in use to support older adults aging in place to cutting edge anti-aging technology.

NOTE: Also offered online

LEARNING HOURS may vary: 120(720;48P)

Requirements: Minimum 3rd year (Level 3) standing, or permission from the instructor.

Offering Faculty: Faculty of Health Sciences

GLPH 471 Advanced Global and Population Health Units: 3.00

Students will take knowledge gained from GLPH 271, and apply it in this course, which will focus on more advanced topics of population and global health, as well as provide experiential learning.

NOTE: Also offered online

NOTE: Learning Hours may vary.

Requirements: Minimum 4th year (Level 4) standing and GLPH 271 or LISC 271, or permission of the instructor.

Offering Faculty: Faculty of Health Sciences

GLPH 472 Special Populations: Neonatal to End-of-Life-Care Units: 3.00

In this online course, students will examine how variations in determinants of health can affect delivery of health care to special populations and shape health policy. Specific populations covered will include neonates, marginalized populations, those in intensive and end-of-life palliative care.

Requirements: Minimum 4th year (Level 4) standing and IDIS 373/3.0, or permission of instructor.

Offering Faculty: Faculty of Health Sciences

GLPH 485 Global Application of Health Informatics Units: 3.00

This fourth-year course will focus on the use of real electronic healthcare data. Students will learn about the history of data processing, the laws and regulations governing the use of healthcare data nationally and internationally, analysis techniques, and how health informatics systems can be used to drive and support health interventions.

LEARNING HOURS 120 (600;60P).

Requirements: Min 4th Year Standing and one of (HSCI 190/3.0;STAM 200/3.0;BIOL 243/3.0; GPHY 247/3.0; KNPE 251/3.0; NURS 323/3.0; POLS 385/3.0; PSYC 202/3.0; STAT 263/3.0). Note: priority will be given to students registered in the Bachelor of Health Sciences pgm

Offering Faculty: Faculty of Health Sciences

GLPH 487 One World, One Health: The global link between human, animal, and environmental health Units: 3.00

This course introduces One Health as an integrated, multi-disciplinary field that can be used to improve health and well-being for all as the intersection of human, animal and environmental health - locally and globally.

A socio-cultural lens is used to examine the historical development of One Health, introduces a framework for One Health research and policy. This framework will be applied when discussing issues including illness and disease, emerging health risks, social determinants of health as well as the health impacts of the human animal bond.

The intersection of human interests with the environment and non-human animals such as wildlife, livestock, and companion animals will be discussed. In addition, One Health models for the use of animals in research will be introduced. Skills developed through this course include critical thinking, knowledge dissemination, communication, all contextualized within the One Health perspective.

Requirements: 4th Year Standing above

Offering Faculty: Faculty of Health Sciences

GLPH 493 Global Health Practice Units: 3.00

This course will strengthen students' abilities to respond to a community's health needs through a practical service learning position with an approved local or international community health organization. Students will apply a reflective approach to community engagement in global health and consider the relationship between global health practice.

NOTE Registration must occur by permission through the Bachelor of Health Sciences Office.

132(60Pc;360;36P)

Requirements: Minimum 4th year (Level 4) standing and GLPH 271/3.0.

Offering Faculty: Faculty of Health Sciences

HSCI 190 Introduction to Statistics for the Health Sciences Units: 3.00

This course is designed to introduce students to basic statistical concepts and techniques and provide them with practical skills for applying statistics to health sciences research. This includes data visualization, probability distributions, descriptive statistics, hypothesis testing, and parameter estimation. Specific techniques such as t-tests, correlations, analysis of variance, and regression analyses will also be covered. Throughout the course, real data will be used to guide learning. Students will also discuss and practice how to effectively interpret and report statistical findings within the health sciences. To be successful in the course assessments, students will need to progressively build their skills and apply the course knowledge to 1) select appropriate statistical tests based on the research question and data, 2) interpret findings from descriptive and statistical analyses, and 3) communicate the results effectively.

Note: Also offered online

Note: Learning Hours may vary

Requirements: Prerequisite None. Exclusion BIOL 243; CHEE 209; COMM 162; ECON 250; GPHY 247; HSCI 190; KNPE 251; NURS 323; PHED 251; POLS 385; PSYC 202; SOCY 211; STAT 263; STAT 267; STAT 367. One-Way Exclusion May not be taken with or after STAT 269.

Offering Faculty: Faculty of Health Sciences

HSCI 270 Fundamentals of Health Research Methodology Units: 3.00

HSCI 270, Fundamentals of Health Research Methodology will introduce fundamentals of health-related research methods with a focus on developing critical reasoning skills. Using examples from a wide range of health-related research topics, students will gain familiarity and skills to assess primary literature at a basic level. Throughout the course, students will assess various aspects of both qualitative and quantitative research such as research questions, study rationales, study design, replicability/trustworthiness of research reports, and ethics for research involving human subjects.

Note: Also offered online

Note: Learning Hours may vary

Requirements: Minimum 2nd year (Level 2) standing and one of (HSCI 190;STAT 263;BIOL 243;STAM 200;CHEE 209; ECON 250;GPHY 247;KNPE 251;NURS 323;POLS 385;PSYC 202;SOCY 211;STAT 267;STAT 367;COMM 162). Exclusion SOCY 210;GPHY 240; HLTH 252; PSYC 203; EPID 301; HLTH 323

Offering Faculty: Faculty of Health Sciences

HSCI 301 Queen's Undergraduate Internship Program Part I Units: 1.50

Part I of a 12-16 month, professionally supervised, career-related position designed to offer students the opportunity to learn about current advances, practices and technologies in workplaces including business, industry, government, and community settings. Students will develop a range of workplace skills, learn about organizational culture, and expand their knowledge of career options.

Requirements: Minimum 2nd year (Level 2) standing and completion of the Queen's Undergraduate Internship Program pre-departure workshop.

Offering Faculty: Faculty of Health Sciences

HSCI 302 Queen's Undergraduate Internship Program Part II Units: 1.50

Part II of a 12-16 month, professionally supervised, career-related position designed to offer students the opportunity to learn about current advances, practices and technologies in workplaces including business, industry, government, and community settings. Students will develop a range of workplace skills, learn about organizational culture, and expand their knowledge of career options.

Requirements: Minimum 2nd year (Level 2) standing, HSCI 301, and completion of the Queen's Undergraduate Internship Program pre-departure workshop.

Offering Faculty: Faculty of Health Sciences

HSCI 303 Queen's Undergraduate Internship Program (12-month) Part III Units: 3.00

Part III of a 12 month, professionally supervised, career-related position designed to offer students the opportunity to learn about current advances, practices and technologies in workplaces including business, industry, government, and community settings. Students will develop a range of workplace skills, learn about organizational culture, and expand their knowledge of career options.

Requirements: Minimum 2nd year (Level 2) standing, HSCI 301/1.5, HSCI 302/1.5, and completion of the Queen's Undergraduate Internship Program pre-departure workshop.

Offering Faculty: Faculty of Health Sciences



HSCI 304 Queen's Undergraduate Internship Program (16-month) Part III Units: 1.50

Part III of a 16-month, professionally supervised, career-related position designed to offer students the opportunity to learn about current advances, practices and technologies in workplaces including business, industry, government, and community settings. Students will develop a range of workplace skills, learn about organizational culture, and expand their knowledge of career options.

Requirements: Minimum 2nd year (Level 2) standing, HSCI 301/1.5, HSCI 302/1.5, and completion of the Queen's Undergraduate Internship Program pre-departure workshop.

Offering Faculty: Faculty of Health Sciences

HSCI 305 Queen's Undergraduate Internship Program (16-month) Part IV Units: 1.50

Part IV of a 16-month, professionally supervised, career-related position designed to offer students the opportunity to learn about current advances, practices and technologies in workplaces including business, industry, government, and community settings. Students will develop a range of workplace skills, learn about organizational culture, and expand their knowledge of career options.

Requirements: Minimum 2nd year (Level 2) standing, HSCI 301/1.5, HSCI 302/1.5, HSCI 304/1.5, and completion of the Queen's Undergraduate Internship Program pre-departure workshop.

Offering Faculty: Faculty of Health Sciences

HSCI 383 Advanced Research Methodologies Units: 3.00

Students will have the opportunity to develop and apply a mixed methods design for research. The course instruction will assist students as they navigate processes of literature review, question development, experimental design, proposed approaches to data analyses (both quantitative and qualitative) and proposed methods of knowledge mobilization.

Requirements: Minimum 3rd year (Level 3) standing and one of (HSCI 270/3.0; BMED 270/3.0; EPID 301/3.0; HLTH 252/3.0; PSYC 203/3.0; SOCY 210/3.0) or permission of the Instructor.

Offering Faculty: Faculty of Health Sciences

HSCI 483 Applied Qualitative Methods for Health Research Units: 3.00

Qualitative methodologies/methods provide an opportunity for researchers to explore diverse perspectives on, and experiences of health care systems. In this course students will explore multiple qualitative methodologies and methods that are used to collect and analyze non-numeric behaviours, experiences, and/or perspectives. This course provides students with an opportunity enhance and apply prior qualitative research skills. In this course, students will design and initiate a qualitative research project on a topical health and health care issues. Students will discuss positionality, ethical considerations, subjectivities, and power relationships associated with the conduct of research involving humans and ways of navigating them.

Requirements: Minimum 3rd year (level 3) standing and HSCI 383/3.0.

Offering Faculty: Faculty of Health Sciences

HSCI 591 Health Sciences Research: Design and Methods Units: 3.00

This course will allow students to carry out components of a research project in the Health Sciences. Students will gain experience searching relevant literature, developing research questions, establishing and testing hypotheses (where appropriate), designing a research plan and methods. (Note: The primary difference between HSCI 591 (120 hours) and HSCI 598 (240 hours) is the number of hours the student is expected to spend on the project, which corresponds to a lesser scope of the research project in HSCI 591).

Requirements: Minimum 3rd year (Level 3) standing and registration in the BHSc program. Exclusion 12.0 units from HSCI 591/3.0; HSCI 592/3.0; HSCI 593/3.0; HSCI 594/3.0; HSCI 595/3.0; HSCI 598/6.0; HSCI 599/6.0.

Offering Faculty: Faculty of Health Sciences

HSCI 592 Health Sciences Research: Design and Methods Units: 3.00

This course will allow students to carry out a research project in the Health Sciences. Students will gain experience searching relevant literature, developing research questions/hypotheses, and designing a research plan and methods.

Requirements: Minimum 3rd year (Level 3) standing and registration in the BHSc program. Exclusion 12.0 units from HSCI 591/3.0; HSCI 592/3.0; HSCI 593/3.0; HSCI 594/3.0; HSCI 595/3.0; HSCI 598/6.0; HSCI 599/6.0.

Offering Faculty: Faculty of Health Sciences

HSCI 593 Health Sciences Research: Data Collection and Interpretation Units: 3.00

This course will allow students to carry out a research project in the Health Sciences. Meant to follow HSCI 592/598, students will gain experience answering research questions and/or testing hypotheses using a research plan and methods developed during the initial course, with an emphasis on the development of research skills and practice interpreting data.

Exclusion: no more than 12 units from HSCI 591,592,593,594,595,598,599.

Requirements: Min 3rd or 4th year HSC prog

Offering Faculty: Faculty of Health Sciences

HSCI 594 Health Sciences Research: Data Collection and Interpretation Units: 3.00

"This course will allow students to carry out components of a research project in the Health Sciences. Meant to follow HSCI 591 and 592 or 598, students will gain experience answering research questions, establishing and testing hypotheses (where applicable) using a research plan and methods developed during the initial course, with an emphasis on the development of research skills and practice interpreting data.

(Note: The primary difference between HSCI 594 (120 hours) and HSCI 599 (240 hours) is the number of hours the student is expected to spend on the project, which corresponds to an expected increase in the scope of the research project.)"

Requirements: Min yr 3, 1 of HSCI591,593,598

Offering Faculty: Faculty of Health Sciences

HSCI 595 Health Sciences Research: Data Collection and Interpretation Units: 3.00

This course will allow students to carry out components of a research project in the Health Sciences. Meant to follow HSCI 591/3.0, HSCI 593/3.0, and HSCI 594/3.0 students will gain experience answering research questions, establishing and testing hypotheses (where applicable) using a research plan and methods developed during the initial course, with an emphasis on the development of research skills and practice interpreting data.

(Note: The primary difference between HSCI 595 (120 hours) and HSCI 599 (240 hours) is the number of hours the student is expected to spend on the project, which corresponds to an expected increase in the scope of the research project.)

Requirements: min yr 3, 1 of HSCI591,593,594

Offering Faculty: Faculty of Health Sciences

HSCI 598 Advanced Health Sciences Research: Design and Methods Units: 6.00

This course will allow students to carry out an in-depth research project in the Health Sciences. Students will gain experience searching relevant literature, developing research questions/hypotheses, and designing a research plan and methods, as well as developing preliminary skills in using the methods.

Exclusion: no more than 12 units from HSCI 591,592,593,594,595,598,599.

Requirements: Min 4th year HSC prog

Offering Faculty: Faculty of Health Sciences

HSCI 599 Advanced Health Sciences Research: Data Collection and Analysis Units: 6.00

This course will allow students to carry out an in-depth research project in the Health Sciences. Meant to follow HSCI 592 or 598, students will gain experience answering research questions and/or testing hypotheses using a research plan and methods developed during the initial course, with an emphasis on the development of research skills and practice interpreting data.

Exclusion: no more than 12 units from HSCI 591,592,593,594,595,598,599.

Requirements: Minimum 4th year (level 4) standing, registration in the BHSc Program, one of (HSCI 592/3.0; HSCI 598/6.0)

Offering Faculty: Faculty of Health Sciences

IDIS 173 The History and Philosophy of Health and Healthcare Units: 3.00

Multidisciplinary course organized around five major fields of scientific endeavour: anatomy, physiology, pathology, pharmacology, and population and global health.

LEARNING HOURS may vary 120(480;72P)

Requirements: Exclusion PHIL 201/3.0 Equivalency BMED 173/3.0

Offering Faculty: Faculty of Health Sciences

IDIS 199 The Science of Mental Health, Well-being, & Resiliency Units: 3.00

A course designed for undergraduate students across all programs. Topics include an overview of conceptual approaches to defining and measuring mental health, mental health problems and mental illness, the impact of sleep habits, distress tolerance and self-regulation on well-being, and an introduction to effective coping choices.

LEARNING HOURS 120(480;72P)

Requirements: Prerequisite None. Exclusion HLTH 102.

Offering Faculty: Faculty of Health Sciences



IDIS 280 Interprofessional Approaches in Healthcare Units: 3.00

This course aims to prepare learners with the knowledge and capabilities for working within complex interprofessional environments common in the healthcare sector. The course introduces the basics of collaborative practice in healthcare and the related six interprofessional competencies.

NOTE Only offered online. Consult Bachelor of Health Sciences program office.

LEARNING HOURS 120 (96O;24P)

Requirements: Minimum 2nd year (Level 2) standing or permission of the Instructor.

Offering Faculty: Faculty of Health Sciences

IDIS 373 Health Ethics, Law, and Policy Units: 3.00

An introduction to ethical, legal and regulatory requirements for people working in the health professions.

LEARNING HOURS may vary 120(48O;72P)

Requirements: Minimum 3rd year (Level 3) standing. Equivalency BMED 373.

Offering Faculty: Faculty of Health Sciences

IDIS 473 Designing Life After Queen's Units: 3.00

The Designing Your Life After Queen's course uses design thinking to help students from any program plan their life and career after graduation. Developed by Stanford University and offered at schools across North America, this course draws on the fields of philosophy, psychology and career counselling to help you align your personal values with your academic interests, career ambitions and desire for social impact. You will learn to use a design process to create career plans from conception to implementation, explore how career choices can contribute to positive social change, and create prototype experiments that will move you closer to your goals. The course also addresses the realities of engaging in the contemporary workplace and introduces practices that support career development over the long term. Due to the personalized nature of the assignments, this course uses a pass/fail grading system.

Requirements: 4th Year Standing above

Offering Faculty: Faculty of Health Sciences

IDIS 480 Advanced Interprofessional Approaches in Healthcare Units: 3.00

This course, the second of two, presents philosophies and methodologies crucial for safe and excellent teamwork in healthcare. It aims to prepare learners with additional knowledge and advanced capabilities to work within complex interprofessional environments, common in diverse workplaces, and indispensable in the healthcare sector. These capabilities, referred to as the 'interprofessional competencies' in The National Interprofessional Competency Framework 1 were introduced previously in IDIS 280.

They will be expanded and applied in greater detail for the advanced learner. In-depth knowledge and complex skill development will be examined in the following areas: theoretical and global frameworks for collaborative practice and health equity; intercultural communication; teamwork processes; communication tools for safe work in healthcare; philosophies of health, wellness and well-being; and collaborative leadership. Models for effective healthcare teams, via the utilization of knowledge and skills from all stakeholders including patient/client, family, and community partnerships, will be introduced on a community and system levels and applied in authentic scenarios. The course is designed as a series of modules that will address these advanced collaborative teamwork competencies. A significant portion of the course assessments will be application-based, leading students to apply the principles of team-based learning and collaborative practice in group situations. LEARNING HOURS 120(72O;48P)

Requirements: Minimum 4th year (Level 4) standing and IDIS 280/3.0 or permission from the instructor.

Offering Faculty: Faculty of Health Sciences

IDIS 483 Applied Health Ethics: Clinical, Organizational, and Research Perspectives Units: 3.00

Individual and collaborative work prepares students to navigate the complex ethical challenges they will face as they enter diverse professional roles in the health system. Course assessment will be based on a combination of active engagement in course discussion, performance in case-based active learning opportunities, and short written case analyses.

LEARNING HOURS 120 (24L;36G;60P).

Requirements: Prerequisite (Level 4 or above and IDIS 373/3.0) or permission of the instructor. Note Priority access will be given to students registered in the Bachelor of Health Sciences program.

Offering Faculty: Faculty of Health Sciences

MICR 270 Infection, Immunity and Inflammation Units: 3.00

This course focuses on 1) the overall organization of the immune system, 2) the role of the immune system in combating diseases caused by common pathogens as well as adverse reactions of the immune system and 3) application of the basic knowledge of immunology to the field of infectious disease prevention and control by vaccines and treatment of cancer. The unique features of this course lie in its overall structure and delivery that will prepare the student for further in-depth learning in the field of immunology.

NOTE This online course in infection and immunity is designed for students from various biological sciences and allied health backgrounds at all levels of post-secondary education and is recommended as a foundation course for students pursuing a life sciences career.

NOTE Also offered online. Consult the Bachelor of Health Sciences program office.

NOTE May not be taken for credit towards the Plan requirements of the LISC Specialization or Major Plans.

LEARNING HOURS may vary 114 (360;78P)

Requirements: Minimum 2nd year (Level 2) standing and one of (BIOL 102/3.0; MICR 121/3.0; PHGY 170/3.0). One-way Exclusion May not be taken with or after MICR 360/3.0; MICR 386/3.0; BMED 386.

Offering Faculty: Faculty of Health Sciences

MICR 271 Introduction to Microbiology Units: 3.00

An introduction to the biology of microbes, including both pathogenic & beneficial bacteria, viruses, fungi, & protozoa. This overview of the biological features of these microorganisms will highlight these organisms' roles in the environment & in human health contributing to infectious diseases vs. maintaining healthy microbiomes.

NOTE Only offered online. Consult the Bachelor of Health Sciences Program office.

LEARNING HOURS 120 (600;60P)

Requirements: Minimum 2nd year (Level 2) standing and one of (PHGY 170/3.0; BIOL 102/3.0). Exclusion MICR 221/3.0

Offering Faculty: Faculty of Health Sciences

MICR 290 Antibiotic Resistance Lab Units: 3.00

This immersive laboratory course is designed to give students the opportunity to apply important microbiological and biochemical research techniques to the study of antibiotic resistance. Students work in small groups on a semester-long project, developing valuable lab skills that will support them with future research opportunities.

LEARNING HOURS 120(36Lb;480;36P)

Requirements: Minimum 2nd year (Level 2) standing, registration in a BHSc, LISC, or BCHM degree plan, and one of (MICR 270/3.0; MICR 271/3.0) Exclusion MICR 221/3.0

Offering Faculty: Faculty of Health Sciences

MICR 320 Microbes in Health and Disease Units: 3.00

This course will focus on the roles of microbes in health (human microbiome) and disease (pathogens). The molecular mechanisms of bacterial/viral virulence and the host response will be examined in order to develop an in depth understanding of the etiology of infectious diseases and the benefits derived from the human microbiome. Consult the Bachelor of Health Sciences program office

NOTE Also offered online. Learning Hours may vary.

Requirements: Minimum 3rd year (Level 3) standing and one of (MICR 221/3.0; MICR 271/3.0; MICR 229/3.0) and one of (MICR 360/3.0; MICR 386/3.0; BMED 386/3.0). Exclusion MICR 382/3.0

Offering Faculty: Faculty of Health Sciences

MICR 386 Fundamentals of Immunology in Health and Disease Units: 3.00

Integrates the key principles of immunology to facilitate learning of immunology as it relates to human health and disease. This course offers real-life case studies, problems encountered and solutions applied, immunology virtual laboratory simulation, and extensive coverage of the basic science underlying each topic in the module.

Also offered online.

LEARNING HOURS may vary:120(480;72P)

Requirements: Minimum 3rd year (Level 3) standing and one of (BCHM 218/3.0; BCHM 270/3.0), and one of (MICR 270/3.0; MICR 271/3.0; MICR 221/3.0). Exclusion MICR 360/BMED 877

Offering Faculty: Faculty of Health Sciences

NSCI 483 Neurobiology of Learning and Memory Units: 3.00

An exploration of brain systems underlying how we learn and remember, and how they become disordered. Online multimedia modules and study of cutting edge research articles reveal how modern techniques and ideas are driving neuroscience forward. Requires interviewing a person with a disorder in order to learn to advocate for them in society.

Requirements: Minimum 4th year (Level 4) standing and one of [(PHGY 215/3.0 and PHGY 216/3.0); PSYC 271/3.0; PHGY 214/6.0; PHGY 210/6.0]. For LISC and BCHM Honours students Level 4 and registration in a LISC or BCHM Major or Specialization Plan and a GPA of 2.5

Offering Faculty: Faculty of Health Sciences



PATH 120 Understanding Human Disease in the 21st Century Units: 3.00

The course provides an introduction to human disease and our understanding of key conditions with major global health and societal impact, including cardiovascular, neurological and infectious diseases and cancer. The basic concepts of disease mechanisms and current management will be explored using specific diseases and clinical example cases. Also offered online.

LEARNING HOURS may vary 120(12L;36G;36O;36P)

Requirements: One-Way Exclusion PATH 310/3.0; CANC 440/3.0

Offering Faculty: Faculty of Health Sciences

PATH 310 Introduction to Pathology and Molecular Medicine Units: 3.00

An introduction to pathology and molecular medicine. The course will be organized around a specific set of diseases, designed to illustrate basic concepts in the molecular biology, biochemistry, and pathology of human disease.

NOTE Also offered online. Consult the Bachelor of Health Sciences program office.

Requirements: Minimum 3rd year (Level 3) standing and one of (BCHM 218/3.0; BCHM 270/3.0).

Course Equivalencies: PATH310, PATH410

Offering Faculty: Faculty of Health Sciences

PATH 381 Clinical Biochemistry Units: 3.00

This upper-year health sciences course covers topics relating to the integrated role of clinical biochemists within a healthcare team. Students will critique analytical techniques in the context of various diseases. Through problem-based learning, students will also explore how to identify and troubleshoot issues in laboratory testing.

LEARNING HOURS 120 (12L;12T;36O;60P).

Requirements: Minimum 3rd year (Level 3) standing and one of (BCHM 270/3.0 or BCHM 218/3.0), or permission of the instructor.

Offering Faculty: Faculty of Health Sciences

PHAR 100 Introductory Pharmacology Units: 3.00

Topics covered include central nervous system stimulants and depressants, narcotics, alcohol, cardiovascular agents, contraceptives, environmental toxicants, mechanism of drug action and disposition, antibiotics, drugs used in sports, over-the-counter drugs, food additives, and vitamins.

NOTE Also offered online. Consult the Bachelor of Health Sciences program office. Learning Hours may vary.

Requirements: One-Way Exclusion PHAR 230/3.0; PHAR 270/3.0; PHAR 340/3.0; PHAR 370/3.0; PHAR 450/3.0

Offering Faculty: Faculty of Health Sciences

PHAR 370 Fundamentals of Pharmacology and Therapeutics Units: 3.00

An interdisciplinary course that introduces the basic principles and clinical applications of pharmacology. This 12-week course covers six topics. Students will work through the topics online, using a combination of online modules, readings, and short video clips. Students will participate in a variety of assessments throughout the course.

LEARNING HOURS may vary: 120(48O;72P)

Also offered online.

Requirements: Corequisite One of (PHGY 215/3.0 and PHGY 216/3.0) or KNPE 225/3.0. Exclusion PHAR 230/3.0; PHAR 270/3.0; PHAR 340/3.0 One-Way Exclusion PHAR 450/3.0

Offering Faculty: Faculty of Health Sciences

PHAR 380 Drug and Environmental Toxicology Units: 3.00

This course will explore the human toxicology associated with both pharmaceutical and environmental exposures. Topics include metabolism and mechanisms of toxicity of various pharmaceuticals and environmental pollutants. Toxicological effects of specific classes of environmental toxicants and different groups of pharmaceuticals are also discussed. NOTE Also offered online. Consult Bachelor of Health Sciences program office.

LEARNING HOURS may vary 120 (60O;60P)

Requirements: Minimum 3rd year (Level 3) standing and one of (BCHM 102/3.0; BCHM 270/3.0; BCHM 316/3.0; BCHM 218/3.0; BIOL 334/3.0)

Offering Faculty: Faculty of Health Sciences

PHAR 480 Drug Discovery and Development Units: 3.00

This survey course covers the life-cycle of pharmaceutical products including discovery, development, and the transition to a generic or over-the-counter medication. Specific themes include target identification, design and synthesis, efficacy determination, optimization, preclinical safety assessment, clinical trials, and the differences between biologics and small chemical entities. Social and economic pressures exerted upon the pharmaceutical industry are also explored.

Requirements: Minimum 4th year (Level 4) standing and one of (PHAR 230/3.0; PHAR 370/3.0; PHAR 340/3.0). LISC MAJ SSP students require a GPA of 2.5. Note this course cannot be used as credit towards the LISC DDHT SSP Plan Exclusion DDHT 459/3.0; DDHT 460/3.0

Offering Faculty: Faculty of Health Sciences

PHGY 170 Human Cell Physiology Units: 3.00

This is an introductory level course on the structure and function of human cells for students interested in pursuing human health-related disciplines. Students will also learn the principles of energy metabolism, cell growth and proliferation, and how cells interact with their environment. There is also an overall focus to relate cellular processes to human function and disease, culminating in a group presentation focused on one specific cell process and how it affects health. Students taking this course will be well-prepared for upper year molecular biology courses. NOTE Also offered online. Consult the Bachelor of Health Sciences program office. Learning Hours may vary. LEARNING HOURS may vary 114 (36O;78P)

Requirements: One-Way Exclusion KNPE 225/3.0

Offering Faculty: Faculty of Health Sciences

PHGY 215 Principles of Mammalian Physiology I Units: 3.00

The focus of this course is on the central and peripheral nervous systems, muscle physiology, the heart, and the vascular system.

NOTE This course may be paired with PHGY 216/3.0 to achieve an introductory physiology full course (6.0 units).

NOTE Although it is recommended to take PHGY 215/3.0 first, this course can be taken before, after, or concurrently with PHGY 216/3.0.

NOTE Also offered online. Consult the Bachelor of Health Sciences program office. Learning Hours may vary.

Requirements: Minimum 2nd year (Level 2) standing. Exclusion (KNPE 125/3.0; KNPE 225/3.0); [PHGY 210/6.0; PHGY 214/6.0; (PHGY 215/3.0 and PHGY 216/3.0)].

Offering Faculty: Faculty of Health Sciences

PHGY 216 Principles of Mammalian Physiology II Units: 3.00

The focus of this course is the physiology of the respiratory, renal, gastrointestinal, endocrine, and reproductive system.

NOTE This course may be paired with PHGY 215/3.0 to achieve an introductory physiology full course (6.0 units).

NOTE Although it is recommended to take PHGY 215/3.0 first, PHGY 216/3.0 can also be taken before or concurrently with PHGY 215/3.0.

NOTE Also offered online. Consult the Bachelor of Health Sciences program office.

Learning hour may vary.
Requirements: Minimum 2nd year (Level 2) standing. Exclusion (KNPE 125/3.0;KNPE 225/3.0); [PHGY 210/6.0;PHGY 214/6.0;(PHGY 215/3.0 PHGY 216/3.0)]. Note it is recommended to take PHGY 215/3.0 first, PHGY 216/3.0 can be taken before or concurrently with PHGY 215/3.0.

Offering Faculty: Faculty of Health Sciences

PHGY 290 Investigation of Human Physiological Responses Units: 3.00

This course is designed to advance critical thinking and practical lab skills through collaborative experimentation on human physiological responses to various stimuli. Upon completion, students should be able to (i) plan and perform experimental protocols, (ii) collect, analyze and interpret data and (iii) produce quality presentations of findings.

LEARNING HOURS 120(36Lb;48O;36P)

Requirements: Corequisite Minimum 2nd year (Level 2) standing, registration in a BHSc, LISC, or BCHM program, and co-req PHGY 215/3.0 Note: We recommend that students should have already completed a statistics course (e.g. HSCI 190/3.0 or equivalent)

Offering Faculty: Faculty of Health Sciences

REPD 372 Reproduction and Development Units: 3.00

Students will obtain a general background on various aspects of human reproduction, ranging from male and female gamete development to pregnancy and birth. The course will serve as a gateway to more advanced courses in human reproduction and development.

NOTE Also offered online. Consult the Bachelor of Health Sciences program.

LEARNING HOURS may vary 120 (60O;60P)

Requirements: Minimum 3rd year (Level 3) standing, one of (ANAT 100/3.0; ANAT 101/3.0; [ANAT 215/3.0 and ANAT 216/3.0]; [ANAT 315/3.0 and ANAT 316/3.0]) and one of (PHGY 210/6.0; PHGY 214/6.0; [KNPE 125/2.0 and KNPE 225/3.0]; [PHGY 215/3.0 and PHGY 216/3.0]).

Offering Faculty: Faculty of Health Sciences

REPD 473 Developmental Origins of Health And Disease Units: 3.00

REPD 473, Development Origins of Health and Disease, will cover how the early-life environment contributes to later-life health. Four major topics will be covered: maternal exposures, maternal nutrition, infection, and pregnancy complications. Students will learn about how alterations in the embryonic and fetal environment due to these four parameters can and do contribute to the development of non-communicable diseases that persist throughout life. Students will have the opportunity to explore and consolidate the academic literature pertaining to DOHaD, as well as investigating the resources available to these populations of patients.

Requirements: Minimum 4th year (Level 4) standing and one of (PHAR 230/3.0; PHAR 370/3.0; PHAR 340/3.0; PHAR 380/3.0) and REPD 372/3.0.

Offering Faculty: Faculty of Health Sciences