

SOC APPROVALS **February 14, 2024**

The following proposals were approved at the February 14, 2024, meeting of the Subcommittee on Undergraduate Academic Courses (SOC).

FACULTY OF ARTS AND HUMANITIES

DEPARTMENT OF ENGLISH AND WRITING STUDIES

Course Revision – Effective September 1, 2024, the following change(s) be made:

ENGLISH 3581F/G

TORONTO: CULTURE AND PERFORMANCE

We will explore a range of recent work produced on Toronto's stages, the contexts in which that work is made, and its reception by reviewers, bloggers, and others. Students will read six to eight plays along with contextual material, and see at least two live performances in Toronto.

Antirequisite(s): Theatre Studies 3581F/G.

Prerequisites: At least 60% in 1.0 of English 1020-1999, or 1.0 of Film 1000-1999 plus English 2112F/G, Film 2212F/G, or Theatre Studies 2212F/G, or permission of the department.

Extra Information: 3 hours. **Students will be charged a non-refundable field trip fee. See the Department/Program for more information.**

Course Weight: 0.50

Course Revision – Effective September 1, 2024, the following change(s) be made:

THEATRE STUDIES 3581F/G

TORONTO: CULTURE AND PERFORMANCE

We will explore a range of recent work produced on Toronto's stages, the contexts in which that work is made, and its reception by reviewers, bloggers, and others. Students will read six to eight plays along with contextual material, and see at least two live performances in Toronto.

Antirequisite(s): English 3581F/G.

Prerequisite(s): At least 60% in 1.0 of English 1020-1999 or permission of the Department

Extra Information: 3 hours. **Students will be charged a non-refundable field trip fee. See the Department/Program for more information.**

Course Weight: 0.50

DEPARTMENT OF VISUAL ARTS

Course Introduction – Effective September 1, 2024, the following course be introduced:

**ART HISTORY 2608F/G
SEXUALITY IN MODERN VISUAL CULTURE**

(Short title: Sexuality Visual Culture)

An introduction to the representation of sexuality in modern and/or contemporary visual culture. Topics may include artistic practices from the 19th century through to the present.

Antirequisite(s): The former Art History 2508F/G, the former VAH 2287F/G.

Prerequisite(s): 1.0 first-year course from Arts and Humanities or Social Science, or permission of the Department.

Extra Information: 3 hours: lecture, blended or online format.

Course Weight: 0.50

Course Introduction – Effective September 1, 2024, the following course be introduced:

**ART HISTORY 2678F/G
WHAT (NOT) TO WEAR: SPECIAL TOPICS IN FASHION, TEXTILES AND ART**

(Short title: What (Not) to Wear)

These special topics courses examine the relationship between art and fashion since the 19th century. Examples of subjects dealt with include haute couture and the art world, body sculpting, activism, and DIY fashion.

Antirequisite(s): the former Art History 2576F/G.

Extra Information: 3 hours: lecture, blended or online format.

Course Weight: 0.50

Course Introduction – Effective September 1, 2024, the following course be introduced:

**ART HISTORY 2680F/G
STUDY TRIP TO OAXACA, MEXICO – ART HISTORY**

(Short title: Study Trip to Oaxaca AH)

Students will explore the rich cultural heritage of the city of Oaxaca, Mexico, from ancient to contemporary art through archeological sites, colonial monuments, and museums. This course combines in-class instruction with a one-week travel opportunity to Oaxaca during Reading Week.

Prerequisite(s): 1.0 from Art History 1640 or the former VAH 1040 or two of Art History 1641A/B – 1649A/B or the former VAH 1041A/B – 1045A/B or 1.0 essay

course from Arts and Humanities, FIMS, or Social Science, or permission of the Department. Co-requisite(s): Studio Art 2680A/B.

Extra Information: 3 hours; lecture, blended or online format. 1-week travel to Oaxaca, Mexico, during Reading Week. Students will be charged a travel fee. See the Department/Program for more information.

Course Weight: 0.50

Course Introduction – Effective September 1, 2024, the following course be introduced:

**STUDIO ART 2645
INTRODUCTION TO CERAMIC ART**

This course will explore approaches to working with ceramic materials in a fine arts context. Fundamental construction methods and surface design techniques will be taught alongside discussions of historical, contemporary, and theoretical approaches to working with ceramics.

Antirequisite(s): Studio Art 2690A/B/Y if taken in 2022-23 or 2023-24.

Prerequisite(s): Studio Art 1601 or Studio Art 1605, or the former VAS 1020 or the former VAS 1025, or permission of the Department.

Extra Information: 3 studio hours, lecture, blended or online format. Priority will be given to students registered in a Visual Arts program. Students will be charged a non-refundable fee. See Department for more information.

Course Weight: 1.00

Course Introduction – Effective September 1, 2024, the following course be introduced:

**STUDIO ART 2680A/B
STUDY TRIP TO OAXACA, MEXICO – PHOTOGRAPHY**

(Short title: Study Trip Oaxaca Photo)

Students will explore creative photography production and capture cultural heritage of the City of Oaxaca, Mexico, through visits to archeological sites, colonial monuments, and museums. This course combines in-class instruction with a one-week travel opportunity to Oaxaca during Reading Week.

Prerequisite(s): Studio Art 1601 or Studio Art 1605, or the former VAS 1020 or the former VAS 1025, or MIT 1070A/B, or permission of the Department. Co-requisites: Art History 2680F/G.

Extra Information: 3 hours; lecture, blended or online format. 1-week travel to Oaxaca, Mexico, during Reading Week. Students will be charged a travel fee. See the Department/Program for more information.

Course Weight: 0.50

Course Introduction – Effective September 1, 2024, the following course be introduced:

STUDIO ART 3676A/B

LANDMARKS: SPATIAL STORYTELLING, LAND, ART, PLACE AND COMMUNITY II

(Short title: Land, Art, Place II)

For Haudenosaunee the landscape is an animate, living and embodied archive with which we are all interconnected. This studio-based course involves continued and richer community engagement learning where students will create site-specific artworks that explore (inter)relationships with the archive of 'place'. This course is a continuation of Studio Art 2676A/B.

Antirequisite(s): Indigenous Studies 3676A/B.

Prerequisite(s): Studio Art 2676A/B or Indigenous Studies 2676A/B.

Extra Information: 6 studio and/or lecture hours, blended or online format. Priority will be given to students registered in a Visual Arts program. Cross-listed with Indigenous Studies 3676A/B.

Course Weight: 0.50

Course Revision – Effective September 1, 2024, the following change(s) be made:

STUDIO ART 3674A/B

ALTERNATIVE APPROACHES TO CREATIVE METHODS

A studio course that encourages students to delve deeply into the conceptual potential of materials and methods in contemporary artmaking. Complimentary to discipline specific courses, this course is designed to advance students' methodological approaches and hone their sense of voice and positionality as artists. Self-reflective engagement is emphasized.

Prerequisite(s): Registration in years 3 or 4 of a Department of Visual Arts module, or permission of the Department.

Extra Information: ~~3~~ **4** studio hours, lecture, blended or online format. Priority will be given to students registered in a Visual Arts program.

Course Weight: 0.50

Course Withdrawal – Effective September 1, 2024, the following course be withdrawn:

ART HISTORY 2508F/G

SEXUALITY IN MODERN VISUAL CULTURE

An introduction to the representation of sexuality in modern and/or contemporary visual culture. Topics may include artistic practices from the 19th century through to the present.

Antirequisite(s): the former VAH 2287F/G.

Prerequisite(s): 1.0 first-year course from Arts and Humanities or Social Science, or permission of the Department.

Extra Information: 3 hours: lecture, blended or online format.

Course Weight: 0.50

Course Withdrawal – Effective September 1, 2024, the following course be withdrawn:

ART HISTORY 2576F/G

WHAT (NOT) TO WEAR: SPECIAL TOPICS IN FASHION, TEXTILES AND ART

These special topics courses examine the relationship between art and fashion since the 19th century. Examples of subjects dealt with include haute couture and the art world, body sculpting, activism and DIY fashion.

Extra Information: 3 hours: lecture, blended or online format.

Course Weight: 0.50

IVEY BUSINESS SCHOOL

Course Introduction – Effective September 1, 2024, the following course be introduced:

**BUSINESS ADMINISTRATION 4678A/B
SPECIAL TOPICS IN DATA DRIVEN MANAGEMENT**

(Short title: Data Driven Management)

This course provides tools for using data and models to obtain managerial insights and introduce quantitative methods for decision analysis including probability, linear regression, simulation, and optimization. It also provides a systematic framework for the use of data and models in managerial decisions in marketing, operations, finance, accounting, and strategy.

Antirequisite(s): Business Administration 3316K.

Extra Information: 3 lecture hours.

Course Weight: 0.50

Course Revision – Effective September 1, 2024, the following change(s) be made:

**BUSINESS ADMINISTRATION 3316K
DECISION MAKING WITH ANALYTICS**

Managerial decision makers must cope with complexity and/or uncertainty. This course presents a systematic approach to structuring and analyzing decision problems including the use of statistical tools and spreadsheet programs. To stress the generality of this approach, problems from all functional areas and various industries are discussed. The course also examines a number of innovative management tools that are changing the practice of management.

Antirequisite(s): **Business Administration 4678A/B.**

Extra Information: 3 hours.

Course Weight: 0.75

Course Revision – Effective September 1, 2024, the following change(s) be made:

**BUSINESS ADMINISTRATION 4413A/B
DERIVATIVES & FINANCIAL MARKETS ~~RISK MANAGEMENT~~**

(Short title: **Derivatives**)

The course covers how derivatives products are structured, priced, and used. This knowledge is essential for corporate executives who use derivatives in financing activities and risk management, bankers who create and trade these products on their behalf and on behalf of clients, and managers of mutual, pension, and hedge funds.

Antirequisite(s): **Business Administration 4643A/B,** Financial Modelling 2557A/B.

Prerequisite(s): Business Administration 3303K.
Extra Information: 3 hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2024, the following change(s) be made:

BUSINESS ADMINISTRATION 4495A/B

BUILDING CONSUMER BRANDS ~~CONSUMER BRANDS MARKETING~~

The course ~~looks at~~ **examines** brand management within the marketing function and its relations to ~~produce~~ **product** management ~~in general~~. We examine product line management ~~as a strategic option~~ and competitive ~~issues in~~ brand management. We then ~~look at~~ **examine** environmental threats to the brand, including the issues of private labels and ~~changes in~~ media **changes**. Finally, we examine global branding and its organizational basis.

Extra Information: 3 hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2024, the following change(s) be made:

BUSINESS ADMINISTRATION 4564A/B

DESIGN DRIVEN INNOVATION

The course demonstrates how organizations gain competitive advantage through design driven innovation which is a customer experience oriented approach to marketing that results in powerful, emotional - and profitable - brand relationships.

Antirequisite(s): **Business Administration 4633A/B**.
Extra Information: 3 hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2024, the following change(s) be made:

BUSINESS ADMINISTRATION 4600A/B

DATA MANAGEMENT ~~END USER DATABASE~~

~~The aim of this~~ **This** course ~~is~~ **aims** to provide a hands-on introduction to **(un)structured** database design and use, specifically tailored to potential users of database systems. This course would be useful to a wide range of graduates, including those who will work in consulting, business analysis, and new ventures.

Extra Information: 3.0 hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2024, the following change(s) be made:

**BUSINESS ADMINISTRATION 4613A/B
FUNDAMENTALS OF COMMERCIAL REAL ESTATE**

This course is designed to give a broad overview of commercial real estate, exposing students to all of the major real estate sectors; office, industrial, retail and multi-family residential. Students will be exposed to the development process, including redevelopments, acquisitions and dispositions, financing, leasing and operations.

Antirequisite(s): **Geography 3464F/G.**

Extra Information: 3.0 hours.

Course Weight: 0.50

Course Revision – Effective September 1, 2024, the following change(s) be made:

**BUSINESS ADMINISTRATION 4632A/B
SPECIAL TOPICS IN CAUSAL INFERENCE**

This course will introduce econometric and statistical methods used to analyze applied research questions in management. Concentration will be placed on when and how causality can be determined using observational data. Topics covered may include matching estimators, instrumental variables, regression discontinuity designs, panel data, and their application in R.

Antirequisite(s): **Business Administration 4656A/B.**

Extra Information: 3 hours.

Course Weight: 0.50

FACULTY OF ENGINEERING

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

Course Revision – Effective September 1, 2024, the following change(s) be made:

ELECTRICAL AND COMPUTER ENGINEERING 3331A/B INTRODUCTION TO SIGNAL PROCESSING

Introduction to discrete-time signals and sampled data, linear time-invariant (LTI) systems, frequency response, discrete Fourier transforms, convolution, spectrum analysis, Z-transforms, non-recursive digital filters.

Antirequisite(s): **AISE 3351A/B or the former ECE 3351A/B.**

Prerequisite(s): ECE 2233A/B or MSE 2233A/B.

Extra Information: 3 lecture hours, 1 laboratory hour.

Course Weight: 0.50

Course Revision – Effective September 1, 2024, the following change(s) be made:

ELECTRICAL AND COMPUTER ENGINEERING 4451A/B ADVANCED TOPICS IN WIRELESS COMMUNICATIONS

The objective is to examine in-depth the practice of analog and digital communications. Fundamentals of wireless communication electronics are considered. A number of existing systems, including 2G/3G wireless systems, satellite communication systems, radio and TV broadcasting, and others are reviewed. Design aspects of wireless communications systems.

Prerequisite(s): ECE 3370A/B, ~~ECE 4432A/B~~, ECE 4437A/B, Statistical Sciences 2141A/B, NMM 3415A/B or the former Applied Mathematics 3415A/B and completion of the third year of the Electrical Engineering program.

Corequisite(s): ~~ECE 4433A/B~~.

Extra Information: 2 lecture hours, 1.5 laboratory hours.

Course Weight: 0.50

SCHULICH SCHOOL OF MEDICINE & DENTISTRY

DEPARTMENT OF MEDICAL BIOPHYSICS

Program Revision – Effective September 1, 2024, the following change(s) be made:

MAJOR IN MEDICAL BIOPHYSICS

A degree containing this module normally requires 4 years for completion. When combined with one of the following Majors, this module leads to a Bachelor of Medical Sciences (BMSc) degree: Biochemistry, Epidemiology and Biostatistics, Interdisciplinary Medical Sciences (IMS), Medical Cell Biology, Microbiology and Immunology, Pathology, Pharmacology or Physiology. See BACHELOR OF MEDICAL SCIENCES (BMSc) PROGRAM for more information.

ADMISSION REQUIREMENTS

Both 1000- and 2000-level courses are included in the Admission Requirements for students pursuing the Major in Medical Biophysics in BMSc degrees, since admission to the BMSc Program does not occur until Year 3. The Admission Requirements for students pursuing the Major in other regular undergraduate degrees include only 1000-level courses, since students may register in the Major in Year 2 in non-BMSc degrees. The Module requirements (below) are the same for all students completing the Major.

Note: students are encouraged to take Medical Biophysics 2500A/B in second year if they want an introduction to the discipline of Medical Biophysics or are interested in learning how biophysics concepts are applied in translational health research.

ADMISSION REQUIREMENTS FOR STUDENTS PURSUING THIS MAJOR MODULE IN A BACHELOR OF MEDICAL SCIENCES (BMSc) DEGREE:

Admission to this Major module occurs in Year 3 and requires admission to Year 3 of the Bachelor of Medical Sciences (BMSc) Program. Students will usually complete MEDICAL SCIENCES FIRST ENTRY (Medical Sciences 1 and 2) prior to admission to Double Major modules in a BMSc degree.

1.0 course: Biology 1001A* and Biology 1002B*.

1.0 course: Chemistry 1301A/B and Chemistry 1302A/B.

0.5 course from: Calculus 1000A/B, Calculus 1500A/B.

0.5 course from: **Applied Mathematics 1201A/B**, Calculus 1301A/B, Calculus 1501A/B, **Mathematics 1600A/B**.

0.5 course from: Physics 1201A/B, Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B.

0.5 course from: **Computer Science 1026A/B**, Physics 1202A/B, Physics 1502A/B, the former Physics 1029A/B, the former Physics 1302A/B.

* Biology 1201A with a mark of at least 70% may be used in place of Biology 1001A, and Biology 1202B with a mark of at least 70% may be used in place of Biology 1002B.

The course below must be completed with a minimum mark of 60% prior to admission to the Major module in Year 3. This course will also be used towards the Module requirements. See ADMISSION TO THE BACHELOR OF MEDICAL SCIENCES (BMSc) PROGRAM and MODULES OFFERED IN THE BMSc PROGRAM for additional requirements (averages, course load, etc.).

0.5 course from: **Biology 2382A/B, Biology 2581A/B, Chemistry 2214A/B, Computer Science 2035A/B, Data Science 2000A/B, Data Science 2100A.**

ADMISSION REQUIREMENTS FOR STUDENTS PURSUING THIS MAJOR MODULE IN A DEGREE OTHER THAN A BACHELOR OF MEDICAL SCIENCES (BMSc) DEGREE:

Completion of first-year requirements, including a mark of at least 60% in each of the 4.0 (full or half) principal courses below:

1.0 courses: Biology 1001A* and Biology 1002B* (may be deferred until Year 2).

1.0 courses: Chemistry 1301A/B and Chemistry 1302A/B.

0.5 course from: Calculus 1000A/B, Calculus 1500A/B.

0.5 course from: Calculus 1301A/B, Calculus 1501A/B.

0.5 course from: Physics 1201A/B, Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B.

0.5 course from: **Computer Science 1026A/B**, Physics 1202A/B, Physics 1502A/B, the former Physics 1029A/B, the former Physics 1302A/B.

* Biology 1201A with a mark of at least 70% may be used in place of Biology 1001A, and Biology 1202B with a mark of at least 70% may be used in place of Biology 1002B.

Module

6.0 courses:

0.5 course **from: Biology 2382A/B, Biology 2581A/B, Chemistry 2214A/B, Computer Science 2035A/B, Data Science 2000A/B, Data Science 2100A.**

1.0 course from: Physics 2101A/B and Physics 2102A/B, or Physiology 2130 or Physiology and Pharmacology 2000.

~~3.5 courses: Medical Biophysics 3330F/G, Medical Biophysics 3501A, Medical Biophysics 3503G, Medical Biophysics 3505F, Medical Biophysics 3507G, Medical Biophysics 3645A/B, Medical Biophysics 3970Z.~~

1.0 course: Medical Biophysics 3330F, Medical Biophysics 3501A.

1.0 course: Medical Biophysics 3980E.

1.5 courses from: Medical Biophysics 3467B, Medical Biophysics 3503G, Medical Biophysics 3518B, Medical Biophysics 3720A, Medical Biophysics 3820B.

~~1.0 course from: Medical Biophysics 4445A/B, Medical Biophysics 4455A/B, Medical Biophysics 4467A/B, Medical Biophysics 4475A/B, Medical Biophysics 4535A/B, Medical Biophysics 4710A/B.~~

1.0 course from: Medical Biophysics 4330A, Medical Biophysics 4445A/B (but only if Medical Biophysics 3503G was not taken to satisfy a requirement above), Medical Biophysics 4467B, Medical Biophysics 4501A, Medical Biophysics 4518B, Medical Biophysics 4720B, Medical Biophysics 4730A/B.

Notes: ~~Some modular courses include a mark requirement in their prerequisite(s). See UNDERGRADUATE COURSE INFORMATION.~~

1. Physics 2101A/B and Physics 2102A/B include the following courses in their prerequisites, with marks of at least 60%: one of Physics 1202A/B, Physics 1402A/B or Physics 1502A/B, and one of Calculus 1301A/B or Calculus 1501A/B.

2. It is recommended that 1.0 of the following modular courses be completed prior to Year 3: (Physics 2101A/B and Physics 2102A/B) or Physiology 2130 or Physiology and Pharmacology 2000.

Program Revision – Effective September 1, 2024, the following change(s) be made:

MINOR IN MEDICAL BIOPHYSICS

ADMISSION REQUIREMENTS

Completion of first-year requirements, including the following courses with a minimum mark of 60% in each full or half course:

0.5 course from: Physics 1201A/B, Physics 1401A/B, Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B.

0.5 course from: **Computer Science 1026A/B**, Physics 1202A/B, Physics 1402A/B, Physics 1502A/B, the former Physics 1029A/B, the former Physics 1302A/B.

~~1.0 courses from: Calculus 1000A/B or Calculus 1500A/B, and Calculus 1301A/B or Calculus 1501A/B, or the former Applied Mathematics 1413.~~

0.5 course from: Calculus 1000A/B, Calculus 1500A/B.

0.5 course from: Applied Mathematics 1201A/B, Calculus 1301A/B, Calculus 1501A/B, Mathematics 1600A/B.

1.0 courses: Chemistry 1301A/B and Chemistry 1302A/B.

1.0 course: Biology 1001A and Biology 1002B (may be deferred until Year 2). Biology 1201A with a mark of at least 70% may be used in place of Biology 1001A, and Biology 1202B with a mark of at least 70% may be used in place of Biology 1002B.

MODULE/PROGRAM INFORMATION

Module

4.0 courses:

0.5 course **from:** Computer Science 2035A/B, **Data Science 2000A/B, Data Science 2100A.**

2.5 courses: Medical Biophysics 3330F/G, **Medical Biophysics 3467B**, Medical Biophysics 3501A, Medical Biophysics 3503G, **Medical Biophysics 3518B, Medical Biophysics 3720A, Medical Biophysics 3820B, the former** Medical Biophysics 3505F, **the former** Medical Biophysics 3507G.

1.0 course from: Biochemistry 2280A, Biology 2382A/B, Biology 2581A/B, Calculus 2302A/B, Calculus 2303A/B, Chemistry 2214A/B, Computer Science 1025A/B or Computer Science 1026A/B or Engineering Science 1036A/B, Mathematics 1600A/B, additional courses in Medical Biophysics at the 2000- and/or 3000-level, Physics 2101A/B, Physics 2102A/B.

Note: students are encouraged to take Medical Biophysics 2500A/B in second year if they want an introduction to the discipline of Medical Biophysics or are interested in learning how biophysics concepts are applied in translational health research.

Course Introduction – Effective September 1, 2024, the following course be introduced:

MEDICAL BIOPHYSICS 3467B CANCER THERAPY

An introduction to three treatment modalities (radiation, surgical, chemotherapy) and the concepts, processes, and instrumentation required in the clinical application of ionizing radiation to treatment of cancer, and application to a case study. Topics include: susceptibility of cancer to radiation, radiation physics, clinical delivery of radiation and dose deposition.

Prerequisite(s): Medical Biophysics 3501A or Medical Biophysics 3720A. Open only to students who are registered in Years 3 or 4.

Extra Information: 3 lecture hours
Course Weight: 0.50

Course Introduction – Effective September 1, 2024, the following course be introduced:

**MEDICAL BIOPHYSICS 3720A
IN VIVO MEDICAL IMAGING**

Through this introductory course, students will learn the physics and methods of how images are formed for the major clinical imaging modalities, which include ultrasound, x-rays (i.e., diagnostic radiology), computed tomography, nuclear medicine, positron-emission tomography (PET), and magnetic resonance imaging (MRI).

Antirequisite(s): the former Medical Biophysics 4475A/B.

Prerequisite(s): One of Calculus 1000A/B, Calculus 1500A/B, Numerical and Mathematical Methods 1412A/B, the former Applied Mathematics 1412A/B, the former Applied Mathematics 1413; and one of Physics 1201A/B, Physics 1401A/B, Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B. Open only to students who are registered in Years 3 or 4.

Extra Information: 3 lecture hours.

Course Weight: 0.50

Course Introduction – Effective September 1, 2024, the following course be introduced:

**MEDICAL BIOPHYSICS 3820B
PHOTONICS IN MEDICINE AND BIOLOGY**

(Short title: Photonics in Medicine and Bio)

Lectures cover the theory, instrumentation, and application of light in pre-clinical and medical research with clinical applications for studying cancers, musculoskeletal conditions, cardiovascular diseases, and neuromonitoring. Specific themes include instrumentation; generation, transmission, and detection of light; optical microscopy; spectroscopy; and imaging of tissue metabolism, blood content, oxygenation, and flow.

Antirequisite(s): the former Medical Biophysics 3645A/B, the former Medical Biophysics 4710A/B.

Prerequisite(s): One of Calculus 1000A/B, Calculus 1500A/B, Numerical and Mathematical Methods 1412A/B or the former Applied Mathematics 1412A/B; one of Physics 1201A/B, Physics 1401A/B, Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B. Open only to students who are registered in Years 3 or 4.

Extra Information: 2 lecture hours, 1 tutorial hour.

Course Weight: 0.50

Course Introduction – Effective September 1, 2024, the following course be introduced:

**MEDICAL BIOPHYSICS 3980E
GENERAL BIOPHYSICS LABORATORY**

Laboratory tasks and seminars introduce students to conducting and communicating research in medical biophysics. Students practice data collection and analyses through preset exercises and assessments. Students complete an individual 12-week term project in a research laboratory under supervision by faculty. Laboratory exercises and projects depend on expertise of participating faculty.

Antirequisite(s): the former Medical Biophysics 3970Z.

Pre- or corequisite(s): Medical Biophysics 3330F/G, Medical Biophysics 3501A.

Open to students in Year 3 and 4 only.

Extra Information: First term: 1 lecture hour each week and 2 laboratory hours bi-weekly. Second term: students will be expected to spend up to 6 hours per week in the research project lab and up to 3 hours bi-weekly in lecture or laboratory, at the instructor's discretion.

Course Weight: 1.00

Course Introduction – Effective September 1, 2024, the following course be introduced:

**MEDICAL BIOPHYSICS 4330A
HUMAN BIOMECHANICS AND BIOMEDICAL APPLICATIONS 2**

(Short title: Human Biomechanics 2)

Lectures introduce theory and advanced methods for modelling the mechanical behaviours of soft tissues, bone and blood vessels. Students practice and apply computational tools, including finite element solvers (e.g. ABAQUS, FEBio and SimVascular), to solve large scale and complex biomechanics problems encountered in biomedical applications.

Prerequisite(s): Medical Biophysics 3330F and Medical Biophysics 3501A.

Extra Information: 2 lecture hours, 1 laboratory hour

Course Weight: 0.50

Course Introduction – Effective September 1, 2024, the following course be introduced:

**MEDICAL BIOPHYSICS 4501A
CIRCULATORY AND RESPIRATORY SCIENCES 2**

(Short title: Circulatory/Respiratory Sci)

Lectures and seminars highlight topics in cardiovascular, circulatory, and respiratory sciences that medical biophysics cover while introducing important concepts and the multidisciplinary nature of research, professionals, and

applications in the field. Key themes are mathematical modelling, experimental models, and technologies used in research and clinic.

Antirequisite(s): the former Medical Biophysics 3507G, the former Medical Biophysics 4535A/B.

Prerequisite(s): Medical Biophysics 3501A.

Extra Information: 2 lecture hours, 1 tutorial hour.

Course Weight: 0.50

Course Revision – Effective September 1, 2024, the following change(s) be made:

MEDICAL BIOPHYSICS 3330F/G

HUMAN BIOMECHANICS AND BIOMEDICAL APPLICATIONS 1

~~HUMAN BIOMECHANICS WITH BIOMEDICAL APPLICATIONS~~

(Short title: Human Biomechanics 1)

The mechanical properties of biological structures and fluids in relation to function: deformability, strength, and visco-elasticity of hard and soft tissues, modes of loading and failure. **Special topics Topics** include mechanics of synovial joints, mechanics of hearing, and mechanics of orthopedic implants and joint replacement

Prerequisite(s): One of Calculus 1000A/B, Calculus 1500A/B, Mathematics 1225A/B, Numerical and Mathematical Methods 1412A/B, the former Applied Mathematics 1412A/B, the former Applied Mathematics 1413; one of Physics 1201A/B, Physics 1401A/B, Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B; ~~and one of Physics 1202A/B, Physics 1402A/B, Physics 1502A/B, the former Physics 1029A/B, the former Physics 1302A/B. Integrated Science 1001X can be used as a prerequisite in place of Physics 1202A/B.~~

Typically taken in third year, this course is also open to second-year students with an overall average of at least 70% in first year.

Extra Information: 3 lecture hours, 2 laboratory/tutorial hours.

Course Weight: 0.50

Course Revision – Effective September 1, 2024, the following change(s) be made:

MEDICAL BIOPHYSICS 3501A

CIRCULATORY AND RESPIRATORY SCIENCES 1

~~BIOPHYSICS OF TRANSPORT SYSTEMS~~

(Short title: Circulatory/Respiratory Sci 1)

The study of the biophysics and physiology of the cardiovascular and respiratory systems in health and disease, including cellular biophysics, cardiac function, physics of blood flow, vascular mechanics in the microcirculation and large vessels, lung function, physics of air flow, breathing mechanics, diffusive and convective transport and exchange.

~~The physics of blood flow and vascular mechanics in the microcirculation and large vessels, surface energy and interactions at biological interfaces such as the lung, diffusive and convective transport and exchange.~~

Prerequisite(s): One of Calculus 1000A/B, Calculus 1500A/B, Mathematics 1225A/B, Numerical and Mathematical Methods 1412A/B, the former Applied Mathematics 1412A/B, the former Applied Mathematics 1413; one of Physics 1201A/B, Physics 1401A/B, Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B; ~~and one of Physics 1202A/B, Physics 1402A/B, Physics 1502A/B, the former Physics 1029A/B, the former Physics 1302A/B. Integrated Science 1001X can be used as a prerequisite in place of Physics 1202A/B.~~

Typically taken in third year, this course is also open to second-year students with an overall average of at least 70% in first year.

Extra Information: 2 lecture hours, 1 tutorial hour.

Course Weight: 0.50

Course Revision – Effective September 1, 2024, the following change(s) be made:

MEDICAL BIOPHYSICS 3503G FUNDAMENTALS OF DIGITAL IMAGING

Concepts of images relevant to all imaging modalities. Image formation and capture including digital cameras and the eye, pixels, aliasing, resolution, contrast, sensitivity, specificity, ROC, window/level, dynamic range, RGB, spectroscopy. Image compression and quality, quantitative analysis based on imaging software and principles of quantitative stereology.

Prerequisite(s): One of Calculus 1000A/B, Calculus 1500A/B, Numerical and Mathematical Methods 1412A/B or the former Applied Mathematics 1412A/B, plus one of **Applied Mathematics 1201A/B**, Calculus 1301A/B, Calculus 1501A/B, **Mathematics 1600A/B**, Numerical and Mathematical Methods 1414A/B or the former Applied Mathematics 1414A/B; or the former Applied Mathematics 1413; one of Physics 1201A/B, Physics 1401A/B, Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B; ~~and one of Physics 1202A/B, Physics 1402A/B, Physics 1502A/B, the former Physics 1029A/B, the former Physics 1302A/B.~~ Integrated Science 1001X can be used as a prerequisite in place of Calculus 1301A/B and Physics 1202A/B. Typically taken in third year, this course is also open to second-year students with an average of at least 70% in first year.

Extra Information: 2 lecture hours, 1 tutorial hour.

Course Weight: 0.50

Course Revision – Effective September 1, 2024, the following change(s) be made:

**MEDICAL BIOPHYSICS 3518B
INTRODUCTION TO MOLECULAR IMAGING**

An overview of the concepts and techniques used in molecular imaging research. Research areas include genetic engineering of imaging contrast, molecular probes for positron emission tomography, cell tracking using magnetic resonance imaging, and optical molecular imaging of tissue dynamics.

Antirequisite(s): The former Medical Biophysics 2582B.

Prerequisite(s): Biochemistry 2280A; 1.0 course from Applied Mathematics 1201A/B, Calculus 1000A/B, Calculus 1301A/B, Calculus 1500A/B, Calculus 1501A/B, Data Science 1000A/B, Mathematics 1225A/B, Mathematics 1228A/B, Mathematics 1229A/B, Mathematics 1600A/B, Statistical Sciences 1024A/B; and ~~1.0~~ 0.5 course from Physics 1201A/B, ~~Physics 1202A/B~~, Physics 1501A/B, ~~Physics 1502A/B~~, the former Physics 1028A/B, ~~the former Physics 1029A/B~~, the former Physics 1301A/B, ~~the former Physics 1302A/B~~. Integrated Science 1001X can be used as a prerequisite in place of Calculus 1301A/B ~~and Physics 1202A/B~~. **Open only to students who are registered in Years 3 or 4.**

Pre- or Corequisite(s): ~~Biology 2581A/B~~.

Extra Information: 3 lecture hours.

Course Weight: 0.50

Course Revision – Effective September 1, 2024, the following change(s) be made:

**MEDICAL BIOPHYSICS 4445A/B
DIGITAL IMAGING PROCESSING**

An introduction to the fundamentals of digital image processing including image representation, 2D linear systems theory and Fourier analysis, digital filtering and segmentation. Concentrates on practical techniques through an exposure to image processing applications in industry, science and medicine and assignments based on MATLAB numeric computation and visualization environments.

Prerequisite(s): ~~Medical Biophysics 3503G and Medical Biophysics 3505F~~; Calculus 2303A/B or Calculus 2503A/B; and Computer Science 2035A/B; or permission of the department.

Extra Information: 3 lecture hours.

Course Weight: 0.50

Course Revision – Effective September 1, 2024, the following change(s) be made:

**MEDICAL BIOPHYSICS 4467A/B
RADIATION BIOLOGY WITH BIOMEDICAL APPLICATIONS**

Nature and effects of ionizing radiation on biomolecular structures, living cells and tissues. Genetic effects and methods of radiation protection. Radiobiological implications of diagnostic and therapeutic radiation.

Prerequisite(s): Medical Biophysics 3501A; and one of **Medical Biophysics 3467B**, ~~Medical Biophysics 3507G~~ or Physics 2101A/B or Physics 2102A/B, **or the former Medical Biophysics 3507G**; or permission of the department.

Extra Information: 2 lecture hours.

Course Weight: 0.50

Course Revision – Effective September 1, 2024, the following change(s) be made:

**MEDICAL BIOPHYSICS 4720B
APPLIED MEDICAL IMAGING**

This course will present the major modalities of medical imaging (e.g., MR, PET, CT, etc.) from a conceptual perspective. Clinical correlate lectures will be used as follow ups to provide applications to real world pathological conditions and to understanding the benefits of those modalities for guiding clinical diagnosis and improving health outcomes.

Prerequisite(s): Registration in Year 4 of a BSc or BSc degree and one of the following: Biochemistry 2280A, Biochemistry 3380G, **Medical Biophysics 3720A**, **Medical Biophysics 3980E**, Medical Sciences 3990E, Microbiology and Immunology 3610F, Microbiology and Immunology 3620G, Physiology and Pharmacology 3000E, **the former** Medical Biophysics 3970Z. One of Physics 1202A/B, 1502A/B, the former Physics 1029A/B, the former Physics 1302A/B is recommended.

Extra Information: 2 lecture hours, 1 tutorial hour.

Course Weight: 0.50

Course Revision – Effective September 1, 2024, the following change(s) be made:

**MEDICAL BIOPHYSICS 4970E
RESEARCH PROJECT IN BIOPHYSICS**

Major laboratory course in experimental biophysics for Honours Specialization modules offered by the Department of Medical Biophysics. Three components are: a major experimental project (topic and advisor chosen in consultation with the student), scientific communication (student presentation and reports), and electronic information processing (data capture, computer analysis of biophysical signals).

Antirequisite(s): Medical Biophysics 4971E.

Prerequisite(s): **Medical Biophysics 3980E or the former** Medical Biophysics 3970Z and registration in Year 4 of one of the following Honours Specialization modules: Medical Biophysics (Medical Science Concentration), Medical Biophysics (Physical Science Concentration), or Medical Biophysics (Biological Science Concentration); or registration in Year 4 of an Honours Specialization in Medical Biophysics and Biochemistry plus either **Medical Biophysics 3980E or the former Medical Biophysics** 3970Z or Biochemistry 3380G.
Extra Information: 15 hours weekly on average.
Course Weight: 1.50

Course Revision – Effective September 1, 2024, the following change(s) be made:

MEDICAL BIOPHYSICS 4971E

CLINICAL RESEARCH PROJECT IN BIOPHYSICS (~~CLINICAL PHYSICS CONCENTRATION~~)

(Short title: Clinical Project in Biophysics)

Major laboratory course in experimental biophysics for ~~fourth-year~~ Honours Specialization **modules in** Medical Biophysics (~~Clinical Physics Concentration~~). ~~The with~~ three components ~~are~~: a major experimental project related to **clinical physics** (topic and advisor chosen in consultation with the student), scientific communication (student presentation and reports), and electronic information processing (data capture, computer analysis of biophysical signals).

Antirequisite(s): Medical Biophysics 4970E.

Prerequisite(s): **Medical Biophysics 3980E or the former** Medical Biophysics 3970Z; and registration in Year 4 of an Honours Specialization in Medical Biophysics (~~Clinical Physics Concentration~~).

Extra Information: 15 hours weekly on average.

Course Weight: 1.50

Course Withdrawal – Effective September 1, 2024, the following course be withdrawn:

MEDICAL BIOPHYSICS 3505F

MATHEMATICAL TRANSFORM APPLICATIONS IN MEDICAL BIOPHYSICS

The role of mathematical transforms in biomedical research. Application of Fourier Transforms for imaging and image analysis. Applications of systems analysis and Laplace Transforms to model complex systems, and of linear time-invariant systems and kinetic models to analyze physiological processes.

Prerequisite(s): One of Calculus 1000A/B, Calculus 1500A/B, Numerical and Mathematical Methods 1412A/B, the former Applied Mathematics 1412A/B, or the former Applied Mathematics 1413; one of Physics 1201A/B, Physics 1401A/B, Physics 1501A/B, the former Physics 1028A/B, the former Physics

1301A/B. Although typically taken in third year, this course is available to second-year students with an overall average of at least 70% in first year.

Extra Information: 2 lecture hours, 2 laboratory/tutorial hours.

Course Weight: 0.50

Course Withdrawal – Effective September 1, 2024, the following course be withdrawn:

MEDICAL BIOPHYSICS 3507G

ANALYSIS OF OXYGEN TRANSPORT IN BIOLOGICAL SYSTEMS

The application of physics and mathematics for modeling oxygen transport. Emphasis on problem solving and simple MATLAB computer models for enhancing the students' interpretation of analytical solutions. Topics include the Krogh-Erlang capillary model, microvascular blood flow, oxygen diffusion in thin tissues and tumors, and finite difference models in unsteady-state systems.

Prerequisite(s): One of Calculus 1000A/B, Calculus 1500A/B, Numerical and Mathematical Methods 1412A/B or the former Applied Mathematics 1412A/B, plus one of Calculus 1301A/B, Calculus 1501A/B, Numerical and Mathematical Methods 1414A/B or the former Applied Mathematics 1414A/B, or the former Applied Mathematics 1413; one of Physics 1201A/B, Physics 1401A/B, Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B; and one of Physics 1202A/B, Physics 1402A/B, Physics 1502A/B, the former Physics 1029A/B, the former Physics 1302A/B. Integrated Science 1001X can be used as a prerequisite in place of Calculus 1301A/B and Physics 1202A/B. Although typically taken in third year, this course is available to second-year students with an overall average of at least 70% in first year.

Extra Information: 2 lecture hours, 2 laboratory/tutorial hours.

Course Weight: 0.50

Course Withdrawal – Effective September 1, 2024, the following course be withdrawn:

MEDICAL BIOPHYSICS 3645A/B

INTRODUCTION TO BIOMEDICAL OPTICS

An introduction to the physical and biophysical principles underlying the methodology and technology for the medical uses of light including diagnostic and therapeutic applications. Specific areas will include: instrumentation which involves light detection and analysis, light spectroscopy which involves photodynamic therapy and diffuse optical tomography and optical imaging.

Prerequisite(s): One of Calculus 1000A/B, Calculus 1500A/B, Numerical and Mathematical Methods 1412A/B or the former Applied Mathematics 1412A/B, plus one of Calculus 1301A/B, Calculus 1501A/B, Numerical and Mathematical Methods 1414A/B and or the former Applied Mathematics 1414A/B, or the former Applied Mathematics 1413; one of Physics 1201A/B, Physics 1401A/B, Physics

1501A/B, the former Physics 1028A/B, the former Physics 1301A/B; plus one of Physics 1202A/B, Physics 1402A/B, Physics 1502A/B, the former Physics 1029A/B, the former Physics 1302A/B. Integrated Science 1001X can be used as a prerequisite in place Calculus 1301A/B and Physics 1202A/B.

Extra Information: 2 lecture hours.

Course Weight: 0.50

Course Withdrawal – Effective September 1, 2024, the following course be withdrawn:

**MEDICAL BIOPHYSICS 3970Z
GENERAL BIOPHYSICS LABORATORY**

Intended primarily for students in Honours Specialization and Major modules in Medical Biophysics. Laboratories include topics from biomechanics (mechanical properties of arteries and bone), imaging (quantitative stereology, optical CT), biophysical analysis (diffusion and washout models), and transport systems (cardiovascular fluid dynamics). Includes an individual 6-week project in a research laboratory.

Pre-or Corequisite(s): Medical Biophysics 3330F/G, Medical Biophysics 3501A and Medical Biophysics 3505F; or Medical Biophysics 3501A and Medical Biophysics 3507G and registration in the Honours Specialization in Medical Biophysics and Biochemistry.

Extra Information: 3 laboratory hours (3 laboratory hours every other week and up to 3 tutorial hours, at the instructor's discretion, in alternate weeks).

Course Weight: 0.50

Course Withdrawal – Effective September 1, 2024, the following course be withdrawn:

**MEDICAL BIOPHYSICS 4475A/B
MEDICAL IMAGING**

Physical principles underlying medical imaging. Modalities covered: x-rays, computed tomography, nuclear medicine, ultra-sound, and magnetic resonance imaging. Topics include signal generation, detection and the associated mathematics to produce medically useful images, and factors affecting resolution and sensitivity.

Prerequisite(s): Medical Biophysics 3503G, Medical Biophysics 3505F and Medical Biophysics 3507G; Physics 2101A/B and Physics 2102A/B, or permission of the department.

Extra Information: 3 lecture hours.

Course Weight: 0.50

Course Withdrawal – Effective September 1, 2024, the following course be withdrawn:

**MEDICAL BIOPHYSICS 4535A/B
HEMODYNAMICS**

Biophysics related to blood flow: Biomechanical properties of blood, heart, arteries, and veins; pressure, flow, and Poiseuille's law; optimality principles; fluid flow conservation laws and their mathematical description; pulsatile flow in rigid vessels; wave propagation in elastic vessels; structure and blood rheology of the microcirculation; oxygen delivery and flow regulation.

Prerequisite(s): Medical Biophysics 3501A, Medical Biophysics 3503G, Medical Biophysics 3505F and Medical Biophysics 3507G; or permission of the department.

Extra Information: 2 lecture hours.

Course Weight: 0.50

Course Withdrawal – Effective September 1, 2024, the following course be withdrawn:

**MEDICAL BIOPHYSICS 4710A/B
BIOPHOTONICS IN MEDICINE AND LIFE SCIENCES**

Theory, instrumentation, and application of biophotonics in pre-clinical and medical research, and clinical applications for the study of human cancers, musculoskeletal conditions, and cardiovascular diseases. Specific themes include instrumentation for light generation, transmission, and detection; optical spectroscopy and imaging of blood flow and metabolism; functional activation.

Prerequisite(s): One of Medical Biophysics 3645A/B or Physics 3380A/B; and registration in Year 4 of an Honours degree that contains a module offered by the Department of Medical Biophysics or, with special permission, registration in Year 4 of a BESC degree or an Honours BHSc, BMSc or BSc degree.

Extra Information: 3 lecture hours.

Course Weight: 0.50

DON WRIGHT FACULTY OF MUSIC

Course Introduction – Effective September 1, 2024, the following course be introduced:

MUSIC 3732F/G

HITTING THE RIGHT NOTES: SONG LYRIC WRITING

(Short title: Song Lyric Writing)

An introduction to the basics of effective lyric writing using a variety of literary tools.

Antirequisite(s): Writing 3402F/G.

Prerequisite(s): Music 1730A/B.

Extra Information: 3 hours. Cross-listed with Writing 3402F/G.

Course Weight: 0.50

FACULTY OF SCIENCE

DEPARTMENT OF PHYSICS AND ASTRONOMY

Program Revision – Effective September 1, 2024, the following change(s) be made:

MAJOR IN ASTROPHYSICS

Admission Requirements

Completion of first-year requirements including the following 2.0 courses, each with a mark of at least 60%:

1.0 course from: (Physics 1201A/B, Physics 1401A/B, Physics 1501A/B, the former Physics 1301A/B or 80% in the former Physics 1028A/B) and (Physics 1202A/B, Physics 1402A/B, Physics 1502A/B, the former Physics 1302A/B or 80% in the former Physics 1029A/B).

1.0 course: (Calculus 1000A/B or Calculus 1500A/B or Numerical and Mathematical Methods 1412A/B) and (Calculus 1501A/B (recommended) or Calculus 1301A/B with a minimum mark of ~~85%~~ 70% or Numerical and Mathematical Methods 1414A/B); or the former Applied Mathematics 1413 or the former Applied Mathematics 1412A/B and the former Applied Mathematics 1414A/B.

Students must complete Mathematics 1600A/B or Numerical and Mathematical Methods 1411A/B or the former Applied Mathematics 1411A/B with a minimum mark of 55% by the end of Term 1 in Year 2.

Module

6.0 courses:

1.5 courses: (Astronomy 2201A/B or Astronomy 2801A/B), Astronomy 3302A/B, Astronomy 3303A/B.

~~1.0 course: Calculus 2502A/B, Calculus 2503A/B.~~

0.5 course from: Calculus 2502A/B (preferred), Calculus 2302A/B.

0.5 course from: Calculus 2503A/B (preferred), Calculus 2303A/B.

0.5 course: Applied Mathematics 2402A or the former Differential Equations 2402A.

2.0 courses: Physics 2101A/B, Physics 2102A/B, Physics 2110A/B and Physics 2910F/G (or the former Physics 2900E).

1.0 course from: Applied Mathematics 2814F/G, Physics 3900F/G/Z, Physics 3926F/G.

Students must also complete Physics 2950Y, Physics 3950Y (non-credit seminar courses).

Program Revision – Effective September 1, 2024, the following change(s) be made:

MAJOR IN MEDICAL PHYSICS

Admission Requirements

Completion of first-year requirements including the following 2.0 courses, each with a mark of at least 60%:

1.0 course from: (Physics 1201A/B, Physics 1401A/B, Physics 1501A/B, the former Physics 1301A/B or 80% in the former Physics 1028A/B) and (Physics 1202A/B, Physics 1402A/B, Physics 1502A/B, the former Physics 1302A/B or 80% in the former Physics 1029A/B).

1.0 course: (Calculus 1000A/B or Calculus 1500A/B or Numerical and Mathematical Methods 1412A/B) and (Calculus 1501A/B (recommended) or Calculus 1301A/B with a minimum mark of ~~85%~~ **70%** or Numerical and Mathematical Methods 1414A/B); or the former Applied Mathematics 1413 or the former Applied Mathematics 1412A/B and the former Applied Mathematics 1414A/B.

Students must complete Mathematics 1600A/B or Numerical and Mathematical Methods 1411A/B or the former Applied Mathematics 1411A/B with a minimum mark of 55% by the end of Term 1 in Year 2.

Module

6.0 courses:

~~1.0 course: Calculus 2502A/B, Calculus 2503A/B.~~

0.5 course from: Calculus 2502A/B (preferred), Calculus 2302A/B.

0.5 course from: Calculus 2503A/B (preferred), Calculus 2303A/B.

1.0 course from: Physics 2101A/B and Physics 2102A/B.

1.5 courses: Physics 2110A/B, Physics 2910F/G, Physics 3926F/G.

1.0 course from: Physics 3151A/B, Physics 3200A/B, Physics 3300A/B, Physics 3400A/B.

0.5 course: Any Physics or Astronomy course numbered 3000 or above.

1.0 course: Physics 4662A/B, Physics 4672A/B or any Medical Biophysics course numbered 3000 or above.

Students must also complete Physics 2950Y, Physics 3950Y (non-credit seminar courses).

Program Revision – Effective September 1, 2024, the following change(s) be made:

HONOURS SPECIALIZATION IN PHYSICS

Module

10.0 courses:

1.0 course: Calculus 2502A/B, Calculus 2503A/B.

1.0 course: Applied Mathematics 2402A (or the former Differential Equations 2402A), Applied Mathematics 3815A/B.

1.0 course: Physics 2101A/B, Physics 2102A/B.

1.0 course: Physics 2110A/B, Physics 2910F/G (or the former Physics 2900E).

~~0.5 course from: Astronomy 2201A/B, Astronomy 2801A/B, Physics 2600A/B, Physics 2810A/B, the former Physics 2700A/B, Physics 2800, the former Materials Science 2800.~~

3.0 courses: Physics 3151A/B, Physics 3200A/B, Physics 3300A/B, Physics 3400A/B, Physics 3900F/G/Z, Physics 3926F/G.

1.0 course: Physics 4251A/B, Physics 4351A/B.

~~1.0 course from: Any Physics or Astronomy course not yet taken numbered 3000 or above.~~

1.5 course from: any Physics or Astronomy course not yet taken numbered 2100 or above, Chemistry 4424A/B.

0.5 course from: any Physics or Astronomy course not already taken at the 4000 level or above.

Students must also complete Physics 2950Y, Physics 3950Y, Physics 4950Y (non-credit seminar courses).

Program Revision – Effective September 1, 2024, the following change(s) be made:

HONOURS SPECIALIZATION IN INTEGRATED SCIENCE WITH PHYSICS

Module

13.0 courses:

2.5 courses: Integrated Science 2001F/G*, Integrated Science 2002B*, Integrated Science 3001F/G**, Integrated Science 3002A/B**, Integrated Science 4001Y***.

0.5 course*: Philosophy 2320F/G.

0.5 course: Science 3377A/B**.

1.5 course: Integrated Science 4999E***.

~~1.0 course: Calculus 2502A/B (preferred) or Calculus 2302A/B, Calculus 2503A/B (preferred) or Calculus 2303A/B.~~

0.5 course from: Calculus 2502A/B (preferred), Calculus 2302A/B.

0.5 course from: Calculus 2503A/B (preferred), Calculus 2303A/B.

0.5 course: Applied Mathematics 2402A/B.

2.0 courses: Physics 2101A/B, Physics 2102A/B, Physics 2110A/B, Physics 2910F/G.

~~1.0 course from: Astronomy 2201A/B, Astronomy 2801A/B, Physics 2810A/B, the former Physics 2600A/B.~~

0.5 course from: Physics 3900F/G/Z, Physics 3926F/G.

1.0 course from: Physics 3151A/B, Physics 3200A/B, Physics 3300A/B, Physics 3400A/B.

~~2.0 additional courses from: Applied Mathematics 3815A/B, any Physics or Astronomy course not yet taken numbered 3000 or above.~~

3.0 courses from: Applied Mathematics 3815A/B, any Physics or Astronomy course not yet taken numbered 2100 or above, Chemistry 4424A/B.

Students must also complete Physics 2950Y, Physics 3950Y (non-credit seminar courses).

Notes:

Year 1 consists of 5.5 courses.

* indicates courses taken in Second Year of Program

** indicates courses taken in Third Year of Program

*** indicates courses taken in Fourth Year of Program

Program Revision – Effective September 1, 2024, the following change(s) be made:

MAJOR IN PHYSICS

Admission Requirements

Completion of first-year requirements including the following courses, each with a mark of at least 60%:

1.0 course from: (Physics 1201A/B, Physics 1401A/B, Physics 1501A/B, the former Physics 1301A/B or 80% in the former Physics 1028A/B) and (Physics 1202A/B, Physics 1402A/B, Physics 1502A/B, the former Physics 1302A/B or 80% in the former Physics 1029A/B).

1.0 course: (Calculus 1000A/B or Calculus 1500A/B or Numerical and Mathematical Methods 1412A/B) and (Calculus 1501A/B (recommended) or Calculus 1301A/B with a minimum mark of ~~85%~~ **70%** or Numerical and Mathematical Methods 1414A/B); or the former Applied Mathematics 1413 or the former Applied Mathematics 1412A/B and the former Applied Mathematics 1414A/B.

1.0 additional course, at least 0.5 of which must be from the Faculty of Science.

Students must complete Mathematics 1600A/B or Numerical and Mathematical Methods 1411A/B or the former Applied Mathematics 1411A/B with a minimum mark of 55% by the end of Term 1 in Year 2.

Module

6.0 courses:

1.0 course: Calculus 2502A/B (preferred) or Calculus 2302A/B or Numerical and Mathematical Methods 2276A/B or Numerical and Mathematical Methods 2277A/B, Calculus 2503A/B (preferred) or Calculus 2303A/B or Numerical and Mathematical Methods 3415A/B.

0.5 course: Applied Mathematics 2402A (or the former Differential Equations 2402A) or Numerical and Mathematical Methods 2270A/B.

1.0 course: Physics 2101A/B, Physics 2102A/B.

1.0 course: Physics 2110A/B and Physics 2910F/G (or the former Physics 2900E).

1.0 course from: any Physics or Astronomy course not yet taken numbered 2100 or above, Chemistry 4424A/B.

0.5 course from: Physics 3900F/G/Z, Physics 3926F/G.

1.0 course from: Physics 3151A/B, Physics 3200A/B, Physics 3300A/B, Physics 3400A/B.

Students must also complete Physics 2950Y, Physics 3950Y (non-credit seminar courses).

Note: The above courses may have prerequisites not included in the module.

Program Revision – Effective September 1, 2024, the following change(s) be made:

MINOR IN PHYSICS

Admission Requirements

Completion of first-year requirements including the following courses, each with a mark of at least 60%:

1.0 course from: (Physics 1201A/B, Physics 1401A/B, Physics 1501A/B, the former Physics 1301A/B or 80% in the former Physics 1028A/B) and (Physics 1202A/B, Physics 1402A/B, Physics 1502A/B, the former Physics 1302A/B or 80% in the former Physics 1029A/B).

1.0 course: (Calculus 1000A/B or Calculus 1500A/B or Numerical and Mathematical Methods 1412A/B) and (Calculus 1501A/B (recommended)

or Calculus 1301A/B with a minimum mark of ~~85%~~ **70%** or Numerical and Mathematical Methods 1414A/B); or the former Applied Mathematics 1413 or the former Applied Mathematics 1412A/B and the former Applied Mathematics 1414A/B.

1.0 additional course, at least 0.5 of which must be from the Faculty of Science.

Students must complete Mathematics 1600A/B or Numerical and Mathematical Methods 1411A/B or the former Applied Mathematics 1411A/B with a minimum mark of 55% by the end of Term 1 in Year 2.

Module

4.0 courses:

1.0 course from: Calculus 2302A/B, Calculus 2303A/B, Calculus 2502A/B, Calculus 2503A/B.

1.0 course: Physics 2101A/B, Physics 2102A/B.

1.0 course: Physics 2110A/B and Physics 2910F/G (or the former Physics 2900E).

1.0 course from: any Physics or Astronomy course not yet taken numbered 2100 or above.

Students must also complete Physics 2950Y (non-credit seminar course).

Program Revision – Effective September 1, 2024, the following change(s) be made:

SPECIALIZATION IN ASTROPHYSICS

Admission Requirements

Completion of first-year requirements including the following 3.5 courses, each with a mark of at least 60%:

1.0 course from: (Physics 1201A/B, Physics 1401A/B, Physics 1501A/B, the former Physics 1301A/B or 80% in the former Physics 1028A/B) and (Physics 1202A/B, Physics 1402A/B, Physics 1502A/B, the former Physics 1302A/B or 80% in the former Physics 1029A/B).

1.0 course: (Calculus 1000A/B or Calculus 1500A/B or Numerical and Mathematical Methods 1412A/B) and (Calculus 1501A/B (recommended) or Calculus 1301A/B with a minimum mark of ~~85%~~ **70%** or Numerical and Mathematical Methods 1414A/B); or the former Applied Mathematics 1413 or the former Applied Mathematics 1412A/B and the former Applied Mathematics 1414A/B.

0.5 course: Mathematics 1600A/B or Numerical and Mathematical Methods 1411A/B or the former Applied Mathematics 1411A/B.

0.5 additional course from the Faculty of Science. It is highly recommended that students complete one of the following: Chemistry 1301A/B, Chemistry 1302A/B, Computer Science 1025A/B or Computer Science 1026A/B, Data Science 1000A/B or the former Statistical Sciences 1024A/B.

0.5 additional course.

Module.

10.0 courses:

3.0 courses: Astronomy 2201A/B, Astronomy 2801A/B, Astronomy 3302A/B, Astronomy 3303A/B, Astronomy 4101A/B, Astronomy 4602A/B.

~~1.0 course from: Calculus 2502A/B (preferred) or Calculus 2302A/B, Calculus 2503A/B (preferred) or Calculus 2303A/B.~~

0.5 course from: Calculus 2502A/B (preferred), Calculus 2302A/B.

0.5 course from: Calculus 2503A/B (preferred), Calculus 2303A/B.

1.0 course: Applied Mathematics 2402A or the former Differential Equations 2402A, Applied Mathematics 3815A/B.

2.0 courses: Physics 2101A/B, Physics 2102A/B, Physics 2110A/B, and Physics 2910F/G (or the former Physics 2900E).

2.0 courses: Physics 3151A/B, Physics 3200A/B, Physics 3300A/B, and Physics 3400A/B.

0.5 course from: Physics 3900F/G/Z, Physics 3926F/G.

0.5 course: Physics 4351A/B.

Students must also complete Physics 2950Y, Physics 3950Y, Physics 4950Y (non-credit seminar courses).

Program Revision – Effective September 1, 2024, the following change(s) be made:

SPECIALIZATION IN MEDICAL PHYSICS

Admission Requirements

Completion of first-year requirements including the following 3.5 courses, each with a mark of at least 60%:

1.0 course from: (Physics 1201A/B, Physics 1401A/B, Physics 1501A/B, the former Physics 1301A/B or 80% in the former Physics 1028A/B) and (Physics 1202A/B, Physics 1402A/B, Physics 1502A/B, the former Physics 1302A/B or 80% in the former Physics 1029A/B).

1.0 course: (Calculus 1000A/B or Calculus 1500A/B or Numerical and Mathematical Methods 1412A/B) and (Calculus 1501A/B (recommended) or Calculus 1301A/B with a minimum mark of ~~85%~~ **70%** or Numerical and Mathematical Methods 1414A/B); or the former Applied Mathematics 1413 or the former Applied Mathematics 1412A/B and the former Applied Mathematics 1414A/B.

0.5 course: Mathematics 1600A/B or Numerical and Mathematical Methods 1411A/B or the former Applied Mathematics 1411A/B.

0.5 additional course from the Faculty of Science. It is highly recommended that students complete one of the following: Chemistry 1301A/B, Chemistry 1302A/B, Computer Science 1025A/B or Computer Science 1026A/B, Data Science 1000A/B or the former Statistical Science 1024A/B.

0.5 additional course.

Module

10.0 courses:

~~1.0 course: Calculus 2502A/B (preferred) or Calculus 2302A/B, Calculus 2503A/B (preferred) or Calculus 2303A/B.~~

0.5 course from: Calculus 2502A/B (preferred), Calculus 2302A/B.

0.5 course from: Calculus 2503A/B (preferred), Calculus 2303A/B.

1.0 course: Applied Mathematics 2402A, Applied Mathematics 3815A/B.

1.0 course from: Physics 2101A/B and Physics 2102A/B.

1.0 course: Physics 2110A/B and Physics 2910F/G.

3.5 courses: Physics 3151A/B, Physics 3200A/B, Physics 3300A/B, Physics 3400A/B, Physics 3900F/G/Z, Physics 3926F/G, Physics 4351A/B.

0.5 course from: Physics 4662A/B or Physics 4672A/B.

1.0 course from: Medical Biophysics 3503G, Medical Biophysics 3505F, Medical Biophysics 3645A/B, Medical Biophysics 4445A/B, Medical Biophysics 4455A/B or the remaining course from Physics 4662A/B or Physics 4672A/B.

1.0 course from: any Physics or Astronomy course not already taken at the 3000 level or above.

Students must also complete Physics 2950Y, Physics 3950Y, Physics 4950Y (non-credit seminar courses).

Note: The above courses may have prerequisites that are not included in the module.

Program Revision – Effective September 1, 2024, the following change(s) be made:

SPECIALIZATION IN PHYSICS

Admission Requirements

Completion of first-year requirements including the following 3.5 courses, each with a mark of at least 60%:

1.0 course from: (Physics 1201A/B, Physics 1401A/B, Physics 1501A/B, the former Physics 1301A/B or 80% in the former Physics 1028A/B) and (Physics 1202A/B, Physics 1402A/B, Physics 1502A/B, the former Physics 1302A/B or 80% in the former Physics 1029A/B).

1.0 course: (Calculus 1000A/B or Calculus 1500A/B or Numerical and Mathematical Methods 1412A/B) and (Calculus 1501A/B (recommended) or Calculus 1301A/B with a minimum mark of ~~85%~~ **70%** or Numerical and Mathematical Methods 1414A/B); or the former Applied Mathematics 1413 or the former Applied Mathematics 1412A/B and the former Applied Mathematics 1414A/B.

0.5 course: Mathematics 1600A/B or Numerical and Mathematical Methods 1411A/B or the former Applied Mathematics 1411A/B.

0.5 additional course from the Faculty of Science. It is highly recommended that students complete one of the following: Chemistry 1301A/B, Chemistry 1302A/B, Computer Science 1025A/B or Computer Science 1026A/B, Data Science 1000A/B or the former Statistical Sciences 1024A/B.

0.5 additional course.

Module

10.0 courses:

~~1.0 course: Calculus 2502A/B (preferred) or Calculus 2302A/B, and Calculus 2503A/B (preferred) or Calculus 2303A/B.~~

0.5 course from: Calculus 2502A/B (preferred), Calculus 2302A/B.

0.5 course from: Calculus 2503A/B (preferred), Calculus 2303A/B.

1.0 course: Applied Mathematics 2402A (or the former Differential Equations 2402A), Applied Mathematics 3815A/B.

1.0 course: Physics 2101A/B, Physics 2102A/B.

1.0 course: Physics 2110A/B, Physics 2910F/G (or the former Physics 2900E),

3.0 courses: Physics 3151A/B, Physics 3200A/B, Physics 3300A/B, Physics 3400A/B, Physics 3900F/G/Z, Physics 3926F/G.

1.0 course: Physics 4251A/B, Physics 4351A/B.

1.5 courses from: Any courses not yet taken numbered 2100 or higher in Physics and Astronomy, **Chemistry 4424A/B**.

0.5 course from: any Physics or Astronomy course not already taken at the 4000-level or above.

Students must also complete Physics 2950Y, Physics 3950Y, Physics 4950Y (non-credit seminar courses).

Course Introduction – Effective September 1, 2024, the following course be introduced:

PHYSICS 2300A/B

QUANTUM COMPUTATION AND INFORMATION

(Short title: Quantum Computation)

This course discusses the basics of quantum information; quantum phenomena; quantum circuits and universality; basics of computational complexity; relationship between quantum and classical complexity classes; simple quantum algorithms such as quantum Fourier transform; Shor factoring algorithm; Grover search algorithm; physical realization of quantum computation; error correction and fault tolerance.

Prerequisite(s): Physics 1202A/B or Physics 1402A/B or Physics 1502A/B or the former Physics 1302A/B, each with a minimum mark of 60%; Mathematics 1600A/B or Numerical and Mathematical Methods 1411A/B or the former Applied Mathematics 1411A/B, each with a minimum mark of 60%; Computer Science 1026A/B, Computer Science 2120A/B, or Engineering Science 1036A/B, each with a minimum mark of 70%, or Physics 3926F/G with a minimum mark of 60%; Applied Mathematics 2402A/B or Numerical and Mathematical Methods 2270A/B. Pre-or Corequisite(s): Numerical and Mathematical Methods 2276A/B or Physics 2110A/B.

Extra Information: 3 lecture hours.

Course Weight: 0.50

FACULTY OF SOCIAL SCIENCE

DEPARTMENT OF HISTORY

Course Revision – Effective September 1, 2024, the following change(s) be made:

HISTORY 3605E

CRUSADERS AND ~~MOSLEMS~~ MUSLIMS IN THE TWELFTH CENTURY

(Short title: **Crusaders and Muslims**)

~~Aspects of Frankish and Moslem Societies and Cultures in the Middle East.~~

This course examines the social and economic factors behind the Crusades, both in medieval Europe and in the Middle East. It explores the Crusaders kingdom in the context of medieval Islam and Christianity, as a neighbor of the Islamic states, and as a link to Mediterranean Europe.

Antirequisite(s): History 3602F/G.

Prerequisite(s): 1.0 History course at the 2200-level or above.

Extra Information: 2 hours.

Course Weight: 1.00

INDIGENOUS STUDIES PROGRAM

Course Introduction – Effective September 1, 2024, the following course be introduced:

INDIGENOUS STUDIES 3676A/B

LANDMARKS: SPATIAL STORYTELLING, LAND, ART, PLACE AND COMMUNITY II

(Short title: Land, Art, Place II)

For Haudenosaunee the landscape is an animate, living and embodied archive with which we are all interconnected. This studio-based course involves continued and richer community engagement learning where students will create site-specific artworks that explore (inter)relationships with the archive of 'place'. This course is a continuation of Indigenous Studies 2676A/B.

Antirequisite(s): Studio Art 3676A/B.

Prerequisite(s): Indigenous Studies 2676A/B or Studio Art 2676A/B, or special permission of the instructor.

Extra Information: 6 studio and/or lecture hours, blended or online format. Priority will be given to students registered in Indigenous Studies. Cross-listed with Studio Art 3676A/B.

Course Weight: 0.50

HURON UNIVERSITY COLLEGE

MANAGEMENT AND ORGANIZATIONAL STUDIES – FACULTY OF ARTS AND SOCIAL SCIENCE

Program Revision – Effective September 1, 2024, the following change(s) be made:

HONOURS SPECIALIZATION IN FINANCE AND ADMINISTRATION

Module

11.0 senior courses:

1.0 course normally taken in second year: Business Administration 2257 or MOS 2227A/B and MOS 2228A/B.

1.0 course **normally taken in second year:** Economics 2220A/B, Economics 2260A/B.

1.0 course: Economics 2222A/B, Economics 2223A/B.

0.5 course normally taken in second year: MOS 2310A/B (or the former MOS 3310A/B).

~~2.0~~ **1.5** courses **normally taken in second or third year from:** MOS 2181A/B, ~~MOS 2277A/B, MOS 2310A/B (or the former MOS 3310A/B),~~ **MOS 2275A/B, MOS 2320A/B (or MOS 3320A/B), MOS 3330A/B.**

1.0 courses normally taken in third year: MOS 3316A/B, **MOS 3311A/B (or the former MOS 4310A/B)** ~~MOS 3370A/B.~~

2.0 courses normally taken in third year from: MOS 2277A/B, MOS 3312A/B, MOS 3331A/B, MOS 3360A/B, MOS 3361A/B, MOS 3370A/B, MOS 4315A/B, MOS 4317A/B.

~~2.0~~ **0.5** courses normally taken in fourth year: ~~MOS 3311A/B (or the former MOS 4310), MOS 3330A/B; MOS 4410A/B; MOS 4471A/B or MOS 4488A/B.~~

1.0 course from: MOS 2182F/G, MOS 2235A/B, MOS 2255F/G, MOS 2265F/G, MOS 3250A/B, MOS 3321F/G, MOS 3325A/B, MOS 3335A/B, MOS 3353F/G, MOS 3362A/B, MOS 3388A/B, MOS 3398A/B, MOS 4465A/B, MOS 4471A/B, MOS 4486A/B, MOS 4488A/B, MOS 4489F/G, MOS 4498A/B, MOS 4998F/G.

~~2.0 courses from: Economics 3340F/G, Economics 3352A/B, Economics 3370A/B, MOS 2182F/G, MOS 2275A/B, MOS 2276A/B, MOS 3321F/G, MOS 3325A/B, MOS 3331A/B, MOS 3360A/B, MOS 3361A/B, MOS 3362A/B, MOS 3388A/B, MOS 3398A/B, MOS 4317A/B, MOS 4465A/B, MOS 4489F/G, MOS 4498A/B, MOS 4998F/G, the former Geography 3422A/B (Note that MOS 3360A/B and/or MOS 3361A/B are prerequisites for MOS 4465A/B).~~

~~0.5~~ **1.0** course from: Actuarial Science 2053, **Economics 2120A/B, Economics 2154A/B, Economics 2156A/B,** Economics 2221A/B, Economics 2261A/B, Economics 3328A/B, Economics 3329A/B, Economics 3340F/G, Economics 3352A/B, Economics 3357A/B, Economics 3370A/B.

0.5 course from: GLE 2001F/G, GLE 2003F/G, History 2125F/G, History

2127F/G, History 2204F/G, MOS 2198A/B, ~~MOS 2255F/G, MOS 2265F/G,~~ MOS 2298A/B, MOS 2299F/G, ~~MOS 3250A/B, MOS 3353F/G, MOS 4486A/B,~~ Philosophy 2074F/G, Philosophy 2821F/G, Philosophy 2822F/G, Political Science 2211E, Political Science 2246E.

Program Revision – Effective September 1, 2024, the following change(s) be made:

SPECIALIZATION IN FINANCE AND ADMINISTRATION

Module

11.0 senior courses:

1.0 course normally taken in second year: Business Administration 2257 or MOS 2227A/B and MOS 2228A/B.

1.0 course **normally taken in second year**: Economics 2220A/B, Economics 2260A/B.

1.0 course: Economics 2222A/B; **and** Economics 2223A/B; **OR MOS 2242A/B and 0.5 MOS course at 2000-level or above.**

0.5 course normally taken in second year: MOS 2310A/B (or the former MOS 3310A/B).

~~2.0~~ **1.5** courses **normally taken in second or third year from**: MOS 2181A/B, ~~MOS 2277A/B, MOS 2310A/B (or the former MOS 3310A/B),~~ **MOS 2275A/B,** MOS 2320A/B (or MOS 3320A/B), **MOS 3330A/B.**

~~0.5~~ **1.0** course normally taken in third year: MOS 3316A/B, **MOS 3311A/B (or the former MOS 4310A/B).**

~~4.0~~ **2.0** courses normally taken in third year from: **MOS 2277A/B, MOS 3312A/B,** MOS 3360A/B, MOS 3361A/B, MOS 3370A/B, **MOS 4315A/B, MOS 4317A/B** (Note that ~~MOS 3360A/B and/or MOS 3361A/B are prerequisites for MOS 4465A/B.~~

0.5 course normally taken in fourth year: MOS 4410A/B.

1.0 course from: MOS 2182F/G, MOS 2235A/B, MOS 2255F/G, MOS 2265F/G, MOS 3250A/B, MOS 3321F/G, MOS 3325A/B, MOS 3335A/B, MOS 3353F/G, MOS 3362A/B, MOS 3388A/B, MOS 3398A/B, MOS 4465A/B, MOS 4471A/B, MOS 4486A/B, MOS 4488A/B, MOS 4489F/G, MOS 4498A/B, MOS 4998F/G.

1.0 course from: Actuarial Science 2053, Economics 2120A/B, Economics 2154A/B, Economics 2156A/B, ~~Economics 2159A/B, Economics 2160A/B, Economics 2165F/G,~~ Economics 2221A/B, Economics 2261A/B, **Economics 3328A/B, Economics 3329A/B, Economics 3340F/G, Economics 3352A/B, Economics 3357A/B, Economics 3370A/B.**

~~0.5 course from: History 2125F/G, History 2127F/G, History 2204F/G, Philosophy 2074F/G, Political Science 2211E, Political Science 2246E.~~

~~1.5 courses normally taken in fourth year: MOS 3311A/B (or the former MOS 4310A/B), MOS 3330A/B, MOS 4410A/B.~~

~~1.5~~ **0.5** courses from: ~~MOS 2182F/G, MOS 2198A/B, MOS 2255F/G, MOS 2265F/G, MOS 2275A/B, MOS 2276A/B, MOS 2298A/B, MOS 2299F/G, MOS~~

~~3250A/B, MOS 3321F/G, MOS 3325A/B, MOS 3331A/B, MOS 3360A/B, MOS 3361A/B, MOS 3362A/B, MOS 3370A/B, MOS 3385A/B, MOS 3388A/B, MOS 3395A/B, MOS 3396A/B, MOS 3397A/B, MOS 3398A/B, MOS 4317A/B, MOS 4465A/B, MOS 4471A/B, MOS 4486A/B, MOS 4488A/B, MOS 4495A/B, MOS 4496A/B, MOS 4497A/B, MOS 4498A/B, MOS 4998F/G, the former MOS 3371A/B, Economics 2124A/B, Economics 2162A/B, Economics 2163A/B, Economics 2164A/B, GLE 2001F/G, GLE 2003F/G, the former Geography 3422A/B~~ **History 2125F/G, History 2127F/G, History 2204F/G, MOS 2198A/B, MOS 2298A/B, MOS 2299F/G, Philosophy 2074F/G, Philosophy 2821F/G, Philosophy 2822F/G, Political Science 2211E, Political Science 2246E.**

Program Revision – Effective September 1, 2024, the following change(s) be made:

HONOURS SPECIALIZATION IN MARKETING and SUSTAINABILITY

Module

10.5 courses:

3.0 courses from the Marketing and Sustainability requirements group

0.5 course normally taken in second year from: MOS 2320A/B* or MOS 3320A/B.

1.5 courses **normally taken in third year**: MOS 3321F/G, MOS 3423F/G, MOS 3420F/G.

1.0 course **s normally taken in third or fourth year** from: MOS 3322F/G, MOS 3323A/B, MOS 3325A/B, **MOS 4511F/G**, Digital Communication 2309A/B, ~~MOS 4498A/B~~.

5.0 courses from the Long-term Strategic Success group

1.0 course normally taken in second year: Business Administration 2257 or MOS 2227A/B and MOS 2228A/B.

2.5 courses normally taken in second year: MOS 2181A/B, MOS 2182F/G, MOS 2242A/B, MOS 2275A/B, MOS 2310A/B (or the former MOS 3310 A/B).

1.0 course **s** normally taken in third or fourth year: MOS 3330A/B, MOS 4410A/B.

0.5 course from: MOS 2198A/B, MOS 2235A/B, MOS 2255F/G, MOS 2265F/G, MOS 2299F/G, MOS 3250A/B, MOS 3332A/B, MOS 3335A/B, MOS 3331A/B, MOS 3335A/B, MOS 3398A/B, MOS 3401F/G, MOS 4488A/B, MOS 4489F/G, MOS 4486A/B, MOS 4498A/B.

1.0 courses from the Knowledge in Sustainability group (some courses may require a prerequisite or department permission in advance of enrollment)

0.5 course normally taken in first or second year from: Environmental Science 1021F/G, MOS 2185A/B, Geography 2133A/B, GLE 2004F/G, Geography 2153A/B, Geography 2162A/B, Geography 2310A/B.
0.5 course normally taken in third or fourth year from: Centre for Global Studies 3531F/G, ~~GLE 2004F/G, GLE 3001F/G,~~ **GLE 3004F/G,** Geography 3446F/G, Geography 3350A/B, Geography 3432A/B, Geography 3461F/G.

1.5 courses from the Interdisciplinary Perspectives group (the student is responsible for ensuring that prerequisites, departmental permissions, and antirequisites have been taken into account ~~some courses may require a prerequisite or department permission or have antirequisites in advance of enrollment~~):

1.5 courses from: Arabic 2050A/B, Arabic 2250, CGS 2002F/G, CGS 2004F/G, CGS 3516F/G, CGS 3519F/G, CGS 3520F/G, CGS 3522F/G, CGS 3525F/G, CGS 3527F/G, CGS 3528F/G, Chinese 2250, Chinese 2252A/B, Economics 2124A/B, Economics 2125A/B, Economics 2154A/B, Economics 3352A/B, Economics 3370A/B, French 1911A/B, French 1912F/G, French 2901A/B, French 2902F/G, French 2301A/B, Geography 2143A/B, Geography 2420A/B, Geography 2430A/B, German 2220A/B, Global Great Books 3001F/G, **GLE 2005F/G, GLE 3011F/G,** History 2125F/G, History 2813F/G, History 4202F/G, Italian 2220A/B, Japanese 2250, Japanese 2251A/B, Korean 2200, Philosophy 2074F/G, Philosophy 2253A/B, Philosophy 3850F/G, Political Science 2231E, Political Science 2257, Political Science 3379E, Psychology 2070A/B, Psychology 3722F/G, Spanish 2200, Writing 2101F/G.

Program Revision – Effective September 1, 2024, the following change(s) be made:

SPECIALIZATION IN MARKETING AND SUSTAINABILITY

Module

10.5 courses:

3.0 courses from the Marketing and Sustainability requirements group

0.5 course normally taken in second year **from**: MOS 2320A/B* or MOS 3320A/B.

1.5 courses **normally taken in third year** ~~from~~: MOS 3321F/G, MOS 3423F/G, MOS 3420F/G.

1.0 course **s normally taken in third or fourth year** from: MOS 3322F/G, MOS 3323A/B, **MOS 3325A/B,** ~~MOS 4498A/B,~~ **MOS 4511F/G, Digital Communication 2309A/B.**

5.0 courses from the Long-term Strategic Success group

1.0 course normally taken in second year: Business Administration 2257 or MOS 2227A/B and MOS 2228A/B.

2.5 courses normally taken in second year: MOS 2181A/B, MOS 2182F/G, MOS 2242A/B, MOS 2275A/B, MOS 2310A/B (or the former MOS 3310 A/B).

1.0 course normally taken in third or fourth year: MOS 3330A/B, MOS 4410A/B.

0.5 course from: MOS 2198A/B, MOS 2235A/B, MOS 2255F/G, MOS 2265F/G, MOS 2299F/G, MOS 3250A/B, MOS 3332A/B, MOS 3335A/B, MOS 3331A/B, MOS 3335A/B, MOS 3398A/B, MOS 3401F/G, MOS 4488A/B, MOS 4489F/G, MOS 4486A/B, MOS 4498A/B.

1.0 courses from the Knowledge in Sustainability group (some courses may require a prerequisite or department permission in advance of enrollment)

0.5 course normally taken in first or second year from: Environmental Science 1021F/G, MOS 2185A/B, Geography 2133A/B, GLE 2004F/G, Geography 2153A/B, Geography 2162A/B, Geography 2310A/B.

0.5 course normally taken in third or fourth year from: Centre for Global Studies 3531F/G, ~~GLE 2004F/G, GLE 3001F/G,~~ **GLE 3004F/G,** Geography 3446F/G, Geography 3350A/B, Geography 3432A/B, Geography 3461F/G.

1.5 courses from the Interdisciplinary Perspectives group (the student is responsible for ensuring that prerequisites, departmental permissions, and antirequisites have been taken into account ~~some courses may require a prerequisite or department permission or have antirequisites in advance of enrollment~~):

1.5 courses from: Arabic 2050A/B, Arabic 2250, CGS 2002F/G, CGS 2004F/G, CGS 3516F/G, CGS 3519F/G, CGS 3520F/G, CGS 3522F/G, CGS 3525F/G, CGS 3527F/G, CGS 3528F/G, Chinese 2250, Chinese 2252A/B, Economics 2124A/B, Economics 2125A/B, Economics 2154A/B, Economics 3352A/B, Economics 3370A/B, French 1911A/B, French 1912F/G, French 2901A/B, French 2902F/G, French 2301A/B, Geography 2143A/B, Geography 2420A/B, Geography 2430A/B, German 2220A/B, Global Great Books 3001F/G, **GLE 2005F/G, GLE 3011F/G,** History 2125F/G, History 2813F/G, History 4202F/G, Italian 2220A/B, Japanese 2250, Japanese 2251A/B, Korean 2200, Philosophy 2074F/G, Philosophy 2253A/B, Philosophy 3850F/G, Political Science 2231E, Political Science 2257, Political Science 3379E, Psychology 2070A/B, Psychology 3722F/G, Spanish 2200, Writing 2101F/G.

Course Revision – Effective September 1, 2024, the following change(s) be made:

**MANAGEMENT AND ORGANIZATIONAL STUDIES 3321F/G
CONSUMER BEHAVIOUR**

This course focuses on understanding and predicting consumer behavior by integrating theories from psychology, sociology, anthropology and economics. Emphasis will be on how behavior is shaped by internal and external influences.

Prerequisite(s) **at Main Campus and Brescia:** MOS 2320A/B or MOS 3320A/B and enrolment in 3rd or 4th year of BMOS. **Prerequisite(s) at Huron campus:** **Enrolment in 3rd or 4th year of BMOS. Priority in enrolment will be given to Huron University College students registered in a Marketing and Sustainability module. Pre- or Co-requisites at Huron campus: MOS 2320A/B or MOS 3320A/B.**

Extra Information: 3 lecture hours.

Course Weight: 0.50

Course Revision – Effective September 1, 2024, the following change(s) be made:

**MANAGEMENT AND ORGANIZATIONAL STUDIES 3420F/G
MARKETING RESEARCH**

This course integrates the various research tools used within the social sciences and applies them to practical marketing research settings. The focus is on how to develop research designs, instruments, and methodologies to answer specific applied research questions and theories.

Antirequisite(s): MOS 3470F/G.

Prerequisite(s) **at Main Campus:** MOS 2320A/B or MOS 3320A/B and enrolment in 3rd or 4th year of BMOS. **Prerequisite(s) at Huron: Enrolment in 3rd or 4th year of BMOS. Priority in enrolment will be given to Huron University College students registered in a Marketing and Sustainability module. Pre-or Corequisite(s) at Main Campus:** One of: MOS 2242A/B; Psychology 2820E; Sociology 2205A/B and Sociology 2206A/B; Statistical Sciences 2035. **Pre-or Corequisite(s) at Huron: MOS 2320A/B or MOS 3320A/B and one of: MOS 2242A/B; Psychology 2820E; Sociology 2205A/B and Sociology 2206A/B; Statistical Sciences 2035.**

Extra Information: 3 lecture hours.

Course Weight: 0.50

Course Revision – Effective September 1, 2024, the following change(s) be made:

**MANAGEMENT AND ORGANIZATIONAL STUDIES 3423F/G
SUSTAINABILITY MARKETING**

This course examines the process of researching, planning and developing marketing strategies to help organizations meet the triple bottom line (people, planet, profit). Topics include developing sustainable business models,

understanding consumer behaviour on sustainability, applying sustainability principles to product design and packaging and supply chains, and communicating sustainable value propositions.

Prerequisite(s): MOS 2320A/B or MOS 3320A/B and enrolment in 3rd or 4th year of BMOS. **Priority in enrolment will be given to Huron University College students registered in a Marketing and Sustainability module.**

Extra Information: 3 hours.

Course Weight: 0.50

KING'S UNIVERSITY COLLEGE

HISTORY

Program Revision – Effective September 1, 2024, the following change(s) be made:

HONOURS SPECIALIZATION IN HISTORY

Module

9.0 courses:

1.0 course from: Canadian History 2201E, History 2203E, History 2205E.

3.0 courses from: History 2301E (U.S.), History 2403E (European), **History 2431F/G (European), History 2432F/G (European)**, History 2501E (Latin America), History 2650E (East Asia), History 2800F/G (Methods), History 2808F/G (Philosophy of History).

Note: 3.0 of the 4.0 core courses must be taken before year 4.

1.0 additional course in History at the 2200 level or above.

2.0 courses in History at the 3000 level.

2.0 courses in History at the 4000 level.

To progress in the Honours Specialization module in History, 3.0 of the 4.0 mandatory core courses must be completed with an average of at least 70% with no mark less than 60%.

This module must satisfy a Geographic Distribution Requirement. This is satisfied by taking:

1.0 course from U.S. History 2300-2399, History 3300-3399, and History 4300-4399;

1.0 course from European History 2400-2499, History 3400-3499, History 4400-4499; and

1.0 course from World History 2500-2599, History 2600-2699, History 3500-3599, History 3600-3699, History 4500-4599, History 4600-4699, History 2800F/G and History 2808F/G.

Notes:

- The former Classical Studies 3400E: Greek and Roman History may be counted as a principal course towards a History module.
- 8.0/9.0 History credits must be essay credits.

Program Revision – Effective September 1, 2024, the following change(s) be made:

MAJOR IN HISTORY

Module

6.0 courses:

1.0 course from: Canadian History 2201E, History 2203E, History 2205E.

2.0 courses from: History 2301E (U.S.), History 2403E (European), **History 2431F/G (European), History 2432F/G (European)**, History 2501E (Latin America), History 2650E (East Asia), History 2800F/G (Methods), History 2808F/G (Philosophy of History).

Note: 2.0 of the 3.0 core courses must be taken before year 4.

1.0 additional course in History at the 2200 level or above.

2.0 courses in History at the 3000 or 4000 level.

This module must satisfy a Geographic Distribution Requirement. This is satisfied by taking:

1.0 course from U.S. History 2300-2399, History 3300-3399, and History 4300-4399;

1.0 course from European History 2400-2499, History 3400-3499, History 4400-4499; and

1.0 course from World History 2500-2599, History 2600-2699, History 3500-3599, History 3600-3699, History 4500-4599, History 4600-4699; History 2800F/G and History 2808F/G.

Students considering graduate school or other post-degree programs are strongly urged to take a 4000 level History course.

Program Revision – Effective September 1, 2024, the following change(s) be made:

MINOR IN HISTORY

Module

4.0 courses:

1.0 course from: History 2201E, History 2203E or History 2205E.

2.0 courses from History 2301E (U.S. History), History 2403E (European), **History 2431F/G (European), History 2432F/G (European)**, History 2501E (Latin America), History 2650E (East Asia), History

2800F/G (Methods), History 2808F/G (Philosophy of History).
1.0 course in History at the 3000 level.

Course Introduction – Effective September 1, 2024, the following course be introduced:

HISTORY 2151A/B
THE FIRST WORLD WAR: A GLOBAL REVOLUTION

(Short title: The First World War)

This course applies a world historical lens to the First World War, examining the causes, course of events, and global ramifications of the conflict. Students will be asked to consider a variety of historiographical schools of thought concerning the war.

Antirequisite(s): History 2177A/B, History 2179.

Extra Information: 2 lecture hours

Course Weight: 0.50

Course Introduction – Effective September 1, 2024, the following course be introduced:

HISTORY 2152A/B
THE SECOND WORLD WAR AS WORLD HISTORY

(Short title: The Second World War)

This course applies a world historical lens to the Second World War, examining the war's cause, course of events, and global consequences, including its influence on the post-1945 world order. Students will be asked to consider a variety of historiographical schools of thought concerning the war.

Antirequisite(s): History 2177A/B, History 2179.

Extra Information: 2 lecture hours

Course Weight: 0.50

Course Introduction – Effective September 1, 2024, the following course be introduced:

HISTORY 2431F/G
AGE OF ANXIETY: EUROPE IN THE EARLY MODERN ERA

(Short title: Age of Anxiety)

This course examines the 16th through 18th centuries as a period of social, political, religious, and emotional anxiety for Europeans experiencing the tumultuous transition from medieval to modern. Topics include socio-economic pressures, religious reformations, state centralization, warfare, revolt, crime and punishment, witch hunts, and climate change.

Antirequisite(s): History 2103, History 2403E, History 2450F/G, History 2460F/G.

Extra Information: 2 lecture and 1 tutorial hour.
Course Weight: 0.50

Course Introduction – Effective September 1, 2024, the following course be introduced:

HISTORY 2432F/G

AGE OF EMPIRE: EUROPE IN THE EARLY MODERN WORLD

(Short title: Age of Empire)

This course explores Europe's role in global networks of commercial, cultural, and biological exchange between 1450 and 1800. Topics include continental and overseas empire-building, imperial rivalries and wars, the rise of global capitalism, the slave trade, hardening concepts of racial difference, as well as the impact of non-Europeans within Europe.

Antirequisite(s): History 2103, History 2403E, History 2450F/G, History 2460F/G.
Extra Information: 2 lecture and 1 tutorial hour.
Course Weight: 0.50

INTERDISCIPLINARY STUDIES

Course Revision – Effective September 1, 2024, the following change(s) be made:

INTERDISCIPLINARY STUDIES 2277F/G

BORDERS, BODIES, AND BOUNDARIES

Students explore causes, consequences and experiences of borders and the bodies that cross them. Examining geographically diverse examples, across academic disciplines (i.e., anthropology, geography, sociology, history, politics, journalism, fiction), we investigate how borders and boundaries emerge and how related forms of circulation and suppression are lived and shape our world.

Prerequisite(s): ~~Second-year-standing.~~
Extra Information: 3 hours.
Course Weight: 0.50

SCHOOL OF MANAGEMENT, ECONOMICS, AND MATHEMATICS

Course Introduction – Effective September 1, 2024, the following course be introduced:

**MANAGEMENT ORGANIZATIONAL STUDIES 1021A/B
INTRODUCTION TO CONSUMER BEHAVIOUR AND HUMAN RESOURCES**
(Short title: Intro Consumer Behavior and HR)

This course introduces students to the study of management and organizations based on best available evidence. Topics covered may include consumer behavior, human resource management, business processes, intercultural relations, and multinational corporations in a globalized economy. These topics are fundamental to understanding managing people, consumer choice, and global commerce.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Introduction – Effective September 1, 2024, the following course be introduced:

**MANAGEMENT ORGANIZATIONAL STUDIES 1023A/B
INTRODUCTION TO ACCOUNTING AND FINANCE**
(Short title: Intro to Accounting & Finance)

This course provides students with a basic introduction to the fields of accounting and corporate finance. The accounting unit introduces students to basic accounting concepts from financial and managerial accounting. The corporate finance unit explains how financial markets work and how corporate managers use these markets to create and sustain corporate value.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Introduction – Effective September 1, 2024, the following course be introduced:

**MANAGEMENT ORGANIZATIONAL STUDIES 3318A/B
INTRODUCTION TO PRIVATE EQUITY**

This course will cover a range of topics key to the study of private equity, including key concepts, the partnership framework, stages in private equity life cycle, valuation tools used, venture capital, mezzanine financing, and buyouts. Students will learn the role of private equity in value creation.

Prerequisite(s): MOS 3310A/B.
Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Introduction – Effective September 1, 2024, the following course be introduced:

**MANAGEMENT ORGANIZATIONAL STUDIES 3357A/B
COACHING FOR PERSONAL TRANSFORMATION**

(Short title: Transformational Coaching)

This course provides an in-depth review of the Coaching Leadership Model and its positive effects on the increase of efficacy, creativity, motivation, conflict resolution, change management skills, and decision-making.

Antirequisite(s): Leadership Studies 3333A/B, MOS 3390A/B if taken in 2021-22 or 2022-23.

Prerequisite(s): Enrolment in 3rd or 4th year of BMOS.

Extra Information: 3 lecture hours.

Course Weight: 0.50

Course Introduction – Effective September 1, 2024, the following course be introduced:

**MANAGEMENT ORGANIZATIONAL STUDIES 4316A/B
FINANCIAL RISK MANAGEMENT**

This course studies best practices in financial risk management and financial institution regulation. It explores market, credit, liquidity, model, climate, cyber, and operational risk.

Prerequisite(s): MOS 3310A/B.

Extra Information: 3 lecture hours.

Course Weight: 0.50

Course Introduction – Effective September 1, 2024, the following course be introduced:

**MANAGEMENT ORGANIZATIONAL STUDIES 4340A/B
SUSTAINABLE FINANCE**

Covers sustainable finance, exploring how responsibility relates to long-term shareholder value maximization. Topics include: returns to responsible business, putting responsibility into practice, financing climate-friendly projects, climate change and corporations, application of finance in context of ESG (environmental, social, and governance) issues, and responsible executive pay, investing, stewardship, and share buybacks.

Prerequisite(s): MOS 3310A/B.

Extra Information: 3 lecture hours.

Course Weight: 0.50

POLITICS AND INTERNATIONAL RELATIONS

Course Introduction – Effective September 1, 2024, the following course be introduced:

POLITICAL SCIENCE 3328F/G

VOTE WITH YOUR FORK: GLOBAL FOOD POLITICS

(Short title: Global Food Politics)

This course provides an overview of the global food system, from production (agriculture) to consumption (diets). By exploring issues such as agricultural trade liberalization, global food governance, global food corporations and decolonization in food, this course provides an issues-based approach to the politics of food in the world today.

Prerequisite(s): Enrolment in third or fourth year of Politics and International Relations, Political Science, Sociology, or Social Justice and Peace Studies, or permission of the department.

Antirequisite(s): Political Science 3405F/G, if taken in 2023-24.

Extra Information: 2 hours.

Course Weight: 0.50

SOCIAL JUSTICE AND PEACE STUDIES

Social Justice and Peace Studies Department Page Revision – Effective September 1, 2024, the following change(s) be made:

APPROVED LIST OF COURSES

The following courses may be taken to complete requirements for the Social Justice and Peace Studies modules. Students may request permission to substitute other courses not on this list. These requests will be considered on a case by case basis. Students are advised to consult the Program Coordinator when planning their program.

Economics 2124A/B, Economics 2125A/B.

~~English 1028E~~ **English 1028F/G**.

GSWS 1020E, GSWS 2200E.

~~History 3328F/G~~, **History 3228F/G**, History 3802F/G, History 4204F/G, History 4861F/G.

Human Rights Studies 2900F/G, Human Rights Studies 2800E, ~~Human Rights Studies 3900F/G~~, Human Rights Studies 4900F/G.

Philosophy 2208E, Philosophy 2227F/G, Philosophy 2242F/G,

Philosophy 3885F/G.

Political Science 3312F/G, Political Science 4439F/G, or the former Political Science 2235E, the former Political Science 3300E, the former Political Science 3309E, the former Political Science 3325E.

Psychology 3725F/G, Psychology 4303F/G, the former Psychology 3710F/G.

Religious Studies 3452F/G.

Sociology 2145A/B, Sociology 2220A/B, Sociology 2256A/B, Sociology 2260A/B, Sociology 2266A/B, Sociology 2267A/B, Sociology 3305F/G, Sociology 3318F/G, Sociology 3339F/G, Sociology 3340F/G, Sociology 3341F/G, Sociology 3371F/G, the former Sociology 3377F/G.

Any Social Justice and Peace Studies course at the 2000 level or above that is not being used to fulfill another module requirement.

Social Work 3344A/B.

Thanatology 3322F/G.

Approved List courses may only be counted once towards module requirements.

SOCIOLOGY

Course Revision – Effective September 1, 2024, the following change(s) be made:

SOCIOLOGY 3378F/G

GLOBAL DIVIDE

This course examines the causes and consequences of the unequal distribution of income, wealth, power and wellbeing between the global north and the global south. ~~This course examines how and why there are huge economic, political, institutional and sociocultural divides between developed and developing countries. Borrowing tools from historical sociology, social theory and comparative cultural analysis the course will discuss topics such as progress, growth, democracy, cultural values and well-being.~~

Antirequisite(s): **Sociology 2229A/B**, ~~The~~ **the** former Sociology 3377F/G.

Prerequisite(s): Third or fourth year standing in a Sociology or Criminology module.

Extra Information: 3 hours.

Course Weight: 0.50