Lecture	Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Prerequisites

- OPTOM 215 - Systemic Disease — View Program
- OPTOM 245 - Diseases of the Eye 1 — View Program

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) — View Program

OPTOM 104 - Neuroanatomy

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Offering Number
1

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Proposal Details

Proposal Type
Change,

Rationale for Change

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Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code
OPTOM

Number
104

Course Level
100

Title
Neuroanatomy

Abbreviated Title
Neuroanatomy

Undergraduate Communication Requirement Identifier
No,

Description
This course presents the detailed anatomy of the head and neck, with emphasis on the special senses. The course includes neuroanatomy as a basis for understanding how various neuronal systems function.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLecture

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Prerequisites

- OPTOM 114 - Ocular Anatomy and Physiology View Program
- OPTOM 243 - Neurophysiology of Vision View Program
- OPTOM 373 - Neuro-Ophthalmic Disease and Management View Program

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 105 - Medical Microbiology

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

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Course Information

Faculty

Faculty of Science

Academic Unit

School of Optometry and Vision Science

Subject Code

OPTOM

Number

105

Course Level

100

Title

Medical Microbiology

Abbreviated Title

Medical Microbiology

Undergraduate Communication Requirement Identifier

No,

Description

Bacterial physiology and genetics, normal flora, bacteria (including chlamydiae and rickettsiae), fungi, viruses, parasites and related diseases, with emphasis on molecular mechanisms of ocular disease and relevant ocular manifestations in appropriate topics.

Units

0.50

Exceptions to Fees or Academic Progress Units

No,

Components

Lecture

Primary Component

Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Prerequisites

- OPTOM 215 - Systemic Disease — View Program
- OPTOM 245 - Diseases of the Eye 1 — View Program

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) — View Program

OPTOM 106 - Geometrical, Physical and Visual Optics

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Offering Number
1

Effective Term and Year
Fall 2023

Proposal Details

Proposal Type
Change,

Rationale for Change

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Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code
OPTOM

Number
106

Course Level
100

Title
Geometrical, Physical and Visual Optics

Abbreviated Title
Optics: Geometrical, Phys, Vis

Undergraduate Communication Requirement Identifier

No,

Description

Nature of light, wave motion and superposition, rectilinear propagation, reflection and refraction, image formation and quality, optical properties of plane and curved surfaces, prisms and thin lenses. Apertures and pupils. Thick lens theory, lens systems, ray construction, Fraunhofer diffraction and resolution limit. Fresnel diffraction. Simple optical eye models. Refractive error and its correction. Interference and coherence of light:applications. Lasers.

Units

0.50

Exceptions to Fees or Academic Progress Units

No,

Components

LaboratoryLectureTutorial

Primary Component

Lecture

Grading Information

Standard Course Grading

No,

Special Course Grading

Passing grade is 60

Cross-Listing Information

Is this course cross-listed?

No,

Repeatable Courses

Can this course be repeated for credit?

No,

Enrolment Rules

Consent to Add
No consent required,

Proposed
Consent to Drop Department consent required,
Existing
Consent to Drop No consent required,

Prerequisites

Complete all of the following

- Must have completed the following:
  - MATH127 - Calculus 1 for the Sciences (0.50)
- Complete 1 of the following
  - Must have completed the following:
    - PHYS111 - Physics 1 (0.50)
    - PHYS111L - Physics 1 Laboratory (0.25)
    - PHYS112 - Physics 2 (0.50)
    - PHYS112L - Physics 2 Laboratory (0.25)
  - Must have completed the following:
    - PHYS121 - Mechanics (0.50)
    - PHYS121L - Mechanics Laboratory (0.25)
    - PHYS122 - Waves, Electricity and Magnetism (0.50)
    - PHYS122L - Waves, Electricity and Magnetism Laboratory (0.25)
- Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Prerequisites

- OPTOM 216 - Ophthalmic Optics 1 View Program
- OPTOM 246 - Ophthalmic Optics 2 View Program
- OPTOM 126 - Fundamentals of Visual Optics View Program

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 108 - Histology of Tissues and Organs

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

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Course Information

Faculty

Faculty of Science

Academic Unit

School of Optometry and Vision Science

Subject Code

OPTOM

Number

108

Course Level

100

Title

Histology of Tissues and Organs

Abbreviated Title

Histology of Tissues & Organs

Undergraduate Communication Requirement Identifier

No,

Description

The organization of human cells, tissues and organs. Cellular structure and function is presented as a foundation for understanding fundamental pathological constructs (e.g. carcinoma versus sarcoma). Detailed histology of major organ systems that are likely to have ocular manifestations when diseased. This coursework will provide the basis for subsequent courses in the pathobiology of ocular and systemic human disease.

Units

0.50

Exceptions to Fees or Academic Progress Units

No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed
Consent to Drop Department consent required,
Existing
Consent to Drop No consent required,

Prerequisites

Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 109 - Visual Perception 1: Perception of Light

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Offering Number
1

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Proposal Details

Proposal Type
Change,

Rationale for Change

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Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code
OPTOM

Number
109

Course Level
100

Title
Visual Perception 1: Perception of Light

Abbreviated Title
Perception of Light

Undergraduate Communication Requirement Identifier
No,

Description
Sensory processes involved in visual perception. Topics include spectral sensitivity, light and dark adaptation, temporal and spatial resolution, and principles of photometry.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLecture

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Prerequisites

- OPTOM 219 - Visual Perception 2: Monocular and Binocular Visual Processes View Program
- OPTOM 139 - Colour Vision View Program

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 114 - Ocular Anatomy and Physiology

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

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to drop courses on their own, and there have been no issues so far. However, we are adding "Drop Consent" as a precaution to correct an oversight and to ensure the existing practice is enforced by the system.

Course Information

Faculty

Faculty of Science

Academic Unit

School of Optometry and Vision Science

Subject Code
OPTOM

Number
114

Course Level
100

Title
Ocular Anatomy and Physiology

Abbreviated Title
Ocular Anatomy & Physiology

Undergraduate Communication Requirement Identifier
No,

Description
This course presents the detailed anatomy of the eye. The course includes histology, gross anatomy and physiology, as a basis for understanding how the various ocular structures function individually and interact with each other. The course emphasizes the processes operating to maintain the eye as a viable organ and provides a patho-physiological and clinical perspective of the implications of breakdown of these mechanisms.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLecture

Primary Component
Lecture

Grading Information

Standard Course Grading

Special Course Grading

No,

Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed
Consent to Drop Department consent required,
Existing
Consent to Drop No consent required,

Prerequisites

Complete all of the following

- Must have completed the following:
  - OPTOM104 - Neuroanatomy (0.50)
- Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Prerequisites

- OPTOM 243 - Neurophysiology of Vision View Program

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 124 - Human Gross Anatomy

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Offering Number
1

Effective Term and Year
Fall 2023

Proposal Details

Proposal Type
Change,

Rationale for Change

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Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code
OPTOM

Number
124

Course Level
100

Title
Human Gross Anatomy

Abbreviated Title
Human Gross Anatomy

Undergraduate Communication Requirement Identifier

No,

Description

A selective study of human gross anatomy as a basis for understanding disease. Strong emphasis is placed on head and neck anatomy, including the orbit, but thorough coverage of thorax, abdomen and pelvis is provided as well. Didactic material is illustrated in laboratory experience with prosected human cadavers, plasticized cadaveric material, anatomical models and computer-based learning tools.

Units

0.50

Exceptions to Fees or Academic Progress Units

No,

Components

LaboratoryLecture

Primary Component

Lecture

Grading Information

Standard Course Grading

No,

Special Course Grading

Passing grade is 60

Cross-Listing Information

Is this course cross-listed?

No,

Repeatable Courses

Can this course be repeated for credit?

No,

Enrolment Rules

Consent to Add

Proposed

No consent required,

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 126 - Fundamentals of Visual Optics

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

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Course Information

Faculty

Faculty of Science

Academic Unit

School of Optometry and Vision Science

Subject Code
OPTOM

Number
126

Course Level
100

Title
Fundamentals of Visual Optics

Abbreviated Title
Fundamentals of Visual Optics

Undergraduate Communication Requirement Identifier
No,

Description
Refraction and reflection of light by the surfaces of the eye. Optical properties of emmetropic and ametropic eyes as a function of growth and pupil size and their measurement. Properties of the retinal image including size, blur and quality and their relationship to imperfections of the optics. Light scattered in the eye. Relationships between the retinal image and visual perception. The retinal image and accommodation.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLecture

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Must have completed the following:
  - OPTOM106 - Geometrical, Physical and Visual Optics (0.50)
- Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 134 - Immunology

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

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Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code
OPTOM

Number
134

Course Level
100

Title
Immunology

Abbreviated Title
Immunology

Undergraduate Communication Requirement Identifier
No,

Description
An introduction to the vertebrate immune response; the cells and tissues of the lymphoid system; humoral and cell-mediated immunity; initiation and regulation of the immune response; the immune system and disease, techniques used in immunology. Unique features of the immunobiology of the eye are included.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLecture

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Enrolled in Optometry

Corequisites

No Rules

Antirequisites

Not completed nor concurrently enrolled in:

- BIOL441 - Advances in Immunology (0.50)

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 148 - Clinical Experience 1

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Winter 2024

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

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Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code
OPTOM

Number
148

Course Level
100

Title
Clinical Experience 1

Abbreviated Title
Clinical Experience 1

Undergraduate Communication Requirement Identifier
No,

Description
Students will observe and assist in assigned teaching eye clinics.

Units
0.25

Exceptions to Fees or Academic Progress Units
No,

Components
Clinic

Primary Component
Clinic

Grading Information

Standard Course Grading
No,

Special Course Grading
Credit/No Credit

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?

No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 150 - Optometric Jurisprudence

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2024

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

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to drop courses on their own, and there have been no issues so far. However, we are adding "Drop Consent" as a precaution to correct an oversight and to ensure the existing practice is enforced by the system.

Course Information

Faculty

Faculty of Science

Academic Unit

School of Optometry and Vision Science

Subject Code
OPTOM

Number
150

Course Level
100

Title
Optometric Jurisprudence

Abbreviated Title
Optometric Jurisprudence

Undergraduate Communication Requirement Identifier
No,

Description
Legal aspects of practising optometry in Canada. Fundamentals of Canadian law. Negligence. Informed consent. Legislation and regulations affecting optometric practice.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 152 - Fundamental Clinical Techniques Top

Effective Date & Career

Career
Undergraduate,

Effective Term and Year
Fall 2026

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

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Course Information

Faculty

Faculty of Science

Academic Unit

School of Optometry and Vision Science

Subject Code

OPTOM

Number

152

Course Level

100

Title

Fundamental Clinical Techniques

Abbreviated Title

Fundamental Clin Techniques

Undergraduate Communication Requirement Identifier

No,

Description

Clinical techniques for the primary care examination of the optical properties and ocular health of the eye. Case history taking. Medical emergency responses. Professional boundaries.

Units

0.50

Exceptions to Fees or Academic Progress Units

No,

Components

Lecture

Primary Component

Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Prerequisites

- OPTOM 272 - Strabismus and Aniseikonia View Program
- OPTOM 387 - Low Vision and Geriatrics View Program
- OPTOM 377 - Pediatric Optometry and Learning Disabilities View Program
- OPTOM 252 - Binocular Vision 1: Non-Strabismic Conditions View Program

Corequisites

- OPTOM 152L - Clinical Techniques 1 Laboratory View Program

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 158 - Clinical Experience 2

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Winter 2024

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

We are adding "Drop consent" to all OPTOM courses. Previously "Drop consent" was added on a term-by-term basis, but this is unnecessary if it can exist at the calendar level. OPTOM students should not be able to drop courses without consulting with an advisor and/or the undergrad committee, as it affects their ability to remain with their cohort. Enrolment is managed for them already, so students are unlikely to try to drop courses on their own, and there have been no issues so far. However, we are adding "Drop Consent" as a precaution to correct an oversight and to ensure the existing practice is enforced by the system.

Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code
OPTOM

Number
158

Course Level
100

Title
Clinical Experience 2

Abbreviated Title
Clinical Experience 2

Undergraduate Communication Requirement Identifier
No,

Description
Students will observe and assist in assigned teaching eye clinics.

Units
0.25

Exceptions to Fees or Academic Progress Units
No,

Components
Clinic

Primary Component
Clinic

Grading Information

Standard Course Grading
No,

Special Course Grading
Credit/No Credit

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 170 - Public Health Optometry

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2024

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

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Course Information

Faculty

Faculty of Science

Academic Unit

School of Optometry and Vision Science

Subject Code
OPTOM

Number
170

Course Level
100

Title
Public Health Optometry

Abbreviated Title
Public Health Optometry

Undergraduate Communication Requirement Identifier
No,

Description
Introduction to the foundation and basic sciences of public health with an emphasis on the epidemiology of vision problems.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 215 - Systemic Disease

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

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Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code
OPTOM

Number
215

Course Level
200

Title
Systemic Disease

Abbreviated Title
Systemic Disease

Undergraduate Communication Requirement Identifier
No,

Description
Etiology, signs, symptoms, diagnosis and management of diseases affecting the organs and tissues of the human body including: circulatory, hemopoietic/lymphoid, lungs/upper respiratory tract, kidney, gastrointestinal tract, liver/biliary tract, pancreas, urogenital system, endocrine system, musculoskeletal system, skin, nervous system diseases.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed
Consent to Drop Department consent required,
Existing
Consent to Drop No consent required,

Prerequisites

Complete all of the following

- Must have completed the following:
  - OPTOM103 - Pathophysiology (0.50)
  - OPTOM105 - Medical Microbiology (0.50)
- Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Prerequisites

- OPTOM 385 - Clinical Medicine for Optometric Practice — View Program

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) — View Program

OPTOM 216 - Ophthalmic Optics 1

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

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Course Information

Faculty

Faculty of Science

Academic Unit

School of Optometry and Vision Science

Subject Code
OPTOM

Number
216

Course Level
200

Title
Ophthalmic Optics 1

Abbreviated Title
Ophthalmic Optics 1

Undergraduate Communication Requirement Identifier
No,

Description
Single vision spectacle lenses. Lens and frame materials. Optical and ophthalmic instrumentation. Image quality. Polarization. Tinted lenses. Decentration and prismatic effect. Obliquely crossed cylinders. Spectacle magnification. Ophthalmic laboratory procedures: measurement of spectacle lens power.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLecture

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Must have completed the following:
  - OPTOM106 - Geometrical, Physical and Visual Optics (0.50)
- Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Prerequisites

- OPTOM 346 - Ophthalmic Optics 3 View Program
- OPTOM 246 - Ophthalmic Optics 2 View Program

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 219 - Visual Perception 2: Monocular and Binocular Visual Processes

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type

Change,

Rationale for Change

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Course Information

Faculty

Faculty of Science

Academic Unit

School of Optometry and Vision Science

Subject Code
OPTOM

Number
219

Course Level
200

Title
Visual Perception 2: Monocular and Binocular Visual Processes

Abbreviated Title
Mono & Binocular Vis Process

Undergraduate Communication Requirement Identifier
No,

Description
Physical space and visual space. Fundamental perceptual processes, binocular vision, stereopsis, binocular space perception. Systems of analysing binocular vision. Theory of aniseikonia. Perceptual aspects of aniseikonia.

Units
0.50

Exceptions to Fees or Academic Progress Units

No,

Components
LaboratoryLecture

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed
Consent to Drop Department consent required,
Existing
Consent to Drop No consent required,

Prerequisites

Complete all of the following

- Must have completed the following:
  - OPTOM109 - Visual Perception 1: Perception of Light (0.50)
- Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Prerequisites

- OPTOM 272 - Strabismus and Aniseikonia

View Program

OPTOM 231 - Introductory Clinical Pharmacology

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

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Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code
OPTOM

Number
231

Course Level
200

Title
Introductory Clinical Pharmacology

Abbreviated Title
Intro Clinical Pharmacology

Undergraduate Communication Requirement Identifier
No,

Description
Pharmacokinetic and pharmacodynamic theory. Systemic medications used to manage most major diseases. Mechanism of action, contraindications and systemic and ocular adverse drug reactions.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Prerequisites

- OPTOM 261 - Clinical Ocular Pharmacology View Program
- OPTOM 385 - Clinical Medicine for Optometric Practice View Program

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 243 - Neurophysiology of Vision

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

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Course Information

Faculty

Faculty of Science

Academic Unit

School of Optometry and Vision Science

Subject Code

OPTOM

Number

243

Course Level

200

Title

Neurophysiology of Vision

Abbreviated Title

Neurophysiology of Vision

Undergraduate Communication Requirement Identifier

No,

Description

The neural processing of colour, brightness, movement and form by the retina, lateral geniculate, cortex, superior colliculus and other brain centres. Neural mechanisms underlying binocular depth perception, the accommodative response and eye movement.

Units

0.50

Exceptions to Fees or Academic Progress Units

No,

Components

Lecture

Primary Component

Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Must have completed the following:
  - OPTOM104 - Neuroanatomy (0.50)
  - OPTOM114 - Ocular Anatomy and Physiology (0.50)
- Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Prerequisites

- OPTOM 373 - Neuro-Ophthalmic Disease and Management View Program

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 245 - Diseases of the Eye 1

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Offering Number
1

Existing

Effective Term and Year
Fall 2023

Proposal Details

Proposal Type
Change,

Rationale for Change

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Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code
OPTOM

Number
245

Course Level
200

Title
Diseases of the Eye 1

Abbreviated Title
Diseases of the Eye 1

Undergraduate Communication Requirement Identifier
No,

Description
Anterior segment disease including etiology, pathogenesis, signs, symptoms, differential diagnosis and management of diseases of the ocular adnexa and anterior segment of the eye: the lids, orbit and adnexa, conjunctiva, cornea, uvea, sclera, lens and cataract, the glaucomas and ocular emergencies.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed
Consent to Drop Department consent required,
Existing
Consent to Drop No consent required,

Prerequisites

Complete all of the following

- Must have completed the following:
  - OPTOM103 - Pathophysiology (0.50)
  - OPTOM105 - Medical Microbiology (0.50)
- Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Prerequisites

- OPTOM 367 - Contact Lenses 2 View Program
- OPTOM 255 - Diseases of the Eye 2 View Program
- OPTOM 261 - Clinical Ocular Pharmacology View Program
- OPTOM 375 - Diseases of the Eye 3 View Program
- OPTOM 342A - Case Analysis and Optometric Therapies 1 View Program

Corequisites

- OPTOM 245L - Diseases of the Eye 1 Laboratory View Program

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 246 - Ophthalmic Optics 2

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

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Course Information

Faculty

Faculty of Science

Academic Unit

School of Optometry and Vision Science

Subject Code

OPTOM

Number

246

Course Level

200

Title

Ophthalmic Optics 2

Abbreviated Title

Ophthalmic Optics 2

Undergraduate Communication Requirement Identifier

No,

Description

Multifocal spectacle lenses. Aberrations of thin lenses and spectacle lens design. Prescribing and fitting of spectacles. Environmental and occupational prescribing. Prescription analysis. Ophthalmic and visual standards. Computer vision syndrome. Ophthalmic laboratory procedures: measurement of complex spectacle lenses, and spectacle frame adjustment and repairs.

Units

0.50

Exceptions to Fees or Academic Progress Units

No,

Components

LaboratoryLecture

Primary Component

Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Must have completed the following:
  - OPTOM106 - Geometrical, Physical and Visual Optics (0.50)
  - OPTOM216 - Ophthalmic Optics 1 (0.50)
- Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Prerequisites

- OPTOM 346 - Ophthalmic Optics 3 View Program
- OPTOM 347 - Contact Lenses 1 View Program

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 248 - Clinical Experience 3

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Winter 2024

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

We are adding "Drop consent" to all OPTOM courses. Previously "Drop consent" was added on a term-by-term basis, but this is unnecessary if it can exist at the calendar level. OPTOM students should not be able to drop courses without consulting with an advisor and/or the undergrad committee, as it affects their ability to remain with their cohort. Enrolment is managed for them already, so students are unlikely to try to drop courses on their own, and there have been no issues so far. However, we are adding "Drop Consent" as a precaution to correct an oversight and to ensure the existing practice is enforced by the system.

Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code
OPTOM

Number
248

Course Level
200

Title
Clinical Experience 3

Abbreviated Title
Clinical Experience 3

Undergraduate Communication Requirement Identifier
No,

Description
Students will observe and assist in assigned teaching eye clinics.

Units
0.25

Exceptions to Fees or Academic Progress Units
No,

Components
Clinic

Primary Component
Clinic

Grading Information

Standard Course Grading
No,

Special Course Grading
Credit/No Credit

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 252 - Binocular Vision 1: Non-Strabismic Conditions

Top

Effective Date & Career

Career	Effective Term and Year	Offering Number
Undergraduate,	Fall 2026	1

Proposal Details

Proposal Type
Change,

Rationale for Change

We are adding "Drop consent" to all OPTOM courses. Previously "Drop consent" was added on a term-by-term basis, but this is unnecessary if it can exist at the calendar level. OPTOM students should not be able to drop courses without consulting with an advisor and/or the undergrad committee, as it affects their ability to remain with their cohort. Enrolment is managed for them already, so students are unlikely to try to drop courses on their own, and there have been no issues so far. However, we are adding "Drop Consent" as a precaution to correct an oversight and to ensure the existing practice is enforced by the system.

Course Information

Faculty

Faculty of Science

Academic Unit

School of Optometry and Vision Science

Subject Code
OPTOM

Number
252

Course Level
200

Title
Binocular Vision 1: Non-Strabismic Conditions

Abbreviated Title
BV1: Non-Strabismic Cond

Undergraduate Communication Requirement Identifier
No,

Description
Basic and clinical ocular motility. Basic concepts of ocular motility are integrated with clinical methods. Assessment and diagnosis of strabismic and non-strabismic disorders.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Must have completed the following:
  - OPTOM152 - Fundamental Clinical Techniques (0.50)
- Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Prerequisites

- OPTOM 272 - Strabismus and Aniseikonia View Program
- OPTOM 387 - Low Vision and Geriatrics View Program
- OPTOM 377 - Pediatric Optometry and Learning Disabilities View Program
- OPTOM 347 - Contact Lenses 1 View Program
- OPTOM 352 - Binocular Vision 3: Eye Movements and Disorders View Program
- OPTOM 372 - Binocular Vision 4: Management and Vision Therapy View Program
- OPTOM 262 - Preparation for Primary Clinical Care View Program

Corequisites

- OPTOM 252L - Clinical Techniques 2 Laboratory View Program

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 255 - Diseases of the Eye 2

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year

Offering Number
1

Fall 2023

Proposal Details

Proposal Type
Change,

Rationale for Change

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Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code
OPTOM

Number
255

Course Level
200

Title
Diseases of the Eye 2

Abbreviated Title
Diseases of the Eye 2

Undergraduate Communication Requirement Identifier
No,

Description
Etiology, signs, symptoms, diagnosis, management, and epidemiology of diseases of the posterior segment of the eye; higher visual and oculomotor systems; multisystem diseases.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Must have completed the following:
  - OPTOM245 - Diseases of the Eye 1 (0.50)
- Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Prerequisites

- OPTOM 261 - Clinical Ocular Pharmacology View Program
- OPTOM 375 - Diseases of the Eye 3 View Program
- OPTOM 342A - Case Analysis and Optometric Therapies 1 View Program

Corequisites

- OPTOM 255L - Diseases of the Eye 2 Laboratory View Program

Prerequisites

- OPTOM 383 - Glaucoma and Neurodegenerative Disease View Program

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 258 - Clinical Experience 4

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

We are adding "Drop consent" to all OPTOM courses. Previously "Drop consent" was added on a term-by-term basis, but this is unnecessary if it can exist at the calendar level. OPTOM students should not be able to drop courses without consulting with an advisor and/or the undergrad committee, as it affects their ability to remain with their cohort. Enrolment is managed for them already, so students are unlikely to try

to drop courses on their own, and there have been no issues so far. However, we are adding "Drop Consent" as a precaution to correct an oversight and to ensure the existing practice is enforced by the system.

Course Information

Faculty

Faculty of Science

Academic Unit

School of Optometry and Vision Science

Subject Code
OPTOM

Number
258

Course Level
200

Title
Clinical Experience 4

Abbreviated Title
Clinical Experience 4

Undergraduate Communication Requirement Identifier
No,

Description
Students will observe and assist in assigned teaching eye clinics.

Units
0.25

Exceptions to Fees or Academic Progress Units
No,

Components
Clinic

Primary Component
Clinic

Grading Information

Standard Course Grading
No,

Special Course Grading
Credit/No Credit

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 261 - Clinical Ocular Pharmacology

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

We are adding "Drop consent" to all OPTOM courses. Previously "Drop consent" was added on a term-by-term basis, but this is unnecessary if it can exist at the calendar level. OPTOM students should not be able to drop courses without consulting with an advisor and/or the undergrad committee, as it affects their ability to remain with their cohort. Enrolment is managed for them already, so students are unlikely to try to drop courses on their own, and there have been no issues so far. However, we are adding "Drop Consent" as a precaution to correct an oversight and to ensure the existing practice is enforced by the system.

Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code
OPTOM

Number
261

Course Level
200

Title
Clinical Ocular Pharmacology

Abbreviated Title
Clinical Ocular Pharmacology

Undergraduate Communication Requirement Identifier
No,

Description
Pharmacokinetic and pharmacodynamic principles of ophthalmic drug design and delivery. Selection and use of ophthalmic diagnostic pharmaceutical agents, palliative agents and therapeutic pharmaceutical agents. Mechanism of action, contraindications and adverse drug reactions. Recommended guidelines for use and follow-up procedures.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed
Consent to Drop Department consent required,
Existing
Consent to Drop No consent required,

Prerequisites

Complete all of the following

- Must have completed the following:
  - OPTOM231 - Introductory Clinical Pharmacology (0.50)
  - OPTOM245 - Diseases of the Eye 1 (0.50)
  - OPTOM255 - Diseases of the Eye 2 (0.50)
- Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

Top

OPTOM 262 - Preparation for Primary Clinical Care

Effective Date & Career

Career
Undergraduate,

Effective Term and Year
Fall 2026

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

We are adding "Drop consent" to all OPTOM courses. Previously "Drop consent" was added on a term-by-term basis, but this is unnecessary if it can exist at the calendar level. OPTOM students should not be able to drop courses without consulting with an advisor and/or the undergrad committee, as it affects their ability to remain with their cohort. Enrolment is managed for them already, so students are unlikely to try to drop courses on their own, and there have been no issues so far. However, we are adding "Drop Consent" as a precaution to correct an oversight and to ensure the existing practice is enforced by the system.

Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code
OPTOM

Number
262

Course Level
200

Title
Preparation for Primary Clinical Care

Abbreviated Title
Prep for Primary Clinical Care

Undergraduate Communication Requirement Identifier
No,

Description
Differential diagnosis and problem specific testing using a systems examination approach. Minimum database expectations. Record keeping, case presentations, counselling, referrals and report writing. Preparation for entry into Optometry Clinic including policy review and standards of practice. Observation and preliminary testing in the Optometry Clinic.

Units
0.25

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLecture

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Must have completed the following:
  - OPTOM252 - Binocular Vision 1: Non-Strabismic Conditions (0.50)
- Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 272 - Strabismus and Aniseikonia

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

We are adding "Drop consent" to all OPTOM courses. Previously "Drop consent" was added on a term-by-term basis, but this is unnecessary if it can exist at the calendar level. OPTOM students should not be able to drop courses without consulting with an advisor and/or the undergrad committee, as it affects their ability to remain with their cohort. Enrolment is managed for them already, so students are unlikely to try

to drop courses on their own, and there have been no issues so far. However, we are adding "Drop Consent" as a precaution to correct an oversight and to ensure the existing practice is enforced by the system.

Course Information

Faculty

Faculty of Science

Academic Unit

School of Optometry and Vision Science

Subject Code
OPTOM

Number
272

Course Level
200

Title
Strabismus and Aniseikonia

Abbreviated Title
Strabismus & Aniseikonia

Undergraduate Communication Requirement Identifier
No,

Description
Detection and evaluation of sensory and motor characteristics of vision in aniseikonic, strabismic and nonstrabismic patients. Classifications, diagnoses, prognoses, and modes of therapy for aniseikonic, nonstrabismic, and strabismic patients.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLecture

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Must have completed the following:
  - OPTOM152 - Clinical Techniques 1 (0.50)
  - OPTOM219 - Visual Perception 2: Monocular and Binocular Visual Processes (0.50)
  - OPTOM252 - Clinical Techniques 2 (0.50)
- Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Prerequisites

- OPTOM 342A - Case Analysis and Optometric Therapies 1 View Program
- OPTOM 352 - Binocular Vision 3: Eye Movements and Disorders View Program
- OPTOM 372 - Binocular Vision 4: Management and Vision Therapy View Program

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 342A - Evidence-Based Case Analysis 1 Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Offering Number
1

Effective Term and Year
Fall 2023

Proposal Details

Proposal Type
Change,

Rationale for Change

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In addition, the title and short title is updated for clarity of what is already happening in the course.

Updating the name of the advanced standing program in the prerequisites for consistency with recently approved changes.

In updating the name of the advanced standing program, ASOPP, it was noticed that the prerequisites were incorrect, and thus updated to correctly require either completion of all three courses listed, or advanced standing status, in addition to being enrolled as an Optometry student.

Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code **Number** **Course Level**

OPTOM	342A	300

Proposed

Title
Evidence-Based Case Analysis 1

Existing

Title
Case Analysis and Optometric Therapies 1

Proposed

Abbreviated Title
Evidence-Based Case Analysis 1

Existing

Abbreviated Title
Case Analysis & Therapies 1

Undergraduate Communication Requirement Identifier
No,

Description
The clinical application of the visual sciences. Emphasis is placed on the differential diagnostic method of analyzing clinical data with consideration given to appropriate clinical techniques, effective record keeping, recommended optometric therapies, and prognoses.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LectureTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

1. Complete all of the following
   - Must have completed the following:
     - ~~OPTOM245 - Diseases of the Eye 1~~
     - ~~OPTOM255 - Diseases of the Eye 2~~
     - ~~OPTOM272 - Strabismus and Aniseikonia~~
   - Must have completed the Advanced Standing Optometry Preparatory Program (ASOPP)
     - ~~Must have advanced standing status~~
     - ~~Enrolled in:~~

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Prerequisites

- OPTOM 342B - Case Analysis and Optometric Therapies 2 View Program

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 342B - Evidence-Based Case Analysis 2 Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year

Offering Number
1

Fall 2024

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-04-02

Rationale for Change

We are adding "Drop consent" to all OPTOM courses. Previously "Drop consent" was added on a term-by-term basis, but this is unnecessary if it can exist at the calendar level. OPTOM students should not be able to drop courses without consulting with an advisor and/or the undergrad committee, as it affects their ability to remain with their cohort. Enrolment is managed for them already, so students are unlikely to try to drop courses on their own, and there have been no issues so far. However, we are adding "Drop Consent" as a precaution to correct an oversight and to ensure the existing practice is enforced by the system.

In addition, the title and short title is updated for clarity of what is already happening in the course.

Consultations

During 2024: Optometry Curriculum Committee for alignment with program outcomes, Optometry faculty and course/lab instructors, current OPTOM students.

Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code
OPTOM

Number
342B

Course Level
300

Proposed

Title
Evidence-Based Case Analysis 2

Existing

Title
Case Analysis and Optometric Therapies 2

Proposed

Abbreviated Title
Evidence-Based Case Analysis 2

Existing

Abbreviated Title
Case Analysis & Therapies 2

Undergraduate Communication Requirement Identifier
No,

Description
A continuation of OPTOM342A. Emphasis is placed on the differential diagnostic method of analyzing clinical data with special emphasis on refractive and binocular vision conditions.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LectureTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?

No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Must have completed the following:
  - OPTOM342A - Case Analysis and Optometric Therapies 1 (0.50)
- Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

346 - Ophthalmic Optics 3

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

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Course Information

Faculty

Faculty of Science

Academic Unit

School of Optometry and Vision Science

Subject Code

OPTOM

Number

346

Course Level

300

Title

Ophthalmic Optics 3

Abbreviated Title

Ophthalmic Optics 3

Undergraduate Communication Requirement Identifier

No,

Description

Spectacle frame materials. Fitting and adjusting techniques. Selection of lens design. Lenses for high myopia. Dispensing of eye protectors. Optics of low vision aids. Patient counselling and management of dispensing problems. Laboratories provide experience in practical aspects of ophthalmic dispensing.

Units

0.25

Exceptions to Fees or Academic Progress Units

No,

Components
Laboratory

Primary Component
Laboratory

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

1. Complete all of the following
    - Must have completed the following:
        - ~~OPTOM216 - Ophthalmic Optics 1~~
        - ~~OPTOM246 - Ophthalmic Optics 2~~

- Must have completed the Advanced Standing Optometry Preparatory Program (ASOPP)
  - ~~Must have advanced standing status~~
  - ~~Enrolled in:~~

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Prerequisites

- OPTOM 387 - Low Vision and Geriatrics

View Program

OPTOM 347 - Contact Lenses 1

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2024

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

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Updating the name of the advanced standing program in the prerequisites for consistency with recently approved changes.

Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code

Number

Course Level

OPTOM	347	300

Title
Contact Lenses 1

Abbreviated Title
Contact Lenses 1

Undergraduate Communication Requirement Identifier
No,

Description
Indications and contra-indications for contact lens wear. Lens selection and design. Fitting and evaluating rigid and hydrogel soft contact lenses. Physico-chemical and mechanical properties of contact lens materials. Optical and mathematical concepts. The ocular physiological response to contact lens wear. Care and maintenance of contact lenses.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?

No,

Enrolment Rules

Consent to Add
No consent required,

Proposed
Consent to Drop Department consent required,
Existing
Consent to Drop No consent required,

Prerequisites

1. Complete all of the following
   - Must have completed the following:
     - ~~OPTOM246 - Ophthalmic Optics 2~~
     - ~~OPTOM252 - Binocular Vision 1: Non-Strabismic Conditions~~
   - Must have completed the Advanced Standing Optometry Preparatory Program (ASOPP)
     - ~~Must have advanced standing status~~
     - ~~Enrolled in:~~

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path	Faculty/AFIW Path(s) for Workflow

Committee approvals,

Faculty of Science

Dependencies

Prerequisites

- OPTOM 367 - Contact Lenses 2 View Program

Corequisites

- OPTOM 347L - Contact Lenses 1 Laboratory View Program

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 347L - Contact Lenses 1 Laboratory

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2024

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

We are adding "Drop consent" to all OPTOM courses. Previously "Drop consent" was added on a term-by-term basis, but this is unnecessary if it can exist at the calendar level. OPTOM students should not be able to drop courses without consulting with an advisor and/or the undergrad committee, as it affects their ability to remain with their cohort. Enrolment is managed for them already, so students are unlikely to try to drop courses on their own, and there have been no issues so far. However, we are adding "Drop Consent" as a precaution to correct an oversight and to ensure the existing practice is enforced by the system.

Course Information

Faculty

Faculty of Science

Academic Unit

School of Optometry and Vision Science

Subject Code

OPTOM

Number

347L

Course Level

300

Title

Contact Lenses 1 Laboratory

Abbreviated Title

Contact Lenses 1 Lab

Undergraduate Communication Requirement Identifier

No,

Description

Selected clinical techniques for students taking OPTOM347.

Units

0.25

Exceptions to Fees or Academic Progress Units

No,

Components

Laboratory

Primary Component

Laboratory

Grading Information

Standard Course Grading
No,

Special Course Grading
Credit/No Credit

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

No Rules

Corequisites

Completed or concurrently enrolled in:

- OPTOM347 - Contact Lenses 1 (0.50)

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

There are no dependencies

OPTOM 348A - Optometry Clinics

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Winter 2024

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

We are adding "Drop consent" to all OPTOM courses. Previously "Drop consent" was added on a term-by-term basis, but this is unnecessary if it can exist at the calendar level. OPTOM students should not be able to drop courses without consulting with an advisor and/or the undergrad committee, as it affects their ability to remain with their cohort. Enrolment is managed for them already, so students are unlikely to try to drop courses on their own, and there have been no issues so far. However, we are adding "Drop Consent" as a precaution to correct an oversight and to ensure the existing practice is enforced by the system.

Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code
OPTOM

Number
348A

Course Level
300

Title
Optometry Clinics

Abbreviated Title
Optometry Clinics

Undergraduate Communication Requirement Identifier
No,

Description
Students are assigned to various areas within the clinic where, under direct clinical faculty supervision, they participate in the provision of optometric services to clinic patients. In addition to primary care, they are exposed to the provision of contact lens, ocular health, and optical services.

Units
1.00

Exceptions to Fees or Academic Progress Units
No,

Components
Clinic

Primary Component
Clinic

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 70

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Students must be in level 3A or higher
- Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 348B - Optometry Clinics

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Winter 2024

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

We are adding "Drop consent" to all OPTOM courses. Previously "Drop consent" was added on a term-by-term basis, but this is unnecessary if it can exist at the calendar level. OPTOM students should not be able to drop courses without consulting with an advisor and/or the undergrad committee, as it affects their ability to remain with their cohort. Enrolment is managed for them already, so students are unlikely to try

to drop courses on their own, and there have been no issues so far. However, we are adding "Drop Consent" as a precaution to correct an oversight and to ensure the existing practice is enforced by the system.

Course Information

Faculty

Faculty of Science

Academic Unit

School of Optometry and Vision Science

Subject Code
OPTOM

Number
348B

Course Level
300

Title
Optometry Clinics

Abbreviated Title
Optometry Clinics

Undergraduate Communication Requirement Identifier
No,

Description
Students are assigned to various areas within the clinic where, under direct clinical faculty supervision, they participate in the provision of optometric services to clinic patients. In addition to primary care, they are exposed to the provision of contact lens, ocular health, and optical services.

Units
1.00

Exceptions to Fees or Academic Progress Units
No,

Components
Clinic

Primary Component
Clinic

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 70

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Students must be in level 3A or higher
- Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 360 - Professional Ethics and Optometric Communication

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

We are adding "Drop consent" to all OPTOM courses. Previously "Drop consent" was added on a term-by-term basis, but this is unnecessary if it can exist at the calendar level. OPTOM students should not be able to drop courses without consulting with an advisor and/or the undergrad committee, as it affects their ability to remain with their cohort. Enrolment is managed for them already, so students are unlikely to try to drop courses on their own, and there have been no issues so far. However, we are adding "Drop Consent" as a precaution to correct an oversight and to ensure the existing practice is enforced by the system.

Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code
OPTOM

Number
360

Course Level
300

Title
Professional Ethics and Optometric Communication

Abbreviated Title
Prof Ethics & Optom Comm

Undergraduate Communication Requirement Identifier
Yes,

Description
A survey of alternative philosophical perspectives involved in resolution of sample ethical and moral issues confronting optometrists. Awareness of the explicit and implicit contents of written and vocal

communications. An exploration of optometric communication issues related to letter and report writing, patient counselling, patient referral, fee presentation, and complaint management.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed
Consent to Drop Department consent required,
Existing
Consent to Drop No consent required,

Prerequisites

Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

There are no dependencies

OPTOM 365 - Ophthalmic Lasers and Refractive Surgery

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

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Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code
OPTOM

Number
365

Course Level
300

Title
Ophthalmic Lasers and Refractive Surgery

Abbreviated Title
Ophthalm Lasers & Refrac Surg

Undergraduate Communication Requirement Identifier
No,

Description
General principles, types and uses of lasers in eyecare. Biagnostic, thermal, ionizing, and excimer lasers. Refractive surgery. Safety and efficacy. Pre-operative and post-operative care.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 367 - Contact Lenses 2

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

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Updating the name of the advanced standing program in the prerequisites for consistency with recently approved changes.

Course Information

Faculty

Faculty of Science

Academic Unit

School of Optometry and Vision Science

Subject Code
OPTOM

Number
367

Course Level
300

Title
Contact Lenses 2

Abbreviated Title
Contact Lenses 2

Undergraduate Communication Requirement Identifier
No,

Description
Detection and management of chronic and acute complications induced by contact lenses. Contact lens management options for special conditions such as dry eye, aphakia, and keratoconus (and other corneal irregularities). Disposable lenses and replacement regimens. Extended wear options. Alternative management of refractive errors such as orthokeratology and refractive surgery. Contact lenses and presbyopia.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components

Primary Component

LaboratoryLecture	Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed
Consent to Drop Department consent required,
Existing
Consent to Drop No consent required,

Prerequisites

1. Complete all of the following
   - Must have completed the following:
     - ~~OPTOM347 - Contact Lenses 1~~
   - OPTOM245 - Diseases of the Eye 1
     - Must have completed the following: OPTOM155
       - ~~OPTOM245 - Diseases of the Eye 1~~

- ~~Must have advanced standing status~~

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 375 - Diseases of the Eye 3

Top

Effective Date & Career

Career

Proposed

Offering Number

Undergraduate,	**Effective Term and Year** Fall 2026 Existing **Effective Term and Year** Fall 2023	1

Proposal Details

Proposal Type
Change,

Rationale for Change

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Updating the name of the advanced standing program in the prerequisites for consistency with recently approved changes.

Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code	Number	Course Level
OPTOM	375	300

Title
Diseases of the Eye 3

Abbreviated Title
Diseases of the Eye 3

Undergraduate Communication Requirement Identifier
No,

Description
Advanced considerations of the etiology, signs, symptoms, diagnosis, treatment, and management of ocular disease. Emphasis will be placed on the clinical case management with therapeutic pharmaceutical agents.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed
Consent to Drop Department consent required,
Existing
Consent to Drop No consent required,

Prerequisites

1. Complete all of the following
   - Must have completed the following:
     - ~~OPTOM245 - Diseases of the Eye 1~~
     - ~~OPTOM255 - Diseases of the Eye 2~~
   - Must have completed the Advanced Standing Optometry Preparatory Program (ASOPP)
     - ~~Must have advanced standing status~~
     - ~~Enrolled in:~~

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Corequisites

- OPTOM 375L - Diseases of the Eye 3 Laboratory View Program

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 375L - Diseases of the Eye 3 Laboratory Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2024

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

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Course Information

Faculty

Faculty of Science

Academic Unit

School of Optometry and Vision Science

Subject Code

OPTOM

Number

375L

Course Level

300

Title

Diseases of the Eye 3 Laboratory

Abbreviated Title

Diseases of the Eye 3 Lab

Undergraduate Communication Requirement Identifier

No,

Description

Selected clinical techniques for students taking OPTOM375.

Units

0.25

Exceptions to Fees or Academic Progress Units

No,

Components

Laboratory

Primary Component

Laboratory

Grading Information

Standard Course Grading
No,

Special Course Grading
Credit/No Credit

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

No Rules

Corequisites

Completed or concurrently enrolled in:

- OPTOM375 - Diseases of the Eye 3 (0.50)

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

There are no dependencies

OPTOM 377 - Pediatric Optometry and Learning Disabilities

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year

Offering Number
1

Fall 2023

Proposal Details

Proposal Type
Change,

Rationale for Change

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Updating the name of the advanced standing program in the prerequisites for consistency with recently approved changes.

Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code
OPTOM

Number
377

Course Level
300

Title
Pediatric Optometry and Learning Disabilities

Abbreviated Title
Pediatric Optom & Learning

Undergraduate Communication Requirement Identifier

No,

Description

Optometric examination and management of infants, children, and patients with learning disabilities or multiple challenges. General child development and the development of the optical and sensory-motor functions of the visual system. Learning disabilities and related vision problems. The role of the optometrist in conjunction with parents, teachers, and psychologists.

Units

0.50

Exceptions to Fees or Academic Progress Units

No,

Components

LaboratoryLecture

Primary Component

Lecture

Grading Information

Standard Course Grading

No,

Special Course Grading

Passing grade is 60

Cross-Listing Information

Is this course cross-listed?

No,

Repeatable Courses

Can this course be repeated for credit?

No,

Enrolment Rules

Consent to Add

Proposed

No consent required,

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

1. Complete all of the following
   - Must have completed the following:
     - ~~OPTOM152 - Fundamental Clinical Techniques~~
     - ~~OPTOM252 - Binocular Vision 1: Non-Strabismic Conditions~~
   - Must have completed the Advanced Standing Optometry Preparatory Program (ASOPP)
     - ~~Must have advanced standing status~~
     - ~~Enrolled in:~~

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 380 - Practice Management

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

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Course Information

Faculty

Faculty of Science

Academic Unit

School of Optometry and Vision Science

Subject Code
OPTOM

Number
380

Course Level
300

Title
Practice Management

Abbreviated Title
Practice Management

Undergraduate Communication Requirement Identifier
No,

Description
Practice management issues relating to solo, associateships, contracts, the development and running of a clinical practice, opening a practice, staff training, dealing with complaints, data collection, practice promotion and marketing, advertising, financial and legal issues.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Credit/No Credit

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 385 - Clinical Medicine for Optometric Practice

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

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Updating the name of the advanced standing program in the prerequisites for consistency with recently approved changes.

Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code
OPTOM

Number
385

Course Level
300

Title
Clinical Medicine for Optometric Practice

Abbreviated Title
Clinical Medicine

Undergraduate Communication Requirement Identifier
No,

Description
Overview of current medical diagnoses and management of systemic diseases with ocular involvement. History and physical examination (including neurological examination), clinical laboratory testing, and diagnostic imaging. Diseases of high prevalence including cardiovascular, cancer, endocrine, and neurological disorders.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLecture

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

1. Complete all of the following
   - Must have completed the following:
     - ~~OPTOM215 - Systemic Disease~~
     - ~~OPTOM231 - Introductory Clinical Pharmacology~~
   - Must have completed the Advanced Standing Optometry Preparatory Program (ASOPP)
     - ~~Must have advanced standing status~~
     - ~~Enrolled in:~~

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 387 - Low Vision and Geriatrics

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

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Updating the name of the advanced standing program in the prerequisites for consistency with recently approved changes.

Course Information

Faculty

Faculty of Science

Academic Unit

School of Optometry and Vision Science

Subject Code
OPTOM

Number
387

Course Level
300

Title
Low Vision and Geriatrics

Abbreviated Title
Low Vision & Geriatrics

Undergraduate Communication Requirement Identifier
No,

Description
Aging and its effects on the visual system in both health and disease, care, and management of the aging patient. Assessment and management of visual impairment and disability, including both optical and non-optical therapies. Epidemiology and psychology of vision impairment, and associated rehabilitative services.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLecture

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

1. Complete all of the following
   - Must have completed the following:
     - ~~OPTOM152 - Fundamental Clinical Techniques~~
     - ~~OPTOM252 - Binocular Vision 1: Non-Strabismic Conditions~~
     - ~~OPTOM346 - Ophthalmic Optics 3~~
   - Must have completed the Advanced Standing Optometry Preparatory Program (ASOPP)
     - ~~Must have advanced standing status~~
     - ~~Enrolled in:~~

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 412 - Case Analysis and Communication 3

Top

Effective Date & Career

Career	Effective Term and Year	Offering Number
Undergraduate,	Fall 2026	1

Proposal Details

Proposal Type
Change,

Rationale for Change

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Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code
OPTOM

Number
412

Course Level
400

Title
Case Analysis and Communication 3

Abbreviated Title
Case Analysis & Comm 3

Undergraduate Communication Requirement Identifier
Yes,

Description
Building on analytical principles developed in OPTOM342, this course involves student, case-based presentations in a grand rounds. Each student chooses one, different, interesting case from their previous clinical experience. The student presents the case and answers questions related to the case and the patient's condition(s). Faculty discussants will direct the students in assessing the basic and clinical science features of the cases. Patient cases may be chosen from any aspect of optometric practice. Students also enhance their understanding of the conventions and purposes of communication modes in optometry,

techniques to analyze and communicate issues to multiple audiences, and selection of language appropriate to different contexts.

Units
0.75

Exceptions to Fees or Academic Progress Units
No,

Components
LectureTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Passing grade is 60

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Students must be in level 4A or higher
- Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 458 - Clinical Clerkship 1

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2024

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

We are adding "Drop consent" to all OPTOM courses. Previously "Drop consent" was added on a term-by-term basis, but this is unnecessary if it can exist at the calendar level. OPTOM students should not be able to drop courses without consulting with an advisor and/or the undergrad committee, as it affects their ability to remain with their cohort. Enrolment is managed for them already, so students are unlikely to try to drop courses on their own, and there have been no issues so far. However, we are adding "Drop Consent" as a precaution to correct an oversight and to ensure the existing practice is enforced by the system.

Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code
OPTOM

Number
458

Course Level
400

Title
Clinical Clerkship 1

Abbreviated Title
Clinical Clerkship 1

Undergraduate Communication Requirement Identifier
No,

Description
Supervised optometric patient care in one, or more, external clinical settings.This course is complementary to OPTOM468 (Clinical Clerkship 2) and includes optometric assessment, diagnosis, and management of refractive errors, disorders, and diseases of the eye and visual system, along with associated systemic conditions and practice management.

Units
3.00

Exceptions to Fees or Academic Progress Units
No,

Components
Clinic

Primary Component
Clinic

Grading Information

Standard Course Grading
No,

Special Course Grading
Credit/No Credit

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed
Consent to Drop Department consent required,
Existing
Consent to Drop No consent required,

Prerequisites

Complete all of the following

- Students must be in level 4A or higher
- Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path

Faculty/AFIW Path(s) for Workflow

Committee approvals,

Faculty of Science

Dependencies

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 468 - Clinical Clerkship 2

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2024

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

We are adding "Drop consent" to all OPTOM courses. Previously "Drop consent" was added on a term-by-term basis, but this is unnecessary if it can exist at the calendar level. OPTOM students should not be able to drop courses without consulting with an advisor and/or the undergrad committee, as it affects their ability to remain with their cohort. Enrolment is managed for them already, so students are unlikely to try to drop courses on their own, and there have been no issues so far. However, we are adding "Drop Consent" as a precaution to correct an oversight and to ensure the existing practice is enforced by the system.

Course Information

Faculty

Faculty of Science

Academic Unit

School of Optometry and Vision Science

Subject Code

OPTOM

Number

468

Course Level

400

Title

Clinical Clerkship 2

Abbreviated Title

Clinical Clerkship 2

Undergraduate Communication Requirement Identifier

No,

Description

Supervised optometric patient care in one, or more, external clinical settings. This course is complementary to OPTOM458 (Clinical Clerkship 1) and includes optometric assessment, diagnosis, and management of refractive errors, disorders, and diseases of the eye and visual system, along with associated systemic conditions and practice management.

Units

3.00

Exceptions to Fees or Academic Progress Units

No,

Components

Clinic

Primary Component

Clinic

Grading Information

Standard Course Grading
No,

Special Course Grading
Credit/No Credit

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Students must be in level 4A or higher
- Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) View Program

OPTOM 478 - Clinical Clerkship 3

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Offering Number
1

Effective Term and Year
Fall 2024

Proposal Details

Proposal Type
Change,

Rationale for Change

We are adding "Drop consent" to all OPTOM courses. Previously "Drop consent" was added on a term-by-term basis, but this is unnecessary if it can exist at the calendar level. OPTOM students should not be able to drop courses without consulting with an advisor and/or the undergrad committee, as it affects their ability to remain with their cohort. Enrolment is managed for them already, so students are unlikely to try to drop courses on their own, and there have been no issues so far. However, we are adding "Drop Consent" as a precaution to correct an oversight and to ensure the existing practice is enforced by the system.

Course Information

Faculty
Faculty of Science

Academic Unit
School of Optometry and Vision Science

Subject Code
OPTOM

Number
478

Course Level
400

Title
Clinical Clerkship 3

Abbreviated Title
Clinical Clerkship 3

Undergraduate Communication Requirement Identifier

No,

Description

Supervised optometric patient care in a variety of the University of Waterloo optometric clinical settings. Activities include assessment, diagnosis and management of disorders and diseases of the eye and visual system, along with associated systemic conditions, dispensing and fitting of optometric appliances and rehabilitative vision care.

Units

3.00

Exceptions to Fees or Academic Progress Units

No,

Components

Clinic

Primary Component

Clinic

Grading Information

Standard Course Grading

No,

Special Course Grading

Passing grade is 70

Cross-Listing Information

Is this course cross-listed?

No,

Repeatable Courses

Can this course be repeated for credit?

No,

Enrolment Rules

Consent to Add

Proposed

No consent required,

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Students must be in level 4A or higher
- Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Course Requirements (units)

- Optometry - Optometry (Doctor of Optometry) [View Program]

OPTOM 477 - Clinical Techniques 4

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

We are adding "Drop consent" to all OPTOM courses. Previously "Drop consent" was added on a term-by-term basis, but this is unnecessary if it can exist at the calendar level. OPTOM students should not be able to drop courses without consulting with an advisor and/or the undergrad committee, as it affects their ability to remain with their cohort. Enrolment is managed for them already, so students are unlikely to try to drop courses on their own, and there have been no issues so far. However, we are adding "Drop Consent" as a precaution to correct an oversight and to ensure the existing practice is enforced by the system.

Course Information

Faculty

Faculty of Science

Academic Unit

School of Optometry and Vision Science

Subject Code
OPTOM

Number
477

Course Level
400

Title
Clinical Techniques 4

Abbreviated Title
Clinical Techniques 4

Undergraduate Communication Requirement Identifier
No,

Description
This course will provide an opportunity for optometry students to discuss and evaluate clinical techniques, instrumentation, and ideologies not covered in the current curriculum. Students will be encouraged to use their basic knowledge of the vision sciences to provide a perceptive critique of the clinical subjects addressed.

Units
0.75

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLecture

Primary Component
Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Credit/No Credit

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Proposed

Consent to Drop
Department consent required,

Existing

Consent to Drop
No consent required,

Prerequisites

Enrolled in Optometry

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Proposed
Notes
Existing
Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

There are no dependencies

PHYS 121 - Mechanics

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Offering Number
1

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-06-11

Rationale for Change

The course description for PHYS 121 is updated for greater clarity, and equivalent calculus pre-requisites from Engineering are added.

Consultations

Consultation Paragraph:

As part of the curriculum change process for the affected physics programs and courses, the Department of Physics & Astronomy engaged in a series of structured consultations with departmental leadership, Associate Chairs Undergraduate Studies, Associate Deans Undergraduate, and relevant Directors and steering committees across many faculties and departments throughout UWaterloo. These consultations ensured transparency, alignment across units, and opportunities for everyone to provide feedback prior to formal submission in Kuali. A chronological order of consultations in Spring 2025 and Fall 2025 are provided below:

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- email consultations attached

Supporting Documentation

- PhysicsCurriculumChanges_ACUGEmails20250826.docx

Course Information

Faculty

Faculty of Science

Academic Unit

Department of Physics and Astronomy

Subject Code

PHYS

Number

121

Course Level

100

Title

Mechanics

Abbreviated Title

Mechanics

Undergraduate Communication Requirement Identifier

No,

Proposed

Description
An introductory calculus-based course in physics for students intending to concentrate their future studies in the physical sciences or mathematics; includes vectors (dot and cross products), particle kinematics and dynamics, forces in nature, work and energy, conservation of energy and linear momentum, rotational kinematics and dynamics, and conservation of angular momentum.

Existing

Description
An introductory course in physics for students intending to concentrate their future studies in the physical sciences, optometry, or mathematics; includes vectors (dot and cross products), particle kinematics and dynamics, forces in nature, work and energy, conservation of energy and linear momentum, rotational kinematics and dynamics, and conservation of angular momentum.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LectureTest Slot TutorialWorkshop

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

1. Complete all of the following
    - Must have completed: 4U Calculus and Vectors, 4U Advanced Functions, and 4U Physics
        - Must have completed: 4U Calculus and Vectors, 4U Advanced Functions, and 4U Physics

Corequisites

1. Completed or concurrently enrolled in at least 1 of the following:
    - **ECE205 - Advanced Calculus 1 for Electrical and Computer Engineers (0.50)**
    - MATH104 - Introductory Calculus for Arts and Social Science (0.50)
    - **MATH116 - Calculus 1 for Engineering (0.50)**
    - **MATH117 - Calculus 1 for Engineering (0.50)**
    - MATH127 - Calculus 1 for the Sciences (0.50)
    - MATH137 - Calculus 1 for Honours Mathematics (0.50)
    - MATH147 - Calculus 1 (Advanced Level) (0.50)
    -
    - ~~Must have completed: 4U Calculus and Vectors, 4U Advanced Functions, and 4U Physics~~

Antirequisites

Not completed nor concurrently enrolled in:

- ECE105 - Classical Mechanics (0.50)
- PHYS111 - Physics 1 (0.50)
- PHYS115 - Mechanics (0.50)

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Prerequisites

- OPTOM 106 - Geometrical, Physical and Visual Optics View Program

Corequisites

- PHYS 121L - Mechanics Laboratory View Program

Antirequisites

- PHYS 111 - Physics 1 View Program
- PHYS 115 - Mechanics View Program

Prerequisites

- PHYS 275 - Planets View Program

Antirequisites

- NE 131 - Physics for Nanotechnology Engineering View Program

Prerequisites

- PHYS 175 - Introduction to the Universe View Program
- PHYS 112 - Physics 2 View Program
- PHYS 124 - Modern Physics View Program
- PHYS 122 - Waves, Electricity and Magnetism View Program

Antirequisites

- PHYS 105 - Introduction to Physics for Health Care Professions View Program

Course Requirements (no units)

- H-Mathematical Physics (BSc) - Mathematical Physics (Bachelor of Science - Honours)
- Astrophysics Minor - Astrophysics Minor View Program View Program
- JH-Earth Sciences - Earth Sciences (Joint Honours) View Program

Course Requirements (units)

- Biophysics Minor - Biophysics Minor View Program
- H-Medicinal Chemistry - Medicinal Chemistry (Bachelor of Science - Honours) View Program

Course Requirements (no units)

- H-Mathematical Physics (BMath) - Mathematical Physics (Bachelor of Mathematics - Honours)
- JH-Physics - Physics (Joint Honours) View Program View Program

Course Requirements (units)

- Physics Minor - Physics Minor View Program
- H-Materials & Nanosciences - Materials and Nanosciences (Bachelor of Science - Honours) View Program

Course Requirements (no units)

- H-Biochemistry - Biochemistry (Bachelor of Science - Honours) View Program
- H-Science & Aviation - Science and Aviation (Bachelor of Science - Honours) View Program
- H-Earth Sciences - Geology Specialization - Earth Sciences - Geology Specialization (Bachelor of Science - Honours) View Program
- H-Earth Sciences - Hydrogeology - Earth Sciences - Hydrogeology Specialization (Bachelor of Science - Honours) View Program
- H-Chemistry - Computational Specialization - Chemistry - Computational Specialization (Bachelor of Science - Honours) View Program

Course Requirements (units)

- H-Biochemistry - Biotechnology Specialization - Biochemistry - Biotechnology Specialization (Bachelor of Science - Honours) View Program
- H-Biological & Medical Physics - Biological and Medical Physics (Bachelor of Science - Honours)
- H-Biology - Biology (Bachelor of Science - Honours) View Program View Program

Required Courses (Term by Term)

- H-Software Engineering - Software Engineering (Bachelor of Software Engineering - Honours) View Program

Course Requirements (no units)

- H-Chemistry - Chemistry (Bachelor of Science - Honours) View Program
- 3G-Science - Science (Bachelor of Science - Three-Year General) View Program
- H-Science - Science (Bachelor of Science - Honours) View Program
- H-Physics & Astronomy - Physics and Astronomy (Bachelor of Science - Honours)
- H-Physics - Physics (Bachelor of Science - Honours) View Program View Program
- H-Mathematical Physics (BSc) - Mathematical Physics (Bachelor of Science - Honours)
- H-Earth Sciences - Geophysics Specialization - Earth Sciences - Geophysics Specialization (Bachelor of Science - Honours) View Program View Program
- H-Science & Business - Science and Business (Bachelor of Science - Honours) View Program

Course Requirements (units)

- H-Biomedical Sciences - Biomedical Sciences (Bachelor of Science - Honours) View Program

Course Lists

- H-Knowledge Integration - Knowledge Integration (Bachelor of Knowledge Integration - Honours) View Program

Course Requirements (no units)

- Physical Sciences Option - Physical Sciences Option View Program

PHYS 122 - Electricity and Magnetism

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Offering Number
1

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-06-11

Rationale for Change

Curriculum plan changes include splitting the existing PHYS 122 content into two courses: electricity and magnetism in PHYS 122 and waves in PHYS 223. This is for student workload and student success in higher terms. In addition, calculus co-requisites updated to reflect equivalencies from Engineering.

Consultations

Consultation Paragraph:

As part of the curriculum change process for the affected physics programs and courses, the Department of Physics & Astronomy engaged in a series of structured consultations with departmental leadership, Associate Chairs Undergraduate Studies, Associate Deans Undergraduate, and relevant Directors and steering committees across many faculties and departments throughout UWaterloo. These consultations ensured transparency, alignment across units, and opportunities for everyone to provide feedback prior to formal submission in Kuali. A chronological order of consultations in Spring 2025 and Fall 2025 are provided below:

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- email consultations attached

Supporting Documentation

- PhysicsCurriculumChanges_ACUGEmails20250826.docx

Course Information

Faculty

Faculty of Science

Academic Unit

Department of Physics and Astronomy

Subject Code
PHYS

Number
122

Course Level
100

Proposed

Title
Electricity and Magnetism

Existing

Title
Waves, Electricity and Magnetism

Proposed

Abbreviated Title

Undergraduate Communication Requirement Identifier
No,

Electricity & Magnetism

Existing

Abbreviated Title
Waves, Electricity & Magnetism

Proposed

Description
An introductory course in electricity and magnetism for students intending to concentrate their future studies in the physical sciences or mathematics. Concepts include electrostatic force and potential, electric current and power, capacitors, DC circuits, magnetic force and fields, and Faraday's Law.

Existing

Description
Simple harmonic motion, resonance, damped harmonic motion, complex numbers, wave motion and sound, electrostatic force and potential, electric current and power, capacitors, DC circuits, LRC circuits, introduction to magnetic fields Lorentz Force.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LectureTest Slot TutorialWorkshop

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

1. Complete all of the following
   - Must have completed at least 1 of the following:
     - ~~ECE105 - Classical Mechanics~~
     - ~~PHYS115 - Mechanics~~
     - ~~PHYS121 - Mechanics~~

Corequisites

1. Completed or concurrently enrolled in at least 1 of the following:
   - **MATH116 - Calculus 1 for Engineering (0.50)**
   - **MATH117 - Calculus 1 for Engineering (0.50)**
   - MATH127 - Calculus 1 for the Sciences (0.50)
   - MATH137 - Calculus 1 for Honours Mathematics (0.50)
   - MATH147 - Calculus 1 (Advanced Level) (0.50)

Antirequisites

1. Not completed nor concurrently enrolled in: PHYS125
   - ~~Not completed nor concurrently enrolled in:~~
   - ~~PHYS112 - Physics 2 (0.50)~~
   -

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Prerequisites

- OPTOM 106 - Geometrical, Physical and Visual Optics View Program
- PHYS 358 - Thermal Physics View Program
- PHYS 380 - Molecular and Cellular Biophysics View Program

Corequisites

- PHYS 122L - Waves, Electricity and Magnetism Laboratory View Program

Prerequisites

- ECE 403 - Thermal Physics View Program
- ECE 404 - Geometrical and Physical Optics View Program
- MNS 211 - Chemistry and the Solid State View Program
- PHYS 263 - Classical Mechanics and Special Relativity View Program
- PHYS 375 - Stars View Program
- PHYS 383 - Medical Physics View Program
- PHYS 391 - Electronics View Program
- PHYS 249 - Linear Algebra for Physics and Astronomy View Program
- PHYS 267 - Probability, Statistics, and Data Analysis for Physics and Astronomy View Program
- PHYS 242 - Electricity and Magnetism 1 View Program
- PHYS 256 - Geometrical and Physical Optics View Program
- PHYS 234 - Quantum Physics 1 View Program

Antirequisites

- PHYS 112 - Physics 2 View Program

Corequisites

- PHYS 124 - Modern Physics View Program

Prerequisites

- PHYS 395 - Biophysics of Therapeutic Methods View Program
- PHYS 396 - Biophysics of Imaging View Program
- EARTH 260 - Introductory Applied Geophysics View Program
- PHYS 233 - Introduction to Quantum Mechanics View Program

Antirequisites

- PHYS 105 - Introduction to Physics for Health Care Professions View Program

Prerequisites

- PHYS 225 - Modelling Biological Physics View Program

Antirequisites

- PHYS 125 - Physics for Engineers View Program

Course Requirements (no units)

- H-Mathematical Physics (BSc) - Mathematical Physics (Bachelor of Science - Honours)
- Astrophysics Minor - Astrophysics Minor View Program View Program

Course Requirements (units)

- Biophysics Minor - Biophysics Minor View Program
- H-Medicinal Chemistry - Medicinal Chemistry (Bachelor of Science - Honours) View Program

Course Requirements (no units)

- H-Mathematical Physics (BMath) - Mathematical Physics (Bachelor of Mathematics - Honours)
- Engineering Specialization - Engineering Specialization View Program View Program
- JH-Physics - Physics (Joint Honours) View Program

Course Requirements (units)

- Physics Minor - Physics Minor View Program
- H-Materials & Nanosciences - Materials and Nanosciences (Bachelor of Science - Honours) View Program

Course Requirements (no units)

- H-Biochemistry - Biochemistry (Bachelor of Science - Honours) View Program
- H-Science & Aviation - Science and Aviation (Bachelor of Science - Honours) View Program
- H-Earth Sciences - Geology Specialization - Earth Sciences - Geology Specialization (Bachelor of Science - Honours) View Program
- H-Earth Sciences - Hydrogeology - Earth Sciences - Hydrogeology Specialization (Bachelor of Science - Honours) View Program
- H-Chemistry - Computational Specialization - Chemistry - Computational Specialization (Bachelor of Science - Honours) View Program

Course Requirements (units)

- H-Biochemistry - Biotechnology Specialization - Biochemistry - Biotechnology Specialization (Bachelor of Science - Honours) View Program
- H-Biological & Medical Physics - Biological and Medical Physics (Bachelor of Science - Honours) View Program

Course Lists

- H-Management Engineering - Management Engineering (Bachelor of Applied Science - Honours)
- H-Software Engineering - Software Engineering (Bachelor of Software Engineering - Honours) View Program View Program

Course Requirements (no units)

- H-Chemistry - Chemistry (Bachelor of Science - Honours) View Program
- 3G-Science - Science (Bachelor of Science - Three-Year General) View Program
- H-Science - Science (Bachelor of Science - Honours) View Program
- H-Physics & Astronomy - Physics and Astronomy (Bachelor of Science - Honours)
- H-Physics - Physics (Bachelor of Science - Honours) View Program View Program
- H-Mathematical Physics (BSc) - Mathematical Physics (Bachelor of Science - Honours)

- H-Earth Sciences - Geophysics Specialization - Earth Sciences - Geophysics Specialization (Bachelor of Science - Honours) View Program
- H-Science & Business - Science and Business (Bachelor of Science - Honours) View Program

Course Lists

- H-Knowledge Integration - Knowledge Integration (Bachelor of Knowledge Integration - Honours) View Program

Course Requirements (no units)

- Physical Sciences Option - Physical Sciences Option View Program

PHYS 234 - Quantum Physics 1

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Offering Number
1

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-06-11

Rationale for Change

The course description for PHYS 234 is updated to reflect what is taught in the course, and prerequisite are

updated other for math equivalencies as well as to include the new PHYS 223, split from PHYS 122.

Consultations

Consultation Paragraph:

As part of the curriculum change process for the affected physics programs and courses, the Department of Physics & Astronomy engaged in a series of structured consultations with departmental leadership, Associate Chairs Undergraduate Studies, Associate Deans Undergraduate, and relevant Directors and steering committees across many faculties and departments throughout UWaterloo. These consultations ensured transparency, alignment across units, and opportunities for everyone to provide feedback prior to formal submission in Kuali. A chronological order of consultations in Spring 2025 and Fall 2025 are provided below:

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Supporting Documentation

- PhysicsCurriculumChanges_ACUGEmails20250826.docx

Course Information

Faculty

Faculty of Science

Academic Unit

Department of Physics and Astronomy

Subject Code	Number	Course Level
PHYS	234	200

Title

Quantum Physics 1

Abbreviated Title
Quantum Physics 1

Undergraduate Communication Requirement Identifier
No,

Proposed

Description
Background of quantum physics. Introduction to formalism of quantum physics. Introduction to operators. Quantization, waves, and particles. Spins and Dirac notation. The uncertainty principle. The Schroedinger equation for one-dimensional problems: bound states in square wells, harmonic oscillator, transmission through barriers.

Existing

Description
Background of quantum physics. Introduction to formalism of quantum physics. Introduction to operators. Quantization, waves, and particles. The uncertainty principle. The Schroedinger equation for one-dimensional problems: bound states in square wells, harmonic oscillator, transmission through barriers.

Units
0.50

Proposed

Exceptions to Fees or Academic Progress Units

Existing

Exceptions to Fees or Academic Progress Units

Components
LectureTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

1. Complete all of the following
    - Must have completed the following:
        - PHYS223 - Waves
            - PHYS122 (taken prior to fall 2026)
                - ~~MATH114 - Linear Algebra for Science~~
                - ~~MATH136 - Linear Algebra 1 for Honours Mathematics~~
                - ~~PHYS249 - Linear Algebra for Physics and Astronomy~~
            - ~~Must have completed at least 1 of the following:~~
        - Must have completed at least 1 of the following:

Corequisites

Completed or concurrently enrolled in at least 1 of the following:

- AMATH250 - Introduction to Differential Equations (0.50)
- AMATH251 - Introduction to Differential Equations (Advanced Level) (0.50)
- MATH228 - Differential Equations for Physics and Chemistry (0.50)

Antirequisites

1. Complete all of the following
    - Not completed nor concurrently enrolled in:
    - CHEM356 - Introductory Quantum Mechanics (0.50)
    - **ECE305 - Introduction to Quantum Mechanics (0.50)**
    - PHYS233 - Introduction to Quantum Mechanics (0.50)
    -
    - Not completed nor concurrently enrolled in: ECE405, NE232

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Antirequisites

- CHEM 356 - Introductory Quantum Mechanics View Program

Prerequisites

- PHYS 334 - Quantum Physics 2 View Program
- PHYS 375 - Stars View Program
- ECE 405A - Quantum Information Processing Devices View Program

Antirequisites

- NE 332 - Quantum Mechanics View Program
- ECE 305 - Introduction to Quantum Mechanics View Program

Prerequisites

- PHYS 359 - Statistical Mechanics View Program
- PHYS 335 - Condensed Matter Physics View Program
- PHYS 349 - Advanced Computational Physics View Program
- PHYS 396 - Biophysics of Imaging View Program

Antirequisites

- PHYS 233 - Introduction to Quantum Mechanics View Program

Prerequisites

- ECE 405B - Fundamentals of Experimental Quantum Information View Program
- ECE 405C - Programming of Quantum Computing Algorithms View Program
- ECE 405D - Superconducting Quantum Circuits View Program

Antirequisites

- ECE 405 - Introduction to Quantum Mechanics View Program

Course Requirements (no units)

- H-Mathematical Physics (BSc) - Mathematical Physics (Bachelor of Science - Honours) View Program

Course Requirements (units)

- Biophysics Minor - Biophysics Minor View Program

Course Requirements (no units)

- Quantum Information Option - Quantum Information Option View Program
- H-Mathematical Physics (BMath) - Mathematical Physics (Bachelor of Mathematics - Honours)
- Quantum Engineering Option - Quantum Engineering Option View Program View Program
- JH-Physics - Physics (Joint Honours) View Program

Course Requirements (units)

- Physics Minor - Physics Minor View Program
- H-Materials & Nanosciences - Materials and Nanosciences (Bachelor of Science - Honours)
- H-Biological & Medical Physics - Biological and Medical Physics (Bachelor of Science - Honours) View Program View Program

Course Lists

- H-Electrical Engineering - Electrical Engineering (Bachelor of Applied Science - Honours)
- H-Computer Engineering - Computer Engineering (Bachelor of Applied Science - Honours) View Program View Program
- H-Software Engineering - Software Engineering (Bachelor of Software Engineering - Honours) View Program

Course Requirements (no units)

- H-Physics & Astronomy - Physics and Astronomy (Bachelor of Science - Honours)
- H-Physics - Physics (Bachelor of Science - Honours) View Program View Program
- H-Mathematical Physics (BSc) - Mathematical Physics (Bachelor of Science - Honours)
- Physical Sciences Option - Physical Sciences Option View Program View Program

PHYS 242 - Electricity and Magnetism 1

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year

Offering Number
1

Fall 2025

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-06-11

Rationale for Change

A description change for PHYS 242 better clarifies what is taught in the course: electrostatics. Induction is more so considered electrodynamics and will be covered in upper-year course: PHYS 342. In addition, equivalent calculus prerequisites from Engineering are added.

Consultations

Consultation Paragraph:

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Supporting Documentation

- PhysicsCurriculumChanges_ACUGEmails20250826.docx

Course Information

Faculty

Faculty of Science

Academic Unit

Department of Physics and Astronomy

Subject Code	Number	Course Level
PHYS	242	200

Title

Electricity and Magnetism 1

Abbreviated Title
Electricity & Magnetism 1

Undergraduate Communication Requirement Identifier
No,

Proposed

Description
Review of vector calculus. Electrostatic field in vacuum, Coulomb's law and the superposition principle, Maxwell's equations for the electrostatic field, electrostatic potential, magnetostatic field in vacuum, Maxwell's equations for the magnetostatic field, Biot-Savart law, vector potential, inductance.

Existing

Description
Electrostatics in vacuum, electric potential, conductors and currents, magnetostatics in vacuum, electromagnetic induction.

Units
0.50

Proposed

Exceptions to Fees or Academic Progress Units

Existing

Exceptions to Fees or Academic Progress Units

Components
LectureTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

1. Complete all of the following
    - Must have completed the following:
        - PHYS122 - Waves, Electricity and Magnetism
            - Must have completed at least 1 of the following:
                - ~~MATH128 - Calculus 2 for the Sciences~~
                - ~~MATH138 - Calculus 2 for Honours Mathematics~~
                - ~~MATH148 - Calculus 2 (Advanced Level)~~
                - ~~Must have completed the following:~~
            - ~~MATH227 - Calculus 3 for Honours Physics~~
        - AMATH231 can be taken concurrently
            - AMATH231 can be taken concurrentlyMust have completed the following:
                - AMATH231 - Calculus 4

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Prerequisites

- PHYS 342 - Electricity and Magnetism 2 View Program
- PHYS 375 - Stars View Program
- PHYS 391 - Electronics View Program
- PHYS 349 - Advanced Computational Physics View Program
- PHYS 396 - Biophysics of Imaging View Program

Corequisites

- PHYS 242L - Electricity and Magnetism Laboratory View Program
- PHYS 260L - Intermediate Physics Laboratory View Program

Course Requirements (no units)

- H-Mathematical Physics (BSc) - Mathematical Physics (Bachelor of Science - Honours) View Program

Course Requirements (units)

- Biophysics Minor - Biophysics Minor View Program

Course Requirements (no units)

- H-Mathematical Physics (BMath) - Mathematical Physics (Bachelor of Mathematics - Honours)
- JH-Physics - Physics (Joint Honours) View Program View Program

Course Requirements (units)

- Physics Minor - Physics Minor View Program
- H-Materials & Nanosciences - Materials and Nanosciences (Bachelor of Science - Honours)
- H-Biological & Medical Physics - Biological and Medical Physics (Bachelor of Science - Honours) View Program View Program

Course Requirements (no units)

- H-Physics & Astronomy - Physics and Astronomy (Bachelor of Science - Honours)
- H-Physics - Physics (Bachelor of Science - Honours) View Program View Program
- H-Mathematical Physics (BSc) - Mathematical Physics (Bachelor of Science - Honours)

- Physical Sciences Option - Physical Sciences Option View Program View Program

PHYS 267 - Probability, Statistics, and Data Analysis for Physics and Astronomy

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Offering Number
1

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-06-11

Rationale for Change

Prerequisites for PHYS 267 are updated to explicitly include Calculus 2 and to allow PHYS 112 students with 80% a pathway into taking PHYS 267.

Consultations

Consultation Paragraph:

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Supporting Documentation

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Course Information

Faculty

Faculty of Science

Academic Unit

Department of Physics and Astronomy

Subject Code

PHYS

Number

267

Course Level

200

Title

Probability, Statistics, and Data Analysis for Physics and Astronomy

Abbreviated Title

Prob, Stats & Data Analysis

Undergraduate Communication Requirement Identifier

No,

Description

Probability, probability distributions, errors, descriptive statistics, statistical inference (hypothesis testing, fitting, confidence intervals), computational methods in Python, including algorithms for numerical integration; examples from physics and astronomy.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LectureTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

1. Complete all of the following
    - Must have completed the following:

- PHYS122 - Waves, Electricity and Magnetism
  - Must have completed at least 1 of the following:
    - ~~MATH227 - Calculus 3 for Honours Physics~~
    - ~~MATH237 - Calculus 3 for Honours Mathematics~~
    - ~~MATH247 - Calculus 3 (Advanced Level)~~
  - Must have completed at least 1 of the following:
    - ~~CS114 - Principles of Computing for Science~~
    - ~~CS116 - Introduction to Computer Science 2~~
    - ~~CS136 - Elementary Algorithm Design and Data Abstraction~~
    - ~~CS146 - Elementary Algorithm Design and Data Abstraction (Advanced Level)~~
  - Must have completed at least 1 of the following:
    - ~~Must have completed the following: PHYS236~~

Corequisites

No Rules

Antirequisites

Not completed nor concurrently enrolled in:

- STAT230 - Probability (0.50)
- STAT231 - Statistics (0.50)

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Prerequisites

- PHYS 370L - Astronomy Laboratory 1

View Program

- AMATH 345 - Data-Driven Mathematical Models View Program
- PHYS 349 - Advanced Computational Physics View Program

Course Requirements (no units)

- Astrophysics Minor - Astrophysics Minor View Program

Course Requirements (units)

- Physics Minor - Physics Minor View Program

Course Lists

- H-Materials & Nanosciences - Materials and Nanosciences (Bachelor of Science - Honours) View Program

Course Requirements (no units)

- H-Biological & Medical Physics - Biological and Medical Physics (Bachelor of Science - Honours)
- H-Physics & Astronomy - Physics and Astronomy (Bachelor of Science - Honours) View Program
- H-Physics - Physics (Bachelor of Science - Honours) View Program
- H-Mathematical Physics (BSc) - Mathematical Physics (Bachelor of Science - Honours) View Program

PHYS 334 - Quantum Physics 2

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2024

Offering Number
1

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-06-11

Rationale for Change

The pre-requisite for PHYS 334 are updated to include linear algebra for students who have CHEM 356 as a background, as this course requires a strong foundation of linear algebra. The AMATH 373 antirequisite is removed as it is now quite different.

Consultations

Consultation Paragraph:

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Supporting Documentation

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Course Information

Faculty **Academic Unit**

Faculty of Science

Department of Physics and Astronomy

Subject Code
PHYS

Number
334

Course Level
300

Title
Quantum Physics 2

Abbreviated Title
Quantum Physics 2

Undergraduate Communication Requirement Identifier
No,

Description
Formalism of quantum mechanics. Operator approach to the harmonic oscillator. Quantum mechanics in three dimensions: Hydrogen atom, angular momentum and spin. Time-independent perturbation theory. Fine structure of hydrogen. Zeeman effect. Identical particles. The variational principle. Ground state of the helium atom. Applications in atomic and molecular physics.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LectureTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

1. Complete all of the following
    - Must have completed the following:
        - CHEM356 - Introductory Quantum Mechanics
            - Must have completed at least 1 of the following:
                - ~~AMATH250 - Introduction to Differential Equations~~
                - ~~AMATH251 - Introduction to Differential Equations (Advanced Level)~~
                - ~~MATH228 - Differential Equations for Physics and Chemistry~~
            - PHYS234 - Quantum Physics 1
                - Must have completed at least 1 of the following:
                - Must have completed at least 1 of the following:

Corequisites

No Rules

Antirequisites

1. No Rules
    - ~~AMATH373 - Quantum Theory 1 (0.50)~~

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Prerequisites

- PHYS 467 - Introduction to Quantum Information Processing View Program
- PHYS 434 - Quantum Physics 3 View Program
- PHYS 435 - Current Topics in Condensed Matter Physics View Program
- PHYS 444 - Introduction to Particle Physics View Program
- PHYS 468 - Introduction to the Implementation of Quantum Information Processing
- AMATH 473 - Quantum Theory 2 View Program View Program

Antirequisites

- AMATH 373 - Quantum Theory 1 View Program

Prerequisites

- PHYS 454 - Quantum Theory 2 View Program

Course Requirements (no units)

- H-Mathematical Physics (BSc) - Mathematical Physics (Bachelor of Science - Honours)
- Quantum Information Option - Quantum Information Option View Program View Program
- H-Mathematical Physics (BMath) - Mathematical Physics (Bachelor of Mathematics - Honours)
- JH-Physics - Physics (Joint Honours) View Program View Program

Course Requirements (units)

- Physics Minor - Physics Minor View Program
- H-Materials & Nanosciences - Materials and Nanosciences (Bachelor of Science - Honours)
  View Program

Course Requirements (no units)

- H-Biological & Medical Physics - Biological and Medical Physics (Bachelor of Science - Honours)
  View Program

Course Lists

- H-Electrical Engineering - Electrical Engineering (Bachelor of Applied Science - Honours)
- H-Computer Engineering - Computer Engineering (Bachelor of Applied Science - Honours) View Program View Program
- H-Software Engineering - Software Engineering (Bachelor of Software Engineering - Honours)
  View Program

Course Requirements (no units)

- H-Physics & Astronomy - Physics and Astronomy (Bachelor of Science - Honours)
- H-Physics - Physics (Bachelor of Science - Honours) View Program View Program
- H-Mathematical Physics (BSc) - Mathematical Physics (Bachelor of Science - Honours)
- Physical Sciences Option - Physical Sciences Option View Program View Program

PHYS 444 - Subatomic Physics

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2024

Offering Number
1

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-06-11

Rationale for Change

Introduction to Particle Physics becomes Subatomic Particles for PHYS 444. In addition to the long and short title changes, the course description is updated to reflect a broader range of topics depending on the instructor. This decision comes from the retirement of a key instructor and incorporation of wider range of instructor expertise in subatomic physics instead of just particle physics.

Consultations

Consultation Paragraph:

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Course Information

Faculty

Faculty of Science

Academic Unit

Department of Physics and Astronomy

Subject Code

PHYS

Number

444

Course Level

400

Proposed
Title Subatomic Physics
Existing
Title

Introduction to Particle Physics

Proposed

Abbreviated Title
Subatomic Physics

Existing

Abbreviated Title
Intro Particle Physics

Undergraduate Communication Requirement Identifier
No,

Proposed

Description
An introduction to modern particle and nuclear physics. Topics covered include symmetries, particle classification, experimental methods and tools, scattering, fundamental forces, and interactions. Other topics may include structure of the nucleus, structure of nucleons, proton decay, the Standard Model, and the Higgs mechanism.

Existing

Description
This course introduces students to the standard model of particle physics. Topics covered include symmetries, particle classification, experimental methods and tools, scattering, Feynman diagrams, gauge theories, quantum electrodynamics, quarks, quantum chromodynamics, weak interactions, and the Higgs mechanism.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

1. Complete all of the following
    - Must have completed at least 1 of the following:
        - ~~AMATH373 - Quantum Theory 1~~
        - ~~PHYS334 - Quantum Physics 2~~
        - ~~Must have completed the following:~~
    - ~~PHYS363 - Intermediate Classical Mechanics~~
    - ~~Must have completed the following:~~

- ~~AMATH332 - Applied Complex Analysis~~
- ~~AMATH351 - Ordinary Differential Equations~~
- ~~AMATH353 - Partial Differential Equations 1~~
- ~~Must have completed the following:~~

- Must have completed at least 1 of the following:

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Proposed
Notes
Existing
Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Course Requirements (no units)

- H-Mathematical Physics (BSc) - Mathematical Physics (Bachelor of Science - Honours)
- H-Mathematical Physics (BSc) - Mathematical Physics (Bachelor of Science - Honours) View Program View Program

PHYS 449 - Special Topics in Computational Physics

Top

Effective Date & Career

Career
Undergraduate,

Proposed
Effective Term and Year

Offering Number
1

Fall 2026

Existing

Effective Term and Year
Fall 2024

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-06-11

Rationale for Change

Formerly Machine Learning in Physics, the title for PHYS 449 becomes Special Topics in Computational Physics to distinguish it from PHYS 349 (Advanced Computational Physics). The course description is broadened to allow flexibility in content. A laboratory component is added to provide flexibility in teaching.

Consultations

Consultation Paragraph:

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Course Information

Faculty

Faculty of Science

Academic Unit

Department of Physics and Astronomy

Subject Code	Number	Course Level
PHYS	449	400

Proposed

Title
Special Topics in Computational Physics

Existing

Title
Machine Learning in Physics

Proposed

Abbreviated Title
Topics: Computational Physics

Existing

Abbreviated Title
Machine Learning in Physics

Undergraduate Communication Requirement Identifier

No,

Proposed

Description

The application of advanced computational methods to solve physics problems, model complex phenomena, and analyze large amounts of data. Other topics may include applications of machine learning techniques, GPU programming, and artificial intelligence.

Existing

Description
Machine learning applications in the physical sciences.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Proposed

Components
Lecture

Primary Component
Lecture

Existing

Components
Laboratory Tutorial

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?

No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

1. Complete all of the following
    - Must have completed the following:
        - PHYS349 - Advanced Computational Physics

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Proposed
Notes
Existing
Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

There are no dependencies

PHYS 468 - Physics of Quantum Computing

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2024

Offering Number
1

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-06-11

Rationale for Change

Content in this course has changed from what has been taught over the past two years, therefore, the course description is updated to reflect this change. The new content relies heavily on knowledge of quantum mechanics and as such, prerequisites are updated to require only PHYS 334, Quantum Physics 2, removing the other options to this prerequisite. Finally a title change is also made, and Introduction to the Implementation of Quantum Information Processing becomes Physics of Quantum Computing for PHYS 468.

Consultations

Consultation Paragraph:

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Supporting Documentation

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Course Information

Faculty

Faculty of Science

Academic Unit

Department of Physics and Astronomy

Subject Code	Number	Course Level
PHYS	468	400

Proposed

Title

Physics of Quantum Computing

Existing

Title
Introduction to the Implementation of Quantum Information Processing

Proposed

Abbreviated Title
Physics of Quantum Computing

Existing

Abbreviated Title
Intro Quantum Info Processing

Undergraduate Communication Requirement Identifier
No,

Proposed

Description
Qubit operations (Di Vincenzo criteria), hardware principles, and qubit diagnostic techniques. Survey of quantum hardware implementations such as photonic quantum computing, superconducting qubits, NMR, ion trap quantum computing, atomic quantum computing.

Existing

Description
Photonic quantum computing, superconducting qubits, NMR, Ion Trap quantum computing, atomic quantum computing.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

1. Complete all of the following
    - Must have completed the following:
        - PHYS334 - Quantum Physics 2

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Antirequisites

- ECE 405A - Quantum Information Processing Devices View Program

Course Requirements (no units)

- Quantum Information Option - Quantum Information Option View Program
- Quantum Engineering Option - Quantum Engineering Option View Program

Course Lists

- H-Software Engineering - Software Engineering (Bachelor of Software Engineering - Honours) View Program

PHYS 483 - Advanced Therapeutic Concepts in Oncology and Medical Physics

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2024

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

The Life Physics program was replaced by the Biological Medical Physics program, Sept. 1, 2023. This course requires the background from PHYS 383, which is a requirement for students in the Biological and Medical physics plans. While the target audience for this course is primarily students from the Biological and Medical Physics plans, others, who have taken PHYS 383 could benefit from, and be successful in PHYS 483.

The prerequisite is updated to remove Life Physics and replace it with PHYS 383.

Consultations

Consultation Paragraph:

As part of the curriculum change process for the affected physics programs and courses, the Department of Physics & Astronomy engaged in a series of structured consultations with departmental leadership, Associate Chairs Undergraduate Studies, Associate Deans Undergraduate, and relevant Directors and steering committees across many faculties and departments throughout UWaterloo. These consultations ensured transparency, alignment across units, and opportunities for everyone to provide feedback prior to formal submission in Kuali. A chronological order of consultations in Spring 2025 and Fall 2025 are provided below:

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- September 8, 2025: Meeting with Physics and Math ADUs and Chairs and ACUGs and Curriculum Chairs to finalize Math Phys program changes
- email consultations attached

Supporting Documentation

- PhysicsCurriculumChanges_ACUGEmails20250826.docx

Course Information

Faculty

Faculty of Science

Academic Unit

Department of Physics and Astronomy

Subject Code
PHYS

Number
483

Course Level
400

Title
Advanced Therapeutic Concepts in Oncology and Medical Physics

Abbreviated Title
Adv Therap Oncol & Med Phys

Undergraduate Communication Requirement Identifier
No,

Description
This course examines advanced oncology therapeutic concepts required as a foundation for patient management in the inpatient, ambulatory, and community settings. Topics include a comprehensive review of cancer epidemiology and pathophysiology, therapeutic agents used in the oncology setting, management of cancer therapy toxicities, and treatment and palliation of cancer symptoms. Physics methods in radiation therapy and the medical physicist's role in cancer treatment will be addressed.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading

Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

1. Complete all of the following
    - Must have completed the following:
        - PHYS383 - Medical Physics

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Course Requirements (units)

- Biophysics Minor - Biophysics Minor View Program

Course Requirements (no units)

- H-Biological & Medical Physics - Biological and Medical Physics (Bachelor of Science - Honours) View Program

PHYS 490 - Special Topics in Physics

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-07-25

Rationale for Change

A tutorial is added to PHYS 490 for flexibility in scheduling guest lectures at partner institutes. Additionally, prerequisites have been updated to include Biological and Medical Physics and Materials and Nanosciences so the course is open to all physics plans.

Consultations

Consultation Paragraph:

As part of the curriculum change process for the affected physics programs and courses, the Department of Physics & Astronomy engaged in a series of structured consultations with departmental leadership, Associate Chairs Undergraduate Studies, Associate Deans Undergraduate, and relevant Directors and steering committees across many faculties and departments throughout UWaterloo. These consultations ensured transparency, alignment across units, and opportunities for everyone to provide feedback prior to formal submission in Kuali. A chronological order of consultations in Spring 2025 and Fall 2025 are provided below:

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- email consultations attached

Supporting Documentation

- PhysicsCurriculumChanges_ACUGEmails20250826.docx

Course Information

Faculty

Faculty of Science

Academic Unit

Department of Physics and Astronomy

Subject Code

PHYS

Number

490

Course Level

400

Title

Special Topics in Physics

Abbreviated Title

Special Topics

Undergraduate Communication Requirement Identifier

No,

Description

A lecture course offered in a particular branch of physics, subject to availability of instructor.

Units

0.50

Exceptions to Fees or Academic Progress Units

No,

Proposed

Components

Tutorial

Existing

Components

Primary Component

Lecture

Grading Information

Standard Course Grading

Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
Yes,

Total Completions Allowed
10

Allow Multiple Enrol in a Term
Yes,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

1. Complete all of the following
    - Enrolled in:

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

There are no dependencies

SCI 211 - Traditional Medicines Land-Based Field Course

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Offering Number
1

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-08-08

Rationale for Change

Additional fees may exist for this course that are paid directly to the faculty in addition to regular course tuition. As such, the course is updated to state that additional fees may apply.

Course Information

Faculty

Faculty of Science

Academic Unit

Dean of Science Office

Subject Code

SCI

Number

211

Course Level

200

Title

Traditional Medicines Land-Based Field Course

Abbreviated Title

Land-Based Trad Medicines

Undergraduate Communication Requirement Identifier

No,

Description

A four-day land-based field course. Students will engage with Indigenous instructors and community members to learn traditional medicine knowledges. Delivery will be blended with online preparatory lectures. Land-based learning, and teaching circles with Indigenous Knowledge Holders.

Units

0.50

Exceptions to Fees or Academic Progress Units

No,

Components

Field Studies

Primary Component

Field Studies

Grading Information

Standard Course Grading
No,

Special Course Grading
Credit/No Credit

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
Department consent required,

Consent to Drop
No consent required,

Prerequisites

Students must be in level 2A or higher

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Proposed
Fee Statement This course may have additional fees. See academic unit for details.
Existing
Fee Statement

Notes

- For further information, contact the Science Indigenous Initiatives Manager.

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

There are no dependencies

SCI 252 - Quantum Mechanics for Everyone

Top

Effective Date & Career

Career
Undergraduate,

Proposed
Effective Term and Year Fall 2026
Existing
Effective Term and Year

Offering Number
2

Fall 2023

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-03-13

Rationale for Change

The course description for PHIL 252 has been rewritten with plan-level learning outcomes embedded, as required by the Faculty of Arts. The Faculty of Science has reviewed and accepts the updated description as presented in this proposal, for the cross-linked SCI 252.

Consultations

The cross-listed departments have been in touch with each other regarding proposed description changes. Science approves the description presented in this proposal, which is slightly modified from the proposed description originally presented by the Department of Philosophy, based on suggestions from the Department of Physics.

- Physics Department approval, S. Idziak, March 13, 2025
- Approval email to Arts, G. Andres, March 19, 2025

Course Information

Faculty
Faculty of Science

Academic Unit
Dean of Science Office

Subject Code
SCI

Number
252

Course Level
200

Title

Quantum Mechanics for Everyone

Abbreviated Title
Quantum Mechanics for Everyone

Undergraduate Communication Requirement Identifier
No,

Proposed

Description
Quantum mechanics is driving a technological revolution that will affect everyone. This course offers an introduction to the basic concepts of quantum mechanics from a historical and philosophical perspective. Students will use a variety of materials (e.g., articles, simulations, videos) to learn about distinctive features of quantum physics. In class discussions and assessments, students will explore controversies surrounding the interpretation of quantum mechanics and develop an understanding of the principles behind the quantum research being conducted here in Waterloo.

Existing

Description
Quantum mechanics is driving a technological revolution. This course offers an introduction to the basic concepts of quantum mechanics from a historical and philosophical perspective. The course will supply the background needed to understand the controversies surrounding the interpretation of quantum mechanics as well as the principles behind the cutting-edge research being carried out at the Perimeter Institute and the University of Waterloo.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
Yes,

Cross-Listed Courses

PHIL 252 - Quantum Mechanics for Everyone

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

No Rules

Corequisites

No Rules

Antirequisites

Not completed nor concurrently enrolled in: PHIL271 (Topic 6: Quantum Mech for Everyone)

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science | Faculty of Arts

Dependencies

Course Requirements (units)

- Society, Technology & Values Diploma - Diploma in Society, Technology and Values
- Science, Technology, & Society Specialization - Science, Technology, and Society Specialization View Program View Program

SCI 267 - Introduction to the Philosophy of Science

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-03-12

Rationale for Change

The course description for PHIL 258 has been rewritten to meet the requirements set out by the Faculty of Arts. The Faculty of Science has reviewed and accepts the updated description as presented in this proposal, for the cross-linked SCI 267.

Consultations

The cross-listed departments have been in touch with each other regarding proposed description changes. Science approves the description presented in this proposal.

- Approval email to Arts, G. Andres, March 12, 2025

Course Information

Faculty

Faculty of Science

Academic Unit

Dean of Science Office

Subject Code

SCI

Number

267

Course Level

200

Title

Introduction to the Philosophy of Science

Abbreviated Title

Intro Philosophy of Science

Undergraduate Communication Requirement Identifier

No,

Proposed

Description

The sciences are widely considered to be one of our best sources of knowledge about the world. In this course, students will investigate the nature of scientific knowledge. Topics may include scientific methodology, the roles of values and social factors in scientific knowledge production, scientific revolutions, scientific explanation, and the scientific realism debate about whether our best scientific

theories describe reality. Through readings and class discussions, students will learn how to apply and evaluate a range of accounts of how scientific knowledge is produced. In-class activities and assessments will develop students' reading comprehension, as well as their oral and written communication skills.

Existing

Description
This course considers fundamental questions concerning the nature of science. Consideration is given to such topics as scientific methodology, scientific revolutions, natural laws, and the debate about whether scientific theories represent reality, or just our perceptions of reality.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
Yes,

Cross-Listed Courses

PHIL 258 - Introduction to the Philosophy of Science

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

No Rules

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science Faculty of Arts

Dependencies

Course Lists

- Degree Reqs: BASc - Bachelor of Applied Science Degree Requirements View Program

Course Requirements (units)

- Society, Technology & Values Diploma - Diploma in Society, Technology and Values

View Program

SCI 300 - Special Topics in Science

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2024

Offering Number
1

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-08-08

Rationale for Change

Some special topics may have associated fees (e.g. SCI 300-002 and SCI 300-003 in 1255). As such, a note about additional fees being possible, is added to this course.

Course Information

Faculty

Faculty of Science

Academic Unit

Dean of Science Office

Subject Code
SCI

Number
300

Course Level
300

Title
Special Topics in Science

Abbreviated Title
Special Topics in Science

Undergraduate Communication Requirement Identifier
No,

Description
These special topics courses will cover material relevant to all students in the Faculty of Science. Course content is not specific to an individual program.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Field StudiesLaboratoryLectureSeminar

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
Yes,

Total Completions Allowed
06

Allow Multiple Enrol in a Term
Yes,

Enrolment Rules

Consent to Add
Instructor consent required,

Consent to Drop
No consent required,

Prerequisites

No Rules

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Proposed

Fee Statement
This course may have additional fees. See academic unit for details.

Existing

Fee Statement

Notes

- For further information, consult the Science Undergraduate Office.

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

There are no dependencies

SCI 301 - Special Topics in Science

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Offering Number
1

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-08-08

Rationale for Change

Some special topics may have associated fees (e.g. SCI 300-002 and SCI 300-003 in 1255). As such, a note about additional fees being possible, is added to this course.

Course Information

Faculty

Faculty of Science

Academic Unit

Dean of Science Office

Subject Code

SCI

Number

301

Course Level

300

Title

Special Topics in Science

Abbreviated Title

Special Topics in Science

Undergraduate Communication Requirement Identifier

No,

Description

These special topics courses will cover material relevant to all students in the Faculty of Science. Course content is not specific to an individual program.

Units

0.50

Exceptions to Fees or Academic Progress Units

No,

Components

Field StudiesLaboratoryLectureSeminar

Primary Component

Lecture

Grading Information

Standard Course Grading
No,

Special Course Grading
Credit/No Credit

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
Yes,

Total Completions Allowed
06

Allow Multiple Enrol in a Term
Yes,

Enrolment Rules

Consent to Add
Department consent required,

Consent to Drop
No consent required,

Prerequisites

No Rules

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Proposed

Fee Statement
This course may have additional fees. See academic unit for details.

Existing

Fee Statement

Notes

- For further information, consult the Science Undergraduate Office.

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

There are no dependencies

H-Chemistry - Chemistry (Bachelor of Science - Honours)

Top

Effective Date and Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-10-06

Quality Assurance Designation
Minor Modification Qad

Is there an impact to existing students?
No,

Is the credential name changing?
No,

Co-operative System of Study and Requirements
No,

Creating or Changing Invalid Combinations
No,

Change to Learning Outcomes

No,

Rationale and Background for Change(s)

The Department of Chemistry wants keep the core strengths of the H- Chemistry program, while reducing the total program units by 2.0. The province only supports 20.0 units of instruction and this will align chemistry programs with other institutions.

- First-year chemistry students take two lab classes in physics (PHYS 111L or 121L and PHYS 112L or 122L). These labs are not essential and do little to prepare our students for co-op jobs in chemistry. Therefore, these lab requirements are simply removed leading to a 0.5 unit reduction.
- General electives are reduced by 1.0 unit to 3.0 units, and CHEM approved electives are reduced by 0.5 unit to 2.5 units, allowing all of the core courses of the H- Chemistry program to remain.

In addition:

1. The overall number of required 400-level courses will be set to 2.0 units (4 courses) which includes CHEM 494A and CHEM 494B. Currently, CHEM 494A/B do not count as 400-level courses in this regard and students are overburdened with a demanding volume of 400-level courses.

2. The selection of 300-level CHEM options, from which students must complete three, will be increased by the addition of CHEM 331 and CHEM 370. However, these courses will also remain in the approved CHEM elective list.

3. CHEM 340 will be renumbered CHEM 340L, which is then added to the list of advanced lab electives from which students are required to choose.

Transitions for current students into the new 2026-2027 program have been considered and no issues are anticipated.

Consultations (Departmental)

The Physics Department has been consulted regarding the removal of the first-year PHYS labs.

General Program/Plan Information

Faculty

Faculty of Science

Academic Unit

Department of Chemistry

Faculty

Faculty of Science

Undergraduate Credential Type
Major

Program Type
Honours

Degree
Bachelor of Science (Science)

Program/Plan Name
Chemistry (Bachelor of Science - Honours)

Systems of Study
Co-operative, Regular,

Admissions

Admissions Entry Point
Direct Entry,

Requirements Information

Invalid Combinations

No,

Average Requirement

Yes,

Minimum Average(s) Required

- A minimum cumulative overall average of 60.0%.
- A minimum cumulative major average of 60.0% in all Chemistry lecture courses.

Proposed

Graduation Requirements

- See Bachelor of Science degree-level requirements.
- Complete a total of 20.0 units:
  - 14.5 units of required courses (see below).
  - 2.5 units from the list of approved courses (see below and Additional Constraints).
  - 3.0 units of elective courses.

Existing

Graduation Requirements

- See Bachelor of Science degree-level requirements.
- Complete a total of 22.0 units:
  - 15.0 units of required courses (see below).
  - 3.0 units from the list of approved courses (see below and Additional Constraints).
  - 4.0 units of elective courses.

Co-operative Education Program Requirements

For students in the co-operative system of study, see Bachelor of Science co-operative education program requirements.

Course Requirements (units)

Required Courses

- 0Units to Complete
- No Rules

Course Requirements (no units)

1. Required Courses
    -
    - Complete all of the following
    - Complete all the following:
    - CHEM121 - Physical and Chemical Properties of Matter (0.50)
    - CHEM121L - Chemical Reaction Laboratory 1 (0.25)
    - CHEM125 - Chemical Reactions, Equilibria and Kinetics (0.50)
    - CHEM125L - Chemical Reaction Laboratory 2 (0.25)
    - CHEM140 - Introduction to Scientific Calculations (0.50)
    - CHEM200 - Introduction to Laboratory Techniques (0.50)
    - CHEM212 - Structure and Bonding (0.50)
    - CHEM220 - Intro Analytical Chemistry (0.50)
    - CHEM220L - Quantitative Chemical Analysis Laboratory (0.25)
    - CHEM221 - Multi-Component Analysis (0.50)
    - CHEM233 - Fundamentals of Biochemistry (0.50)
    - CHEM240 - Mathematical Methods for Chemistry (0.50)
    - CHEM250L - Physical Chemistry Laboratory 1 (0.25)
    - CHEM254 - Introductory Chemical Thermodynamics (0.50)
    - CHEM264 - Organic Chemistry 1 (0.50)
    - CHEM265 - Organic Chemistry 2 (0.50)
    - CHEM265L - Organic Chemistry Laboratory 1 (0.25)
    - CHEM313L - Inorganic Chemistry Laboratory 1 (0.25)
    - CHEM356 - Introductory Quantum Mechanics (0.50)
    - MATH127 - Calculus 1 for the Sciences (0.50)
    - MATH128 - Calculus 2 for the Sciences (0.50)
    -
    - Complete all of the following
    - Complete 2 of the following:
    - CHEM224L - Analytical Instrumentation Laboratory (0.50)
    - CHEM310L - Inorganic Chemistry Laboratory 2 (0.50)
    - CHEM340 - Introductory Computational Chemistry (0.50)
    - CHEM350L - Physical Chemistry Laboratory 2 (0.50)
    - CHEM360L - Senior Organic Chemistry Laboratory (0.50)
    -
    - Complete 1 of the following
    - Complete all the following:
    - CHEM494A - Research Project (0.50)
    - CHEM494B - Research Project (0.50)
    -
    - Complete all of the following
    - Complete 1 of the following:
    - CHEM224L - Analytical Instrumentation Laboratory (0.50)
    - CHEM310L - Inorganic Chemistry Laboratory 2 (0.50)
    - CHEM340 - Introductory Computational Chemistry (0.50)
    - CHEM350L - Physical Chemistry Laboratory 2 (0.50)
    - CHEM360L - Senior Organic Chemistry Laboratory (0.50)
    -
    - Complete 1 additional course from the list of Approved Courses below
    -
    - Complete 1 of the following:
    - CHEM310 - Transition Element Compounds and Inorganic Materials (0.50)
    - CHEM313 - Main Group and Solid State Chemistry (0.50)
    -
    - Complete 2 of the following:
    - CHEM310 - Transition Element Compounds and Inorganic Materials (0.50)
    - CHEM313 - Main Group and Solid State Chemistry (0.50)
    - CHEM323 - Analytical Instrumentation (0.50)
    - CHEM331 - Fundamentals of Metabolism 1 (0.50)
    - CHEM350 - Chemical Kinetics and Statistical Mechanics (0.50)
    - CHEM360 - Organic Chemistry 3 (0.50)
    - CHEM370 - Introduction to Polymer Science (0.50)

-
- Complete 1 of the following:
- COMMST193 - Communication in the Sciences (0.50)
- ENGL193 - Communication in the Sciences (0.50)
-
- Complete 1 of the following:
- PHYS111 - Physics 1 (0.50)
- PHYS121 - Mechanics (0.50)
-
- Complete 1 of the following:
- PHYS112 - Physics 2 (0.50)
- PHYS122 - Waves, Electricity and Magnetism (0.50)
-
- Complete 1 additional course from the following subject codes: AMATH, CO, MATH, PMATH, STAT
- The following cannot be used towards this academic plan:
- CHEM266 - Basic Organic Chemistry 1 (0.50)
- CHEM266L - Organic Chemistry Laboratory (0.25)
- CHEM267 - Basic Organic Chemistry 2 (0.50)
- CHEM267L - Organic Chemistry Laboratory (0.25)
-
- Approved Courses List
-
- Complete all of the following
- **Complete 2.5 units from the following list of courses**
- Choose any of the following:
- CHEM209 - Introductory Spectroscopy and Structure (0.50)
- CHEM224L - Analytical Instrumentation Laboratory (0.50)
- CHEM310 - Transition Element Compounds and Inorganic Materials (0.50)
- CHEM310L - Inorganic Chemistry Laboratory 2 (0.50)
- CHEM313 - Main Group and Solid State Chemistry (0.50)
- CHEM323 - Analytical Instrumentation (0.50)
- CHEM331 - Fundamentals of Metabolism 1 (0.50)
- CHEM333 - Metabolism 1 (0.50)
- CHEM350 - Chemical Kinetics and Statistical Mechanics (0.50)
- CHEM350L - Physical Chemistry Laboratory 2 (0.50)
- CHEM357 - Physical Biochemistry (0.50)
- CHEM360 - Organic Chemistry 3 (0.50)
- CHEM360L - Senior Organic Chemistry Laboratory (0.50)
- CHEM363 - Organic Process Chemistry (0.50)
- CHEM370 - Introduction to Polymer Science (0.50)
- CHEM381 - Bioorganic Chemistry (0.50)
- CHEM382L - Advanced Organic Synthesis Laboratory (0.50)
- CHEM383 - Medicinal Chemistry (0.50)
- CHEM400 - Special Topics in Chemistry (0.50)
- CHEM404 - Physicochemical Aspects of Natural Waters (0.50)
- CHEM430 - Special Topics in Biochemistry (0.50)
- CHEM432 - Metabolism 2 (0.50)
- CHEM433 - Advanced Biochemistry (0.50)
- CHEM464 - Spectroscopy in Organic Chemistry (0.50)
- CHEM481 - Rational Design of Potential Drug Candidates (0.50)
- CHEM494A - Research Project (0.50)
- CHEM494B - Research Project (0.50)
- CHEM340 - Introductory Computational Chemistry (0.50)
- ~~PHYS111L - Physics 1 Laboratory (0.25)~~
- ~~PHYS121L - Mechanics Laboratory (0.25)~~
- ~~PHYS112L - Physics 2 Laboratory (0.25)~~
- ~~PHYS122L - Waves, Electricity and Magnetism Laboratory (0.25)~~
- ~~Complete 3.0 units from the following list of courses~~

Course Lists

Required Courses

- No Rules

Are there cross-listed courses listed in requirements?

Yes,

Cross-Listings Options

All cross-listings to be displayed,

Proposed

Additional Constraints

1. No one course may fulfil more than one requirement within the major.
2. Approved courses: 2.0 units must be courses at the 400-level.
3. A maximum of 3.0 units of SCI courses can be used.

Existing

Additional Constraints

1. No one course may fulfil more than one requirement within the major.
2. Approved courses: 2.0 units must be courses at the 400-level, excluding CHEM494A and CHEM494B.
3. A maximum of 3.0 units of SCI courses can be used.

Notes

- See list of academic advisors.
- See Faculty of Science for recommended course sequences.

Specializations

Specializations for this Major
No,

Undergraduate Plan Guidelines

Workflow Information

Change to Undergraduate Communication Requirement
No,

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Prerequisites

- CHEM 233L - Fundamentals of Biochemistry Laboratory View Program
- CHEM 121 - Physical and Chemical Properties of Matter View Program
- CHEM 200 - Introduction to Laboratory Techniques View Program

- CHEM 400 - Special Topics in Chemistry View Program
- CHEM 310L - Inorganic Chemistry Laboratory 2 View Program
- CHEM 313L - Inorganic Chemistry Laboratory 1 View Program
- CHEM 360L - Senior Organic Chemistry Laboratory View Program
- CHEM 233 - Fundamentals of Biochemistry View Program
- CHEM 220L - Quantitative Chemical Analysis Laboratory View Program
- CHEM 224L - Analytical Instrumentation Laboratory View Program
- CHEM 265L - Organic Chemistry Laboratory 1 View Program
- CHEM 494A - Research Project View Program
- CHEM 302 - Innovation and Project Management View Program
- CHEM 339 - Methods and Tools for Biosyntheses View Program
- CHEM 479 - Preparation of Biobased Compounds and Materials View Program
- CHEM 491A - Biobased Chemistry Research Project 1 View Program

H-Chemistry - Computational Specialization - Chemistry - Computational Specialization (Bachelor of Science - Honours)

Top

Effective Date and Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-10-06

Quality Assurance Designation
Minor Modification Qad

Is there an impact to existing students?
No,

Is the credential name changing?
No,

Co-operative System of Study and Requirements
No,

Creating or Changing Invalid Combinations
No,

Change to Learning Outcomes
No,

Rationale and Background for Change(s)

The Department of Chemistry wants keep the core strengths of the H- Chemistry, Computational Specialization program, while reducing the total program by 2.0 units. The province only supports 20.0 units of instruction and this will align chemistry programs with other institutions.

- First-year chemistry students take two lab classes in physics (PHYS 111L or 121L and PHYS 112L or 122L). These labs are not essential and do little to prepare our students for co-op jobs in chemistry. Therefore, these lab requirements are simply removed leading to a 0.5 unit reduction.
- CHEM 209 is removed as a required course, and added to the CHEM approved elective list. CHEM 209 is not a prerequisite for any other courses and this program would be the only one that still requires CHEM 209 so moving it brings it in line with other programs.
- Additional lab requirements are reduced by 0.5 units to 0.75 unit which suffices for Canadian Society for Chemistry (CSC) accreditation. The aim in the Computational Specialization is to do a minimal number of required labs. If students do not do CHEM 494A/B they will have to take an additional lab course to meet the CSC lab criteria (which is the case currently).
- CHEM approved electives are reduced by 0.5 unit to 2.0 units, allowing all the core courses of this program, with the exception of CHEM 209, to remain.

In addition:

1. The overall number of required 400-level courses will be set to 2.0 units (4 courses) which includes CHEM 494A and CHEM 494B. Currently, CHEM 494A/B do not count as 400-level courses in this regard and students are overburdened with a demanding volume of 400-level courses.

2. The approved CHEM elective list is updated to add CHEM 370 and CHEM 481.

Transitions for current students into the new program have been considered and no issues are anticipated.

Consultations (Departmental)

The Physics Department has been consulted regarding the removal of the PHYS labs.

General Program/Plan Information

Faculty

Faculty of Science

Academic Unit

Department of Chemistry

Faculty
Faculty of Science

Undergraduate Credential Type
Major

Program Type
Honours

Degree
Bachelor of Science (Science)

Program/Plan Name
Chemistry - Computational Specialization (Bachelor of Science - Honours)

Systems of Study

Co-operative, Regular,

Admissions

Admissions Entry Point
Direct Entry,

Requirements Information

Invalid Combinations
No,

Average Requirement
Yes,

Minimum Average(s) Required

- A minimum cumulative overall average of 60.0%.
- A minimum cumulative Chemistry average of 60.0%.
- A minimum cumulative Computer Science average of 60.0%.

Proposed

Graduation Requirements

- See Bachelor of Science degree-level requirements.

- Complete a total of 20.0 units:
  - 15.5 units of required courses (see below and Additional Constraints).
  - 2.0 units of approved courses (see below and Additional Constraints).
  - 2.5 units of elective courses (must be 0.5 unit lecture or laboratory courses).

Existing

Graduation Requirements

- See Bachelor of Science degree-level requirements.
- Complete a total of 22.0 units:
  - 17.0 units of required courses (see below).
  - 2.5 units of approved courses (see below and Additional Constraints).
  - 2.5 units of elective courses (must be 0.5 unit lecture or laboratory courses).

Co-operative Education Program Requirements

For students in the co-operative system of study, see Bachelor of Science co-operative education program requirements.

Course Requirements (units)

Required Courses

- oUnits to Complete
- No Rules

Course Requirements (no units)

1. Required Courses
   -
   - Complete all of the following
   - Complete all the following:
   - CHEM121 - Physical and Chemical Properties of Matter (0.50)
   - CHEM121L - Chemical Reaction Laboratory 1 (0.25)
   - CHEM125 - Chemical Reactions, Equilibria and Kinetics (0.50)
   - CHEM125L - Chemical Reaction Laboratory 2 (0.25)
   - CHEM140 - Introduction to Scientific Calculations (0.50)
   - CHEM212 - Structure and Bonding (0.50)
   - CHEM220 - Intro Analytical Chemistry (0.50)
   - CHEM240 - Mathematical Methods for Chemistry (0.50)
   - CHEM250L - Physical Chemistry Laboratory 1 (0.25)
   - CHEM254 - Introductory Chemical Thermodynamics (0.50)
   - CHEM264 - Organic Chemistry 1 (0.50)
   - CHEM340 - Introductory Computational Chemistry (0.50)
   - CHEM350 - Chemical Kinetics and Statistical Mechanics (0.50)
   - CHEM350L - Physical Chemistry Laboratory 2 (0.50)
   - CHEM356 - Introductory Quantum Mechanics (0.50)
   - CS115 - Introduction to Computer Science 1 (0.50)
   - CS116 - Introduction to Computer Science 2 (0.50)
   - CS234 - Data Types and Structures (0.50)
   - CS370 - Numerical Computation (0.50)
   - MATH106 - Applied Linear Algebra 1 (0.50)
   - MATH127 - Calculus 1 for the Sciences (0.50)
   - MATH128 - Calculus 2 for the Sciences (0.50)

-
- Complete 1 of the following:
- CHEM233 - Fundamentals of Biochemistry (0.50)
- CHEM237 - Introductory Biochemistry (0.50)
-
- Complete 1 of the following:
- COMMST193 - Communication in the Sciences (0.50)
- ENGL193 - Communication in the Sciences (0.50)
-
- Complete 1 of the following:
- PHYS111 - Physics 1 (0.50)
- PHYS121 - Mechanics (0.50)
-
- Complete 1 of the following:
- PHYS112 - Physics 2 (0.50)
- PHYS122 - Waves, Electricity and Magnetism (0.50)
-
- Complete all of the following
- **Complete 0.75 units from the following list of courses.**
- Choose any of the following:
- CHEM200 - Introduction to Laboratory Techniques (0.50)
- CHEM220L - Quantitative Chemical Analysis Laboratory (0.25)
- CHEM224L - Analytical Instrumentation Laboratory (0.50)
- CHEM265L - Organic Chemistry Laboratory 1 (0.25)
- CHEM310L - Inorganic Chemistry Laboratory 2 (0.50)
- CHEM313L - Inorganic Chemistry Laboratory 1 (0.25)
- CHEM335L - Advanced Biochemistry Laboratory (0.50)
- CHEM360L - Senior Organic Chemistry Laboratory (0.50)
-
- Complete 1 of the following
- Complete all the following:
- CHEM494A - Research Project (0.50)
- CHEM494B - Research Project (0.50)
-
- Complete all of the following
- Complete 0.5 unit in additional CHEM courses
- Complete 0.5 unit from the following list of CHEM courses
- Choose any of the following:
- CHEM200 - Introduction to Laboratory Techniques (0.50)
- CHEM220L - Quantitative Chemical Analysis Laboratory (0.25)
- CHEM224L - Analytical Instrumentation Laboratory (0.50)
- CHEM265L - Organic Chemistry Laboratory 1 (0.25)
- CHEM310L - Inorganic Chemistry Laboratory 2 (0.50)
- CHEM313L - Inorganic Chemistry Laboratory 1 (0.25)
- CHEM335L - Advanced Biochemistry Laboratory (0.50)
- CHEM360L - Senior Organic Chemistry Laboratory (0.50)
-
- Complete 2 of the following:
- CHEM221 - Multi-Component Analysis (0.50)
- CHEM265 - Organic Chemistry 2 (0.50)
- CHEM310 - Transition Element Compounds and Inorganic Materials (0.50)
- CHEM313 - Main Group and Solid State Chemistry (0.50)
- CHEM331 - Fundamentals of Metabolism 1 (0.50)
- CHEM357 - Physical Biochemistry (0.50)
- CHEM360 - Organic Chemistry 3 (0.50)
-
- Complete 1 of the following:
- CO481 - Introduction to Quantum Information Processing (0.50)
- CS230 - Introduction to Computers and Computer Systems (0.50)
- CS330 - Management Information Systems (0.50)
- CS338 - Computer Applications in Business: Databases (0.50)
- CS467 - Introduction to Quantum Information Processing (0.50)
- CS475 - Computational Linear Algebra (0.50)
- PHYS467 - Introduction to Quantum Information Processing (0.50)

-
- The following cannot be used towards this academic plan:
- CHEM266 - Basic Organic Chemistry 1 (0.50)
- CHEM266L - Organic Chemistry Laboratory (0.25)
- CHEM267 - Basic Organic Chemistry 2 (0.50)
- CHEM267L - Organic Chemistry Laboratory (0.25)
-
- Approved Courses List
-
- **Complete 4 of the following:**
- AMATH382 - Computational Modelling of Cellular Systems (0.50)
- BIOL266 - Introduction to Computational Biology (0.50)
- BIOL382 - Computational Modelling of Cellular Systems (0.50)
- CHEM209 - Introductory Spectroscopy and Structure (0.50)
- **CHEM370 - Introduction to Polymer Science (0.50)**
- CHEM400 - Special Topics in Chemistry (0.50)
- CHEM404 - Physicochemical Aspects of Natural Waters (0.50)
- CHEM430 - Special Topics in Biochemistry (0.50)
- **CHEM481 - Rational Design of Potential Drug Candidates (0.50)**
- NE451 - Simulation Methods (0.50)
- NE452 - Special Topics in Nanoscale Simulations (0.50)
- PHYS359 - Statistical Mechanics (0.50)
- ~~PHYS111L - Physics 1 Laboratory (0.25)~~
- ~~PHYS121L - Mechanics Laboratory (0.25)~~
- ~~PHYS112L - Physics 2 Laboratory (0.25)~~
- ~~PHYS122L - Waves, Electricity and Magnetism Laboratory (0.25)~~
- ~~Complete 1.25 units from the following list of courses.~~
- ~~Complete 5 of the following:~~

Course Lists

Required Courses

- No Rules

Are there cross-listed courses listed in requirements?

Yes,

Cross-Listings Options

All cross-listings to be displayed,

Proposed

Additional Constraints

1. Students may only complete one course from any cross-listed set.
2. For the approved courses: Students must complete 1.0 unit of CHEM courses.
3. Students must complete 2.0 units at the 400-level.
4. A maximum of 2.5 units of SCI courses can be used.
5. Alternative electives may be substituted with prior approval of the academic advisor.

Existing

Additional Constraints

1. Students may only complete one course from any cross-listed set.

2. For the approved courses:
    1. Students must complete 1.0 unit of CHEM courses.
    2. Students must complete 2.0 units at the 400-level.
3. A maximum of 2.5 units of SCI courses can be used.
4. Alternative electives may be substituted with prior approval of the academic advisor.

Notes

- See list of academic advisors.
- See Faculty of Science for recommended course sequences.

Specializations

Specializations for this Major

No,

Undergraduate Plan Guidelines

Workflow Information

Change to Undergraduate Communication Requirement
No,

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Prerequisites

- CHEM 233L - Fundamentals of Biochemistry Laboratory View Program
- CHEM 121 - Physical and Chemical Properties of Matter View Program
- CHEM 200 - Introduction to Laboratory Techniques View Program
- CHEM 400 - Special Topics in Chemistry View Program
- CHEM 310L - Inorganic Chemistry Laboratory 2 View Program
- CHEM 313L - Inorganic Chemistry Laboratory 1 View Program
- CHEM 360L - Senior Organic Chemistry Laboratory View Program
- CHEM 233 - Fundamentals of Biochemistry View Program
- CHEM 220L - Quantitative Chemical Analysis Laboratory View Program
- CHEM 224L - Analytical Instrumentation Laboratory View Program
- CHEM 265L - Organic Chemistry Laboratory 1 View Program
- CHEM 494A - Research Project View Program
- NE 451 - Simulation Methods View Program
- NE 452 - Special Topics in Nanoscale Simulations View Program
- CHEM 302 - Innovation and Project Management View Program
- CHEM 339 - Methods and Tools for Biosyntheses View Program
- CHEM 479 - Preparation of Biobased Compounds and Materials View Program
- CHEM 491A - Biobased Chemistry Research Project 1 View Program

H-Medicinal Chemistry - Medicinal Chemistry (Bachelor of Science - Honours)

Top

Effective Date and Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-10-06

Quality Assurance Designation
Minor Modification Qad

Is there an impact to existing students?
No,

Is the credential name changing?
No,

Co-operative System of Study and Requirements

No,

Creating or Changing Invalid Combinations

No,

Change to Learning Outcomes

No,

Rationale and Background for Change(s)

The Department of Chemistry wants keep the core strengths of the H- Medicinal Chemistry program, while reducing the total program units by 1.75 units, getting as close as possible to the 20.0 units of instruction supported by the province.

- First-year medicinal chemistry students take two lab classes in physics (PHYS 111L or 121L and PHYS 112L or 122L). The skills taught in these laboratory courses are not required for students pursuing a H-Medicinal Chemistry degree. Removing these lab requirements leads to a 0.5 unit reduction.
- The synthetic methods taught in the CHEM 313L laboratory are addressed in other laboratory courses, rendering this course unnecessary. Removing this lab requirement leads to an additional 0.25 unit reduction.
- The CHEM 350 requirement is removed (-0.5 unit). The kinetics covered in CHEM 350 needed for the H-Medicinal Chemistry program will now be taught in the new course, CHEM 257, Physical Chemistry for the Life Sciences. CHEM 350 moves into the list of approved CHEM electives.
- 0.5 unit of CHEM approved electives is removed from requirements to aid in total unit reduction, while another 0.5 unit is removed and then added to elective units increasing them from 1.5 to 2.0 units total, giving students more chances to choose courses from other departments or faculties.

Note: Removing CHEM 313L, PHYS 111L or 121L, and PHYS 112L or 122L decreases the H-Medicinal Chemistry lab hours from 590 to 540 hours of instruction, which still exceeds the 400-hour minimum required for Canadian Society for Chemistry (CSC) accreditation.

In addition:

1. The new course CHEM 257, Physical Chemistry for the Life Sciences, is added (+ 0.5 unit), replacing the CHEM 254, Introductory Chemical Thermodynamics, requirement (-0.5 unit). CHEM 257 covers the core topics of thermodynamics and kinetics necessary for the Medicinal Chemistry curriculum. The thermodynamics covered in CHEM 254 is found in CHEM 257.

2. The required combined minimum average of CHEM 264 and CHEM 265 is reduced from 70% to 65%. Students struggling in one course may cause the combined average of CHEM 264 and CHEM 265 to drop below 70% but above 65%. This measure supports such students and has been the common practice taken by the program advisor.

3. Currently students require a minimum grade of 70% in each of CHEM 360, CHEM 360L, CHEM 381, CHEM 382L, CHEM 383. Effective 2026 students must achieve a minimum grade of 70% in each of CHEM 360L and CHEM 382L, and a combined minimum average grade of 70% in CHEM 360, CHEM 360L, CHEM 381, CHEM 382L, and CHEM 383. This change supports and reduce stress for students, while upholding the program's standards. It is vital that students keep a minimum 70% grade in labs to ensure lab proficiency.

4. The minimum overall number of required 400-level courses is reduced to 2.0 units (4 courses) which includes the required CHEM 464, CHEM 494A and CHEM 494B, plus the requirement that one 0.5 unit of approved electives must be a CHEM 400-level topic in organic synthesis. The remaining 1.5 units of approved electives courses can be fulfilled through 300- or 400-level courses.

5. CHEM 340 is renumbered CHEM 340L, effective 2026, and remains a program requirement for H-Medicinal Chemistry.

Students who wish to transition to the new program requirements and who have taken CHEM 254 but not CHEM 350 can take CHEM 350 or CHEM 357, which will then count as a program elective for the new program requirements. No additional issues are expected to arise.

Consultations (Departmental)

The Physics Department has been consulted regarding the removal of the first-year PHYS labs.

General Program/Plan Information

Faculty

Faculty of Science

Academic Unit

Department of Chemistry

Faculty

Faculty of Science

Undergraduate Credential Type

Major

Program Type

Honours

Degree

Bachelor of Science (Science)

Program/Plan Name

Medicinal Chemistry (Bachelor of Science - Honours)

Systems of Study
Co-operative, Regular,

Admissions

Admissions Entry Point
Direct Entry,

Requirements Information

Invalid Combinations
No,

Average Requirement
Yes,

Proposed

Minimum Average(s) Required

- A minimum cumulative overall average of 60.0%.
- A minimum cumulative Chemistry average of 60.0%.
- A minimum combined average of 65.0% in CHEM264 and CHEM265.
- A minimum combined average of 70.0% in the following courses: CHEM360, CHEM360L, CHEM381, CHEM382L, CHEM383

In addition, students must achieve a minimum grade of 70.0% in each of CHEM 360L and CHEM 382L.

Existing

Minimum Average(s) Required

- A minimum cumulative overall average of 60.0%.
- A minimum cumulative Chemistry average of 60.0%.
- A minimum combined average in CHEM264 and CHEM265 of 70.0%.

In addition, students much achieve a minimum grade of 70.0% in the following courses:

- CHEM360
- CHEM360L
- CHEM381
- CHEM382L
- CHEM383

Proposed

Graduation Requirements

- See Bachelor of Science degree-level requirements.
- Complete a total of 20.25 units:
  - 16.25 units of required courses, listed below.
  - 2.0 units of approved courses (see Additional Constraints).
  - 2.0 units of elective courses.

Existing

Graduation Requirements

- See Bachelor of Science degree-level requirements.
- Complete a total of 22.0 units:
  - 17.5 units of required courses, listed below.
  - 3.0 units of approved courses (see Additional Constraints).
  - 1.5 units of elective courses.

Co-operative Education Program Requirements

See Bachelor of Science co-operative education program requirements.

Course Requirements (units)

1. Required Courses

- Complete all the following:
  - BIOL130 - Introductory Cell Biology (0.50)
  - CHEM121 - Physical and Chemical Properties of Matter (0.50)
  - CHEM121L - Chemical Reaction Laboratory 1 (0.25)
  - CHEM125 - Chemical Reactions, Equilibria and Kinetics (0.50)
  - CHEM125L - Chemical Reaction Laboratory 2 (0.25)
  - CHEM140 - Introduction to Scientific Calculations (0.50)
  - CHEM200 - Introduction to Laboratory Techniques (0.50)
  - CHEM212 - Structure and Bonding (0.50)
  - CHEM220 - Intro Analytical Chemistry (0.50)
  - CHEM220L - Quantitative Chemical Analysis Laboratory (0.25)
  - CHEM221 - Multi-Component Analysis (0.50)
  - CHEM224L - Analytical Instrumentation Laboratory (0.50)
  - CHEM233 - Fundamentals of Biochemistry (0.50)
  - CHEM240 - Mathematical Methods for Chemistry (0.50)
  - CHEM250L - Physical Chemistry Laboratory 1 (0.25)
  - CHEM264 - Organic Chemistry 1 (0.50)
  - CHEM265 - Organic Chemistry 2 (0.50)
  - CHEM265L - Organic Chemistry Laboratory 1 (0.25)
  - CHEM310 - Transition Element Compounds and Inorganic Materials (0.50)
  - CHEM331 - Fundamentals of Metabolism 1 (0.50)
  - CHEM340 - Introductory Computational Chemistry (0.50)
  - CHEM360 - Organic Chemistry 3 (0.50)
  - CHEM360L - Senior Organic Chemistry Laboratory (0.50)
  - CHEM381 - Bioorganic Chemistry (0.50)
  - CHEM382L - Advanced Organic Synthesis Laboratory (0.50)
  - CHEM383 - Medicinal Chemistry (0.50)
  - CHEM464 - Spectroscopy in Organic Chemistry (0.50)
  - CHEM494A - Research Project (0.50)
  - CHEM494B - Research Project (0.50)
  - MATH127 - Calculus 1 for the Sciences (0.50)
  - MATH128 - Calculus 2 for the Sciences (0.50)
  - **CHEM257 - Physical Chemistry for the Life Sciences (0.50)**
  - ~~CHEM254 - Introductory Chemical Thermodynamics (0.50)~~
  - ~~CHEM313L - Inorganic Chemistry Laboratory 1 (0.25)~~
  - ~~CHEM350 - Chemical Kinetics and Statistical Mechanics (0.50)~~
  - ~~Complete all the following:~~
- Complete 1 of the following:
  - **COMMST193 - Communication in the Sciences (0.50)**
  - **ENGL193 - Communication in the Sciences (0.50)**
  - ~~PHYS122 - Waves, Electricity and Magnetism (0.50)~~
  - ~~PHYS122L - Waves, Electricity and Magnetism Laboratory (0.25)~~
- Complete 1 of the following:
  - **PHYS111 - Physics 1 (0.50)**
  - **PHYS121 - Mechanics (0.50)**
  - ~~COMMST193 - Communication in the Sciences (0.50)~~
  - ~~ENGL193 - Communication in the Sciences (0.50)~~
  - ~~Complete all the following:~~
- Complete 1 of the following:
  - **PHYS112 - Physics 2 (0.50)**
  - **PHYS122 - Waves, Electricity and Magnetism (0.50)**
  - ~~PHYS121 - Mechanics (0.50)~~
  - ~~PHYS121L - Mechanics Laboratory (0.25)~~

Grand Total Units:14

Course Requirements (no units)

Required Courses

- No Rules

Course Lists

1. Approved Courses List
    -
    - **Complete 4 of the following:**
    - CHEM209 - Introductory Spectroscopy and Structure (0.50)
    - CHEM310L - Inorganic Chemistry Laboratory 2 (0.50)
    - CHEM313 - Main Group and Solid State Chemistry (0.50)
    - CHEM323 - Analytical Instrumentation (0.50)
    - **CHEM350 - Chemical Kinetics and Statistical Mechanics (0.50)**
    - CHEM350L - Physical Chemistry Laboratory 2 (0.50)
    - CHEM356 - Introductory Quantum Mechanics (0.50)
    - CHEM357 - Physical Biochemistry (0.50)
    - CHEM363 - Organic Process Chemistry (0.50)
    - CHEM370 - Introduction to Polymer Science (0.50)
    - CHEM400 - Special Topics in Chemistry (0.50)
    - CHEM404 - Physicochemical Aspects of Natural Waters (0.50)
    - CHEM430 - Special Topics in Biochemistry (0.50)
    - CHEM432 - Metabolism 2 (0.50)
    - CHEM433 - Advanced Biochemistry (0.50)
    - CHEM481 - Rational Design of Potential Drug Candidates (0.50)
    - ~~Choose any of the following:~~

Are there cross-listed courses listed in requirements?

Yes,

Cross-Listings Options

All cross-listings to be displayed,

Proposed

Additional Constraints

1. A least one course from the approved course list must be a CHEM 400-level with a synthetic organic chemistry topic.
2. Any modifications to the approved elective courses must be approved by the academic advisor.

Existing

Additional Constraints

1. A minimum of four courses from the approved courses list must be at the 400-level, and at least one must be CHEM400 with a synthetic organic chemistry topic.
2. Not all of the topics offered in CHEM400 can be counted towards the Honours Medicinal Chemistry requirements. Students should consult their academic advisor for more information about which courses can be counted.

Notes

- See list of academic advisors.
- See Faculty of Science for recommended course sequences.

Specializations

Specializations for this Major
No,

Undergraduate Plan Guidelines

Workflow Information

Change to Undergraduate Communication Requirement
No,

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Prerequisites

- CHEM 121 - Physical and Chemical Properties of Matter View Program
- CHEM 200 - Introduction to Laboratory Techniques View Program
- CHEM 400 - Special Topics in Chemistry View Program
- CHEM 310L - Inorganic Chemistry Laboratory 2 View Program
- CHEM 313L - Inorganic Chemistry Laboratory 1 View Program
- CHEM 360L - Senior Organic Chemistry Laboratory View Program
- CHEM 382L - Advanced Organic Synthesis Laboratory View Program
- CHEM 233 - Fundamentals of Biochemistry View Program
- CHEM 220L - Quantitative Chemical Analysis Laboratory View Program
- CHEM 224L - Analytical Instrumentation Laboratory View Program
- CHEM 265L - Organic Chemistry Laboratory 1 View Program
- CHEM 494A - Research Project View Program
- CHEM 302 - Innovation and Project Management View Program
- CHEM 339 - Methods and Tools for Biosyntheses View Program

- CHEM 479 - Preparation of Biobased Compounds and Materials [View Program]
- CHEM 491A - Biobased Chemistry Research Project 1 [View Program]

H-Biochemistry - Biochemistry (Bachelor of Science - Honours)

Top

Effective Date and Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-10-06

Quality Assurance Designation
Minor Modification Qad

Is there an impact to existing students?
No,

Is the credential name changing?
No,

Co-operative System of Study and Requirements

No,

Creating or Changing Invalid Combinations

No,

Change to Learning Outcomes

No,

Rationale and Background for Change(s)

The Department of Chemistry, in consultation with the Department of Biology wants keep the core strengths of the H- Biochemistry program, while reducing the total program units by 1.75 units, getting as close as possible to the 20.0 units of instruction supported by the province.

- Reduce the approved program elective requirement from 5.0 to 4.0 units (-1.0 unit reduction).
- Remove the requirement for one 0.25 unit lab chosen from PHYS 111L, PHYS 121L, CHEM 250L, CHEM 313L, or BIOL 373L (-0.25 unit reduction). Biochemistry students have enough required lab courses that better fit their specialization. Biochemistry students qualify for Canadian Society for Chemistry (CSC) accreditation as some of their biology labs can count for the lab requirement.
- Move the CHEM 357 (Physical Biochemistry) requirement to the approved course elective list (-0.5 unit reduction). This allows students to take CHEM 357 as elective while reducing overall load. The chemical kinetics part of the class will be taught in the new CHEM 257 course requirement.

In addition:

1. MATH 228 (Differential Equations for Physics and Chemistry) is removed as an option to STAT 202 leaving STAT 202 as a required course, deemed more necessary background for students in Biochemistry to have.

2. A more conceptual thermodynamics and kinetics course, CHEM257 (Physical Chemistry for the Life Sciences) replaces the math heavy thermodynamic course, CHEM 254 (Introductory Chemical Thermodynamics), which is a program bottleneck.

3. A more conceptual inorganic chemistry with a survey of bioinorganic examples, CHEM 214 (Biological Inorganic Chemistry) replaces CHEM 212 (Structure and Bonding), which is a program bottleneck.

4. The approved course elective lists are combined into one list, removing list 1 and list 2 specific requirements, to remove the complexity of program elective selection.

5. CHEM 356 (Introductory Quantum Mechanics), CHEM 370 (Introduction to Polymer Science), CHEM 481 (Biomolecular Modelling), MNS 331(Biomaterials), and MNS 431 (Special Topics in Nano-Biomaterials) are added to the approved elective course list, providing Biochemistry students an increased flexibility of a larger set of program electives.

Students who have taken or who would want to take CHEM 212 will be able to use this course in place of CHEM 214 if they change into the new program. Students who have taken CHEM 254 and not CHEM 357

and wish to change to the new program will be required to take CHEM 257 or CHEM 357, and CHEM 357 will be counted as a program elective (but not CHEM 257). No additional issues are expected to arise.

Consultations (Departmental)

The Biology Department has been consulted and agrees to the changes.

2025-10-09 The Math and Statistics and Actuarial Science Departments have been consulted regarding the removal of MATH 228 and keeping STAT 202 as a program requirement.

2025-10-14 Math ADUG Benoit Charbonneau acknowledged change and indicated no material impacts on Faculty of Mathematics operations

General Program/Plan Information

Faculty

Faculty of Science

Academic Unit

Department of Chemistry

Faculty

Faculty of Science

Undergraduate Credential Type

Major

Program Type

Honours

Degree

Bachelor of Science (Science)

Program/Plan Name

Biochemistry (Bachelor of Science - Honours)

Systems of Study
Co-operative, Regular,

Admissions

Admissions Entry Point
Direct Entry,

Requirements Information

Invalid Combinations
Yes,

List of Invalid Combinations

Biology Minor | Biology Specialization | Bioinformatics Specialization

Average Requirement
Yes,

Minimum Average(s) Required

- A minimum cumulative overall average of 60.0%.
- A minimum cumulative Biology average of 60.0%.
- A minimum cumulative Chemistry average of 60.0%.

Proposed

Graduation Requirements

- See Bachelor of Science degree-level requirements.
- Complete a total of 20.25 units:
  - 14.25 units of required courses, listed below.
  - 4.0 units of approved courses (see Additional Constraints).
  - 2.0 units of elective courses.

Existing

Graduation Requirements

- See Bachelor of Science degree-level requirements.
- Complete a total of 22.0 units:
  - 15.0 units of required courses, listed below.
  - 5.0 units of approved courses (see Additional Constraints).
  - 2.0 units of elective courses.

Co-operative Education Program Requirements

For students in the co-operative system of study, see Bachelor of Science co-operative education program requirements.

Course Requirements (units)

Required Courses

- 0Units to Complete
- No Rules

Course Requirements (no units)

1. Required Courses
   -
   - Complete all of the following
   - Complete all the following:
   - BIOL130 - Introductory Cell Biology (0.50)
   - BIOL130L - Cell Biology Laboratory (0.25)
   - BIOL235 - Foundations of Molecular Biology (0.50)
   - BIOL239 - Genetics (0.50)
   - BIOL240 - Fundamentals of Microbiology (0.50)
   - BIOL240L - Microbiology Laboratory (0.25)
   - BIOL331 - Advanced Cell Biology (0.50)
   - CHEM121 - Physical and Chemical Properties of Matter (0.50)
   - CHEM121L - Chemical Reaction Laboratory 1 (0.25)
   - CHEM125 - Chemical Reactions, Equilibria and Kinetics (0.50)
   - CHEM125L - Chemical Reaction Laboratory 2 (0.25)
   - CHEM140 - Introduction to Scientific Calculations (0.50)
   - CHEM200 - Introduction to Laboratory Techniques (0.50)
   - CHEM220 - Intro Analytical Chemistry (0.50)
   - CHEM220L - Quantitative Chemical Analysis Laboratory (0.25)

- CHEM233 - Fundamentals of Biochemistry (0.50)
- CHEM233L - Fundamentals of Biochemistry Laboratory (0.25)
- CHEM264 - Organic Chemistry 1 (0.50)
- CHEM265 - Organic Chemistry 2 (0.50)
- CHEM265L - Organic Chemistry Laboratory 1 (0.25)
- CHEM331 - Fundamentals of Metabolism 1 (0.50)
- CHEM335L - Advanced Biochemistry Laboratory (0.50)
- MATH127 - Calculus 1 for the Sciences (0.50)
- MATH128 - Calculus 2 for the Sciences (0.50)
- STAT202 - Introductory Statistics for Scientists (0.50)
- **Course Not Found**
- **Course Not Found**
-
- Complete 1 of the following:
- CHEM224L - Analytical Instrumentation Laboratory (0.50)
- CHEM360L - Senior Organic Chemistry Laboratory (0.50)
-
- Complete 1 of the following:
- COMMST193 - Communication in the Sciences (0.50)
- ENGL193 - Communication in the Sciences (0.50)
-
- Complete 1 of the following:
- PHYS111 - Physics 1 (0.50)
- PHYS121 - Mechanics (0.50)
-
- Complete 1 of the following:
- PHYS112 - Physics 2 (0.50)
- PHYS122 - Waves, Electricity and Magnetism (0.50)
-
- Complete 0.5 additional BIOL courses at the 200-level
- ~~CHEM212 - Structure and Bonding (0.50)~~
- ~~CHEM254 - Introductory Chemical Thermodynamics (0.50)~~
- ~~CHEM357 - Physical Biochemistry (0.50)~~
- ~~BIOL373L - Human Physiology Laboratory (0.25)~~
- ~~CHEM250L - Physical Chemistry Laboratory 1 (0.25)~~
- ~~CHEM313L - Inorganic Chemistry Laboratory 1 (0.25)~~
- ~~PHYS111L - Physics 1 Laboratory (0.25)~~
- ~~PHYS121L - Mechanics Laboratory (0.25)~~
- ~~MATH228 - Differential Equations for Physics and Chemistry (0.50)~~

Course Lists

1. Approved Courses List
   -
   - Complete all of the following
   - **Complete 4.0 units of BIOL and CHEM courses from the following list (see Additional Constraints).**
   - Complete 8 of the following:
   - AMATH382 - Computational Modelling of Cellular Systems (0.50)
   - BIOL308 - Principles of Molecular Biology (0.50)
   - BIOL323 - Plant Physiology (0.50)
   - BIOL335L - Molecular Biology Techniques (0.50)
   - BIOL341 - Fundamentals of Immunology (0.50)
   - BIOL342 - Molecular Biotechnology 1 (0.50)
   - BIOL345 - Microorganisms in Foods (0.50)
   - BIOL354 - Environmental Toxicology (0.50)
   - BIOL359 - Evolution 1: Mechanisms (0.50)
   - BIOL365 - Methods in Bioinformatics (0.50)
   - BIOL370 - Comparative Animal Physiology: Environmental Aspects (0.50)

- BIOL371 - Comparative Animal Physiology: Evolutionary Themes (0.50)
- BIOL373 - Principles of Human Physiology 2 (0.50)
- BIOL382 - Computational Modelling of Cellular Systems (0.50)
- BIOL403 - Developmental Biology and Embryology (0.50)
- BIOL431 - Bacterial Molecular Genetics (0.50)
- BIOL432 - Molecular Biotechnology 2 (0.50)
- BIOL433 - Plant Biotechnology (0.50)
- BIOL434 - Human Molecular Genetics (0.50)
- BIOL439 - Environmental and Natural Products Biochemistry (0.50)
- BIOL441 - Advances in Immunology (0.50)
- BIOL442 - Virology (0.50)
- BIOL443 - Fermentation Biotechnology (0.50)
- BIOL444 - Bacterial Pathogenesis (0.50)
- BIOL447 - Environmental Microbiology (0.50)
- BIOL448 - Microbial Physiology and Biochemistry (0.50)
- BIOL465 - Structural Bioinformatics (0.50)
- BIOL469 - Genomics (0.50)
- BIOL472 - Cell Biology of Human Disease (0.50)
- BIOL473 - Mammalian Reproduction (0.50)
- BIOL477L - Techniques in Animal Physiology (0.50)
- BIOL483 - Animal Cell Biotechnology (0.50)
- BIOL484 - Advanced Eukaryotic Genetics (0.50)
- BIOL499A - Senior Honours Project (0.50)
- BIOL499B - Senior Honours Project (0.50)
- CHEM209 - Introductory Spectroscopy and Structure (0.50)
- CHEM221 - Multi-Component Analysis (0.50)
- CHEM224L - Analytical Instrumentation Laboratory (0.50)
- CHEM310 - Transition Element Compounds and Inorganic Materials (0.50)
- CHEM313 - Main Group and Solid State Chemistry (0.50)
- CHEM323 - Analytical Instrumentation (0.50)
- **CHEM356 - Introductory Quantum Mechanics (0.50)**
- **CHEM357 - Physical Biochemistry (0.50)**
- CHEM360 - Organic Chemistry 3 (0.50)
- CHEM360L - Senior Organic Chemistry Laboratory (0.50)
- **CHEM370 - Introduction to Polymer Science (0.50)**
- CHEM381 - Bioorganic Chemistry (0.50)
- CHEM382L - Advanced Organic Synthesis Laboratory (0.50)
- CHEM383 - Medicinal Chemistry (0.50)
- CHEM400 - Special Topics in Chemistry (0.50)
- CHEM404 - Physicochemical Aspects of Natural Waters (0.50)
- CHEM430 - Special Topics in Biochemistry (0.50)
- CHEM432 - Metabolism 2 (0.50)
- CHEM433 - Advanced Biochemistry (0.50)
- CHEM464 - Spectroscopy in Organic Chemistry (0.50)
- **CHEM481 - Rational Design of Potential Drug Candidates (0.50)**
- CHEM494A - Research Project (0.50)
- CHEM494B - Research Project (0.50)
- **MNS331 - Biomaterials (0.50)**
- **MNS431 - Special Topics in Nano-Biomaterials (0.50)**
- ~~Complete 5.0 BIOL and CHEM courses: 4.0 units must be from List 1, the remaining 1.0 unit can be from List 1 or List 2 (see Additional Constraints)~~
- ~~List 1~~
- ~~List 2~~
- ~~Complete 1.0 unit from this list or from List 1~~
- ~~Choose any of the following:~~

Are there cross-listed courses listed in requirements?

Yes,

Cross-Listings Options

All cross-listings to be displayed,

Proposed

Additional Constraints

1. Of the 4.0 units of approved courses:
    1. At least 1.5 units must be in BIOL courses and 1.0 unit must be in CHEM courses.
    2. At least 1.5 units must be at the 400-level.

Existing

Additional Constraints

1. Of the 5.0 units of approved courses:
    1. At least 1.5 units must be in BIOL courses and 1.0 unit must be in CHEM courses.
    2. At lest 1.5 units must be at the 400-level.

Notes

- See list of academic advisors.
- See Faculty of Science for recommended course sequences.

Specializations

Specializations for this Major
No,

Undergraduate Plan Guidelines

Workflow Information

Change to Undergraduate Communication Requirement
No,

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Prerequisites

- BIOL 499A - Senior Honours Project View Program
- BIOL 499B - Senior Honours Project View Program
- CHEM 233L - Fundamentals of Biochemistry Laboratory View Program
- CHEM 121 - Physical and Chemical Properties of Matter View Program
- CHEM 200 - Introduction to Laboratory Techniques View Program
- CHEM 400 - Special Topics in Chemistry View Program
- CHEM 360L - Senior Organic Chemistry Laboratory View Program
- BIOL 341 - Fundamentals of Immunology View Program
- BIOL 345 - Microorganisms in Foods View Program
- CHEM 233 - Fundamentals of Biochemistry View Program
- CHEM 220L - Quantitative Chemical Analysis Laboratory View Program
- CHEM 224L - Analytical Instrumentation Laboratory View Program
- CHEM 265L - Organic Chemistry Laboratory 1 View Program
- CHEM 494A - Research Project View Program

- BIOL 400 - Special Topics in Biology View Program
- CHEM 302 - Innovation and Project Management View Program
- CHEM 339 - Methods and Tools for Biosyntheses View Program
- CHEM 479 - Preparation of Biobased Compounds and Materials View Program
- CHEM 491A - Biobased Chemistry Research Project 1 View Program

H-Biochemistry - Biotechnology Specialization - Biochemistry - Biotechnology Specialization (Bachelor of Science - Honours)

Top

Effective Date and Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-10-06

Quality Assurance Designation
Minor Modification Qad

Is there an impact to existing students?
No,

Is the credential name changing?

No,

Co-operative System of Study and Requirements

No,

Creating or Changing Invalid Combinations

No,

Change to Learning Outcomes

No,

Rationale and Background for Change(s)

The Department of Chemistry, in consultation with the Department of Biology wants keep the core strengths of the H- Biochemistry, Biotechnology Specialization program, while reducing the total program units by 1.75 units, getting as close as possible to the 20.0 units of instruction supported by the province.

- Reduce the approved program elective requirement from 2.5 to 2.0 units (-0.5 unit reduction).
- Remove the requirement for one 0.25 unit lab chosen from PHYS 111L, PHYS 121L, CHEM 250L, CHEM 313L, or BIOL 373L (-0.25 unit reduction). Biochemistry students have enough required lab courses that better fit their specialization. Biochemistry students qualify for Canadian Society for Chemistry (CSC) accreditation as some of their biology labs can count for the lab requirement.
- Move the CHEM 357 (Physical Biochemistry) requirement to the approved course elective list (-0.5 unit reduction). This allows students to take CHEM 357 as an elective while reducing overall load. The chemical kinetics part of the class will be taught in the new CHEM 257 course requirement.
- Move the BIOL 354 (Environmental Toxicology) requirement to the approved course elective list (-0.5 unit reduction). This allows students to take BIOL 354 as an elective while reducing overall load. The course material taught in BIOL 354 is deemed not highly applicable or required for a degree in biochemistry.

In addition:

1. MATH 228 (Differential Equations for Physics and Chemistry) is removed as an option to STAT 202 leaving STAT 202 as a required course, deemed more necessary background for students in Biochemistry to have.

2. A more conceptual thermodynamics and kinetics course, CHEM257 (Physical Chemistry for the Life Sciences) replaces the math heavy thermodynamic course, CHEM 254 (Introductory Chemical Thermodynamics), which is a program bottleneck.

3. A more conceptual inorganic chemistry with a survey of bioinorganic examples, CHEM 214 (Biological Inorganic Chemistry) replaces CHEM 212 (Structure and Bonding), which is a program bottleneck.

4. The approved course elective lists are combined into one list, removing list 1 and list 2 specific requirements, to remove the complexity of program elective selection.

5. CHEM 356 (Introductory Quantum Mechanics), CHEM 370 (Introduction to Polymer Science), CHEM 481 (Biomolecular Modelling), MNS 331(Biomaterials), and MNS 431 (Special Topics in Nano-Biomaterials) are added to the approved elective course list, providing Biochemistry students an increased flexibility of a larger set of program electives.

Students who have taken or who would want to take CHEM 212 will be able to use this course in place of CHEM 214 if they change into the new program. Students who have taken CHEM 254 and not CHEM 357 and wish to change to the new program will be required to take CHEM 257 or CHEM 357, and CHEM 357 will be counted as a program elective (but not CHEM 257). No additional issues are expected to arise.

Consultations (Departmental)

The Biology Department has been consulted and agrees to the changes.

2025-10-09 The Math and Statistics and Actuarial Science Departments have been consulted regarding the removal of MATH 228 and keeping STAT 202 as a program requirement.

2025-10-14 Math ADUG Benoit Charbonneau acknowledged change and indicated no material impacts on Faculty of Mathematics operations

General Program/Plan Information

Faculty

Faculty of Science

Academic Unit

Department of Chemistry

Faculty

Faculty of Science

Undergraduate Credential Type

Major

Program Type

Honours

Degree

Bachelor of Science (Science)

Program/Plan Name
Biochemistry - Biotechnology Specialization (Bachelor of Science - Honours)

Systems of Study
Co-operative, Regular,

Admissions

Admissions Entry Point
Direct Entry,

Requirements Information

Invalid Combinations
No,

Average Requirement **Minimum Average(s) Required**

Yes,

- A minimum cumulative overall average of 60.0%.
- A minimum cumulative Biology average of 60.0%.
- A minimum cumulative Chemistry average of 60.0%.

Proposed

Graduation Requirements

- See Bachelor of Science degree-level requirements.
- Complete a total of 20.25 units:
  - 16.25 units of required courses, listed below.
  - 2.0 units of approved courses (see Additional Constraints).
  - 2.0 units of elective courses.

Existing

Graduation Requirements

- See Bachelor of Science degree-level requirements.
- Complete a total of 22.0 units:
  - 17.5 units of required courses, listed below.
  - 2.5 units of approved courses (see Additional Constraints).
  - 2.0 units of elective courses.

Co-operative Education Program Requirements

For students in the co-operative system of study, see Bachelor of Science co-operative education program requirements.

Course Requirements (units)

1. Required Courses
   - Complete all the following:
     - BIOL130 - Introductory Cell Biology (0.50)
     - BIOL130L - Cell Biology Laboratory (0.25)
     - BIOL235 - Foundations of Molecular Biology (0.50)
     - BIOL239 - Genetics (0.50)
     - BIOL240 - Fundamentals of Microbiology (0.50)
     - BIOL240L - Microbiology Laboratory (0.25)
     - BIOL241 - Introduction to Applied Microbiology (0.50)
     - BIOL331 - Advanced Cell Biology (0.50)
     - BIOL342 - Molecular Biotechnology 1 (0.50)
     - BIOL432 - Molecular Biotechnology 2 (0.50)
     - BIOL439 - Environmental and Natural Products Biochemistry (0.50)
     - BIOL443 - Fermentation Biotechnology (0.50)
     - CHEM121 - Physical and Chemical Properties of Matter (0.50)
     - CHEM121L - Chemical Reaction Laboratory 1 (0.25)
     - CHEM125 - Chemical Reactions, Equilibria and Kinetics (0.50)

        - CHEM125L - Chemical Reaction Laboratory 2 (0.25)
        - CHEM140 - Introduction to Scientific Calculations (0.50)
        - CHEM200 - Introduction to Laboratory Techniques (0.50)
        - CHEM220 - Intro Analytical Chemistry (0.50)
        - CHEM220L - Quantitative Chemical Analysis Laboratory (0.25)
        - CHEM233 - Fundamentals of Biochemistry (0.50)
        - CHEM233L - Fundamentals of Biochemistry Laboratory (0.25)
        - CHEM264 - Organic Chemistry 1 (0.50)
        - CHEM265 - Organic Chemistry 2 (0.50)
        - CHEM265L - Organic Chemistry Laboratory 1 (0.25)
        - CHEM331 - Fundamentals of Metabolism 1 (0.50)
        - CHEM335L - Advanced Biochemistry Laboratory (0.50)
        - MATH127 - Calculus 1 for the Sciences (0.50)
        - MATH128 - Calculus 2 for the Sciences (0.50)
        - **STAT202 - Introductory Statistics for Scientists (0.50)**
        - **CHEM214 - Biological Inorganic Chemistry (0.50)**
        - **CHEM257 - Physical Chemistry for the Life Sciences (0.50)**
        - ~~BIOL354 - Environmental Toxicology (0.50)~~
        - ~~CHEM212 - Structure and Bonding (0.50)~~
        - ~~CHEM254 - Introductory Chemical Thermodynamics (0.50)~~
        - ~~CHEM357 - Physical Biochemistry (0.50)~~
    - Complete 1 of the following:
        - COMMST193 - Communication in the Sciences (0.50)
        - ENGL193 - Communication in the Sciences (0.50)
    - Complete 1 of the following:
        - PHYS111 - Physics 1 (0.50)
        - PHYS121 - Mechanics (0.50)
    - Complete 1 of the following:
        - PHYS112 - Physics 2 (0.50)
        - PHYS122 - Waves, Electricity and Magnetism (0.50)
    - Complete 1 of the following:
        - **CHEM224L - Analytical Instrumentation Laboratory (0.50)**
        - **CHEM360L - Senior Organic Chemistry Laboratory (0.50)**
        - ~~MATH228 - Differential Equations for Physics and Chemistry (0.50)~~
        - ~~STAT202 - Introductory Statistics for Scientists (0.50)~~

Grand Total Units:15.25

Course Requirements (no units)

Required Courses

- No Rules

Course Lists

1. Approved Courses List
    -
    - Complete all of the following
    - **Complete 2.0 units of BIOL and CHEM courses from the following list (see Additional Constraints).**
    - **Complete 4 of the following:**
    - AMATH382 - Computational Modelling of Cellular Systems (0.50)
    - BIOL308 - Principles of Molecular Biology (0.50)
    - BIOL323 - Plant Physiology (0.50)
    - BIOL335L - Molecular Biology Techniques (0.50)
    - BIOL341 - Fundamentals of Immunology (0.50)

- BIOL345 - Microorganisms in Foods (0.50)
- **BIOL354 - Environmental Toxicology (0.50)**
- BIOL359 - Evolution 1: Mechanisms (0.50)
- BIOL365 - Methods in Bioinformatics (0.50)
- BIOL370 - Comparative Animal Physiology: Environmental Aspects (0.50)
- BIOL371 - Comparative Animal Physiology: Evolutionary Themes (0.50)
- BIOL373 - Principles of Human Physiology 2 (0.50)
- BIOL382 - Computational Modelling of Cellular Systems (0.50)
- BIOL403 - Developmental Biology and Embryology (0.50)
- BIOL431 - Bacterial Molecular Genetics (0.50)
- BIOL433 - Plant Biotechnology (0.50)
- BIOL434 - Human Molecular Genetics (0.50)
- BIOL441 - Advances in Immunology (0.50)
- BIOL442 - Virology (0.50)
- BIOL444 - Bacterial Pathogenesis (0.50)
- BIOL447 - Environmental Microbiology (0.50)
- BIOL448 - Microbial Physiology and Biochemistry (0.50)
- BIOL465 - Structural Bioinformatics (0.50)
- BIOL469 - Genomics (0.50)
- BIOL472 - Cell Biology of Human Disease (0.50)
- BIOL473 - Mammalian Reproduction (0.50)
- BIOL477L - Techniques in Animal Physiology (0.50)
- BIOL483 - Animal Cell Biotechnology (0.50)
- BIOL484 - Advanced Eukaryotic Genetics (0.50)
- BIOL499A - Senior Honours Project (0.50)
- BIOL499B - Senior Honours Project (0.50)
- CHEM209 - Introductory Spectroscopy and Structure (0.50)
- CHEM221 - Multi-Component Analysis (0.50)
- CHEM224L - Analytical Instrumentation Laboratory (0.50)
- CHEM310 - Transition Element Compounds and Inorganic Materials (0.50)
- CHEM313 - Main Group and Solid State Chemistry (0.50)
- CHEM323 - Analytical Instrumentation (0.50)
- **CHEM356 - Introductory Quantum Mechanics (0.50)**
- **CHEM357 - Physical Biochemistry (0.50)**
- CHEM360 - Organic Chemistry 3 (0.50)
- CHEM360L - Senior Organic Chemistry Laboratory (0.50)
- **CHEM370 - Introduction to Polymer Science (0.50)**
- CHEM381 - Bioorganic Chemistry (0.50)
- CHEM382L - Advanced Organic Synthesis Laboratory (0.50)
- CHEM383 - Medicinal Chemistry (0.50)
- CHEM400 - Special Topics in Chemistry (0.50)
- CHEM404 - Physicochemical Aspects of Natural Waters (0.50)
- CHEM430 - Special Topics in Biochemistry (0.50)
- CHEM432 - Metabolism 2 (0.50)
- CHEM433 - Advanced Biochemistry (0.50)
- CHEM464 - Spectroscopy in Organic Chemistry (0.50)
- **CHEM481 - Rational Design of Potential Drug Candidates (0.50)**
- CHEM494A - Research Project (0.50)
- CHEM494B - Research Project (0.50)
- **MNS331 - Biomaterials (0.50)**
- **MNS431 - Special Topics in Nano-Biomaterials (0.50)**
- ~~Complete 2.5 BIOL and CHEM courses: 1.5 units must be from List 1, the remaining 1.0 unit can be from List 1 or List 2 (see Additional Constraints)~~
- ~~List 1~~
- ~~Complete 3 of the following:~~
- ~~List 2~~
- ~~Complete 1.0 unit from this list or from List 1~~
- ~~Choose any of the following:~~

Are there cross-listed courses listed in requirements?	**Cross-Listings Options** All cross-listings to be displayed,

Yes,

Proposed

Additional Constraints

1. Of the 2.0 units of approved courses, at least 1.0 unit must be in CHEM courses.

Existing

Additional Constraints

1. Of the 2.5 units of approved courses, at least 1.0 unit must be in CHEM courses.

Notes

- See list of academic advisors.
- See Faculty of Science for recommended course sequences.

Specializations

Specializations for this Major
No,

Undergraduate Plan Guidelines

Workflow Information

Change to Undergraduate Communication Requirement
No,

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Science

Dependencies

Prerequisites

- BIOL 499A - Senior Honours Project View Program
- BIOL 499B - Senior Honours Project View Program
- CHEM 233L - Fundamentals of Biochemistry Laboratory View Program
- CHEM 121 - Physical and Chemical Properties of Matter View Program
- CHEM 200 - Introduction to Laboratory Techniques View Program
- CHEM 400 - Special Topics in Chemistry View Program
- CHEM 360L - Senior Organic Chemistry Laboratory View Program
- BIOL 341 - Fundamentals of Immunology View Program
- BIOL 345 - Microorganisms in Foods View Program
- CHEM 233 - Fundamentals of Biochemistry View Program
- CHEM 220L - Quantitative Chemical Analysis Laboratory View Program
- CHEM 224L - Analytical Instrumentation Laboratory View Program
- CHEM 265L - Organic Chemistry Laboratory 1 View Program
- CHEM 494A - Research Project View Program

- BIOL 400 - Special Topics in Biology [View Program]
- CHEM 302 - Innovation and Project Management [View Program]
- CHEM 339 - Methods and Tools for Biosyntheses [View Program]
- CHEM 479 - Preparation of Biobased Compounds and Materials [View Program]
- CHEM 491A - Biobased Chemistry Research Project 1 [View Program]

Earth Sciences Minor - Earth Sciences Minor

Top

Effective Date and Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-01-31

Quality Assurance Designation
Minor Modification Qad

Is there an impact to existing students?
No,

Is the credential name changing?
No,

Co-operative System of Study and Requirements

Not Applicable,

Creating or Changing Invalid Combinations

Yes,

Invalid Combinations Consultations

There are so many core EARTH course requirements, outside the technical elective options, in the Geological Engineering major, that overlap it almost completely with the Earth Sciences minor, therefore both can not be awarded.

Change to Learning Outcomes

No,

Rationale and Background for Change(s)

EARTH 231, 232, 235, 238, 260, 333, 390, 437, 438, 458, and 458L are core EARTH requirements within the Geological Engineering major, with an additional 6 electives required from a list which includes 14 additional EARTH courses. The Earth Sciences minor, requires four EARTH courses at any level and three EARTH courses at the 300-level, in addition to EARTH 121/L and EARTH 122/L. There is way too much overlap between this major and minor to allow both credentials to be combined.

To date, there has never been a graduate from Honours Geological Engineering that has graduated with an Earth Sciences minor.

Consultations (Departmental)

The request for this invalid combination was initiated by Engineering (January 2025) in response to a student requesting the Earth Sciences minor with a Geological Engineering major. Both Engineering (T. Szarka, L. Schneider, J. Grove) and the Department of Earth and Environmental Sciences (A. Mar, J. Johnston, J. Parks) are in agreement that there is too much overlap to allow granting of both credentials.

Verification that no there have been no past graduates with this combination of major and minor was made by the R.O. (L. Campbell Jan. 20, 2025).

General Program/Plan Information

Faculty

Faculty of Science

Academic Unit

Department of Earth and Environmental Sciences

Faculty
Faculty of Science

Undergraduate Credential Type
Minor

Program/Plan Name
Earth Sciences Minor

Admissions

Admissions Entry Point
Declare Plan,

Declaration Audience
This credential is open to students enrolled in any degree program.

Declaration Requirements

- Before requesting admission to this academic plan, see invalid credential combinations.

Requirements Information

Invalid Combinations
Yes,

Proposed

List of Invalid Combinations

- Environmental Sciences - Geoscience Specialization (Bachelor of Science - Honours)
- Environmental Sciences - Water Science Specialization (Bachelor of Science - Honours)
- Geological Engineering (Bachelor of Applied Science - Honours)

Existing

List of Invalid Combinations

- Environmental Sciences - Geoscience Specialization (Bachelor of Science - Honours)
- Environmental Sciences - Water Science Specialization (Bachelor of Science - Honours)

Average Requirement
Yes,

Minimum Average(s) Required

- A minimum cumulative minor average of 60.0%.

Graduation Requirements

- Complete a total of 5.0 units.

Course Requirements (units)

Required Courses

- 0Units to Complete
- No Rules

Course Requirements (no units)

Required Courses

- Complete all of the following
- Complete all the following:
  - EARTH121 - Introductory Earth Sciences (0.50)
  - EARTH121L - Introductory Earth Sciences Laboratory (0.25)
  - EARTH122L - Introductory Environmental Sciences Laboratory (0.25)
- Complete 1 of the following:
  - EARTH122 - Introductory Environmental Sciences (0.50)
  - ENVS195 - Introduction to Environmental Studies (0.50)
- Complete 3 EARTH lecture courses at the 300-level or above.
- Complete 4 additional EARTH lecture courses.

Course Lists

Required Courses

- No Rules

Are there cross-listed courses listed in requirements?
No,

Notes

- See list of academic advisors.

Specializations

Undergraduate Plan Guidelines

Adherence to Academic Plan Guidelines
No,

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Prerequisites

- EARTH 491 - Special Topics in Earth and Environmental Sciences View Program
- MATH 218 - Differential Equations for Engineers View Program

H-Physics - Physics (Bachelor of Science - Honours)

Top

Effective Date and Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-06-11

Quality Assurance Designation
Minor Modification Qad

Is there an impact to existing students?
No,

Is the credential name changing?
No,

Co-operative System of Study and Requirements
No,

Creating or Changing Invalid Combinations
No,

Change to Learning Outcomes
No,

Rationale and Background for Change(s)

All physics plans are being changed to permit more flexibility in course selection for students and reduce units for degree requirements. The rationale for changes reflects the broader revision of all physics-based plans:

- Rising enrolment (approx. 200 students per year) has increased the diversity of student preparation and goals.
- Many students enter with less high-school preparation than in the past.
- Plans were redesigned to:
    - Reduce the number of required units to 21.0
    - Ensure strong introductory foundations in first three terms
    - Provide flexibility in selecting core courses in third year (introduce pick four from a list of six, rather than require all six)
    - Challenge strong students through Advanced Physics Option.
    - Better clarify content taught in PHYS courses.
    - Increase diversity of fourth year courses
- These goals were achieved by modest adjustments to some courses, retiring or merging others, and introducing a small number of new courses to minimally effect teaching tasks.

For the **Honours Physics** plan, we have the following changes:

1. Reduce total units from 22.0 --> 21.0
    1. Core: 16.5 --> 15.5
2. Course adjustments to facilitate reduced units and improved flexibility:

1. Remove PHYS 124, allowing PHYS 122 to split into PHYS 122 + PHYS 223 (added as a core requirement)
2. Introduce PHYS 357 (condensed version of PHYS 358 Thermal Physics + PHYS 359 Statistical Mechanics), with opportunity to learn advanced stat mech in PHYS 457 (new)

3. To improve selection/flexibility of PHYS elective courses, we removed the following from core requirements (PHYS 256, 334, 342, 358, 359, 363, 365) and created a new "pick 4 of the following" requirements (PHYS 334, 342, 356 [old 256], 363, 365, 376 [new Relativistic Physics course]).

Consultations (Departmental)

Consultation Paragraph:

As part of the curriculum change process for the affected physics programs and courses, the Department of Physics & Astronomy engaged in a series of structured consultations with departmental leadership, Associate Chairs Undergraduate Studies, Associate Deans Undergraduate, and relevant Directors and steering committees across many faculties and departments throughout UWaterloo. These consultations ensured transparency, alignment across units, and opportunities for everyone to provide feedback prior to formal submission in Kuali. A chronological order of consultations in Spring 2025 and Fall 2025 are provided below:

- June 2, 2025: Consulted with the Materials & Nanosciences (MNS) Steering Committee regarding proposed curriculum changes affecting MNS course offerings
- June 16, 2025: Curriculum strategy meeting with Chairs of Applied Math and Physics to discuss directions for the Math Phys program
- June 17, 2025: Consultation for Math Phys program changes (ACUGs, Chairs and ADUs) to refine program revisions and confirm cross-faculty alignment
- August 13, 2025: Follow-up consultation with Applied Mathematics to confirm remaining issues requiring resolution for both Math Phys plans
- August 26, 2025: Consulted with all Associate Chairs and ADUs of affected departments/faculties via a formal email notice, providing a general consultation template and a summarized Word document outlining proposed program and course changes. See attachment.
- August 29, 2025: Released proposed curriculum changes on Kuali for broader visibility and feedback from stakeholders.
- September 3, 2025: Consulted with the Chairs of Physics and Applied Mathematics regarding proposed program revisions and alignment across departments.
- September 4, 2025: Met with the Applied Mathematics Undergraduate Committee (AMATH ACUG) to discuss the Math Phys plan revisions and gather feedback.
- September 8, 2025: Meeting with Physics and Math ADUs and Chairs and ACUGs and Curriculum Chairs to finalize Math Phys program changes
- email consultations attached

Supporting Documentation

- PhysicsCurriculumChanges_ACUGEmails20250826.docx

General Program/Plan Information

Faculty **Academic Unit**

Faculty of Science

Department of Physics and Astronomy

Faculty
Faculty of Science

Undergraduate Credential Type
Major

Program Type
Honours

Degree
Bachelor of Science (Science)

Program/Plan Name
Physics (Bachelor of Science - Honours)

Systems of Study
Co-operative, Regular,

Admissions

Admissions Entry Point
Direct Entry,

Requirements Information

Invalid Combinations
Yes,

List of Invalid Combinations

Mathematical Physics (Bachelor of Mathematics - Honours)

Mathematical Physics (Bachelor of Science - Honours)

Physics Specialization

Average Requirement
Yes,

Minimum Average(s) Required

- A minimum cumulative overall average of 60.0%.
- A minimum cumulative Physics average of 60.0%.

Proposed

Graduation Requirements

- See Bachelor of Science degree-level requirements.
- Complete a total of 21.0 units:
  - 15.5 units of required courses, listed below.
  - 5.5 units of elective courses (see Additional Constraints).
- Students must enrol in PHYS10 when it is offered.

Existing

Graduation Requirements

- See Bachelor of Science degree-level requirements.
- Complete a total of 22.0 units:
  - 16.5 units of required courses, listed below.
  - 5.5 units of elective courses (see Additional Constraints).
- Students must enrol in PHYS10 when it is offered.

Co-operative Education Program Requirements

For students in the co-operative system of study, see Bachelor of Science co-operative education program requirements.

Course Requirements (units)

Required Courses

- 0Units to Complete
- No Rules

Course Requirements (no units)

1. Required Courses
    -
    - Complete all of the following
    - Complete all the following:
    - CS114 - Principles of Computing for Science (0.50)
    - MATH127 - Calculus 1 for the Sciences (0.50)
    - MATH128 - Calculus 2 for the Sciences (0.50)
    - MATH227 - Calculus 3 for Honours Physics (0.50)
    - MATH228 - Differential Equations for Physics and Chemistry (0.50)
    - PHYS121 - Mechanics (0.50)
    - PHYS121L - Mechanics Laboratory (0.25)
    - PHYS122 - Waves, Electricity and Magnetism (0.50)
    - PHYS122L - Waves, Electricity and Magnetism Laboratory (0.25)
    - PHYS160L - Introductory Measurement Laboratory (0.25)
    - PHYS234 - Quantum Physics 1 (0.50)
    - PHYS242 - Electricity and Magnetism 1 (0.50)
    - PHYS249 - Linear Algebra for Physics and Astronomy (0.50)
    - PHYS260A - Intermediate Physics Laboratory 1 (0.50)
    - PHYS260B - Intermediate Physics Laboratory 2 (0.50)
    - PHYS263 - Classical Mechanics and Special Relativity (0.50)
    - PHYS267 - Probability, Statistics, and Data Analysis for Physics and Astronomy (0.50)
    - PHYS360A - Modern Physics Laboratory 1 (0.25)
    - PHYS364 - Mathematical Physics 1 (0.50)
    - **Course Not Found**
    - **Course Not Found**
    -
    - Complete 1 of the following:
    - COMMST193 - Communication in the Sciences (0.50)
    - ENGL193 - Communication in the Sciences (0.50)
    -
    - **Complete 4 of the following:**
    - PHYS334 - Quantum Physics 2 (0.50)
    - PHYS342 - Electricity and Magnetism 2 (0.50)
    - **Course Not Found**
    - PHYS363 - Intermediate Classical Mechanics (0.50)
    - PHYS365 - Mathematical Physics 2 (0.50)
    - **Course Not Found**
    -
    - Complete 1 of the following:
    - PHYS360B - Modern Physics Laboratory 2 (0.25)
    - PHYS370L - Astronomy Laboratory 1 (0.25)
    - PHYS391L - Electronics Laboratory (0.25)
    - PHYS460A - Advanced Laboratory 1 (0.25)

- PHYS460B - Advanced Laboratory 2 (0.25)
-
- Complete all of the following
- Complete 1.25 units of courses from the following list
- Choose any of the following:
- BIOL110 - Biodiversity, Biomes, and Evolution (0.50)
- BIOL130 - Introductory Cell Biology (0.50)
- BIOL130L - Cell Biology Laboratory (0.25)
- BIOL150 - Organismal and Evolutionary Ecology (0.50)
- BIOL165 - Diversity of Life (0.50)
- BIOL201 - Human Anatomy (0.50)
- BIOL211 - Introductory Vertebrate Zoology (0.50)
- BIOL220 - Introduction to Plant Structure and Function (0.50)
- BIOL239 - Genetics (0.50)
- BIOL240 - Fundamentals of Microbiology (0.50)
- BIOL240L - Microbiology Laboratory (0.25)
- BIOL241 - Introduction to Applied Microbiology (0.50)
- BIOL251 - Fundamentals of Ecology (0.50)
- BIOL273 - Principles of Human Physiology 1 (0.50)
- CHEM120 - General Chemistry 1 (0.50)
- CHEM120L - General Chemistry Laboratory 1 (0.25)
- CHEM123 - General Chemistry 2 (0.50)
- CHEM123L - General Chemistry Laboratory 2 (0.25)
- EARTH121 - Introductory Earth Sciences (0.50)
- EARTH121L - Introductory Earth Sciences Laboratory (0.25)
- EARTH122 - Introductory Environmental Sciences (0.50)
- EARTH122L - Introductory Environmental Sciences Laboratory (0.25)
-
- Complete 0.5 unit additional PHYS course, any level
- Complete 3 additional PHYS lecture courses (1.5 units) at the 400-level (exclusive of PHYS437A and PHYS437B)
- ~~PHYS124 - Modern Physics (0.50)~~
- ~~PHYS256 - Geometrical and Physical Optics (0.50)~~
- ~~PHYS358 - Thermal Physics (0.50)~~
- ~~PHYS359 - Statistical Mechanics (0.50)~~

Course Lists

Required Courses

- No Rules

Proposed

Are there cross-listed courses listed in requirements?
No,

Existing

Are there cross-listed courses listed in requirements?
Yes,

Additional Constraints

1. For the 5.5 units of elective courses, students may use a maximum of 1.5 units of laboratory courses and a maximum of 3.0 units of SCI courses.

Notes

- See list of academic advisors.
- See Faculty of Science for recommended course sequences.

Specializations

Specializations for this Major

No,