Sciences Curriculum Committee

Proposals Reported for Information (Abbreviated Review)

November 15, 2019
1 Course Modification:

**BCH242Y1: Introduction to Biochemistry**

<table>
<thead>
<tr>
<th>Contact Hours:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Previous:</strong></td>
<td>Lecture: 64 / Practical: 14 / Tutorial: 12</td>
</tr>
<tr>
<td><strong>New:</strong></td>
<td>Lecture: 64 / Practical: 18 / Tutorial: 12</td>
</tr>
</tbody>
</table>

**Rationale:**
Instructor noticed a discrepancy in the number of lab hours listed (14h) and what is actually included in the course (18h). Modified to reflect reality.

**Consultation:**

**Resources:**
# 14 Course Modifications:

## CSB202H1: Further Exploration in Biotechnology

**Description:**

Provides non-science students with an additional opportunity to explore biotechnology and its applications in agriculture, the environment, and human health including: genetically modified organisms, drug discovery, aging, and aging vaccines. Most lectures are viewed online before class and students work in groups during class on problem sets and case studies designed to stimulate further learning, enhance evidence-based reasoning, and promote reflection on the role of biotechnology in society. This course does not count towards CSB programs. CSB201H1 is not a prerequisite for this course.

**Rationale:**

Minor modifications to course description to reflect contents of course.

**Consultation:**

None

**Resources:**

## CSB329H1: Stem Cell Biology: Developmental Models and Cell-based Therapeutics

**Description:**

Stem cells provide the basis for cellular diversity in multicellular organisms and have enormous therapeutic potential in regenerative medicine. The course will introduce students to the differences and similarities between stem cells from different organisms, their roles throughout development and therapeutic potential potentials.

**Rationale:**

Removal of "s" to correct grammatical error.

**Consultation:**

None

**Resources:**

## CSB331H1: Advanced Cell Biology I: Cellular Dynamics During Development

**Title:**

Advanced Cell Biology I: Cellular Dynamics During Development

**Abbreviated Title:**

Adv Cell Biol I

**Previous:** Adv Cell Biol I

**New:** Advanced Cell Biology

**Rationale:**

Title and abbreviated title modified to better reflect the content of the course and to make it more straight forward for students.

**Consultation:**

None
**Cell and Systems Biology (FAS), Department of**

**Resources:**

<table>
<thead>
<tr>
<th>CSB346H1: Neurobiology of Respiration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description:</strong></td>
</tr>
<tr>
<td>This course examines how the central integrated control of cardio-respiratory physiology and peripheral nervous system controls breathing metabolism in mammals. Topics include how the brain generates rhythmic breathing movements exercise, diving, how sleep impacts breathing control and how abnormal breathing contributes to disorders such as sleep apnea hibernation.</td>
</tr>
</tbody>
</table>

| **Rationale:**                       |
| This course description provides the students with a better representation of what is taught in the course. |

| **Consultation:**                    |
| None                                 |

| **Resources:**                       |

<table>
<thead>
<tr>
<th>CSB353H1: Plant-Microorganism Interactions and Plant Immunity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exclusions:</strong></td>
</tr>
<tr>
<td>Previous: CSB452H1</td>
</tr>
<tr>
<td>New:</td>
</tr>
</tbody>
</table>

| **Rationale:**                       |
| CSB452H1 is being removed as an exclusion because there is a new instructor of 452, so the content has changed sufficiently that the exclusion no longer applies to CSB353. |

| **Consultation:**                    |
| None                                 |

| **Resources:**                       |

<table>
<thead>
<tr>
<th>CSB397Y0: Research Abroad in Cell &amp; Systems Biology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description:</strong> An independent research project conducted in molecular cell biology, cell developmental biology, developmental plant biology, neurobiology neurophysiology, physiology or systems biology. Whole organism, cell culture, research lab in vitro or in silico studies are acceptable an approved partner university. The laboratory research is conducted by the student and supervised by a faculty member at an approved the partner university. An information session is held each fall, and an application and interview process is required. The research is typically conducted from May to August institution. Not eligible for CR/NCR option.</td>
</tr>
</tbody>
</table>

| **Rationale:**                       |
| Course description modified to provide students with a clearer understanding of the nature of this course. |

| **Consultation:**                    |
| None                                 |

| **Resources:**                       |
CSB428H1: Advanced Cell Biology II: Cell Polarity and Cytoskeletal Dynamics

Title:
Previous: Advanced Cell Biology II : Cell Polarity and Cytoskeletal Dynamics
New: Cytoskeletal Networks of the Cell

Abbreviated Title:
Previous: Advanced Cell Biology II
New: Cytoskeletal Networks of Cell

Description:

The cytoskeleton is a highly dynamic protein network that links all regions and components of the cell to provide a structural framework for organizing numerous cellular activities. This advanced course will explore the molecular regulation of the actin and microtubule cytoskeletons during covers cell migration polarity and other cellular processes cytoskeletal dynamics emphasizing current literature. Topics will include For each topic, the course examines(1)an overview of key regulators of the cytoskeleton proteins involved, (2) how they organize specific cellular structures their interactions and regulation, and (3) how the coordinated activities of cytoskeletal networks govern complex they organize specific cellular behaviours structures. The format coordination of this course these complexes for orchestrating complex cellular processes is mainly journal club style presentations and student-led discussions also addressed. These important topics of research papers, together cell biology are pursued with supporting background question-driven lectures. Experience with critical evaluation; and both round-table discussions and group presentations of research papers is emphasized.

Rationale:

The revised description provides students with a more accurate reflection of the course content and structure.

Consultation:
None

Resources:

CSB432H1: Advanced Topics in Cellular Neurophysiology

Prerequisites:
CJH332H1/#CSB332H1

Rationale:
Removal of CSB332H1 from prerequisite list. CSB332 was last listed in the Calendar in 2015-16. It was renumbered to CJH332H1.

Consultation:
None

Resources:

CSB445H1: Topics in Sleep Research

Description:

This course covers Covers theories in why and how we sleep. It will focus on the biological functions function of sleep-wake states: By means of in-depth study of sleep primary research papers, how the brain generates different sleep states and how breakdowns in sleep mechanisms contribute course focuses on sleep-related function at all levels of biological organization - from molecular biology through systems physiology to sleep disorders like insomnia, sleep walking
Cell and Systems Biology (FAS), Department of

behaviour and narcolepsy evolutionary ecology. This course emphasizes student participation in seminar discussion and debates.

**Recommended Preparation:**
CJH332H1/CSB332H1/CSB345H1/PSY397H1

**Rationale:**
The revision in the course description is a reflection of a new instructor taking over this course. CSB332H1 was removed from the prerequisite list as that course designator was changed to CJH332H1 in 2016-17.

**Consultation:**
None

<table>
<thead>
<tr>
<th>Resources</th>
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</thead>
<tbody>
<tr>
<td>CSB452H1: Molecular Plant-Microorganism Interactions</td>
</tr>
</tbody>
</table>

**Title:**
Molecular Plant-Microorganism Interactions Between Plants, Microorganisms and Parasitic Plants

**Description:**
This course explores the molecular strategies that microbes and plants have evolved to defend themselves against microbes and parasitic plants live with each other. The course consists variety of two sections: 1. Plant - pathogenic microbe interactions and 2. Plant - plant parasite interactions. The first section focuses on an in-depth discussion about on-going research of plant immunity against pathogenic microbes. The second section introduces plant - parasitic plant relationships strategies will be summarized with an emphasis on signalling pathways that underlie these interactions and discusses how basic knowledge of the lifestyle molecular mechanisms of parasitic plants could contribute to agricultural solutions in the developing world pathogenic relationships.

**Rationale:**
These changes are the result of a new instructor being added to the course.

**Consultation:**
None outside of the course team.

<table>
<thead>
<tr>
<th>Resources</th>
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</thead>
<tbody>
<tr>
<td>CSB491H1: Team-Based Research: Research in Cell and Molecular Biology</td>
</tr>
</tbody>
</table>

**Contact Hours:**
<br>Previous:  
<br>New: **Practical:** 60

**Description:**
CSB491H1 is a plant molecular biology lab that builds on molecular biology and biochemistry skills approaches acquired in CSB350H1 or CSB330H1 to investigate the role of metabolic enzymes in plants. After an initial training lab section, students will work in teams to develop address a specific aspect of a research project which they will conduct in the second half of the course. They will develop laboratory and teamwork skills that are desirable for them to function in a research laboratory and in the workplace. The course will integrate current molecular biology techniques, including designing and characterizing mutants made with CRISPR/Cas9, identifying protein interactors, and performing
structural and mechanistic analysis of metabolic enzymes. (Lab Materials Fee: $50). Lab coat and safety glasses are required for use in laboratories; students are responsible for purchasing these items (approximate cost is $25).

Prerequisites:
CSB330H1/CSB350H1 with a minimum grade of 77% and approval of the instructor

Rationale:
Course description modified to provide a better reflection of the course content. CSB330H1 being added as a prerequisite option to allow more students access to this course.

Consultation:
None

Resources:
Budget Implications: The academic unit will provide the resources required for this course from existing budget.

CSB497H1: Independent Research in Cell and Systems Biology I

Description:
An original research project (a literature review alone is not sufficient) requiring the prior consent of a member of the Department to supervise the project. The topic is to be mutually agreed upon by the student and supervisor. They must arrange the time, place, and provision of any materials and submit to the Undergraduate Office a signed form of agreement outlining details prior to being enrolled. In the Fall or Winter sessions, a commitment of 8-10 hours per week is expected for research and related course activities. If spread over both the Fall and Winter sessions, a commitment of 4-5 hours per week is expected. In the Summer Session, the number of hours doubles per week (e.g., 16-20 for F or S, or 8-10 for Y) as the length of the term is halved compared to the Fall or Winter term. Many students spend more than this amount of time as they become immersed in their project. This course is normally open only to fourth year students with adequate background in Cell and Systems Biology. Course requirements include a final report, and either an oral presentation (Summer and Fall sessions) or a poster presentation (Winter session). Two workshops on scientific research are scheduled and highly recommended. Details for enrollment are available at http://csb.utoronto.ca/undergraduate-studies/undergraduate-courses/undergraduate-course-level-400/. Maximum of 2.0 FCEs allowed among CSB497H1, CSB498Y1 and CSB499Y1. (Lab Materials Fee: $25). Not eligible for CR/NCR option.

Rationale:
Line added in description to clarify departmental policy on the number of CSB independent research courses we allow students to take.

Consultation:
None

Resources:

CSB498Y1: Independent Research in Cell and Systems Biology I

Description:
An original research project (a literature review alone is not sufficient) requiring the prior consent of a member of the Department to supervise the project. The topic is to be mutually agreed upon by the student and supervisor. They must arrange the time, place, and provision of any materials and submit to the Undergraduate Office a signed form of agreement outlining details prior to being enrolled. In the Fall/Winter session, a commitment of 8-10 hours per week is expected for research and related course activities. In the Summer session, the number of hours doubles (16-20 per week) as the length
of the term is halved. This course is normally open only to fourth year students with adequate background in Cell and Systems Biology. Course requirements include a final report and either an oral presentation (Summer session) or a poster presentation (Fall/Winter session). Four workshops on scientific research are scheduled and highly recommended. Details for enrollment are available at http://csb.utoronto.ca/undergraduate-studies/undergraduate-courses/undergraduate-course-level-400/. Maximum of 2.0 FCEs allowed among CSB497H1, CSB498Y1 and CSB499Y1. (Lab Materials Fee:$50). Not eligible for CR/NCR option.

Rationale:
Line added to course description to clarify a departmental policy of the number of CSB independent research courses students can take.

Consultation:
None

Resources:

CSB499Y1: Independent Research in Cell and Systems Biology II

Description:
Allows students to do a second independent project. Operates in the same manner as CSB497H1/CSB498Y1. Maximum of 2.0 FCEs allowed among CSB497H1, CSB498Y1 and CSB499Y1. Students who have completed both CSB497H1 and CSB498Y1 are excluded from taking CSB499Y1.(Lab Materials Fee:$50). Not eligible for CR/NCR option.

Rationale:
Line added to description to clarify the department's policy on the number of CSB independent research courses students can take.

Consultation:
None

Resources:
### 18 Course Modifications:


<table>
<thead>
<tr>
<th>Corequisites:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Previous:</strong> CHM135H1 and CHM136H1 (in sequence) or CHM151Y1</td>
</tr>
<tr>
<td><strong>New:</strong></td>
</tr>
</tbody>
</table>

**Rationale:**

**Consultation:**

**Resources:**

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**CHM211H1: Chemicals in the Environment: The Good, the Bad, and the Ugly**

<table>
<thead>
<tr>
<th>Abbreviated Title:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Previous:</strong> CHEM Good Bad Ugly</td>
</tr>
<tr>
<td><strong>New:</strong> Chemicals in the Environment</td>
</tr>
</tbody>
</table>

**Contact Hours:**

<table>
<thead>
<tr>
<th>Previous: Lecture: 24</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New:</strong> Lecture: 24 / Tutorial: 12</td>
</tr>
</tbody>
</table>

**Rationale:**

**Consultation:**

**Resources:**

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**CHM217H1: Introduction to Analytical Chemistry**

<table>
<thead>
<tr>
<th>Abbreviated Title:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intro to Analytical Chemistry Analytic Chem</strong></td>
</tr>
</tbody>
</table>

**Contact Hours:**

<table>
<thead>
<tr>
<th>Previous: Lecture: 30 / Practical: 48 / Tutorial: 6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New:</strong> Lecture: 30 / Practical: 52 / Tutorial: 6</td>
</tr>
</tbody>
</table>

**Rationale:**

**Consultation:**

**Resources:**

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**CHM222H1: Introduction to Physical Chemistry**

**Description:**
Chemistry (FAS), Department of

Topics: introductory thermodynamics; first and second law; reaction kinetics; chemical equilibrium; introductory quantum mechanics; spectroscopy. The course is intended for students who will be following one of the chemistry specialist programs (including Biological Chemistry and Environmental Chemistry) or who will be including a substantial amount of chemistry in their degree (such as those following a chemistry major program).

Rationale: 
Consultation: 
Resources:

CHM223H1: Physical Chemistry: The Molecular Viewpoint

Description:
A continuation of CHM220H1 or CHM222H1 for students wishing to take some additional material in Physical Chemistry. The course covers topics in quantum mechanics and spectroscopy as well as an introduction to reaction kinetics.

Rationale: 
Consultation: 
Resources:

CHM238Y1: Introduction to Inorganic Chemistry

Contact Hours:
Previous: Lecture: 48 / Practical: 44 / Tutorial: 10
New: Lecture: 48 / Practical: 52 / Tutorial: 10

Rationale: 
Consultation: 
Resources:

CHM249H1: Organic Chemistry

Contact Hours:
Previous: Lecture: 36 / Practical: 50
New: Lecture: 36 / Practical: 52

Rationale: 
Consultation:
### CHM310H1: Environmental Chemistry

**Contact Hours:**
- Previous: Lecture: 24
- New: Lecture: 24 / Tutorial: 12

**Rationale:**

**Consultation:**

**Resources:**

### CHM317H1: Introduction to Instrumental Methods of Analysis

**Abbreviated Title:**
- Previous: Intro Instr Analysis
  - New:

**Contact Hours:**
- Previous: Lecture: 24 / Practical: 48
- New: Lecture: 24 / Practical: 52

**Rationale:**

**Consultation:**

**Resources:**

### CHM325H1: Introduction to Inorganic and Polymer Materials Chemistry

**Exclusions:**
- Previous:
  - New: CHM426H1

**Rationale:**

**Consultation:**

**Resources:**

### CHM326H1: Introductory Quantum Mechanics and Spectroscopy

**Contact Hours:**
- Previous: Lecture: 24
- New: Lecture: 24 / Tutorial: 12

**Rationale:**

**Consultation:**

**Resources:**
### CHM327H1: Experimental Physical Chemistry

**Contact Hours:**
- Previous: Lecture: 12 / Practical: 48
- New: Lecture: 12 / Practical: 52

### CHM338H1: Intermediate Inorganic Chemistry

**Contact Hours:**
- Previous: Lecture: 24 / Practical: 54
- New: Lecture: 24 / Practical: 52

### CHM342H1: Modern Organic Synthesis

**Contact Hours:**
- Previous: Lecture: 24
- New: Lecture: 24 / Tutorial: 12

### CHM343H1: Organic Synthesis Techniques

**Contact Hours:**
- Previous: Lecture: 24 / Practical: 54
- New: Lecture: 24 / Practical: 52

### Resources:
CHM379H1: Biomolecular Chemistry

Contact Hours:
Previous: Lecture: 24 / Practical: 48
New: Lecture: 24 / Practical: 52

Rationale:

Consultation:

Resources:

CHM416H1: Separation Science

Description:

This course provides theoretical and practical background useful for engaging Principles of separation in cutting-edge chemical separations in analytical chemistry, biology, medicine, engineering, research, and industry. The course covers general separations concepts fractionation processes and principles, with an emphasis on liquid solvent extractions; theory of chromatography and its various modes, including partition chromatography retention time, ion chromatography, enantiomer chromatography, size exclusion chromatography, column efficiency and affinity chromatography resolution. Other topics include materials and Principles of gas-liquid chromatography; instrumentation, for gas chromatography, supercritical fluid; High performance liquid chromatography, electrophoresis - practice and related techniques, and a host of miscellaneous separation (e.g. equipment design. ion exchange, TLC, FFF, CF) size-exclusion and extraction (e.g. affinity chromatography., LLE, SPE, SPME) modalities Electrophoretic techniques. Classes are supplemented with online/virtual laboratory exercises.

Rationale:

Consultation:

Resources:

CHM479H1: Biological Chemistry

Prerequisites:
BCH210H1/BCH242Y1, CHM347H1, CHM348H1

Rationale:

Consultation:

Resources:
36 Course Modifications:

**COG343H1: Issues on Cognitive Science III: Computational Cognition**

<table>
<thead>
<tr>
<th>Prerequisites:</th>
</tr>
</thead>
<tbody>
<tr>
<td>COG260H1, CSC148H1, STA220H1/PSY201H1</td>
</tr>
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<table>
<thead>
<tr>
<th>Rationale:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housekeeping</td>
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<table>
<thead>
<tr>
<th>Consultation:</th>
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<tbody>
<tr>
<td>Consultation with the COG Advisory board and UC Curriculum committee.</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Resources:</th>
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</thead>
<tbody>
<tr>
<td><strong>Budget Implications:</strong> The academic unit will provide the resources required for this course from existing budget.</td>
</tr>
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</table>

**CSC300H1: Computers and Society**

<table>
<thead>
<tr>
<th>Exclusions:</th>
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</thead>
<tbody>
<tr>
<td>NOTE: Students not enrolled in the Computer Science Major or Specialist program at <strong>FAS the UTSG, UTM, or UTSC, or the Data Science Specialist at FAS</strong>, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.</td>
</tr>
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<thead>
<tr>
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<tbody>
<tr>
<td>Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.</td>
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<thead>
<tr>
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<tbody>
<tr>
<td>Consultation between the Department of Computer Science and the Enrolment and Records team at Arts &amp; Science OFR.</td>
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**CSC301H1: Introduction to Software Engineering**

<table>
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**CSC302H1: Engineering Large Software Systems**

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<tr>
<th>Rationale:</th>
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</thead>
</table>
### Computer Science (FAS), Department of

Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

**Consultation:**
Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

**Resources:**

#### CSC303H1: Social and Information Networks

**Exclusions:**
CSCC46H3. NOTE: Students not enrolled in the Computer Science Major or Specialist program at **FAS the UTSG, UTM, or UTSC, or the Data Science Specialist at FAS**, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

**Rationale:**
Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

**Consultation:**
Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

**Resources:**

#### CSC304H1: Algorithmic Game Theory and Mechanism Design

**Exclusions:**
NOTE: Students not enrolled in the Computer Science Major or Specialist program at **FAS the UTSG, UTM, or UTSC, or the Data Science Specialist at FAS**, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

**Rationale:**
Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

**Consultation:**
Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

**Resources:**

#### CSC320H1: Introduction to Visual Computing

**Exclusions:**
NOTE: Students not enrolled in the Computer Science Major or Specialist program at **FAS the UTSG, UTM, or UTSC, or the Data Science Specialist at FAS**, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

**Rationale:**
Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

**Consultation:**
Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

**Resources:**
### CSC324H1: Principles of Programming Languages

**Exclusions:**

NOTE: Students not enrolled in the Computer Science Major or Specialist program at FAS the UTSG, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

**Rationale:**

Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

**Consultation:**

Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

**Resources:**

### CSC358H1: Principles of Computer Networks

**Exclusions:**

NOTE: Students not enrolled in the Computer Science Major or Specialist program at FAS the UTSG, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

**Rationale:**

Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

**Consultation:**

Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

**Resources:**

### CSC367H1: Parallel Programming

**Exclusions:**

NOTE: Students not enrolled in the Computer Science Major or Specialist program at FAS the UTSG, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

**Rationale:**

Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

**Consultation:**

Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

**Resources:**

### CSC369H1: Operating Systems

**Exclusions:**

NOTE: Students not enrolled in the Computer Science Major or Specialist program at FAS the UTSG, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

**Rationale:**

Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

**Consultation:**
Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

Resources:

**CSC373H1: Algorithm Design, Analysis & Complexity**

**Exclusions:**
CSC375H1. NOTE: Students not enrolled in the Computer Science Major or Specialist program at FAS the UTSG, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

**Rationale:**
Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

**Consultation:**
Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

Resources:

**CSC385H1: Microprocessor Systems**

**Exclusions:**
CSC372H1, ECE385H1. NOTE: Students who are not enrolled in the Computer Science Major or Specialist program at FAS the UTSG, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to campuses may take a maximum of three 300-/400-level CSC/ECE half-courses.

**Rationale:**
Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

**Consultation:**
Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

Resources:

**CSC396Y0: Designing Systems for Real World Problems**

**Exclusions:**
NOTE: Students not enrolled in the Computer Science Major or Specialist program at FAS the UTSG, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

**Rationale:**
Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

**Consultation:**
Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

Resources:

**CSC399Y1: Research Opportunity Program**

**Exclusions:**

17
Computer Science (FAS), Department of

**Previous:**

**New:** NOTE: Students not enrolled in the Computer Science Major or Specialist program at FAS, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

**Rationale:**

We made this change on almost all our 3rd and 4th year courses previously and missed updating this course.

**Consultation:**

In consultation with Tamara Jones and Cheryl O'Donoghue from Arts & Science OFR.

**Resources:**

---

**CSC410H1: Software Testing and Verification**

**Exclusions:**

NOTE: Students not enrolled in the Computer Science Major or Specialist program at the FAS UTSG, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

**Rationale:**

Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

**Consultation:**

Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

**Resources:**

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**CSC436H1: Numerical Algorithms**

**Exclusions:**

CSC351H1. NOTE: Students not enrolled in the Computer Science Major or Specialist program at the FAS UTSG, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

**Rationale:**

Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

**Consultation:**

Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

**Resources:**

---

**CSC438H1: Computability and Logic**

**Exclusions:**

MAT309H1; PHL348H1. NOTE: Students not enrolled in the Computer Science Major or Specialist program at the FAS UTSG, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

**Rationale:**

Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

**Consultation:**

Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.
### Computer Science (FAS), Department of

#### Resources:

#### CSC443H1: Database System Technology

**Exclusions:**

NOTE: Students not enrolled in the Computer Science Major or Specialist program at the FAS UTSG, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

**Rationale:**

Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

**Consultation:**

Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

**Resources:**

#### CSC446H1: Computational Methods for Partial Differential Equations

**Exclusions:**

NOTE: Students not enrolled in the Computer Science Major or Specialist program at the FAS UTSG, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

**Rationale:**

Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

**Consultation:**

Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

**Resources:**

#### CSC448H1: Formal Languages and Automata

**Exclusions:**

NOTE: Students who are not enrolled in the Computer Science Major or Specialist program at the FAS UTSG, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

**Rationale:**

Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

**Consultation:**

Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

**Resources:**

#### CSC454H1: The Business of Software

**Exclusions:**

NOTE: Students not enrolled in the Computer Science Major or Specialist program at the FAS UTSG, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

**Rationale:**

Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

**Resources:**
Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

Consultation:
Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

Resources:

CSC456H1: High-Performance Scientific Computing

Exclusions:
NOTE: Students not enrolled in the Computer Science Major or Specialist program at the FAS UTSG, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

Rationale:
Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

Consultation:
Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

Resources:

CSC458H1: Computer Networking Systems

Exclusions:
NOTE: Students not enrolled in the Computer Science Major or Specialist program at the FAS UTSG, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

Rationale:
Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

Consultation:
Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

Resources:

CSC463H1: Computational Complexity and Computability

Exclusions:
CSC363H1/CSCC63H3, CSC365H1. NOTE: Students not enrolled in the Computer Science Major or Specialist program at the FAS UTSG, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

Rationale:
Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

Consultation:
Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

Resources:
CSC465H1: Formal Methods in Software Design

Exclusions:
NOTE: Students not enrolled in the Computer Science Major or Specialist program at the FAS UTSG, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

Rationale:
Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

Consultation:
Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

Resources:

CSC466H1: Numerical Methods for Optimization Problems

Exclusions:
NOTE: Students not enrolled in the Computer Science Major or Specialist program at the FAS UTSG, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

Rationale:
Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

Consultation:
Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

Resources:

CSC469H1: Operating Systems Design and Implementation

Exclusions:
NOTE: Students not enrolled in the Computer Science Major or Specialist program at the FAS UTSG, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

Rationale:
Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

Consultation:
Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

Resources:

CSC473H1: Advanced Algorithm Design

Exclusions:
NOTE: Students not enrolled in the Computer Science Major or Specialist program at the FAS UTSG, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

Rationale:
Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

Consultation:
Computer Science (FAS), Department of

Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

Resources:

<table>
<thead>
<tr>
<th><strong>CSC486H1: Knowledge Representation and Reasoning</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exclusions:</strong></td>
</tr>
<tr>
<td>NOTE: Students not enrolled in the Computer Science Major or Specialist program at the <strong>FAS UTSG</strong>, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.</td>
</tr>
<tr>
<td><strong>Recommended Preparation:</strong></td>
</tr>
<tr>
<td>Previous: CSC330H1</td>
</tr>
<tr>
<td>New:</td>
</tr>
<tr>
<td><strong>Rationale:</strong></td>
</tr>
<tr>
<td>Remove CSC330H1 from &quot;Recommended Preparation&quot; since it is no longer offered (this is a correction -- CSC330H1 should have been removed when it was discontinued). Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.</td>
</tr>
<tr>
<td><strong>Consultation:</strong></td>
</tr>
<tr>
<td>Consultation between the Department of Computer Science and the Enrolment and Records team at Arts &amp; Science OFR (exclusions).</td>
</tr>
<tr>
<td><strong>Resources:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>CSC488H1: Compilers and Interpreters</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exclusions:</strong></td>
</tr>
<tr>
<td>NOTE: Students not enrolled in the Computer Science Major or Specialist program at the <strong>FAS UTSG</strong>, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.</td>
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<tr>
<td><strong>Rationale:</strong></td>
</tr>
<tr>
<td>Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.</td>
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<tr>
<td><strong>Consultation:</strong></td>
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<tr>
<td>Consultation between the Department of Computer Science and the Enrolment and Records team at Arts &amp; Science OFR.</td>
</tr>
<tr>
<td><strong>Resources:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>CSC490H1: Capstone Design Project</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exclusions:</strong></td>
</tr>
<tr>
<td>NOTE: Students not enrolled in the Computer Science Major or Specialist program at the <strong>FAS UTSG</strong>, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.</td>
</tr>
<tr>
<td><strong>Rationale:</strong></td>
</tr>
<tr>
<td>Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.</td>
</tr>
<tr>
<td><strong>Consultation:</strong></td>
</tr>
<tr>
<td>Consultation between the Department of Computer Science and the Enrolment and Records team at Arts &amp; Science OFR.</td>
</tr>
<tr>
<td><strong>Resources:</strong></td>
</tr>
</tbody>
</table>
### CSC491H1: Capstone Design Project

**Exclusions:**

NOTE: Students not enrolled in the Computer Science Major or Specialist program at the FAS UTSG, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

**Rationale:**

Update to the exclusions language to reflect the fact that the Data Science Specialist is one of the Specialist programs offered by the Department of Computer Science.

**Consultation:**

Consultation between the Department of Computer Science and the Enrolment and Records team at Arts & Science OFR.

**Resources:**

### CSC494H1: Computer Science Project

**Exclusions:**

**Previous:**

NOTE: Students not enrolled in the Computer Science Major or Specialist program at FAS, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

**Rationale:**

We made this change on almost all our 3rd and 4th year courses previously and missed updating this course.

**Consultation:**

In consultation with Tamara Jones and Cheryl O'Donoghue from Arts & Science OFR.

**Resources:**

### CSC495H1: Computer Science Project

**Exclusions:**

**Previous:**

NOTE: Students not enrolled in the Computer Science Major or Specialist program at FAS, UTM, or UTSC, or the Data Science Specialist at FAS, are limited to a maximum of three 300-/400-level CSC/ECE half-courses.

**Rationale:**

We made this change on almost all our 3rd and 4th year courses previously and missed updating this course.

**Consultation:**

In consultation with Tamara Jones and Cheryl O'Donoghue from Arts & Science OFR.

**Resources:**

### SMC199H1: Intelligence, Artificial and Human

**Exclusions:**

**Previous:** CSC199H1, other first year foundations or College Ones courses

**New:** CSC199H1

**Rationale:**

Removal of exclusions that were previously added in error.

**Consultation:**

Consultation between the Office of the Principal and Vice-President at SMC and Enrolment Services & Records in the Office of the Faculty Registrar in September 2019.
Resources:
3 Course Modifications:

**EEB375H1: Organisms and Their Environment**

<table>
<thead>
<tr>
<th>Contact Hours:</th>
<th>Previous: Lecture: 24 / Tutorial: 12</th>
<th>New: Lecture: 24</th>
</tr>
</thead>
</table>

**Rationale:**
As there are no tutorials for this course, we're modifying this course record to ensure the correct instructional hours are reflected.

**Consultation:**
Internal. The tutorial hours was a mistake as we have never scheduled tutorials. The instructor does not offer tutorials.

**Resources:**

**EEB462H1: Phylogenetic Systematics**

**Exclusions:**
- Previous: BIO443H5
- New: BIO443H5

**Rationale:**
UTM’s BIO department approached us with a new course they were introducing this year, and said that it should be an exclusion to EEB462H1. I passed their description to the instructors who teach EEB462H1 and they agreed that there should be an exclusion.

**Consultation:**
Consultation between EEB and UTM's BIO department.

**Resources:**

**ENV334H1: Environmental Biology: Applied Ecology**

<table>
<thead>
<tr>
<th>Contact Hours:</th>
<th>Previous: Lecture: 24 / Practical: 36</th>
<th>New: Lecture: 36 / Tutorial: 12</th>
</tr>
</thead>
</table>

**Description:**
Applied issues in aquatic and terrestrial ecosystems, with an emphasis on land-use change and its impacts on watersheds. Topics include: ecology of agro-ecosystems and other human-managed ecosystems, bio-indicators of anthropogenic impacts, ecosystem restoration, and adaptive management. **Field trips and laboratory exercises:** A fee of approximately $15 may be charged for field trip transportation. Group projects address local management/restoration issues. (Lab Materials Fee: $25)

**Rationale:**
The proposed change will remove the labs and put a larger emphasis on two other components of the course: 1) in-class critiques/discussions of papers to deepen understanding of lecture topics, and 2) provide more support for the major group term project. Literature critiques/discussions were introduced 2 years ago and have improved learning outcomes, but the current structure has insufficient lecture time to do this properly. The group project works very well and is a central component of student learning, but currently lacks TA support to help students with group-work dynamics. The shift in lecture and practical time will enable us to maintain the current level of material taught, and increase the number of students in the group projects.
Ecology and Evolutionary Biology (FAS), Department of

- learning on literature critiques/discussions and group projects. The 2h lecture/practical period will further facilitate this by allowing group presentations and discussion with the entire class.

| Consultation: | Internal to department with course instructor and also consultation within School of the Environment |

| Resources: |
| **Budget Implications:** The academic unit will provide the resources required for this course from existing budget. |
1 Minor Program Modification:

Environment & Toxicology Specialist

Description:

This program is jointly sponsored by the Department of Pharmacology and Toxicology and the School of the Environment. For additional information see “School of the Environment”(www.environment.utoronto.ca)or consult our website:www.pharmtox.utoronto.ca.

The Environment and Toxicology Specialist program is an interdisciplinary program which spans the social, physical and life sciences and integrates study of the effects of chemicals not only on the health and behaviour of human beings but on whole ecosystems as the adverse effects associated with therapeutic and environmental chemicals are discussed. This program emphasizes the application of knowledge of environmental toxicology and risk assessment and prepares students for a variety of job opportunities following its completion. Graduates of the Environment and Toxicology program may pursue careers in scientific research, environmental science, conservation science, governmental agencies, consulting agencies, and within chemical, manufacturing or agriculture industries. Students learn to integrate basic environmental and life science with particular aspects of clinical toxicology and related areas through lectures, tutorials, and laboratory and independent research project experience. The senior independent research project course enables students to gain valuable research experience while working under the supervision of an individual faculty member in either a laboratory-based or a non-laboratory-based setting.

The Professional Experience Year Co-op Program (PEY Co-op) internship program is a 12-16 month paid employment placement within pharmaceutical/biotechnology/chemical companies, university research laboratories, university-affiliated organizations, consulting companies or government research agencies. The PEY Co-op takes place between the 3rd and 4th years of undergraduate study and is open to Specialists in Pharmacology and Biomedical Toxicology who have a cGPA of at least 3.0. Students who participate in this program agree to return to their SPE program in the Department to complete their 4th year and their degree. The PEY Co-op internship provides an excellent opportunity for real-world experience in drug development, project management, client relations, basic and clinical research, information management and regulatory affairs.

Completion Requirements:

(14 full courses or their equivalent, including 4.0 300+-level courses, 1.0 of which must be at the 400-level).

First Year: BIO120H1; BIO130H1; CHM135H1; CHM136H1; and at least 1.0 FCE from PHY131H1; PHY132H1; MAT135H1; MAT136H1

Second Year: BCH210H1; BIO230H1/BIO255H1; ENV221H1; ENV222H1, PCL201H1 and CHM247H1. One FCE from (BIO270H1, BIO271H1)/(PSL300H1, PSL301H1) (see NOTE 1)

Third and Fourth Years: BIO220H1; ENV234H1; JGE321H1; ENV334H1; CHM210H1; PCL302H1; PCL362H1; (PCL482H1, PCL483H1)/PCL473Y1
One from STA220H1/STA221H1/STA288H1/EEB225H1 (see NOTE 2)
One from ENV421H1/PCL367H1/PCL474Y1 (see NOTE 2)
At least 1.0 FCE from: ENV341H1; PHY231H1; ENV337H1/JEE337H1; CHM310H1; ESS463H1; JPM300H1; PCL477H1; PCL481H1; PCL484H1; PCL486H1; PCL490H1; LMP301H1; LMP363H1 (see NOTE 3)

An Integrative, Inquiry-Based Activity Requirement must be satisfied.

The requirement for an integrative, inquiry-based and/or experiential activity must be met by completing at least one of the following: PCL297H1, PCL367H1, PCL397Y0, ENV421H1, PCL474Y1, Professional Experience Year Co-op Program
NOTES:
1. PSL300H1 and PSL301H1 require MAT100/PHY100-series courses.
2. PCL201H1, and PCL302H1 are pre-requisites for students intending to take PCL474Y1. Students intending to take PCL474Y1 must obtain permission from the Undergraduate Student Advisor of the School of the Environment 3 months prior to the intended date of enrolment. Students must also consult with the Department of Pharmacology and Toxicology at least 3 months prior to the intended date of enrolment.
3. Students taking PCL481H1 must take PCL302H1 and PCL362H1 as prerequisites. Students taking PCL477H1 must take BCH210H1 prior. **Students taking ENV421H1 or PCL367H1 must take 1.5 FCE from program electives requirement list of courses to ensure 15 FCE program credits.**

<table>
<thead>
<tr>
<th>Description of Proposed Changes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rationale:</td>
</tr>
<tr>
<td>Impact:</td>
</tr>
<tr>
<td>Consultation:</td>
</tr>
<tr>
<td>Resource Implications:</td>
</tr>
</tbody>
</table>
10 Course Modifications:

CJH332H1: Cellular and Molecular Neurobiology of the Synapse

<table>
<thead>
<tr>
<th>Contact Hours:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous: Lecture: 24</td>
</tr>
<tr>
<td>New: Lecture: 36</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rationale:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correcting hours.</td>
</tr>
</tbody>
</table>

| Consultation:                                     |

| Resources:                                        |

HMB201H1: Introduction to Fundamental Genetics and its Applications

<table>
<thead>
<tr>
<th>Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Interdisciplinary course provides a comprehensive introduction to a variety of therapeutic approaches including gene therapy, CRISPR-based gene editing, epigenetic manipulations &amp; regenerative medicine. This course consists of three parts: the genetic basis, tools and techniques of gene &amp; genome manipulations; biotechnology; medical, environmental and agricultural biotechnology applications; and ethical, legal and social aspects of modern biotechnology as it pertains (including approaches to human health risk assessment, reduction and wellbeing acceptance). A prime example used in the third part is the controversy over genetically modified foods.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rationale:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clarifying what is taught in the class.</td>
</tr>
</tbody>
</table>

| Consultation:                                     |

| Resources:                                        |

HMB402H1: Topics in Translational Medicine

<table>
<thead>
<tr>
<th>Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td>The bridge between basic scientific research and clinical practice integrates fundamental knowledge about molecular/cellular mechanisms and clinical disorders to increase the potential for new medical treatments, therapies and interventions as well as understanding of disease processes. Specific topics vary from year to year and will be based on the course instructor's area(s) of expertise.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rationale:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Just housekeeping.</td>
</tr>
</tbody>
</table>

| Consultation:                                     |

| Resources:                                        |
HMB440H1: Dementia

Contact Hours:
- Previous: Lecture: 18 / Practical: 10 / Seminar: 6
- New: Lecture: 24

Rationale:
- Adjusting hours to reflect how the course is taught.

Consultation:

Resources:

HMB450H1: Neurodevelopmental Disorders and Diseases

Abbreviated Title:
- Neurodev Disorders Disorderse

Description:

Proper development of the human brain is essential for human health. This course will examine how neurodevelopment failures contribute to neurological disorders and diseases, such as epilepsy and autism. Current research from basic, translational, and clinical perspectives will be examined using case studies: The impact of neurodevelopmental disorders and diseases on the individual and community will be discussed.

Rationale:
- Reflecting the course as taught.

Consultation:

Resources:

HMB470H1: Exercise and Sports Medicine

Contact Hours:
- Previous: Lecture: 20 / Seminar: 4
- New: Lecture: 22 / Seminar: 4

Description:

This course considers the health benefits introduces biomechanics and risks of different forms of exercise, with a goal of understanding how people should exercise, and how much, depending builds on their athletic and health goals. It introduces elements knowledge of exercise science including the biomechanics of tissues injury and injuries dysfunction to develop an a systematic understanding of how both the quantity risk, injury prevention, and quality initial management of movement injuries in sports and loading contribute to healthy training and/or injury physical activities. Some common injuries additional topics include doping in sport; travel issues in competitive sport such as knee injuries; and concussions are used as examples of how various patterns of loading can cause injuries ethical issues in clinical sport medicine.

Rationale:
- From the course instructor Dr. Doug Richards:
The course has actually evolved slowly over the last decade. When I first started teaching it, Valerie specifically wanted doping in sport and the surrounding ethics to be heavily featured - we spent a third of the course on just that issue throughout her tenure as Director. Based on feedback from students that that part of the course was a bit disconnected from the rest, and that they wanted more about injuries and healthy exercise, I discussed it with Melanie when she assumed the HMB Director's chair. She agreed to allow me to evolve the course along those lines, and I have done so for the last few years. I have devoted more class times to the issue of what constitutes optimal exercise or training (depending on health and performance goals), and the feedback from the students has been positive from my perspective.

Consultation:

Resources:

HMB471H1: Performance Enhancement

Abbreviated Title:
Performance Enhancement Enhancem

Contact Hours:
- Previous: Lecture: 20 / Seminar: 4
- New: Lecture: 24 / Practical: 4

Rationale:
Correcting the hours.

Consultation:

Resources:

HMB474H1: Dental Sciences

Contact Hours:
- Previous: Lecture: 12 / Seminar: 12
- New: Lecture: 20 / Seminar: 4

Rationale:
Correcting hours.

Consultation:

Resources:

HMB489H1: Advanced Laboratory in Human Biology

Contact Hours:
- Previous: Practical: 72
- New: Practical: 36 / Seminar: 12

Rationale:
Correcting hours to reflect what is taught: a 3 hour lab with a one hour seminar.

Consultation:

Resources:
### JHA410H1: Clinical Neuroimaging

**Description:**

This course focuses on the use of neuroimaging techniques in understanding how trauma, disorders, and disease impact neural structure and function. Lectures will focus on introduction to techniques local and long-range neural impact of pathology and clinical/research applications neuroimaging assessment. Lab work will focus on the development of practical skills including image processing, analyses, and experimental design.

### Rationale:

Description update.

### Consultation:

### Resources:
1 Course Modification:

INS240Y1: Ecological Interactions: Intro to Indigenous and Western Sciences

<table>
<thead>
<tr>
<th>Contact Hours:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous: Lecture: 48 / Practical: 72</td>
</tr>
<tr>
<td>New: Lecture: 72 / Practical: 72</td>
</tr>
</tbody>
</table>

Rationale:

Consultation:

Resources:
3 Course Modifications:

**JLS473H1: Adult Speech and Language Disorders**

**Description:**

Students are introduced to the etiologies and characteristics of speech and language disorders in adults, associated with aphasia, neurodegenerative disorders, and head injuries. The effects of communication handicaps on the individual and theoretical underpinnings of the major intervention approaches for adults are discussed. *(Given by the Departments of Linguistics and Speech Language Pathology. (Not offered every year)*

**Rationale:**

The addition of "(Not offered every year)" to reflect the fact that we do not have instructors to teach these courses every year.

**Consultation:**

**Resources:**

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**JLS475H1: Literacy and Reading Disorders**

**Description:**

Literacy and Reading Disorders is an introduction to the typical development of emergent literacy skills, including oral language, phonological awareness, narratives, and emergent writing in children; a discussion of the effects of language disorders on emergent literacy skills; a survey of approaches to intervention for children’s emergent literacy skills. *(Given by the Departments of Linguistics and Speech Language Pathology. (Not offered every year)*

**Rationale:**

The addition of "(Not offered every year)" to reflect the fact that we do not have instructors to teach these courses every year.

**Consultation:**

**Resources:**

---

**JLS476H1: Linguistics in the Workforce: Clinical Practice and Research**

**Description:**

This course exposes students to research and practical approaches in the context of health professions of relevance to linguistics students, especially audiology and speech-language pathology. Students learn about evidence-informed practice, research methodologies, practice approaches and theories in the health professions. Students will be poised to benefit from optional service learning placements during or following the course, in research laboratories or clinical settings. Successful completion of this course provides students with exposure and experience of use in their applications to audiology, speech-language pathology, and other clinical programs and in their future health or graduate studies. Not eligible for CR/NCR option. *(Not offered every year)*.
<table>
<thead>
<tr>
<th><strong>Rationale:</strong></th>
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</thead>
<tbody>
<tr>
<td>The addition of &quot;(Not offered every year)&quot; to reflect the fact that we do not have instructors to teach these courses every year.</td>
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</table>

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<tr>
<th><strong>Consultation:</strong></th>
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</table>

| **Resources:** |
3 Minor Program Modifications:

**Biomedical Toxicology Specialist**

**Enrolment Requirements:**

This is a limited enrolment program that can only accommodate a limited number of students. Eligibility will be competitive and based on a student’s marks in the 3.0 required first-year courses:

BIO120H1, BIO130H1, (CHM135H1, CHM136H1)/CHM151Y1, and 1.0 FCE from (MAT135H1, MAT136H1)/MAT137Y1/MAT157Y1/(PHY131H1, PHY132H1)/(PHY151H1, PHY152H1) with an average of at least 70% on these 3.0 full-course equivalents (FCEs) and a final mark of at least 60% in each course.

Achieving these estimated marks does not guarantee admission to the program in any given year.

While it is difficult to predict what will be competitive course marks and average in a given year, based on previous years, the estimate is: course marks = mid 80s; average = mid 80s.

Students must apply to this program on the Arts & Science Faculty Registrar's Office website (see the Arts & Science Program Toolkit for application procedures). **Students wishing to enroll in the Biomedical Toxicology Specialist will initially apply to the Specialist in Pharmacology and Biomedical Toxicology (ASSPE2340). After completion of first year pre-requisite courses and during the spring of their second year of study (and completion of PCL201H1) students can then choose to apply to the Biomedical Toxicology Specialist.** First and second year courses are the same for all Specialist programs within the Department (ASSPE2082/ASSPE2340/ASSPE2573).

Students will follow the calendar year in which they initially enter one of our programs (students who are enrolled in the Biomedical Toxicology or the Pharmacology Specialist will follow the requirements for the calendar year in which they first enrolled in the Specialist in Pharmacology and Biomedical Toxicology (ASSPE2340)).

Students cannot combine the Biomedical Toxicology Specialist with either departmental Major programs (Biomedical Toxicology or Pharmacology).

Students wishing to enroll after their second year who have taken PCL201H1 will be considered on a case by case basis. Successful completion of required pre-requisite courses is required to further enroll in upper level program courses. Students may not transfer to the Major program from the Specialist after completion of PCL474Y1 or PEY Co-op.

**Completion Requirements:**

Students will follow the calendar year in which they initially enter one of our programs (ie for the majority of students that will be ASSPE2340).

(14.5 full courses or their equivalent)

First Year: BIO120H1; BIO130H1; (CHM135H1, CHM136H1)/CHM151Y1; and 1 FCE from any combination of (MAT135H1, MAT136H1); PHY131H1/PHY151H1; PHY132H1/PHY152H1 (see NOTE 1)

Second Year: BCH210H1; BIO230H1/BIO255H1; BIO260H1/HMB265H1; CHM247H1/CHM249H1; STA288H1; PCL201H1; (PSL300H1, PSL301H1) (NOTE: PSL201Y1 is not acceptable)

Third Year: PCL302H1; PCL362H1; at least 0.5 FCE from PCL367H1 or PCL368H1

Third or Fourth Year: LMP363H1 and two and a half (2.5 FCE) full-credit equivalent with at least 1.5 full credit equivalent from PCL courses: JPM300H1/PCL345H1/PCL367H1 or PCL368H1 (see NOTE 2)/PCL389H1/PCL475H1/PCL476H1/PCL475Y1/PCL477H1/PCL484H1/PCL486H1/PCL490H1/JPM400Y1/ANA301H1/CHM310H1/ESS463H1/
An Integrative, Inquiry-Based Activity Requirement must be satisfied.

The requirement for an integrative, inquiry-based and/or experiential activity must be met by completing at least one of the following: PCL297H1, PCL389H1, PCL397Y0, PCL472Y1, PCL474Y1, JPM400Y1, Professional Experience Year Co-op Program

NOTES:
1. Any PHY/MAT courses should be completed during the first year and included for program enrolment.

2. At least 0.5 FCE from PCL367H1 or PCL368H1 is required for the program, however if desired the alternative course can be taken as a program elective.

3. Enrolment in any of PCL474Y1 or JPM400Y1 is limited and requires permission from the Department of Pharmacology and Toxicology. Students must receive prior consent from the course coordinator according to Departmental guidelines before the Department will register them in the course. Students can take either course as their required independent project, or may take JPM400Y1 as an additional elective. It is the student’s responsibility to make all necessary preparations before the session starts (see course description).

Professional Experience Year Co-op Program:

The Professional Experience Year Co-op Program (PEY Co-op) internship program is a 12-16 month paid employment placement within pharmaceutical/biotechnology/chemical companies, university research laboratories, university-affiliated organizations, consulting companies or government research agencies. The PEY Co-op takes place between the 3rd and 4th years of undergraduate study and is open to Specialists in Biomedical Toxicology who have a cGPA of at least 3.0. Students who participate in this program agree to return to their SPE program in the Department to complete their 4th year and their degree. The PEY Co-op internship provides an excellent opportunity for real-world experience in drug development, project management, client relations, basic and clinical research, information management and regulatory affairs.

Description of Proposed Changes:

Rationale:

Impact:

Consultation:

Resource Implications:

Pharmacology Specialist

Enrolment Requirements:

This is a limited enrolment program that can only accommodate a limited number of students. Eligibility will be competitive and based on a student’s marks in the 3.0 required first-year courses:

BIO120H1, BIO130H1, (CHM135H1, CHM136H1)/CHM151Y1, and 1.0 FCE from (MAT135H1, MAT136H1)/MAT137Y1/MAT157Y1/(PHY131H1, PHY132H1)/(PHY151H1, PHY152H1) with an average of at least 70% on these 3.0 full-course equivalents (FCEs) and a final mark of at least 60% in each course.
Achieving these estimated marks does not guarantee admission to the program in any given year.

While it is difficult to predict what will be competitive course marks and average in a given year, based on previous years, the estimate is: course marks = mid 80s; average = mid 80s.

Students must apply to this program on the Arts & Science Faculty Registrar's Office website (see the Arts & Science Program Toolkit for application procedures). Students wishing to enroll in the Pharmacology Specialist will initially apply to the Specialist in Pharmacology and Biomedical Toxicology (ASSPE2340). After completion of first year pre-requisite courses and during the spring of their second year of study (and completion of PCL201H1) students can then choose to apply to the Pharmacology Specialist. First and second year courses are the same for all Specialist programs within the Department (ASSPE2082/ASSPE2340/ASSPE2573).

Students will follow the calendar year in which they initially enter one of our programs (students who are enrolled in the Biomedical Toxicology or the Pharmacology Specialist will follow the requirements for the calendar year in which they first enrolled in the Specialist in Pharmacology and Biomedical Toxicology (ASSPE2340)). Students cannot combine the Biomedical Toxicology Specialist with either departmental Major programs (Biomedical Toxicology or Pharmacology).

Students wishing to enroll after their second year who have taken PCL201H1 will be considered on a case by case basis. Successful completion of required pre-requisite courses is required to further enroll in upper level program courses. Students may not transfer to the Major program from the Specialist after completion of PCL472Y1 or PEY Co-op.

Completion Requirements:

Students will follow the calendar year in which they initially enter one of our programs (i.e., for the majority of students that will be ASSPE2340).

(14.5 full courses or their equivalent)

First Year: BIO120H1; BIO130H1; (CHM135H1, CHM136H1)/CHM151Y1; and 1 FCE from any combination of (MAT135H1, MAT136H1); PHY131H1/PHY151H1; PHY132H1/PHY152H1 (see NOTE 1)

Second Year: BCH210H1; BIO230H1/BIO255H1; BIO260H1/HMB265H1; CHM247H1/CHM249H1; STA288H1; PCL201H1; (PSL300H1, PSL301H1)/(NOTE: PSL201Y1 is not acceptable)

Third Year: BCH311H1/PSL350H1; PCL302H1; at least 0.5 FCE from PCL367H1 or PCL368H1

Third or Fourth Year: PCL469H1 and 3.5 full-course equivalents with at least 1.5 full credit equivalents from PCL courses: JPM300H1/PCL345H1/PCL367H1 or PCL368H1 (see NOTE 2)/PCL389H1/PCL475H1/PCL476H1/PCL475Y1/PCL477H1/PCL484H1/PCL486H1/PCL490H1/JPM400Y1/ANA300Y1/BCH340H1/BCH350H1

Fourth Year: PCL402H1; PCL470H1/PCL470Y1; PCL472Y1/JPM400Y1 (see NOTE 3)

An Integrative, Inquiry-Based Activity Requirement must be satisfied.

The requirement for an integrative, inquiry-based and/or experiential activity must be met by completing at least one of the following: PCL297H1, PCL389H1, PCL397Y0, PCL472Y1, PCL474Y1, JPM400Y1, Professional Experience Year Co-op Program

NOTES:

1. Any PHY/MAT courses should be completed during the first year and included for program enrolment.

2. At least 0.5 FCE from PCL367H1 or PCL368H1 is required for the program, however if desired the alternative course can be taken as a program elective.

3. Enrolment in either PCL472Y1 or JPM400Y1 is limited and requires permission from the Department of
Pharmacology & Toxicology (MED), Department of Pharmacology and Toxicology. Students must receive prior consent from course coordinator according to Departmental guidelines before the Department will register them in the course. Students can take either course as their required independent project, or may take JPM400Y1 as an additional elective. It is the student’s responsibility to make all necessary preparations before the session starts (see course description).

Professional Experience Year Co-op Program:

The Professional Experience Year Co-op Program (PEY Co-op) internship program is a 12-16 month paid employment placement within pharmaceutical/biotechnology/chemical companies, university research laboratories, university-affiliated organizations, consulting companies or government research agencies. The PEY Co-op takes place between the 3rd and 4th years of undergraduate study and is open to Specialists in Pharmacology who have a cGPA of at least 3.0. Students who participate in this program agree to return to their SPE program in the Department to complete their 4th year and their degree. The PEY Co-op internship provides an excellent opportunity for real-world experience in drug development, project management, client relations, basic and clinical research, information management and regulatory affairs.

Description of Proposed Changes:

Rationale:

Impact:

Consultation:

Resource Implications:

Specialist in Pharmacology and Biomedical Toxicology

Enrolment Requirements:

This is a limited enrolment program that can only accommodate a limited number of students. Eligibility will be competitive and based on a student’s marks in the 3.0 required first-year courses:

BIO120H1, BIO130H1,(CHM135H1, CHM136H1)/ CHM151Y1, and 1.0 FCE from (MAT135H1, MAT136H1)/ MAT137Y1/MAT157Y1/(PHY131H1, PHY132H1)/(PHY151H1, PHY152H1) with an average of at least 70% on these 3.0 full-course equivalents (FCEs) and a final mark of at least 60% in each course.

Achieving these estimated marks does not guarantee admission to the program in any given year.

While it is difficult to predict what will be competitive course marks and average in a given year, based on previous years, the estimate is: course marks = mid 80s; average = mid 80s.

Students must apply to this program on the Arts & Science Faculty Registrar's Office website (see the Arts & Science Program Toolkit for application procedures). Students will follow the calendar year in which they initially enter one of our programs. Students cannot combine the Biomedical Toxicology Specialist with either departmental Major programs (Biomedical Toxicology or Pharmacology).

Students wishing to enroll after their second year who have taken PCL201H1 will be considered on a case by case basis. Successful completion of required pre-requisite courses is required to further enroll in upper level program courses. Students may not transfer to the Major program from the Specialist after completion of PCL472Y1/PCL474Y1 courses or PEY Co-op.
Completion Requirements:

Students will follow the calendar year in which they initially enter one of our programs (i.e., for the majority of students that will be ASSPE2340).

(15 full courses or their equivalent)

First Year: BIO120H1; BIO130H1; (CHM135H1, CHM136H1)/CHM151Y1; and 1 FCE from any combination of (MAT135H1, MAT136H1); PHY131H1/PHY151H1; PHY132H1/PHY152H1 (see NOTE 1)

Second Year: BCH210H1; BIO230H1/BIO255H1; BIO260H1/HMB265H1; CHM247H1/CHM249H1; STA288H1; PCL201H1; (PSL300H1, PSL301H1) (NOTE: PSL201Y1 is not acceptable)

Third Year: BCH311H1/PSL350H1; PCL302H1; PCL362H1; at least 0.5 FCE from PCL367H1 or PCL368H1 (see NOTE 2)

Third or Fourth Year: LMP363H1, PCL469H1, and a one and half (1.5 FCE) full-credit equivalent from the following courses: JPM300H1/PCL345H1/PCL367H1 or PCL368H1 (see NOTE 2)/PCL389H1/PCL475H1/PCL476H1/PCL475Y1/PCL477H1/PCL484H1/PCL486H1/PCL490H1/JPM400Y1/LMP301H1. Additional courses that may strengthen your background in this program can be taken, but will not count towards your program: ANA300Y1/ANA301H1/BCH340H1/CHM310H1/ESS463H1

Fourth Year: PCL402H1; PCL470H1/PCL470Y1; (PCL482H1, PCL483H1)/PCL473Y1; PCL472Y1/PCL474Y1/JPM400Y1 (see NOTE 3); PCL481H1

An Integrative, Inquiry-Based Activity Requirement must be satisfied.

The requirement for an integrative, inquiry-based and/or experiential activity must be met by completing at least one of the following: PCL297H1, PCL389H1, PCL397Y0, PCL472Y1, PCL474Y1, JPM400Y1, Professional Experience Year Co-op Program.

NOTES:
1. Any PHY/MAT courses should be completed during the first year and included for program enrolment.
2. At least 0.5 FCE from PCL367H1 or PCL368H1 is required for the program, however if desired the alternative course can be taken as a program elective.
3. Enrolment in any of PCL472Y1/PCL474Y1 or JPM400Y1 is limited and requires permission from the Department of Pharmacology and Toxicology. Students must receive prior consent from the course coordinator according to Departmental guidelines before the Department will register them in the course. Students can take either course as their required independent project, or may take JPM400Y1 as an additional elective. It is the student’s responsibility to make all necessary preparations before the session starts (see course description).

Professional Experience Year Co-op Program:

The Professional Experience Year Co-op Program (PEY Co-op) internship program is a 12-16 month paid employment placement within pharmaceutical/biotechnology/chemical companies, university research laboratories, university-affiliated organizations, consulting companies or government research agencies. The PEY Co-op takes place between the 3rd and 4th years of undergraduate study and is open to Specialists in Pharmacology and Biomedical Toxicology who have a cGPA of at least 3.0. Students who participate in this program agree to return to their SPE program in the Department to complete their 4th year and their degree. The PEY Co-op provides an excellent opportunity for real-world experience in drug development, project management, client relations, basic and clinical research, information management and regulatory affairs.

Description of Proposed Changes:
6 Course Modifications:

PCL200H1: Drugs & the Brain

Description:

Lectures introduce students to prescribed and illicit drugs that affect the brain. Lectures cover drug pharmacology and explain how drugs alter mood, perception, cognition, and arousal by affecting different aspects of brain function. The societal impact of these prescribed and illicit drugs is also discussed.

Note: This course is not intended for upper year students who have already completed BCH210H1 or other exclusion courses. Upper year Life Science students who are excluded and are interested in this content should look into PCL475H1 and/or PCL476H1 as the more appropriate choice.
### PCL475H1: Neuropsychopharmacology 1

**Abbreviated Title:**
Neuropsychopharmacology Neuropsychopharm 1

**Exclusions:**
- Previous: PCL475Y1; PSY396H1
- New: PCL475Y1

**Enrolment Limits:**
- Previous: 50
- New: 70

**Rationale:**

**Consultation:**

**Resources:**

### PCL476H1: Neuropsychopharmacology 2

**Abbreviated Title:**
Neuropsychopharmacology Neuropsychopharm 2

**Prerequisites:**
- Completion of at least 9.0 FCE, and PCL475H1 (or Permission of the Department)

**Rationale:**

**Consultation:**

**Resources:**

### PCL482H1: Biomedical Toxicology

**Prerequisites:**
- (PCL201H1, PCL302H1, PCL362H1), a minimum of 14 FCE or Permission of Department.

**Enrolment Limits:**
- Previous: 
- New: 4th year standing

**Rationale:**

**Consultation:**

**Resources:**

### PCL490H1: Advanced Topics in Pharmacology and Toxicology

**Prerequisites:**

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42
PCL302H1, and one of STA288H1/STA220H1/PCL376H1, a minimum of 14.0 FCE or Permission of the Department

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<thead>
<tr>
<th>Rationale:</th>
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<tr>
<td>Consultation:</td>
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<td>Resources:</td>
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</table>
6 Course Modifications:

**JPH441H1: Physical Science in Contemporary Society**

<table>
<thead>
<tr>
<th>Contact Hours:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous: Seminar: 24</td>
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<tr>
<td>New: Lecture: 24</td>
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<tr>
<th>Rationale:</th>
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<tbody>
<tr>
<td>Hours were listed as 24S. However, this has not been given as a seminar course in some time. This is now a lecture course, so the hours have been changed to 24L.</td>
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<th>Consultation:</th>
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<tr>
<td>Approved by Physics Dept undergraduate curriculum committee.</td>
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| Resources: |

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**PHY199H1: Dark Matter and Dark Energy are the New Black**

<table>
<thead>
<tr>
<th>Contact Hours:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous: Seminar: 48</td>
</tr>
<tr>
<td>New: Seminar: 24</td>
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<tr>
<th>Rationale:</th>
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<tbody>
<tr>
<td>Corrected errors in Hours.</td>
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<td>Approved by Physics Dept. undergraduate curriculum committee.</td>
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| Resources: |

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**PHY424H1: Advanced Physics Laboratory**

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<th>Description:</th>
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<tr>
<td>Experiments in this course are designed to form a bridge to current experimental research. A wide range of exciting experiments relevant to modern research in physics is available. The laboratory is open from 9 a.m. - 4:5 p.m., Monday to Friday.</td>
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<th>Rationale:</th>
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<tbody>
<tr>
<td>Change only to stated opening hours of the lab, which no longer match reality. It used to be open from 9AM-5PM. More recently it is open only until 4PM.</td>
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<th>Consultation:</th>
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<tr>
<td>Approved by Physics Dept undergraduate curriculum committee</td>
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| Resources: |

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**PHY460H1: Nonlinear Physics**

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<tr>
<th>Contact Hours:</th>
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</thead>
<tbody>
<tr>
<td>Previous: Lecture: 36</td>
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<tr>
<td>New: Lecture: 24 / Tutorial: 12</td>
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| Resources: |
**Physics (FAS), Department of**

<table>
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<tr>
<th>Rationale:</th>
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<tbody>
<tr>
<td>Hours listed were 36L which does not reflect how the course is delivered. This has been correct to 24L/12T.</td>
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<th>Resources:</th>
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**PHY483H1: Relativity Theory I**

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<tr>
<th>Contact Hours:</th>
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<tbody>
<tr>
<td>Previous: Lecture: 24</td>
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<tr>
<td>New: Lecture: 24 / Tutorial: 12</td>
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<tr>
<th>Rationale:</th>
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<tbody>
<tr>
<td>Hours listed were 24L. However, for quite some time now there has also been a weekly tutorial for this course. Hours have therefore been changed to 24L/12T.</td>
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<th>Resources:</th>
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**PHY485H1: Laser Physics**

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<tr>
<th>Prerequisites:</th>
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<tbody>
<tr>
<td>PHY350H1, PHY358H1 <strong>PHY356H1</strong>, PHY385H1/ECE318H1</td>
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<th>Rationale:</th>
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<tbody>
<tr>
<td>Prerequisite change requested by instructor. A policy of requiring PHY358 was already in practice within the department. This change is just meant to formalize this. The previous prerequisite of PHY356 is a prerequisite for PHY358.</td>
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<td>Approved by Physics Dept. undergraduate curriculum committee.</td>
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<th>Resources:</th>
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</table>
### 1 Course Modification:

**PSL201Y1: Basic Human Physiology**

| Contact Hours: | Previous: *Lecture*: 48  
|               | New: *Lecture*: 44 / *Practical*: 24 |
| Description:  | A survey course covering all organ systems intended for students who are not proceeding further in Physiology. |
| Topics Covered: | Previous:  
|               | New: same as calendar (no change) |
| Methods of Assessment: | Previous:  
|               | New: on-line assessment/quizzes in-class group work 3 - mid-terms 1 - final exam |
| Mode of Delivery: | Previous: In Class  
|               | New: Hybrid |
| Rationale: | PSL201Y is often taken by students who require one full credit in physiology as part of our PSL minor PoST or for application to post-graduate programs such as Speech and Language Pathology, Physiotherapy, and Dentistry. As such, the course attracts a broad range of learners: some with more background knowledge than others. Over several years, PSL201Y has been taught in a traditional lecture format. We believe that student learning would be greatly enhanced by adopting a more evidence-based pedagogy. Specifically, we would like to teach PSL201Y in a hybrid format: combining on-line and in-class lectures together with in-class active learning involving group discussion and problem solving. The online lecture component will provide students with flexibility in terms of location, individual study time and allow multiple repetitive review of concepts they are having difficulty understanding. Pre-assessments will help to reinforce online course material and will prepare students for in-class group work. In class, diverse active learning strategies will be employed to further reinforce lecture content and to develop skills such as science communication, critical thinking and problem solving. Thus, we believe that updating the course format reflects the needs of our current students by both enhancing student learning and engagement, and by building transferable skills. |
| Consultation: | None needed -- this is a course that has been taught for decades -- we are only changing the teaching format. |
| Resources: | Instructor, room and TAs  
| Budget Implications: | The academic unit will provide the resources required for this course from existing budget. |
10 Course Modifications:

**ACT475H1: Insurance Products and Regulation with AXIS**

**Description:**

Case studies using leading actuarial application AXIS. Examine key types of insurance products and their pricing and valuation. Review representative developments in insurance regulations in US, Europe and Canada. Other topics include a brief introduction of the use of AI in life insurance. Demonstrate case studies using leading actuarial application AXIS.

**Rationale:**

**Consultation:**

N/A

**Resources:**

**STA220H1: The Practice of Statistics I**

**Exclusions:**


**Rationale:**

The other two second-year STA sequences are already listed as exclusions (i.e., STA248H1 and STA261H1), and we need to update this list to include the recently introduced course STA238H1. STA238 is a more advanced (in terms of theory and mathematical demands) introduction to Statistics than STA220 is. Students should not be able to take STA220 if they have already taken STA238H1. This change will update the exclusion list for STA220 based on our current course offerings.

**Consultation:**

N/A

**Resources:**

**STA255H1: Statistical Theory**

**Exclusions:**


**Topics Covered:**

Previous:

New:

**Rationale:**

The other two second-year STA sequences are already listed as exclusions (i.e., STA247/248H1 and STA257/261H1), and we need to update this list to include the recently introduced courses STA237/STA238H1. STA237/238H1 is a more advanced (in terms of theory and mathematical demands) introduction to Probability and Statistics than STA255 is. Students should not be able to take STA255 if they have already taken STA237H1 or STA238H1. This change will update the exclusion list for STA255 based on our current course offerings.

Correction of ECO220Y5 being listed as both a prerequisite and exclusion. It should only be a prerequisite.
Statistical Sciences (FAS), Department of

Consultation:
N/A

Resources:

STA257H1: Probability and Statistics I

Abbreviated Title:
Probability and Statistics & Stat I

Exclusions:
ECO227Y1, STA237H1, STA247H1, MAT377H1, STAB52H3, STA256H5, ECO227Y5

Rationale:
The other second year introduction to probability is listed as an exclusion (i.e., STA247H1), so we need to update this list to include the recently introduced courses STA237/STA238H1. STA237/238H1 is a less advanced (in terms of theory and mathematical demands) introduction to Probability and Statistics than STA257/261 is. Students should not be able to take STA257 if they have already taken STA237H1. This change will update the exclusion list for STA257 based on our current course offerings.

Consultation:
N/A

Resources:

STA261H1: Probability and Statistics II

Abbreviated Title:
Probability and Statistics & Stat II

Exclusions:
ECO227Y1/STA238H1, STA248H1, STA255H1, STAB57H3/STA260H5/ECO227Y5

Rationale:
The other second year introduction to probability is listed as an exclusion (i.e., STA248H1), so we need to update this list to include the recently introduced courses STA237/STA238H1. STA237/238H1 is a less advanced (in terms of theory and mathematical demands) introduction to Probability and Statistics than STA257/261 is, but similar in level to STA247/248H1. Students should not be able to take STA261 if they have already taken STA238H1.

We want to provide students an opportunity to upgrade their foundation in probability and statistics theory, so they will be better prepared for upper-year STA courses and so they will be eligible for a Statistics Major or Specialist program, so we have dropped STA255 (our lowest-level introduction to Statistics theory that cannot be used toward a Statistics Major or Specialist program) as an exclusion to STA261H1 so students have this option without having to take courses as extra. This change also makes the exclusions consistent with those in the first course in this sequence (i.e., STA257H1).

This change will update the exclusion list for STA261 based on our current course offerings and create an opportunity for students to upgrade their second year STA foundation to access the Statistics Major or Specialist programs and to better prepare themselves for upper-year STA courses.

Consultation:
No consultation was required to add STA238H1 (the recently course) as an exclusion. This is consistent with the current STA248H1 exclusion. Regarding dropping STA255 as an exclusion, this was discussed with the Statistics Undergraduate Committee and members all agreed with this change.

Resources:
### STA288H1: Statistics and Scientific Inquiry in the Life Sciences

**Exclusions:**
- STA220H1, PSY201H1, GGR270H1, ECO220Y1, ECO227Y1, SOC202H1, EEB225H1, HMB325H1, STA238H1, STA248H1, STA261H1, PCL376H1, STA215H5, STA220H5, STAB22H3

**Rationale:**
The other second year introduction to probability is listed as an exclusion (i.e., STA248H1), so we need to update this list to include the recently introduced course STA238H1. Students should not be able to take STA288 if they have already taken STA238H1. This change will update the exclusion list for STA288 based on our current course offerings.

**Consultation:**
N/A

**Resources:**

### STA496H1: Readings in Statistics

**Description:**
Independent study under the direction of a faculty member. Students wishing to take this course must have the permission of the Department of Statistical Sciences Undergraduate Secretary and of the prospective supervisor. Not eligible for CR/NCR option.

**Prerequisites:**
- **Previous:**
- **New:** At least 1.0 FCE 300+ level STA courses with a minimum grade of 80% in each course.

**Exclusions:**
- **Previous:**
- **New:** STA497H1/STA498Y1/STA499Y1

**Rationale:**
In recent years we have had several students with little Statistics background request these courses. Based on the current academic calendar, most other independent research/readings courses in other programs have prerequisites (e.g., upper-year courses, enrolment in specific programs, minimum grades on prerequisites, even CGPA). So, we have decided to introduce prerequisites to ensure a sufficient STA background for this course. Further, we have had a couple of students who keep requesting these courses. We’ve introduced our other readings courses as exclusions to limit the number of readings courses an individual student can take to ensure more of our qualified students have access to these courses.

This change will clarify requirements for students and prospective supervisors and will ensure that students have sufficient preparation to do an independent study 400-level STA course. Also, since supervision of these courses does not count toward faculty members’ teaching loads (i.e., we have limited capacity), introducing the other readings courses as exclusions will ensure more of our qualified students have access to these courses.

**Consultation:**
This was discussed with the Statistics Undergraduate Committee and members all supported these changes.

**Resources:**

### STA497H1: Readings in Statistics

**Description:**
Prerequisites:

Previous:
New: At least 1.0 FCE 300+ level STA courses with a minimum grade of 80% in each course.

Exclusions:

Previous:
New: STA496H1/STA498Y1/STA499Y1

Rationale:
In recent years we have had several students with little Statistics background request these courses. Based on the current academic calendar, most other independent research/readings courses in other programs have prerequisites (e.g., upper-year courses, enrolment in specific programs, minimum grades on prerequisites, even CGPA). So, we have decided to introduce prerequisites to ensure a sufficient STA background for this course. Further, we have had a couple of students who keep requesting these courses. We’ve introduced our other readings courses as exclusions to limit the number of readings courses an individual student can take to ensure more of our qualified students have access to these courses.

This change will clarify requirements for students and prospective supervisors and will ensure that students have sufficient preparation to do an independent study 400-level STA course. Also, since supervision of these courses does not count toward faculty members’ teaching loads (i.e., we have limited capacity), introducing the other readings courses as exclusions will ensure more of our qualified students have access to these courses.

Consultation:
This was discussed with the Statistics Undergraduate Committee and members all supported these changes.

Resources:

STA498Y1: Readings in Statistics

Description:

Independent study under the direction of a faculty member. Students Persons wishing to take this course must have the permission of the Department of Statistical Sciences Undergraduate Secretary and of the prospective supervisor. Not eligible for CR/NCR option.

Prerequisites:

Previous:
New: At least 1.0 FCE 300+ level STA courses with a minimum grade of 80% in each course.

Exclusions:

Previous:
New: STA496H1/STA497H1/STA499Y1

Rationale:
In recent years we have had several students with little Statistics background request these courses. Based on the current academic calendar, most other independent research/readings courses in other programs have prerequisites (e.g., upper-year courses, enrolment in specific programs, minimum grades on prerequisites, even CGPA). So, we have decided to introduce prerequisites to ensure a sufficient STA background for this course. Further, we have had a couple of students who keep requesting these courses. We’ve introduced our other readings courses as exclusions to limit the number of readings courses an individual student can take to ensure more of our qualified students have access to these courses.
This change will clarify requirements for students and prospective supervisors and will ensure that students have sufficient preparation to do an independent study 400-level STA course. Also, since supervision of these courses does not count toward faculty members’ teaching loads (i.e., we have limited capacity), introducing the other readings courses as exclusions will ensure more of our qualified students have access to these courses.

Consultation:
This was discussed with the Statistics Undergraduate Committee and members all supported these changes.

Resources:

**STA499Y1: Readings in Statistics**

**Description:**
Independent study under the direction of a faculty member. Students wishing to take this course must have the permission of the Department of Statistical Sciences Undergraduate Secretary and of the prospective supervisor. Not eligible for CR/NCR option.

**Prerequisites:**

- **Previous:**
- **New:** At least 1.0 FCE 300+ level STA courses with a minimum grade of 80% in each course.

**Exclusions:**

- **Previous:**
- **New:** STA496H1/STA497H1/STA498Y1

**Rationale:**
In recent years we have had several students with little Statistics background request these courses. Based on the current academic calendar, most other independent research/readings courses in other programs have prerequisites (e.g., upper-year courses, enrolment in specific programs, minimum grades on prerequisites, even CGPA). So, we have decided to introduce prerequisites to ensure a sufficient STA background for this course. Further, we have had a couple of students who keep requesting these courses. We’ve introduced our other readings courses as exclusions to limit the number of readings courses an individual student can take to ensure more of our qualified students have access to these courses.

This change will clarify requirements for students and prospective supervisors and will ensure that students have sufficient preparation to do an independent study 400-level STA course. Also, since supervision of these courses does not count toward faculty members’ teaching loads (i.e., we have limited capacity), introducing the other readings courses as exclusions will ensure more of our qualified students have access to these courses.

Consultation:
This was discussed with the Statistics Undergraduate Committee and members all supported these changes.

Resources:
2 Course Modifications:

**COG341H1: Issues on Attention, Perception and Consciousness**

<table>
<thead>
<tr>
<th>Prerequisites:</th>
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<tbody>
<tr>
<td>COG250Y1, COG250Y1, COG260H1 and one of PSY270H1/PHL342H1</td>
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<table>
<thead>
<tr>
<th>Rationale:</th>
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<tbody>
<tr>
<td>Housekeeping. COG260H1 was mistakenly added as pre-requisite.</td>
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<table>
<thead>
<tr>
<th>Consultation:</th>
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<tbody>
<tr>
<td>Consultation with the COG Advisory board and UC Curriculum committee.</td>
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</table>

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<tr>
<th>Resources:</th>
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</thead>
<tbody>
<tr>
<td><strong>Budget Implications:</strong> The academic unit will provide the resources required for this course from existing budget.</td>
</tr>
</tbody>
</table>

**COG343H1: Issues on Cognitive Science III: Computational Cognition**

<table>
<thead>
<tr>
<th>Prerequisites:</th>
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<tbody>
<tr>
<td>COG260H1, CSC148H1, STA220H1/PSY201H1</td>
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<table>
<thead>
<tr>
<th>Rationale:</th>
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