FOR APPROVAL **PUBLIC** **OPEN SESSION**

TO:	UTSC Academic Affairs Committee
SPONSOR:	Prof. Karin Ruhlandt, Vice-Principal Academic and Dean
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PRESENTER:	Prof. Katie Larson, Vice-Dean Teaching, Learning & Undergraduate Programs
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DATE:	April 22, 2026 for April 29, 2026
AGENDA ITEM:	13

ITEM IDENTIFICATION:

Minor Modifications: Undergraduate Curriculum Changes, Sciences UTSC (For approval)

JURISDICTIONAL INFORMATION:

The UTSC Academic Affairs Committee (AAC) "is concerned with matters affecting the teaching, learning and research functions of the Campus (AAC *Terms of Reference*, section 4)." Under section 5.6 of its *Terms of Reference*, the AAC is responsible for approval of "major and minor modifications to existing degree programs."

The AAC has responsibility for the approval of major and minor modifications to existing programs as defined by the University of Toronto Quality Assurance Process (UTQAP, Section 3.1 and 3.3).

GOVERNANCE PATH:

1. **UTSC Academic Affairs Committee [For Approval] (April 29, 2026)**

PREVIOUS ACTION TAKEN:

No previous action in governance has been taken on this item.

HIGHLIGHTS:

This package contains minor modifications to the undergraduate curriculum submitted by the UTSC Sciences academic units listed below. These changes require governance approval. Minor modifications

are defined as adjustments that do not substantially alter program or course learning outcomes but may involve modest changes to the structure of a program or course. Upon approval, these changes are in effect as of Fall 2026, for the 2026-27 academic year.

- Department of Computer and Mathematical Sciences (Report: Undergraduate Minor Curriculum Modifications Sciences for Approval)
    - 11 Program Modifications
        - SCMAJ2289: MAJOR PROGRAM IN STATISTICS (SCIENCE)
        - SCMIN2295: MINOR PROGRAM IN APPLIED STATISTICS (SCIENCE)
        - SCMAJ1688: MAJOR PROGRAM IN COMPUTER SCIENCE (SCIENCE)
        - SCSPE0510C: SPECIALIST (CO-OPERATIVE) PROGRAM IN COMPUTER SCIENCE - Comprehensive Stream (SCIENCE)
        - SCSPE0805C: SPECIALIST (CO-OPERATIVE) PROGRAM IN COMPUTER SCIENCE - Entrepreneurship Stream (SCIENCE)
        - SCSPE0455C: SPECIALIST (CO-OPERATIVE) PROGRAM IN COMPUTER SCIENCE - Information Systems Stream (SCIENCE)
        - SCSPE0795C: SPECIALIST (CO-OPERATIVE) PROGRAM IN COMPUTER SCIENCE – Software Engineering Stream (SCIENCE)
        - SCSPE0510: SPECIALIST PROGRAM IN COMPUTER SCIENCE - Comprehensive Stream (SCIENCE)
        - SCSPE0805: SPECIALIST PROGRAM IN COMPUTER SCIENCE - Entrepreneurship Stream (SCIENCE)
        - SCSPE0455: SPECIALIST PROGRAM IN COMPUTER SCIENCE - Information Systems Stream (SCIENCE)
        - SCSPE0795: SPECIALIST PROGRAM IN COMPUTER SCIENCE - Software Engineering Stream (SCIENCE)
    - 2 New Courses
        - CSCD60H3: High-Performance Computing
        - MATB23H3: Applied Linear Algebra II
    - 1 Course Modification:
        - CSCD84H3: Artificial Intelligence

- Department of Physical and Environmental Sciences (Report: Undergraduate Minor Curriculum Modifications Sciences for Approval)
    - 4 Program Modifications
        - SCMAJ1762: MAJOR PROGRAM IN BIOCHEMISTRY (SCIENCE)
        - SCMAJ1376: MAJOR PROGRAM IN CHEMISTRY (SCIENCE)
        - SCMAJ0361: MAJOR PROGRAM IN ENVIRONMENTAL CHEMISTRY (SCIENCE)
        - SCSPE0351A: SPECIALIST PROGRAM IN ENVIRONMENTAL GEOSCIENCE (SCIENCE)
    - 4 New Courses
        - CHMD65H3: Chemistry in Medical Diagnosis
        - EESD03H3: Physical Limnology

        - FSTC07H3: Baking: Science and Culture
        - FSTC14H3: Culinary Practice for Health
    - 1 Course Modification:
        - EESC29H3: Environmental Geophysics

FINANCIAL IMPLICATIONS:

There are no significant financial implications to the campus operating budget.

RECOMMENDATION:

Be It Resolved:

THAT the proposed Sciences undergraduate curriculum changes for the 2026-27 academic year, as detailed in the respective curriculum report, be approved effective September 1, 2026.

DOCUMENTATION PROVIDED:

1. Report - Undergraduate Minor Curriculum Modifications Sciences for Approval

UNIVERSITY OF TORONTO

University of Toronto Scarborough
2026-27 Curriculum Cycle
Undergraduate Minor Curriculum Modifications Sciences for Approval
April 29, 2026

Computer & Mathematical Sciences (UTSC), Department of

11 Program Modifications

SCMAJ2289: MAJOR PROGRAM IN STATISTICS (SCIENCE)

Completion Requirements:

Program Requirements
This program requires 8.0 credits.

1. A-level courses
[MATA22H3 Linear Algebra I for Mathematical Sciences or MATA23H3 Linear Algebra I]
[CSCA08H3 Introduction to Computer Science I or CSCA20H3 Computer Science for the Sciences]
[MATA30H3 Calculus I for Physical Sciences or MATA31H3 Calculus I for Mathematical Sciences*]
[MATA36H3 Calculus II for Physical Sciences or MATA37H3 Calculus II for Mathematical Sciences*]
*The sequence MATA31H3 and MATA37H3 is recommended. MATA31H3 is the prerequisite for MATA37H3.

2. B-level courses
[MATB23H3 Applied Linear Algebra II or MATB24H3 Linear Algebra II]
MATB41H3 Techniques of the Calculus of Several Variables I
MATB42H3 Techniques of the Calculus of Several Variables II
[STAB52H3 An Introduction to Probability or STAB53H3 Introduction to Applied Probability]*
STAB57H3 An Introduction to Statistics*

3. Upper-level courses
STAC67H3 Regression Analysis*
and
1.5 credits from the following:
any C- or D-level STA courses, except: STAC32H3, STAC53H3 and STAD29H3

4. Electives
1.5 credit from the following:
STAA57H3, STAB40H3, STAB41H3, MATB61H3, or any C- or D-level CSC, MAT or STA courses

* STAB52H3, STAB53H3, STAB57H3, STAC67H3 - These courses must be taken at UTSC. No substitutes are permitted without permission from the program supervisor.

Enrolment Requirements:

Enrolment Requirements

Enrolment in the Major Program in Statistics is limited.

Students may apply to enter the program after completing 4.0 credits, and must meet the requirements described below:

1. Students already admitted to the UTSC Year 1 Statistics admissions category:

Required Courses:

Students must have passed the following CSC and MAT courses: [CSCA08H3 or CSCA20H3], [MATA22H3 or MATA23H3], [MATA30H3 or MATA31H3] and [MATA36H3 or MATA37H3].

Required Grades:

Students that meet the following requirements will be admitted to the Statistics Major POSt:
a. A cumulative grade point average (CGPA) of at least 2.3 over the following courses: CSCA08H3/CSCA20H3, MATA22H3/MATA23H3, and MATA36H3/MATA37H3.

2. Students admitted to other UTSC Year 1 admissions categories:

Students that have been admitted to other CMS admissions categories (Computer Science or Mathematics) or any other UTSC Year 1 admissions categories

are eligible to apply for a Statistics Major POSt. Admission will be based on academic performance in the required A-level courses, identified above. The admission requirements change each year depending on available spaces and the pool of eligible applicants, and students are cautioned that there is no guarantee of admission; as such, students are strongly advised to plan to enroll in backup programs.

For more information about the admission requirements, please visit the following CMS webpage.

Description of Proposed Changes:
Adding MATA23H3 as an option to MATA22H3 in the STA major.
Adding MATB23H3 as an option to MATB24H3 in the STA major.

Rationale:
CMS is creating a new course, MATB23H3. While it covers much of the same material as MATB24H3, it focuses on the applied aspects of linear algebra rather than mathematical rigour. This version of the course provides suitable preparation for the Statistics Major and will be added as an option.

MATA23H3 will be an acceptable prerequisite for MATB23H3; accordingly, it will be included as an option within the Major Program in Statistics.

Impact:
None

Consultations:
Campus Curriculum Committee: September 29, 2025
UTSC Dept of Psychology (Ainsley L.) - October 16, 2025
Approved by DCC October 21, 2025.
RO Consultation: November 5, 2025.

Resource Implications:
None.

Proposal Status:
Under Review

SCMIN2295: MINOR PROGRAM IN APPLIED STATISTICS (SCIENCE)

Completion Requirements:

Program Requirements
This program requires a total of 4.0 credits as follows:

1. 0.5 credit from the following:
CSCA08H3 Introduction to Computer Science I
CSCA20H3 Introduction to Programming
CSC120H1 Computer Science for the Sciences
CSC121H1 Computer Science for Statistics

2. 0.5 credit from the following:
STAB22H3 Statistics I
STAB23H3 Introduction to Statistics for the Social Sciences
MGEB11H3 Quantitative Methods in Economics I

PSYA06H3 Introduction to Data Analysis for Scientific Literacy
(PSYB07H3) Data Analysis in Psychology
STA220H1 The Practice of Statistics I

3. 0.5 credit from the following:
STAB27H3 Statistics II
MGEB12H3 Quantitative Methods in Economics II

PSYB06H3 Applied Statistical Analysis for Psychology & Neuroscience
(PSYC08H3) Advanced Data Analysis in Psychology
STA221H1 The Practice of Statistics II

4. 1.5 credits as follows:
STAC32H3 Applications of Statistical Methods
STAC53H3 Applied Data Collection
STAD29H3 Statistics for Life and Social Scientists

5. 1.0 credit from the following:
[one of the following: any ACT, CSC, MAT, STA course]
[one of the following: MGEA02H3, MGEA06H3, MGEB02H3, MGEB06H3, MGEC11H3, MGED11H3, MGED70H3]
GGRB02H3 Geographic Thought: Critical Perspectives on Key Concepts in Human Geography ~~The Logic of Geographical Thought~~
HLTB15H3 ~~Introduction to~~ Health Research Methodology
[one of the following: MGFB10H3, MGFC30H3, MGOC10H3, MGMC01H3, MGMD01H3]
POLC11H3 Applied Statistics for Politics and Public Policy
PSYC06H3 Advanced Statistical Analysis for Psychology & Neuroscience

Enrolment Requirements:

Enrolment in the Minor in Applied Statistics is limited.

Students may apply to the program after completing [STAB27H3 or PSYB06H3 or (PSYC08H3) or MGEB12H3 or STA221H1].

Students who meet the following requirements will be admitted to the Minor in Applied Statistics POSt:

- A cumulative grade point average (CGPA) of at least 2.7 over [STAB22H3 or STAB23H3 or PSYA06H3 or (PSYB07H3) or MGEB11H3 or STA220H1] and [STAB27H3 or PSYB06H3 or (PSYC08H3) or MGEB12H3 or STA221H1]
- An overall CGPA of 2.50 at the time of application

Application for admission will be made to the Office of the Registrar through ACORN, during the Limited Program application periods. For more information on applying to limited enrolment programs, please visit the Office of the Registrar website.

For more information about the admission requirements, please visit the following CMS webpage.

Description of Proposed Changes:

1. Add STAB23H3 to the list of courses for the GPA calculation for POSt admission. STAB23H3 was inadvertently omitted from the POSt admission requirements statement. STAB23H3 is listed under Program Requirements (#2). Last year, we introduced limited program requirements and adding this course to the list of courses was inadvertently omitted.
2. Added the proposed new PSY courses PSYA06H3 and PSYB06H3, and bracketed PSYC08H3 to show retirement, within the list of courses included in the GPA calculation for POSt admission.
3. Add the proposed new PSY courses to the list of requirements for the program: PSYA06H3 as an option in requirement 2, PSYB06H3 as an option in requirement 3, and PSYC06H3 as an option in requirement 5.
4. Bracketed PSYB07H3 in requirement 2 and PSYC08H3 in requirement 4 to show they are now retired courses
5: Updated the course titles for GGRB02H3 and HLTB15H3 under requirement 5.

Rationale:

1. This is a housekeeping matter as the course is listed as an option in the program requirements.
2. This accounts for the proposed changes in the Psychology statistics courses.
3. This allows the proposed new Psychology statistics courses to be used as options to satisfy the program requirements.
4. Bracketed courses to show they are now retired. Changes made to ensure accuracy throughout the calendar
5: The course title for GGRB02H3 has been updated to Geographic Thought: Critical Perspectives on Key Concepts in Human Geography. The Department of Human Geography has emailed CMS for consultation. The Course title HLTB15H3 has been updated to Health Research Methodology. The OVPD office emailed CMS for this update as the title was updated Fall 2024.

Impact:

None

Consultations:

Campus Curriculum Committee: September 29, 2025
UTSC Dept of Psychology: October 16, 2025
Approved by DCC: October 21, 2025.
UTSC Dept of Human Geography: November 11, 2025
UTSC Dept of Health and Society: November 24, 2025
RO Consultation (Lindsey T): December 16, 2026

Resource Implications:

None

Proposal Status:

Under Review

SCMAJ1688: MAJOR PROGRAM IN COMPUTER SCIENCE (SCIENCE)

Completion Requirements:

Program Requirements

This program requires a total of 16 distinct courses (8.0 credits) satisfying all of the requirements listed below.

Note: Many Computer Science courses are offered across all three U of T campuses: U of T Scarborough, U of T Mississauga, and ~~both at U of T Scarborough and at~~ the St. George campus. When a course is offered at more than one campus, ~~both campuses in a given session,~~ U of T Scarborough students are expected to take that course at U of T Scarborough. The Department of Computer Science at the St. George campus and the Department of Mathematical and Computational Sciences at U of T Mississauga cannot guarantee space for U of T Scarborough students in their courses.~~, especially those offered at both campuses.~~

1. A-level courses (3.0 credits)

CSCA08H3 Introduction to Computer Science I
CSCA48H3 Introduction to Computer Science II
CSCA67H3 Discrete Mathematics
MATA22H3 Linear Algebra I for Mathematical Sciences
MATA31H3 Calculus I for Mathematical Sciences
MATA37H3 Calculus II for Mathematical Sciences

2. B-level courses (3.0 credits)

CSCB07H3 Software Design
CSCB09H3 Software Tools and Systems Programming
CSCB36H3 Introduction to the Theory of Computation
CSCB58H3 Computer Organization
CSCB63H3 Design and Analysis of Data Structures
and
0.5 credit from the following:*
MATB24H3 Linear Algebra II
STAB52H3 Introduction to Probability
***Note**: In making this choice, students should consider the prerequisites of courses they plan to take to satisfy requirements 3-4.

3. C-level courses in numerical computation and theory of computing (1.0 credit)
CSCC37H3 Introduction to Numerical Algorithms for Computational Mathematics
and
0.5 credit from the following:
CSCC63H3 Computability and Computational Complexity
CSCC73H3 Algorithm Design and Analysis

4. CSC electives (1.0 credit)
1.0 credits in any C- or D-level CSC courses.

Writing Recommendation:
Students are urged to take a course from the following list of courses by the end of their second year: ANTA01H3, ANTA02H3, CLAA06H3, (CTLA19H3), CTLA01H3, ENGA10H3, ENGA11H3, ENGB06H3, ENGB07H3, ENGB08H3, ENGB17H3, ENGB19H3, ENGB50H3, (ENGB51H3), GGRA02H3, GGRA03H3, GGRB05H3, (GGRB06H3), (HISA01H3), (HLTA01H3), (HUMA01H3), (HUMA11H3), (HUMA17H3), (LGGA99H3), LINA01H3, PHLA10H3, PHLA11H3, WSTA01H3.

Description:

Supervisor of Studies: R. Pancer, richard.pancer@utoronto.ca ~~(416-287-7679) Email: pancer@utsc.utoronto.ca~~

Program Objectives
This program provides basic knowledge of the foundations of computer science: modern computer software and hardware, theoretical aspects of computer science, and relevant areas of mathematics and statistics. This program is intended to be combined with other programs, typically a major program in another discipline.

Enrolment Requirements:

Enrolment Requirements

Enrolment in the Major in Computer Science is limited. Students may apply to enter the program after completing 4.0 credits, and must meet the requirements described below:

1. Students already admitted to the UTSC Year 1 Computer Science admissions category:

Required Courses:

Students must have passed the following CSC and MAT courses: CSCA08H3, CSCA48H3, CSCA67H3, MATA22H3, MATA31H3, and MATA37H3.

Required Grades:

Students that meet all of the following requirements will be admitted to a CS Major POSt:
a. A cumulative grade point average (CGPA) of at least 2.5 over the following courses: CSCA48H3, CSCA67H3, MATA22H3, and MATA37H3;
b. A final grade of at least B in CSCA48H3; and
c. A final grade of at least C- in two of the following: CSCA67H3, MATA22H3, and MATA37H3.

2. Students admitted to other UTSC Year 1 admissions categories:

Students that have been admitted to either the UTSC Year 1 Math or UTSC Year 1 Statistics admissions categories are eligible to apply for the Computer Science Major POSt. Admission will be based on academic performance in the required A-level courses, identified above. The admission requirements change each year depending on available spaces and the pool of eligible applicants, and students are cautioned that there is no guarantee of admission; as such, students are strongly advised to plan to enroll in backup programs.

Students that have not been admitted to a UTSC Year 1 CMS admissions category (Computer Science, Mathematics, or Statistics) must achieve a final grade of at least A- in both MATA31H3 and CSCA67H3 **the first time they complete these courses** in order to be eligible to apply for a CS Major POSt. **This is a strict requirement**. Admission will be based on academic performance in the required A-level courses, identified above. The admission requirements change each year depending on available spaces and the pool of eligible applicants, and students are cautioned that there is no guarantee of admission; as such, students are strongly advised to plan to enroll in backup programs.

For more information about the admission requirements, please visit the following CMS webpage.

Note: Students admitted to the program after second or third year will be required to pay retroactive deregulated program fees.

Description of Proposed Changes:
A minor update to the description, and an update to the completion requirements note to ensure consistency with the language used in the new Artificial Intelligence and Machine Learning stream.

Rationale:
The Supervisor of Studies' contact information was updated to reflect the current email address and to remove the phone number.
The updated note clarifies that Computer Science courses may be offered at UTM, and that when a course is offered at more than one campus, students in UTSC programs are expected to complete the course at UTSC.

Impact:
There is no impact on students. The update is clarificatory in nature and does not affect program requirements or learning outcomes.

Consultations:
Discussions took place between the department and the Dean’s Office in March and April 2026, including meetings on March 18 and 19, 2026.

A meeting with representatives from the Dean’s Office (Katie Larson, Maggie Cummings, Kevin Mak) and the Office of the Registrar (Lindsey Taylor) was held on April 1, 2026.

Resource Implications:
None

Proposal Status:
Under Review

SCSPE0510C: SPECIALIST (CO-OPERATIVE) PROGRAM IN COMPUTER SCIENCE - Comprehensive Stream (SCIENCE)

Description:

Academic Program Advisor: S. Calanza susan.calanza@utoronto.ca
Co-op Program Coordinator: coopsuccess.utsc@utoronto.ca

This program provides a working knowledge of the foundations of computer science: modern computer software and hardware, theoretical aspects of computer science, and relevant areas of mathematics and statistics. It also imparts an appreciation of the discipline's transformative impact on science and society. The program prepares students for further study and for careers in the computing industry. It comprises five ~~four~~ streams with different emphases:

The Comprehensive Stream provides a broad and balanced exposure to the discipline. It is the stream best-suited for students planning to pursue graduate study in computer science, but it is also suitable for other career paths.

The structure of the program requirements allows one to easily switch streams until relatively late in the program. Consequently, these streams should not be viewed as rigidly separated channels feeding students to different career paths, but as a flexible structure that provides computer science students guidance in their course selection based on their broad (but possibly fluid) interests.

In addition to their academic course requirements, students must successfully complete the additive Arts & Science Co-op Work Term and Course requirements.

Description of Proposed Changes:
The description of this stream has been updated to reflect the proposed creation of a new fifth stream in Artificial Intelligence and Machine Learning (AI & ML).

Rationale:
With the proposed creation of a new stream in AI & ML, the existing four streams within the Specialist in Computer Science are being updated to ensure students are aware of this additional option.

Impact:
This minor modification is expected to have minimal impact on students. The update is informational in nature and does not affect program requirements or learning outcomes.

Consultations:
Discussions took place between the department and the Dean’s Office in March and April 2026, including meetings on March 18 and 19, 2026.

A meeting with representatives from the Dean’s Office (Katie Larson, Maggie Cummings, Kevin Mak) and the Office of the Registrar (Lindsey Taylor) was held on April 1, 2026.

Resource Implications:
None

Proposal Status:
Under Review

SCSPE0805C: SPECIALIST (CO-OPERATIVE) PROGRAM IN COMPUTER SCIENCE - Entrepreneurship Stream (SCIENCE)

Description:

Academic Program Advisor: S. Calanza susan.calanza@utoronto.ca
Co-op Program Coordinator: coopsuccess.utsc@utoronto.ca

This program provides a working knowledge of the foundations of computer science: modern computer software and hardware, theoretical aspects of computer science, and relevant areas of mathematics and statistics. It also imparts an appreciation of the discipline's transformative impact on science and society. The program prepares students for further study and for careers in the computing industry. It comprises five ~~four~~ streams with different emphases:

The Entrepreneurship Stream includes a solid core of computer science and software engineering, while exposing students to the framework and the methodologies that underlie the development of innovative technology ideas into viable commercial opportunities. Enrolment into the Entrepreneurship stream will be limited to highly qualified and motivated students, and preference will be given to students enrolled in the Specialist (Co-op) Program.

The structure of the program requirements allows one to easily switch streams until relatively late in the program. Consequently, these streams should not be viewed as rigidly separated channels feeding students to different career paths, but as a flexible structure that provides computer science students guidance in their course selection based on their broad (but possibly fluid) interests.

Description of Proposed Changes:
The description of this stream has been updated to reflect the proposed creation of a new fifth stream in Artificial Intelligence and Machine Learning (AI & ML).

Rationale:
With the proposed creation of a new stream in AI & ML, the existing four streams within the Specialist in Computer Science are being updated to ensure students are aware of this additional option.

Impact:
This minor modification is expected to have minimal impact on students. The update is informational in nature and does not affect program requirements or learning outcomes.

Consultations:
Discussions took place between the department and the Dean’s Office in March and April 2026, including meetings on March 18 and 19, 2026.

A meeting with representatives from the Dean’s Office (Katie Larson, Maggie Cummings, Kevin Mak) and the Office of the Registrar (Lindsey Taylor) was held on April 1, 2026.

Resource Implications:

None

Proposal Status:
Under Review

SCSPE0455C: SPECIALIST (CO-OPERATIVE) PROGRAM IN COMPUTER SCIENCE - Information Systems Stream (SCIENCE)

Description:

Academic Program Advisor: S. Calanza susan.calanza@utoronto.ca
Co-op Program Coordinator: coopsuccess.utsc@utoronto.ca

This program provides a working knowledge of the foundations of computer science: modern computer software and hardware, theoretical aspects of computer science, and relevant areas of mathematics and statistics. It also imparts an appreciation of the discipline's transformative impact on science and society. The program prepares students for further study and for careers in the computing industry. It comprises five ~~four~~ streams with different emphases:

The Information Systems Stream has a similar focus as the Software Engineering Stream, but it provides additional exposure to certain aspects of business management. It is of special interest to students wishing to pursue careers in technical management but who have a deep interest in the technology.

The structure of the program requirements allows one to easily switch streams until relatively late in the program. Consequently, these streams should not be viewed as rigidly separated channels feeding students to different career paths, but as a flexible structure that provides computer science students guidance in their course selection based on their broad (but possibly fluid) interests.

Description of Proposed Changes:
The description of this stream has been updated to reflect the proposed creation of a new fifth stream in Artificial Intelligence and Machine Learning (AI & ML).

Rationale:
With the proposed creation of a new stream in AI & ML, the existing four streams within the Specialist in Computer Science are being updated to ensure students are aware of this additional option.

Impact:
This minor modification is expected to have minimal impact on students. The update is informational in nature and does not affect program requirements or learning outcomes.

Consultations:
Discussions took place between the department and the Dean’s Office in March and April 2026, including meetings on March 18 and 19, 2026.

A meeting with representatives from the Dean’s Office (Katie Larson, Maggie Cummings, Kevin Mak) and the Office of the Registrar (Lindsey Taylor) was held on April 1, 2026.

Resource Implications:
None

Proposal Status:
Under Review

SCSPE0795C: SPECIALIST (CO-OPERATIVE) PROGRAM IN COMPUTER SCIENCE – Software Engineering Stream (SCIENCE)

Description:

Academic Program Advisor: S. Calanza susan.calanza@utoronto.ca
Co-op Program Coordinator: coopsuccess.utsc@utoronto.ca

This program provides a working knowledge of the foundations of computer science: modern computer software and hardware, theoretical aspects of computer science, and relevant areas of mathematics and statistics. It also imparts an appreciation of the discipline's transformative impact on science and society. The program prepares students for further study and for careers in the computing industry. It comprises five ~~four~~ streams with different emphases

The Software Engineering Stream places a greater emphasis on the engineering side of the discipline, including computer systems and core applications.

The structure of the program requirements allows one to easily switch streams until relatively late in the program. Consequently, these streams should not be viewed as rigidly separated channels feeding students to different career paths, but as a flexible structure that provides computer science students guidance in their course selection based on their broad (but possibly fluid) interests.

Description of Proposed Changes:
The description of this stream has been updated to reflect the proposed creation of a new fifth stream in Artificial Intelligence and Machine Learning (AI & ML).

Rationale:
With the proposed creation of a new stream in AI & ML, the existing four streams within the Specialist in Computer Science are being updated to ensure students are aware of this additional option.

Impact:
This minor modification is expected to have minimal impact on students. The update is informational in nature and does not affect program requirements or learning outcomes.

Consultations:
Discussions took place between the department and the Dean’s Office in March and April 2026, including meetings on March 18 and 19, 2026.

A meeting with representatives from the Dean’s Office (Katie Larson, Maggie Cummings, Kevin Mak) and the Office of the Registrar (Lindsey Taylor) was held on April 1, 2026.

Resource Implications:
None

Proposal Status:
Under Review

SCSPE0510: SPECIALIST PROGRAM IN COMPUTER SCIENCE - Comprehensive Stream (SCIENCE)

Completion Requirements:

Program Requirements
The program requirements comprise a core of 17 courses (8.5 ~~18 courses (9.0~~ credits), common to all streams and additional requirements which depend on the stream, for a total of 27 courses (13.5 credits) for the Artificial Intelligence and Machine Learning, Comprehensive, Software Engineering, and Entrepreneurship streams, and 29 courses (14.5 credits) for the Information Systems stream.

Note: Many Computer Science courses are offered across all three U of T campuses: U of T Scarborough, U of T Mississauga, and ~~both at U of T Scarborough and at~~ the St. George campus. When a course is offered at more than one campus, ~~both campuses in a given session,~~ U of T Scarborough students are expected to take that course at U of T Scarborough. The Department of Computer Science at the St. George campus and the Department of Mathematical and Computational Sciences at U of T Mississauga cannot guarantee space for U of T Scarborough students in their courses.~~, especially those offered at both campuses.~~

Core (8.5 ~~9.0~~ credits)

1. Writing Requirement (0.5 credit)*
0.5 credit from the following: ANTA01H3, ANTA02H3, CLAA06H3, (CTLA19H3), CTLA01H3, ENGA10H3, ENGA11H3, ENGB06H3, ENGB07H3, ENGB08H3, ENGB09H3, ENGB17H3, ENGB19H3, ENGB50H3, (ENGB51H3), GGRA02H3, GGRA03H3, GGRB05H3, (GGRB06H3), (HISA01H3), (HLTA01H3), (ACMA01H3), (HUMA01H3), (HUMA11H3), (HUMA17H3), (LGGA99H3), LINA01H3, PHLA10H3, PHLA11H3, WSTA01H3.
***Note:** It is recommended that this requirement be satisfied by the end of the second year.

2. A-level courses (3.0 credits)
CSCA08H3 Introduction to Computer Science I
CSCA48H3 Introduction to Computer Science II
CSCA67H3 Discrete Mathematics
MATA22H3 Linear Algebra I for Mathematical Sciences
MATA31H3 Calculus I for Mathematical Sciences
MATA37H3 Calculus II for Mathematical Sciences

3. B-level courses (3.5 credits)
CSCB07H3 Software Design
CSCB09H3 Software Tools and Systems Programming
CSCB36H3 Introduction to the Theory of Computation
CSCB58H3 Computer Organization
CSCB63H3 Design and Analysis of Data Structures
MATB24H3 Linear Algebra II
STAB52H3 Introduction to Probability

4. C-level courses (1.5 credits)
CSCC43H3 Introduction to Databases
CSCC69H3 Operating Systems
CSCC73H3 Algorithm Design and Analysis

~~**5. D-level courses (0.5 credit)**~~
~~CSCD03H3 Social Impact of Information Technology~~

Comprehensive Stream
This stream requires a total of 27 courses (13.5 credits). In addition to the core requirements 1-4 ~~1-5~~ common to all streams, 10 ~~9~~ other distinct courses (5.0 ~~(4.5~~ credits) must be chosen to satisfy all of the following requirements:

5. Technology, Society, and Ethics course (0.5 credit)
CSCD03H3 Social Impact of Information Technology

6. Additional required courses (2.5 credits)
CSCC24H3 Principles of Programming Languages
CSCC37H3 Introduction to Numerical Algorithms for Computational Mathematics
CSCC63H3 Computability and Computational Complexity
CSCD37H3 Analysis of Numerical Algorithms for Computational Mathematics
MATB41H3 Techniques of the Calculus of Several Variables I

7. Electives from courses in computer systems and applications (1.0 credits)
Choose from:
CSCC01H3 Introduction to Software Engineering
CSCC09H3 Programming on the Web
CSCC10H3 Human-Computer Interaction
CSCC11H3 Introduction to Machine Learning and Data Mining
CSCC46H3 Social and Information Networks
CSCC85H3 Fundamentals of Robotics and Automated Systems
CSCD01H3 Engineering Large Software Systems
CSCD18H3 Computer Graphics
CSCD25H3 Advanced Data Science
CSCD27H3 Computer and Network Security
CSCD43H3 Database System Technology
CSCD58H3 Computer Networks
CSCD70H3 Compiler Optimization
CSCD84H3 Artificial Intelligence

CSC320H1 Introduction to Visual Computing
CSC401H1 Natural Language Computing
CSC413H1 Neural Networks and Deep Learning
CSC469H1 Operating Systems Design and Implementation
CSC485H1 Computational Linguistics
CSC488H1 Compilers and Interpreters

8. Electives from courses related to the theory of computing (0.5 credit)
Choose from:
MATC09H3 Introduction to Mathematical Logic
MATC32H3 Graph Theory and Algorithms for its Applications
MATC44H3 Introduction to Combinatorics
MATD16H3 Coding Theory and Cryptography
CSC438H Computability and Logic
CSC448H Formal Languages and Automata
CSC465H Formal Methods in Software Design

9. CSC, MAT, or STA elective (0.5 credit)
Any C- or D-level CSC, MAT, or STA course, excluding MATC82H3, MATC90H3, STAC32H3, STAC53H3 and STAD29H3.

Description:

Supervisor of Studies: R. Pancer, richard.pancer@utoronto.ca ~~(416-287-7679) Email: pancer@utsc.utoronto.ca~~

Program Objectives
This program provides a working knowledge of the foundations of computer science: modern computer software and hardware, theoretical aspects of computer science, and relevant areas of mathematics and statistics. It also imparts an appreciation of the discipline's transformative impact on science and society. The program prepares students for further study and for careers in the computing industry. It comprises five ~~four~~ streams with different emphases:

The Comprehensive Stream provides a broad and balanced exposure to the discipline. It is the stream best-suited for students planning to pursue graduate study in computer science, but it is also suitable for other career paths.

The structure of the program requirements allows one to easily switch streams until relatively late in the program. Consequently, these streams should not be viewed as rigidly separated channels feeding students to different career paths, but as a flexible structure that provides computer science students guidance in their course selection based on their broad (but possibly fluid) interests.

Enrolment Requirements:

Enrolment Requirements

Enrolment in the Specialist in Computer Science (all streams) is limited. Students may apply to enter the program after completing 4.0 credits, and must meet the requirements described below:

1. Students already admitted to the UTSC Year 1 Computer Science admissions category:

Required Courses:

Students must have passed the following CSC and MAT courses: CSCA08H3, CSCA48H3, CSCA67H3, MATA22H3, MATA31H3, and MATA37H3.

Required Grades:

Students that meet all of the following requirements will be admitted to a CS Specialist POSt*:
a. A cumulative grade point average (CGPA) of at least 2.5 over the following courses: CSCA48H3, CSCA67H3, MATA22H3, and MATA37H3;
b. A final grade of at least B in CSCA48H3; and
c. A final grade of at least C- in two of the following: CSCA67H3, MATA22H3, and MATA37H3.

*Students must select **one** stream of the CS Specialist as follows:
a. Students can select either the Comprehensive stream or the Software Engineering stream or the Artificial Intelligence and Machine Learning stream.
b. A limited number of students will be admitted to the Information Systems stream, depending on available space.
c. Admission to the Entrepreneurship stream will be based in part on submission of a Supplementary Application Form (SAF) available on the Department of Computer and Mathematical Sciences website. Applications for admission will be accepted once per academic year, during the April-May POSt admissions round.

2. Students admitted to other UTSC Year 1 admissions categories:

Students who ~~that~~ have been admitted to either the UTSC Year 1 Math or UTSC Year 1 Statistics admissions categories are eligible to apply for the Computer Science Specialist POSt. Admission will be based on academic performance in the required A-level courses, identified above. The admission requirements change each year depending on available spaces and the pool of eligible applicants, and students are cautioned that there is no guarantee of admission; as such, students are strongly advised to plan to enroll in backup programs.

Students who ~~that~~ have not been admitted to a UTSC Year 1 CMS admissions category (Computer Science, Mathematics, or Statistics) must achieve a final grade of at least A- in both MATA31H3 and CSCA67H3 **the first time they complete these courses** in order to be eligible to apply for a CS Specialist POSt. **This is a strict requirement.** Admission will be based on academic performance in the required A-level courses, identified above. The admission requirements change each year depending on available spaces and the pool of eligible applicants, and students are cautioned that there is no guarantee of admission; as such, students are strongly advised to plan to enroll in backup programs.

For more information about the admission requirements, please visit the following CMS webpage.

To remain in the program, a student must maintain a CGPA of 2.0 or higher throughout the program.

Note: Students admitted to the program after second or third year will be required to pay retroactive deregulated program fees.

Description of Proposed Changes:
The description, enrolment requirements, and completion requirements of this stream have been updated to reflect the proposed creation of a new fifth stream in Artificial Intelligence and Machine Learning (AI & ML).

Rationale:
The Supervisor of Studies' contact information was updated to reflect the current email address and to remove the phone number.

With the proposed creation of a new stream in Artificial Intelligence and Machine Learning, the existing four streams within the Specialist in Computer Science are being updated to ensure students are aware of the additional option.

In addition, students in the new stream will have a choice between two courses to satisfy Requirement 5. As this flexibility does not apply to the existing four streams, Requirement 5 will no longer be listed as a Common Core requirement and will instead become stream-specific.

The label “Technology, Society, and Ethics” is also being introduced in place of “D-level courses” to improve clarity for students.

Impact:
This minor modification is expected to have minimal impact on students. There are no changes to program learning outcomes, and the course used to fulfill Requirement 5 in the existing streams remains unchanged.

The inclusion of a fifth stream is expected to provide additional options for both current and prospective students.

Consultations:
Discussions regarding the proposed minor modifications took place between the department and the Dean’s Office in March and April 2026, including meetings on March 18 and 19, 2026.

A meeting with representatives from the Dean’s Office (Katie Larson, Maggie Cummings, Kevin Mak) and the Office of the Registrar (Lindsey Taylor) was held on April 1, 2026.

Additional consultations were conducted via email and meetings with the Office of the Registrar and the VPAP Office on March 23 and 24, 2026.

Resource Implications:
None

Proposal Status:
Under Review

SCSPE0805: SPECIALIST PROGRAM IN COMPUTER SCIENCE - Entrepreneurship Stream (SCIENCE)

Completion Requirements:

Program Requirements
The program requirements comprise a core of 17 courses (8.5 ~~18 courses (9.0~~ credits), common to all streams and additional requirements which depend on the stream, for a total of 27 courses (13.5 credits) for the Artificial Intelligence and Machine Learning, Comprehensive, Software Engineering, and Entrepreneurship streams, and 29 courses (14.5 credits) for the Information Systems stream.

Note: Many Computer Science courses are offered across all three U of T campuses: U of T Scarborough, U of T Mississauga, and ~~both at U of T Scarborough and at~~ the St. George campus. When a course is offered at more than one campus, ~~both campuses in a given session,~~ U of T Scarborough students are expected to take that course at U of T Scarborough. The Department of Computer Science at the St. George campus and the Department of Mathematical and Computational Sciences at U of T Mississauga cannot guarantee space for U of T Scarborough students in their courses.~~, especially those offered at both campuses.~~

Core (8.5 ~~9.0~~ credits)

1. Writing Requirement (0.5 credit)*
0.5 credit from the following: ANTA01H3, ANTA02H3, CLAA06H3, (CTLA19H3), CTLA01H3, ENGA10H3, ENGA11H3, ENGB06H3, ENGB07H3, ENGB08H3, ENGB09H3, ENGB17H3, ENGB19H3, ENGB50H3, (ENGB51H3), GGRA02H3, GGRA03H3, GGRB05H3, (GGRB06H3), (HISA01H3), (HLTA01H3), (ACMA01H3), (HUMA01H3), (HUMA11H3), (HUMA17H3), (LGGA99H3), LINA01H3, PHLA10H3, PHLA11H3, WSTA01H3.
***Note:** It is recommended that this requirement be satisfied by the end of the second year.

2. A-level courses (3.0 credits)
CSCA08H3 Introduction to Computer Science I
CSCA48H3 Introduction to Computer Science II
CSCA67H3 Discrete Mathematics
MATA22H3 Linear Algebra I for Mathematical Sciences
MATA31H3 Calculus I for Mathematical Sciences
MATA37H3 Calculus II for Mathematical Sciences

3. B-level courses (3.5 credits)
CSCB07H3 Software Design
CSCB09H3 Software Tools and Systems Programming
CSCB36H3 Introduction to the Theory of Computation
CSCB58H3 Computer Organization
CSCB63H3 Design and Analysis of Data Structures
MATB24H3 Linear Algebra II
STAB52H3 Introduction to Probability

4. C-level courses (1.5 credits)
CSCC43H3 Introduction to Databases
CSCC69H3 Operating Systems

CSCC73H3 Algorithm Design and Analysis

~~**5. D-level courses (0.5 credit)**~~
~~CSCD03H3 Social Impact of Information Technology~~

Entrepreneurship Stream
This stream requires a total of 27 courses (13.5 credits). In addition to the core requirements 1-4 ~~1-5~~ common to all streams, 10 ~~9~~ other distinct courses (5.0 ~~(4.5~~ credits) must be chosen to satisfy all of the following requirements:

5. Technology, Society, and Ethics course (0.5 credit)
CSCD03H3 Social Impact of Information Technology

6. Additional required courses (3.0 credits)
CSCC01H3 Introduction to Software Engineering
CSCC37H3 Introduction to Numerical Algorithms for Computational Mathematics
CSCC63H3 Computability and Computational Complexity
CSCD01H3 Engineering Large Software Systems
CSCD54H3 Technology Innovation and Entrepreneurship
CSCD90H3 The Startup Sandbox

7. Electives from courses in computer science, mathematics, and statistics (1.5 credits)
Choose from:
CSCC09H3 Programming on the Web
CSCC10H3 Human-Computer Interaction
CSCC11H3 Introduction to Machine Learning and Data Mining
CSCC24H3 Principles of Programming Languages
CSCC46H3 Social and Information Networks
CSCC85H3 Fundamentals of Robotics and Automated Systems
CSCD18H3 Computer Graphics
CSCD25H3 Advanced Data Science
CSCD27H3 Computer and Network Security
CSCD43H3 Database System Technology
CSCD58H3 Computer Networks
CSCD70H3 Compiler Optimization
CSCD84H3 Artificial Intelligence
MATB41H3 Techniques of the Calculus of Several Variables I
STAB57H3 Introduction to Statistics
CSC320H1 Introduction to Visual Computing
CSC401H1 Natural Language Computing
CSC413H1 Neural Networks and Deep Learning
CSC469H1 Operating Systems Design and Implementation
CSC485H1 Computational Linguistics
CSC488H1 Compilers and Interpreters

Description:

Supervisor of Studies: R. Pancer, richard.pancer@utoronto.ca ~~(416-287-7679) Email: pancer@utsc.utoronto.ca~~

Program Objectives
This program provides a working knowledge of the foundations of computer science: modern computer software and hardware, theoretical aspects of computer science, and relevant areas of mathematics and statistics. It also imparts an appreciation of the discipline's transformative impact on science and society. The program prepares students for further study and for careers in the computing industry. It comprises five ~~four~~ streams with different emphases:

The Entrepreneurship Stream includes a solid core of computer science and software engineering, while exposing students to the framework and methodologies that underlie the development of innovative technology ideas into viable commercial opportunities. Enrolment into the Entrepreneurship stream will be limited to highly qualified and motivated students, and preference will be given to students enrolled in the Specialist (Co-operative) program.

The structure of the program requirements allows one to easily switch streams until relatively late in the program. Consequently, these streams should not be viewed as rigidly separated channels feeding students to different career paths, but as a flexible structure that provides computer science students guidance in their course selection based on their broad (but possibly fluid) interests.

Enrolment Requirements:

Enrolment Requirements

Enrolment in the Specialist in Computer Science (all streams) is limited. Students may apply to enter the program after completing 4.0 credits, and must meet the requirements described below:

1. Students already admitted to the UTSC Year 1 Computer Science admissions category:

Required Courses:

Students must have passed the following CSC and MAT courses: CSCA08H3, CSCA48H3, CSCA67H3, MATA22H3, MATA31H3, and MATA37H3.

Required Grades:

Students that meet all of the following requirements will be admitted to a CS Specialist POSt*:
a. A cumulative grade point average (CGPA) of at least 2.5 over the following courses: CSCA48H3, CSCA67H3, MATA22H3, and MATA37H3;
b. A final grade of at least B in CSCA48H3; and
c. A final grade of at least C- in two of the following: CSCA67H3, MATA22H3, and MATA37H3.

*Students must select **one** stream of the CS Specialist as follows:
a. Students can select either the Comprehensive stream or the Software Engineering stream or the Artificial Intelligence and Machine Learning stream.
b. A limited number of students will be admitted to the Information Systems stream, depending on available space.
c. Admission to the Entrepreneurship stream will be based in part on submission of a Supplementary Application Form (SAF) available on the Department of Computer and Mathematical Sciences website. Applications for admission will be accepted once per academic year, during the April-May POSt admissions round.

2. Students admitted to other UTSC Year 1 admissions categories:

Students who ~~that~~ have been admitted to either the UTSC Year 1 Math or UTSC Year 1 Statistics admissions categories are eligible to apply for the Computer Science Specialist POSt. Admission will be based on academic performance in the required A-level courses, identified above. The admission requirements change each year depending on available spaces and the pool of eligible applicants, and students are cautioned that there is no guarantee of admission; as such, students are strongly advised to plan to enroll in backup programs.

Students who ~~that~~ have not been admitted to a UTSC Year 1 CMS admissions category (Computer Science, Mathematics, or Statistics) must achieve a final grade of at least A- in both MATA31H3 and CSCA67H3 **the first time they complete these courses** in order to be eligible to apply for a CS Specialist POSt. **This is a strict requirement.** Admission will be based on academic performance in the required A-level courses, identified above. The admission requirements change each year depending on available spaces and the pool of eligible applicants, and students are cautioned that there is no guarantee of admission; as such, students are strongly advised to plan to enroll in backup programs.

For more information about the admission requirements, please visit the following CMS webpage.

To remain in the program, a student must maintain a CGPA of 2.0 or higher throughout the program.

Note: Students admitted to the program after second or third year will be required to pay retroactive deregulated program fees.

Description of Proposed Changes:
The description, enrolment requirements, and completion requirements of this stream have been updated to reflect the proposed creation of a new fifth stream in Artificial Intelligence and Machine Learning (AI & ML).

Rationale:
The Supervisor of Studies' contact information was updated to reflect the current email address and to remove the phone number.

With the proposed creation of a new stream in Artificial Intelligence and Machine Learning, the existing four streams within the Specialist in Computer Science are being updated to ensure students are aware of the additional option.

In addition, students in the new stream will have a choice between two courses to satisfy Requirement 5. As this flexibility does not apply to the existing four streams, Requirement 5 will no longer be listed as a Common Core requirement and will instead become stream-specific.

The label “Technology, Society, and Ethics” is also being introduced in place of “D-level courses” to improve clarity for students.

Impact:
This minor modification is expected to have minimal impact on students. There are no changes to program learning outcomes, and the course used to fulfill Requirement 5 in the existing streams remains unchanged.

The inclusion of a fifth stream is expected to provide additional options for both current and prospective students.

Consultations:
Discussions regarding the proposed minor modifications took place between the department and the Dean’s Office in March and April 2026, including meetings on March 18 and 19, 2026.

A meeting with representatives from the Dean’s Office (Katie Larson, Maggie Cummings, Kevin Mak) and the Office of the Registrar (Lindsey Taylor) was held on April 1, 2026.

Additional consultations were conducted via email and meetings with the Office of the Registrar and the VPAP Office on March 23 and 24, 2026.

Resource Implications:
None

Proposal Status:
Under Review

SCSPE0455: SPECIALIST PROGRAM IN COMPUTER SCIENCE - Information Systems Stream (SCIENCE)

Completion Requirements:

Program Requirements
The program requirements comprise a core of 17 courses (8.5 ~~18 courses (9.0~~ credits), common to all streams and additional requirements which depend on the stream, for a total of 27 courses (13.5 credits) for the Artificial Intelligence and Machine Learning, Comprehensive, Software Engineering, and Entrepreneurship streams, and 29 courses (14.5 credits) for the Information Systems stream.

Note: Many Computer Science courses are offered across all three U of T campuses: U of T Scarborough, U of T Mississauga, and ~~both at U of T Scarborough and at~~ the St. George campus. When a course is offered at more than one campus, ~~both campuses in a given session,~~ U of T Scarborough students are expected to take that course at U of T Scarborough. The Department of Computer Science at the St. George campus and the Department of Mathematical and Computational Sciences at U of T Mississauga cannot guarantee space for U of T Scarborough students in their courses.~~, especially those offered at both campuses.~~

Core (8.5 ~~9.0~~ credits)

1. Writing Requirement (0.5 credit)*
0.5 credit from the following: ANTA01H3, ANTA02H3, CLAA06H3, (CTLA19H3), CTLA01H3, ENGA10H3, ENGA11H3, ENGB06H3, ENGB07H3,

ENGB08H3, ENGB09H3, ENGB17H3, ENGB19H3, ENGB50H3, (ENGB51H3), GGRA02H3, GGRA03H3, GGRB05H3, (GGRB06H3), (HISA01H3), (HLTA01H3), (ACMA01H3), (HUMA01H3), (HUMA11H3), (HUMA17H3), (LGGA99H3), LINA01H3, PHLA10H3, PHLA11H3, WSTA01H3.
***Note:** It is recommended that this requirement be satisfied by the end of the second year.

2. A-level courses (3.0 credits)
CSCA08H3 Introduction to Computer Science I
CSCA48H3 Introduction to Computer Science II
CSCA67H3 Discrete Mathematics
MATA22H3 Linear Algebra I for Mathematical Sciences
MATA31H3 Calculus I for Mathematical Sciences
MATA37H3 Calculus II for Mathematical Sciences

3. B-level courses (3.5 credits)
CSCB07H3 Software Design
CSCB09H3 Software Tools and Systems Programming
CSCB36H3 Introduction to the Theory of Computation
CSCB58H3 Computer Organization
CSCB63H3 Design and Analysis of Data Structures
MATB24H3 Linear Algebra II
STAB52H3 Introduction to Probability

4. C-level courses (1.5 credits)
CSCC43H3 Introduction to Databases
CSCC69H3 Operating Systems
CSCC73H3 Algorithm Design and Analysis

~~**5. D-level courses (0.5 credit)**~~
~~CSCD03H3 Social Impact of Information Technology~~

Information Systems Stream
This stream requires a total of 29 courses (14.5 credits). In addition to the core requirements 1-4 ~~1-5~~ common to all streams, 12 ~~11~~ other distinct courses (6.0 ~~(5.5~~ credits) must be chosen to satisfy all of the following requirements:

5. Technology, Society, and Ethics course (0.5 credit)
CSCD03H3 Social Impact of Information Technology

6. Required management courses (1.5 credits)
MGTA01H3 Introduction to Business
MGTA02H3 Managing the Business Organization
MGHB02H3 Managing People and Groups in Organizations

7. Additional required mathematics and computer science courses (3.0 credits)
CSCC01H3 Introduction to Software Engineering
CSCC37H3 Introduction to Numerical Algorithms for Computational Mathematics
CSCC63H3 Computability and Computational Complexity
CSCD01H3 Engineering Large Software Systems
CSCD43H3 Database System Technology
MATB41H3 Techniques of the Calculus of Several Variables I

8. Electives from courses on computer systems and applications (1.0 credit)
Choose from:
CSCC09H3 Programming on the Web
CSCC10H3 Human-Computer Interaction
CSCC11H3 Introduction to Machine Learning and Data Mining
CSCC46H3 Social and Information Networks
CSCC85H3 Fundamentals of Robotics and Automated Systems
CSCD18H3 Computer Graphics
CSCD25H3 Advanced Data Science
CSCD27H3 Computer and Network Security
CSCD58H3 Computer Networks
CSCD70H3 Compiler Optimization
CSCD84H3 Artificial Intelligence
CSC320H1 Introduction to Visual Computing
CSC401H1 Natural Language Computing
CSC413H1 Neural Networks and Deep Learning
CSC469H1 Operating Systems Design and Implementation
CSC485H1 Computational Linguistics
CSC488H1 Compilers and Interpreters

Description:

Supervisor of Studies: R. Pancer, richard.pancer@utoronto.ca ~~(416-287-7679) Email: pancer@utsc.utoronto.ca~~

Program Objectives
This program provides a working knowledge of the foundations of computer science: modern computer software and hardware, theoretical aspects of computer science, and relevant areas of mathematics and statistics. It also imparts an appreciation of the discipline's transformative impact on science and society. The program prepares students for further study and for careers in the computing industry. It comprises five ~~four~~ streams with different emphases:

The Information Systems Stream has a similar focus as the Software Engineering Stream, but it provides additional exposure to certain aspects of business

management. It is of special interest to students wishing to pursue careers in technical management but who have a deep interest in the technology.

The structure of the program requirements allows one to easily switch streams until relatively late in the program. Consequently, these streams should not be viewed as rigidly separated channels feeding students to different career paths, but as a flexible structure that provides computer science students guidance in their course selection based on their broad (but possibly fluid) interests.

Enrolment Requirements:

Enrolment Requirements

Enrolment in the Specialist in Computer Science (all streams) is limited. Students may apply to enter the program after completing 4.0 credits, and must meet the requirements described below:

1. Students already admitted to the UTSC Year 1 Computer Science admissions category:

Required Courses:

Students must have passed the following CSC and MAT courses: CSCA08H3, CSCA48H3, CSCA67H3, MATA22H3, MATA31H3, and MATA37H3.

Required Grades:

Students that meet all of the following requirements will be admitted to a CS Specialist POSt*:
a. A cumulative grade point average (CGPA) of at least 2.5 over the following courses: CSCA48H3, CSCA67H3, MATA22H3, and MATA37H3;
b. A final grade of at least B in CSCA48H3; and
c. A final grade of at least C- in two of the following: CSCA67H3, MATA22H3, and MATA37H3.

*Students must select **one** stream of the CS Specialist as follows:
a. Students can select either the Comprehensive stream or the Software Engineering stream or the Artificial Intelligence and Machine Learning stream.
b. A limited number of students will be admitted to the Information Systems stream, depending on available space.
c. Admission to the Entrepreneurship stream will be based in part on submission of a Supplementary Application Form (SAF) available on the Department of Computer and Mathematical Sciences website. Applications for admission will be accepted once per academic year, during the April-May POSt admissions round.

2. Students admitted to other UTSC Year 1 admissions categories:

Students who ~~that~~ have been admitted to either the UTSC Year 1 Math or UTSC Year 1 Statistics admissions categories are eligible to apply for the Computer Science Specialist POSt. Admission will be based on academic performance in the required A-level courses, identified above. The admission requirements change each year depending on available spaces and the pool of eligible applicants, and students are cautioned that there is no guarantee of admission; as such, students are strongly advised to plan to enroll in backup programs.

Students who ~~that~~ have not been admitted to a UTSC Year 1 CMS admissions category (Computer Science, Mathematics, or Statistics) must achieve a final grade of at least A- in both MATA31H3 and CSCA67H3 **the first time they complete these courses** in order to be eligible to apply for a CS Specialist POSt. **This is a strict requirement.** Admission will be based on academic performance in the required A-level courses, identified above. The admission requirements change each year depending on available spaces and the pool of eligible applicants, and students are cautioned that there is no guarantee of admission; as such, students are strongly advised to plan to enroll in backup programs.

For more information about the admission requirements, please visit the following CMS webpage.

To remain in the program, a student must maintain a CGPA of 2.0 or higher throughout the program.

Note: Students admitted to the program after second or third year will be required to pay retroactive deregulated program fees.

Description of Proposed Changes:

The description, enrolment requirements, and completion requirements of this stream have been updated to reflect the proposed creation of a new fifth stream in Artificial Intelligence and Machine Learning (AI & ML).

Rationale:

The Supervisor of Studies' contact information was updated to reflect the current email address and to remove the phone number.

With the proposed creation of a new stream in Artificial Intelligence and Machine Learning, the existing four streams within the Specialist in Computer Science are being updated to ensure students are aware of the additional option.

In addition, students in the new stream will have a choice between two courses to satisfy Requirement 5. As this flexibility does not apply to the existing four streams, Requirement 5 will no longer be listed as a Common Core requirement and will instead become stream-specific.

The label “Technology, Society, and Ethics” is also being introduced in place of “D-level courses” to improve clarity for students.

Impact:

This minor modification is expected to have minimal impact on students. There are no changes to program learning outcomes, and the course used to fulfill Requirement 5 in the existing streams remains unchanged.

The inclusion of a fifth stream is expected to provide additional options for both current and prospective students.

Consultations:

Discussions regarding the proposed minor modifications took place between the department and the Dean’s Office in March and April 2026, including meetings on March 18 and 19, 2026.

A meeting with representatives from the Dean’s Office (Katie Larson, Maggie Cummings, Kevin Mak) and the Office of the Registrar (Lindsey Taylor) was held on April 1, 2026.

Additional consultations were conducted via email and meetings with the Office of the Registrar and the VPAP Office on March 23 and 24, 2026.

Resource Implications:
None

Proposal Status:
Under Review

SCSPE0795: SPECIALIST PROGRAM IN COMPUTER SCIENCE - Software Engineering Stream (SCIENCE)

Completion Requirements:

Program Requirements
The program requirements comprise a core of 17 courses (8.5 ~~18 courses (9.0~~ credits), common to all streams and additional requirements which depend on the stream, for a total of 27 courses (13.5 credits) for the Artificial Intelligence and Machine Learning, Comprehensive, Software Engineering, and Entrepreneurship streams, and 29 courses (14.5 credits) for the Information Systems stream.

Note: Many Computer Science courses are offered across all three U of T campuses: U of T Scarborough, U of T Mississauga, and ~~both at U of T Scarborough and at~~ the St. George campus. When a course is offered at more than one campus, ~~both campuses in a given session,~~ U of T Scarborough students are expected to take that course at U of T Scarborough. The Department of Computer Science at the St. George campus and the Department of Mathematical and Computational Sciences at U of T Mississauga cannot guarantee space for U of T Scarborough students in their courses.~~, especially those offered at both campuses.~~

Core (8.5 ~~9.0~~ credits)

1. Writing Requirement (0.5 credit)*
0.5 credit from the following: ANTA01H3, ANTA02H3, CLAA06H3, (CTLA19H3), CTLA01H3, ENGA10H3, ENGA11H3, ENGB06H3, ENGB07H3, ENGB08H3, ENGB09H3, ENGB17H3, ENGB19H3, ENGB50H3, (ENGB51H3), GGRA02H3, GGRA03H3, GGRB05H3, (GGRB06H3), (HISA01H3), (HLTA01H3), (ACMA01H3), (HUMA01H3), (HUMA11H3), (HUMA17H3), (LGGA99H3), LINA01H3, PHLA10H3, PHLA11H3, WSTA01H3.
***Note:** It is recommended that this requirement be satisfied by the end of the second year.

2. A-level courses (3.0 credits)
CSCA08H3 Introduction to Computer Science I
CSCA48H3 Introduction to Computer Science II
CSCA67H3 Discrete Mathematics
MATA22H3 Linear Algebra I for Mathematical Sciences
MATA31H3 Calculus I for Mathematical Sciences
MATA37H3 Calculus II for Mathematical Sciences

3. B-level courses (3.5 credits)
CSCB07H3 Software Design
CSCB09H3 Software Tools and Systems Programming
CSCB36H3 Introduction to the Theory of Computation
CSCB58H3 Computer Organization
CSCB63H3 Design and Analysis of Data Structures
MATB24H3 Linear Algebra II
STAB52H3 Introduction to Probability

4. C-level courses (1.5 credits)
CSCC43H3 Introduction to Databases
CSCC69H3 Operating Systems
CSCC73H3 Algorithm Design and Analysis

~~**5. D-level courses (0.5 credit)**~~
~~CSCD03H3 Social Impact of Information Technology~~

Software Engineering Stream
This stream requires a total of 27 courses (13.5 credits). In addition to the core requirements 1-4 ~~1-5~~ common to all streams, 10 ~~9~~ other distinct courses (5.0 ~~(4.5~~ credits) must be chosen to satisfy all of the following requirements:

5. Technology, Society, and Ethics course (0.5 credit)
CSCD03H3 Social Impact of Information Technology

6. Additional required courses (3.0 credits)
CSCC01H3 Introduction to Software Engineering
CSCC24H3 Principles of Programming Languages
CSCC37H3 Introduction to Numerical Algorithms for Computational Mathematics
CSCC63H3 Computability and Computational Complexity
CSCD01H3 Engineering Large Software Systems
MATB41H3 Techniques of the Calculus of Several Variables I

7. Electives from courses on computer systems and applications (1.5 credits)
Choose from:
CSCC09H3 Programming on the Web
CSCC10H3 Human-Computer Interaction
CSCC11H3 Introduction to Machine Learning and Data Mining
CSCC46H3 Social and Information Networks
CSCC85H3 Fundamentals of Robotics and Automated Systems
CSCD18H3 Computer Graphics

CSCD25H3 Advanced Data Science
CSCD27H3 Computer and Network Security
CSCD43H3 Database System Technology
CSCD58H3 Computer Networks
CSCD70H3 Compiler Optimization
CSCD84H3 Artificial Intelligence
CSC320H1 Introduction to Visual Computing
CSC401H1 Natural Language Computing
CSC413H1 Neural Networks and Deep Learning
CSC469H1 Operating Systems Design and Implementation
CSC485H1 Computational Linguistics
CSC488H1 Compilers and Interpreters

Description:

Supervisor of Studies: R. Pancer, richard.pancer@utoronto.ca ~~(416-287-7679) Email: pancer@utsc.utoronto.ca~~

Program Objectives
This program provides a working knowledge of the foundations of computer science: modern computer software and hardware, theoretical aspects of computer science, and relevant areas of mathematics and statistics. It also imparts an appreciation of the discipline's transformative impact on science and society. The program prepares students for further study and for careers in the computing industry. It comprises five ~~four~~ streams with different emphases:

The Software Engineering Stream places a greater emphasis on the engineering side of the discipline, including computer systems and core applications.

The structure of the program requirements allows one to easily switch streams until relatively late in the program. Consequently, these streams should not be viewed as rigidly separated channels feeding students to different career paths, but as a flexible structure that provides computer science students guidance in their course selection based on their broad (but possibly fluid) interests.

Enrolment Requirements:

Enrolment Requirements

Enrolment in the Specialist in Computer Science (all streams) is limited. Students may apply to enter the program after completing 4.0 credits, and must meet the requirements described below:

1. Students already admitted to the UTSC Year 1 Computer Science admissions category:

Required Courses:

Students must have passed the following CSC and MAT courses: CSCA08H3, CSCA48H3, CSCA67H3, MATA22H3, MATA31H3, and MATA37H3.

Required Grades:

Students that meet all of the following requirements will be admitted to a CS Specialist POSt*:
a. A cumulative grade point average (CGPA) of at least 2.5 over the following courses: CSCA48H3, CSCA67H3, MATA22H3, and MATA37H3;
b. A final grade of at least B in CSCA48H3; and
c. A final grade of at least C- in two of the following: CSCA67H3, MATA22H3, and MATA37H3.

*Students must select **one** stream of the CS Specialist as follows:
a. Students can select either the Comprehensive stream or the Software Engineering stream or the Artificial Intelligence and Machine Learning stream.
b. A limited number of students will be admitted to the Information Systems stream, depending on available space.
c. Admission to the Entrepreneurship stream will be based in part on submission of a Supplementary Application Form (SAF) available on the Department of Computer and Mathematical Sciences website. Applications for admission will be accepted once per academic year, during the April-May POSt admissions round.

2. Students admitted to other UTSC Year 1 admissions categories:

Students who ~~that~~ have been admitted to either the UTSC Year 1 Math or UTSC Year 1 Statistics admissions categories are eligible to apply for the Computer Science Specialist POSt. Admission will be based on academic performance in the required A-level courses, identified above. The admission requirements change each year depending on available spaces and the pool of eligible applicants, and students are cautioned that there is no guarantee of admission; as such, students are strongly advised to plan to enroll in backup programs.

Students who ~~that~~ have not been admitted to a UTSC Year 1 CMS admissions category (Computer Science, Mathematics, or Statistics) must achieve a final grade of at least A- in both MATA31H3 and CSCA67H3 **the first time they complete these courses** in order to be eligible to apply for a CS Specialist POSt. **This is a strict requirement.** Admission will be based on academic performance in the required A-level courses, identified above. The admission requirements change each year depending on available spaces and the pool of eligible applicants, and students are cautioned that there is no guarantee of admission; as such, students are strongly advised to plan to enroll in backup programs.

For more information about the admission requirements, please visit the following CMS webpage.

To remain in the program, a student must maintain a CGPA of 2.0 or higher throughout the program.

Note: Students admitted to the program after second or third year will be required to pay retroactive deregulated program fees.

Description of Proposed Changes:

The description, enrolment requirements, and completion requirements of this stream have been updated to reflect the proposed creation of a new fifth stream in Artificial Intelligence and Machine Learning (AI & ML).

Rationale:

The Supervisor of Studies' contact information was updated to reflect the current email address and to remove the phone number.

With the proposed creation of a new stream in Artificial Intelligence and Machine Learning, the existing four streams within the Specialist in Computer Science are being updated to ensure students are aware of the additional option.

In addition, students in the new stream will have a choice between two courses to satisfy Requirement 5. As this flexibility does not apply to the existing four streams, Requirement 5 will no longer be listed as a Common Core requirement and will instead become stream-specific.

The label “Technology, Society, and Ethics” is also being introduced in place of “D-level courses” to improve clarity for students.

Impact:

This minor modification is expected to have minimal impact on students. There are no changes to program learning outcomes, and the course used to fulfill Requirement 5 in the existing streams remains unchanged.

The inclusion of a fifth stream is expected to provide additional options for both current and prospective students.

Consultations:

Discussions regarding the proposed minor modifications took place between the department and the Dean’s Office in March and April 2026, including meetings on March 18 and 19, 2026.

A meeting with representatives from the Dean’s Office (Katie Larson, Maggie Cummings, Kevin Mak) and the Office of the Registrar (Lindsey Taylor) was held on April 1, 2026.

Additional consultations were conducted via email and meetings with the Office of the Registrar and the VPAP Office on March 23 and 24, 2026.

Resource Implications:

None

Proposal Status:

Under Review

2 New Courses

CSCD60H3: High-Performance Computing

Description:

A comprehensive introduction to the field of high-performance and parallel computing (supercomputing). Topics include foundational theory of communication and distributed systems, parallel programming, modern supercomputer hardware and architecture, and optimization and high-performance scientific computing.

Prerequisites:

CSCA48H3, CSCB09H3, CSCB58H3, CSCC37H3, [MATA22H3 or MATA23H3], MATB24H3

Exclusions:

CSC367H1, CSC456H1

Recommended Preparation:

CSCB07H3, CSCD37H3

Delivery Method:

In Person

Methods of Assessment:

1. Assignments: 50% of the final mark.
2. Term Tests: 30% of the final mark.
3. Final Project: 20% of the final mark.

Breadth Requirements:

Quantitative Reasoning

CNC Allowed:

Y

Credit Value:

Fixed: 0.5

Learning Outcomes:

Students will be able to develop software for modern computer architectures, leveraging the parallel and concurrent capabilities of available hardware. Students will develop an understanding of the hardware configurations, infrastructure, and state-of-the-art technologies used in typical supercomputing centres, distributed clusters, and modern data centres.

Topics Covered:

- Motivating parallel and distributed computing.
- Performance metrics and measurements.
- Compiler optimization.
- Serial performance, IO.
- Introduction to distributed systems and parallel programming.
- Communication theory and processes.
- Shared-memory parallel programming.
- Distributed-memory parallel programming.
- Specialized architectures, including accelerators, GPUs, and FPGAs.
- Hybrid parallel programming.

Rationale:

High-Performance Computing (HPC), or supercomputing, encompasses a set of techniques used to optimize and fully exploit modern computer architectures and hardware.
Most modern computing devices contain multiple processing units. Designing and developing software for such devices requires an understanding of the underlying hardware and architecture, as well as knowledge of concurrent and parallel programming and optimization techniques.
These skills are applicable to a wide range of disciplines, including development of scientific applications, deployment, maintenance and administration of modern data centres and supercomputer centres, supporting computing infrastructure for modern AI systems, and more.
UTSC does not currently offer a course that covers these important topics. This proposal would fill that gap while also addressing the industry needs and offering our students a possible career pathway.

Consultation:

Campus Curriculum Committee meeting; September 29, 2025
Proposal approved by Departmental Curriculum Committee: October 3, 2025
Course code approved by Office of the Registrar: Amber Lantsman, October 16, 2025.
Consult with St. George & UTM Computer Science Undergraduate Chairs was undertaken with no concerns, questions or objections: November 30, 2025
RO Consultation: RO Consultation (Lindsey T): December 16, 2026

Resources:

Typical CMS resources: course instructor + 1 TA per 35 students. This course will be primarily taught by Professor Marcelo Ponce, a regular faculty member. All resources will be covered within CMS' existing budget.

Access to specialized hardware, such as a high-performance computer cluster. Pilot versions of the course used SciNet's Advanced Research Computing facility at the University of Toronto (www.scinethpc.ca), which is a sustainable option long-term.

Overlap with Existing Courses:

Graduate and cross-listed courses offered on St. George campus:
- CSC2222H Applications of Parallel and Distributed Computing
- CSC2306H/CSC456H1 High Performance Scientific Computing
St. George and UTM:
- CSC367H5 Parallel Programming

Programs of Study for Which This Course Might be Suitable:

All programs in Computer Science, including the new Artificial Intelligence/Machine Learning stream of the CS Specialist program.

Proposal Status:

Under Review

MATB23H3: Applied Linear Algebra II

Impact on Programs: This Proposal triggers modifications in the unit's programs(s)

Description:

Real vector spaces, inner product spaces, coordinatization; linear transformations; Gram–Schmidt process; orthogonal diagonalization. Cayley-Hamilton theorem; LU and QR Factorizations. Change of basis and similar matrices; quadratic form. Complex vector space and unitarily diagonalization. Jordan form. The course emphasizes techniques and applications, particularly those relevant to the physical sciences and statistics.

Prerequisites:

MATA22H3 or MATA23H3 or MAT240H1

Exclusions:

MATB24H3, MAT224H1

Delivery Method:

In Person

Methods of Assessment:

Assignments, midterm exams, final exam

Breadth Requirements:

Quantitative Reasoning

CNC Allowed:

Y

Credit Value:

Fixed: 0.5

Learning Outcomes:

Students will gain a strong grasp of real and complex vector spaces, inner products, and coordinatization for applications in physical sciences and statistics. They will master linear transformations, Gram-Schmidt process, orthogonal diagonalization, and Cayley-Hamilton theorem for efficient system analysis. Learners will become proficient in LU/QR factorizations, change of basis, similar matrices, and quadratic forms for data modeling. The course covers unitary diagonalization and Jordan form in complex spaces to tackle advanced problems. Participants will focus on practical techniques, integrating linear algebra into fields like physics, statistics, and engineering.

Topics Covered:

- Real vector spaces, inner product spaces, coordinatization
- linear transformations
- Gram–Schmidt process
- orthogonal diagonalization.
- Cayley-Hamilton theorem
- LU and QR Factorizations
- Change of basis and similar matrices
- quadratic form.
- Complex vector space and unitarily diagonalization

- Jordan form.

Rationale:
MATB24H3 is a mathematically rigorous course designed to prepare students for the Mathematics Major/Specialist and other rigorous programs. However, it is currently taken by students in programs where applications are of greater importance, and some of these students may not have the same level of advanced mathematical preparation as CMS students. Accordingly, the Department is creating a more applied version of the course.

Consultation:
Consultation with DPES (This course will be included in some of their programs): September 12, 2025
Consultation with the Department of Philosophy (MATB24H3 is listed as a prerequisite for PHLC51H3): September 16, 2025
Campus Curriculum Committee Meeting; September 29, 2025
Proposal approved by Departmental Curriculum Committee: October 3, 2025
Course code approved by Office of the Registrar: Amber Lantsman, October 10, 2025.
RO Consultation (Lindsey T): December 16, 2025

Resources:
The Department currently offers several sections of MATB24H3 each year and anticipates maintaining the same total number of sections across MATB23H3 and MATB24H3, with approximately the same overall student enrolment. As such, this change will not increase the need for additional instructional or teaching assistant resources.

This course can be taught by a range of faculty members within the Department. Professor Xiamei Jiang has previously taught MATB24H3 and is also able to teach MATB23H3.

Overlap with Existing Courses:
None

Estimated Enrolment:
150

Proposal Status:
Under Review

1 Course Modification

CSCD84H3: Artificial Intelligence

Description:

A study of the theories, ~~and~~ algorithms, and applications of Artificial Intelligence. Topics include a subset of search, game playing, logical representations and reasoning, planning, ~~natural language processing,~~ reasoning and decision making with uncertainty, neural networks and deep learning models. ~~computational perception, robotics, and applications of Artificial Intelligence.~~ Assignments provide practical experience of the core topics.

Learning Outcomes:

Students will discover how simple neural networks operate. They will experiment and learn their limitations, and understand how these limitations led to the development of different network architectures now collectively known as ‘Deep Learning’. Students will gain familiarity with the major types of deep learning models.

Topics Covered:
Topics covered:
- Deep Learning models, which may include: Convolutional networks, diffusion models, language models including LLMs, and Generative Adversarial Networks.

Rationale:
The course had not been updated to include the newer and now most relevant techniques in A.I., collectively known as ‘Deep Learning’ models. The updated course now covers the major deep learning models and places the material in the context of classical A.I. and applications.

Consultation:
Internal consultation at CMS was undertaken involving the faculty in Computer Science, instructors who have taught CSCD84H3 and the related machine learning CSCC11H3 course, and students in the computer science program. The decision to revise the course to include a significant component of Deep Learning was necessary and was strongly supported by all involved, It will benefit our graduating students who will be expected to know these models if they have taken an A.I. course.
Campus Curriculum Committee Meeting: September 29, 2025.
Approved by DCC October 16, 2025.
RO Consultation (Lindsey T): December 16, 2025

Resources:
Resource requirements are equivalent to those of the previous version of the course in terms of TA support, equipment, and instructional support, and will be covered within the Department’s existing budget. This course is taught by Professor Francisco J. Estrada, a regular faculty member.

Overlap with Existing Courses:
N/A – no other course at CMS covers deep learning models, and no other department covers the material in technical.

Proposal Status:
Under Review

Physical & Environmental Sciences (UTSC), Department of

4 Minor Program Mod Full Reviews

SCMAJ1762: MAJOR PROGRAM IN BIOCHEMISTRY (SCIENCE)

Completion Requirements:

Track Changes:
Program Requirements:

Students should complete the following 9.0 credits:

First Year:
1. 3.0 credits from the following
BIOA01H3 Life on Earth: Unifying Principles
BIOA02H3 Life on Earth: Form, Function and Interactions
CHMA10H3 Introductory Chemistry I: Structure and Bonding
[CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms *or* CHMA12H3 Advanced General Chemistry]
[MATA29H3 Calculus I for the Life Sciences *or* MATA30H3 Calculus I for Physical Sciences]
[MATA35H3 Calculus II for Biological Sciences *or* MATA36H3 Calculus II for Physical Sciences]

Second and Later Years:
2. 6.0 credits from the following
BIOB10H3 Cell Biology
BIOB11H3 Molecular Aspect of Cellular and Genetic Processes
BIOB12H3 Cell & Molecular Biology Laboratory
BIOC12H3 Biochemistry I: Proteins & Enzymes
BIOC13H3 Biochemistry II: Bioenergetics & Metabolism
BIOC23H3 Practical Approaches to Biochemistry
CHMB16H3 Techniques in Analytical Chemistry
CHMB41H3 Organic Chemistry I
CHMB42H3 Organic Chemistry II
CHMC47H3 Bio-Organic Chemistry
and
0.5 credit from the following:
CHMB20H3 Chemical Thermodynamics and Elementary Kinetics*
CHMB23H3 Introduction to Chemical Thermodynamics and Kinetics: Theory and Practice*
CHMB31H3 Introduction to Inorganic Chemistry
CHMC11H3 Principles of Analytical Instrumentation
CHMC42H3 Organic Synthesis
CHMC71H3/(CHMD71H3) Medicinal Chemistry

* If CHMB20H3 or CHMB23H3 is selected, one of either [PHYA10H3 or PHYA11H3] is required.

and
0.5 credit from the following:
BIOD12H3 Protein Homeostasis
BIOD13H3 Herbology: The Science Behind Medicinal Plants
CHMD41H3/(CHMC41H3) Physical Organic Chemistry
CHMD47H3 Advanced Bio-Organic Chemistry
CHMD65H3 Chemistry in Medical Diagnosis
CHMD69H3 Chemical Elements in Living Systems
CHMD79H3 Topics in Biological Chemistry

Enrolment Requirements:

Track Changes:
Students apply to the Major Program in Biochemistry after completing a minimum of 4.0 credits, including:
BIOA01H3 Life on Earth: Unifying Principles
BIOA02H3 Life on Earth: Form, Function and Interactions
CHMA10H3 Introductory Chemistry I: Structure and Bonding (with a minimum grade of C-)
[CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms *or* CHMA12H3 Advanced General Chemistry] (with a minimum grade of C-)
[MATA29H3 Calculus I for the Life Sciences *or* MATA30H3 Calculus I for Physical Sciences]
[MATA35H3 Calculus II for Biological Sciences *or* MATA36H3 Calculus II for Physical Sciences]

Application for admission is made to the Office of the Registrar through ACORN in April/May and July/August. See the UTSC Office of the Registrar's website for more information on program selection.

Description of Proposed Changes:
1. Adding enrollment requirements
2. D-level Courses: added CHMD65H3 as an optional course

Rationale:
1. The enrollment requirements are being updated since the program has experienced rapid growth over the past several years, placing significant strain on core B- and C-level laboratory courses (e.g., CHMB16, CHMB41, CHMC47). The pace of this growth has exceeded the department's capacity, resulting in limited access to these courses for students across multiple programs that require them. While this increased interest is encouraging, the department is committed to

maintaining academic rigor and ensuring that program expansion does not compromise quality. Also, instructors have observed rising attrition and failure rates in upper-year courses, noting that an increasing number of students lack foundational chemical knowledge. To support student success and ensure the program attracts students who are adequately prepared, the department proposes implementing a minimum grade requirement of C– in first-year CHM courses. This requirement is expected to help curb unsustainable program growth and alleviate pressure on resource-intensive laboratory courses. Additionally, the program supervisor reports that an increasing number of students are delaying completion of the first-year MAT requirement until later in their degrees, which disrupts course sequencing because several required and optional B-level CHM courses (e.g., CHMB16, CHMB20, CHMB23) depend on this prerequisite. To address this concern, the department is proposing that students may not enrol in the program until they have completed the full suite of first-year program requirements (3.0), including the 1.0 in MAT credits.
2. The department is proposing the addition of an optional course to provide students with more flexibility in fulfilling this requirement.

Impact: None; changes to enrolment requirements will help manage demand, while also helping with student success and retention.

Consultations:
Chemistry faculty discussed and approved on February 19th, 2025, and again by email exchange on December 4th, 2025, for the revised change request.
Department's Teaching & Curriculum Committee approved Oct. 17th, 2025, and again by email exchange December 8th, 2025, for the revised change request.
Dean's Office and the Registrar's Office by email exchange, December 2nd 2025.
CMS Consultation: Feb 4, 2026 (Kelly S.)
Bio Science Consultation: December 9, 2025 (Jenn. C)

Resource Implications: None

Proposal Status: Under Review

SCMAJ1376: MAJOR PROGRAM IN CHEMISTRY (SCIENCE)

Enrolment Requirements:

Track Changes:
Students apply to the Major Program in Chemistry after completing a minimum of 4.0 credits, including:
CHMA10H3 Introductory Chemistry I: Structure and Bonding (with a minimum grade of C-)
[CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms *or* CHMA12H3 Advanced General Chemistry] (with a minimum grade of C-)
MATA30H3 Calculus I for Physical Sciences
MATA36H3 Calculus II for Physical Sciences
PHYA10H3 Physics I for the Physical Sciences
PHYA21H3 Physics II for the Physical Sciences

Application for admission is made to the Office of the Registrar through ACORN in April/May and July/August. See the UTSC Office of the Registrar's website for more information on program selection.

Description of Proposed Changes: Adding enrolment requirements

Rationale:
Enrolment controls are being added to this program as the chemistry major and biochemistry major have significant overlap in their courses; there is a concern that the limits placed on biochemistry will cause students failing to meet them to select the chemistry major instead. This would simply shift the problem of underprepared students from one program to another and would not lead to desirable growth in the chemistry major. It would also work against our efforts to reduce strain on some of our key B- and C-level lab courses. Therefore, we are proposing a set of enrolment requirements here for the chemistry major, which are equivalent to those being added to the biochemistry major, submitted as a separate proposal.

Impact: None; changes to enrolment requirements will help manage demand, while also helping with student success and retention.

Consultations:
The chemistry faculty discussed and approved the revised change request on February 19, 2025, and again by email exchange on December 4, 2025.
The Department's Teaching & Curriculum Committee approved the revised change request on October 17, 2025, and again by email exchange on December 8, 2025.
Dean's Office and the Registrar's Office by email exchange, December 2nd, 2025.
CMS Consultation: Feb 3, 2026 (Kelly S.)
Bio Science Consultation: December 9, 2025 (Jenn. C)

Resource Implications: None

Proposal Status: Under Review

SCMAJ0361: MAJOR PROGRAM IN ENVIRONMENTAL CHEMISTRY (SCIENCE)

Enrolment Requirements:

Track Changes:
Students apply to the Major Program in Environmental Chemistry after completing a minimum of 4.0 credits, including:
CHMA10H3 Introductory Chemistry I: Structure and Bonding (with a minimum grade of C-)
[CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms *or* CHMA12H3 Advanced General Chemistry] (with a minimum grade of C-)
[MATA29H3 Calculus I for the Life Sciences *or* MATA30H3 Calculus I for Physical Sciences]
[MATA35H3 Calculus II for Biological Sciences *or* MATA36H3 Calculus II for Physical Sciences]
EESA01H3 Introduction to Environmental Science
[EESA06H3 Introduction to Planet Earth *or* EESA07H3 Water *or* EESA11H3 Environmental Pollution]

Application for admission is made to the Office of the Registrar through ACORN in April/May and July/August. See the UTSC Office of the Registrar's website for more information on program selection.

Description of Proposed Changes: Adding enrolment requirements

Rationale:
Enrolment controls are being proposed for this program due to the substantial overlap in coursework between the Environmental Chemistry and Biochemistry majors. There is a concern that the enrolment limits introduced for Biochemistry may lead students who do not meet those requirements to redirect into Environmental Chemistry. Such a shift would transfer, rather than address, issues related to student preparedness and would not support intentional or sustainable growth in the Environmental Chemistry major. In addition, this outcome would undermine ongoing efforts to reduce pressure on key B- and C-

level laboratory courses. To mitigate these risks, the proposal recommends the introduction of enrolment requirements for Environmental Chemistry that are equivalent to those being implemented for Biochemistry.

Impact: None; changes to enrolment requirements will help manage demand, while also helping with student success and retention.

Consultations:
The chemistry faculty discussed and approved the revised change request on February 19, 2025, and again by email exchange on December 4, 2025.
The Department's Teaching & Curriculum Committee approved the revised change request on October 17, 2025, and again by email exchange on December 8, 2025.
Dean's Office and the Registrar's Office by email exchange, December 2nd, 2025.
CMS Consultation: Feb 3, 2026 (Kelly S.)
Bio Science Consultation: December 9, 2025 (sent to Jenn C.)

Resource Implications: None

Proposal Status: Under Review

SCSPE0351A: SPECIALIST PROGRAM IN ENVIRONMENTAL GEOSCIENCE (SCIENCE)

Completion Requirements:

Track Changes:

Program Requirements
Total requirements: 16 credits, ~~15.5 credits~~ of which 1.0 credit must be at the D-level as follows:

Notes:
1. Possible changes to program-required courses (exceptions/substitutions) can only be considered by gaining permission from the program supervisor BEFORE taking the substitution course.
2. Retroactive substitutions to program-required courses cannot be granted; they will not count toward the degree requirements.

First Year: 5.0 credits
BIOA01H3 Life on Earth: Unifying Principles
CHMA10H3 Introductory Chemistry I: Structure and Bonding
CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms
CSCA20H3 Introduction to Programming
EESA06H3 Introduction to Planet Earth
[MATA30H3 Calculus I for Physical Sciences *or* MATA31H3 Calculus I for Mathematical Sciences]*
[MATA36H3 Calculus II for Physical Sciences *or* MATA37H3 Calculus II for Mathematical Sciences]**
PHYA10H3 Physics I for the Physical Sciences
PHYA21H3 Physics II for the Physical Sciences
and
0.5 credit from the following:
BIOA02H3 Life on Earth: Form, Function and Interactions
EESA01H3 Introduction to Environmental Science

*MAT130H3 (MAT135H1) will not be accepted as an exception/substitution
**MAT136H1 will not be accepted as an exception/substitution

Second Year: 5.0 credits
CHMB55H3 Environmental Chemistry
EESB02H3 Principles of Geomorphology
EESB03H3 Principles of Climatology
EESB04H3 Principles of Hydrology
EESB05H3 Principles of Soil Science
EESB15H3 Earth History
EESB18H3 Natural Hazards
EESB19H3 Mineralogy
EESB20H3 Sedimentology and Stratigraphy
STAB22H3 Statistics I

Third Year: 4.0 ~~3.5~~ credits
EESC03H3 Geographic Information Systems and Remote Sensing
EESC07H3 Groundwater
EESC13H3 Environmental Impact Assessment and Auditing
EESC20H3 Geochemistry
EESC22H3 Exploration Geophysics
EESC36H3 Petrology
and
1.0 credit from the following ~~0.5 credit from the following:~~
~~BIOB50H3 Ecology~~
~~EESB22H3 Environmental Geophysics~~
EESB26H3 Introduction to Global Geophysics (only offered every second year)
EESC18H3 Limnology
EESC19H3 Oceanography
EESC29H3/(EESB22H3) Environmental Geophysics
EESC31H3 Glacial Geology (only offered every second year)

Fourth Year: 2.0 credits
EESC37H3 Structural Geology
and

0.5 credit from the following:
EESC26H3 Seismology and Seismic Methods
EESD02H3 Contaminant Hydrogeology
EESD06H3 Climate Change Impact Assessment
EESD09H3 Research Project in Environmental Science
EESD10Y3 Research Project in Environmental Science
EESD11H3 Advanced Watershed Hydrology
EESD13H3 Environmental Law, Policy and Ethics
EESD15H3 Fundamentals of Site Remediation
EESD19H3 Professional Development Seminars in Geoscience
EESD20H3 Geological Evolution and Environmental History of North America
EESD21H3 Geophysical and Climate Data Analysis
and
[1.0 credit at the C- or D-level in EES*** courses] or [0.5 credit at the C- or D-level in EES*** courses and PSCD11H3 Communicating Science: Film, Media, Journalism, and Society]
****For these credits, we strongly recommend (PGO requirement) 0.5 credit from the following ~~Strongly recommended~~*: EESC16H3 Field Camp I and/or ~~*or* EESD07H3 Field Camp II *or*~~ EESD33H3 Field Techniques

Description of Proposed Changes:
1. Credit Requirements: increasing by 0.5 credit to 16.0 credits required for program completion.
2. Requirement 1: added new FAS course MAT130H1 (MAT135H1)
3. Requirement 3: Increased requirement from 3.5 to 4.0. Removed BIOB50H3 as an optional course. Note added to EESC3H3 and EESB26H3: "Only offered every second year". EESB22H3 code changed to EESC29H3
4. Requirement 4 Note: more context to the note about EESC16H3 or EESD33H3. Removed EESD07H3 as an option

Rationale:
1. 16 credits for specialist programs allow students to gain more in-depth knowledge of the respective courses and help highlight the courses needed for the PGO accreditation.
2. To ensure accuracy at a tricampus level, the addition of a new course as an exclusion is necessary.
3. Addition of the extra 0.5 credit to the third-year requirement as an additional course in the list of courses in this area would support students with an in-depth understanding and advanced skills. BIOB50H3 has been removed due to low enrolment. The note was added to ensure students plan their schedules accordingly. The course code update is necessary to ensure accuracy throughout the calendar
4. The note highlights that EESC16 or EESD33 are recommended as one of the 1.0 credit options, as these are options for the Field Techniques PGO requirement. EESD07 was removed since EESC16 is the respective prerequisite for this course.

Impact: The changes will help the students to plan their course enrollment better in terms of selecting courses that are needed for the professional PGO accreditation. Additionally, the change may have a positive impact on some of the course enrollment numbers of the optional course list.

Consultations:
Discussion with colleagues in Environmental Sciences (other Program Supervisors) who have noticed similar problems.
Sept.-Oct. 2025: personal communication and email.
Consultation with Env. Sci. Group: October 2025 through email
DCC Approval: Oct. 10, 2025
FAS Consultation: Jan 26, 2026

Resource Implications: None

Proposal Status: Under Review

4 New Courses - No Committee

CHMD65H3: Chemistry in Medical Diagnosis

Description:

This course introduces the chemical principles underlying medical diagnosis. Topics include disease biomarkers, analytical methods for disease detection in clinic lab, and the chemistry of medical imaging. Students will also develop skills in literature research, critical analysis, and scientific communication through reviews, presentations, discussions, and proposal writing.

Prerequisites: CHMB16H3 and CHMB31H3 and CHMB42H3 and [CHMB62H3 *or* BIOC12H3], and at least 0.5 credit at the C-level in CHM courses.

Enrolment Limits: 24

Recommended Preparation: CHMC11H3 and BIOC39H3

Notes: Priority enrolment will be given to students in the Specialist Program in Medicinal and Biological Chemistry, and the Specialist Program in Chemistry, followed by students in the Major Program in Biochemistry, and the Major Program in Chemistry.

Delivery Method: In Person

Methods of Assessment:

Methods of Assessment will typically be:
Literature Report: 15%
A literature review of chemical methods for clinical diagnosis of a selected disease.
• Presentation: 10%
Oral presentation of the literature review to be given during class time.
• Research Proposal: 25 %
A 5-page (inclusive of figures without references) research proposal – NSERC style. Topic to be pre-approved by the instructor.
• Final Exam: 38 %
The final exam will consist of answering detailed questions about the lecture topics and student literature reports presented in class.
• Peer Review: 6 %
The peer-review process is a key component of communicating results and new ideas in the sciences. Students will be asked to apply critical thinking skills to give feedback to fellow classmates on their presentations and proposals. Instructions will be provided.

Students are expected to have read, thought about, and be ready to discuss posted materials, including the lecture notes and literature reviews, before each class. Participation marks will be assigned based on attendance, engagement and performance in the class discussions.

Breadth Requirements:

Natural Sciences

University of Toronto Scarborough

CNC Allowed: Y

Credit Value: fixed: 0.5

Learning Outcomes:

By the end of the course, students will be able to systematically gain the following subject-specific, as well as certain general knowledge and skills:
• Explain the chemical principles underlying diagnostic medicine, including laboratory tests and medical imaging techniques.
• Analyze the role of analytical chemistry in medical laboratory testing and its applications in clinical diagnosis. • Describe the fundamental chemical principles involved in various medical imaging technologies (e.g., MRI, CT, PET).
• Apply theoretical knowledge to evaluate the advantages and limitations of diagnostic tests and imaging techniques.
• Conduct comprehensive literature research to gather and synthesize information on topics related to diagnostic medicine.
• Develop critical and creative thinking skills through problem-solving exercises and group discussion.
• Communicate scientific concepts effectively through public presentations and written assignments.
• Collaborate with peers in peer-review exercises to provide and receive constructive feedback.
• Design and propose a research project, demonstrating the ability to integrate theoretical knowledge with creative thinking. These learning outcomes are in good alignment with the program learning outcomes:
• The course supports the development of analytical and problem-solving skills, which are essential for careers in chemistry, medicine, and related fields.
• It enhances communication and collaboration skills, preparing students for teamwork in interdisciplinary environments. It fosters research and innovation skills, aligning with the program's goal of producing graduates capable of contributing to scientific advancements.

Topics Covered:

Introduction:
• Brief history and general process of medical diagnosis;
• Molecular basis of disease and disease biomarker.
Part 1: Chemical Lab Tests
• Principles of diagnostic lab chemistry: selectivity, sensitivity, precision, false-positive and false-negative;
• Types of molecular biomarkers, sampling methods and analytical methods;
• Detection of selected monoatomic/elemental biomarkers (H+, metal ions, trace elements, etc);
• Detection of representative small molecules biomarkers (O2, carbohydrates, lipids, vitamins, hormones, etc);
• Detection of peptide/protein/enzyme-based biomarkers;
• Detection of nucleic acid (DNA/RNA) biomarkers.
Part 2: Chemistry in Medical Imaging
• General introduction of medical imaging;
• X-ray/CT imaging and contrast agents;
• Nuclear medicine: PET/SPECT;
• Ultrasound imaging;
• Magnetic resonance imaging (MRI);
Optical imaging (optional).

Rationale:

The topics and themes in this course, such as the diagnostic applications of chemistry, are rarely included in mainstream university curricula, both nationally and internationally, including across the University of Toronto's tri-campus system. This will be the first undergraduate course to address this gap, offering a comprehensive exploration of chemistry's role in medical diagnosis. This course will be a cornerstone for the Medicinal and Biological Chemistry specialist programs at UTSC and will serve as a valuable resource for health-related programs across the University of Toronto. It aligns with and supports future facilitated program pathways related to the Scarborough Academy of Medicine and Integrated Health (SAMIH). In the long term, this course will not only expand the scope of our Medicinal and Biological Chemistry program but also foster stronger connections between the Department of Physical and Environmental Sciences (DPES) and SAMIH in both teaching and research.

Consultation:

Proposal approved by Departmental Curriculum Committee: September 23, 2025
RO Approval (Tarraiz M.): September 29, 2025
Campus Curriculum Committee September 29, 2025
Bio Consultation: approval via email from Jennifer Campbell, Dec 10, 2025

Resources:

This course will be primarily taught by Prof. Xiao-an Zhang, a regular faculty member, with additional support from Prof. Kagan Kerman and Prof. Ruby Sullan. The course will require one TA, ideally a graduate student with a relevant background, to assist with the assessment and feedback of assignments, including literature review, research proposal, and final exam. This TA would be funded out of the department's regular budget.

Overlap with Existing Courses: None

Estimated Enrolment: 24

Proposal Status: Under Review

EESD03H3: Physical Limnology

Jointly Offered with Course(s): EES1120H3

Description:

This course will introduce the physical processes that control mixing and transport in lakes. Understanding many environmental issues in the millions of lakes in Canada requires a deeper understanding of the role of wind-driven currents in thermally stratified water bodies. The emphasis will be on a practical understanding of different physical limnological processes as they relate to government mandates on drinking water quality and the preservation of fish habitat. Students will learn to use the basic equations that model these processes and understand how these equations are used in water quality models. Students will

also be introduced to field measurement techniques and learn to compare field data with model data. Among the subjects to be discussed are the dispersion of pollutants in lakes, the physical controls on lake hypoxia and the role of thermal stratification in setting fish habitat, mixing in stratified estuaries and the dynamics of the seasonal thermocline.

This course is jointly offered with the graduate course EES1120H3.

Prerequisites: PHYA10H3 and PHYA21H3

Exclusions: EES1120H3

Enrolment Limits: 20

Recommended Preparation: EESC18H3

Delivery Method: In Person

Methods of Assessment:

The course will be assessed using problem-solving assignments and a research-based final oral presentation. The exact breakdown of grades is as follows.

4 problem set assignments, each worth 12.5%
1 research project, with an oral presentation worth 40% and a written report worth 10%

Breadth Requirements:

Quantitative Reasoning

University of Toronto Scarborough

CNC Allowed: Y

Credit Value: fixed: 0.5

Learning Outcomes:

By the end of this course, students will be able to:
• summarize seasonal mixing patterns in lakes based upon their latitude and altitude.
• Describe how oxygen is depleted in lakes with different mixing and nutrient regimes.
• predict the influence of nutrient loading upon the water quality of lakes of different sizes
• estimate water current speeds in lakes based upon the wind speed.

Topics Covered:
• The seasonal cycle of thermal stratification in lakes
• The role of wind-driven mixing
• How physical processes influence oxygen loss in lakes
• Transport of pollution in the Great Lakes
• Sediment transport in the coastal zone of lakes

Rationale:

EESD03H3 will be co-taught and co-listed with the existing graduate course EES1120H3. While limnology broadly refers to the study of lakes, this course will focus specifically on physical limnology and the mathematical description of water movement. Undergraduate students will complete the same assignments as graduate students, with a modified final research project. The rationale for introducing and co-listing this course is to create a continuation for two highly subscribed C-level courses, EESC18H3 Limnology and ESC19H3 Oceanography, which typically enroll more than 40 students each and currently lack a direct academic pathway. By leveraging the structure and resources of EES1120, the department will provide undergraduates with access to advanced lake research supported by several faculty members. The course will help develop future experts in limnology and support students interested in pursuing graduate studies in lake research. At present, UTSC offers only one fluid dynamics course focused on small-scale processes; therefore, EESD03H3 will address a curriculum gap by focusing on large-scale geophysical flows relevant to the Great Lakes and coastal estuaries

Consultation:
DCC Approval: Sept 29, 2025
RO Approval (Amber L.): November 8, 2025

Resources: Mathew Wells will teach this course; the course does not require additional resources

Overlap with Existing Courses: EESD03 will extend the material on water circulation that is introduced in EESC18 and EESC19 but does not overlap with those courses. This course is jointly offered with the EES1120H3 graduate course and is therefore listed as an exclusion.

Proposal Status: Under Review

FSTC07H3: Baking: Science and Culture

Description:

This class introduces students to baking traditions from around the world, including both dietary staples (breads of various types) and luxury goods (pastry). It examines underlying scientific principles and environmental contexts. Culinaria Kitchen labs teach practical skills while encouraging innovation.

Enrolment Limits: This course is capped at 20. It will be held in the Culinaria Kitchen Laboratory and all sessions will involve intensive baking and tasting. Every effort will be made to ensure an inclusive environment, but students with medical or other concerns (eg, gluten intolerance) will not be required to taste. The laboratory can safely accommodate 20 students engaged in cookery.

Recommended Preparation: FSTB01H3, FSTB14H3

Notes: Priority will be given to students enrolled in the Food Studies and Environmental Studies Programs. Additional students will be admitted as space permits.

Delivery Method: In Person

Methods of Assessment:

Reflective lab reports 40% (Learning outcomes 1, 2, 3, 4). Research project 25% (Learning outcomes 3, 4). Final exam 35% (Learning outcomes 1, 2, 4).

Breadth Requirements:

Natural Sciences

CNC Allowed: Y

Credit Value: fixed: 0.5

Learning Outcomes:

1) Students will understand the scientific principles and the cultural meanings of starchy staples (in English, bread) and luxury goods (pastry) within environmental contexts.
2) They will apply theoretical knowledge to professional baking skills.
3) They will research the historical, biochemical, social, and cultural dimensions of bread and pastry.
4) They will learn to use multisensory analysis to address critical questions of sustainability

Course Experience: University-Based Experience

Topics Covered:
Baking cultures, social distinction, terroir (connections between ecology, culture, and flavour), artisanal and industrial production, and environmental and social sustainability. Baking science, fermentation, chemical structures, sugar, environmental influences, baking ratios, recipe evaluation and troubleshooting, and baking skills.

Rationale:
The Food Studies minor program seeks to provide students with a combination of theoretical knowledge and practical skills, but despite the extensive use of kitchen labs, the program needs more intensive courses for professional development. This class seeks to fill that gap by introducing students to one of the main categories of culinary arts training, baking, giving students the foundations of food cultures, scientific practices, and ecological systems. It will also serve as a pilot for other professional classes. The core FST faculty members have discussed prerequisites and decided to keep them to a minimum. To support students, the department has listed recommended courses, but the preference is to allow students to make their own decisions. This pathway is more suitable for students' success in FST courses.

Consultation:
DCC Approval: Sept 23 2025
Food Studies faculty and undergraduate advising staff, Sept 2, 2025
RO Approval (Tarraiz Malandrino): Oct 22, 2025
Experiential Learning approval (Team X): Sept 4, 2025

Resources: This class will be taught by regular faculty member Jeffrey Pilcher without TA support in the Culinaria Kitchen Laboratory. Lab materials will be purchased using ancillary fees. It will require no additional resources.

Proposal Status: Under Review

FSTC14H3: Culinary Practice for Health

Description:

This class uses evidence-based approaches combining culinary arts, nutrition science, food literacies, and related applied health sciences to explore how food helps to prevent, manage, and treat diet-related health conditions. Working in the Culinaria Kitchen Laboratory, students will learn to cook foods and plan diets that are healthy, delicious, economical, and culturally diverse.

Recommended Preparation: [FSTB01H3 and FSTB14H3] or [HISB14H3, HLTB11H3

Notes: Priority will be given to students enrolled in the Food Studies, Environmental Studies, and Health Studies programs. Additional students will be admitted as space permits.

Delivery Method: In Person

Methods of Assessment:

Weekly reflective lab reports 20% (Learning outcomes 1, 2, 3).
Midterm exam 20% (Learning outcomes 1, 2, 3).
Research project 25% (Learning outcomes 3, 4).
Final exam 35% (Learning outcomes 1, 2, 3, 4).

Breadth Requirements:

Social & Behavioural Sciences

CNC Allowed: Y

Credit Value: fixed: 0.5

Learning Outcomes:

1) Students will understand how different paradigms (traditional, scientific, consumerist) conceptualize links between food and health.
2) They will gain practical skills in planning, sourcing, and preparing healthy, economical, and culturally relevant meals
3) They will learn effective strategies for researching and implementing culinary medicine, nutritional security, and food literacy strategies.

Course Experience: University-Based Experience

Topics Covered:
Diet and chronic disease prevention and management, macro and micro nutrients, nutrition around the world, nutritional myths and functional foods, microbiome, eating well on a budget, culturally relevant foods, nutritional security, and eco-health outcomes.

Rationale:
Poor diets, consumption of ultra-processed foods, and low levels of food literacy are major contributors to ill-health. This class provides students with theoretical knowledge and practical skills to feed themselves and others healthy foods, which is currently lacking in the Food Studies curriculum and therefore helps to fill a curriculum gap. It expands the Food Studies program’s connections with the Health Studies program. The core FST faculty members have discussed prerequisites and decided to keep them to a minimum. To support students, the department has listed recommended courses, but the preference is to allow students to make their own decisions. This pathway is more suitable for students' success in FST courses.

Consultation:
DCC Approval: Sept 23, 2025

Food Studies: Sept 2, 2025
Experiential Learning approval: Sept 4, 2025
Consult with Nutritional Sciences, Temerty Faculty of Medicine: Sept 10, 2025: Daniel Sellen, who has appointments in Anthropology (FAS), Nutrition (Temerty), and Health Sciences (Dalla Lana), and serves as Director, The Joannah and Brian Lawson Centre for Child Nutrition, Faculty of Medicine, was contacted via email for consultation. He was sent the course proposal, which at the time was still labelled Culinary Medicine. He was enthusiastic about the course and offered to promote it among Nutritional Science and Anthropology students at St George. He also encouraged the faculty member to reach out to Dr. John Sievenpiper, a clinical researcher who leads the Culinary Medicine initiative at the Lawson Centre, who unfortunately did not respond to the email.
CCC: Sept 22, 2025
RO Approval (Tarraiz Malandrino): Oct 22, 2025

Resources:
This class will be taught by an existing faculty member, Jeffery Pilcher. Existing resources will be used in the Culinaria Kitchen Laboratory. No extra resources will be required

Proposal Status: Under Review

1 Course Change No Committee

EESC29H3H3: Environmental Geophysics

Previous Course Code: EESB22H3

Prerequisites: ~~EESA06H3 and [PHYA10H3 or PHYA11H3]~~ EESB15H3

Exclusions: (EESB22H3)

Learning Outcomes:
~~Students should leave this course with the ability to:~~

~~1. understand the basic theory behind geophysical techniques such as gravity and magnetic surveys, electromagnetics, resistivity, and seismology (amongst others);~~
~~2. apply this theory and techniques for assessments of applied environmental issues including climate change and natural hazard monitoring, and clean energy and water assessments.~~
~~3. make informed decisions on where different geophysical techniques are best applied to assess environmental conditions across different temporal and spatial scales;~~
~~4. analyze and interpret different forms of geophysical data;~~
~~5. Communicate geophysical data and related interpretations to specialist and general audiences, in both written and oral forms.~~

Students should leave this course with the ability to:
1. Understand the underlying physical and mathematical principles, as well as strengths and weaknesses, of various geophysical techniques (such as gravity and magnetic surveys, electromagnetics, resistivity, and seismology, amongst others).
2. Recognize which geophysical technique(s) are appropriate for specific problems and apply this theory and these techniques for assessments of applied environmental issues (including climate change and natural hazard monitoring, and clean energy and water assessments).
3. Make informed decisions on where different geophysical techniques are best applied to assess environmental conditions across different temporal and spatial scales.
4. Analyze and interpret different forms of processed geophysical data (such as gravity and magnetic surveys, electromagnetics, resistivity, and seismology, amongst others).
5. Communicate the uncertainty of interpretation of various forms of geophysical data.

Topics Covered:
The topics covered will link the use of geophysics to environmental science, including:

- hazard analysis including monitoring of volcanoes, tsunamis, and earthquakes;
- climate change monitoring, including permafrost degradation and sea-level change;
- clean water and sanitation assessments, including characterization of watershed basin structure, monitoring contamination transport pathways, and radioactive waste monitoring;
- clean energy evaluations, including site-specific carbon capture and storage potential, assessments of geothermal energy potential;
- and the use of geophysics in the construction of sustainable cities.

Methods of Assessment:
~~- A written report on planning the location of a geophysical survey will show an understanding of the various factors required to conduct a survey (related to Learning Outcomes 1-3).~~
~~- A guest speaker in the field of science communication will be invited to speak to the students on communicating risk and uncertainty in scientific findings. This Experiential Learning university-based partnership will be linked to the field of science communication. Based on this EL activity, there will be a written report communicating the risk of natural disasters based on geophysical data interpretation. The reflective assessment will show an understanding of how to communicate science to different audiences across different platforms (e.g., social media, press releases, blog posts) and be related to Learning Outcome 5.~~
~~- Two reports on data interpretation. The work here will show the student's understanding of geophysical data based on specific tutorial lessons (related to Learning Outcomes 1-2 and 4).~~
~~- Five multiple-choice online quizzes will be provided to capture assessments for tutorial sessions that do not have a report linked to them (related to Learning Outcomes 1-5).~~
~~- Final exam: A final exam will focus the student's attention on the key learning outcomes: method of geophysical techniques, basic data interpretation, the societal impact of geophysics, and measuring uncertainty (related to Learning Outcomes 1-5).~~
Methods of assessment will be split between problem sets, reports, and presentations:
• Problem sets on geophysical data interpretation. The work here will show the student's understanding of geophysical data based on specific lessons (related to Learning Outcomes 1- 4).
• A written report on planning the location of a geophysical study will show an understanding of the various factors required to conduct a survey (related to Learning Outcomes 1-3).
• A final report will be written on the design of an Environmental Geophysics project with relevant stakeholder engagement and act as an applied culmination of knowledge from the theoretical part of the course. The report will focus the student's attention on the key learning outcomes: method of geophysical techniques, basic data interpretation, societal impact of geophysics, and measuring uncertainty (related to Learning Outcomes 1-5). There will also be a summary oral presentation of the work.

Rationale:
This is a course code change from EESB22H3. The original course, offered from 2023 to 2026 as EESB22H3, has been reviewed by the department and determined to be more appropriately classified as a C-level course. EESB22H3 already operated at a depth consistent with C-level expectations. The course builds foundational knowledge before progressing to in-depth exploration of environmental topics, with a strong emphasis on applying geophysics to real-world environmental problems. Students analyze real geophysical datasets and complete a substantial final report focused on applying theory to practice. The revised course formalizes this existing structure by adding a B-level prerequisite to better prepare students and by clarifying learning outcomes to reflect the progression from foundational to advanced application. The placement of the course as a B-level offering has also created enrolment challenges. Undergraduate programs in Environmental Geoscience, Environmental Physics, and Environmental Science include several mandatory B-level requirements, leaving limited space for optional specialist B-level courses such as this one. As a result, continued low enrolment is likely if the course remains at the B-level. Also, in practice, students in the Environmental Geoscience program typically take this course in their third year due to limited opportunities for optional second-year courses. In addition, students in Environmental Science and Environmental Geoscience are required to complete several C-level EES courses to graduate. Changing this course to a C-level creates an additional opportunity for students to meet these requirements, supports progression within the program, contributes toward PGO requirements, and is expected to increase enrolment and visibility of the course.

Consultation:
Consultation with Earth and Environmental Science Group in DPES: October 8, 2025
DCC Approval: October 10, 2025
Consultation with Chair of DPES: Oct 8 2025
RO Approval: Oct 14, 2025

Resources: None. This is a direct transfer of resources from EESB22H3

Proposal Status: Under Review