Senate Undergraduate Council

Open & Confidential Session

April 7, 2026

10:00 a.m. - 12:00 p.m.

Needles Hall

NH 3318

Waterloo Campus

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2026 04 07 Senate Undergraduate Council Meeting Book

AGENDA

	1. Governance Resources		
	1.1. Link to Governance Resources		
10:00 a.m.	2. Approval of the Agenda		
	2.1. Conflict of Interest		
	2.2. Approval of the Agenda and Consent Items	Decision	3
	2.3. Business Arising from the Minutes	Information	
	2.3.1. Senate Alternative Credentials Committee Updates	Information	4
	3. Consent Agenda		
	3.1. Minutes of February 4, 2026 Meeting	Decision	8
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	3.2.2. Faculty of Mathematics	Decision	14
	3.2.3. Faculty of Science	Decision	23
	4. Regular Agenda		
10:05 a.m.	5. Chair's Remarks [DeVidi]	Information	
10:10 a.m.	6. Curricular Submissions		
	6.1. Report from the SUC Curriculum Subcommittee	Information	59
	6.2. Faculty of Science	Decision	60
10:15 a.m.	7. EdTech Fee [Gilbertson & Fluttert]		
	7.1. EdTech Fee	Discussion	97
10:35 a.m.	8. Velocity Resources and Support for Undergraduate Students [Dick & Traianovski]		
	8.1. Velocity Resources and Support for Undergraduate Students	Discussion	102
10:55 a.m.	9. Items Removed from the Consent Agenda		
11:00 a.m.	10. Other Business		
	11. Confidential Session		
11:05 a.m.	12. SUC Mandate Review [DeVidi, Jeanneault, & Ly]		
	12.1. SUC Mandate Review	Discussion	114
	13. Adjournment		

The next SUC meeting will be held on June 16, 2026.

UNIVERSITY OF WATERLOO | Senate

For Approval **Open Session**

To:	Senate Undergraduate Council
From:	Tony Ly Governance Officer
Date of Meeting:	April 7, 2026
Agenda Item:	**2. Approval of the Agenda**

2.1. Conflict of Interest

Members are invited to declare any conflicts related to the open session agenda at this time. Should a conflict of interest arise during discussion, members are asked to declare a conflict of interest as it arises. Information and guidance on conflicts of interest is provided on the Secretariat website.

The Secretariat can provide guidance regarding potential conflicts of interest in advance of or during the meeting.

2.2. Approval of the Agenda and Approval of the Consent Agenda

Motion: To approve the agenda as presented/amended, and to approve or receive for information the items on the consent agenda, listed as items 3.1 – 3.2.

Members wishing to have an item removed from consent to the regular agenda are asked to contact the Secretariat in advance of the meeting. Members may also request to have items moved to the regular agenda immediately prior to the approval of the agenda.

2.3. Business Arising from the Minutes

Renewal of Agreement with Beijing Jiaotong University

Renewal of agreements will be going forward to Senate Undergraduate Council for information only. The vote for the last renewal will be noted for the record.

New Agreement with Sault College

New agreements are only brought forward for approval should they contain impacts to curriculum or other major/minor modifications that would otherwise be under the mandate of SUC. The Secretariat is currently working with internal stakeholders to provide clear and transparent guidelines on how new and revised agreements should be listed on the Senate Undergraduate Council, Senate Graduate Council, and Senate agendas.

Senate Alternative Credentials Committee Updates

An update about the Senate Alternative Credentials Committee was provided in a memo included in the agenda package.

Memorandum
To: SUC, SGC
Subject: Senate discussion of Senate Alternative Credentials Committee recommendation from SUC and SGC
From: David DeVidi, AVPA

Colleagues:
The SACC motion was on the agenda at the March Senate meeting. As often happens, the meeting was running far behind the anticipated timelines. As a result, the President ruled that everyone who had a question of comment would ask/comment, and only then would there be responses. As a result, several people asked the same or similar questions. Because it was taking a long time to get through these questions, the President deferred the vote to the next time SACC appeared on the Senate agenda.

I think that all of the questions are readily answered in a way that should be persuasive to Senators. I have included the questions and my answers below for the information of SUC and SGC members.

There was also a Senator who suggested that the concerns raised by SUC and SGC when we considered a proposal for a Senate Academic Innovation Committee *also* applied to the SACC proposal that SUC and SGC had recommended to Senate at around the same time. I have not provided an answer to this suggestion because I think it should seem manifestly untrue to the SUC and SGC members who attended the three discussions of the SACC idea a SUC and SGC and the discussions of the Senate Academic Innovation Committee proposal.

Here are the questions that were asked and my replies:

What is the scope of SACC approvals? As stated in the SACC Terms of Reference, the scope is "to approve, on behalf of Senate, alternative credentials, including microcredentials." As specified in the "Mandate" section, "alternative" is essentially synonymous with "non-credit", where "for credit" includes all courses and milestones that can count towards degrees.

All for credit credentials, from milestones to courses to options to minors to degree programs must be approved by Senate or (for courses, for instance) by SUC or SGC on behalf of Senate.

What about "stacking" of non-credit credentials into credits? This can only happen *if there is a credit credential (or part of a program leading to a credential, like a course) to "stack" into*. That is, if the leadership of a Waterloo program decides that certain non-credit credentials ought to count as equivalent to a for credit course (e.g., so that someone can count it towards a degree), *they can only do so if the course already "exists" in the sense of being approved by SUC or SGC and appearing in the relevant academic calendar.* SACC will not be approving the for credit offering and will not be the body determining equivalence to any for credit offering.

While it is not yet formalized, the "stacking" process proposed in the Credentials Framework report vests the decision about when non-credit credentials are sufficient, from an academic point of

view, to count as equivalent to a credit *with the academic program leadership* of the unit that offers the course. This is exactly parallel to how decisions are made about which credit courses offered by other institutions ought to count as equivalent to a Waterloo credit course.

Will SACC be approving "programs"? Like most vocabulary in this area, definitions are slippery. As noted above, *SACC will not approve for credit programs*, which includes things like programs leading to Bachelor, Masters or Doctoral degrees, minors, options, etc.

However, another appropriate use of the word "program," the one recommended for use in the Credentials Framework report, is "a sequence of courses or milestones the successful completion of which results in the awarding of a credential." In this sense SACC can approve a program, *if the credential is a non-credit credential*.

An example is the Sustainable Aviation Certificate, offered through the Waterloo Institute for Sustainable Aviation. In order to receive this certificate, learners must complete three somewhat independent courses, each of which results in awarding of a smaller certificate (e.g., "Aviation and Climate Change"). According to the definition of "program" just presented, the Sustainable Aviation Certificate is awarded after the completion of a program. The crucial point for present purposes is that it is *not* a for credit program.

Why are there no elected Senators on the SACC? This is not uncommon for Senate committees. For instance, the Senate AQuE committee need not have *elected* members, either of Senate or of SUG/SGC. But the most relevant analogue is the Curriculum Subcommittee of Senate Undergraduate Committee. The Curriculum Subcommittee includes the AVPA, the Associate Deans Undergraduate from each Faculty, an AFIW representative, student members, and (as non-voting supports) several expert staff members. This subcommittee reviews, on behalf of SUC, all of the undergraduate submissions that come forward. The membership is appropriate because these people have the relevant expertise to understand what to look for in a proposal for a new course, a modification of a program, or a new program proposal. Similarly, the proposal for SACC is that the people reviewing proposed non-credit credentials will have relevant expertise because they are their Faculty's designated expert on lifelong learning offerings.

Why does it say that it is at the discretion of the SACC Chair that an item of controversy will be referred to Senate for discussion? Compare the comparable passage from Senate Undergraduate Council's mandate in Bylaw 2: "Any matter of controversy that might arise may be referred to Senate." The SACC wording if similarly vague about exactly when such a referral to Senate is appropriate, but less vague in that it assigns the job of referring to a particular individual.

Trying to specify in detail what should happen when there is controversy within SACC would be problematic, in that it might tie the hands of the committee in its attempts to resolve issues efficiently. For instance, some discussions within the current Alternative Credentials Approval Committee have led to further discussion with proponents of a particular credential idea and, often, revisions; some discussions have led to conversations between Deans or between a Dean and the Provost. To date, none have been of such a nature that referring to Senate or either SUC or SGC has seemed appropriate. The proposed description of SACC gives the license to so-refer an item if it seems to be one that would benefit from Senate consideration.

Why not add the approval of alternative credentials to the Senate agenda under the consent agenda before the are considered officially approved? What's the rush? This delay can sometimes cause problems. For instance, some one hour sessions aimed at CEOs for which WatSPEED has offered what is essentially a certificate of attendance were ones that (a) needed to be offered within a few weeks in order to draw an audience, (b) were to be delivered by recognized international experts from the University of Waterloo, and (c) drew large audiences and so were both reputation-burnishing for the University and revenue positive. Waiting for a month might have prevented this from happening. There are non-WatSPEED examples of, for instance, summer programs aimed at international learners that could not have been offered if ACAC approvals had taken months instead of days. The flexibility of these approval proposals is an important asset that we should preserve from ACAC.

Moreover, it is worth noting that requiring that non-credit offerings be on the consent agenda of Senate is requiring *a higher degree of Senate oversight than the University requires of for credit academic courses*. These are approved by SUC or SCG on behalf of Senate.

For the interest of Senators, here is a list of ACAC approvals in 2025, reproduced from the report from the Senate AQuE committee to Senate in February.

WatSPEED Offerings

Credential	Partners	Notes
Back end 1: Frameworks and Architecture	School of Computer Science/Inflection Group	Certificate of Achievement
Back end 2: Security, Database Design and Concurrency	School of Computer Science/Inflection Group	Certificate of Achievement
Cloud Computing and Security Essentials	School of Computer Science	Certificate of Achievement
Cloud Computing and Security Fundamentals	School of Computer Science	Certificate of Achievement
Cybersecurity and Privacy	Cybersecurity and Privacy Institute	Certificate of Attendance
Managing AI Projects	Vector Institute	Certificate of Completion
Neural Networks	Faculty of Engineering	Certificate of Completion
Python 2	School of Computer Science	Certificate of Achievement

Non-Credit Credentials not involving WatSPEED

Credential	Whose is it?	Notes
Leveraging AI to Improve Healthcare in Canada	School of Public Health Science (Health)	Certificate of completion
AI Enabled Healthcare	School of Public Health Sciences	Certificate of Completion
Land Development Bootcamp	Future Cities Institute (Environment)	Certificate of participation
Future Cities Field School	Future Cities Institute	Certificate of participation

Leadership Training Program in Entrepreneurship	Faculty of Engineering	Certificate of completion
Global Spotts Management Certificate: Leadership and Innovation	Department of Recreation and Leisure Studies (Health)	Certificate of participation
Municipal Climate Adaptation Certificate	Faculty of Environment	Certificate of completion
Systems and Platform Security	School of Computer Science	Certificate of Achievement

University of Waterloo
SENATE UNDERGRADUATE COUNCIL
Minutes of the February 4, 2026 Meeting

Present: Katherine Acheson, Faisal Al-Faisal, Veronica Austen, Makenzie Campbell, Benoit Charbonneau, Victoria Chu, Laura Deakin, David DeVidi [Chair], Tanraj Dulai, Leeanne Ferries, Jason Grove, Tony Ly [Secretary], Carol Ann MacGregor, Sean Meehan, Damian Mikhail, Samantha Pater, Cynthia Richard, Sharon Roberts, Helen Shilomboleni, Robert Stark, Steven Singh, Ian VanderBurgh, Johanna Wandel, William Wong, Richard Wikkerink

Resources/Guests: Nasser Abukhdeir, Melissa Benjamin, Angela Christelis, Jennifer Coghlin, Ashley Day, Samantha Harley, Emily Hudson, Danielle Jeanneault, Carrie MacKinnon Molson, Nadia Singh, Rebecca Wickens

Regrets: Tom Duever, Vivek Goel, Joshua Stainton

Organization of Meeting: David DeVidi took the chair and Tony Ly acted as secretary. The secretary advised that quorum was present. The agenda was approved without a formal motion.

1. Governance Resources
This item was provided for information only.

2. Approval of the Agenda
Council heard a motion to approve or receive for information the items of the consent agenda. Charbonneau and Wandel. Carried.

The Secretariat received a request from a council member to remove the DATSC 101 motion from item 3.3.8 and item 3.4 from the consent agenda.

2.1. Conflict of Interest
No conflicts of interest were declared.

2.2. Approval of the Agenda and Consent Items
Council approved the agenda as amended.

2.3. Business Arising from the Minutes
The Chair advised that the Senate Alternative Credentials Committee (SACC) proposal will be presented to SEC and Senate. Feedback provided from the Senate Graduate Council (SGC) and Senate Undergraduate Councill (SUC) will be incorporated in the revised SACC proposal. Ian VanderBurgh will be Acting Chair for item 9, Senate Academic Innovation Committee (SAIC).

3. Consent Agenda
Council approved items 3.1, 3.2, 3.3, 3.5 on behalf of Senate and received for information item 3.4.

3.1. Minutes of December 9, 2025 Meeting
Council approved the minutes of the meeting as distributed.

3.2. Awards and Scholarships
Council received for information and approved all new awards and scholarships.

3.3 Curricular Submissions
Council received for information item 3.3.1 and approved items 3.3.2 – 3.3.12 on behalf of Senate.

3.4. Renewal of Agreement with Beijing Jiaotong University
Renewal of agreements are provided to Senate Undergraduate Council for information only.

3.5. New Agreement with Sault College
New agreements are only brought forward for approval should they contain impacts to curriculum or other major/minor modifications that would otherwise be under the mandate of SUC.

4. Regular Agenda

5. Chair's Remarks
The Chair welcomed new members to the Senate Undergraduate Council. The Chair advised that there are many items on the agenda and asked members to keep their comments brief.

6. Curricular Submissions

6.1. Report from the SUC Curriculum Subcommittee
Council received a report from the SUC Curriculum Subcommittee for information only.

6.2. Faculty of Arts
Acheson provided an overview of the program changes from the departments and the regulation changes from the Faculty of Arts.

A motion was heard to recommend to SUC that Senate approve the major plan modifications for the Faculty of Arts School of Accounting and Finance, Department of Communication Arts, Department of Economics, Renison University College programs, and regulation changes, effective September 1, 2026, as presented. Acheson and Charbonneau. Carried.

6.3 – 6.5. Faculty of Engineering
Grove introduced the proposed major modifications from the Faculty of Engineering. Grove also presented information for the changes from the Department of Civil and Environmental Engineering and the Department of Systems Design Engineering. Additional consultation with the Faculty of Health, Faculty of Science, and Faculty of Mathematics was completed. The name for the Sports Engineering specialization was adjusted to be Biomechanics and Rehabilitation Engineering. The regulation changes include updated details to clarify outdated descriptions. Grove will work with the Office of the Registrar to address any further editorial changes.

A motion was heard to recommend to SUC that Senate approve the major plan modifications for the Faculty of Engineering Biomedical Imaging Technologies Specialization, Diploma in Business and Entrepreneurship programs, and regulation changes, effective September 1, 2026, as presented. Grove and Wikkerink. Carried.

A motion was heard to recommend that SUC approve the submitted new courses for the Department of Civil and Environmental Engineering, effective September 1, 2026, as presented. Grove and Wikkerink. Carried.

A motion was heard to recommend that SUC approve the submitted retired courses, new courses, course changes, and minor plan modifications for the Department of Systems Design Engineering, effective September 1, 2026, as presented. Grove and Wikkerink. Carried.

6.6. Faculty of Environment
Wandel provided a presentation about the changes for the specializations and regulations from the Faculty of Environment. A new Certificate in Geographic Information Systems was created.

A motion was heard to recommend to SUC that Senate approve the major plan modifications for the Faculty of Environment Geographic Information Systems Certificate, Environment, Society and Well-Being Specialization, Remote Sensing Specialization programs, and regulation changes, effective September 1, 2026, as presented. Wandel and Ferries. Carried.

6.7. Faculty of Mathematics
Charbonneau described the major modifications for the Data Science program and the changes for DATSC 101 that was removed from the consent agenda. Additional consultation occurred within the Faculty of Mathematics. All students will have access to DATSC 101. The academic unit was changed to the Dean of Mathematics Office.

A motion was heard to recommend to SUC that Senate approve the major plan modifications for the Faculty of Mathematics Data Science program, effective September 1, 2026, as presented. Charbonneau and Deakin. Carried.

A motion was heard to recommend that SUC approve the changes for the DATSC 101 – Introduction to Data Science, effective September 1, 2026, as presented. Charbonneau and Deakin. Carried.

6.8. Faculty of Science
Deakin presented the major modifications from the Faculty of Science. The changes for the Advanced Physics Option will allow students to get a credential recognizing their accomplishments. The Aviation Minor was developed in consultation with the Faculty of Environment and will provide students with a different pathway. The regulation changes provided clarification about the process for students transferring out of the Bachelor of Medical Sciences program.

A motion was heard to recommend to SUC that Senate approve the major plan modifications for the Faculty of Science Advanced Physics Option, Aviation Minor, and regulation changes, effective September 1, 2026, as presented. Deakin and Ferries. Carried.

6.9. Office of the Registrar
VanderBurgh presented a summary of the new regulations and changes from the Office of the Registrar.

A motion was heard to recommend to SUC that Senate approve the Office of the Registrar new regulation and regulation changes, effective September 1, 2026, as presented. VanderBurgh and Acheson. Carried.

7. Faculty of Environment – Joint Education Institutes
The Chair noted that this item is being provided for discussion and consultation only. Wickens presented an overview of the new joint education model with international institutions that differ from traditional agreements. The program will be delivered at the partnered institution. Students would be admitted to the University of Waterloo and a partner institution in China. This model has been implemented in the United Kingdom, Australia, and New Zealand. The policy framework, business terms, and operational considerations are currently being reviewed. Discussion from council members focused on the process for curriculum changes, intellectual property, governance oversight, risk management, and strategic priorities. Wickens will provide council members with a list of institutions with similar agreements. Council members were invited to send Wickens their questions and feedback.

8. Policy 70 Consultation
Singh provided a presentation about changes to Policy 70. Initial work to revise Policy 70 began in 2017. Council members raised questions about membership, decision-making authority, and specific language used in sections 6 and 8. Members were invited to send additional comments to Singh.

9. Senate Academic Innovation Committee
The Acting Chair, Ian VanderBurgh, noted he would be chairing this portion of the meeting. Abukhdeir presented a proposal for the Senate Academic Innovation Committee (SAIC). This proposal was inspired by the work of the Academic Innovation Working Group (AIWG) and is intended to provide a long-term governance structure for academic innovation at the University of Waterloo. The proposed committee would focus on reviewing and advising on academic innovation initiatives, alternative credentials, and would operate with oversight from the Senate Undergraduate Council (SUC) and Senate Graduate Council (SGC). Abukhdeir emphasized that SAIC would not

develop initiatives, but would receive proposals for information, address governance gaps, and ensure initiatives are appropriately reviewed through Senate processes.

Discussion followed and council members raised the following concerns: 1) unclear definition and scope of academic innovation; 2) duplication of work — similar work is already completed at the Faculty level, Teaching Innovation Incubator, and existing governing bodies such as SUC and SGC; 3) overlapping activities with current curriculum development and academic program approval processes; 4) the approval process of alternative credentials; 5) the resource and funding implications; 6) need clearer definitions within the Terms of Reference; and 7) to explicitly distinguish the role of SAIC from existing governance processes.

10. Senate Undergraduate Council Mandate Review
The Chair provided an introduction for the Senate Undergraduate Council mandate review. Ly highlighted findings from an environmental scan of the U15. Key discussion points included: amendments to Senate Bylaw 2, opportunities for enhancing curriculum processes, improving communication to campus stakeholders, subcommittee membership, and student involvement. Members were invited to submit additional feedback to the Secretariat.

11. Items Removed from the Consent Agenda
The Chair invited Charbonneau to speak about item 3.4, Renewal of Agreement with Beijing Jiaotong University. Charbonneau requested additional information about the agreement. Deakin mentioned that this is a renewal with a partnered institution in China. Concerns were raised if this agreement is not renewed because students have already been admitted to the program. Members discussed whether renewal of agreements should be approved at the Senate Undergraduate Council.

The Secretariat is currently working with internal stakeholders to provide clear and transparent guidelines on how new and revised agreements should be listed on the Senate Undergraduate Council, Senate Graduate Council, and Senate agendas. The vote for the last renewal will be noted for the record.

A motion was heard to recommend that SUC approve the Renewal of Agreement with Beijing Jiaotong University, as presented. Deakin and Mikhail. Carried. There were 10 noted abstentions.

12. Other Business
No other items of business were identified.

13. Adjournment
With no further business, the meeting was adjourned. The next meeting of the Senate Undergraduate Council will be held on April 7, 2026 from 10:00 a.m. - 12:00 p.m.

For Approval **Consent Agenda**

To:	Senate Undergraduate Council
Sponsor/Presenter:	David DeVidi, Associate Vice-President, Academic
Date of Meeting:	April 7, 2026
Agenda Item Identification:	3.2.1. SUC Curriculum Subcommittee Report: Consent Agenda for Approval

Recommendation/Motion

To approve the following curricular motions on behalf of Senate, as presented:

i. Faculty of Mathematics – Consent Agenda
To recommend that SUC approve, through its consent agenda, the submitted course changes for the Faculty of Mathematics, effective September 1, 2027, as presented.

ii. Faculty of Science – Consent Agenda
To recommend that SUC approve, through its consent agenda, the submitted retired course, new courses, course changes for the Faculty of Science, effective September 1, 2027, as presented.

Summary

The SUC Curriculum Subcommittee has reviewed and agreed, via an e-vote which closed on January 26, 2026 to recommend to SUC for approval or receive for information as part of the consent agenda, the items included in the subsequent sections of this report (3.2.2 – 3.2.3).

To support easier navigation, items are also available in Kuali Curriculum Management (CM) via the following links. Please review the online guide for additional information about Kuali CM. If you have any issues accessing the links below, please contact Tony Ly, Governance Officer, for support.

i. Faculty of Mathematics – Consent Agenda
ii. Faculty of Science – Consent Agenda

Jurisdictional Information

As provided for in Senate Bylaw 2, section 5.03, council is empowered to make approvals on behalf of Senate for a variety of operational matters:

c. Make recommendations to Senate with respect to new undergraduate programs/plans, the deletion of undergraduate programs/plans, and major changes to undergraduate programs/plans.

Governance Path

Senate Undergraduate Council, Curriculum Subcommittee: March 27, 2026 (via e-vote)
Senate Undergraduate Council: April 7, 2026 (prospective)

Documents Included

- 3.2.2. Faculty of Mathematics
- 3.2.3. Faculty of Science

Date 2026/03/30

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Meeting Information

Agenda Page TitleSUC - 2026-04 - Consent Agenda - Faculty of Mathematics

Career Level
Undergraduate,

Faculty/UnitMathematics

Date2026-04-07

Summary

The following motion was approved at UAC on January 19, 2026 and at Math Faculty Council on February 24, 2026.

1. Course Change (Motion 1)

- **CS338**

Course Proposals

Courses: Retire No proposals have been added.

Courses: New No proposals have been added.

Courses: Changes

Code	Title	Type	Workflow Step
CS 338	Computer Applications in Business: Databases	Courses	SUC Subcommittee, SUC Curricular Subcommittee

Programs & Plans Proposals

Programs & Plans: Retire No proposals have been added.

Programs & Plans: Major Modifications No proposals have been added.

Programs & Plans: Minor Modifications No proposals have been added.

Regulations Proposals

Regulations: Retire No proposals have been added.

Regulations: New No proposals have been added.

Regulations: Changes No proposals have been added.

CS 338 - Computer Applications in Business: Databases

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2027

Existing

Effective Term and Year
Fall 2024

Offering Number
1

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2026-01-14

Unit Weight/Number Changes
No,

Rationale for Change

We wish to add a TST slot to CS 338 in the calendar to facilitate the scheduling of midterm exams.

Approved at UAC 20260119

Approved at FC 20260224

Course Information

Faculty

Faculty of Mathematics

Academic Unit

David R. Cheriton School of Computer Science

Subject Code

CS

Number

338

Course Level

300

Title

Computer Applications in Business: Databases

Abbreviated Title

Comp Applic in Bus Databases

Undergraduate Communication Requirement Identifier

No,

Description

A user-oriented approach to the management of large collections of data. Methods used for the storage, selection, and presentation of data. Common database management systems.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Proposed

Components
Test Slot

Existing

Components

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

1. Complete all of the following
    - Must have completed at least 1 of the following:
    - AFM341 - Accounting Information Systems (0.50)
        - Must have completed at least 1 of the following:

Corequisites

No Rules

Antirequisites

Complete all of the following

- Not completed nor concurrently enrolled in:
  - CS348 - Introduction to Database Management (0.50)
  - CS448 - Database Systems Implementation (0.50)
- Not completed nor concurrently enrolled in the following: MSCI346
- Not open to students enrolled in H-BBA & BCS Double Degree, H-Computer Science (BCS), H-Computer Science (BMath), JH-Computer Science (BCS), JH-Computer Science (BMath), H-Computing & Financial Management, H-Data Science (BCS), or H-Software Engineering

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Mathematics

Dependencies

Antirequisites

- MSE 245 - Databases and Software Design View Program
- CS 348 - Introduction to Database Management View Program

Course Requirements (no units)

- CPA-Data Analytics Specialization - Data Analytics Specialization View Program

Specializations

- H-Mathematical Optimization - Operations Research Specialization - Mathematical Optimization - Operations Research Specialization (Bachelor of Mathematics - Honours) View Program
- H-Mathematical Optimization - Business Specialization - Mathematical Optimization - Business Specialization (Bachelor of Mathematics - Honours) View Program

Course Requirements (no units)

- H-Mathematics/Business Administration - Mathematics/Business Administration (Bachelor of Mathematics - Honours) View Program
- H-Mathematics/Teaching - Mathematics/Teaching (Bachelor of Mathematics - Honours) View Program
- H-Information Technology Management - Information Technology Management (Bachelor of Mathematics - Honours) View Program

Course Requirements (units)

- Health Informatics Option - Health Informatics Option View Program

Course Requirements (no units)

- MS-Business Specialization - Business Specialization View Program

Specializations

- H-Math/FARM - Professional Risk Management Spec - Mathematics/Financial Analysis and Risk Management - Professional Risk Management Specialization (Bachelor of Mathematics - Honours) View Program

Course Requirements (no units)

- H-Data Science (BMath) - Data Science (Bachelor of Mathematics - Honours) View Program
- H-Geospatial Data Science - Geospatial Data Science (Bachelor of Environmental Studies - Honours) View Program
- JH-Geospatial Data Science - Geospatial Data Science (Joint Honours)
- H-Chemistry - Computational Specialization - Chemistry - Computational Specialization (Bachelor of Science - Honours) View Program View Program

Course Lists

- Computing Option - Computing Option [View Program]
- Computer Engineering Option - Computer Engineering Option [View Program]
- Software Engineering Option - Software Engineering Option [View Program]

Date 2026/03/20

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Meeting Information

Agenda Page TitleSUC - 2026-04- Consent Agenda - Faculty of Science

Faculty/UnitFaculty of Science

Time **Location**

Summary

Faculty of Science Report

The following motion was approved at the Science Undergraduate Studies Committee (SUSC) Feb. 11, 2026 and Science Faculty Counsil (SFC) Feb. 24, 2026.

Motion 1: To approve the retirement of SCBUS 425, changes to SCBUS 123, 223, 323, 423 and 424, two new courses, SCBUS 498 and 499, as detailed in the Kuali proposals included in this agenda.

Other Business

Related agenda:

SUC - 2026-04 - Regular Agenda - Faculty of Science

- **H- Science and Business, Biochemistry Specialization (retirement)**
- **H- Science and Business, Biology Specialization (retirement)**
- **H- Science and Business, Biotechnology Specialization (retirement)**

Course Proposals

Course Proposal Details

Retire

SCBUS 425- Due to low enrolment.

New

SCBUS 498, 499- Two new capstone courses for Science and Business plan. Students will have the opportunity to connect with the interdisciplinary capstone team.

Changes

SCBUS 123, 223, 323, 423, and 424- titles, descriptions, requisites, and components to align with what is currently being taught. These courses are at the intersection of Science and Business and have significant opportunities for students to meet alumni and experts that have bridges in these disciplines.

Courses: Retire

Code	Title	Type	Workflow Step
SCBUS 425	Workshop 6: Challenges in Globalizing Science and Technology	Courses	SUC Subcommittee, SUC Curricular Subcommittee

Courses: New

Code	Title	Type	Workflow Step
SCBUS 498	Science and Business Capstone Project 1	Courses	SUC Subcommittee, SUC Curricular Subcommittee
SCBUS 499	Science and Business Capstone Project 2	Courses	SUC Subcommittee, SUC Curricular Subcommittee

Courses: Changes

Code	Title	Type	Workflow Step
SCBUS 123	Foundations in Science and Business	Courses	SUC Subcommittee, SUC Curricular Subcommittee
SCBUS 223	Customers, Markets, and Innovation	Courses	SUC Subcommittee, SUC Curricular Subcommittee
SCBUS 323	Technology, Innovation, and Global Strategies	Courses	SUC Subcommittee, SUC Curricular Subcommittee
SCBUS 423	Strategic Management of Science and Business	Courses	SUC Subcommittee, SUC Curricular Subcommittee
SCBUS 424	Special Topics in Science and Business	Courses	SUC Subcommittee, SUC Curricular Subcommittee

Programs & Plans Proposals

Programs & Plans Proposal Details

Programs & Plans: Retire No proposals have been added.

Programs & Plans: Major Modifications No proposals have been added.

Programs & Plans: Minor Modifications No proposals have been added.

Regulations Proposals

Regulations: Retire No proposals have been added.

Regulations: New No proposals have been added.

Regulations: Changes No proposals have been added.

SCBUS 425 - Workshop 6: Challenges in Globalizing Science and Technology

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2027

Existing

Effective Term and Year
Fall 2024

Offering Number
1

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-12-12

Last Offering of Course
Winter 2025

Retired Impact
No,

Rationale for Change

A total of four students have taken SCBUS 425 since 2022; one in the winter 2022 term and three in the winter 2023 term. There was no interest in 2024 or 2025 offerings, thus it was not offered in winter 2026.

SCBUS 425 will retire due low or no interest.

Course Information

Faculty
Faculty of Science

Academic Unit
Dean of Science Office

Subject Code
SCBUS

Number
425

Course Level
400

Title
Workshop 6: Challenges in Globalizing Science and Technology

Abbreviated Title
Challenges: Global Sci & Tech

Undergraduate Communication Requirement Identifier
No,

Description
This workshop addresses the implications for Canadian science and technology based firms of competing in the global competitive environment.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLecture

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

1. Complete all of the following
    - Enrolled in:

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

There are no dependencies

SCBUS 498 - Science and Business Capstone Project 1

Top

Effective Date & Career

Career
Undergraduate,

Effective Term and Year
Fall 2027

Proposal Details

Proposal Type
New,

Academic Unit Approval
2025-12-12

Rationale for New Course
The Faculty of Science and the School of Accounting and Finance (SAF) have collaborated to revise the Science and Business program, strengthening its focus on linking scientific innovation with business practice.

The updated program emphasizes commercialization and entrepreneurship, building core skills in business fundamentals, project management, systems thinking, and supply chain management. The curriculum is designed to help students turn scientific ideas into impactful products and solutions.

SAF provided expertise to refine the business curriculum, identifying foundational courses and integrating them with SCBUS courses that apply business concepts to scientific contexts.

As part of these revisions, two new capstone courses (SCBUS 498, SCBUS 499) are added to the program. This aligns with other faculty and interdisciplinary capstone experiences for these students. SCBUS 423 (Strategic Management) will be a corequisite to provide students with enough information to help them launch their projects with stakeholders.
SCBUS 498 and 499 will be graded independently of each other, each having different learning outcomes. IP grades will not be used or needed.

Consultations

Planning for revisions to Science and Business program was done in conjunction with SAF (Fall 2025);

The addition of the new capstone courses (SCBUS 498 and 499) was decided upon by the Faculty of Science together with SAF.

Course Information

Faculty

Faculty of Science

Academic Unit

Dean of Science Office

Subject Code

SCBUS

Number

498

Course Level

400

Title

Science and Business Capstone Project 1

Abbreviated Title

Capstone Project 1

Undergraduate Communication Requirement Identifier

No,

Description

The first of two required courses for the Science and Business capstone project where students will work together in small groups to design a project that solves a real-world problem. Students will communicate the challenge or opportunity; engage relevant stakeholders; create an achievable project proposal; research contextual factors, risks, and industry data; devise feasible solutions to solve the identified problem; identify a successful solution; present their work and draft a report summarizing their work.

Units

0.50

Exceptions to Fees or Academic Progress Units

No,

Components

Project

Primary Component

Project

Grading Information

Standard Course Grading

Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Corequisites

Completed or concurrently enrolled in:

- SCBUS423 - Workshop 4: Strategic Management of Science and Business (0.50)

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

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

Dependencies

There are no dependencies

SCBUS 499 - Science and Business Capstone Project 2

Top

Effective Date & Career

Career
Undergraduate,

Effective Term and Year
Fall 2027

Proposal Details

Proposal Type
New,

Academic Unit Approval
2025-12-12

Rationale for New Course
The Faculty of Science and the School of Accounting and Finance (SAF) have collaborated to revise the Science and Business program, strengthening its focus on linking scientific innovation with business practice.

The updated program emphasizes commercialization and entrepreneurship, building core skills in business fundamentals, project management, systems thinking, and supply chain management. The curriculum is designed to help students turn scientific ideas into impactful products and solutions.

SAF provided expertise to refine the business curriculum, identifying foundational courses and integrating them with SCBUS courses that apply business concepts to scientific contexts.

As part of these revisions, two new capstone courses (SCBUS 498, SCBUS 499) are added to the program. This aligns with other faculty and interdisciplinary capstone experiences for these students. SCBUS 498 is a prerequisite for SCBUS 499.
SCBUS 498 and 499 will be graded independently of each other, each having different learning outcomes. IP grades will not be used or needed.

Consultations

Planning for revisions to Science and Business program was done in conjunction with SAF (Fall 2025);

The addition of the new capstone courses (SCBUS 498 and 499) was decided upon by the Faculty of Science together with SAF.

Course Information

Faculty

Faculty of Science

Academic Unit

Dean of Science Office

Subject Code
SCBUS

Number
499

Course Level
400

Title
Science and Business Capstone Project 2

Abbreviated Title
Capstone Project 2

Undergraduate Communication Requirement Identifier
No,

Description
The second of two required courses for the Science and Business capstone project where students will work together in small groups to design a project that solves a real-world problem. Students will continue to manage and build on their capstone projects, revise the proposed solution to their identified problem, prototype and iterate based on stakeholder feedback. At the end of the course, students will publicly present their capstone project work and complete a final report detailing their project and results.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Project

Primary Component
Project

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

1. Complete all of the following
    - Must have completed the following:
        - SCBUS498 - Science and Business Capstone Project 1 (0.50)

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

There are no dependencies

SCBUS 123 - Foundations in Science and Business

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2027

Existing

Offering Number
1

Effective Term and Year
Fall 2024

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-12-12

Unit Weight/Number Changes
No,

Rationale for Change

The Faculty of Science and the School of Accounting and Finance (SAF) have collaborated to revise the Science and Business program, enhancing its focus on connecting scientific innovation with business practice.

The updated program emphasizes commercialization and entrepreneurship, strengthening core skills in business fundamentals, project management, systems thinking, and supply chain management to help students transform scientific ideas into real-world solutions.

SAF guided updates to the business curriculum, refining foundational courses and aligning them with SCBUS offerings that apply business concepts in scientific contexts. Course titles, descriptions, and delivery components for SCBUS 123, 223, 323, and 423 have been updated to reflect current teaching practices. These changes formalize what is already being delivered, so in-progress students will not be disadvantaged.

SCBUS 123 will be restricted to students in the Science and Business program. With specializations retiring and the course positioned in first year, requisites are updated to remove both the level and retired programs.

The Discussion and Laboratory components are removed as this courses has been offered using only the primary Lecture component for the past five years. A Tutorial component is added allowing for student group work and/or guest speakers, as required. A Test Slot component is also added to be available when required for future offerings.

Consultations

Consults between science (L. Deakin, L. Balch) and SAF (B. Phillips, B. Belton) occurred via email (last few

emails for course changes confirmed Jan 27 and Feb 2, 2026).

Course Information

Faculty

Faculty of Science

Academic Unit

Dean of Science Office

Subject Code
SCBUS

Number
123

Course Level
100

Proposed

Title
Foundations in Science and Business

Existing

Title
Workshop 1: Science and Business

Proposed

Abbreviated Title
Science & Business Foundations

Existing

Abbreviated Title
Science & Business

Undergraduate Communication Requirement Identifier
No,

Proposed

Description
This course introduces the intersection of scientific discovery and business strategy. Students explore innovation processes, global and cultural awareness, sustainability, and ethical reasoning. Through cases and applied exercises, they develop foundational skills in strategic thinking, intellectual property, and commercialization. Guests will provide examples from various scientific disciplines. Emphasis is placed on understanding how science-driven ideas create value within a global, responsible, and interconnected economy.

Existing

Description

This workshop addresses concepts of technology development and related marketing aspects that undertake an analysis of a firm's existence, its physical and/or social media presence, and customer feedback. Students work in collaborative teams to tackle case studies and class exercises. A major deliverable is the development of a team marketing plan, where market segments are identified based on revenue and market potential. This involves conducting a PESTLE and SWOT analysis, market planning, information retrieval strategies, scientific business forecasting, competitive intelligence, and product development. Results are presented orally and in writing.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Proposed

Components
Lecture

Existing

Components
Discussion

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?

No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

1. Complete all of the following
   - Enrolled in:

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Prerequisites

- SCBUS 223 - Workshop 2: Strategies Behind Technological Innovation View Program

- SCBUS 424 - Workshop 5: Special Topics in Science and Business View Program

Course Requirements (units)

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

Course Requirements (no units)

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

SCBUS 223 - Customers, Markets, and Innovation

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2027

Existing

Effective Term and Year
Fall 2024

Offering Number
1

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-12-12

Unit Weight/Number Changes
No,

Rationale for Change

The Faculty of Science and the School of Accounting and Finance (SAF) have collaborated to revise the Science and Business program, enhancing its focus on connecting scientific innovation with business practice.

The updated program emphasizes commercialization and entrepreneurship, strengthening core skills in business fundamentals, project management, systems thinking, and supply chain management to help students transform scientific ideas into real-world solutions.

SAF guided updates to the business curriculum, refining foundational courses and aligning them with SCBUS offerings that apply business concepts in scientific contexts. Course titles, descriptions, and delivery components for SCBUS 123, 223, 323, and 423 have been updated to reflect current teaching practices. These changes formalize what is already being delivered, so in-progress students will not be disadvantaged.

Prerequisites for SCBUS 223 are updated to remove retired programs, and the Laboratory component is removed, not having been used in the past five years. A Tutorial component is added allowing for student group work and/or guest speakers, as required. A Test Slot component is also added to be available when required for future offerings.

Consultations

Consults between science (L. Deakin, L. Balch) and SAF (B. Phillips, B. Belton) occurred via email (last few emails for course changes confirmed Jan 27 and Feb 2, 2026).

Course Information

Faculty

Faculty of Science

Academic Unit

Dean of Science Office

Subject Code	Number	Course Level
SCBUS	223	200

Proposed

Title
Customers, Markets, and Innovation

Existing

Title
Workshop 2: Strategies Behind Technological Innovation

Proposed

Abbreviated Title
Customers, Markets & Innov

Existing

Abbreviated Title
Strat Behind Tech Innovation

Undergraduate Communication Requirement Identifier
No,

Proposed

Description
This course explores how organizations identify customer needs and transform them into innovative products and services. Students learn market research methods, value proposition design, marketing strategy, and responsible corporate practice. Examples will be taken from innovations in deep technologies. Emphasis is placed on customer insight, product development, and risk awareness within technology-based and sustainable business environments.

Existing

Description
This workshop is organized as a strategic management process, focusing on the management of technology, innovation, research and development in scientific team-based settings. Students working in groups analyze real business ventures, their launch, and growth, synthesizing major field research to develop a term deliverable in the form of a company report and final project presentation. Students engage in experiential learning involving theory, case studies, scientific team debates, and critical reasoning.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Proposed

Components
Lecture Tutorial

Existing

Components
Laboratory

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

1. Complete all of the following
    - Must have completed the following:
        - SCBUS123 - Workshop 1: Science and Business (0.50)
            - Enrolled in:

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

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

Dependencies

Prerequisites

- SCBUS 323 - Workshop 3: Technology Development View Program
- SCBUS 424 - Workshop 5: Special Topics in Science and Business View Program

Course Requirements (units)

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

Course Requirements (no units)

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

SCBUS 323 - Technology, Innovation, and Global Strategies

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2027

Existing

Effective Term and Year
Fall 2025

Offering Number
1

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-12-27

Unit Weight/Number Changes
No,

Rationale for Change

The Faculty of Science and the School of Accounting and Finance (SAF) have collaborated to revise the Science and Business program, enhancing its focus on connecting scientific innovation with business practice.

The updated program emphasizes commercialization and entrepreneurship, strengthening core skills in business fundamentals, project management, systems thinking, and supply chain management to help students transform scientific ideas into real-world solutions.

SAF guided updates to the business curriculum, refining foundational courses and aligning them with SCBUS offerings that apply business concepts in scientific contexts. Course titles, descriptions, and delivery components for SCBUS 123, 223, 323, and 423 have been updated to reflect current teaching practices. These changes formalize what is already being delivered, so in-progress students will not be disadvantaged.

Prerequisites for SCBUS 323 are updated to remove retired programs, and the Laboratory component is removed, not having been used in the past five years. A Tutorial component is added allowing for student group work and/or guest speakers, as required. A Test Slot component is also added to be available when required for future offerings.

Consultations

Consults between science (L. Deakin, L. Balch) and SAF (B. Phillips, B. Belton) occurred via email (last few emails for course changes confirmed Jan 27 and Feb 2, 2026).

Course Information

Faculty

Faculty of Science

Academic Unit

Dean of Science Office

Subject Code
SCBUS

Number
323

Course Level
300

Proposed

Title
Technology, Innovation, and Global Strategies

Existing

Title
Workshop 3: Technology Development

Proposed

Abbreviated Title
Tech, Innov & Global Strategy

Existing

Abbreviated Title
Technology Development

Undergraduate Communication Requirement Identifier

No,

Proposed

Description
In this course, students examine how organizations use technology and data to compete in global markets. Topics include digital transformation, business model innovation, global market entry, and responsible use of emerging technologies. Students learn to connect scientific innovation to

international strategy, equipping students with analytical and creative tools to manage science-driven enterprises in a rapidly changing world. Specific examples will be discussed.

Existing

Description
A senior honours project focusing on technology innovation, assessment of the current utility of a technology, scale-up of the technology, projected return on investment and hurdles (production, regulatory, market competition, intellectual property protection). The major class project focuses on the development of a business plan for a product that could be commercialized. Applications, implications, cost benefit analysis, feasibility, etc. are included.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Proposed

Components
Test Slot Tutorial

Existing

Components
Laboratory

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

1. Complete all of the following
    - Must have completed the following:
        - SCBUS223 - Workshop 2: Strategies Behind Technological Innovation (0.50)
            - Enrolled in:

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Prerequisites

- SCBUS 423 - Workshop 4: Strategic Management of Science and Business View Program
- SCBUS 424 - Workshop 5: Special Topics in Science and Business View Program

Course Requirements (units)

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

Course Requirements (no units)

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

SCBUS 423 - Strategic Management of Science and Business

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2027

Existing

Effective Term and Year
Fall 2026

Offering Number
1

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-12-12

Unit Weight/Number Changes
No,

Rationale for Change

The Faculty of Science and the School of Accounting and Finance (SAF) have collaborated to revise the Science and Business program, enhancing its focus on connecting scientific innovation with business practice.

The updated program emphasizes commercialization and entrepreneurship, strengthening core skills in business fundamentals, project management, systems thinking, and supply chain management to help students transform scientific ideas into real-world solutions.

SAF guided updates to the business curriculum, refining foundational courses and aligning them with SCBUS offerings that apply business concepts in scientific contexts. Course titles, descriptions, and delivery components for SCBUS 123, 223, 323, and 423 have been updated to reflect current teaching practices. These changes formalize what is already being delivered, so in-progress students will not be disadvantaged.

Prerequisites for SCBUS 423 are updated to remove retired programs, and the Laboratory component is removed, not having been used in the past five years, with the exception of fall 2025, to allow break out groups from the lecture. A Tutorial component is added as a better secondary component, replacing the lab, allowing for student group work and/or guest speakers, as required. A Test Slot component is also added to be available when required for future offerings.

Consultations

Consults between science (L. Deakin, L. Balch) and SAF (B. Phillips, B. Belton) occurred via email (last few emails for course changes confirmed Jan 27 and Feb 2, 2026).

Course Information

Faculty
Faculty of Science

Academic Unit
Dean of Science Office

Subject Code	Number	Course Level
SCBUS	423	400

Proposed

Title
Strategic Management of Science and Business

Existing

Title
Workshop 4: Strategic Management of Science and Business

Abbreviated Title
Strategic Management

Undergraduate Communication Requirement Identifier
No,

Proposed

Description
This course integrates management, innovation, and sustainability concepts through real or simulated projects. Students apply strategic analysis, systems thinking, and project management to address contemporary issues at the interface of science and business. Emphasis is placed on ethical leadership, responsible decision-making, and the integration of scientific knowledge into organizational strategy and performance. Students will learn how to connect with scientific experts and enterprises driving product development.

Existing

Description
Current real-world issues and problems in the strategic management of startups and scientific/technology companies are addressed, based on the use of publicly available information including research findings. Working in groups, students will address the topics to be pursued, including both scientific and business/economic aspects. Assignments result in a written strategic plan, which is formally presented to the class.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Proposed

Components

Lecture Tutorial

Existing

Components

Laboratory

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

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

- SCBUS323 - Workshop 3: Technology Development (0.50)
  - Enrolled in:

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Prerequisites

- SCBUS 424 - Workshop 5: Special Topics in Science and Business View Program

Course Requirements (units)

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

Course Requirements (no units)

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

SCBUS 424 - Special Topics in Science and Business

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2027

Existing

Effective Term and Year
Fall 2026

Offering Number
1

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-12-12

Unit Weight/Number Changes
No,

Rationale for Change

SCBUS 424 is a capstone-project workshop elective for Science and Business students, but enrolment has historically been very low because students currently have one or fewer electives available in their plans.

As part of the 2027 Science and Business program revision, developed jointly by the Faculty of Science and the School of Accounting and Finance (SAF), elective space will increase from 0.5 to 2.0 units, and students will complete new required capstone courses (SCBUS 498 and 499) in fourth year. As a result, a separate capstone elective is no longer needed.

SCBUS 424 will be repurposed as a Special Topics umbrella course for emerging subjects in science and business. Students may use their expanded elective space to take one or more of these topic courses. Prerequisites are removed to allow flexibility, as topics may be suitable for students at different stages of the program.

While SCBUS 423 is currently listed as a prerequisite, students who took SCBUS 424 in 2023 will no longer be enrolled when new Special Topics offerings begin, so no antirequisite is required. Department consent will be used when specific prerequisites are needed, consistent with other topics-based courses.

Historic enrolment for SCBUS 424:

- Winter 2021: 1 student
- Winter 2022: 5 students
- Winter 2023: 2 students
- Winter 2024: 0 students
- Winter 2025: cancelled due to no/low enrolment
- Winter 2026: not offered

Consultations

Planning for revisions to Science and Business program was done in conjunction with SAF (Fall 2025);

The addition of the new capstone courses (SCBUS 498 and 499) and retention of SCBUS 424 as a special topics course, was decided upon by the Faculty of Science together with SAF.

Course Information

Faculty

Faculty of Science

Academic Unit

Dean of Science Office

Subject Code	Number	Course Level
SCBUS	424	400

Proposed

Title
Special Topics in Science and Business

Existing

Title
Workshop 5: Special Topics in Science and Business

Abbreviated Title
Special Topics

Undergraduate Communication Requirement Identifier
No,

Proposed

Description
This special topics course covers materials in selected areas of science and business.

Existing

Description
This capstone-project workshop addresses the formulation of firm-wide strategic plans (e.g., business cases, marketing plans, strategic plans) for science and technology based startups and traditional firms. It provides a framework for developing and implementing business strategies and the related documentation that fits a firm's environment, human resources, markets, managerial styles and organization. This course involves significant group work under the supervision of a Science and Business instructor. A written report and seminar presentation are required. A special capstone project is also required.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Proposed

Components
Lecture

Existing

Components
Laboratory

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Proposed
Can this course be repeated for credit? Yes,
Existing
Can this course be repeated for credit? No,

Proposed
Total Completions Allowed 05
Existing
Total Completions Allowed

Proposed
Allow Multiple Enrol in a Term Yes,
Existing
Allow Multiple Enrol in a Term

Enrolment Rules

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

Consent to Drop
No consent required,

Prerequisites

1. Complete all of the following
   - Enrolled in:

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

There are no dependencies

For Approval **Regular Agenda**

To:	Senate Undergraduate Council
Sponsor/Presenter:	David DeVidi, Associate Vice-President, Academic
Date of Meeting:	April 7, 2026
Agenda Item Identification:	6.1. SUC Curriculum Subcommittee Report: Regular Agenda for Approval

Recommendation/Motion

To recommend that Senate approve the following curricular motions, as presented:

i. Faculty of Science – Regular Agenda
To recommend to SUC that Senate approve the major modifications for the Biochemistry Specialization, Biology Specialization, and Biotechnology Specialization for the Faculty of Science, effective September 1, 2027, as presented.

Summary

The SUC Curriculum Subcommittee has reviewed and agreed, via an e-vote which closed on January 26, 2026 to recommend to SUC for approval or receive for information as part of the regular agenda, the items included in the subsequent sections of this report (6.2).

To support easier navigation, items are also available in Kuali Curriculum Management (CM) via the following links. Please review the online guide for additional information about Kuali CM. If you have any issues accessing the links below, please contact Tony Ly, Governance Officer, for support.

i. Faculty of Science – Regular Agenda

Jurisdictional Information

As provided for in Senate Bylaw 2, section 5.03, council is empowered to make approvals on behalf of Senate for a variety of operational matters:

b. Make recommendations to Senate with respect to new undergraduate programs/plans, the deletion of undergraduate programs/plans, and major changes to undergraduate programs/plans.

Governance Path

Senate Undergraduate Council, Curriculum Subcommittee: March 27, 2026 (via e-vote)
Senate Undergraduate Council: April 7, 2026 (prospective)

Documents Included

- 6.2. Faculty of Science

Date 2026/03/20

Show Empty Fields

Meeting Information

Agenda Page TitleSUC - 2026-04- Regular Agenda - Faculty of Science

Career Level
Undergraduate,

Faculty/UnitFaculty of Science

Date2026-04-07 **Time** **Location**

Summary

Faculty of Science Report

The following motion was approved at the Science Undergraduate Studies Committee (SUSC) Feb. 11, 2026 and Science Faculty Counsil (SFC) Feb, 24, 2026.

Motion 1: To approve major modifications to the following programs, as detailed in the Kuali proposals included in this agenda.

- **H- Science and Business, Biochemistry Specialization (retirement)**
- **H- Science and Business, Biology Specialization (retirement)**
- **H- Science and Business, Biotechnology Specialization (retirement)**

RATIONALE:

The above specializations are direct entry (plan10) specializations. They are being removed to align with the definition of specializations across UW (as a plan20). These specializations have had very low enrolment, and students undergo multiple changes in plans as their interests change. Students will be placed into the general Science and Business program, with the opportunity to later choose micro credentials in both Science and Business fields (options, minors or diplomas) to accompany their degree.

NOTE:

The major modification for changes to the H- Science and Business plan, included below, is for awareness only as this plan requires the approval of the new MSE 335 courses (ENG). The removal of specializations is a major modification impacting the 1A term and will proceed before the full plan update so as to meet the deadline for intake in Fall 2027.

Other Business

Related agenda:

SUC - 2026-04 - Consent Agenda - Faculty of Science

- **retirement of SCBUS 425**
- **changes to SCBUS 123, 223, 323, 423 and 424**
- **new capstone courses SCBUS 498 and 499**

Course Proposals

Course Proposal Details

Courses: Retire No proposals have been added.

Courses: New No proposals have been added.

Courses: Changes No proposals have been added.

Programs & Plans Proposals

Programs & Plans Proposal Details

Major Modification:

Retirement of the following plans:

- **H- Science and Business, Biochemistry Specialization**
- **H- Science and Business, Biology Specialization**
- **H- Science and Business, Biotechnology Specialization**

NOTE:

The major modification for the H- Science and Business plan, included below, is for awareness only as this plan required the approval of the new MSE 335 courses (ENG). The removal of specializations is a major modification impacting the 1A term and will proceed before the full plan update so as to meet the deadline for intake in Fall 2027.

Programs & Plans: Retire

Code	Title	Type	Workflow Step
H-Science & Business - Biochemistry Specialization	Science and Business - Biochemistry Specialization (Bachelor of Science - Honours)	Programs	SUC Subcommittee, SUC Curricular Subcommittee
H-Science & Business - Biology Specialization	Science and Business - Biology Specialization (Bachelor of Science - Honours)	Programs	SUC Subcommittee, SUC Curricular Subcommittee
H-Science & Business - Biotechnology Specialization	Science and Business - Biotechnology Specialization (Bachelor of Science - Honours)	Programs	SUC Subcommittee, SUC Curricular Subcommittee

Programs & Plans: Major Modifications

Code	Title	Type	Workflow Step
H-Science & Business	Science and Business (Bachelor of Science - Honours)	Programs	SUC Subcommittee, SUC Curricular Subcommittee

Programs & Plans: Minor Modifications No proposals have been added.

Regulations Proposals

Regulations: Retire No proposals have been added.

Regulations: New No proposals have been added.

Regulations: Changes No proposals have been added.

H-Science & Business - Biochemistry Specialization - Science and Business - Biochemistry Specialization (Bachelor of Science - Honours)

Top

Effective Date and Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2027

Existing

Effective Term and Year
Fall 2025

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-12-12

Quality Assurance Designation
Major Modification Qad

Major Modification Categories
Closure of a graduate research field, graduate specialization, honours, option, specialization, undergraduate diploma, minor

Is there an impact to existing students?
No,

Rationale and Background for Change(s)

The Faculty of Science and the School of Accounting and Finance (SAF) have collaborated to revise the Science and Business program, strengthening its focus on linking scientific innovation with business practice.

The updated program emphasizes commercialization and entrepreneurship, building core skills in business fundamentals, project management, systems thinking, and supply chain management. The curriculum is designed to help students turn scientific ideas into impactful products and solutions.

SAF provided expertise to refine the business curriculum, identifying foundational courses and integrating them with SCBUS courses that apply business concepts to scientific contexts.

On the science side, the revisions simplify requirements, increase flexibility, and align the plan with other Science programs. Retiring the three existing specializations supports these goals and streamlines administration.

Students will have added flexibility to pursue a variety of existing science credentials, guided by advisors who will help them consider the full range of options. A forthcoming Biotechnology Option will ensure pathways that correspond with the retiring specializations.

Current existing Science Credentials:

- Astrophysics Minor
- Biochemistry Minor
- Biology Minor
- Biophysics Minor
- Chemistry Minor
- Earth Sciences Minor
- Neuroscience Minor
- Physics Minor
- Bioinformatics Option
- Cell and Molecular Biology Option
- Ecology and Environmental Biology Option
- Microbiology Option

Since students are introduced to specializations upon admission, approval to retire the following three specializations effective September 1, 2027, is being requested now to support marketing and recruitment for the 2027 cohort:

- Science and Business, Biology Specialization
- Science and Business, Biochemistry Specialization
- Science and Business, Biotechnology Specialization

Science and Business will remain invalid with Management Studies minor, but "(any specialization)" can be removed as the specializations will retire as part of this change.

For the three retiring specializations the following combinations with each one, will be discontinued:

- Bioinformatics Specialization (Computer Science major, BCS or BMath)
- Biology Minor
- Biology Specialization (Applied Mathematics major)
- Biology Minor
- Biology Major
- Management Studies Minor

Inactivation of Science and Business Specializations, as well as proposed changes to the H-Science and Business plan, were socialized at the SUSC forum Jan. 14, 2026. The Assistant Registrar, Records Operations was present at this forum (A. Graystone).

General Program/Plan Information

Faculty

Faculty of Science

Academic Unit

Dean of Science Office

Faculty

Faculty of Science

Undergraduate Credential Type

Major

Program Type

Honours

Degree

Bachelor of Science (Science)

Program/Plan Name

Science and Business - Biochemistry Specialization (Bachelor of Science - Honours)

Systems of Study
Co-operative, Regular,

Admissions

Admissions Entry Point
Direct Entry,

Requirements Information

Invalid Combinations
Yes,

List of Invalid Combinations

Bioinformatics Specialization | Biology Minor | Biology Specialization | Management Studies Minor

Average Requirement
Yes,

Minimum Average(s) Required

- A minimum cumulative overall average of 65.0%.
- A minimum cumulative Science average of 65.0%.

Graduation Requirements

- See Bachelor of Science degree-level requirements.
- Complete a total of 21.0 units:
  - 17.0 units of required courses (see below).
  - 1.0 unit of approved courses (see below).
  - 1.0 unit of additional BIOL or CHEM or approved courses (see below).
  - 1.0 unit of additional BIOL courses, at the 100- or 200-level.
  - 0.5 unit of additional CHEM courses, at the 200-level.
  - 0.5 unit of elective courses.
- A maximum of 2.0 failed units is permitted.

Co-operative Education Program Requirements

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

Course Requirements (units)

Required Courses

- 17Units to Complete
- Complete all of the following
  - Complete all the following:
    - BIOL130 - Introductory Cell Biology (0.50)
    - BIOL235 - Foundations of Molecular Biology (0.50)
    - BIOL239 - Genetics (0.50)
    - BIOL331 - Advanced Cell Biology (0.50)
    - CHEM120 - General Chemistry 1 (0.50)
    - CHEM120L - General Chemistry Laboratory 1 (0.25)
    - CHEM123 - General Chemistry 2 (0.50)
    - CHEM123L - General Chemistry Laboratory 2 (0.25)
    - CHEM237 - Introductory Biochemistry (0.50)
    - CHEM237L - Introductory Biochemistry Laboratory (0.25)
    - CHEM333 - Metabolism 1 (0.50)
    - CS100 - Introduction to Computing Through Applications (0.50)
    - ECON101 - Introduction to Microeconomics (0.50)
    - ECON102 - Introduction to Macroeconomics (0.50)
    - ECON221 - Statistics for Economists (0.50)
    - ECON371 - Business Finance 1 (0.50)
    - MATH127 - Calculus 1 for the Sciences (0.50)
    - MGMT220 - Entrepreneurship and the Creative Workplace (0.50)
    - SCBUS122 - Management of Business Organizations (0.50)
    - SCBUS123 - Workshop 1: Science and Business (0.50)
    - SCBUS223 - Workshop 2: Strategies Behind Technological Innovation (0.50)
    - SCBUS225 - Organizational Behaviour in Scientific and Technical Workplaces (0.50)
    - SCBUS323 - Workshop 3: Technology Development (0.50)
    - SCBUS423 - Workshop 4: Strategic Management of Science and Business (0.50)
  - Complete 1 of the following:
    - AFM123 - Accounting Information for Managers (0.50)
    - ARBUS102 - Accounting Information for Managers (0.50)
  - Complete 1 of the following:
    - AFM131 - Introduction to Business in North America (0.50)
    - ARBUS101 - Introduction to Business in North America (0.50)
  - Complete 1 of the following:

        - AFM231 - Business Law (0.50)
        - LS283 - Business Law (0.50)
    - Complete 5 of the following:
        - BIOL308 - Principles of Molecular Biology (0.50)
        - BIOL341 - Fundamentals of Immunology (0.50)
        - BIOL342 - Molecular Biotechnology 1 (0.50)
        - BIOL345 - Microorganisms in Foods (0.50)
        - BIOL365 - Methods in Bioinformatics (0.50)
        - BIOL370 - Comparative Animal Physiology: Environmental Aspects (0.50)
        - BIOL371 - Comparative Animal Physiology: Evolutionary Themes (0.50)
        - BIOL403 - Developmental Biology and Embryology (0.50)
        - BIOL431 - Bacterial Molecular Genetics (0.50)
        - BIOL432 - Molecular Biotechnology 2 (0.50)
        - BIOL434 - Human Molecular Genetics (0.50)
        - BIOL439 - Environmental and Natural Products Biochemistry (0.50)
        - BIOL441 - Advances in Immunology (0.50)
        - BIOL442 - Virology (0.50)
        - BIOL447 - Environmental Microbiology (0.50)
        - CHEM430 - Special Topics in Biochemistry (0.50)
        - CHEM432 - Metabolism 2 (0.50)
        - CHEM433 - Advanced Biochemistry (0.50)
        - CHEM464 - Spectroscopy in Organic Chemistry (0.50)
    - Complete 1 of the following
        - Complete all the following:
            - CHEM264 - Organic Chemistry 1 (0.50)
            - CHEM265 - Organic Chemistry 2 (0.50)
            - CHEM265L - Organic Chemistry Laboratory 1 (0.25)
        - Complete all the following:
            - CHEM266 - Basic Organic Chemistry 1 (0.50)
            - CHEM266L - Organic Chemistry Laboratory (0.25)
            - CHEM267 - Basic Organic Chemistry 2 (0.50)
    - Complete 1 of the following:
        - COMMST193 - Communication in the Sciences (0.50)
        - ENGL193 - Communication in the Sciences (0.50)
- Approved Courses List
- 1Units to Complete
- Complete 2 of the following:
    - ACTSC231 - Introductory Financial Mathematics (0.50)
    - AFM333 - International Business (0.50)
    - ARBUS301 - International Business (0.50)
    - BET300 - Foundations of Venture Creation (0.50)
    - ECON211 - Introduction to Mathematical Economics (0.50)
    - ECON311 - Mathematical Economics (0.50)
    - ECON361 - Cost-Benefit Analysis and Project Evaluation (0.50)
    - ECON372 - Business Finance 2 (0.50)
    - HRM200 - Basic Human Resources Management (0.50)
    - HRM301 - Strategic Human Resources Management (0.50)
    - INDEV100 - Introduction to International Development (0.50)
    - MSE311 - Organizational Design and Technology (0.50)
    - MSE432 - Production and Service Operations Management (0.50)
    - STAT231 - Statistics (0.50)
    - STAT333 - Stochastic Processes 1 (0.50)
- Grand Total Units: 18

Course Requirements (no units)

Required Courses

- No Rules

Course Lists

Required Courses

- No Rules

Are there cross-listed courses listed in requirements?

Yes,

Cross-Listings Options

All cross-listings to be displayed,

Additional Constraints

1. Alternative approved courses may be substituted with permission from the academic advisor.
2. SCBUS-labelled courses do not count as Science units and are not included in any Science average calculations.
3. A minimum of 0.5 unit BIOL or CHEM elective must be at 400-level

Notes

- See list of academic advisors.
- Students can choose to emphasize international business with AFM333/ARBUS301 and INDEV100, entrepreneurism with BET300 and MSE311, technical development with MSE311, or strategic operations with ECON311 and MSE311.
- See Faculty of Science for recommended course sequence.

Specializations

Specializations for this Major
No,

Undergraduate Plan Guidelines

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Science

Dependencies

Prerequisites

- SCBUS 123 - Workshop 1: Science and Business View Program
- SCBUS 223 - Workshop 2: Strategies Behind Technological Innovation View Program
- SCBUS 425 - Workshop 6: Challenges in Globalizing Science and Technology View Program
- CHEM 220L - Quantitative Chemical Analysis Laboratory View Program
- CHEM 265L - Organic Chemistry Laboratory 1 View Program
- SCBUS 323 - Workshop 3: Technology Development View Program
- SCBUS 122 - Management of Business Organizations View Program
- SCBUS 225 - Organizational Behaviour in Scientific and Technical Workplaces View Program
- SCBUS 423 - Workshop 4: Strategic Management of Science and Business View Program

Antirequisites

- AFM 101 - Introduction to Financial Accounting [View Program]

Prerequisites

- AFM 123 - Accounting Information for Managers [View Program]

Corequisites

- ECON 221 - Statistics for Economists [View Program]

H-Science & Business - Biology Specialization - Science and Business - Biology Specialization (Bachelor of Science - Honours)

Top

Effective Date and Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2027

Existing

Effective Term and Year
Fall 2025

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-12-12

Quality Assurance Designation
Major Modification Qad

Major Modification Categories
Closure of a graduate research field, graduate specialization, honours, option, specialization, undergraduate diploma, minor

Is there an impact to existing students?
No,

Rationale and Background for Change(s)

The Faculty of Science and the School of Accounting and Finance (SAF) have collaborated to revise the Science and Business program, strengthening its focus on linking scientific innovation with business practice.

The updated program emphasizes commercialization and entrepreneurship, building core skills in business fundamentals, project management, systems thinking, and supply chain management. The curriculum is designed to help students turn scientific ideas into impactful products and solutions.

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On the science side, the revisions simplify requirements, increase flexibility, and align the plan with other Science programs. Retiring the three existing specializations supports these goals and streamlines administration.

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- Chemistry Minor
- Earth Sciences Minor
- Neuroscience Minor
- Physics Minor
- Bioinformatics Option
- Cell and Molecular Biology Option

- Ecology and Environmental Biology Option
- Microbiology Option

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- Biology Specialization (Applied Mathematics major)
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General Program/Plan Information

Faculty

Faculty of Science

Academic Unit

Dean of Science Office

Faculty

Faculty of Science

Undergraduate Credential Type

Major

Program Type

Honours

Degree

Bachelor of Science (Science)

Program/Plan Name

Science and Business - Biology Specialization (Bachelor of Science - Honours)

Systems of Study
Co-operative, Regular,

Admissions

Admissions Entry Point
Direct Entry,

Requirements Information

Invalid Combinations
Yes,

List of Invalid Combinations

Bioinformatics Specialization
Biology Minor
Biology Specialization
Management Studies Minor

Average Requirement

Yes,

Minimum Average(s) Required

- A minimum cumulative overall average of 65.0%.
- A minimum cumulative Science average of 65.0%.

Graduation Requirements

- See Bachelor of Science degree-level requirements.
- Complete a total of 21.0 units:
  - 11.5 units of required courses (see below).
  - 1.0 unit of approved courses (see below).
  - 7.0 units of BIOL courses, with the following constraints:
    - 3.0 units at the 100- or 200-level.
    - 3.5 units at the 300- or 400-level.
    - 0.5 unit at the 400-level.
  - 1.0 unit from additional BIOL courses at the 300-level or additional approved courses.
  - 0.5 unit of elective courses.
- A maximum of 2.0 failed units is permitted.

Co-operative Education Program Requirements

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

Course Requirements (units)

Required Courses

- 11.5Units to Complete
- Complete all of the following
  - Complete all the following:
    - CHEM120 - General Chemistry 1 (0.50)
    - CHEM120L - General Chemistry Laboratory 1 (0.25)
    - CHEM123 - General Chemistry 2 (0.50)
    - CHEM123L - General Chemistry Laboratory 2 (0.25)
    - CHEM237 - Introductory Biochemistry (0.50)
    - CHEM237L - Introductory Biochemistry Laboratory (0.25)
    - CHEM266 - Basic Organic Chemistry 1 (0.50)
    - CHEM266L - Organic Chemistry Laboratory (0.25)
    - CS100 - Introduction to Computing Through Applications (0.50)
    - ECON101 - Introduction to Microeconomics (0.50)
    - ECON102 - Introduction to Macroeconomics (0.50)
    - ECON221 - Statistics for Economists (0.50)
    - ECON371 - Business Finance 1 (0.50)
    - MATH127 - Calculus 1 for the Sciences (0.50)
    - MGMT220 - Entrepreneurship and the Creative Workplace (0.50)
    - SCBUS122 - Management of Business Organizations (0.50)
    - SCBUS123 - Workshop 1: Science and Business (0.50)
    - SCBUS223 - Workshop 2: Strategies Behind Technological Innovation (0.50)
    - SCBUS225 - Organizational Behaviour in Scientific and Technical Workplaces (0.50)

        - SCBUS323 - Workshop 3: Technology Development (0.50)
        - SCBUS423 - Workshop 4: Strategic Management of Science and Business (0.50)
    - Complete 1 of the following:
        - AFM123 - Accounting Information for Managers (0.50)
        - ARBUS102 - Accounting Information for Managers (0.50)
    - Complete 1 of the following:
        - AFM131 - Introduction to Business in North America (0.50)
        - ARBUS101 - Introduction to Business in North America (0.50)
    - Complete 1 of the following:
        - AFM231 - Business Law (0.50)
        - LS283 - Business Law (0.50)
    - Complete 1 of the following:
        - COMMST193 - Communication in the Sciences (0.50)
        - ENGL193 - Communication in the Sciences (0.50)
- Approved Courses List
- 1Units to Complete
- Complete 2 of the following:
    - ACTSC231 - Introductory Financial Mathematics (0.50)
    - AFM333 - International Business (0.50)
    - ARBUS301 - International Business (0.50)
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    - ECON211 - Introduction to Mathematical Economics (0.50)
    - ECON311 - Mathematical Economics (0.50)
    - ECON361 - Cost-Benefit Analysis and Project Evaluation (0.50)
    - ECON372 - Business Finance 2 (0.50)
    - HRM200 - Basic Human Resources Management (0.50)
    - HRM301 - Strategic Human Resources Management (0.50)
    - INDEV100 - Introduction to International Development (0.50)
    - MSE311 - Organizational Design and Technology (0.50)
    - MSE432 - Production and Service Operations Management (0.50)
    - STAT231 - Statistics (0.50)
    - STAT333 - Stochastic Processes 1 (0.50)
- Grand Total Units: 12.5

Course Requirements (no units)

Required Courses

- No Rules

Course Lists

Required Courses

- No Rules

Are there cross-listed courses listed in requirements?

Yes,

Cross-Listings Options

All cross-listings to be displayed,

Additional Constraints

1. Alternative approved courses may be substituted with permission from the academic advisor.
2. SCBUS-labelled courses do not count as Science units and are not included in any Science average calculations.

Notes

- See list of academic advisors.
- Students can choose to emphasize international business with AFM333/ARBUS301 and INDEV100, entrepreneurism with BET300 and MSE311, technical development with MSE311, or strategic operations with ECON311 and MSE311.
- See Faculty of Science recommended course sequences.

Specializations

Specializations for this Major

No,

Undergraduate Plan Guidelines

Workflow Information

Workflow Path
Committee approvals,

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

Dependencies

Prerequisites

- SCBUS 123 - Workshop 1: Science and Business View Program
- SCBUS 223 - Workshop 2: Strategies Behind Technological Innovation View Program
- SCBUS 425 - Workshop 6: Challenges in Globalizing Science and Technology View Program
- SCBUS 323 - Workshop 3: Technology Development View Program
- SCBUS 122 - Management of Business Organizations View Program
- SCBUS 225 - Organizational Behaviour in Scientific and Technical Workplaces View Program
- SCBUS 423 - Workshop 4: Strategic Management of Science and Business View Program

Antirequisites

- AFM 101 - Introduction to Financial Accounting View Program

Prerequisites

- AFM 123 - Accounting Information for Managers View Program

Corequisites

- ECON 221 - Statistics for Economists View Program

Top

H-Science & Business - Biotechnology Specialization - Science and Business -

Biotechnology Specialization (Bachelor of Science - Honours)

Effective Date and Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2027

Existing

Effective Term and Year
Fall 2025

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-12-12

Quality Assurance Designation
Major Modification Qad

Major Modification Categories
Closure of a graduate research field, graduate specialization, honours, option, specialization, undergraduate diploma, minor

Is there an impact to existing students?
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Rationale and Background for Change(s)

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- Biophysics Minor
- Chemistry Minor
- Earth Sciences Minor
- Neuroscience Minor
- Physics Minor
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- Cell and Molecular Biology Option
- Ecology and Environmental Biology Option
- Microbiology Option

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- Science and Business, Biochemistry Specialization
- Science and Business, Biotechnology Specialization

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For the three retiring specializations the following combinations with each one, will be discontinued:

- Bioinformatics Specialization (Computer Science major, BCS or BMath)

- Biology Minor
- Biology Specialization (Applied Mathematics major)
- Biology Minor
- Biology Major
- Management Studies Minor

Inactivation of Science and Business Specializations, as well as proposed changes to the H-Science and Business plan, were socialized at the SUSC forum Jan. 14, 2026. The Assistant Registrar, Records Operations was present at this forum (A. Graystone).

General Program/Plan Information

Faculty

Faculty of Science

Academic Unit

Dean of Science Office

Faculty
Faculty of Science

Undergraduate Credential Type
Major

Program Type
Honours

Degree
Bachelor of Science (Science)

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

Systems of Study
Co-operative, Regular,

Admissions

Admissions Entry Point
Direct Entry,

Requirements Information

Invalid Combinations
Yes,

List of Invalid Combinations

Bioinformatics Specialization | Biology Minor | Biology Specialization | Management Studies Minor

Average Requirement
Yes,

Minimum Average(s) Required

- A minimum cumulative overall average of 65.0%.
- A minimum cumulative Science average of 65.0%.

Graduation Requirements

- See Bachelor of Science degree-level requirements.
- Complete a total of 21.0 units:
  - 18.5 units of required courses (see below).

- 1.0 unit of approved courses (see below).
- 1.0 unit from additional BIOL courses or additional approved courses.
- 0.5 unit of additional CHEM courses, at the 200-level or above (see Additional Constraints).

- A maximum of 2.0 failed units is permitted.

Co-operative Education Program Requirements

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

Course Requirements (units)

Required Courses

- 18.5Units to Complete
- Complete all of the following
  - Complete all the following:
    - BIOL130 - Introductory Cell Biology (0.50)
    - BIOL235 - Foundations of Molecular Biology (0.50)
    - BIOL239 - Genetics (0.50)
    - BIOL240 - Fundamentals of Microbiology (0.50)
    - BIOL240L - Microbiology Laboratory (0.25)
    - BIOL241 - Introduction to Applied Microbiology (0.50)
    - BIOL308 - Principles of Molecular Biology (0.50)
    - BIOL331 - Advanced Cell Biology (0.50)
    - BIOL342 - Molecular Biotechnology 1 (0.50)
    - BIOL432 - Molecular Biotechnology 2 (0.50)
    - BIOL443 - Fermentation Biotechnology (0.50)
    - CHEM120 - General Chemistry 1 (0.50)
    - CHEM120L - General Chemistry Laboratory 1 (0.25)
    - CHEM123 - General Chemistry 2 (0.50)
    - CHEM123L - General Chemistry Laboratory 2 (0.25)
    - CHEM237 - Introductory Biochemistry (0.50)
    - CHEM266 - Basic Organic Chemistry 1 (0.50)
    - CHEM266L - Organic Chemistry Laboratory (0.25)
    - CS100 - Introduction to Computing Through Applications (0.50)
    - ECON101 - Introduction to Microeconomics (0.50)
    - ECON102 - Introduction to Macroeconomics (0.50)
    - ECON221 - Statistics for Economists (0.50)
    - ECON371 - Business Finance 1 (0.50)
    - MATH127 - Calculus 1 for the Sciences (0.50)
    - MGMT220 - Entrepreneurship and the Creative Workplace (0.50)
    - SCBUS122 - Management of Business Organizations (0.50)
    - SCBUS123 - Workshop 1: Science and Business (0.50)
    - SCBUS223 - Workshop 2: Strategies Behind Technological Innovation (0.50)
    - SCBUS225 - Organizational Behaviour in Scientific and Technical Workplaces (0.50)
    - SCBUS323 - Workshop 3: Technology Development (0.50)
    - SCBUS423 - Workshop 4: Strategic Management of Science and Business (0.50)
  - Complete 1 of the following:
    - AFM123 - Accounting Information for Managers (0.50)
    - ARBUS102 - Accounting Information for Managers (0.50)
  - Complete 1 of the following:
    - AFM131 - Introduction to Business in North America (0.50)
    - ARBUS101 - Introduction to Business in North America (0.50)
  - Complete 1 of the following:
    - AFM231 - Business Law (0.50)
    - LS283 - Business Law (0.50)
  - Complete 4 of the following:
    - BIOL341 - Fundamentals of Immunology (0.50)

        - BIOL345 - Microorganisms in Foods (0.50)
        - BIOL431 - Bacterial Molecular Genetics (0.50)
        - BIOL433 - Plant Biotechnology (0.50)
        - BIOL441 - Advances in Immunology (0.50)
        - BIOL442 - Virology (0.50)
        - BIOL444 - Bacterial Pathogenesis (0.50)
        - BIOL483 - Animal Cell Biotechnology (0.50)
    - Complete 1 of the following:
        - COMMST193 - Communication in the Sciences (0.50)
        - ENGL193 - Communication in the Sciences (0.50)
- Approved Courses List
- 1Units to Complete
- Complete 2 of the following:
    - ACTSC231 - Introductory Financial Mathematics (0.50)
    - AFM333 - International Business (0.50)
    - ARBUS301 - International Business (0.50)
    - BET300 - Foundations of Venture Creation (0.50)
    - ECON211 - Introduction to Mathematical Economics (0.50)
    - ECON311 - Mathematical Economics (0.50)
    - ECON361 - Cost-Benefit Analysis and Project Evaluation (0.50)
    - ECON372 - Business Finance 2 (0.50)
    - HRM200 - Basic Human Resources Management (0.50)
    - HRM301 - Strategic Human Resources Management (0.50)
    - INDEV100 - Introduction to International Development (0.50)
    - MSE311 - Organizational Design and Technology (0.50)
    - MSE432 - Production and Service Operations Management (0.50)
    - STAT231 - Statistics (0.50)
    - STAT333 - Stochastic Processes 1 (0.50)
- Grand Total Units: 19.5

Course Requirements (no units)

Required Courses

- No Rules

Course Lists

Required Courses

- No Rules

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

Cross-Listings Options
All cross-listings to be displayed,

Additional Constraints

1. Alternative approved courses may be substituted with permission from the academic advisor.

2. SCBUS-labelled courses do not count as Science units and are not included in any Science average calculations.

Notes

- See list of academic advisors.
- Students can choose to emphasize international business with AFM333/ARBUS301 and INDEV100, entrepreneurism with BET300 and MSE311, technical development with MSE311, or strategic operations with ECON311 and MSE311.
- See Faculty of Science recommended course sequences.

Specializations

Specializations for this Major

No,

Undergraduate Plan Guidelines

Workflow Information

Workflow Path
Committee approvals,

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

Dependencies

Prerequisites

- SCBUS 123 - Workshop 1: Science and Business View Program
- SCBUS 223 - Workshop 2: Strategies Behind Technological Innovation View Program
- SCBUS 425 - Workshop 6: Challenges in Globalizing Science and Technology View Program
- BIOL 331 - Advanced Cell Biology View Program
- SCBUS 323 - Workshop 3: Technology Development View Program
- SCBUS 122 - Management of Business Organizations View Program
- SCBUS 225 - Organizational Behaviour in Scientific and Technical Workplaces View Program
- SCBUS 423 - Workshop 4: Strategic Management of Science and Business View Program

Antirequisites

- AFM 101 - Introduction to Financial Accounting View Program

Prerequisites

- AFM 123 - Accounting Information for Managers View Program

Corequisites

- ECON 221 - Statistics for Economists View Program

H-Science & Business - Science and Business (Bachelor of Science - Honours)

Top

Effective Date and Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2027

Existing

Effective Term and Year
Fall 2025

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-12-12

Quality Assurance Designation
Major Modification Qad

Major Modification Categories
Change course/program requirementsMajor changes to courses comprising a significant proportion of the program, where significant is defined as more than one-third of the courses

Is there an impact to existing students?
Yes,

Impact on Existing Students

- Once approved, this will be presented to students at a town hall meeting then added to the Science and Business website for students to review.
- Fall 2026 cohort will be given an option to stay in current plan or take courses in first year that will be part of the 2027 plan. A website, an email, and advising appointments will help educate students on the best option for them.
- Fall 2025 cohort will also be able to switch into the Fall 2027 Calendar, with AFM - ECON substitutions will be reviewed by the School of Accounting and Finance.

Is the credential name changing?
No,

Co-operative System of Study and Requirements

No,

Creating or Changing Invalid Combinations

No,

Change to Learning Outcomes

No,

Rationale and Background for Change(s)

The Faculty of Science and the School of Accounting and Finance (SAF) have collaborated to revise the Science and Business program, strengthening its focus on linking scientific innovation with business practice.

The updated program emphasizes commercialization and entrepreneurship, building core skills in business fundamentals, project management, systems thinking, and supply chain management. The curriculum is designed to help students turn scientific ideas into impactful products and solutions.

SAF provided expertise to refine the business curriculum, identifying foundational courses and integrating them with SCBUS courses that apply business concepts to scientific contexts.

On the science side, the revisions simplify requirements, increase flexibility, and align the plan with other Science programs. Retiring the three existing specializations supports these goals and streamlines administration.

Students will have added flexibility to pursue a variety of existing science credentials, guided by advisors who will help them consider the full range of options. A forthcoming Biotechnology Option will ensure pathways that correspond with the retiring specializations (Biology, Biochemistry and Biotechnology). Current existing Science Credentials:

- Astrophysics Minor
- Biochemistry Minor
- Biology Minor
- Biophysics Minor
- Chemistry Minor
- Earth Sciences Minor
- Neuroscience Minor
- Physics Minor
- Bioinformatics Option
- Cell and Molecular Biology Option
- Ecology and Environmental Biology Option
- Microbiology Option

Summary of proposed program changes:

- Reduce total program units from 21.0 to 20.0, aligning with the Faculty of Science's goal of standardizing honours programs at 20.0 units.
- Aligned the required Science average to match other honours programs in the Faculty of Science.
- Modernize the business curriculum by shifting from economics-heavy requirements to business strategy and stages content.
    - Remove: CS 100, MATH 128, ECON 201, 221, MGMT 220, ECON 371, AFM 131, 231 and SCBUS 122, 225
    - Add: AFM 112, 113, 121, 132, 280; MSE 335 (new); SCBUS 498/499 (new)

Course replacements and rationale:

- CS 100 is being removed as other courses (AFM 112, 113) will be integrating data analytics, business, and statistics into the program. The revision provides students the opportunity to add CS or other mathematics courses.
- MATH 128 requirement is being replaced by AFM 113, which has MATH 128 as an antirequisite. Students are then provided an opportunity to select another MATH, or STAT, or CS, or other mathematics course instead.
- ECON 201 is removed as it no longer provides key material for the program.
- ECON 221 and MGMT 220 are being removed as microeconomics depth is unnecessary and entrepreneurship content is now fully addressed in SCBUS courses.
- ECON 371 is being replaced by AFM 121 as the latter provides introductory finance content tailored for business-focused students.
- AFM 131 is being removed as the material is being covered in the AFM 132 course (Business Stages)
- AFM 231 is being removed as it satisfies CPA needs but is not suited to Science and Business students.
- SCBUS 122 is removed and a specific management course is being created for science and business students, MSE 335 (new supply chain course).
- SCBUS 225 is removed and content replaced with a similar more advanced course, AFM 280.
- SCBUS 498, 499 are two new capstone courses inserted into the program, to provide capstone opportunities that align with other faculties.

- Increase elective flexibility: from 0.5 to 2.0 units by removing the program elective list and the 300-level science requirement.
- Increase science course flexibility by removing mandatory first-year chemistry (CHEM 120, 121L, 123, 123L).
  Require 1.5 units of first-year science in two different science disciplines.
- Increase maximum lab units from 1.5 to 2.0 to match the Honours Science program.

Consultations (Departmental)

Chemistry change support needed from Department of Chemistry (confirmation email from M. Nooijen Feb 10, 2026).

CS 100 removal from program was communicated to Dave Tomkins & Barbara Daly via email (replied Dec. 16, 2025 acknowledging plan and requesting brief rationale as to why).

K. Macculloch (UG Coordinator & Advisor, Arts and Business)- confirmed with director that removal of MGMT 220 from SCBUS programs has no implact on ARBUS program this support the change (Dec. 10, 2025).

Math faculty awareness for removal of MATH 128 as a core, and replacement of this course with a choice math faculty owned course, via email (Dec. 3, 2025 from L. Balch to MATH UG; Math UG deemed it "not hugely impactful" based on last four terms of enrolment data- Dec 4, 2025 email).

ECON and MGMT courses: We have communicated the removal of ECON 201, 221 and 371, and MGMT 220 to Lutz Busch (email Dec. 18, 2025 to Blake Phillips, cc'd K. Acheson).

Science and SAF have been working together as a team to plan changes on both the science and business end of the program (L. Balch, L. Deakin, B. Phillip, 2025).

Inactivation of Science and Business Specializations, as well as proposed changes to the H-Science and Business plan, were socialized at the SUSC forum Jan. 14, 2026. The Assistant Registrar, Records Operations was present at this forum (A. Graystone).

General Program/Plan Information

Faculty

Faculty of Science

Academic Unit

Dean of Science Office

Faculty

Faculty of Science

Undergraduate Credential Type

Major

Program Type

Honours

Degree

Bachelor of Science (Science)

Program/Plan Name

Science and Business (Bachelor of Science - Honours)

Systems of Study
Co-operative, Regular,

Admissions

Admissions Entry Point
Direct Entry,

Requirements Information

Invalid Combinations
Yes,

List of Invalid Combinations

Management Studies Minor

Average Requirement
Yes,

Proposed

Minimum Average(s) Required

- A minimum cumulative overall average of 65.0%.
- A minimum cumulative Science average of 60.0%.

Existing

Minimum Average(s) Required

- A minimum cumulative overall average of 65.0%.
- A minimum cumulative Science average of 65.0%.

Proposed

Graduation Requirements

- See Bachelor of Science degree-level requirements.
- Complete a total of 20.0 units:
  - 9.0 units of required courses (see below).
  - 3.0 units of Science courses (see below; see Additional Constraints).
  - 6.0 units of Science courses, from the following subject codes: BIOL, CHEM, EARTH, MNS, and PHYS, including:
    - 0.5 unit at any level.
    - 3.0 units at the 200-level or higher.
    - 2.0 units at the 300-level or higher.
    - 0.5 unit at the 400-level.
  - 2.0 units of elective courses.

Existing

Graduation Requirements

- See Bachelor of Science degree-level requirements.
- Complete a total of 21.0 units:
  - 11.0 units of required courses (see below).
  - 8.0 units of Science courses, from the following subject codes: BIOL, CHEM, EARTH, MNS, and PHYS, including:
    - 2.0 units of lecture and lab courses listed below.
    - 3.0 units at the 200-level or above.
    - 2.5 units at the 300-level or above.
    - 0.5 unit at the 400-level.
  - 0.5 unit of approved courses (see below).
  - 1.0 unit of additional Science or approved courses.
  - 0.5 unit of elective courses.
- A maximum of 2.0 failed units is permitted.

Co-operative Education Program Requirements

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

Course Requirements (units)

Required Courses

- 0Units to Complete

- No Rules

Course Requirements (no units)

1. Required Courses
    - Complete all the following:
        - ECON101 - Introduction to Microeconomics (0.50)
        - ECON102 - Introduction to Macroeconomics (0.50)
        - MATH127 - Calculus 1 for the Sciences (0.50)
        - SCBUS123 - Workshop 1: Science and Business (0.50)
        - SCBUS323 - Workshop 3: Technology Development (0.50)
        - SCBUS423 - Workshop 4: Strategic Management of Science and Business (0.50)
        - **AFM112 - Analytic Methods for Business 1 (0.50)**
        - **AFM113 - Analytic Methods for Business 2 (0.50)**
        - **AFM121 - Introduction to Global Financial Markets (0.50)**
        - **AFM132 - Introduction to Business Stages (0.50)**
        - **AFM280 - Introduction to Organizational Behaviour (0.50)**
        - SCBUS223 - Workshop 2: Strategies Behind Technological Innovation (0.50)
        - **SCBUS498 - Science and Business Capstone Project 1 (0.50)**
        - **SCBUS499 - Science and Business Capstone Project 2 (0.50)**
        - **MSE335 - Supply Chain Management for Business (0.5)**
        - ~~CHEM120 - General Chemistry 1 (0.50)~~
        - ~~CHEM120L - General Chemistry Laboratory 1 (0.25)~~
        - ~~CHEM123 - General Chemistry 2 (0.50)~~
        - ~~CHEM123L - General Chemistry Laboratory 2 (0.25)~~
        - ~~CS100 - Introduction to Computing Through Applications (0.50)~~
        - ~~ECON201 - Microeconomic Theory for Business and Policy (0.50)~~
        - ~~ECON221 - Statistics for Economists (0.50)~~
        - ~~ECON371 - Business Finance 1 (0.50)~~
        - ~~MATH128 - Calculus 2 for the Sciences (0.50)~~
        - ~~MGMT220 - Entrepreneurship and the Creative Workplace (0.50)~~
        - ~~SCBUS122 - Management of Business Organizations (0.50)~~
        - ~~SCBUS225 - Organizational Behaviour in Scientific and Technical Workplaces (0.50)~~
    - Complete 1 of the following:
        - COMMST193 - Communication in the Sciences (0.50)
        - ENGL193 - Communication in the Sciences (0.50)
        - Complete all the following:
    - PHYS111 - Physics 1 (0.50)
    - PHYS111L - Physics 1 Laboratory (0.25)
    - PHYS112 - Physics 2 (0.50)
    - PHYS112L - Physics 2 Laboratory (0.25)
    - **Complete all the following:**

- **PHYS121 - Mechanics (0.50)**
- **PHYS121L - Mechanics Laboratory (0.25)**
- **PHYS122 - Electricity and Magnetism (0.50)**
- **PHYS122L - Waves, Electricity and Magnetism Laboratory (0.25)**
- ~~Complete 1 of the following:~~

- Complete 1 of the following:
    - **AFM123 - Accounting Information for Managers (0.50)**
    - **ARBUS102 - Accounting Information for Managers (0.50)**
    - **Complete all the following:**
    - ~~EARTH121 - Introductory Earth Sciences (0.50)~~
    - ~~EARTH121L - Introductory Earth Sciences Laboratory (0.25)~~
    - ~~EARTH122 - Introductory Environmental Sciences (0.50)~~
    - ~~EARTH122L - Introductory Environmental Sciences Laboratory (0.25)~~

- **EARTH121 - Introductory Earth Sciences (0.50)**
- **EARTH121L - Introductory Earth Sciences Laboratory (0.25)**
- **EARTH122 - Introductory Environmental Sciences (0.50)**
- **EARTH122L - Introductory Environmental Sciences Laboratory (0.25)**

- **Complete all the following:**
- ~~Complete 1 of the following:~~

- **CHEM120 - General Chemistry 1 (0.50)**
- **CHEM120L - General Chemistry Laboratory 1 (0.25)**
- **CHEM123 - General Chemistry 2 (0.50)**
- **CHEM123L - General Chemistry Laboratory 2 (0.25)**
- ~~AFM131 - Introduction to Business in North America (0.50)~~
- ~~ARBUS101 - Introduction to Business in North America (0.50)~~

Grand Total Units:7

Course Lists

Required Courses

- No Rules

Are there cross-listed courses listed in requirements?

Yes,

Cross-Listings Options

All cross-listings to be displayed,

Proposed

Additional Constraints

1. A maximum of 2.0 total Science lab units counts towards this program.
2. SCBUS-labelled courses do not count as Science units and are not included in any Science average calculations.

Existing

Additional Constraints

1. A maximum of 1.0 Science lab unit, exclusive of CHEM120L and CHEM123L, is permitted.
2. Alternative approved courses may be substituted with permission from the academic advisor.
3. SCBUS-labelled courses do not count as Science units and are not included in any Science average calculations.

Proposed

Notes

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

Existing

Notes

- See list of academic advisors.
- Students can choose to emphasize international business with AFM333/ARBUS301 and INDEV100, entrepreneurism with BET300 and MSE311, technical development with MSE311, or strategic operations with ECON311 and MSE311.
- See Faculty of Science recommended course sequences.

Specializations

Specializations for this Major
No,

Undergraduate Plan Guidelines

Workflow Information

Change to Undergraduate Communication Requirement
No,

Workflow Path
Committee approvals,

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

Dependencies

Prerequisites

- SCBUS 123 - Workshop 1: Science and Business View Program
- SCBUS 223 - Workshop 2: Strategies Behind Technological Innovation View Program
- SCBUS 425 - Workshop 6: Challenges in Globalizing Science and Technology View Program
- SCBUS 323 - Workshop 3: Technology Development View Program
- SCBUS 122 - Management of Business Organizations View Program
- SCBUS 225 - Organizational Behaviour in Scientific and Technical Workplaces View Program
- SCBUS 423 - Workshop 4: Strategic Management of Science and Business View Program

Antirequisites

- AFM 101 - Introduction to Financial Accounting View Program

Prerequisites

- AFM 123 - Accounting Information for Managers View Program

Corequisites

- ECON 221 - Statistics for Economists View Program

UNIVERSITY OF WATERLOO | Senate

For Discussion **Open Session**

To:	Senate Undergraduate Council
From:	David DeVidi, Association Vice-President, Academic
	Pam Fluttert, Director Instructional Technologies & Media Services
	Shawn Gilbertson, Manager Course Materials
Date of Meeting:	April 7, 2026
Agenda Item:	**7. A Collaborative Strategy to Effectively Manage Educational Technology Costs and Decisions**

Recommendation

The student EdTech fee is a key component of a project that is intended to improve the learning experience for students while improving the operational efficiency of the university. More explicitly, the project has the following goals:

1. To prevent uninformed educational technology (EdTech) budget cuts that would have to be based on contract end dates and would result in unplanned increases in ad hoc student costs for technology in courses, implement a small student technology fee for a 2-year pilot, beginning F26, that will,
   - 1.1. protect the EdTech budget from unplanned cuts; and
   - 1.2. provide time to make informed budget decisions and appropriate transition plans for removal of duplicate and/or underused EdTech; and
   - 1.3. address unnecessary ad hoc student costs for courses.
2. Address duplication and inefficiencies in managing EdTech by
   - 2.1. simplifying the hybrid EdTech funding model; and
   - 2.2. prioritizing the use of centrally supported EdTech; and
   - 2.3. implementing an exception protocol for unique pedagogical needs; and
   - 2.4. plan and execute transitions from duplicated and/or unused EdTech.

The pilot test is to allow time to assess the project with respect to its ability to meet these goals, and to make a decision about the advisability of a permanent student EdTech fee.

Summary

The cost of EdTech is rising every year and is no longer sustainable with ongoing budget cuts in today's financial environment. EdTech costs must be reduced and managed more efficiently.

A student technology fee for a 2-year pilot beginning F26, such as $20-25 for a full-time undergraduate student (part-time fee approximately 30% of full-time) per academic term would provide an estimated $1.1-$1.3 million a year. The fee will protect the central EdTech budget from unplanned cuts that would have to be based on contract end dates, thereby providing the opportunity to rationally assess how to return to a sustainable budget and

manage ad hoc student costs for courses. Fee details will be finalized in collaboration with WUSA before June's Board of Governors meeting. During the pilot, the fee must demonstrate value through student cost savings and an improved experience where there is demonstratable progress towards addressing ad hoc student costs and duplication. The pilot period also provides opportunity to assess if there is potential value and student cost savings in a longer-term technology fee and the criteria. For example, Outline data indicates publisher tools represent the highest cost to students and may present a future opportunity to investigate further student cost savings following the pilot.

To address duplication and ad hoc student costs, implement a framework that prioritizes the use of centrally supported software in teaching and learning. To improve student experience and reduce overall costs, assessment of duplicated and underused EdTech, as well as unnecessary ad hoc student costs, will be initiated. Priorities will be set for planned transitions to recommended solutions. In circumstances where there is a unique pedagogical need that central tools do not adequately support, an exception protocol will evaluate requests for other EdTech. The exception protocol will include pedagogical and student voices. An interim protocol (refer to Documents Provided) is approved by the Provost and is being implemented until a longer-term solution is in place.

Proposal/Rationale

With the support of Deans Council and the Educational Technology (EdTech) Steering committees, the EdTech Evolution 2.0: Enhancing the Framework project was initiated in 2025 to implement a framework that ensures these technologies are responsibly managed and used to enhance teaching and learning in a way that provides a consistent, secure, and reliable student experience in alignment with university policies, guidelines, and the digital learning strategy. For the purposes of the scope of this project, EdTech is defined as

- a digital tool or platform whose primary, intended purpose is to support formal teaching and learning within credit-bearing courses or approved academic programs; and
- directly contributes to the instructional process by primarily enabling one or more of the following instructional functions:
    - the delivery, creation, curation, or facilitation of instructional content and learning activities
    - student engagement, interaction, or collaboration in support of course learning outcomes
    - the assessment of student learning or performance (formative or summative), including participation of activities that contribute to academic evaluation or the earning of academic credit

The EdTech ecosystem has become complex and unsustainable with rising costs and support demands and a fragmented decision-making and funding model. The fragmentation degrades the student experience and results in cybersecurity, privacy, and accessibility compliance risks, as well as duplication, increased cost and support demands, and inequitable access to technology. The university has not had the appropriate structures in place to holistically manage EdTech due to a hybrid model where funding is through a combination of central, departments/faculties, instructors, and students. The time has come to implement a framework to successfully navigate the increasing EdTech costs during ongoing financial pressures and budget cuts, manage EdTech more efficiently, and align

with the digital learning strategy[1]. EdTech decisions must be made holistically as One Waterloo, with an understanding of the impact and implementation of appropriate risk mitigations for the student experience. A planned, holistic approach to address duplication and underuse of EdTech will reduce the EdTech budget and improve student experience.

The cost of centrally supported[2] EdTech has increased from $1.2M in 2019 to $2.9M in 2026, with a projected $3.2M by 2028. These costs do not include the total spent by instructors, departments/faculties and students. With the current hybrid model, a response to growing costs of EdTech and budget cuts requires fragmented decisions based on central contract end dates without appropriate time to understand impacts and plan successful transitions. Instructors will have no choice but to continue using the canceled technologies or select alternatives, leading to increased duplication and costs for students. Student-pay subscriptions are a higher cost per license than a site agreement and present cybersecurity, privacy, and accessibility compliance risks.

The recommendations in this motion provide an opportunity to address challenges in the EdTech ecosystem in a planned and methodical way, while implementing a framework that will prevent the same issues from occurring in the future.

Jurisdictional Information

As provided for in Senate Bylaw 2, section 5.03, council is empowered to make approvals on behalf of Senate for a variety of operational matters:

- Consider, study and review briefs on any aspect of undergraduate studies from members of the university.

Governance Pathway

Deans Council Plus: May 28, 2025

Graduate Student Relations Committee: October 7, 2025

Undergraduate Student Relations Committee: October 8, 2025

Graduate Operations Committee: October 21, 2025

Undergraduate Student Relations Committee: October 23, 2025

Graduate Student Relations Committee: November 4, 2025

Undergraduate Student Relations Committee: November 5, 2025

GSA Council: December 11, 2025

WUSA Academic Affairs Advisory: January 16, 2026

[1] Digital Learning Strategy recommendation 3.3(d) to ensure students have appropriate access to tools and technologies, and recommendation 3.6(f) to foster a consistent technological and functional experience

[2] Includes Piazza, PebblePad, LEARN, Bongo, Mobius, TurnitIn, iThenticate, Crowdmark, Akindi, Vevox, peerScholar, iClicker, Zoom, and LinkedIn Learning.

Prospective:

Senate Undergraduate Council: April 7, 2026

Senate Graduate Council: April 16, 2026

Board of Governors: TBD

Documentation Provided

Interim Protocol Approved by the Provost

The interim protocol is an adaptation of the process used during the pandemic to grant instructor exemptions from the guideline limiting the amount students can be required to pay for educational materials used in course assessments.

The following relevant resources are, or will be, available to instructors, staff and students:

- *A master list of known EdTech used across campus will be created, published and maintained. It will indicate if non-centrally supported software is "approved" for use (see footnote) or "waiting for assessment". As the team continues to analyze the list, duplicates will also be flagged and prioritized for assessment*
- *The EdTech hub website currently includes*
  - *A support page for instructors to find central support resources*
  - *Centrally supported visual tool diagram and tool guides*
  - *Guidelines for LEARN integrations*
  - *EdTech governance and guiding principles*
- *University guidelines for fees related to 3rd party resources for academic assessment*

The interim protocol will be used when

- *an instructor wants to use a technology that is not on the master list or centrally supported; or*
- *when there is contention towards removing a duplicate or unsafe technology prioritized through the EdTech 2.0 project or on the master list. While the team works through EdTech assessments on the master list, instructors can continue using software that is "waiting for assessment".*

Interim protocol:

1. ***Submission:** Instructor submits an exception request form that will include but not be limited to the pedagogical requirement, explanation why a central tool will not work, and date of central tool assessment. Requests can be submitted when:*
   - *1.1. Requesting to use a tool that is not centrally supported and not on the master list*
   - *1.2. The instructor does not agree with an EdTech 2.0 recommendation to transition from duplicated or unsafe technology*
2. ***Assessment and Decision:** A small committee comprised of the AVPA (senior leader), UG/Grad student, and the relevant teaching fellow (non-biased pedagogical perspective) assesses the request. The committee may*

consult with ITMS/ITSU about central tools, as well as others such as associate deans, deans, chairs, etc. as needed.

2.1. The committee provides a unanimous decision whether the request is "approved pending IRA/PIA"[3] and moves to step 2(b), or otherwise "not approved" and moves to step 3

2.2. If the request is approved pending an IRA/PIA, ITMS will assist the instructor to initiate the IRA/PIA process. The instructor will be accountable for knowing how the unsupported tool works and acquiring required information from the vendor

3. ***Notification:*** *Committee notifies instructor and ITMS of final decision and reasoning*

3.1. ITMS updates the master list

[3] Approved pending IRA/PIA equates to pedagogical requirement cannot be appropriately met with a centrally supported tool.

UNIVERSITY OF WATERLOO | Senate

For Discussion **Open Session**

To:	Senate Undergraduate Council
From:	John Dick Managing Director, Velocity
	Krysta Traianovski Associate Director of Founder Development, Velocity
Date of Meeting:	April 7, 2026
Agenda Item:	**8. Velocity Resources and Support for Undergraduate Students**

Summary

John Dick is the Managing Director of Velocity. Krysta Traianovski is the Associate Director of Founder Development at Velocity. John and Krysta will provide a presentation about the resources and support available for undergraduate students at Velocity.

Documentation Provided

N/A

Velocity and Student Opportunities

Senate Undergraduate Council
April 7, 2026

John Dick, PhD, MBA
Managing Director, Velocity
john.dick1@uwaterloo.ca

Krysta Traianovski, MBET
Associate Director, Founder Development
krysta.traianovski@uwaterloo.ca

The History of Velocity est. 2008

Velocity Metrics

1,200+
Founders trained

500+
Companies supported

$6.6B
Funds raised

10,000+
Jobs created

$40B
Enterprise value

45,000
sqft office and product dev space at off-campus incubator

1,692
student participants in 2025

519
campus teams in 2025

20
Summer accelerator teams – pilot cohort 2025 – 30 teams this summer

18
Continuing to pursue their ventures
8 reside at the incubator

Velocity Today

Our Thesis: The best trained founders will create the best startups

HELP FOUNDERS GO FURTHER, FASTER

Further
Creating new systems and training opportunities for students and founders to succeed entrepreneurially

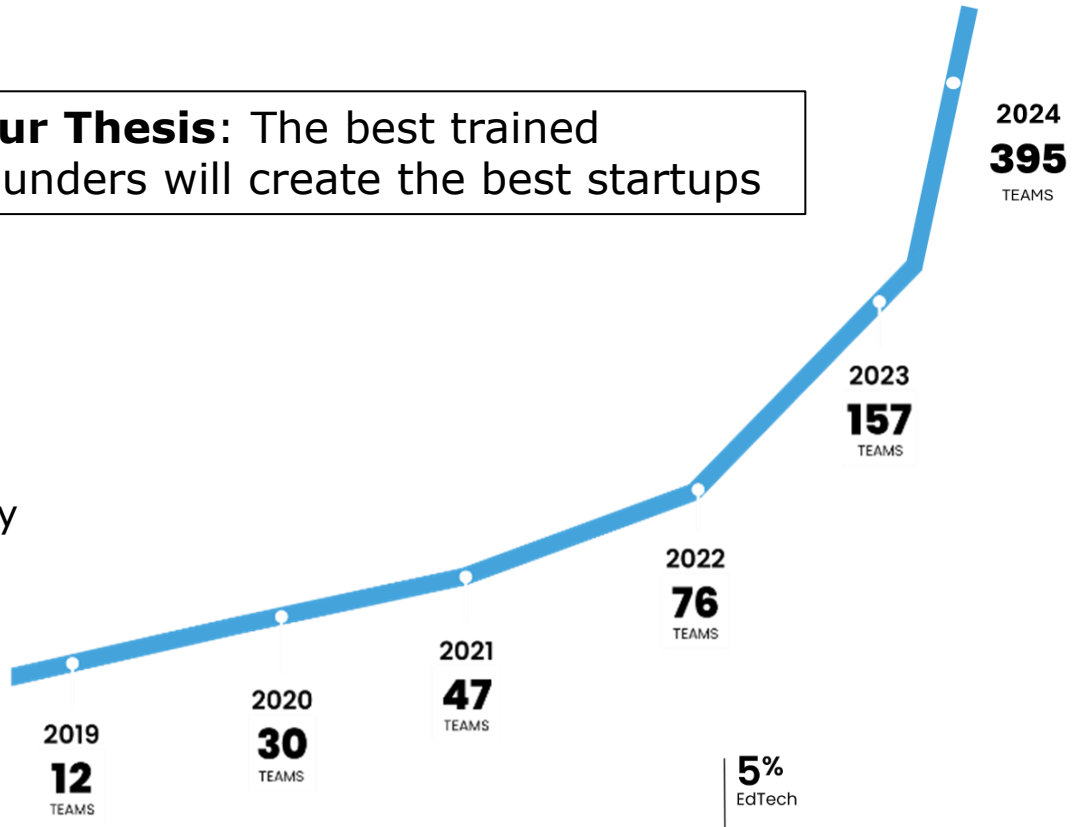
Faster
Breaking down barriers through broad program accessibility, community support, expert advice, and warm industry connections

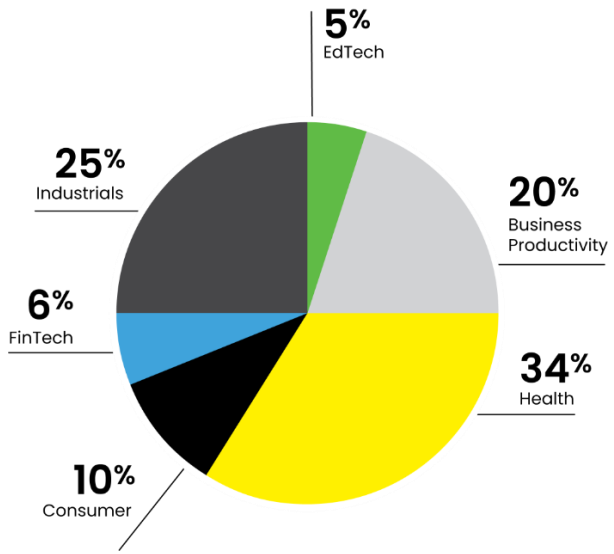
FIND. DEVELOP. CONNECT.

Find
Attract talented students and researchers, match them with important business challenges, and inspire them to make positive change

Develop
Train students and researchers to grow their innovative-mindset through entrepreneurial experience

Connect
Create the broadest and most effective network of founders, service providers, and industry connections to increase the opportunity for success





Building Bridges to Train Innovators

FIND

Students
Harness their intrinsic motivations and inspire them to start working on something impactful

Researchers
Connect them with industries to validate their research in the real world

Industry
Help them bring problem spaces to campus to ignite the innovation cycle for consequential opportunities

DEVELOP

Programs
Short programming with light touchpoints focused heavily on external validation and accountability

Advisory
Provide experienced entrepreneurs to consult and train through programs and 1 on 1 meetings

Ideation
Train students to look for opportunities to innovate through their co-op placements

CONNECT

500+ companies & 1200+ founders
Activated Velocity alumni are the key to scaling support. Building a network of experienced entrepreneurs who want to give back and help future generations of founders

Industry & customers
Find the hard-to-reach individuals who founders need to speak with at key organizations. Build relationships and make warm intros to help them validate their solutions

Adoption
Facilitate pilots and first sales for early founders. Train them in sales and fundraising to get them to their first revenues as quickly as possible

Find

INNOVATION OPEN HOUSE

Lead off event every term
Welcome back students from co-op and welcome new students into the fold with free food and booths

STARTUP 101

General topics in entrepreneurship
Information sessions, panels, fireside chats, women in entrepreneurship meetups, etc.

INNOVATION CHALLENGES

2-week hackathons with external partners
Velocity's main source of sponsorship funding – external groups bring real-world problem spaces for student teams to tackle – leading to future startups

CO-OP WORKPLACE SIMULATION

Training students to find opportunities on Co-op
Students are put into a simulated internship where their goal is to find a corporate problem to solve To do so, they interview up to 14 AI coworkers too piece together the opportunities they hide

Develop

CORNERSTONE

The Start of the Journey
A 2-Week Discovery Sprint to introduce customer validation for any student who has an idea or technology they wish to commercialize

SUMMER ACCELERATOR

10-week full-time program for new graduates
A "last chance" for new graduates to explore entrepreneurship. Participants have an idea and work to gain real traction before the end of summer

ADVISORY SUPPORT

Regular meetings with experienced founders
Velocity has 5 former founders on staff to provide deep advisory support. Alumni are tapped for specific advice and connections

SALES AND FUNDRAISING SUPPORT

Get to the first milestone - fast
New full-time founders are expected to make their first sale, sign a first pilot or raise funding within the first 4 months of joining the incubator. Velocity has 2 staff dedicated to helping them achieve this goal

Connect

CAMPUS WORKSPACES

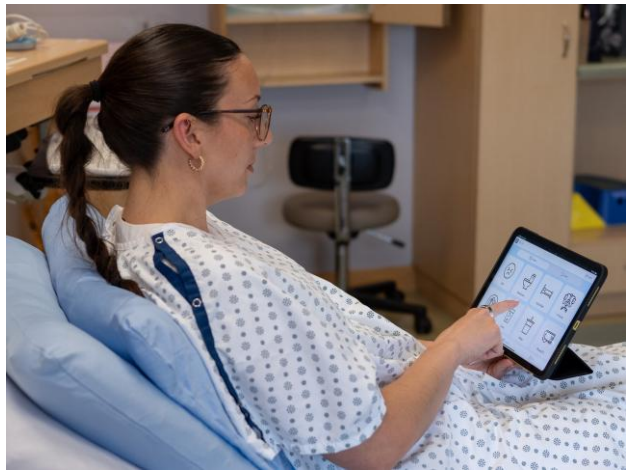
3 spaces for collaboration
A common room, a coworking space, and a laboratory for students to work and build community along with an open access GPU AI Server

INNOVATION ARENA

Off-campus incubator for offices and product dev
The evolution of the Velocity incubator – 45,000 sqft of space dedicated to community and commercialization

WARM INDUSTRY CONNECTIONS

Industry contacts who are excited to meet you
Velocity has an extensive network of alumni working in a multitude of industries who remember how hard it is to make connections and want to help.



VELOCITY HEALTH NETWORK

Fast adoption of health technologies
A network of over 50 hospitals and clinics ready to pilot startup technologies with one call

Funding

JAIN FAMILY AWARD

Supporting dedicated students
$5,000 funding for a student who completes Velocity Cornerstone then follows it up with an enterprise co-op term

ABUNDANCE AWARD FOR WOMEN

Supporting Equity in Founding Startups
$25,000 in funding for a graduating women-identifying founder looking to start their career in entrepreneurship but facing headwinds

IPON INNOVATION FELLOWSHIP

Accelerating graduates
IP Ontario has provided $12,000 in funding for 30 graduating teams to create a startup and gain support through the Velocity Summer Accelerator Program

THE VELOCITY FUND

Pre-seed investment
An independent early-stage VC that can invest in velocity companies using funds raised from the University of Waterloo endowment

Upcoming Initiatives

COMMERCIALIZATION PROGRAMMING FOR PROFESSORS

Demystifying Opportunity
Creation of a commercialization community for professors to increase interest in research commercialization and educate them on the process

AI TRAINING and RESOURCES

Every startup is AI
Providing experiential training in AI to train students how it may be used to fast-track their own projects and reduce the need for a "technical" co-founder

GLOBAL INNOVATION CHALLENGE

Waterloo Leads Student Innovation (Again)
A global innovation challenge that gathers students from 10 global universities to tackle a single problem. Students will compete in a global finals hosted annually at the University of Waterloo.

Read about Velocity's momentum.

Momentum is a publication from Velocity. Periodically, we provide insight into Velocity's activities and offer inspiration through the stories of Velocity founders.

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