



Ex-Officio: F West (Chair); D Ali, J Bagwe, D Barbosa, J Bartoszewski, D Beaver, J Boulter, N Bozorgnia, A Brown, I Cheng, C Cairo, F Dai, G de Vries, C Demmans Epp, S Desaulniers, C Dickson, T Evans, M Evenden, M Ferguson, C Frei, Z Friggstad, R Funk, C Gagne, N Guay, J Hall, C Heinke, C Herd, T Johnson, S Johnston, N Karpenko, V Kravchinsky, B Lanoil, K Magor, S Mansy, A Mikdame, C McDermott, M McDermott, T McGee, R Moore, L Mou, H Proctor, T Rogers, E Rosolowsky, J Sander, L Santana de Lelis, A Singhal, D Singhal, A Sochatsky, M Spila, T Smith, E Stroulia, C Sturdy, J Veinot, W Wakarchuk, C Westbury, L Willis, M Wolansky, X Yu

Additional Members: D Abbas, S Bhardwaj, B Cockburn, I Cribben, M de Montigny, CM Galon, M Glover, W Goulden, S Gosgnach, C Gozon, J Hammond, A Hughes, A Johnson, A Luo, MD MacKenzie, M Przystupa

Guests: D Bialowas, L Budney, E Burdek, N Dyck, B Dyson, D Feisst, K Gallardo, S Guenette, H Hong, M Huff, R Kafle, B Martin, L Mason, M Mayerhofer, K Noels, J Pigeon, S Wang

of Attendees: 91

1. Approval of Agenda

Be it RESOLVED that the agenda of the 136th Science Faculty Council be adopted as circulated.
Moved/seconded by S Johnston/R Moore. CARRIED

2. Notes for the 135th Faculty Council Meeting, May 19, 2022

Be it RESOLVED that the notes of the 135th Science Faculty Council be adopted as circulated.
Moved/seconded by A Johnson/R Moore. CARRIED

3.1 Proposed changes to BSc Degree Framework

Motion: Upon the recommendation by Science Chairs, to approve the proposed changes to the Faculty of Science's Bachelor of Science degree framework, as outlined in the governance documents circulated with the agenda. Moved/Seconded by R Moore/J Hall. CARRIED

Adjournment

There being no other business, the meeting was adjourned.

AGENDA ITEM #1

2022/2023 Faculty of Science Council – Additional Members

Charles Wong	Alumni Affairs
Wanda Goulden	APEGA
Mark Glover	Department of Biochemistry
Bruce Cockburn	Division of Computer Engineering
James Hammond	Department of Pharmacology
Simon Gosgnach	Department of Physiology
Marc de Montigny	Campus Saint-Jean
Derek MacKenzie	Faculty of Agricultural, Life and Environmental Sciences
Katalin Bimbo	Faculty of Arts
Ivor Cribben	Alberta School of Business
Maria Cutumisu	Faculty of Education
TBD	Faculty of Engineering
Mark Glover	Faculty of Medicine and Dentistry
TBD	Faculty of Nursing
Paul Juraz	Faculty of Pharmacy and Pharmaceutical Sciences
Michael Kennedy	Faculty of Kinesiology, Sport, and Recreation
Clare Maristela Galon	Graduate Students' Association
Michael Przystupa	Graduate Students' Association
Anna Hughes	Registrar's Office
Audrey Johnson	Undergraduate Student
Anson Luo	Undergraduate Student
Saurabh Bhardwaj	Undergraduate Student
Daniyal Abbas	Undergraduate Student
Kyla Gallardo	Undergraduate Student
Charlene Jay Gozon	Undergraduate Student
Muhammad Ali	Undergraduate Student
Reewa Kafle	Undergraduate Student
Sabrina Iraschko	Undergraduate Student
Isumi De Silva	Undergraduate Student
Isabel Cook	Undergraduate Student
Ramnik Aojula	Undergraduate Student

AGENDA ITEM #2

135th COUNCIL OF THE FACULTY OF SCIENCE

19 May 2022

9:00 AM

Virtual Meeting

Ex-Officio: F West (Chair); D Ali, T Allison, O Ardakanian, J Bartoszewski, W Bedard, S Blake, J Boulter, M Boyce, I Cheng, T Choulli, J Davis, G de Vries, T Evans, M Ferguson, C Frei, Z Friggstad, R Funk, M Gedik, M Gingras, T Grant, Z Hall, L Hasham, N Hegde, C Heinke, B Jensen, T Johnson, N Karpenko, L LeBlanc, S Leys, A Litvak, L Mason, A Mikdame, M McDermott, T McGee, R McKay, B Peavey, B Powell, T Raivio, O Rueppell, J Sander, L Santana de Lelis, J Schaeffer, L Schulha, R Shields, A Singhal, M Spila, E Stroulia, R Summers, B Sutherland, M Taylor, R Tykwinski, G Uhrig, G Wagner, H Wan, H Wang, C Westbury, K Whitfield, S Wilson, M Wolansky, K Wong, X Yu, D Zaragoza

Additional Members: C Althoen, K Bimbo, G Chan, B Cockburn, I Cribben, M Cutumisu, I De Silva, M Glover, A Hughes, M Kennedy, M de Montigny, G Mix, J Olson, K Paulson, E Proctor, KA Reid, UT Sarwar, J Tarilyn Prouse, E Thomas, A Ullah, I Xin

Guests: D Feisst, C Freitas, L Madsen

of Attendees: 87

1. **Approval of Agenda**

Be it RESOLVED that the agenda of the 135th Science Faculty Council be adopted as circulated.

Moved/seconded by B Bedard/O Rueppell.

CARRIED

2. **Notes for the 134th Faculty Council Meeting, May 20, 2021**

Be it RESOLVED that the notes of the 134th Science Faculty Council be adopted as circulated.

Moved/seconded by R Shields/K Whitfield.

CARRIED

3. **Frederick West, Interim Dean of Science**

The Interim Dean made a presentation to Council about the current state of the Faculty of Science and answered questions from the floor.

4.1 a) **Information Graduands lists**

Information on the Spring 2022 graduand list was provided by the Associate Dean (Undergraduate). Total Graduands - approximately 1,243; BSc Honors - approximately 217; BSc Specialization - approximately 391; BSc General – approximately 635; Science Internship Program - approximately 79 students.

4.1 b) **Motion to permit addition of names to the Graduand list**

Be it RESOLVED that the Science Faculty Office be empowered to constitute the list of graduands for Spring 2022, as required. Moved/seconded by G de Vries/S Blake.

CARRIED

4.2 Faculty of Science Standards - Revisions

Be it RESOLVED that the Science Chairs' recommendations for revisions to the Faculty of Science Criteria for Merit Increments, Tenure and Promotion be adopted as circulated. Moved/seconded by E Stroulia/T Allison. CARRIED

Be it RESOLVED that the Science Chairs' recommendations for revisions to the Faculty of Science FEC Procedures for Annual Review of Performance, Merit Increments, Evaluation of Probationary Appointments, Tenure Decisions, and Application for Promotion to the Rank of Professor be adopted as circulated. Moved/seconded by E Stroulia/B Bedard. CARRIED

Be it RESOLVED that the Science Chairs' recommendations for revisions to the Faculty of Science Standards of Performance and Procedures for Merit Increments, Continuing Appointment, and Promotion for Faculty Service Officers (FSOs) be adopted as circulated. Moved/seconded by E Stroulia/S Blake. CARRIED

5. Items for Information

Update on Administrative Appointments

Fred West provided the following updates on administrative appointments with the faculty:

Declan Ali began his term as Chair in the Department of Biological Sciences on January 1, 2022.

Thank you to Tracy Raivio for serving as Acting Chair from January 1, 2021 to December 31, 2021.

The position of Chair of the Department of Chemistry has been filled with the appointee being announced shortly. The appointee will begin July 1, 2022. Thank you to Rik Tykwinski for serving as chair for the past five and a half years.

Christoph Frei has accepted the position of Interim Chair of the Department of Mathematical and Statistical Sciences starting July 1, 2022. Thank you to Terry Gannon for serving as Chair for the past two years.

Stephen Johnston will be returning from Administrative Leave to start his second term as Chair of the Department of Earth and Atmospheric Sciences on July 1, 2022. Thank you to Thomas Chacko for serving as Acting Chair this past year.

5.1 Gold and Silver Medalists

Science Chairs approved the following Gold Medal winners:

Jayesh Vig, BSc General with a Major in Psychology and a Minor in Biological Sciences, will receive the Dean's Gold Medal in Science.

Kara Terry, BSc with Specialization in Pharmacology, will receive the Gold Medal in Science.

Shezel Muneer, BSc with Honors in Physiology, will receive the Lieutenant-Governor's Gold Medal.

Dean's Silver Medals, Spring Convocation 2022

The Dean's Silver Medals are awarded annually to convocating students with superior academic achievement enrolled in an Honors program in the Faculty of Science. Recipients must have had a minimum grade point average of at least 3.7 on a full course load in three Fall/Winter academic sessions while enrolled in the Faculty of Science. This year there are 87 Silver Medalists.

5.2 Engagement & EDI Plan 2020-2023 for the Faculty of Science

The Faculty of Science Engagement & EDI Plan for 2020-2023 can be viewed on the Faculty of Science website and is included in the agenda. Thank you to Tara McGee our Associate Dean Engagement & EDI for forging this plan and for those who provided input and feedback.

5.3 New Academic Staff Appointments

A list of new academic staff appointments has been circulated with the agenda. Welcome to those who are with us and to those yet to arrive.

5.4 Academic Staff Promotions and/or Tenure/Continuing Appointments

A list of academic staff promotions, tenure and continuing appointments has been circulated with the agenda.

5.5 Proposed changes to BSc Degree Framework and BSc Academic Standing

Gerda de Vries presented the two executive summaries around the BSc renewal. Thank you to Gerda and Michelle Spila for their tireless work on this endeavour.

6.0 Other Business

Discussion took place on hybrid and online teaching.

- It was very useful to have classes recorded, especially in a hybrid setting.
- From an instructor perspective, students who choose asynchronous delivery also tend to have worse course outcomes. There was little difference between in-person and livestream students.
- Consider noting online versus in-person classes on transcript.
- It may be useful to have the courses listed in Bear Tracks specify the delivery mode.
- Need clarification on expectations from students and instructors and levels of responsibility (e.g. department level).
- It would be beneficial to have comparative data internally and from peer institutions to assess the various teaching modalities.

It was suggested that a retreat or Community of Practice be implemented to continue this discussion.

7.0 Adjournment

There being no other business, the meeting was adjourned at 10:53 am.

AGENDA ITEM #3.1

Proposed Changes to Bachelor of Science Degree Framework - Faculty of Science

Presented by: Dr. Gerda de Vries, Associate Dean (Undergraduate), Faculty of Science

Introduction

The main purpose of the BSc Renewal Project is to restructure the Bachelor of Science degree framework. We currently offer three degree levels (General, Specialization and Honors); with BSc Renewal, we are proposing to move to two degree levels (Major and Honors). We are also taking this opportunity to build consistency and articulation between the degree levels by introducing common program requirements. The implementation date for BSc Renewal is Fall 2024.

A general overview of the proposed changes is provided in this [Executive Summary](#).

A more detailed explanation is provided in this [Comprehensive Report](#).

As the proposed changes are quite complex and extensive, we have created this index document in an attempt to present them as logically and efficiently as possible. Below you will find links to Google documents and PDFs organized into four categories: (1) the templates required to move the proposed changes through governance; (2) a letter of support from the Dean of Science; (3) the associated calendar changes; and (4) documents explaining the Faculty of Science's progress on indigenizing the Bachelor of Science.

(1) Templates

Internal Suspensions - Science Specializations	All Science Specialization programs will be suspended for a period of five years. After five years, they will be terminated. Starting in Fall 2024, students will be admitted into either the Major or Honors version of these subject areas. Students admitted prior to Fall 2024 will be allowed to complete the BSc with Specialization program requirements published the year they were admitted. Or, on the advice of an advisor, they may switch to either the new Major or Honors programs.
Internal Suspensions - Science Honors	The Honors in Applied Mathematics with Computing Science Minor, Honors in Applied Mathematics with Statistics Minor, Honors in Mathematics with Computing Science Minor, and Honors in Mathematics with Statistics Minor programs must be suspended because we no longer need to specify these particular combinations. Starting in Fall 2024, any Honors student in the Faculty of Science may choose to add a Minor. Therefore, Applied Mathematics and Mathematics students have access to the Computing Science and Statistics Minors, in addition to any other Minor.
Internal Suspension - Physical Sciences Minor	The Minor in Physical Sciences is being suspended because the new framework allows students to easily combine Major or Honors subject areas with Minor subject areas, or combine two Major subject areas. Therefore,

	students seeking to obtain expertise in Physical Sciences can take a Major or Honors in Chemistry plus a Minor in Physics OR a Major or Honors in Physics plus a Minor in Chemistry OR a Double Major in Chemistry and Physics.
Ministry New Specialization (major) - Astrophysics Ministry New Specialization (major) - Environmental Earth Sciences Ministry New Specialization (major) - Paleontology	Although we've been offering Specialization and Honors programs in Astrophysics, Environmental Earth Sciences, and Paleontology for many years, these subject areas were never properly entered into the Ministry's database (they are currently miscategorized under Physics and Earth Sciences). This is a purely administrative update; the Ministry has given us permission to submit abbreviated templates in order to correct the program record.
New Internal Science Majors	These new Majors replace the Specializations suspended above, except for Applied Mathematics, Mathematical Physics, Neuroscience and Physiology, which are truly new Majors as they previously existed as Honors programs only.
New Internal Science Honors	New Honors programs are required in the Biological Sciences, Computing Science - Software Practice, Earth Sciences and Planning subject areas as they previously existed as either Major or Specialization programs only.
New Internal Second-level Specializations	Several new Minors are being proposed in recognition of student demand for certain subject areas (i.e. Biochemistry, Cell Biology and Pharmacology) and to encourage enrolment in other subject areas (i.e. Astrophysics, Climate Dynamics and Geophysics). With this proposal, we also aim to fix the name of the Computing Science - Software Practice Option in the calendar to ensure it is clearly identifiable as a second-level specialization, which will be available only to students enrolled in the BSc or BSc with Honors in Computing Science.
Name Change - Earth & Atmospheric Sciences	With this proposal, we are returning the name to "Earth Sciences", which is actually more broadly representative of the new Major/Honors course requirements.

(2) Letter of Support

[Letter of Support from the Dean of Science](#)

(3) Calendar Changes

Bachelor of Science General Bachelor of Science Specialization Bachelor of Science Honors	The admission sections on these pages are being updated to reflect the degree framework changes coming into effect Fall 2024.
Bachelor of Science (Major and Honors) - Effective Fall 2024	This is a new program requirement page; it must appear in the 2023-2024 calendar year in order to inform applicants of the degree structure and program requirements in effect for Fall 2024.

FoS Admission Requirements	The Faculty of Science Admission Requirements page has been completely revised. These changes must appear in the 2023-2024 calendar year in order to inform applicants of the new admission requirements in effect for Fall 2024.
FoS Admission Chart 7	The BSc with Specialization degree program is being suspended and the admission requirements for the BSc with Honors degree program are being standardized. Therefore, we no longer need Admission Chart 7.
FoS Admission Deadlines	The Faculty of Science Admission Deadlines table is being updated to reflect the new degree framework associated with the proposed BSc Renewal changes.
FoS General Information	Information regarding the After Degree in the Faculty of Science does not belong here. Accordingly, the information will be split between the new Faculty of Science Admission Requirements page and the Faculty of Science Regulations page.
FoS Regulations	The Faculty of Science Regulations page is being updated to reflect the new degree framework associated with the proposed BSc Renewal changes.

Note:

Additional calendar changes related to BSc Renewal will be submitted by the Faculty of Science for inclusion in the 2024-2025 calendar. These changes will include the deletion of the program requirements presented on the General, Specialization and Honors pages. They will be replaced with language noting certain programs have been suspended and a new degree framework is in place. They will also include new calendar language associated with academic standing and other Faculty of Science regulations governing our new degree framework, the new Indigenous course requirement (as discussed below), and other minor adjustments as needed.

(4) Indigenization of the Bachelor of Science

[Indigenization of the Bachelor of Science Curriculum Working Group Recommendation - Indigenous Course Requirement](#)

This document presents a recommendation that the Faculty of Science implement a faculty-level Indigenous course requirement for all BSc programs. The requirement would be that all undergraduate Bachelor of Science students in the Faculty of Science must complete at least 3 units (one course) from a curated list of Indigenous courses.

In addition to consulting with stakeholders and connecting with the faculties/ departments offering the courses, the calendar language associated with this new requirement must be drafted.

We intend to present this new requirement for University Governance approval in 2023 for inclusion in the 2024-2025 University Calendar (in time for the Fall 2024 implementation of the proposed BSc Renewal degree framework changes).

[Letter of Support from the Dean of Science and Chairs of the Indigenization of the Bachelor of Science Curriculum Working Group](#)

Proposed Changes to BSc Degree Framework

**Special Science Faculty Council
October 28, 2022**



**UNIVERSITY
OF ALBERTA**

Faculty of Science, College of Natural & Applied Sciences

Why are we proposing these changes?

- BSc degree framework had not been reviewed or significantly updated for at least 25 years or more
- There are numerous systemic issues that need to be fixed; for example:
 - Problematic articulation between degree types
 - High variability within degree types
 - Requirements for our Majors (General) are light compared to Majors elsewhere
 - Forced Minors (General) and limited/no access to Minors (Specialization and Honors)
 - Inconsistent and problematic academic standing parameters
 - Complicated and time-consuming administration processes

Existing Degree Structure

Degrees Offered:	Fields of Study Available only in BSc General:	Fields of Study Available at all Three Levels:	Fields of Study Available only in Honors & Specialization:	Fields of Study Available only in Specialization:	Fields of Study Available only in Honors:
BSc with Honors		✓	✓		✓
BSc with Specialization		✓	✓	✓	
BSc (General)	✓	✓			
Fields of Study:	Biological Sciences Earth & Atmos. Sci. Physical Sciences	Chemistry Computing Science Mathematics Physics Psychology Statistics	Astrophysics Biochemistry Cell Biology EE&E Biology Env. Earth Sciences Geology Geophysics Immun. & Infection Integrat. Physiology Math, Stat. Minor Math & Finance Math/Economics MC&D Biology Paleontology Pharmacology	Comp Sci., Bus. Min. Comp Sci., Soft. Prac. Math., Comp. Science Planning	Applied Math Applied Math, Comp. Sci. Min. Applied Math, Statistics Minor Mathematical Physics Math, Comp. Science Minor Neuroscience Physiology

Minors:

(Restricted to BSc General students only)

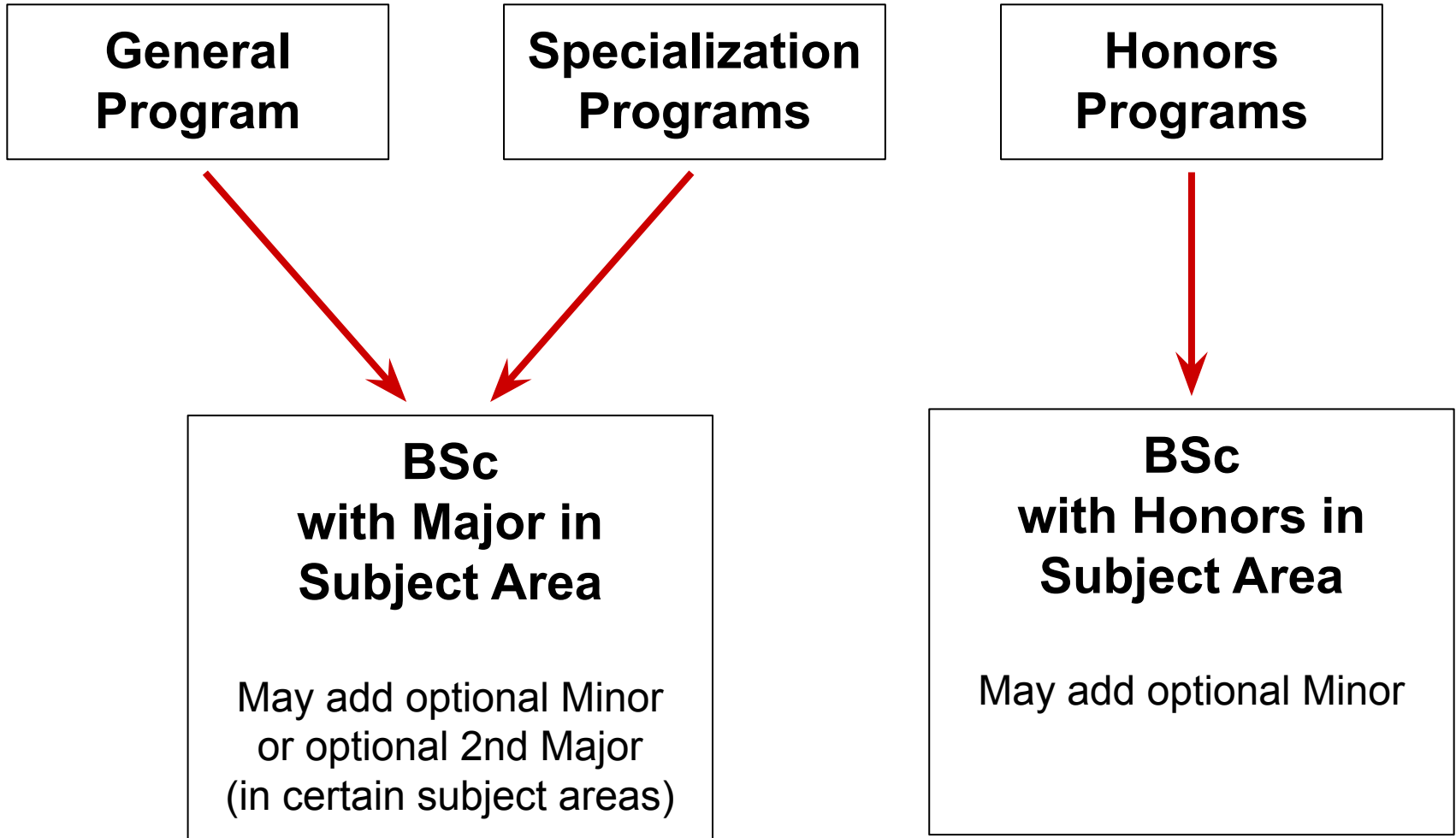
Any minor from ARTS
Agriculture [ALES]
Bioinformatics
Biological Sciences

Business [BUS]
Chemistry
Computing Science
Earth & Atmos. Sciences

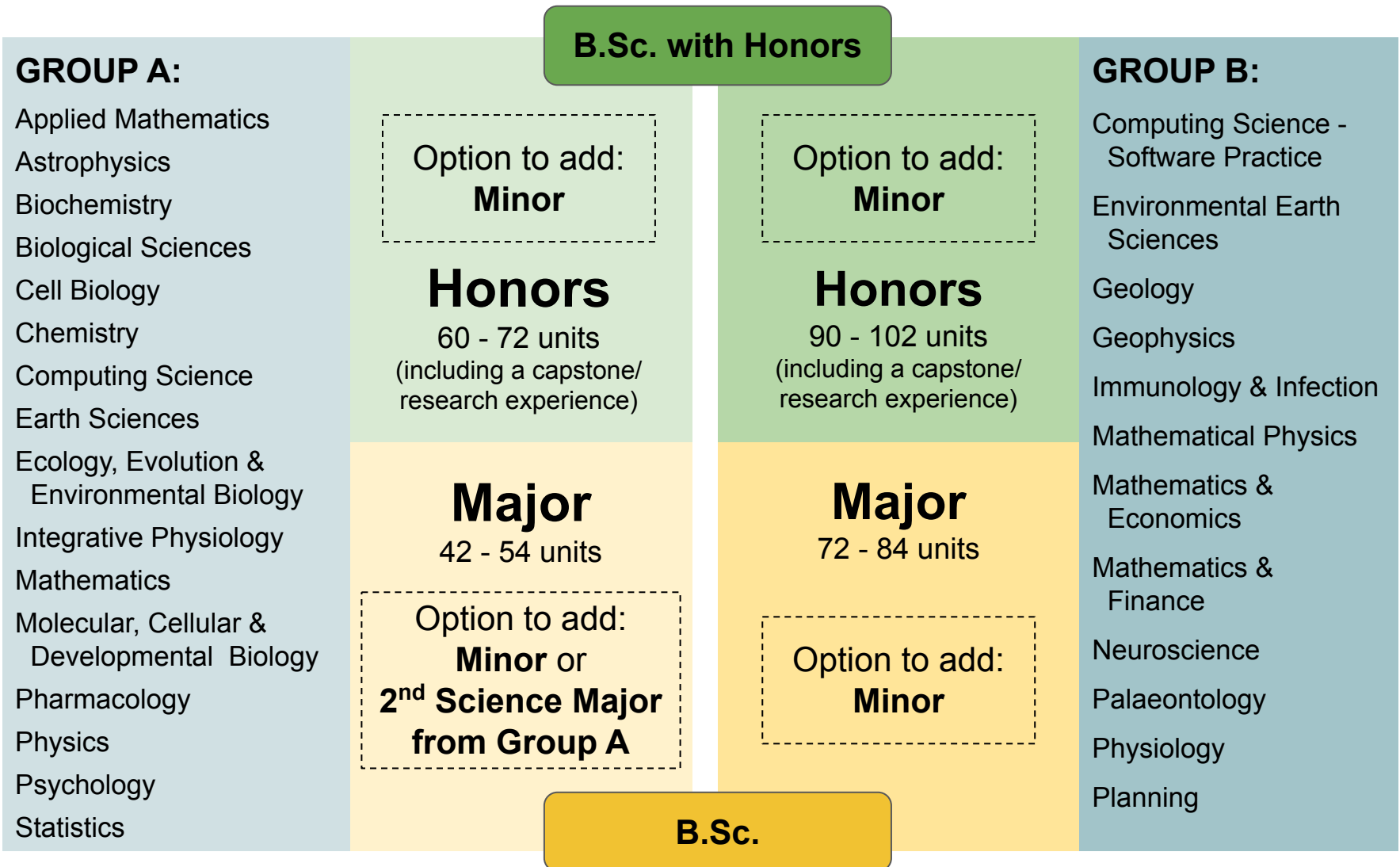
Human Ecology [ALES]
Nutrition [ALES]
Native Studies [NS]
Mathematics

Physical Sciences
Physics
Psychology
Statistics

Overview of Proposed Changes



New Degree Framework



Minors:

(optional; available to all Science students)

Any Minor from ARTS

Agriculture [ALES]

Astrophysics (NEW)

Biochemistry (NEW)

Bioinformatics

Biological Sciences

Business [BUS]

Cell Biology (NEW)

Chemistry

Climate Dynamics (NEW)

Computing Science

Earth Sciences

Geophysics (NEW)

Human Ecology [ALES]

Mathematics

Native Studies [NS]

Nutrition [ALES]

Pharmacology (NEW)

Physics

Psychology

Statistics

... with more to come as new Minors are developed

Note: A Minor consists of 24-30 units with at least 6 units @ the 300 level or higher

New Common Program Requirements

(set at the Faculty Level)

Communication/ Writing	6 units in ENGL or WRS <i>To evolve overtime to include scientific communication or writing in the scientific discipline courses</i>			
Breadth Outside the Faculty of Science	6 units, with at least 3 units from two of the following categories: Business (eg. ACCTG, FIN, MARK, OM, SEM) Applied Sciences (eg. AREC, ENGG, KIN, NUTR, REN R, SPH) Humanities, Fine & Performing Arts (eg. ART, CHRTC, CLASS, DRAMA, FREN, HIST, PHIL) Social Sciences (eg. ANTHR, ECON, HGEO, NS, SOC, POL S, WGS)			
Breadth Within the Faculty of Science <i>Must include at least 3 units in a lab or field experience</i>	9 units, with at least 3 units from each of the following categories: Basic Sciences (eg. BIOL, CHEM, PHYS) Formal Sciences (eg. CMPUT, MA PH, MATH, STAT) Specialized Sciences (eg. ASTRO, BIOCH, BOT, CELL, EAS, ENT, GEOPH, NEURO, PALEO, PMCOL, PHYSL, Science PSYCO, ZOOL)			
Minimum @ 200+	78 units			
Minimum in Science	72 units			
Specified units in the subject area	<u>Group A Major</u> 42 - 54	<u>Group B Major</u> 72 - 84	<u>Group A Honors</u> 60 - 72	<u>Group B Honors</u> 90 - 102
Min. units @ 300 level or higher in degree overall	36	36	42	42
Min. units @ 300 level or higher in subject area	18	24	30	36
Min. units @ 400 level in subject area	6	9	15	18

Consultation



- Much of the work on BSc Renewal was completed by Associate Chairs (Undergraduate) in collaboration with departmental curriculum committees and members of Student Services
- Town halls/special meetings took place in each department and with other Faculties (in particular Arts and ALES)
- Extensive consultation with Provost's Office & Registrar's Office
- Departments provided "in principle" approval of the changes in 2021
- Calendar language developed in early 2022; final touches were completed over summer/fall 2022

Student Consultation



- Brainstorming session with ~50 Science mentors in 2019
- Special presentation to ISSS executives in 2020
- Student Advisory Committee established in Winter 2021 term
 - 25 participants representing all departments, General/Specialization/Honors, 1st to 4th year
 - Five 2-hour meetings
 - Extensive feedback received
- Two town hall presentations to ISSS and COSSA executives in Winter 2022
- There are also student reps on Departmental and Faculty councils

Governance Pathway



- Program Support Team - October 27
 - Advisory role
 - Positive feedback; no concerns
- Special Science Faculty Council - This Meeting
 - Seeking Faculty-level approval of the proposed changes
- Programs Committee - November 17
 - Seeking University-level approval on the delegated authority of the GFC
- A small portion of the proposed changes goes on to the Ministry for approval