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## FACULTY OF SCIENCE

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### COUNCIL OF THE FACULTY OF SCIENCE

#### **Agenda**

**Tuesday, May 9, 2017  
at 3:00pm – 4:30pm, in 306 Lumbers**

1. Call to Order and Approval of Agenda
2. Chair's Remarks
3. Minutes of April 11, 2017 meeting
4. Business Arising
5. Inquiries and Communications
  - Senate Synopsis: Meeting of April 27, 2017
6. Dean's Remarks
7. Associate Deans' and Bethune Master's Remarks
8. Reports from Science Representatives on Senate Committees
9. Reports from Standing Committees of Council
  - 9.1 *Executive Committee*
    - Vacancies: 2017-18 Vacancies Report on Senate and FSc Committees (item for action)
  - 9.2 Science Curriculum Committee (items for action and consent)
10. Other Business
  - Presentation by Joy Kirchner, University Librarian, Open Access Open Data Steering Committee update  
<https://www.library.yorku.ca/web/open/>



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## FACULTY OF SCIENCE

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### COUNCIL OF THE FACULTY OF SCIENCE

#### Minutes

**Tuesday, April 11, 2017**  
**at 3:00pm – 4:30pm, in 306 Lumbers**

**Attendance:** D. Golemi-Kotra, A. Mills, D. R. Hastie, W. A. van Wijngaarden, R. Jayawardhana, M. Xu, K. Tamara, S. Morin, E. Hamm, P. Potvin, N. Madras, J. Grigull, A. Mun, J. Lazenby, N. Madras (Chair), R. Tsushima, E. Hamm, E.J Janse van Rensburg, P.Lakin-Thomas, S. Siyakatshana (Assistant Secretary of Council)

**Guests:** B. Sheeller, H. McLellan & L. Grant

**1. Call to Order and Approval of Agenda**

The meeting was called to order and the Agenda adopted as presented.

**2. Chair's Remarks**

There were no Chair's remarks.

**3. Minutes of March 14, 2017 meeting**

A motion was moved, seconded and carried to approve the

Minutes.

**4. Business Arising**

There was no Business Arising.

**5. Inquiries and Communications**

Council noted the Senate Synopsis of the meeting of March 23, 2017.

## 6. Dean's Remarks

Dean Jayawardhana reported to Council that the APPRC, the Faculty Deans and others were working on refining the Strategic Mandate Agreement 2 document. The draft document will soon be brought to Senate for discussion. He noted that the current draft version included York's aspiration for a Medical School, which is of great interest to Science.

The Dean stated that the Province would like to know our goals and metrics for assessing progress. The general consensus among Faculties was that we signal all five areas do not have to be weighted the same. They reiterated the importance for us to signal that York University wants to be regarded as a research intensive institution.

He reported that the York Region Science and Technology Fair was held on March 30 & April 1<sup>st</sup> and it had some 160 participants. The event was a huge success and the Dean gave the opening remarks at the awards ceremony. He added that Science sponsored one of the students to attend the Canada-wide fair. Two complimentary registrations to SciX and Helix camps were also awarded. The Dean thanked Professor Robert Tsushima for his continued hard work and dedication to the Fair organizing.

The Dean informed Council that the inaugural recipients of the Carswell Graduate Scholarships met with Professor Emeritus Allan Carswell over lunch.

He noted that six Vernon Stong Scholarships and six Carswell Scholarships of \$10,000 each had been awarded.

He also announced that nineteen NSERC USRAs and nineteen Dean's Undergraduate Research Awards had been adjudicated and offered to recipients.

He congratulated Dr. Amro Zayed, who was awarded the President's Emerging Research Leadership Award. He noted that for three consecutive years, a Science faculty member had received one of the two main research awards.

The York University Research Leaders from Science were: Nantel Bergeron, Carol Bucking, Ray Jayawardhana, Sergey Krylov, Jean-Paul Paluzzi, Chun Peng, and Derek J. Wilson as well as Thilo Womensdorf, Jianhong Wu as members of the Vision Science to Applications (VISTA) Program.

The Dean also congratulated the following faculty members:

- Eric Hessels: York Research Chair in Atomic Physics Tier I
- Sapna Sharma: York Research Chair in Global Change Biology Tier II

He reported that Science student Olga Andriyevska was recognized with a Robert Tiffin Student Leadership Award.

He announced that another Science & Business Workshop was held. The speaker was alumnus Dr. Scott Tanner, Co-Founder, DVS Sciences/Fluidigm Canada.

### *Upcoming events;*

Biology symposium to be held on April 28

Science Rendezvous to be held on May 13, in Markham, at 10:00am – 3:00pm.

He concluded his remarks by informing Council that the Science Annual Review report had been printed recently and members could expect to receive copies in the near future.

#### **7. Associate Deans' and Bethune Master's Remarks**

Associate Dean Morin reported that they were currently adjudicating the next round of the Vernon Stong and Carswell scholarships. She noted that the Vernon Stong Scholarship will be awarded shortly. For the Carswell scholarships, the students will receive their scholarship offer and will have two weeks to accept. She encouraged faculty members to contact their GPDs if they have a student in mind who could benefit from these scholarships.

She added that Science was now in the process of admitting the Masters and PhD students for the Fall session. Dr. S. Morin stated that the financial responsibility for supporting students was now in the Faculty of Science. We have aggressive enrolment targets to meet in 2017/18 and there are budgetary implication if they cannot be met.

She informed Council that the CFI JELF NOI are due on April 18th in the VPRI's office. For the next competition applications will be due in October 2017.

Associate Dean Janse vanRensburg reminded faculty members to submit their sabbatical requests as stipulated by the YUFA collective agreement. He also informed them that Brad Sheeller will be contacting those whose health and safety training records had expired. He encouraged faculty members to cooperate with this request and update their training records.

Associate Dean Mills informed Council that all four Science applications for the academic innovation fund were

successful: Early Alert (continuing), Integrated Science (continuing), e-Learning Best Practices using NATS courses, and developing an Experiential Education plan for the Faculty.

Associate Dean Mills presented statistics regarding the Lassonde coop and internship program. He added that Science intended to work with and share information with Lassonde regarding the coop and internship program.

He announced that, strategically, this year's admission offers were made substantially earlier in the cycle than last year, which appears to be generating healthy acceptance levels.

He ended his report by stating that petitions applications had dropped, presumably as a result of the revision to the Senate rules regarding the W and the course relief policy on petitions.

#### **8. Reports from Science Representatives on Senate Committees**

There were no reports.

#### **9. Reports from Standing Committees of Council**

Executive Committee: Vacancies: 2017-18 Vacancies Report on Senate and FSc Committees

N. Madras informed Council that the student caucus nomination call will be sent out in September when students have their class schedules and can determine their availability.

A motion was moved, seconded and carried to ratify J. Clark to the SRC Tenure & Promotion Committee as well as conduct a ballot vote for the Academic Policy, Planning

and Research Committee (APPRC), be conducted for R. Tsushima or William van Wijngaarden.

Council Science Curriculum Committee

A motion was moved, seconded and carried to approve the Science Curriculum Committee items.

#### **10. Other Business**

Presentation about community safety at York by Susan Seaby, Director, Policy and Programs: Community Safety Department, can be reviewed by clicking here; <http://science.yorku.ca/files/2017/04/community-safety-presentation.pdf>

N. Madras, Chair of Council

S. Siyakatshana, Assistant Secretary of Council

## **The 634th Meeting of Senate held on Thursday, April 27, 2017**

### **Remarks**

The Chair of Senate, Professor Lesley Beagrie, reminded Senators to participate in the annual surveys of Senate and committee members before they close. Although Senate did not agree to deal with a motion submitted as other business for which due notice had not been given, the Chair explained the process by which the matter addressed might be re-considered.

In the absence of Dr Mamdouh Shoukri, who conveyed regrets, Provost Rhonda Lenton shared the names of individuals who will receive honorary degrees at Spring 2017 Convocation ceremonies. Responses to questions about a recent incident at a York Lanes store involving a University student, and more generally security on the campuses, will be provided in May.

### **Inquiries and Communications**

The Academic Colleague to the Council of Ontario Universities, Professor David Leyton-Brown, commented on recent meetings of COU. A particular focus for recent discussions has been the Indigenization of Ontario universities. A joint statement from the York Federation of Students and the York University Graduate Student Association on the York Lanes incident was received.

### **Senate Membership for 2017-2018 to 2018-2019**

At the final stage of a statutory motion, Senate approved an Executive Committee recommendation setting the membership of Senate from July 1, 2017 to June 30, 2019.

### **Other Approvals**

Senate approved recommendations of its Academic Policy, Planning and Research Committee to

- establish a *Senate Policy on Postdoctoral Researchers at York University*
- a change of name of the Department of Political Science in the Faculty of Liberal Arts and Professional Studies to the Department of Politics

As recommended by the Academic Standards, Curriculum and Pedagogy Committee, Senate approved the granting of a maximum of 54 block transfer credits to eligible graduates of the Sampradaya Dance Academy Professional Training Program towards the Honours BFA or BA Programs in Dance within the School of the Arts, Media, Performance & Design.

### **Strategic Mandate Agreement 2: Discussion of Draft Submission**

Following a presentation by the Chair of APPRC, Professor Les Jacobs, Senators commented on a draft submission prepared for the second round of Strategic Mandate Agreements. Senators and members of the community were invited to forward further

comments and suggestions to the Office of the Provost. APPRC will review the next draft prior to the submission's finalization.

### **Facilitated Discussion: University Academic Plan Priority Area 1**

In the fourth of a series of "spotlight" discussions of priority areas in the University Academic Plan sponsored by APPRC, Vice-Provost Academic Alice Pitt shared her perspective on priority area 1: Innovative, Quality Programs for Academic Excellence.

## **Committee Information Items**

### **Senate Executive**

The Executive Committee informed Senate that it had concurred with recommendations of the Sub-Committee on Honorary Degrees and Ceremonials, and, as a result, five new candidates have been added to the pool of prospective honorary degree recipients. The Committee encouraged Senators to provide input during consultations on draft amendments to the *Senate Policy on Accommodations for Students with Disabilities*, and congratulated Professor Lisa Philipps on her appointment as the Interim Vice-President Academic and Provost.

### **Academic Policy, Planning and Research**

In its report, APPRC advised that it had concurred with a recommendation of the Provost to establish the Helen Carswell Chair in Community Engaged Research in the Arts, shared reflections on the evolution of academic budget planning by former Vice-President Finance and Administration Gary Brewer, and drew attention to recent studies issued by the Higher Education Quality Council of Ontario.

### **Academic Standards, Curriculum and Pedagogy**

ASCP reported that it had approved in principle the reintroduction of a Fall Reading Week held over the four days following Thanksgiving in October, and furnished details on the development and implementation of a new curriculum management based on a briefing by the University Registrar, Carol Altilia. All of the modifications approved in March and April by the Committee originated with the Faculty of Graduate Studies:

- minor changes to the degree and admission requirements for Master of Design Program
- minor changes to the degree requirements for the MScN program
- minor change to the degree requirements for the PhD program in Mathematics & Statistics
- a change in the administrative unit housing the International & Security Studies Diploma from the York Centre for International & Security Studies to the Department of Political Science, Faculty of Liberal Arts & Professional Studies, and updates to requirements for the Diploma

### **Awards**

The Awards Committee conveyed a listing of new awards established in the calendar year 2016 and the disbursement of graduate awards for 2014-2015.

### **Additional Information about this Meeting**

Please refer to the full Senate agenda and supplementary material posted online with the April 27, 2017 meeting for details about these items.

<http://secretariat.info.yorku.ca/senate/meeting-agendas-and-synopses/>

### **May Meeting of Senate**

Senate's next meeting will be held at 3:00 p.m. on **Thursday, May 25, 2017**.

## **2017 - 2018 REPORT OF VACANCIES ON SENATE AND FSC COMMITTEES**

Ratification of nomination

### **Appeals Committee**

L. Donaldson, Department of Biology

### **Committee on Teaching and Learning**

T. Kelly, Department of Biology

**2017-2018 Report of Vacancies on Senate and FSc Committees**

2017-2018 Report of Vacancies on Senate and FSc Committees				
<b>Outstanding vacancies are highlighted in red</b>				
<b>Faculty on Sabbaticals are also highlighted in red</b>				
Committee	Rules of Faculty Council - membership	Meeting time / Membership	Term	
			From	To
<b>Senate</b>	According to the York University Secretariat based on the Senate Rules and Procedures governing the size and composition of Senate, the Faculty of Science shall have 9 members, including a minimum of two Chairs. According to The Rules of Council (Science), Faculty representation shall include the Director of Natural Science, three Department Chairs, and terms shall be for three years.	As per Senate website		
	Designated	R. Jayawardhana - Dean	designated	
	Member at large	EJ Janse van Rensburg - AD (Faculty)	2015	2018
	Member at large	V. Saridakis, Biology	2016	2019
	Member at large	G. Audette, Chemistry	2016	2019
	Member at large	T. Salisbury, Math & Statistics	2015	2018
	Member at large	J. Lazenby, STS	2016	2019
	Department Chair	D. Hastie (Chemistry)	2015	2018
	Department Chair	P. Szeptycki (Math & Statistics)	2016	2019
	Department Chair	M. McCall (Physics & Astronomy)	2015	2018
	Director of NATS	J. Clark	designated	
<b>FSc Reps on Senate Committees</b>				
Senate Executive	1 member from FSc	M. McCall, Chair, Phys & Astronomy	2016	2019
Academic Policy, Planning and Research Committee (APPRC)	1 member from FSc	Vacant	2017	2020
Sub-Committee on Honorary Degrees & Ceremonials	1 member from FSc	Vacant	2017	2020
<b>Executive Committee</b>	The <u>Executive Committee</u> shall be chaired by the Chair of Council and include the Vice-Chair of Council, the Secretary of Council, and one member elected from each of Biology, Chemistry, Mathematics & Statistics, Physics & Astronomy, and Science and Technology Studies/Natural Science, the Dean of the Faculty of Science ( <i>ex officio</i> ), one student member of Council, and one of the staff members elected to Council.	The Executive Committee will normally meet the first Tuesday of each month (September to May) from 1:30 pm - 3:00 pm in LUM 305B		
	Chair	D. Golemi-Kotra	2017	2018
	Vice-Chair	Vacant (becomes chair in 2018)	2017	2018
	Dean	R. Jayawardhana		
	Asst. Dean - SEM & SEP	A. Mun-Shimoda		
	Staff Representative	Vacant	2017	2018
	Undergraduate Student Representative	Vacant	2017	2018
	Biology	V. Saridakis	2015	2018
	Chemistry	Vacant	2017	2020
P. Gibson is on sabbatical from Jul 1-17-Jun 30-18	Math & Stats	Vacant	2017	2018
W. Taylor on Sabbatical from Jul 1-17-Jun 30-18	Physics & Astronomy	Vacant	2017	2018
	STS	E. Hamm	2016	2019

<b>APPC</b>	The <u>Academic Policy and Planning Committee</u> shall include the Dean or designate ( <i>ex officio</i> ), the Master of Norman Bethune College and one member elected from each of Biology, Chemistry, Mathematics & Statistics, Physics & Astronomy, and Science and Technology Studies/Natural Science, one student member of Council, and one of the staff members elected to Council.	APPC will normally meet the last Thursday of each month (September to April) from 9:00 am - 10:30 am			
	Associate Dean, Faculty	E. J. vanRensburg			
	Master of Bethune College	J. Amanatides			
	Undergraduate Student Rep	Vacant	2017	2018	
	Staff Representative	Vacant	2017	2018	
	Biology	D. Golemi-Kotra	2016	2019	
	Chemistry	M. Yousaf	2016	2019	
	Math & Stats	P. Szeptycki	2016	2019	
	Physics & Astronomy	R. Lewis	2016	2019	
	STS	V. Pavri	2016	2019	
<b>Curriculum Committee</b>	The <u>Curriculum Committee</u> shall include the Dean ( <i>ex officio</i> ) and an Associate Dean ( <i>ex officio</i> ), the Chair or nominee from each teaching Division or Department, the Chair or nominee of the Department of Geography, three faculty members elected by Council and two student members of Council.	The Curriculum Committee will normally meet every last Tuesday of each month (September to April) from 1:30 pm - 3:00 pm			
	Member at Large	J. Kreller-Vanderkooy	2016	2019	
	Member at Large	J. Clark, NATS	2016	2019	
	Member at Large	N. Nivilac, Biology	2016	2019	
	Dean	R. Jayawardhana			
	Associate Dean, Students	A. Mills			
	Undergraduate Student Rep (two vacancies)	Vacant	2017	2018	
	Undergraduate Student Rep (two vacancies)	Vacant	2017	2018	
	Biology	P. Lakin-Thomas	2016	2019	
	Chemistry	P. Potvin	2016	2019	
	Fu, Y. Cindy on sabbatical Jul 1-17-Jun 30-18(position is sh	Math & Stats	Vacant (Fall); M. Chen (Winter)	2017	2018
		Physics & Astronomy	A. Kumarakrishnan	2016	2019
		STS	J. Lazenby	2015	2018
		Geography	R. Bello	2016	2019
<b>CEAS</b>	The <u>Committee on Examinations and Academic Standards</u> shall consist of an Associate Dean ( <i>ex officio</i> ), five members elected by Council from each of Biology, Chemistry, Mathematics & Statistics, Physics & Astronomy and Science and Technology Studies/Natural Science, and one student member of Council.	CEAS will normally meet every alternate Wed / Thurs from 1:00 - 3:00 pm year round.			
	In addition to the above membership of the committee, Council shall elect an alternate member from each of the Departments specified above. The alternate member shall be the person polling the next highest number of votes to those elected to the committee from each Department. The alternate for the student member will be selected by the Science Student Caucus from one of its Members at Large. An alternate can only vote in the event that first elected members are not in attendance.				
	Associate Dean, Students	A. Mills			
	Undergraduate Student Representatives (2 including alternate)	Vacant/ALT. member	2017	2018	
	Biology	Y. Sheng / K. Hudak	2016	2019	
	Chemistry	G. Audette / ALT. Vacant	2015/2017	2018/2020	
	Math & Stats	A. Wu / J. Grigull	2015	2018	

	Physics & Astronomy	C. Story/ALT. M. Horbatsch	2016	2019
	STS	Vacant / J. Lazenby	2017/15	2020/18
<b>Petitions</b>	The <u>Petitions Committee</u> shall consist of an Associate Dean ( <i>ex officio</i> ), six members of Council, and two student members of Council. A quorum shall consist of either (a) three faculty members and one student member or (b) four faculty members.	The Petition's Committee has two panels. Each panel meets once a month either on Tuesday from 2:30 pm - 4:00 pm or Thursday from 11:00 am - 1:00 pm		
	Associate Dean	A. Mills, designated		
	Undergraduate Student Rep	Vacant	2017	2018
	Undergraduate Student Rep	Vacant	2017	2018
	Member at Large	N. Nivilac	2016	2019
	Biology	Vacant	2017	2020
	Chemistry	R. Fournier	2016	2019
	Physics & Astronomy	S. Tulin	2015	2018
	Math & Stats	A. Wong	2015	2018
D. Lungu on sabbatical from Jul 1, 2017 to Jun 30, 2018	STS	Vacant	2017	2018
<b>Senate Tenure and Promotions Review Committee</b>	The <u>Committee on Tenure and Promotions</u> shall consist of one currently tenured member from each of Biology, Chemistry, Mathematics & Statistics, Physics & Astronomy and Science and Technology Studies/Natural Science elected by Council, and one student member of Council. No member of the Committee shall be a member of another Tenure and Promotions Committee at any time during their tenure on this committee.	SRC T & P Committee will normally meet the last Friday of each month (September to March) from 9:00 am - 11:00 am in LUM 305B		
	In addition to the above membership of the committee, Council shall elect an alternate member from each of the Units mandated above. The alternate member shall be the person polling the next highest number of votes to those elected to the committee from each Department. The alternate for the student member shall be selected by the Science Student Caucus from one of its Members-at-Large on an annual basis. An alternate can only vote in the event that existing members are not in attendance.			
	Associate Dean, Faculty	E. J. vanRensburg		
	Undergraduate Student Rep	Vacant	2017	2018
	Biology	Julie Clark/Alt. Vacant	2017	2020
	Chemistry	A. Orellana / ALT - P. Potvin	2016	2019
	Physics & Astronomy	N. Bartel / Vacant	2015/17	2018/20
	Math & Stats	G. Monette / ALT - S. Watson	2016	2019
D. Lungu on sabbatical from Jul 1, 2017 to Jun 30, 2018	STS	Vacant / ALT - Vacant	2017/17	2018/20
<b>CoTL</b>	Currently, the Committee on Teaching and Learning shall consist of a minimum of two Faculty members from each department, the Associate Dean – Students, one Librarian, one staff member, one undergraduate student, and two graduate students, in addition to other members invited as provided for by the Rules. Graduate students and staff nominees will indicate their interest in serving on the committee in writing to the committee, who will then approve by majority vote.	CoTL normally meets every third Thursday of each month (September to May) from 1:00 pm - 2:30 pm		
	Associate Dean, Students	A. Mills		
	Graduate Student Rep	Vacant	2017	2018
	Graduate Student Rep	Vacant	2017	2018
	Undergraduate Student Rep	Vacant	2017	2018
	Stacie Librarian	G. Jon		
	IT Rep	D. Keramidas		

	Teaching Commons Rep	Y. Su		
	Staff Representative	Vacant	2017	2018
	Biology	T. Kelly	2017	2020
	Biology	Vacant	2017	2020
	Chemistry	Vacant	2017	2020
	Chemistry	J. Chen	2015	2018
	Physics & Astronomy	A. Muzzin	2016	2018
	Physics & Astronomy	W.vanWijngaarden	2016	2018
	Math & Stats	W. Liu	2015	2018
	Math & Stats	A. Chow	2017	2020
	on sabbatical from Jul 1, 2017 to Jun 30, 2018	STS	Vacant	2017
	STS	V. Pavri	2015	2018
<b>Research &amp; Awards</b>	The <u>Committee on Research and Awards</u> shall consist of one member elected by Council from each of Biology, Chemistry, Mathematics and Statistics, Science and Technology Studies/Natural Science, and Physics and Astronomy, one student member of Council and an Associate Dean ( <i>ex officio</i> ) who will serve as the Chair.	The Research & Awards Committee will meet when grants and awards need to be adjudicated.		
	Associate Dean - Research & Graduate education	S. Morin		
	Undergraduate Student Rep	Vacant	2017	2018
	Biology	Raymond Kwong	2017	2020
	Chemistry	P. Johnson (Vice-Chair)	2016	2019
	Physics & Astronomy	W. van Wijngaarden (Chair)	2016	2019
	Math & Stats	I. Farah	2016	2019
	STS	R. Metcalfe	2016	2019
<b>Appeals</b>	The <u>Appeals Committee</u> for the purpose of hearing student appeals shall consist of four elected faculty members from Science units, an Associate Dean ( <i>ex officio</i> ) and two student members of Council. A quorum shall consist of either (a) two faculty members and one student member or (b) three faculty members.	Meeting is held once a month and times are polled by the Committee Secretary.		
	Associate Dean - Research & Graduate Education	S. Morin		
	Undergraduate Student Rep	Vacant	2017	2018
	Biology (Member at Large)	J.P. Paluzzi	2016	2019
	Biology	L. Donaldson	2017	2020
	Chemistry	Vacant	2017	2020
	Physics & Astronomy	M. Johnson	2015	2018
	Math & Stats	A. Pietrowski	2015	2018
	STS	R. Metcalfe	2015	2018

York University

COUNCIL OF THE FACULTY OF SCIENCE

**Report of the Science Curriculum Committee**

April 2017

The Faculty of Science Curriculum Committee has reviewed proposals for changes to course information and degree requirements and recommends to the Executive Committee that the following changes be submitted to Council for approval.

Details regarding these proposals (and regarding other minor changes to Calendar/Repository course descriptions and prerequisites which were approved by the Committee but are not reported here) are included in the working papers of April 25, 2017, meeting of the Curriculum Committee, which are on file for your inspection in the Office of the Dean, with all members of the Curriculum Committee or by contacting the Secretary of the Committee at [jpearson@yorku.ca](mailto:jpearson@yorku.ca)

1. New Course

3900 0.0 "Mathematic and Statistics Internship Work Term" (item for action)

2. Course Changes

Change in pre/co-requisites: SC/BIOL 4220 4.0 "Histology" (item for action)

3. Grade 12 admission requirements for science programs

3.1 Grade 12 admission requirements to BA STS

3.2 Grade 12 admission requirements to BSc Applied Mathematics, Mathematics, Mathematics for Education

3.3 Grade 12 admission requirements to BSc Computational Math

3.4 Grade 12 admission requirements to BSc Stats

3.5 Grade 12 admission requirements to BSC Chemistry

3.6 Grade 12 admission requirements to BSC Physics and Astronomy

3.7 Grade 12 admission requirements to BSC Environmental Science (Life Sciences Stream)

3.8 Grade 12 admission requirements to BSc STS

3.9 Grade 12 admission requirements to BSc Undeclared

**COMMITTEE ON ACADEMIC STANDARDS, CURRICULUM AND PEDAGOGY  
TEMPLATE**

**NEW COURSE PROPOSAL FORM**

**Faculty:**  
Indicate all relevant  
Faculty(ies)

SC
----

**Department:**  
Indicate department and  
course prefix (e.g.  
Languages, GER)

Mathematics and Statistics (MATH)
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<b>Date of Submission:</b> November 3, 2016
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**Course Number:**  
Special Topics courses  
Include variance (e.g.  
HUMA 3000C 6.0,  
Variance is "C")

3901, 3902, 3903, 3904
------------------------

<b>Var:</b>
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<b>Academic Credit Weight:</b> Indicate both the fee, and MET weight if different from academic weight (e.g. AC=6, FEE=8, MET=6)	0.0
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**Course Title:**  
The official name of the  
course as it will appear in  
the Undergraduate  
Calendar and on the  
Repository

Mathematic and Statistics Internship Work Term
--

**Short Title:**  
Appears on any  
documents where space  
is limited - e.g.  
transcripts and lecture  
schedules - **maximum  
40 characters**

Math and Stat Internship
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*With every new course proposal it is the Department's responsibility to ensure that new courses do not overlap with existing courses in other units. If similarities exist, consultation with the respective departments is necessary to determine degree credit exclusions and/or cross-listed courses.*

**Brief Course Description:**

**Maximum 2000 characters**

*(approximately 300 words including spaces and punctuation).*

The course description should be carefully written to convey what the course is about. It should be followed by a statement of prerequisites and co-requisites, if applicable. This description appears in the calendar.

For editorial consistency, and in consideration of the various uses of the Calendars, verbs should be in the present tense (i.e., "This course analyzes the nature and extent of...", rather than "This course will analyze...")

Qualified Honours or Specialized Honours students gain relevant work experience as an integrated complement to their academic studies, reflected in the requirements of a learning agreement and work term report. Students are required to register in this course for each four month work term, with the maximum number of work term courses being four (i.e. 16 months). Students in this course are assigned a Faculty Supervisor/Committee. During the course, students are expected to work at least 480 hours for the employer.

**Prerequisites:** Enrollment is by permission only. Criteria for permission include: 1. that students have a cumulative GPA and an average of math courses GPA of at least 7.5; 2. that Applied Mathematics students have successfully completed Math 3241 3.00, Math 3271 3.00 and at least one of one of MATH 3242 3.00, 3260 3.00, 3171 3.00 and 3172 3.00; that Pure Mathematics students have successfully completed at least two of Math 3001, 3010 and 3021; that Statistics students have successfully completed MATH 3131 3.00, 3300 3.00, 3132 3.00, and 3430 3.00; that Actuarial Science students have successfully completed MATH 2280 3.00, 2281 3.00, 2131 3.00 and passed at least one professional exam; that Mathematics for Education students have successfully completed Math 3052; 3. that students are enrolled full-time in the Honours or Specialized Honours program prior to beginning their internship; 4. that students have not been absent for more than two consecutive years as a full-time student from their Honours or Specialized Honours degree studies; 5. that upon enrolling in this course students have a minimum of 9 credits remaining toward their Honours or Specialized Honours degree and need to return as a full-time student for at least one academic term to complete their degree after completion of their final work term.

**Note:** This is a pass/fail course, which does not count for degree credit. Registration in MATH 3901-3904 0.00 provides a record on the transcript for each work term.

**Generic Course  
Description:**

This is the description of the "Parent / Generic course" for Special Topics courses under which variances of the "Generic" course can be offered in different years (Max. 40 words). Generic course descriptions are published in the calendar.

List all degree credit exclusions, prerequisites, integrated courses, and notes below the course description.

## Expanded Course Description:

Please provide a detailed course description, including topics / theories and learning objectives, as it will appear in supplemental calendars.

Qualified Honours or Specialized Honours students gain relevant work experience as an integrated complement to their academic studies, reflected in the requirements of a learning agreement and work term report. Students are required to register in this course for each four month work term, with the maximum number of work term courses being four (i.e. 16 months). Students in this course are assigned a Faculty Supervisor/Committee. During the course, students are expected to work at least 480 hours for the employer.

Prerequisites: Enrollment is by permission only. Criteria for permission include:

1. that students have a cumulative GPA and a cumulative MATH GPA of at least 7.5;
2. that Applied Mathematics students have successfully completed Math 3241 3.00, Math 3271 3.00 and at least one of one of MATH 3242 3.00, 3260 3.00, 3171 3.00 and 3172 3.00; that Pure Mathematics students have successfully completed at least two of Math 3001, 3010 and 3021; that Statistics students have successfully completed MATH 3131 3.00, 3300 3.00, 3132 3.00 and 3430 3.00; that Actuarial Science students have successfully completed MATH 2280 3.00, 2281 3.00, 2131 3.00 and passed at least one professional exam; that Mathematics for Education students have successfully completed Math 3052;
3. that students are enrolled full-time in the Honours or Specialized Honours program prior to beginning their internship.
4. that students have not been absent for more than two consecutive years as a full-time student from their Honours or Specialized Honours degree studies;
5. that upon enrolling in this course students have a minimum of 9 credits remaining toward their Honours or Specialized Honours degree and need to return as a full-time student for at least one academic term to complete their degree after completion of their final work term.

**Note:** This is a pass/fail course, which does not count for degree credit. Registration in MATH 3901-3904 0.00 provides a record on the transcript for each work term.

Students are required to register in this course in each academic term of their internship work term.

The expected learning outcomes of experiential learning based on work experiences and the reflection on those work experiences in subsequent academic learning include:

-Demonstrate the ability to integrate theoretical/academic knowledge with workplace practice;

- Apply the relevant academic learning to the workplace;
- Develop career goals and improve the ability to manage career planning;
- Develop a professional network with employers and peer employees
- Determine strengths and weaknesses in communication and enhance interpersonal skills;
- Underline the importance of lifelong learning skills.

**Course Design:**

Indicate how the course design supports students in achieving the learning objectives. For example, in the absence of scheduled contact hours what role does student-to-student and/or student-to-instructor communication play, and how is it encouraged?

Detail any aspects of the content, delivery, or learning goals that involve "face-to-face" communication, non-campus attendance or experiential education components.

Alternatively, explain how the course design encourages student engagement and supports student learning in the absence of substantial on-campus attendance.

Any student who is enrolled in the an Honours or Specialized Honours program offered by the Department of Mathematics & Statistics who also undertakes a Mathematics and Statistics internship position will be enrolled in the course MATH 3901-3904 Internship Work Term for each academic term of their Internship. At the end of each academic term, the student will submit a Work Term Report and a Supervisor Evaluation. This experience is understood to be a 0-credit optional endeavor. Students enter into this arrangement because they see value in critically applying their classroom learning in an industry setting. The course is a 0-credit course because there is minimal faculty oversight of the academic learning outcomes of the experience. The Mathematics and Statistics Faculty liaison to the intern will receive the Work Term Reports that are submitted by students in MATH 3901-3904 at the end of each academic term and assign each a grade of Pass or Fail. The grade and the experience are acknowledged on the transcript.

This course shall be mounted each term starting in the summer 2018 term.

**Instruction:**

1. Planned frequency of offering and number of sections anticipated (every year, alternate years, etc.).
2. Number of department members currently competent to teach the course.
3. Instructor(s) likely to teach the course in the coming year.
4. An indication of the number of contact hours (defined in terms of hours, weeks, etc.) involved, in order to indicate whether an effective length of term is being maintained **OR** in the absence of scheduled contact hours a detailed breakdown of the estimated time students are likely to spend engaged in learning activities required by the course.

- 1) This course shall be mounted each term starting in the summer 2018 term.
- 2) Teaching competence is not applicable; The Mathematics and Statistics liaison position can be filled by any faculty member who is currently associated with the Department of Mathematics and Statistics.
- 3) The Mathematics and Statistics Faculty Liaison to the intern shall be determined, but this individual will be selected from among the faculty affiliated with the Mathematics and Statistics programs.
- 4) An overall of four contact hours are anticipated with the Faculty Liaison to monitor and provide advice to the intern during their internship.

**Evaluation:**

A detailed percentage breakdown of the basis of evaluation in the proposed course must be provided.

If the course is to be integrated, the additional requirements for graduate students are to be listed.

If the course is amenable to technologically mediated forms of delivery please identify how the integrity of learning evaluation will be maintained. (e.g. will "on-site" examinations be required, etc.)

Work Term Report with employer review or evaluation (100%):  
Pass or Fail.

Work Term Report will be graded by the supervisor appointed for each student.

**Bibliography:**

**A READING LIST MUST BE INCLUDED FOR ALL NEW COURSES**

The Library has requested that the reading list contain complete bibliographical information, such as full name of author, title, year of publication, etc., and that you distinguish between required and suggested readings. A statement is required from the bibliographer responsible for the discipline to indicate whether resources are adequate to support the course.

Also please list any online resources.

If the course is to be integrated (graduate/ undergraduate), a list of the additional readings to be required of graduate students must be included. If no additional readings are to be required, a rationale should be supplied.

**LIBRARY SUPPORT STATEMENT MUST BE INCLUDED.**

Given the unique nature of the 0.0 credit course, no academic reading list is applicable.

**Other Resources:**

A statement regarding the adequacy of physical resources (equipment, space, etc.) must be appended. If other resources will be required to mount this course, please explain

**COURSES WILL NOT BE APPROVED UNLESS IT IS CLEAR THAT ADEQUATE RESOURCES ARE AVAILABLE TO SUPPORT IT.**

Student work terms in internship positions will take place at the employers' work place location;

Department of Mathematics and Statistics will provide assistance to students to connect them to potential employers.

**Course Rationale:**

*The following points should be addressed in the rationale:*

*How the course contributes to the learning objectives of the program / degree.*

*The relationship of the proposed course to other existing offerings, particularly in terms of overlap in objectives and/or content. If inter-Faculty overlap exists, some indication of consultation with the Faculty affected should be given.*

*The expected enrolment in the course.*

The industrial experience provided by the internship program can broaden students' knowledge and let them apply their knowledge into real applications. The internship experience can boost their chance of finding future employment.

Expected enrollment: 4-6 students/year.

**Faculty and Department Approval for Cross-listings:**

*If the course is to be cross-listed with another department, this section needs to be signed by all parties. In some cases there may be more than two signatures required (i.e. Mathematics, Women's Studies). In the majority of the cases either the Undergraduate Director or Chair of a unit approves the agreement to cross-list. All relevant signatures must be obtained prior to submission to the Faculty curriculum committee.*

Dept: \_\_\_\_\_  
Signature (Authorizing cross-listing)      Department      Date

Dept: \_\_\_\_\_  
Signature (Authorizing cross-listing)      Department      Date

Dept: \_\_\_\_\_  
Signature (Authorizing cross-listing)      Department      Date

# Changes to Existing Course

Faculty:

Department:

Biology

Date of Submission:

February 3, 2017

Course Number:

SC/BIOL 4220 4.0

Effective Session:

Sept. 2018

Course Title:

Histology

Type of Change:

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> in pre-requisite(s)/co-requisite(s)            | <input type="checkbox"/> in cross-listing                        |
| <input type="checkbox"/> in course number/level                                    | <input type="checkbox"/> in degree credit exclusion(s)           |
| <input type="checkbox"/> in credit value   | <input type="checkbox"/> regularize course (from Special Topics) |
| <input type="checkbox"/> in title (max. 40 characters for short title)             | <input type="checkbox"/> in course format/mode of delivery *     |
| <input type="checkbox"/> in Calendar description (max. 40 words or 200 characters) | <input type="checkbox"/> retire/expire course                    |
| <input type="checkbox"/> other (please specify):                                   | <input type="checkbox"/>   |

Change From:

Structure and function of tissues in vertebrates, with special emphasis on human histology. The laboratory deals with basic histological and histochemical techniques, such as tissue sectioning and staining, and localization of enzymes. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisites: SC/BIOL 2020 3.00, SC/BIOL 2021 3.00, SC/BIOL 2070 3.00.

To:

Structure and function of tissues in vertebrates, with special emphasis on human histology. The laboratory deals with basic histological and histochemical techniques, such as tissue sectioning and staining, and localization of enzymes. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisites: ~~SC/BIOL 2020 3.00, SC/BIOL 2021 3.00,~~ SC/BIOL 2070 3.00, SC/BIOL 3070 4.0.

Rationale:

Students who have BIOL 3070 4.0 tend to do significantly better in BIOL 4220 4.0 because of their understanding of basic physiology terminology. BIOL 3070 requires BIOL 2020 and BIOL 2021, so these can be removed from the list of prerequisites.

Note: For course proposals involving cross-listings, integrations and degree credit exclusions, approval from all of the relevant Faculties/department is required.

Note: Since one change (such as a change in year level or credit value) may result in several other changes (e.g., to the course description, evaluation, instruction, bibliography, etc.), please submit as many details as possible. If there are several changes, please feel free to use a New Course Proposal Form in order to ensure that all the required information is included.

\* Note: If there is a technology component to the course, a statement is required from ATS indicating whether resources are adequate to support the course. Courses converted from face-to-face to an on-line delivery mode should follow the instructions provided on page 4 of the New Course Proposal Form to provide revised 'Course Design' and 'Method of Instruction' information.

## Program Change Proposal

1. Program: **SCIENCE and TECHNOLOGY STUDIES**
  2. Degree Designation: **B.A.**
  3. Type of Modification: **Change to grade 12 courses admission requirements**
  4. Effective Date: **September 1, 2018**
- 

5. Provide a description of the proposed changes:

Currently, Science Technology Studies (BA) requires:

- ENG4U
- Five other 4U or 4M courses

The proposal is to have Science Technology Studies (BA) require:

- ENG4U
- One of these three grade 12 sciences: SPH4U, SCH4U, SBI4U
- Four other 4U or 4M courses

Reference:

- SPH4U is grade 12 university-level Physics
- SCH4U is grade 12 university-level Chemistry
- SBI4U is grade 12 university-level Biology
- ENG4U is grade 12 university-level English
- MHF4U is grade 12 university-level Functions
- MCV4U is grade 12 university-level Calculus

6. Provide the rationale for the proposed changes.

**From August 2016 through February 2017, the Faculty of Science reviewed its grade 12 entrance requirements because it was felt there was unnecessary complexity and in some cases onerous entrance requirements. The goal was to simplify the sets of requirements for the various programs in the Faculty, providing such changes did not result in admitting students who would not be prepared for the programs they were admitted for.**

**In this case, the changes in paragraph 5 complied with these goals.** In particular, students cannot take grade 12 calculus (MCV4U) without taking grade 12 functions (MCH4U).

7. Provide an updated mapping of the program requirements to the program learning outcomes to illustrate how the proposed requirements will support the achievement of

program learning objectives. If changes to the admission requirements are being proposed, comment on the appropriateness of the revised requirements to the achievement of the program learning outcomes.

**Because the changes herein occur at the admission level, as opposed to within-the-program, mapping is not affected. What has been considered in making these changes is whether the grade 12 admission requirements are adequate preparation in the sense of grade 12 prerequisites for the program. In this case, the departmental and faculty review determined they are adequate.**

8. If relevant, summarize the consultation undertaken with relevant academic units, including commentary on the impact of the proposed changes on other programs. Provide individual statements from the relevant program(s) confirming consultation and their support.

**For all changes to grade 12 high school admission requirements in this exercise, the following were included in consultations: Dean's Office, Departmental Chairs, Departmental UPDs, and Departmental Curriculum Committees. In the case of Environmental Science, the Coordinator of the program, Rick Bello, was consulted, and he himself consulted with other faculty who are involved in delivering that program.**

**This form is being prepared for the benefit of the Faculty of Science Curriculum Committee.**

9. Describe any resource implications and how they are being addressed (e.g., through a reallocation of existing resources). If new/additional resources are required, provide a statement from the relevant Dean(s)/Principal confirming resources will be in place to implement the changes.

**There are no resource implications, except that numerous Faculty and Staff have already spent time engaged in this exercise, and, assuming it is approved, staff will spend time in making the changes to promotional material, calendar copy, and website. New promotional material is printed more or less annually in any event.**

10. Provide as an appendix a side-by-side comparison of the existing and proposed program requirements as they will appear in the Undergraduate or Graduate Calendar.

**Please see the description of changes in Paragraph 5.**

## Program Change Proposal

1. Program: **APPLIED MATHEMATICS; MATHEMATICS; MATHEMATICS FOR EDUCATION**
  2. Degree Designation: **B.Sc.**
  3. Type of Modification: **Change to grade 12 courses admission requirements**
  4. Effective Date: **September 1, 2018**
- 

5. Provide a description of the proposed changes:

Currently, these three Math BSc programs require:

- ENG4U
- MHF4U
- SPH4U or SCH4U
- Three other 4U or 4M courses, MCV4U recommended

The proposal is to have these three Math BSc programs require:

- ENG4U
- MHF4U
- One of these three grade 12 sciences: SPH4U, SCH4U, SBI4U
- Three other 4U or 4M courses; MCV4U recommended

Reference:

- SPH4U is grade 12 university-level Physics
- SCH4U is grade 12 university-level Chemistry
- SBI4U is grade 12 university-level Biology
- ENG4U is grade 12 university-level English
- MHF4U is grade 12 university-level Functions
- MCV4U is grade 12 university-level Calculus

6. Provide the rationale for the proposed changes.

**From August 2016 through February 2017, the Faculty of Science reviewed its grade 12 entrance requirements because it was felt there was unnecessary complexity and in some cases onerous entrance requirements. The goal was to simplify the sets of requirements for the various programs in the Faculty, providing such changes did not result in admitting students who would not be prepared for the programs they were admitted for.**

**In this case, the changes in paragraph 5 complied with these goals.**

7. Provide an updated mapping of the program requirements to the program learning outcomes to illustrate how the proposed requirements will support the achievement of program learning objectives. If changes to the admission requirements are being proposed, comment on the appropriateness of the revised requirements to the achievement of the program learning outcomes.

**Because the changes herein occur at the admission level, as opposed to within-the-program, mapping is not affected. What has been considered in making these changes is whether the grade 12 admission requirements are adequate preparation in the sense of grade 12 prerequisites for the program. In this case, the departmental and faculty review determined they are adequate.**

8. If relevant, summarize the consultation undertaken with relevant academic units, including commentary on the impact of the proposed changes on other programs. Provide individual statements from the relevant program(s) confirming consultation and their support.

**For all changes to grade 12 high school admission requirements in this exercise, the following were included in consultations: Dean's Office, Departmental Chairs, Departmental UPDs, and Departmental Curriculum Committees. In the case of Environmental Science, the Coordinator of the program, Rick Bello, was consulted, and he himself consulted with other faculty who are involved in delivering that program.**

**This form is being prepared for the benefit of the Faculty of Science Curriculum Committee.**

9. Describe any resource implications and how they are being addressed (e.g., through a reallocation of existing resources). If new/additional resources are required, provide a statement from the relevant Dean(s)/Principal confirming resources will be in place to implement the changes.

**There are no resource implications, except that numerous Faculty and Staff have already spent time engaged in this exercise, and, assuming it is approved, staff will spend time in making the changes to promotional material, calendar copy, and website. New promotional material is printed more or less annually in any event.**

10. Provide as an appendix a side-by-side comparison of the existing and proposed program requirements as they will appear in the Undergraduate or Graduate Calendar.

**Please see the description of changes in Paragraph 5.**

## Program Change Proposal

1. Program: **COMPUTATIONAL MATHEMATICS**
  2. Degree Designation: **B.Sc.**
  3. Type of Modification: **Change to grade 12 courses admission requirements**
  4. Effective Date: **September 1, 2018**
- 

5. Provide a description of the proposed changes:

Currently, Computational Mathematics (BSc) requires:

- ENG4U
- MHF4U
- 4U Math; MCV4U recommended
- SPH4U or SCH4U
- Two other 4U or 4M courses

The proposal is to have Computational Mathematics (BSc) require:

- ENG4U
- MHF4U
- One of these three grade 12 sciences: SPH4U, SCH4U, SBI4U
- Three other 4U or 4M courses; MCV4U recommended

Reference:

- SPH4U is grade 12 university-level Physics
- SCH4U is grade 12 university-level Chemistry
- SBI4U is grade 12 university-level Biology
- ENG4U is grade 12 university-level English
- MHF4U is grade 12 university-level Functions
- MCV4U is grade 12 university-level Calculus

6. Provide the rationale for the proposed changes.

**From August 2016 through February 2017, the Faculty of Science reviewed its grade 12 entrance requirements because it was felt there was unnecessary complexity and in some cases onerous entrance requirements. The goal was to simplify the sets of requirements for the various programs in the Faculty, providing such changes did not result in admitting students who would not be prepared for the programs they were admitted for.**

**In this case, the changes in paragraph 5 complied with these goals.**

7. Provide an updated mapping of the program requirements to the program learning outcomes to illustrate how the proposed requirements will support the achievement of program learning objectives. If changes to the admission requirements are being proposed, comment on the appropriateness of the revised requirements to the achievement of the program learning outcomes.

**Because the changes herein occur at the admission level, as opposed to within-the-program, mapping is not affected. What has been considered in making these changes is whether the grade 12 admission requirements are adequate preparation in the sense of grade 12 prerequisites for the program. In this case, the departmental and faculty review determined they are adequate.**

8. If relevant, summarize the consultation undertaken with relevant academic units, including commentary on the impact of the proposed changes on other programs. Provide individual statements from the relevant program(s) confirming consultation and their support.

**For all changes to grade 12 high school admission requirements in this exercise, the following were included in consultations: Dean's Office, Departmental Chairs, Departmental UPDs, and Departmental Curriculum Committees. In the case of Environmental Science, the Coordinator of the program, Rick Bello, was consulted, and he himself consulted with other faculty who are involved in delivering that program.**

**This form is being prepared for the benefit of the Faculty of Science Curriculum Committee.**

9. Describe any resource implications and how they are being addressed (e.g., through a reallocation of existing resources). If new/additional resources are required, provide a statement from the relevant Dean(s)/Principal confirming resources will be in place to implement the changes.

**There are no resource implications, except that numerous Faculty and Staff have already spent time engaged in this exercise, and, assuming it is approved, staff will spend time in making the changes to promotional material, calendar copy, and website. New promotional material is printed more or less annually in any event.**

10. Provide as an appendix a side-by-side comparison of the existing and proposed program requirements as they will appear in the Undergraduate or Graduate Calendar.

**Please see the description of changes in Paragraph 5.**

## Program Change Proposal

1. Program: **STATISTICS**
  2. Degree Designation: **B.Sc.**
  3. Type of Modification: **Change to grade 12 courses admission requirements**
  4. Effective Date: **September 1, 2018**
- 

5. Provide a description of the proposed changes:

Currently, the Statistics (BSc) program requires:

- ENG4U
- MHF4U
- SPH4U or SCH4U
- Three other 4U or 4M courses; MCV4U recommended

The proposal is to have the Statistics (BSc) program require:

- ENG4U
- MHF4U
- One of these three grade 12 sciences: SPH4U, SCH4U, SBI4U
- Three other 4U or 4M courses; MCV4U recommended

Reference:

- SPH4U is grade 12 university-level Physics
- SCH4U is grade 12 university-level Chemistry
- SBI4U is grade 12 university-level Biology
- ENG4U is grade 12 university-level English
- MHF4U is grade 12 university-level Functions
- MCV4U is grade 12 university-level Calculus

6. Provide the rationale for the proposed changes.

**From August 2016 through February 2017, the Faculty of Science reviewed its grade 12 entrance requirements because it was felt there was unnecessary complexity and in some cases onerous entrance requirements. The goal was to simplify the sets of requirements for the various programs in the Faculty, providing such changes did not result in admitting students who would not be prepared for the programs they were admitted for.**

**In this case, the changes in paragraph 5 complied with these goals.**

7. Provide an updated mapping of the program requirements to the program learning outcomes to illustrate how the proposed requirements will support the achievement of program learning objectives. If changes to the admission requirements are being proposed, comment on the appropriateness of the revised requirements to the achievement of the program learning outcomes.

**Because the changes herein occur at the admission level, as opposed to within-the-program, mapping is not affected. What has been considered in making these changes is whether the grade 12 admission requirements are adequate preparation in the sense of grade 12 prerequisites for the program. In this case, the departmental and faculty review determined they are adequate.**

8. If relevant, summarize the consultation undertaken with relevant academic units, including commentary on the impact of the proposed changes on other programs. Provide individual statements from the relevant program(s) confirming consultation and their support.

**For all changes to grade 12 high school admission requirements in this exercise, the following were included in consultations: Dean's Office, Departmental Chairs, Departmental UPDs, and Departmental Curriculum Committees. In the case of Environmental Science, the Coordinator of the program, Rick Bello, was consulted, and he himself consulted with other faculty who are involved in delivering that program.**

**This form is being prepared for the benefit of the Faculty of Science Curriculum Committee.**

9. Describe any resource implications and how they are being addressed (e.g., through a reallocation of existing resources). If new/additional resources are required, provide a statement from the relevant Dean(s)/Principal confirming resources will be in place to implement the changes.

**There are no resource implications, except that numerous Faculty and Staff have already spent time engaged in this exercise, and, assuming it is approved, staff will spend time in making the changes to promotional material, calendar copy, and website. New promotional material is printed more or less annually in any event.**

10. Provide as an appendix a side-by-side comparison of the existing and proposed program requirements as they will appear in the Undergraduate or Graduate Calendar.

**Please see the description of changes in Paragraph 5.**

## Program Change Proposal

1. Program: **CHEMISTRY**
  2. Degree Designation: **B.Sc.**
  3. Type of Modification: **Change to grade 12 courses admission requirements**
  4. Effective Date: **September 1, 2018**
- 

5. Provide a description of the proposed changes:

Currently, Chemistry requires:

- SCH4U among the three grade 12 sciences (SPH4U, SCH4U, SBI4U)
- Three other specified courses (ENG4U, MHF4U, MCV4U)
- Two other 4U or 4M courses; SPH4U recommended

The proposal is to have Chemistry require:

- SCH4U and one other grade 12 U or M science
- Two other specified courses (ENG4U, MHF4U)
- Two other 4U or 4M course; SPH4U and MCV4U recommended

Reference:

- SPH4U is grade 12 university-level Physics
- SCH4U is grade 12 university-level Chemistry
- SBI4U is grade 12 university-level Biology
- ENG4U is grade 12 university-level English
- MHF4U is grade 12 university-level Functions
- MCV4U is grade 12 university-level Calculus

6. Provide the rationale for the proposed changes.

**From August 2016 through February 2017, the Faculty of Science reviewed its grade 12 entrance requirements because it was felt there was unnecessary complexity and in some cases onerous entrance requirements. The goal was to simplify the sets of requirements for the various programs in the Faculty, providing such changes did not result in admitting students who would not be prepared for the programs they were admitted for.**

**In this case, the changes in paragraph 5 complied with these goals.**

7. Provide an updated mapping of the program requirements to the program learning outcomes to illustrate how the proposed requirements will support the achievement of program learning objectives. If changes to the admission requirements are being proposed, comment on the appropriateness of the revised requirements to the achievement of the program learning outcomes.

**Because the changes herein occur at the admission level, as opposed to within-the-program, mapping is not affected. What has been considered in making these changes is whether the grade 12 admission requirements are adequate preparation in the sense of grade 12 prerequisites for the program. In this case, the departmental and faculty review determined they are adequate.**

8. If relevant, summarize the consultation undertaken with relevant academic units, including commentary on the impact of the proposed changes on other programs. Provide individual statements from the relevant program(s) confirming consultation and their support.

**For all changes to grade 12 high school admission requirements in this exercise, the following were included in consultations: Dean's Office, Departmental Chairs, Departmental UPDs, and Departmental Curriculum Committees. In the case of Environmental Science, the Coordinator of the program, Rick Bello, was consulted, and he himself consulted with other faculty who are involved in delivering that program.**

**This form is being prepared for the benefit of the Faculty of Science Curriculum Committee.**

9. Describe any resource implications and how they are being addressed (e.g., through a reallocation of existing resources). If new/additional resources are required, provide a statement from the relevant Dean(s)/Principal confirming resources will be in place to implement the changes.

**There are no resource implications, except that numerous Faculty and Staff have already spent time engaged in this exercise, and, assuming it is approved, staff will spend time in making the changes to promotional material, calendar copy, and website. New promotional material is printed more or less annually in any event.**

10. Provide as an appendix a side-by-side comparison of the existing and proposed program requirements as they will appear in the Undergraduate or Graduate Calendar.

**Please see the description of changes in Paragraph 5.**

## Program Change Proposal

1. Program: **PHYSICS AND ASTRONOMY**
  2. Degree Designation: **B.Sc.**
  3. Type of Modification: **Change to grade 12 courses admission requirements**
  4. Effective Date: **September 1, 2018**
- 

5. Provide a description of the proposed changes:

Currently, Physics requires:

- SPH4U among the three grade 12 sciences (SPH4U, SCH4U, SBI4U)
- Three other specified courses (ENG4U, MHF4U, MCV4U)
- Two other 4U or 4M courses; SCH4U recommended

The proposal is to have Physics require:

- SPH4U and one other grade 12 U or M sciences; SCH4U recommended
- Three other specified courses (ENG4U, MHF4U, MCV4U)
- One other 4U or 4M course

Reference:

- SPH4U is grade 12 university-level Physics
- SCH4U is grade 12 university-level Chemistry
- SBI4U is grade 12 university-level Biology
- ENG4U is grade 12 university-level English
- MHF4U is grade 12 university-level Functions
- MCV4U is grade 12 university-level Calculus

6. Provide the rationale for the proposed changes.

**From August 2016 through February 2017, the Faculty of Science reviewed its grade 12 entrance requirements because it was felt there was unnecessary complexity and in some cases onerous entrance requirements. The goal was to simplify the sets of requirements for the various programs in the Faculty, providing such changes did not result in admitting students who would not be prepared for the programs they were admitted for.**

**In this case, the changes in paragraph 5 complied with these goals.**

7. Provide an updated mapping of the program requirements to the program learning outcomes to illustrate how the proposed requirements will support the achievement of program learning objectives. If changes to the admission requirements are being proposed, comment on the appropriateness of the revised requirements to the achievement of the program learning outcomes.

**Because the changes herein occur at the admission level, as opposed to within-the-program, mapping is not affected. What has been considered in making these changes is whether the grade 12 admission requirements are adequate preparation in the sense of grade 12 prerequisites for the program. In this case, the departmental and faculty review determined they are adequate.**

8. If relevant, summarize the consultation undertaken with relevant academic units, including commentary on the impact of the proposed changes on other programs. Provide individual statements from the relevant program(s) confirming consultation and their support.

**For all changes to grade 12 high school admission requirements in this exercise, the following were included in consultations: Dean's Office, Departmental Chairs, Departmental UPDs, and Departmental Curriculum Committees. In the case of Environmental Science, the Coordinator of the program, Rick Bello, was consulted, and he himself consulted with other faculty who are involved in delivering that program.**

**This form is being prepared for the benefit of the Faculty of Science Curriculum Committee.**

9. Describe any resource implications and how they are being addressed (e.g., through a reallocation of existing resources). If new/additional resources are required, provide a statement from the relevant Dean(s)/Principal confirming resources will be in place to implement the changes.

**There are no resource implications, except that numerous Faculty and Staff have already spent time engaged in this exercise, and, assuming it is approved, staff will spend time in making the changes to promotional material, calendar copy, and website. New promotional material is printed more or less annually in any event.**

10. Provide as an appendix a side-by-side comparison of the existing and proposed program requirements as they will appear in the Undergraduate or Graduate Calendar.

**Please see the description of changes in Paragraph 5.**

## Program Change Proposal

1. Program: ENVIRONMENTAL SCIENCE (LIFE SCIENCES STREAM)
  2. Degree Designation: B.Sc.
  3. Type of Modification: **Change to grade 12 courses admission requirements**
  4. Effective Date: **September 1, 2018**
- 

5. Provide a description of the proposed changes:

Currently, Environmental Science (Life Sciences Stream) requires:

- SCH4U among the three grade 12 sciences: SPH4U, SCH4U, SBI4U
- Two specified grade 12 math courses (MHF4U, MCV4U)
- ENG4U
- Two other 4U or 4M courses; SPH4U recommended

The proposal is to have Environmental Science (Life Sciences Stream) require:

- SCH4U and SBI4U
- MHF4U
- ENG4U
- Two other 4U or 4M courses; SPH4U recommended

Reference:

- SPH4U is grade 12 university-level Physics
- SCH4U is grade 12 university-level Chemistry
- SBI4U is grade 12 university-level Biology
- ENG4U is grade 12 university-level English
- MHF4U is grade 12 university-level Functions
- MCV4U is grade 12 university-level Calculus

6. Provide the rationale for the proposed changes.

**From August 2016 through February 2017, the Faculty of Science reviewed its grade 12 entrance requirements because it was felt there was unnecessary complexity and in some cases onerous entrance requirements. The goal was to simplify the sets of requirements for the various programs in the Faculty, providing such changes did not result in admitting students who would not be prepared for the programs they were admitted for.**

**In this case, the changes in paragraph 5 complied with these goals.** In particular, students in this program are required to take York's calculus course for students who have not taken calculus (MATH 1505), and they are required to take BIOL1000, BIOL1001, CHEM1000, and CHEM1001.

7. Provide an updated mapping of the program requirements to the program learning outcomes to illustrate how the proposed requirements will support the achievement of program learning objectives. If changes to the admission requirements are being proposed, comment on the appropriateness of the revised requirements to the achievement of the program learning outcomes.

**Because the changes herein occur at the admission level, as opposed to within-the-program, mapping is not affected. What has been considered in making these changes is whether the grade 12 admission requirements are adequate preparation in the sense of grade 12 prerequisites for the program. In this case, the departmental and faculty review determined they are adequate.**

8. If relevant, summarize the consultation undertaken with relevant academic units, including commentary on the impact of the proposed changes on other programs. Provide individual statements from the relevant program(s) confirming consultation and their support.

**For all changes to grade 12 high school admission requirements in this exercise, the following were included in consultations: Dean's Office, Departmental Chairs, Departmental UPDs, and Departmental Curriculum Committees. In the case of Environmental Science, the Coordinator of the program, Rick Bello, was consulted, and he himself consulted with other faculty who are involved in delivering that program.**

**This form is being prepared for the benefit of the Faculty of Science Curriculum Committee.**

9. Describe any resource implications and how they are being addressed (e.g., through a reallocation of existing resources). If new/additional resources are required, provide a statement from the relevant Dean(s)/Principal confirming resources will be in place to implement the changes.

**There are no resource implications, except that numerous Faculty and Staff have already spent time engaged in this exercise, and, assuming it is approved, staff will spend time in making the changes to promotional material, calendar copy, and website. New promotional material is printed more or less annually in any event.**

10. Provide as an appendix a side-by-side comparison of the existing and proposed program requirements as they will appear in the Undergraduate or Graduate Calendar.

**Please see the description of changes in Paragraph 5.**

## Program Change Proposal

1. Program: **SCIENCE and TECHNOLOGY STUDIES**
  2. Degree Designation: **B.Sc.**
  3. Type of Modification: **Change to grade 12 courses admission requirements**
  4. Effective Date: **September 1, 2018**
- 

5. Provide a description of the proposed changes:

Currently, Science Technology Studies (BSc) requires:

- SCH4U or SPH4U among the three grade 12 sciences (SPH4U, SCH4U, SBI4U)
- One grade 12 math course, either MHF4U or MCV4U
- ENG4U
- Three other 4U or 4M courses

The proposal is to have Science Technology Studies (BSc) require:

- One of these three grade 12 sciences: SPH4U, SCH4U, SBI4U
- MHF4U
- ENG4U
- Three other 4U or 4M courses

Reference:

- SPH4U is grade 12 university-level Physics
- SCH4U is grade 12 university-level Chemistry
- SBI4U is grade 12 university-level Biology
- ENG4U is grade 12 university-level English
- MHF4U is grade 12 university-level Functions
- MCV4U is grade 12 university-level Calculus

6. Provide the rationale for the proposed changes.

**From August 2016 through February 2017, the Faculty of Science reviewed its grade 12 entrance requirements because it was felt there was unnecessary complexity and in some cases onerous entrance requirements. The goal was to simplify the sets of requirements for the various programs in the Faculty, providing such changes did not result in admitting students who would not be prepared for the programs they were admitted for.**

**In this case, the changes in paragraph 5 complied with these goals.** In particular, students cannot take grade 12 calculus (MCV4U) without taking grade 12 functions (MCH4U)

7. Provide an updated mapping of the program requirements to the program learning outcomes to illustrate how the proposed requirements will support the achievement of program learning objectives. If changes to the admission requirements are being proposed, comment on the appropriateness of the revised requirements to the achievement of the program learning outcomes.

**Because the changes herein occur at the admission level, as opposed to within-the-program, mapping is not affected. What has been considered in making these changes is whether the grade 12 admission requirements are adequate preparation in the sense of grade 12 prerequisites for the program. In this case, the departmental and faculty review determined they are adequate.**

8. If relevant, summarize the consultation undertaken with relevant academic units, including commentary on the impact of the proposed changes on other programs. Provide individual statements from the relevant program(s) confirming consultation and their support.

**For all changes to grade 12 high school admission requirements in this exercise, the following were included in consultations: Dean's Office, Departmental Chairs, Departmental UPDs, and Departmental Curriculum Committees. In the case of Environmental Science, the Coordinator of the program, Rick Bello, was consulted, and he himself consulted with other faculty who are involved in delivering that program.**

**This form is being prepared for the benefit of the Faculty of Science Curriculum Committee.**

9. Describe any resource implications and how they are being addressed (e.g., through a reallocation of existing resources). If new/additional resources are required, provide a statement from the relevant Dean(s)/Principal confirming resources will be in place to implement the changes.

**There are no resource implications, except that numerous Faculty and Staff have already spent time engaged in this exercise, and, assuming it is approved, staff will spend time in making the changes to promotional material, calendar copy, and website. New promotional material is printed more or less annually in any event.**

10. Provide as an appendix a side-by-side comparison of the existing and proposed program requirements as they will appear in the Undergraduate or Graduate Calendar.

**Please see the description of changes in Paragraph 5.**

## Program Change Proposal

1. Program: **UNDECIDED MAJOR**
  2. Degree Designation: **B.Sc.**
  3. Type of Modification: **Change to grade 12 courses admission requirements**
  4. Effective Date: **January 1, 2018**
- 

5. Provide a description of the proposed changes:

Currently, the Undeclared Major (BSc) requires:

- ENG4U
- 4U Math (MHF4U recommended)
- SPH4U or SCH4U
- Three other 4U or 4M courses

The proposal is to have the Undeclared Major (BSc) require:

- ENG4U
- MHF4U
- One of these three grade 12 sciences: SPH4U, SCH4U, SBI4U
- Three other 4U or 4M courses

Reference:

- SPH4U is grade 12 university-level Physics
- SCH4U is grade 12 university-level Chemistry
- SBI4U is grade 12 university-level Biology
- ENG4U is grade 12 university-level English
- MHF4U is grade 12 university-level Functions
- MCV4U is grade 12 university-level Calculus

6. Provide the rationale for the proposed changes.

**From August 2016 through February 2017, the Faculty of Science reviewed its grade 12 entrance requirements because it was felt there was unnecessary complexity and in some cases onerous entrance requirements. The goal was to simplify the sets of requirements for the various programs in the Faculty, providing such changes did not result in admitting students who would not be prepared for the programs they were admitted for.**

**In this case, the changes in paragraph 5 complied with these goals.** In particular, high school students must take MHF4U prior to taking MCV4U.

7. Provide an updated mapping of the program requirements to the program learning outcomes to illustrate how the proposed requirements will support the achievement of program learning objectives. If changes to the admission requirements are being proposed, comment on the appropriateness of the revised requirements to the achievement of the program learning outcomes.

**Because the changes herein occur at the admission level, as opposed to within-the-program, mapping is not affected. What has been considered in making these changes is whether the grade 12 admission requirements are adequate preparation in the sense of grade 12 prerequisites for the program. In this case, the departmental and faculty review determined they are adequate.**

8. If relevant, summarize the consultation undertaken with relevant academic units, including commentary on the impact of the proposed changes on other programs. Provide individual statements from the relevant program(s) confirming consultation and their support.

**For all changes to grade 12 high school admission requirements in this exercise, the following were included in consultations: Dean's Office, Departmental Chairs, Departmental UPDs, and Departmental Curriculum Committees. In the case of Environmental Science, the Coordinator of the program, Rick Bello, was consulted, and he himself consulted with other faculty who are involved in delivering that program.**

**This form is being prepared for the benefit of the Faculty of Science Curriculum Committee.**

9. Describe any resource implications and how they are being addressed (e.g., through a reallocation of existing resources). If new/additional resources are required, provide a statement from the relevant Dean(s)/Principal confirming resources will be in place to implement the changes.

**There are no resource implications, except that numerous Faculty and Staff have already spent time engaged in this exercise, and, assuming it is approved, staff will spend time in making the changes to promotional material, calendar copy, and website. New promotional material is printed more or less annually in any event.**

10. Provide as an appendix a side-by-side comparison of the existing and proposed program requirements as they will appear in the Undergraduate or Graduate Calendar.

**Please see the description of changes in Paragraph 5.**