

COUNCIL OF THE FACULTY OF SCIENCE



NOTICE OF MEETING

April 13, 2021

3pm – 4:30pm

via Zoom

AGENDA

1. Call to Order and Approval of Agenda
2. Chair's Remarks
3. Approval of March 9, 2021 Minutes
4. Inquiries and Communications
 - 4.1 Senate Synopsis of meetings held on March 25, 2021
5. Business Arising
6. Dean's Remarks
7. Associate Deans' and Head of Bethune College Remarks
8. Reports from Science Representatives on Senate Committees
9. Student Caucus Representative Report
10. Reports from Standing Committees of Council
 - 10.1 Executive Committee
 - 10.1.1 Vacancies report on the Standing Committees of FSc Council (items for action)
 - 10.2 Graduate Education Committee (consent agenda items)
 - 10.3 Curriculum Committee (consent agenda items)
11. Other Business
 - 11.1 Vote to endorse Faculty of Science 2021-2025 Strategic Plan

COUNCIL OF THE FACULTY OF SCIENCE



MINUTES

March 9, 2021

3pm – 4:30pm

via Zoom

1. Call to Order and Approval of Agenda

The Chair of Council, C. Storry, called the meeting to order and the Agenda was adopted with 1 amendment, adding item 11.2 “Notice of Motion for Vote on the endorsement of the Faculty of Science Strategic Plan”.

2. Chair’s Remarks

The Chair of Council, C. Storry welcomed members to the March Faculty Council.

3. Approval of February 9 2021 Minutes

A motion was moved, seconded and carried to approve the Minutes.

4. Inquiries and Communications

4.1 Senate Synopsis of meetings held on February 25, 2021

4.2 Consultation on Revisions to Policy on Academic Honesty

Mike Scheid led a discussion surrounding the changes made to the existing Academic Honesty Policy. Council was advised to review the document, and send him or Sibonile an email if they had any feedback.

5. Business Arising

There was none.

6. Dean’s Remarks

Dean Wang welcomed Faculty Council and wished the women in attendance a Happy International Woman’s Day.

Coregulations to:

Professor Eric Hessels has been awarded \$3,360,000 from the CFI Innovation Fund for the project Tabletop Probe of PeV-scale new physics.

Professor Derek Wilson has been awarded almost \$2.1 million as principal investigator of a project with Professor Sergey Krylov, Technology-Enhanced Drug Development and Manufacturing (TEndev): MirrorLab.

Dean Wang highlighted that York University is offering additional support to Faculty members:

1. Financial support of \$250 - \$500 for guest lecturers. Application deadline is March 31, 2021. This application can also be used for retroactive pay.
2. Additional marker and grader support for course deliveries.
3. Family and medical accommodation measures.

Dean Wang mentioned that the University’s Addressing Anti-Black racism action plan framework continues, he highlighted several actions the Faculty of Science have put into motion: Establishing a Committee on Equity, Diversity & Inclusivity, participating in the

University wide new postdoctoral fellowship and program for Black and Indigenous post-doc fellows and the Black Faculty Search. He noted these actions will improve Black representation, but more needs to be done.

Dean Wang advised Council that Fall/Winter 2021-22 planning continues. Senate sent Fall Planning Principal Template Guidelines and Senate Executive Announcement on the Fall Planning principals. He noted that all updates and procedures must be guided by Toronto Public Health.

7. Associate Deans' and Head of Bethune College Remarks

Associate Dean, Faculty Affairs, Gerald Audette reminded Chairs that 2022-23 sabbaticals should be requested by April. If you are near retirement, please advise the Dean's Office.

Associate Dean, Research & Graduate Education, Jennifer Steeves reported that NSERC summer positions are being ranked within departments, should be confirmed by end of March. Additionally, we are waiting on NSERC results for competitions.

Associate Dean, Students, Mike Scheid asked Almira Mun, Assistant Dean to speak on enrolment: overall up by 6% in 2021-22. Ontario High School applications are up by 16.4%, International & Domestic applications are down by 19% and 6.5% respectively.

8. Reports from Science Representatives on Senate Committees

There were none.

9. Student Caucus Representative Report

The Student Caucus met with Assistant Dean, Almira Mun on March 3 in regards to the new Science Communications Group to provide a regular channel of communications between the student and Faculty of Science. Discussed the possibility of opening the meetings up to other peer and student leaders. The Student Caucus also thanks Dean Wang for providing an in-depth response to their letter.

10. Reports from Standing Committees of Council

10.1 Executive Committee

10.1.1 Vacancies report on the Standing Committees of FSc Council (items for action)

The chair noted that there are several vacancies due to memberships ending in 2021.

10.2 Curriculum Committee (consent agenda items)

All items were passed.

11. Other Business

11.1 Faculty of Science Strategic Plan's presentation – Dean Wang

Dean Wang presented the 2021-2025 Faculty of Science Strategic Plan. Faculty Council members were encouraged to send validation comments to Melissa Hughes at mehughes@yorku.ca.

11.2 Notice of Motion for Vote on the endorsement of the Faculty of Science Strategic Plan

Dean Wang advised council of the notice of motion to Cote on the endorsement of the 2021-2025 Faculty of Science Strategic Plan at the April 13 Faculty Council meeting.

ATTENDANCE

First Name	Last Name
Kevin	McGregor
Margaret	Hough
Rachel	Duncan
Robin	Metcalfe
Gaby	Gerzon
Pierre	Potvin
Kyle	Belozerov
Jennifer Steeves	
Daniel	Kamel
Tom	Salisbury
Sameen	Ali
Alice	Fours
Maksym	Stolyarevskyy (Staff)
Rui	Wang
Areeba	Chaudhry
Michael	Scheid
Robert	Tsushima
Brad	Sheeller (non-voting guest)
Paula	Wilson
Stephanie	Domenikos (STS)
Tanya	Da Silva
Helen	Abraham

Akash	Chauhan
Mark	Bayfield
Iain	Moyles
Stephen	Watson
Cody	Storry
Helen	McLellan (staff)
Elaheh	Abdollahi
Gerald	Audette
Christine	Le
Ali	Bashar
Conor	Douglas
Patricia	Lakin-Thomas
Rene	Fournier
Ailiya	Rizwan
Julie	Clark
Tina	Reddi
Almira	Mun
Thomas	Baumgartner
Neal	Madras
amenda	chow
Anita	Khoshnik
Hovig	Kouyoumdjian
Hugo	Chen
Julyana	Al-Hussain

Olga	Andriyevska
mar	armour
Carl	Wolfe
Scott	Menary
Delwar	Hossain
Georges	Monette
John	Amanatides
Vera	Pavri
Birgit	Schwarz
Alex	Mills
Pat	Hall
Pam	Sargent
Maggie	Xu



The Senate of York University

Synopsis

The 674rd Meeting of Senate held on Thursday, March 25, 2021 via Zoom

Remarks

The Chair of Senate, Professor Alison Macpherson of the Faculty of Health, welcomed Senators to the meeting and extended a special acknowledgement to all who have been impacted by the pandemic, especially those who have been ill, and those who have lost loved ones.

Comments made by President Lenton included the following:

- a report on the recent release of the 2021 Ontario Budget which is focused on pandemic recovery. Highlights include the government's commitment to the investment of over \$500 million to support healthcare research initiatives undertaken in universities, colleges and academic hospitals, an additional \$7 million to help postsecondary students during COVID-19 to increase access to mental health and addiction services, and a new Ontario Jobs Training Tax Credit which would provide up to \$2,000 towards eligible training expenses.
- an update that the Ontario government is expanding the Ontario Student Assistance Program (OSAP) to include nearly 600 micro-credential programs. Through this initiative, the province is ensuring loans and grants will be available to more learners looking to rapidly upskill and reskill for the in-demand jobs of today and tomorrow.
- an update on campus planning for fall 2021 and the partial return to campus in September beginning with the gradual reopening of the campus over the summer while keeping consistent with government and public health guidelines and prioritizing the health and safety of the community.
- acknowledgement of the significant challenges for students and faculty in the context of the pandemic in reference to a recent student accommodation matter, and emphasis that York University is committed to upholding and promoting the values of respect, equity, diversity, and inclusion across its campuses and in communications.

The Senate of York University

Synopsis

- acknowledgement of the open letter to the President and the Board of Governors from the *York University Fossil Free Campaign* advocating for divestment in fossil fuels and York's leadership, in addition to its investment strategies, in lowering its carbon emissions to advance its institutional Sustainable Development Goals.
- an announcement that in recognition of all the efforts of faculty and units across the university in continuing to advance the priorities of the university in the context of the ongoing impacts of the pandemic, a special York Wellness Day will be instituted on Friday, July 2, to provide an extended 4-day long weekend.
- highlights from the "Kudos" report including three major research projects led by York researchers Professors Eric Hessels, Derek Wilson, and George Zhu, which have received more than \$9 million in research infrastructure funding from the Canada Foundation for Innovation (CFI).

The monthly "Kudos" report on the achievements of members of the York community can be accessed with other documentation for the meeting.

Reports

Academic Colleague to the Council of Ontario Universities (COU)

Speaking to the written report included in the agenda, the Academic Colleague to COU, Senator Brenda Spotton Visano, reported on the February COU meetings in which members engaged in conversation with Dr. Alison Flynn, Associate Professor, Department of Chemistry and Biomolecular Sciences, University of Ottawa, on the topic of "Online Learning: Lessons Learned and the Future of Education after the Pandemic." In addition, a number of updates were provided on policy matters and initiatives under discussion at the provincial level, including the advocacy of the OCAV Micro-credential Working group regarding the Ministry's emerging micro-credential framework.

Vice-President Research and Innovation Annual Report

Under the auspices of the Academic Policy, Planning and Research Committee, Vice-President Research & Innovation Amir Asif presented the Vice-President Research and Innovation Annual Report.

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Academic Policy, Planning and Research (APPRC) / Academic Standards, Curriculum and Pedagogy (ASCP)

Speaking to the written report included in the agenda, APPRC Chair Senator Brenda Spotton Visano, reported on joint meeting with ASCP in late February to discuss the academic programming for the Markham Centre Campus, highlighting how the planning is animating the campus vision and focused on providing students a rich experience at the new site. Professor Alice Pitt, Senior Advisor for Markham Academic Strategic Planning, led the discussion.

Approvals

On the recommendation of its Academic Policy, Planning and Research Committee, Senate approved, effective immediately:

- Change in the name of the Department of Communication Studies to the *Department of Communication and Media Studies*

On the recommendation of its Academic Standards, Curriculum and Pedagogy Committee, Senate approved:

- change in the name of the BA and Honours iBA programs in Communication Studies to *Communication and Media Studies*, housed within the Faculty of Liberal Arts & Professional Studies, effective FW 2021-2022
- change to the Osgoode Hall Law School Academic Rules governing the Indigenous and Aboriginal Law Requirement for the Osgoode Hall Law School Juris Doctor Program to accommodate a waiver of the requirement in specific circumstances, effective immediately
- changes to the requirements for the Geographic Information Systems (GIS) and Remote Sensing Undergraduate Certificate housed within the Faculty of Environmental and Urban Change, effective FW 2021-2022
- changes to the requirements for the Sustainable Energy Undergraduate Certificate, housed within Faculty of Environmental and Urban Change, effective FW 2021-2022
- amendments to the *Senate Policy on Letters of Permission* related to the new grading scheme implementation, effective FW2023-2024

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- amendments to the *Senate Policy and Guidelines on Undergraduate Co-Registration Options with Other Post-secondary Institutions* related to the new grading scheme implementation, effective FW2023-2024
- amendments to the *Undergraduate Certificate Guidelines and Procedures* related to the new grading scheme implementation, effective FW2023-2024

Committee Information Reports

Executive

The Executive Committee's information items included the following:

- its ongoing monitoring of the impact of the COVID-19 pandemic on academic activities including a decision on online proctoring of examinations and further actions pertaining to the disruption outlined in its written Report
- the Senate consultation process pertaining to the renewal of the President's term
- the launch of the call for Expressions of Interest in membership on Senate committees and other positions elected by Senate
- its review of the Faculty Council rules and procedures of the School of Arts, Media, Performance & Design, and Glendon.
- the launch of the search for York's next Chancellor

Academic Policy, Planning and Research (APPRC)

APPRC reported on the following items:

- its ongoing monitoring of UAP Implementation including the spring planning forum session on the UAP teaching priorities focusing on ways to take up Experiential Education opportunities that took place on 11 March 2021.

Academic Standards, Curriculum and Pedagogy (ASCP)

ASCP's information the following following minor changes that were approved by the Committee, effective FW2021-2022 unless otherwise noted:

Faculty of Health

Minor changes to the requirements for the degree options in the BSc program in Global Health

The Senate of York University

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Minor changes to the requirements for the degree options in the BSc programs in Kinesiology

Minor changes to the requirements for the Specialized Honours BSc Program in Neuroscience

Minor changes to the requirements for the degree options in the BSc programs in Psychology

Faculty of Science

Minor changes to Degree Requirements for the BSc programs in the Department of Biology

Lassonde School of Engineering

Minor change to complementary studies requirement for BEng degree programs

Schulich School of Business

Establishment of a Specialization in Digital Transformation within the MBA program

Minor changes to degree requirements for the Bachelor of Business Administration (BBA) and International Bachelor of Business Administration (iBBA) programs

Glendon / FGS

Changes to admissions requirements for the MA in Translation Studies program (related to the new grading scheme implementation), effective FW2023-2024

Faculty of Graduate Studies

Changes to the Graduate Courses and Grading Regulations (related to the new grading scheme implementation), effective FW2023-2024

Changes to English Language Proficiency requirements, effective immediately (related to the changes to undergraduate and graduate admission requirements (Language Proficiency))

Additional Information about this Meeting

Please refer to the full Senate agenda and supplementary material posted online with the Thursday, Marh 25, 2020 meeting for details about these items.

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

April Meeting of Senate

Senate's next meeting will be held at 3:00 pm on Thursday, April 22, 2021.

2020-2021 FSc Report on vacancies for Senate and FSc Standing Committees

Committee	Rules of Faculty Council - membership	Meeting time / Membership	Term	
			From	To
Senate	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 twelve 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		
	Dean, Ex officio	R. Wang	Designated	
	Member at large	G. Audette	Designated	
	Member at large	E. Hessels, Physics & Astronomy	2019	2022
	Member at large	J. Lazenby, STS	2019	2022
	Member at large	T. Baumgartner, Chemistry	2021	2024
	Member at large	B. Pietro, Chemistry	2019	2022
	Member at large	P. Lukin-Thomas, Biology	2019	2022
	Member at large	N. Madras - 1 yr replacement	2020	2023
	Department Chair	R. Tsuchima, Biology	2018	2022
	Department Chair	R. Fournier, Chemistry	2019	2022
	Department Chair	S. Watson, Mathematics & Statistics	2019	2022
	Director of NATS	J. Clark	Designated	
FSc Reps on Senate Committees	Student representative	Julyana Al-Hussain	2020	2022
		Romina Noormohammadi	2019	2021
Senate Executive	1 member from FSc		2018	2021
Academic Policy, Planning and Research Committee (APPRC)	1 member from FSc	D. Golemi-Kotra	2020	2023
ASCP (Academic Standards, Curriculum and Pedagogy Committee)	1 member from FSc			
Sub-Committee on Honorary Degrees & Ceremonials	1 member from FSc	M. N. Yousaf	2020	2023
Executive Committee	The Executive Committee 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 (ex officio), 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 3:00pm - 4:30pm in LUM 305B		
	Chair of Council	C. Story	2020	2021
	Vice-Chair of Council	T. Salisbury	2020	2021
	Dean, Ex officio	R. Wang	Designated	
	Asst. Dean - SEM & SEP	A. Mun	Designated	
	Staff representative	V. Gorchewa	2020	2021
	Undergraduate Student Rep	Hila Akbari	2020	2021
	Biology	D. Golemi-Kotra	2020	2023
	Chemistry	S. Krylov	2019	2022
	Math & Stats	N. Madras	2019	2022
	Physics & Astronomy	S. Menary	2020	2021
	STS	V. Pavi	2020	2023
APPC	The Academic Policy and Planning Committee shall include the Dean or designate (ex officio), 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 Affairs, Ex officio	G. Audette	Designated	
	Head of Bethune College	J. Amanatides	Designated	
	Undergraduate Student Rep	Rachel Duncan	2020	2022
	Elected staff representative	M. Xu	2020	2021
	Biology, also representing STS	J. Clark	2019	2022
	Chemistry	R. McLaren	2019	2022
	Math & Stats	Man Wah Wong - 1 year replacement ie, 2020-2021	2019	2022
	Physics & Astronomy	E. Hessels	2020	2021
	STS	Represented by J. Clark	2019	2022
Curriculum Committee	The Curriculum Committee shall include the Dean and an Associate Dean (ex officio), the Chair or nominee from each teaching Division or Department, three 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. Clark	2019	2022
	Member at Large	VACANT	2020	2023
	Dean, Ex officio	R. Wang	Designated	
	Associate Dean - Students, Ex officio	M. Schied	Designated	
	Undergraduate Student Rep	Elena Dhaigham	2020	2021
	Undergraduate Student Rep	Jessica Sinha	2020	2021
	Biology	S. Connor	2019	2022
	Chemistry	P. Potvin	2019	2022
	Math & Stats	J. Grigull (Winter) VACANT (Fall)	2019	2022
	Physics & Astronomy	S. Jerzak	2020	2021
	STS	S. Domenikos	2020	2021
	Member at Large	C. Rozins	2020	2023

T. Baumgartner on Sabbatical July 2022 - June 2023

N. Madras on Sabbatical July 1 2021 - June 30 2022

T. Salisbury Chair in 2021-2022

N. Madras on Sabbatical 2021-22

J. Heffernan on Sabbatical Jul 1, 2020 - Jun 2021

2020-2021 FSc Report on vacancies for Senate and FSc Standing Committees

Committee	Rules of Faculty Council - membership	Meeting time / Membership	Term	
			From	To
CEAS	The Committee on Examinations and Academic Standards shall consist of an Associate Dean (ex officio), 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, Ex officio	M. Scheid	Designated	
	Undergraduate Student Rep	Ali Bashir	2020	2021
	Undergraduate Student Rep	Sormeh Hamedani	2020	2021
	Biology	C. Jang/ALT S. Connor	2019	2022
	Chemistry	H. Kouyoumdjian / R. McLaren / T. Mirkovic	2020/2018	2023/2021
	Math & Stats	M. Chen (Fall) / Y. Wu (Winter) ALT C. Fu	2020/2019	2023/2022
	Physics & Astronomy	M. Horbatsch; P. Delaney (Sept - Nov), William van Wijngaarden (Dec - Feb), Saeed Rastgoo (Mar - May)	2020	2021
	STS	J. Elwick/J. Rogerson	2020/2023	2020/2023
Petitions	The Petition Committee for the purpose of hearing student petitions shall consist of an Associate Dean (ex officio), six members of Council, and two student members of Council. The Committee may divide the workload by splitting the Committee membership into two panels of four people each. A quorum shall consist of either (a) two faculty voting faculty members and one student member or (b) three voting faculty members.	Each panel meets once a month on Wednesday or Thursday from 2:30 pm - 4:00 pm		
	Associate Dean, Ex officio	M. Scheid	Designated	
	Undergraduate Student Rep	Yashna Maneek	2020	2021
	Undergraduate Student Rep	Hassan Khan	2020	2021
	Member at Large	K. Belozeroz	2020	2023
	Biology	A. Mills	2020	2022
	Chemistry	W. J. Pietro	2019	2022
	Physics & Astronomy	N. Bartel (member in Fall ALT in Winter)/N. Bozorgnia ALT in Fall & member in Winter)	2020	2021
	Math & Stats	Y. Gao	2019	2022
	STS	S. Domenikos	2020	2021
SRC T & P Committee	The Committee on Tenure and Promotions 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 May) 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, Ex officio	G. Audette	Designated	
	Undergraduate Student Rep	Daniel Kamel	2020	2021
	Graduate Student Rep	Si Jia (Molly) Hu	2020	2021
	Biology	K. Hudak / ATL Jean-Paul Paluzzi	2020/2020	2023/2023
	Chemistry	D. Ifta/ALT V. Tsoukanova	2020/2019	2023/2022
	Physics & Astronomy	W. Taylor/ALT D. Harris	2020	2021
	Math & Stats	S. Wang ALT Y. Gao	2019	2022
	STS	D. Lungu/ALT Vacancy	2018	2021
CoTL	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 10:00 am - 11:30 am		
	Associate Dean - Students, Ex officio	M. Scheid	Designated	
	Graduate Student Representative	Gabriella Gerzon	2020	2021
	Graduate Student Representative	VACANT	2020	2021
	Undergraduate Student Rep	Aneetha Chaudhry	2020	2021
	Steadie Librarian	Ife-Katryn Maimets	Designated	
	IT Representative	V. Gotcheva	Designated	
	Teaching Commons Rep	Y. Su	Designated	
	Staff representative, Elected	D. Hossain	2020	2021
	Biology	D. Golemi-Kotra	2020	2023
Committee on Research & Awards	The Committee on Research and Awards 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 (ex officio) 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, ex officio	J. Steeves	Designated	
	Undergraduate Student Rep	Samreen Ali	2020	2021
	Biology	R. Kwong	2020	2023
	Chemistry	M. Yousof (1 year replacement)	2019	2022
	Physics & Astronomy	A. Kumarakrishnan	2020	2021
	Math & Stats	Huailong Zhu	2019	2022
	STS	H. Misset	2020	2023
	The Appeal Committee for the purpose of hearing student appeals shall consist of four elected faculty members from Science units, an Associate Dean (ex officio) 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 - Faculty, ex officio	G. Audette	Designated	
Appeals Committee	Undergraduate Student Rep	Yuriy Kurzyckyj	2020	2021
	Undergraduate Student Rep	Tanya Rajwani	2020	2021
	Member at Large	R. Fournier	2019	2022
	Biology	N. Kovinich	2020	2023
	Chemistry	M. Hempstead	2020	2023
	Physics & Astronomy	S. Rastgoo	2020	2021
	Math & Stats	A. Wong	2020	2023
	STS	M.H. Armour	2018	2021

S. Connor to serve 1 year
T. Mirkovic to serve 1 year
M. Chen-Sabbatical Jan 2021-June 2021
J. Lazenby on Sabbatical July 2020-June 2021

Liang on Sab. Jan. 1, 2021-June 2021

W. Liu on Sabbatical - July 2020- Dec 2020

S. Morin on Sab. Starting July 1, 2020-2021

2020-2021 FSc Report on vacancies for Senate and FSc Standing Committees

Committee		Rules of Faculty Council – membership	Meeting time / Membership	Term	
				From	To
Graduate Education Program		To provide broad review and commendation to Council via the Academic Policy and Planning Committee of all proposals received from Graduate Programs with respect to: New Course Proposals, Course Change Proposals, Minor Changes to Program/Graduate Diploma Academic Requirements, Major Modifications to Program/Graduate Diploma Academic Requirements, New Graduate Fields, New Graduate Diplomas, New Graduate Degree Programs The Graduate Education Committee shall consist of: - Associate Dean – Research & Graduate Education (ex officio) - Graduate Program Director (or designate who must be a member of the graduate program) of each Graduate Program in the Faculty of Science - one graduate student member from any Graduate Program within the Faculty of Science - one full-time faculty member from the Faculty of Health or Lassonde School of Engineering who is appointed to teach in any FSc graduate program A member at large with knowledge of graduate programming, and experience with curriculum approvals at the Faculty-level. The Chair of the Committee is selected by the voting members of the Committee for a one-year term.	Meeting is held		
		Associate Dean – Research & Graduate Education (ex officio)	J. Steeves	Designated	
		Biology	B. Stutchbury	2020	2023
		Chemistry	R. McLaren	2020	2022
		Physics & Astronomy	M. Johnson	2020	2023
		Math & Stats	S. Moghadas	2020	2023
		STS	K. Birch	2020	2021
		Member from Faculty of Health OR Lassonde	VACANT		
		Member at Large	VACANT		
		Graduate Student	Ellie Abdullahi	2020	2021
		The purpose of the Committee on Equity, Diversity & Inclusivity is to provide broad review and leadership to Council on matters of Equity, Diversity and Inclusivity issues with respect to: • Tenure and Promotions • Hiring and Retention of members form EDI groups • Approaches to addressing gender bias in the workplace • Research engaging equity recognized groups • Workload and service contributions of EDI members • EDI experiences in Teaching and Learning The Equity, Diversity and Inclusivity committee shall consist of: • Associate Dean, Faculty Affairs (ex officio) • Associate Dean, Research & Graduate Education (ex officio) • One primary and one alternate member from each of Biology, Chemistry, Mathematics & Statistics, Physics & Astronomy and Science & Technology Studies. • Two graduate students or postdoctoral fellow/visitors (one primary and one alternate) from any graduate program within the Faculty of Science • One undergraduate student	Meeting is held TBD		
EDI		Associate Dean - Faculty, ex officio	G. Audette	Designated	
		Associate Dean, Research & Graduate Education (ex officio)	J. Steeves	2020	2023
		Undergraduate Student Rep	Alliya Rizwan	2020	2022
		Graduate Student / Post Doc Representative	Olga Andriyevska	2020	2022
		Graduate Student / Post Doc Representative	VACANT	2020	2022
		Biology	D. Bazely	2020	2023
		Chemistry	C. Le	2020	2023
		Physics & Astronomy	D. Harris	2020	2023
		Math & Stats	A. Chow	2020	2023
		STS	V. Pavri	2020	2023

Graduate Education Committee Report



March 2021

The Faculty of Science Graduate Education Committee has reviewed proposals for Changes to Program/Graduate Diploma Academic Requirements (MSc and PhD) in the Department of Biology and recommends to the Executive Committee that the following changes be submitted to Council for approval.

Details regarding these proposals are included in the working papers of the March 17, 2021, meeting of the Graduate Education Committee, which are on file for your inspection in the Office of the Dean, with the Secretary of the Committee at adminres@yorku.ca

1. Change to Program/Graduate Diploma Academic Requirements – Biology MSc
2. Change to Program/Graduate Diploma Academic Requirements – Biology PhD

Bridget J. Stutchbury

From: Graduate Program Directors <GPDS@YORKU.CA> on behalf of Wesley Moir <wmoir@YORKU.CA>
Sent: February 18, 2021 11:05 AM
To: GPDS@YORKU.CA
Subject: Reminder: Implementation of the New Grading Scheme
Attachments: Implementation of the New Grading Schemes: Senate Policy on York University Grading Schemes and Faculty-level Implementation Activities; fgs-council-graduate-grading-scheme-overview-november-2020-7.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Hello GPDs and ADs Grad,

With the [recent update at February's FGS Council meeting](#) (see Item #7) to change FGS Graduate Courses and Grading regulations, I am sending this reminder for the implementation of the new grading scheme (see attached email) to take effect Fall 2023.

To ensure the timely implementation of the new scheme, Faculties/programs are asked to submit academic regulation changes to Senate's Academic Standards, Curriculum and Pedagogy Committee (ASCP) **by no later than April 7, 2021**. Proposals are to be brought forward to your anchor Faculty graduate curriculum committees.

The attached Overview of Updates document summarizes the updates and implications. For graduate programs specifically, the addition of B- may potentially impact program-specific regulations (admissions, program requirements) as the current use of B or B+ may now shift due to percentage range updates (B+ = 77-79%; B = 73-76%; B- = 70-72%).

If your graduate program is impacted and changes (if applicable) have not yet been brought forward to your anchor Faculty graduate committee, I am hosting a **drop-in over the lunch hour (12:00-1:00pm) tomorrow, February 19 and Monday, February 22** to answer any questions you may have. Please use the following Zoom link: <https://yorku.zoom.us/j/6092365749>.

Alternatively, you may email me to discuss further or we can set up an individual time to quickly connect over Zoom.

Thank you,
Wes

Wesley Moir
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*Ranked 33rd in the World in the
Times Higher Education 2020 Impact Rankings*

We recognize that many Indigenous Nations have longstanding relationships with the territories upon which York University campuses are located that precede the establishment of York University. York University acknowledges its presence on the traditional territory of many Indigenous Nations. The area known as Tkaronto has been care taken by the Anishinabek Nation, the Haudenosaunee Confederacy, and the Huron-Wendat. It is now home to many First Nation, Inuit and Métis communities. We acknowledge the current treaty holders, the Mississaugas of the Credit First Nation. This territory is subject of the Dish with One Spoon Wampum Belt Covenant, an agreement to peaceably share and care for the Great Lakes region.

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MSc Achievement of Learning Objectives

Master of Science in Biology Degree Level Expectations and Program Map		Level of Learning Outcomes (R: reinforces BSc outcomes, P: professional level)												
		Assessment	Committee Meeting I (Term 1)	FGS Research Proposal (Term 2)	Research Progress Evaluation I (Term 2)	Graduate Student Seminars -attendance Terms 1 & 2	Graduate Courses	Thesis Research	Committee Meeting II (Term 4)	Graduate Student Seminars -presentation (Year 2)	Research Progress Evaluation II (Term 5)	Thesis Writing and Submission	Thesis Defense	
Core Competencies														
A. Depth and Breadth of Knowledge														
A1. Demonstrate a broad understanding of the important and recent concepts and methodologies within a particular area of biology, including knowledge from other disciplines where appropriate.		seminars, literature reviews, group discussion, Research Progress Evaluation, thesis, thesis defense			R			R			P	P	P	
B. Research and Scholarship														
B1. Carry out publication-quality research to answer an important biological question, using appropriate methodological, experimental and statistical approaches.		Research Progress Evaluation, thesis defense	R	R	R			R	R		P	P	P	
B2. Gather, organize, synthesize and critically evaluate information from scientific literature.		seminars, literature reviews, Research Progress report, thesis	R	R	R			R			P	P	P	
B3. Present research goals, methods, results and interpretation in the form of a Master's thesis.		thesis approval for defense, thesis defense			R						R	P	P	
C. Level of Application of Knowledge														
C1. Identify or validate a research question and experimental design through a critical review of recent scientific literature		Research Progress Evaluation	R	R	R						P	P	P	
D. Professional capacity/autonomy														
D1. Demonstrate the interpersonal skills, professional responsibility, integrity and independent learning required for employment or continued research and education in Biology or a related discipline		course seminars, course group discussions, student seminar, Research Progress Evaluations			R	R		R	R		P	P	P	
D2. Successfully conduct biological research in a safe and ethical manner		Research Progress Evaluation						R			P	P	P	
E. Level of Communication Skills														
E1. Speak and write with high effectiveness; communicate biological concepts and data clearly to peers, the general public and a scientific audience, orally and in writing.		course seminars and papers, student seminar series, Research Progress Evaluation, thesis	R	R	R	R		R	R		P	P	P	
F. Awareness of limits of knowledge														
F1. Describe, analyze and discuss the methodological and conceptual limitations of research findings in the field of study.		literature reviews, thesis				R		R		R		P	P	

Change to Program/Graduate Diploma Academic Requirements Proposal Form

The following information is required for all proposals involving a minor modification to program/graduate diploma academic requirements. To facilitate the review/approval process, please use the headings below (and omit the italicized explanations below each heading).

1. Program/Graduate Diploma: Biology MSc

2. Effective Session of Proposed Change(s): Admission requirements for Fall 2023

3. Proposed Change(s) and Rationale

The description of and rationale for the proposed modification(s) should provide information with respect to each of the following points:

a) A description of the proposed modification(s) and rationale, including alignment with academic plans.

Rational is change in York U grading scheme. The new grading scheme will change the definition of B+ from 75-79% to 77-79% e.g. (B+ = 77-79%; B = 73-76%; B- = 70-72%).\

Admission requirements will be changed to B (73-76%) from the current B+ (75-79%). This is a tiny % change and students in the 73-74% range would be usually be admitted anyway via the non-standard admit paperwork. Students cannot be admitted without first securing a supervisor, so our faculty are already vetting their prospective students using a range of criteria.

b) An outline of the changes to requirements and the associated learning outcomes/objectives, including how the proposed requirements will support the achievement of program/graduate diploma learning objectives. Additionally, please append the graduate program's existing learning outcomes as a separate document.

No change to learning outcomes; this is for admission only

c) An overview of the consultation undertaken with relevant academic units and an assessment of the impact of the modifications on other programs/graduate diplomas.

Where and as appropriate, the proposal must include statements from the relevant program/graduate diplomas confirming consultation/support.

Change has been approved by the Biology Graduate Committee

d) A summary of any resource implications and how they are being addressed.

Attention should be paid to whether the proposed changes will be supported by a reallocation of existing resources or if new/additional resources are required. If new/additional resources are required, the proposal must include a statement from the relevant Dean(s)/Principal.

No resource implications.

e) A summary of how students currently enrolled in the program/graduate diploma will be accommodated.

Not applicable

4. Calendar Copy

Using the following two-column format, provide a copy of the relevant program/graduate diploma requirements as they will appear in the FGS Calendar - <http://gradstudies.yorku.ca/current-students/regulations/program-requirements/>.

Please note: Senate requires that FULL Calendar copy be provided. Please include the entire graduate program/diploma section, not just text that is being revised.

Please clearly and visibly indicate how graduate program/graduate diploma information has been changed using strikethrough (left column), bold, underlining, colours, etc. (right column).

Existing Program/Graduate Diploma Information (change from)	Proposed Program/Graduate Diploma Information (change to)
Graduates with a four-year bachelor's degree in biological science or its equivalent, with at least a B+ average in the last two years of study, may be admitted as candidates for the Master of Science degree. Each candidate selects a faculty supervisor on the basis of their mutual research interests and a supervisory committee (usually consisting of the supervisor and one other faculty member with similar research interests) is appointed by the graduate program to supervise and monitor the student's progress.	Graduates with a four-year bachelor's degree in biological science or its equivalent, with at least a B average in the last two years of study, may be admitted as candidates for the Master of Science degree. Each candidate selects a faculty supervisor on the basis of their mutual research interests and a supervisory committee (usually consisting of the supervisor and one other faculty member with similar research interests) is appointed by the graduate program to supervise and monitor the student's progress.

Please submit completed forms and required supporting documentation through the Science Curriculum Toolkit website.

PhD Achievement of Learning Objectives

Core Competencies - PhD Biology		Assessment	Committee Meeting I (Term 1)	FGS Research Proposal (Term 2)	Research Progress Evaluation I (Term 2)	Graduate Student Seminars - attendance & 2 presentations	Graduate Courses (Year 1, optional)	Thesis Research	Committee Meeting II (Term 4)	Research Progress Evaluation II (Term 5)	Committee Meetings (Years 3-5)	Research Progress Evaluations (Years 3-5)	Dissertation Writing and Submission	PhD Thesis Defense
A. Depth and Breadth of Knowledge														
A1. Demonstrate in depth and advanced understanding of the important and recent concepts and methodologies within a particular field of biology, including knowledge from other disciplines		student seminars, Research Progress Evaluation, thesis, thesis defense			R		R			R		P	P	P
B. Research and Scholarship														
B1. Carry out advanced research and answer novel questions in biology, by developing and applying appropriate methodological, experimental, and statistical techniques.		Research Progress Evaluation, thesis defense			R	R	R			R	R	P	P	P
B2. Gather, organize, synthesize and critically evaluate information from scientific literature.		seminars, Research Progress report, thesis	R	R	R			R	R	R	P	P	P	P
B3. Present research goals, methods, results and interpretation in the form of a doctoral thesis that is high enough caliber to merit publication		thesis approval for defense, thesis defense			R					R	R	R	P	P
C. Level of Application of Knowledge														
C1. Identify a novel and important research question and appropriate methodology through a critical review of recent scientific literature		Research Progress Evaluation	R	R	R				R	R	P	P	P	P
C2. Develop new methodologies and experimental designs, as necessary, to advance the field of study		Thesis research						R				P	P	P
D. Professional capacity/autonomy														
D1. Conduct independent biological research with integrity, applying professional standards of safety and ethical behaviour.		group discussions, Research Progress Evaluations			R		R	R	R	R		P	P	P
E. Level of Communication Skills														
E1. Speak and write with excellence; explain complex biological concepts and data effectively to the general public and to a scientific audience.		Research Progress Evaluation, student seminars	R	R	R	R	R		R	R	P	P	P	P
F. Awareness of limits of knowledge														
F1. Critically reflect on the methodological and conceptual limitations of one's own research, and that of peers.		Research Progress Evaluation, student seminars				R	R				P	P	P	P

Change to Program/Graduate Diploma Academic Requirements Proposal Form

The following information is required for all proposals involving a minor modification to program/graduate diploma academic requirements. To facilitate the review/approval process, please use the headings below (and omit the italicized explanations below each heading).

1. Program/Graduate Diploma: Biology PhD

2. Effective Session of Proposed Change(s): Admission requirements for Fall 2023

3. Proposed Change(s) and Rationale

The description of and rationale for the proposed modification(s) should provide information with respect to each of the following points:

a) A description of the proposed modification(s) and rationale, including alignment with academic plans.

Rational is change in York U grading scheme. The new grading scheme will change the definition of B+ from 75-79% to 77-79% e.g. new system will be: (B+ = 77-79%; B = 73-76%; B- = 70-72%).\

Admission requirements will be changed to B (73-76%) from the current B+ (75-79%). This is a tiny % change and students in the 73-74% range would be usually be admitted anyway via the non-standard admit paperwork. Students cannot be admitted without first securing a supervisor, so our faculty are already vetting their prospective students using a range of criteria.

b) An outline of the changes to requirements and the associated learning outcomes/objectives, including how the proposed requirements will support the achievement of program/graduate diploma learning objectives. Additionally, please append the graduate program's existing learning outcomes as a separate document.

No change to learning outcomes; this is for admission only

c) An overview of the consultation undertaken with relevant academic units and an assessment of the impact of the modifications on other programs/graduate diplomas.

Where and as appropriate, the proposal must include statements from the relevant program/graduate diplomas confirming consultation/support.

Change has been approved by the Biology Graduate Committee

d) A summary of any resource implications and how they are being addressed.

Attention should be paid to whether the proposed changes will be supported by a reallocation of existing resources or if new/additional resources are required. If new/additional resources are required, the proposal must include a statement from the relevant Dean(s)/Principal.

No resource implications.

e) A summary of how students currently enrolled in the program/graduate diploma will be accommodated.

Not applicable

4. Calendar Copy

Using the following two-column format, provide a copy of the relevant program/graduate diploma requirements as they will appear in the FGS Calendar - <http://gradstudies.yorku.ca/current-students/regulations/program-requirements/>.

Please note: Senate requires that FULL Calendar copy be provided. Please include the entire graduate program/diploma section, not just text that is being revised.

Please clearly and visibly indicate how graduate program/graduate diploma information has been changed using strikethrough (left column), bold, underlining, colours, etc. (right column).

Existing Program/Graduate Diploma Information (change from)	Proposed Program/Graduate Diploma Information (change to)
Graduates from a recognized university with a master's degree or equivalent in biological sciences, with at least a B+ average, or with a medical degree, may be admitted as candidates (PhD I) in a program of study and research leading to the PhD degree. Each candidate selects a faculty supervisor on the basis of their mutual research interests and a supervisory committee (usually consisting of the supervisor and two other faculty members with similar research interests) is appointed by the graduate program to supervise and monitor the student's progress.	Graduates from a recognized university with a master's degree or equivalent in biological sciences, with at least a B average, or with a medical degree, may be admitted as candidates (PhD I) in a program of study and research leading to the PhD degree. Each candidate selects a faculty supervisor on the basis of their mutual research interests and a supervisory committee (usually consisting of the supervisor and two other faculty members with similar research interests) is appointed by the graduate program to supervise and monitor the student's progress.
Graduates with an honours bachelor's degree, or equivalent, in one of the biological sciences, who have at least a B+ standing at the undergraduate level may be considered for admission to the PhD program. Normally, however, such graduates must first register as candidates for the MSc degree. MSc students may request advancement in status to candidates (PhD 1) for the PhD degree, without completing the requirements for the MSc degree. Their progress during the first year must be deemed excellent by their supervisory committee and the Graduate Program Director. Candidates wishing to make this change must pass the PhD preliminary examination (see below) within 20 months of registering for the MSc degree.	Graduates with an honours bachelor's degree, or equivalent, in one of the biological sciences, who have at least a B standing at the undergraduate level may be considered for admission to the PhD program. Normally, however, such graduates must first register as candidates for the MSc degree. MSc students may request advancement in status to candidates (PhD 1) for the PhD degree, without completing the requirements for the MSc degree. Their progress during the first year must be deemed excellent by their supervisory committee and the Graduate Program Director. Candidates wishing to make this change must pass the PhD preliminary examination (see below) within 20 months of registering for the MSc degree.

Please submit completed forms and required supporting documentation through the Science Curriculum Toolkit website.

Curriculum Committee Report

March 2021

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 March 30, 2021, 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 tinar@yorku.ca

1.2 BIOL

1.2.1 Change in prerequisite: SC/BIOL 4310 3.0 "Physiology of Circadian Timing"

2.2 GEOG

2.2.1 Change in cross listing and title change: EU/SC GEOG 2340 3.0, EU/SC/GEOG 3340 3.0, EU/SC GEOG 4340 3.0, EU/SC GEOG 3440 3.0, EU/SC GEOG 4440 3.0

2.3 Grading Scheme: Appendix E – For information only – submitted by Associate Dean Prof. Mike Scheid

Changes to Existing Course

Faculty: SC

Department:

Biology

Date of Submission:

Jan 25, 2021

Course Number:

4310 3.0

Effective Session:

Winter 2022

Course Title:

Physiology of Circadian Timing

Type of Change:

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

Change From:

Examines the mechanism by which cells generate 24h (circadian) rhythms, how the numerous sites of these cells are coordinated by nerves and hormones and the critical roles of human circadian clocks in health and diseases. Prerequisites: SC/BIOL 2020 4.00 or SC/BIOL 2020 3.00; SC/BIOL 2021 4.00 or SC/BIOL 2021 3.00; SC/BIOL 3060 4.00.

To:

Examines the mechanism by which cells generate 24h (circadian) rhythms, how the numerous sites of these cells are coordinated by nerves and hormones and the critical roles of human circadian clocks in health and diseases. Prerequisites: ~~SC/BIOL 2020 4.00 or SC/BIOL 2020 3.00; SC/BIOL 2021 4.00 or SC/BIOL 2021 3.00; SC/BIOL 3060 4.00.~~ One of the following:

- (1) SC/BIOL 2020 3.00, SC/BIOL 2021 3.00, and SC/BIOL 3060 4.00 OR
- (2) SC/BIOL 2020 3.00, SC/BIOL 2021 3.00, HH/KINE 2011 3.00 and HH/KINE 3012 3.00 OR
- (3) HH/SC NRSC 2000 3.00 and HH/SC NRSC 3000 3.00.

Rationale: Current pre-reqs are SC/BIOL 2020 3.00 (Biochemistry), SC/BIOL 2021 3.00 (Cell Biology), and SC/BIOL 3060 4.00 (Animal Physiology). SC/BIOL 2020 4.00 and SC/BIOL 2021 4.00 are no longer offered and are being removed.

A proposal has already been submitted to add the option of HH/SC NRSC 2000 3.00 (Fundamental Molecular and Cellular Neuroscience) and HH/SC NRSC 3000 3.00 (Molecular and Cellular Neurobiology) instead of the existing 3 pre-reqs, to allow Neuroscience students to take this course if they do not have room in their program for Biochem, Cell Biology and Animal Physiology.

This new proposal would add another option to replace SC/BIOL 3060 4.00 with HH/KINE 2011 3.00 (Human Physiology I) and HH/KINE 3012 3.00 (Human Physiology II). These two courses cover topics similar to Animal Physiology. The current course director for BIOL4310 has been allowing students to enrol with these pre-reqs, so this proposal will regularize a pre-existing practice.

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.

Non-Major Modification Program Changes

1. Program: GIS & Remote Sensing Certificate in legacy Department of Geography
 2. Degree Designation: Undergraduate Certificate - EUC
 3. Type of Modification: (Example: changes to degree / admission requirements) **Reduction of certificate core requirement by 6.0 credits; title change; retire BES GIS & Remote Sensing Certificate and minor modification of Geography's GIS & Remote Sensing Certificate.**
 4. Effective Date: **Sept 2021**
-

5. State what the changes are (Example: increase / decrease to the number of major credits)

We are revising the AP/Geography's GIS and Remote Sensing Certificate and retiring the ES/BES GIS and Remote Sensing Certificate. Through this, there will be a reduction of core requirement by 9.0 credits: The requirement of GEOG 1000 6.0 or 1400 6.0 and GEOG 2420 3.0 are changed to prerequisites; and replaced with a list of elective courses relevant to the certificate. We are also proposing a title change for certificate, as well as title changes for the core courses.

6. Provide the rationale for the proposed changes that is rooted in the program learning outcomes. **With the establishment of the new EUC faculty, the legacy certificates in AP/Geography and ES/BES need to be combined into one certificate. We are retiring the BES GIS/RS certificate and modifying the GEOG GIS/RS certificate. Two main actions are to clean up course offerings (i.e., get rid of cross listings) that are no longer necessary and change the certificate title. The new title is a better reflection of the modified program.**
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. **See Appendix A for the learning outcomes and mapping.**
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.

We emailed three units on the use of LE/EECS 1530 3.00 Computer Use: Programming; ITEC 1010 3.0 Information and Organizations; ESSE 4220 3.00: Remote Sensing of the Earth's Surface and ESSE 4230 3.00: Remote Sensing of the Atmosphere as electives (see Appendix B).

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.

No new additional resources are required. The certificate will be supported by existing staff, Faculty members and resources. By reducing the core requirements by 9.0 credits means that there is more flexibility in student choices and less demand to offer all the core courses for the certificate.

10. Provide a summary of how students currently enrolled in the program will be accommodated.

The Geomatics certificate is the most popular certificate from our legacy programs. Currently, we have 36 students enrolled. Given that the changes to the certificate are minor, students who are currently enrolled in either certificate programs will not be impacted because the courses will continue to be offered. Should there be a need, at the course level, students will be accommodated through our existing grand-parented rules effective Fall 2021-Summer 2026. It is assumed that, if necessary, discretion will be used in order to accommodate any students inadvertently disadvantaged by rules implemented by the new Faculty.

11. 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. **See Appendix C.**

Appendix A. Geomatics Program Learning Outcomes

I = key ideas, concepts or skills related to LO are introduced

R = reinforced Students are developing and becoming increasingly proficient in demonstrating the learning outcomes; The LO is reinforced with feedback.

M = students master the material by demonstrating the LO with high level of independence and a level of understanding and sophistication expected upon graduation.

	Certificate Learning outcomes:	Proficiency with Geographic Information Systems software	Knowledge of a range of spatial analysis techniques	Proficiency with quantitative methods	Ability to apply spatial analysis across environmental domains
Core Courses					
GEOG 2340 3.00 Introduction to Geomatics	integrate computer science, geosciences with certain branches of engineering and cartography; have an understanding of the historical developments of geoinformatics; have an understanding of various aspects of geographical analysis	I	I	I	
GEOG 3340 3.00 Fundamentals of Geographic Information Systems (GIS)	understand the fundamental theory of Geographic Information Science behind GIS and associated tools to generate awareness of what GIS can be used for planning and resource management; be proficient in the use of GIS and associated tools to conduct spatial analyses and to build effective maps that can convey complex environmental information to intended audience and stakeholders; ability to apply spatial analysis to address applied problems and/or research questions and to be able to adopt a systematic approach in data collection, analysis, manipulation and presentation of geographic data and information; ability to apply theory to practice and to develop necessary skills in using GIS and associated tools for advanced analysis and modelling techniques.	I	I		I

GEOG 3440 3.00 Remote Sensing for Earth Observation	Understand the process of examining, measuring, and studying our planet from a distance; understand the science of energy interactions at or near the surface of the earth; understand the theoretical utility and application of remote sensing techniques.	I	R	R	I
GEOG 4340 3.00 Spatial analysis and problem solving with Geographic Information Systems (GIS)	implement project planning and management in GIS; ability to develop and assess spatial databases; ability to explore data analysis of spatial and aspatial databases; understand a variety of spatial analytical and modelling techniques	M	M	M	M
GEOG 4440 3.00 Processing and Analysis of Earth Observation Data	working knowledge of sophisticated methods and techniques for collecting, processing, and analyzing remote sensing data; understand theories and practices of undertaking remote sensing projects; apply remote sensing in geographical analyses and environmental monitoring	M	M	M	M
Electives					
EECS 1530	develop understanding of computers; develop elementary programming skills; develop and strengthen general problem-solving skills and logical thinking through the writing and understanding of well-structured computer programs	I		I	
ITEC 1010 Information and organizations	The value and importance of information to organizations, how it is used, stored and processed; emphasizes the uses of information technologies of various kinds, the benefits of the technologies, and the associated costs and problems; use of desktop applications.			I	

EATS 4220 Remote Sensing of the Earth's Surface	[understand the physical principles of the remote sensing of the earth's surface; measure signatures of natural targets using laboratory instruments as well as from digital images] ^a		R		
EATS 4230 Remote Sensing of the Atmosphere	[understand atmospheric radiation; atmospheric spectroscopy; inversion theory; satellites; instrumentation; space platforms and future technology.] ^a	R	R		
ENVS 4523 Systems Thinking: How everything is connected to everything else, and what to do about it	articulate a range of systems thinking concepts and theories such as general systems theory and complex systems theory; apply systems concepts to observations of the world; express the relationship of systems epistemology to problem solving methods and frameworks (such as the ecosystem approach) in environmental studies; apply at least one systems-based method to an environmental problem; ability to do an agent-based modelling.	R		R	M
ENVS 3406 3.00 Conservation Planning	to provide a basic overview of landscape ecology; to provide specific knowledge of some relevant techniques (in the fields of statistics, modelling and GIS); to provide a chance to practice techniques in relevant conservation planning cases; to provide some skills in presenting visual information in academic presentations	R	R	R	R

^aLearning outcomes were not provided in the course syllabi, so we developed one basic one for each course.

Appendix B. Consultation with other units

Consultation	
Oct 2020. Emailed Suprakash Datta on the confirmation of the continued use of LE/EECS 1530 3.00 Computer Use: Programming in the GIS/RS certificate.	Computer Science, Suprakash Datta, confirmed Oct 9 2020
Jan 29 2021 Emailed UPD of Information Technology, Zijiang Yang zyang@yorku.ca on the use of ITEC 1010 3.0 Information and Organizations as an elective.	
Oct 9 2020, Oct 25, 2020 and Jan 14, 2021. Emailed Sunil B Bisnath <sbisnath@yorku.ca> ; Baoxin Hu baoxin@yorku.ca on the confirmation of the continued use of ESSE 4220 3.00: Remote Sensing of the Earth's Surface ESSE 4230 3.00: Remote Sensing of the Atmosphere On Jan 29 sent them the full proposal.	No reply as of Jan 29, 2021

Appendix C. Side by Side Calendar

GEOG GIS Certificate	EUC Geomatics Certificate
Geographic Information Systems and Remote Sensing York University students may earn a Certificate in Geographic Information Systems and Remote Sensing concurrent with fulfillment of the requirements of a Bachelor's Degree. The Certificate is designed for students to learn theory and techniques of GIS and RS and their applications in urban and natural environments with the aid of the state-of-the-art software packages. Possible job opportunities after obtaining the certificate include various industries such as banks, energy/hydro, environmental planning, mining, real estate, and federal, provincial or municipal governments (e.g., environment, health, natural resources, urban and regional planning). This certificate is open to students concurrently enrolled in any of York University's undergraduate programs and to students who already hold a BA or BSc degree in Geography or Environmental Science from York University. In order to be awarded the Certificate in Geographic Information Systems and Remote Sensing, students must achieve and maintain a cumulative grade point average of 6.00 (B) on the York University courses required for that Certificate, and achieve an overall cumulative grade point average of 5.00 (C+) in all courses. Note: students who have been exempted from the 1000-level requirement may substitute six	CERTIFICATE IN GEOMATICS: GEOGRAPHIC INFORMATION SYSTEMS (GIS) AND REMOTE SENSING (24 CREDITS) Geomatics encompass the art, science and technology involved in collecting, managing and communicating geographically-referenced information. The Certificate prepares students with hands-on technical training. Students develop skills in spatial analysis applications, topographical surveying, geospatial database development, cartographic communication, and project planning and management. The Certificate in Geomatics: Geographic Information Systems and Remote Sensing (GEOM) may be completed either as a direct entry or concurrently with a Bachelor's or Honours degree program at York University. Direct entry candidates who previously completed an undergraduate degree in a related field must have a minimum grade point average of 5.00/9.00 (C+). Individuals without an undergraduate degree but who have previous relevant work experience may also apply to the certificate. Students must register in the certificate program after completing 24 credits. Applications are available from the Office of Student and Academic Services (OSAS) in HNES 137. To qualify for the certificate, students must complete 24 credits, including: Prerequisites: GEOG 1000 6.0 The world today: an introduction to world geography or GEOG 1401 3.0 Weather and climate or GEOG 1402 3.0The dynamic earth (or equivalent) and GEOG 2420 3.00 Introductory Statistical Analysis in Geography. Students who have

additional credits which must be approved by the Department of Geography

:

~~P/GEOG 1000 6.00 Intro to World Geography~~
~~or AP/GEOG 1400 6.00 Physical Geography~~
~~(cross-listed to: SC/GEOG 1400 6.00) or~~
~~AP/GEOG 1410 6.00 Introduction to human~~
~~geography;~~

AP/GEOG 2340 3.00 (cross-listed to:
SC/GEOG 2340 3.00);

~~AP/GEOG 2420 3.00 Geoinformatics:~~
~~introduction (cross-listed to: SC/GEOG 2420~~
~~3.00);~~

AP/GEOG 3340 3.00 Geoinformatics GIS I
(cross-listed to: SC/GEOG 3340 3.00);

AP/GEOG 3440 3.00 Geoinformatics:
Remote Sensing I
(cross-listed to: SC/GEOG 3440 3.00);

AP/GEOG 4340 3.00 GeoInformatics GIS II
(cross-listed to: SC/GEOG 4340 3.00);

AP/GEOG 4440 3.00 GEOG 4440:
Geoinformatics: Remote Sensing II (cross-
listed to: SC/GEOG 4440 3.00);

**previously attained/earned post-secondary
credentials in the introductory Statistical
Analysis in Geography are exempted from
this prerequisite.**

Core Courses (15 credits) *title changes

EU/GEOG 2340 3.00 Introduction to Geomatics*

EU/GEOG 3340 3.00 **Fundamentals of Geographic
Information Systems (GIS)**

EU/GEOG 3440 3.00 **Remote Sensing for Earth
Observation**

EU/GEOG 4340 3.00 **Spatial analysis and problem
solving with Geographic Information Systems (GIS)**

EU/GEOG 4440 3.00 **Processing and Analysis of
Earth Observation Data**

**Elective Courses: (9 credits of which 6 credits
must be at the 3000 or 4000 level) and students
must undertake a geomatics oriented
assignment in each electives course verified by
the course director.**

GEOG 3380.00 Urban Social Analysis
ESSE 4220 3.00: Remote Sensing of the Earth's
Surface

	ESSE 4230 3.00: Remote Sensing of the Atmosphere ENVS 4523 3.0 Systems Thinking: How everything is connected to everything else, and what to do about it ENVS 3406 3.00 Conservation Planning LE/EECS 1530 3.00 Computer Use: Programming Additional courses may be considered as electives subject to the pre-approval of the Certificate coordinator. Graduating with a certificate: Students in the Geomatics Certificate must maintain a cumulative grade point average of 5.00 (C+) in their degree program and a minimum grade point average of 6.00 (B) in the 24 credits required for the certificate. Students must apply to \Graduate using the Certificate form, which is available on the York University current students website. Certificates will not be conferred until candidates have successfully completed an undergraduate degree program if they are simultaneously enrolled in a degree and a certificate program.
BES GIS Certificate – to be retired CORE (24.00 credits) ENVS 1000 6.00: Earth in Our Hands ENVS 2009 3.00: Quantitative Methods in Environmental Studies ENVS 3520 3.00: Applications of Geographic Information Systems in Environmental Studies ENVS 3521 3.00: Geoinformatics: Remote Sensing+ ENVS 4520 3.00: Geographical Information Systems Applications in Environmental Studies ENVS 4521 3.00: Geoinformatics: Remote	

Sensing II

AND

3.00 credits from the list of elective courses

Elective courses

ESSE 4220 3.00: Remote Sensing of the Earth's Surface

ESSE 4230 3.00: Remote Sensing of the Atmosphere

ENVS 3710 3.00: Landscape Ecology

ENVS 4522 3.00: Web GIS

GEOG 2340 3.00: Geoinformatics: Introduction (CCE: GEOG 2350 3.00)

GEOG 3140 3.00: Retailing, Shopping, Society and Space

GEOG 4240 3.00: The Planning of Urban Public Facilities

Other courses that may be considered as electives are LE/EECS 1530 3.00 and ES/ENVS 4523 3.00 Systems Thinking in Environmental Studies: Theory and Methodologies

MINIMUM REQUIREMENTS FOR MULTIPLE CERTIFICATES

Students may acquire more than one certificate during the course of their studies provided that at least 18.00 credits in each certificate program are unique to the specific certificate.

RESIDENCY REQUIREMENTS

York University's residency requirement for Undergraduate certificate programs is 18.00 credits for certificate programs requiring up to 36.00 credits, and 50% of

the required credits for certificates comprising more than 36.1 credits. Normally, for Undergraduate certificate programs requiring 18.00 credits or less, all credits are completed at York.	
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New Grading Schemes: Template for Program and/or Academic Regulation Changes

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1. Please select **ONE** of the two checkboxes below.

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☐ **B.** The changes described below **do not** meet the criteria outlined in A, i.e. they represent a change to GPA requirements that varies from the mathematical conversion and University standard or include elements such as major GPA, course grade or graduation requirements.

If you require clarity about which category is most appropriate, please contact the ASCP Secretary at kwhite1@yorku.ca.

2. Program: **Actuarial Science, Applied Mathematics, Mathematical Biology, Mathematics for Education, Mathematics, Statistics**

3. Degree Designation: **Specialized Honours BA, BSc; Honours BA, BSc; BA, BSc**

4. Type of Modification: Changes to program or academic regulations as a result of the transition to the new grading schemes (Additional detail may be added)

5. Effective Date: FW2023-2024

6. Describe the proposed changes to the program or academic regulations. (**Not required if A is checked**)

7. Provide the rationale for the proposed changes that is rooted in academic standards, fairness to students, and the program learning outcomes. (**Not required if A is checked**)

8. Summarize the consultation undertaken within the program and with relevant academic or non-academic units, such as the Dean or Principal's Office and the Office of the University Registrar. (**Not required if A is checked**)

9. 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.

Instructions:

- Reproduce only the sections in which GPA changes are being made for the program/certificate/diploma. Please ensure to capture all references to the GPA.
- Reproduce relevant content for all degree options within a program (Specialized Honours, Honours, 90-credit, Honours Minor, etc).
- Denote deletions/changes with ~~striketrough~~ in the LEFT column and additions/changes with **bold, blue, underlined** type in the RIGHT column.
- An example is provided below for reference.

Existing Program/Certificate/Diploma Regulations	New Program/Certificate/Diploma Regulations
Actuarial Science Specialized Honours BA & Honours BA To graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of 5.00 (C+) over all courses completed. Certificate Graduating with a certificate: except where otherwise stated, a minimum cumulative grade point average of 4.00 is required to satisfy certificate requirements. Students must also submit application to graduate from a certificate program. Applications should be obtained from and filed with the unit administering the certificate program. Transcript notation that the requirements for a certificate have been completed will be made once the Registrar's Office has received notice from the unit administering the program. Certificates will not be conferred until candidates have successfully completed an undergraduate degree program if they are simultaneously enrolled in a degree and a certificate program. The Faculty does not award certificates retroactively. Refer to the Academic Standards section for details of the undergraduate certificate minimum standards.	Actuarial Science Specialized Honours BA & Honours BA To graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of <u>2.0 (C)</u> over all courses completed. Certificate Graduating with a certificate: except where otherwise stated, a minimum cumulative grade point average of <u>2.00</u> is required to satisfy certificate requirements. Students must also submit application to graduate from a certificate program. Applications should be obtained from and filed with the unit administering the certificate program. Transcript notation that the requirements for a certificate have been completed will be made once the Registrar's Office has received notice from the unit administering the program. Certificates will not be conferred until candidates have successfully completed an undergraduate degree program if they are simultaneously enrolled in a degree and a certificate program. The Faculty does not award certificates retroactively. Refer to the Academic Standards section for details of the undergraduate certificate minimum standards.
Applied Mathematics (Financial Math Stream) Specialized Honours BA, BSc F. Standing requirement: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of 5.00 (C+) over all courses completed.	Applied Mathematics (Financial Math Stream) Specialized Honours BA, BSc F. Standing requirement: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of <u>2.00 (C)</u> over all courses completed.

Applied Mathematics

Honours BA

F. Standing requirement: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all courses completed.

Honours BSc

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all courses completed, subject to the following exception. In addition, a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all biology courses completed is required to graduate in an Honours Double Major program where biology is the other major.

BA

F. Standing requirement: to graduate in a Bachelor Program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of ~~4.00 (C)~~ over all courses completed.

BSc

F. Standing requirement: a minimum overall grade point average of ~~4.00 (C)~~ is required in order to be eligible to graduate with a BSc degree (bachelor program).

International Dual Degree in Math & Stats

Specialized Honours BSc

F. Standing requirements: to graduate in a Specialized Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of ~~5.0 (C+)~~ over all courses completed.

Mathematical Biology

Applied Mathematics

Honours BA

F. Standing requirement: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of 2.00 (C) over all courses completed.

Honours BSc

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of 2.00 (C) over all courses completed, subject to the following exception. In addition, a minimum cumulative credit-weighted grade point average of 2.00 (C) over all biology courses completed is required to graduate in an Honours Double Major program where biology is the other major.

BA

F. Standing requirement: to graduate in a Bachelor Program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of 1.70 (C-) over all courses completed.

BSc

F. Standing requirement: a minimum overall grade point average of 1.70 (C-) is required in order to be eligible to graduate with a BSc degree (bachelor program).

International Dual Degree in Math & Stats

Specialized Honours BSc

F. Standing requirements: to graduate in a Specialized Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of 2.00 (C) over all courses completed.

Mathematical Biology

Specialized Honours BSc & Honours BSc

F. Standing requirements: To proceed in the Specialized Honours program requires in addition to the overall cumulative GPA as established by Senate, a major GPA (defined to include all required Chemistry, Biology, and Mathematics courses) of at least ~~6.00 (B)~~. To graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses, a major GPA (as defined above) of at least ~~6.00 (B)~~ and a minimum cumulative credit weighted grade point average of ~~5.00 (C+)~~ over all courses completed.

Mathematics for Education

Specialized Honours BA, BSc & Honours BA

F. Standing requirement: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all courses completed.

Honours BSc

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all courses completed, subject to the following exception. In addition, a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all biology courses completed is required to graduate in an Honours Double Major program where biology is the other major.

Mathematics

Specialized Honours BA, BSc & Honours BA

F. Standing requirement: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all courses completed.

Honours BSc

Specialized Honours BSc & Honours BSc

F. Standing requirements: To proceed in the Specialized Honours program requires in addition to the overall cumulative GPA as established by Senate, a major GPA (defined to include all required Chemistry, Biology, and Mathematics courses) of at least 2.70 (B-). To graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses, a major GPA (as defined above) of at least 2.70 (B-) and a minimum cumulative credit weighted grade point average of 2.00 (C) over all courses completed.

Mathematics for Education

Specialized Honours BA, BSc & Honours BA

F. Standing requirement: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of 2.00 (C) over all courses completed.

Honours BSc

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of 2.00 (C) over all courses completed, subject to the following exception. In addition, a minimum cumulative credit-weighted grade point average of 2.00 (C) over all biology courses completed is required to graduate in an Honours Double Major program where biology is the other major.

Mathematics

Specialized Honours BA, BSc & Honours BA

F. Standing requirement: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of 2.00 (C) over all courses completed.

Honours BSc

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all courses completed, subject to the following exception. In addition, a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all biology courses completed is required to graduate in an Honours Double Major program where biology is the other major.

Statistics

Specialized Honours BA, BSc & Honours BA

F. Standing requirement: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all courses completed.

Honours BSc

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all courses completed, subject to the following exception. In addition, a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all biology courses completed is required to graduate in an Honours Double Major program where biology is the other major.

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of 2.00 (C) over all courses completed, subject to the following exception. In addition, a minimum cumulative credit-weighted grade point average of 2.00 (C) over all biology courses completed is required to graduate in an Honours Double Major program where biology is the other major.

Statistics

Specialized Honours BA, BSc & Honours BA

F. Standing requirement: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of 2.00 (C) over all courses completed.

Honours BSc

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of 2.00 (C) over all courses completed, subject to the following exception. In addition, a minimum cumulative credit-weighted grade point average of 2.00 (C) over all biology courses completed is required to graduate in an Honours Double Major program where biology is the other major.

New Grading Schemes: Template for Program and/or Academic Regulation Changes

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2. Program: **Biophysics**

3. Degree Designation: **Specialized Honours BSc**

4. Type of Modification: Changes to program or academic regulations as a result of the transition to the new grading schemes (Additional detail may be added)

5. Effective Date: FW2023-2024

6. Describe the proposed changes to the program or academic regulations. (**Not required if A is checked**)

7. Provide the rationale for the proposed changes that is rooted in academic standards, fairness to students, and the program learning outcomes. (**Not required if A is checked**)

8. Summarize the consultation undertaken within the program and with relevant academic or non-academic units, such as the Dean or Principal's Office and the Office of the University Registrar. (**Not required if A is checked**)

9. 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.

Instructions:

- Reproduce only the sections in which GPA changes are being made for the program/certificate/diploma. Please ensure to capture all references to the GPA.
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Existing Program/Certificate/Diploma Regulations	New Program/Certificate/Diploma Regulations
Biophysics Specialized Honours Program F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of 5.00 (C+) over all courses completed.	Biophysics Specialized Honours Program F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of <u>2.00 (C)</u> over all courses completed.

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2. Program: **Environmental Science**

3. Degree Designation: **Honours BSc; BSc**

4. Type of Modification: Changes to program or academic regulations as a result of the transition to the new grading schemes (Additional detail may be added).

5. Effective Date: FW2023-2024

6. Describe the proposed changes to the program or academic regulations. (**Not required if A is checked**)

7. Provide the rationale for the proposed changes that is rooted in academic standards, fairness to students, and the program learning outcomes. (**Not required if A is checked**)

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- An example is provided below for reference.

Existing Program/Certificate/Diploma Regulations	New Program/Certificate/Diploma Regulations
Honours – Environmental Dynamics Stream Note: at least 12 credits from the major courses (BIOL or ENVS or GEOG) must be at the 4000 level. C. Science breadth: satisfied by above requirements. D. Upper level requirement: a minimum of 42 credits at the 3000 or higher level. E. Additional elective credits, as required for an overall total of at least 120 credits. F. Standing requirement: to graduate in an Honours program requires successful completion of all Faculty requirements and program required courses and a minimum cumulative credit-weighted grade point average of 5.00 (C+) over all courses completed. G. Not all non-core courses are offered every year.	Honours – Environmental Dynamics Stream Note: at least 12 credits from the major courses (BIOL or ENVS or GEOG) must be at the 4000 level. C. Science breadth: satisfied by above requirements. D. Upper level requirement: a minimum of 42 credits at the 3000 or higher level. E. Additional elective credits, as required for an overall total of at least 120 credits. F. Standing requirement: to graduate in an Honours program requires successful completion of all Faculty requirements and program required courses and a minimum cumulative credit-weighted grade point average of <u>2.00 (C)</u> over all courses completed. G. Not all non-core courses are offered every year.
Honours – Biodiversity and Conservation Stream Note: at least 12 credits from the major courses (BIOL or ENVS or GEOG) must be at the 4000 level. C. Science breadth: satisfied by above requirements. D. Upper level requirement: a minimum of 42 credits at the 3000 or higher level. E. Additional elective credits, as required for an overall total of at least 120 credits. F. Standing requirement: to graduate in an Honours program requires successful completion of all Faculty requirements and program required courses and a minimum cumulative credit-weighted grade point	Honours – Biodiversity and Conservation Stream Note: at least 12 credits from the major courses (BIOL or ENVS or GEOG) must be at the 4000 level. C. Science breadth: satisfied by above requirements. D. Upper level requirement: a minimum of 42 credits at the 3000 or higher level. E. Additional elective credits, as required for an overall total of at least 120 credits. F. Standing requirement: to graduate in an Honours program requires successful completion of all Faculty requirements and program required courses and a minimum cumulative credit-weighted grade point

average of ~~5.00 (C+)~~ over all courses completed.
G. Not all non-core courses are offered every year.

Bachelor Program

Bachelor – Environmental Dynamics Stream

C. Science breadth: satisfied by above requirements.
D. Upper level requirement: a minimum of 18 credits at the 3000 level or above.
E. Additional elective credits, as required for an overall total of at least 90 credits.
F. Standing requirements: a minimum overall grade point average of ~~4.00 (C)~~ is required in order to be eligible to graduate with a BSc degree (bachelor program).
G. Not all non-core courses are offered every year.

Bachelor – Biodiversity and Conservation Stream

C. Science breadth: satisfied by above requirements.
D. Upper level requirement: a minimum of 18 credits at the 3000 level or above.
E. Additional elective credits, as required for an overall total of at least 90 credits.
F. Standing requirements: a minimum overall grade point average of ~~4.00 (C)~~ is required in order to be eligible to graduate with a BSc degree (bachelor program).
G. Not all non-core courses are offered every year.

average of 2.00 (C) over all courses completed.
G. Not all non-core courses are offered every year.

Bachelor Program

Bachelor – Environmental Dynamics Stream

C. Science breadth: satisfied by above requirements.
D. Upper level requirement: a minimum of 18 credits at the 3000 level or above.
E. Additional elective credits, as required for an overall total of at least 90 credits.
F. Standing requirements: a minimum overall grade point average of 1.70 (C-) is required in order to be eligible to graduate with a BSc degree (bachelor program).
G. Not all non-core courses are offered every year.

Bachelor – Biodiversity and Conservation Stream

C. Science breadth: satisfied by above requirements.
D. Upper level requirement: a minimum of 18 credits at the 3000 level or above.
E. Additional elective credits, as required for an overall total of at least 90 credits.
F. Standing requirements: a minimum overall grade point average of 1.70 (C-) is required in order to be eligible to graduate with a BSc degree (bachelor program).
G. Not all non-core courses are offered every year.

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2. Program: **Science**

3. Degree Designation: **Honours BSc; BSc**

4. Type of Modification: Changes to program or academic regulations as a result of the transition to the new grading schemes (Additional detail may be added).

5. Effective Date: FW2023-2024

6. Describe the proposed changes to the program or academic regulations. (**Not required if A is checked**)

7. Provide the rationale for the proposed changes that is rooted in academic standards, fairness to students, and the program learning outcomes. (**Not required if A is checked**)

8. Summarize the consultation undertaken within the program and with relevant academic or non-academic units, such as the Dean or Principal's Office and the Office of the University Registrar. (**Not required if A is checked**)

9. 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.

Instructions:

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- Denote deletions/changes with ~~striketrough~~ in the LEFT column and additions/changes with **bold, blue, underlined** type in the RIGHT column.
- An example is provided below for reference.

Existing Program/Certificate/Diploma Regulations	New Program/Certificate/Diploma Regulations
Science Honours BSc BSc F. Standing requirements: a minimum overall grade point average of 4.00 (C) is required to be eligible to graduate with a bachelor degree, and a minimum overall grade point average of 5.00 (C+) for the Honours BSc degree.	Science Honours BSc BSc F. Standing requirements: a minimum overall grade point average of <u>1.70 (C-)</u> is required to be eligible to graduate with a bachelor degree, and a minimum overall grade point average of <u>2.00 (C)</u> for the Honours BSc degree.

New Grading Schemes: Template for Program and/or Academic Regulation Changes

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If you require clarity about which category is most appropriate, please contact the ASCP Secretary at kwhite1@yorku.ca.

2. Program: Chemistry

3. Degree Designation:

Bachelor of Science

Honours Major Bachelor of Science

Specialized Honours Bachelor of Science

Specialized Honours Bachelor of Science – Pharmaceutical and Biological Chemistry Stream

4. Type of Modification: Changes to program or academic regulations as a result of the transition to the new grading schemes

5. Effective Date: FW2023-2024

6. Describe the proposed changes to the program or academic regulations. (**Not required if A is checked**)

7. Provide the rationale for the proposed changes that is rooted in academic standards, fairness to students, and the program learning outcomes. (**Not required if A is checked**)

8. Summarize the consultation undertaken within the program and with relevant academic or non-academic units, such as the Dean or Principal's Office and the Office of the University Registrar. (**Not required if A is checked**)

9. 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.

See next page.

Current requirements

Chemistry

Bachelor Program

[...]

F. Standing requirements: a minimum overall grade point average of ~~4.00 (C)~~ is required in order to be eligible to graduate with a BSc degree (bachelor program).

Specialized Honours Program

[...]

F. Standing requirements: to graduate in a Specialized Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of ~~5.50 (B)~~ over all courses completed.

Specialized Honours Program Stream in Pharmaceutical and Biological Chemistry

[...]

F. Standing requirements: To graduate in a Specialized Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of ~~5.50 (B)~~ over all courses completed.

Honours Major Program

[...]

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all courses completed.

Proposed requirements

Chemistry

Bachelor Program

[...]

F. Standing requirements: a minimum overall grade point average of 1.70 (C-) is required in order to be eligible to graduate with a BSc degree (bachelor program).

Specialized Honours Program

[...]

F. Standing requirements: to graduate in a Specialized Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of 2.70 (B-) over all courses completed.

Specialized Honours Program Stream in Pharmaceutical and Biological Chemistry

[...]

F. Standing requirements: To graduate in a Specialized Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of 2.70 (B-) over all courses completed.

Honours Major Program

[...]

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of 2.00 (C) over all courses completed.

New Grading Schemes: Template for Program and/or Academic Regulation Changes

This template should be used for changes to program and/or academic regulations (e.g. changes to admission, degree and program requirements) resulting from the transition to the new grading schemes effective FW2023-2024.

Please complete this form and return to Wendy Anderson (wanders@yorku.ca) by Monday, March 8.

1. Please select **ONE** of the two checkboxes below.

☒ **A.** The changes described below:

- 1) consist of a mathematical conversion of GPA requirements from the current to the new grading schemes in accordance with the conversion scales **OR**
- 2) align with the minimum undergraduate thresholds outlined in *the Policy on York University Grading Schemes*

☐ **B.** The changes described below **do not** meet the criteria outlined in A, i.e. they represent a change to GPA requirements that varies from the mathematical conversion and University standard or include elements such as major GPA, course grade or graduation requirements.

If you require clarity about which category is most appropriate, please contact the ASCP Secretary at kwhite1@yorku.ca.

2. Program: **Neuroscience**

3. Degree Designation: (List all degree options within the program): **Specialized Honours BSc**

4. Type of Modification: Changes to program or academic regulations as a result of the transition to the new grading schemes (Additional detail may be added). **Conversion of GPA (mathematical).**

5. Effective Date: FW2023-2024

6. Describe the proposed changes to the program or academic regulations. (**Not required if A is checked**). **Prior to the implementation date of the 9.00 to 4.00 GPA changes, we will be submitting a non-major modification proposal (to be implemented Sept 2022) to change the calendar language for the qualifying period and continuation requirements. The non-major modification will be as follows:**

Change from:

Qualifying Period: once admitted students will enter a qualifying period. Depending on their pathway (Biology, Kinesiology & Health Science, or Psychology) students must ~~complete their first-year curriculum with~~ an overall grade point average (GPA) of at least 7.50 on at least 27 earned credits ~~at the end of first year~~. Successful completion of the qualifying period requirements will allow students to continue in the BSc Specialized Honour neuroscience program. Students proceeding in the program after the qualifying period are required to maintain the continuation GPA requirement.

Change to:

Qualifying Period: once admitted students will enter a qualifying period. Depending on their pathway (Biology, Kinesiology & Health Science, or Psychology) students must **achieve** an overall grade point average (GPA) of at least **7.00 (B+)** on at least **24** earned credits. Successful completion of the qualifying period requirements will allow students to continue in the BSc Specialized Honour neuroscience program. Students proceeding in the program after the qualifying period are required to maintain the continuation GPA requirement

For continuation requirement Change from:

Continuation requirement: students ~~must attain a cumulative grade point average of 6.00 (B) on 30 credits~~ to continue in the program.

Change to:

Continuation requirement: students **proceeding in the program after the qualifying period are required to maintain an overall GPA** of 6.00 (B) to continue in the program.

The existing calendar language are now as described in the ‘Change to’ sections above. The proposed changes for the GPA for this document represented in the calendar copy below is now a direct mathematical calculation.

7. Provide the rationale for the proposed changes that is rooted in academic standards, fairness to students, and the program learning outcomes. (**Not required if A is checked**).
8. Summarize the consultation undertaken within the program and with relevant academic or non-academic units, such as the Dean or Principal’s Office and the Office of the University Registrar. (**Not required if A is checked**).
9. 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.

Instructions:

- Reproduce only the sections in which GPA changes are being made for the program/certificate/diploma. Please ensure to capture all references to the GPA.
- Reproduce relevant content for all degree options within a program (Specialized Honours, Honours, 90-credit, Honours Minor, etc).
- Denote deletions/changes with ~~striketrough~~ in the LEFT column and additions/changes with **bold, blue, underlined** type in the RIGHT column.
- An example is provided below for reference.

Existing Program/Certificate/Diploma Regulations	New Program/Certificate/Diploma Regulations
Neuroscience Specialized Honours BSc Qualifying Period: once admitted students will enter a qualifying period. Depending on	Neuroscience Specialized Honours BSc Qualifying Period: once admitted students will enter a qualifying period. Depending on

their pathway (Biology, Kinesiology & Health Science, or Psychology) students must achieve an overall grade point average (GPA) of at least ~~7.00~~ (B+) on at least 24 earned credits. Successful completion of the qualifying period requirements will allow students to continue in the BSc Specialized Honour neuroscience program. Students proceeding in the program after the qualifying period are required to maintain the continuation GPA requirement.

Continuation requirement: students proceeding in the program after the qualifying period are required to maintain an overall GPA of ~~6.00~~ (B) to continue in the program.

Graduation requirement: all graduates must complete a total of at least 120 credits with a minimum overall cumulative grade point average of ~~6.00~~ (B).

their pathway (Biology, Kinesiology & Health Science, or Psychology) students must achieve an overall grade point average (GPA) of at least 3.30 (B+) on at least 24 earned credits. Successful completion of the qualifying period requirements will allow students to continue in the BSc Specialized Honour neuroscience program. Students proceeding in the program after the qualifying period are required to maintain the continuation GPA requirement

Continuation requirement: students proceeding in the program after the qualifying period are required to maintain an overall GPA of 3.00 (B) to continue in the program.

Graduation requirement: all graduates must complete a total of at least 120 credits with a minimum overall cumulative grade point average of 3.00 (B).

New Grading Schemes: Template for Program and/or Academic Regulation Changes

This template should be used for changes to program and/or academic regulations (e.g. changes to admission, degree and program requirements) resulting from the transition to the new grading schemes effective FW2023-2024.

Once this template has been completed and reviewed by the appropriate Faculty-level governance body/bodies, it should be submitted to ASCP via a [MachForm](#) (at the hyperlink) by no later than April 7, 2021.

1. Please select **ONE** of the two checkboxes below.

☐ **A.** The changes described below:

- 1) consist of a mathematical conversion of GPA requirements from the current to the new grading schemes in accordance with the conversion scales **OR**
- 2) align with the minimum undergraduate thresholds outlined in *the Policy on York University Grading Schemes*

☐ **B.** The changes described below **do not** meet the criteria outlined in A, i.e. they represent a change to GPA requirements that varies from the mathematical conversion and University standard or include elements such as major GPA, course grade or graduation requirements.

If you require clarity about which category is most appropriate, please contact the ASCP Secretary at kwhite1@yorku.ca.

2. Program: **Physics and Astronomy**

3. Degree Designation: **Specialized Honours BSc; Honours BSc; BSc**

4. Type of Modification: Changes to program or academic regulations as a result of the transition to the new grading schemes (Additional detail may be added)

5. Effective Date: FW2023-2024

6. Describe the proposed changes to the program or academic regulations. (**Not required if A is checked**)

7. Provide the rationale for the proposed changes that is rooted in academic standards, fairness to students, and the program learning outcomes. (**Not required if A is checked**)

8. Summarize the consultation undertaken within the program and with relevant academic or non-academic units, such as the Dean or Principal's Office and the Office of the University Registrar. (**Not required if A is checked**)

9. 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.

Instructions:

- Reproduce only the sections in which GPA changes are being made for the program/certificate/diploma. Please ensure to capture all references to the GPA.
- Reproduce relevant content for all degree options within a program (Specialized Honours, Honours, 90-credit, Honours Minor, etc).
- Denote deletions/changes with ~~striketrough~~ in the LEFT column and additions/changes with **bold, blue, underlined** type in the RIGHT column.
- An example is provided below for reference.

Existing Program/Certificate/Diploma Regulations	New Program/Certificate/Diploma Regulations
Physics and Astronomy Bachelor Program F. Standing requirement: a minimum overall grade point average of 4.00 (C) is required in order to be eligible to graduate with a BSc degree (bachelor program). Specialized Honours Program F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of 5.00 (C+) over all courses completed. Honours Major, Honours Double Major and Honours Major/Minor Programs F. Standing requirement: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of 5.00 (C+) over all courses completed, subject to the exception in the following note. In addition, a minimum cumulative credit-weighted grade point average of 5.00 (C+) over all biology courses completed is required to graduate in an Honours Double Major program where biology is the other major.	Physics and Astronomy Bachelor Program F. Standing requirement: a minimum overall grade point average of <u>1.70 (C-)</u> is required in order to be eligible to graduate with a BSc degree (bachelor program). Specialized Honours Program F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of <u>2.00 (C)</u> over all courses completed. Honours Major, Honours Double Major and Honours Major/Minor Programs F. Standing requirement: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of <u>2.00 (C)</u> over all courses completed, subject to the exception in the following note. In addition, a minimum cumulative credit-weighted grade point average of <u>2.00 (C)</u> over all biology courses completed is required to graduate in an Honours Double Major program where biology is the other major.

New Grading Schemes: Template for Program and/or Academic Regulation Changes

This template should be used for changes to program and/or academic regulations (e.g. changes to admission, degree and program requirements) resulting from the transition to the new grading schemes effective FW2023-2024.

Once this template has been completed and reviewed by the appropriate Faculty-level governance body/bodies, it should be submitted to ASCP via a [MachForm](#) (at the hyperlink) by no later than April 7, 2021.

1. Please select **ONE** of the two checkboxes below.

☐ **A.** The changes described below:

- 1) consist of a mathematical conversion of GPA requirements from the current to the new grading schemes in accordance with the conversion scales **OR**
- 2) align with the minimum undergraduate thresholds outlined in *the Policy on York University Grading Schemes*

☐ **B.** The changes described below **do not** meet the criteria outlined in A, i.e. they represent a change to GPA requirements that varies from the mathematical conversion and University standard or include elements such as major GPA, course grade or graduation requirements.

If you require clarity about which category is most appropriate, please contact the ASCP Secretary at kwhite1@yorku.ca.

2. Program: **Space Science**

3. Degree Designation: **Specialized Honours BSc**

4. Type of Modification: Changes to program or academic regulations as a result of the transition to the new grading schemes (Additional detail may be added)

5. Effective Date: FW2023-2024

6. Describe the proposed changes to the program or academic regulations. (**Not required if A is checked**)

7. Provide the rationale for the proposed changes that is rooted in academic standards, fairness to students, and the program learning outcomes. (**Not required if A is checked**)

8. Summarize the consultation undertaken within the program and with relevant academic or non-academic units, such as the Dean or Principal's Office and the Office of the University Registrar. (**Not required if A is checked**)

9. 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.

Instructions:

- Reproduce only the sections in which GPA changes are being made for the program/certificate/diploma. Please ensure to capture all references to the GPA.
- Reproduce relevant content for all degree options within a program (Specialized Honours, Honours, 90-credit, Honours Minor, etc).
- Denote deletions/changes with ~~striketrough~~ in the LEFT column and additions/changes with **bold, blue, underlined** type in the RIGHT column.
- An example is provided below for reference.

Existing Program/Certificate/Diploma Regulations	New Program/Certificate/Diploma Regulations
Space Science Specialized Honours Program F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of 5.00 (C+) over all courses completed.	Space Science Specialized Honours Program F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses and a minimum cumulative credit-weighted grade point average of <u>2.00 (C)</u> over all courses completed.

New Grading Schemes: Template for Program and/or Academic Regulation Changes

This template should be used for changes to program and/or academic regulations (e.g. changes to admission, degree and program requirements) resulting from the transition to the new grading schemes effective FW2023-2024.

Once this template has been completed and reviewed by the appropriate Faculty-level governance body/bodies, it should be submitted to ASCP via a [MachForm](#) (at the hyperlink) by no later than April 7, 2021.

1. Please select **ONE** of the two checkboxes below.

☐ **A.** The changes described below:

- 1) consist of a mathematical conversion of GPA requirements from the current to the new grading schemes in accordance with the conversion scales **OR**
- 2) align with the minimum undergraduate thresholds outlined in *the Policy on York University Grading Schemes*

☒ **B.** The changes described below **do not** meet the criteria outlined in A, i.e. they represent a change to GPA requirements that varies from the mathematical conversion and University standard or include elements such as major GPA, course grade or graduation requirements.

If you require clarity about which category is most appropriate, please contact the ASCP Secretary at kwhite1@yorku.ca.

2. Program: Biochemistry

3. Degree Designation: (List all degree options within the program)

Specialized Honours, Biochemistry

Honours Major, Biochemistry,

Honours Double Major, Biochemistry major

Honours Major/Minor, Biochemistry major

4. Type of Modification: Changes to program or academic regulations as a result of the transition to the new grading schemes (Additional detail may be added)

5. Effective Date: FW2023-2024

6. Describe the proposed changes to the program or academic regulations. (**Not required if A is checked**)

We are making changes to progression and graduation requirements to improve retention and progression.

7. Provide the rationale for the proposed changes that is rooted in academic standards, fairness to students, and the program learning outcomes. (**Not required if A is checked**)

Honours major changes – we have removed special requirements for declaration and progression to improve retention and student progression.

Specialized Honours – We have decreased progression requirements to support student retention and progression. We have used a mathematical calculation to maintain the same % average for graduation (see rationale below).

There is a difference between converting a single grade (like 70% or B-) to a grade point, on the one hand, and converting the average of a collection of grade points back to an average letter grade or average percent.

Simple example (current system):

The two grades C+ and B give a gpa of 5.5 if the courses have the same number of credits. What is the corresponding average letter grade or percentage? If you take C+ to mean the midpoint of its % range (67.5%) and B to mean the same (72.5%), then you get a 70% average.

More precisely, given that the actual % grades are unknown because they are not reported,:

C+ = 67.5% +/- 2.5%

B = 72.5% +/- 2.5%

Avg = 70% +/- 2.5%/sqrt(2) = 70% +/- 1.8%

In general, a collection of N letter grades averaging to a gpa of 5.5 represents an average percentage of 70% +/- 2.5%/sqrt(N) or a barebones B. We have therefore converted the GPA of 5.5 to a GPA of 2.7 (B-) in the new system.

Summarize the consultation undertaken within the program and with relevant academic or non-academic units, such as the Dean or Principal's Office and the Office of the University Registrar.

(**Not required if A is checked**)

Both Biology and Chemistry departments were consulted and have approved the changes. Science Academic Services and the Dean's office have been notified.

8. 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.

Instructions:

- Reproduce only the sections in which GPA changes are being made for the program/certificate/diploma. Please ensure to capture all references to the GPA.
- Reproduce relevant content for all degree options within a program (Specialized Honours, Honours, 90-credit, Honours Minor, etc).
- Denote deletions/changes with ~~striketrough~~ in the LEFT column and additions/changes with **bold, blue, underlined** type in the RIGHT column.
- An example is provided below for reference.

Existing Program/Certificate/Diploma Regulations	New Program/Certificate/Diploma Regulations
Biochemistry, Honours Major	Biochemistry, Honours Major

F. Standing requirements: To declare Honours requires successful completion of at least 24 credits, a minimum cumulative credit-weighted grade point average of 5.00(C+) over all science courses completed, and a minimum cumulative credit-weighted grade point average of 4.25 over all courses completed.

To proceed in each year of the Honours program requires a minimum cumulative credit-weighted grade point average of 5.00 (C+) over all science courses completed, and a minimum cumulative credit-weighted overall grade point average as specified in the Academic Standards section of the Faculty of Science Regulations Governing Undergraduate Degree Requirements section.

To graduate in Honours biochemistry requires successful completion of all Faculty requirements and all required program courses, a minimum cumulative credit-weighted grade point average of 5.00 (C+) over all science (SC) courses completed, and a minimum cumulative credit-weighted grade point average of 5.00 (C+) over all courses completed.

Biochemistry, Specialized Honours

F. Standing requirements: To declare Honours requires successful completion of at least 24 credits, a minimum cumulative credit-weighted grade point average of 5.50(B) over all science courses completed, and a minimum cumulative credit-weighted grade point average of 4.25 over all courses completed.

To proceed in each year of the Honours program requires a minimum cumulative credit-weighted grade point average of 5.50(B) over all science courses completed, and a minimum cumulative credit-weighted overall grade point average as specified in the Academic Standards section of the Faculty of Science Regulations Governing Undergraduate Degree Requirements section.

To graduate in Specialized Honours biochemistry requires successful completion of all Faculty requirements and all required program courses, a minimum cumulative credit-weighted grade point average of 5.50(B) over all science (SC) courses completed, and a minimum cumulative

F. Standing requirements: To graduate in Honours **Major** biochemistry requires successful completion of all Faculty requirements and all required program courses, a minimum cumulative credit-weighted grade point average of **2.0 (C)** over all science (SC) courses completed, and a minimum cumulative credit-weighted grade point average of **2.0 (C)** over all courses completed.

Biochemistry, Specialized Honours

F. Standing requirements: To declare **Specialized** Honours requires successful completion of at least 24 credits, a minimum cumulative credit-weighted grade point average of **2.3 (C+)** over all science (**SC**) courses completed.

To proceed in each year of the **Specialized** Honours program requires a minimum cumulative credit weighted grade point average of **2.3 (C+)** over all science (**SC**) courses completed, and a minimum cumulative credit-weighted overall grade point average as specified in the Academic Standards section of the Faculty of Science Regulations Governing Undergraduate Degree Requirements section.

To graduate in **Specialized** Honours biochemistry requires successful completion of all Faculty requirements and all required program courses, a minimum cumulative credit-weighted grade point average of **2.7 (B-)** over all science (SC) courses completed, and a minimum cumulative credit-weighted grade point average of **2.00 (C)** over all courses completed.

credit-weighted grade point average of 5.00 (C+) over all courses completed.

New Grading Schemes: Template for Program and/or Academic Regulation Changes

This template should be used for changes to program and/or academic regulations (e.g. changes to admission, degree and program requirements) resulting from the transition to the new grading schemes effective FW2023-2024.

Once this template has been completed and reviewed by the appropriate Faculty-level governance body/bodies, it should be submitted to ASCP via a [MachForm](#) (at the hyperlink) by no later than April 7, 2021.

1. Please select **ONE** of the two checkboxes below.

☐ **A.** The changes described below:

- 1) consist of a mathematical conversion of GPA requirements from the current to the new grading schemes in accordance with the conversion scales **OR**
- 2) align with the minimum undergraduate thresholds outlined in *the Policy on York University Grading Schemes*

☒ **B.** The changes described below **do not** meet the criteria outlined in A, i.e. they represent a change to GPA requirements that varies from the mathematical conversion and University standard or include elements such as major GPA, course grade or graduation requirements.

If you require clarity about which category is most appropriate, please contact the ASCP Secretary at kwhite1@yorku.ca.

2. Program: Biology, iBSc Biology, Environmental Biology

3. Degree Designation: (List all degree options within the program)

Bachelor Biology

Specialized Honours Biology

Specialized Honours Biology, Biotechnology Stream

Specialized Honours Biology, Biomedical Science Stream

Honours Major, Biology

Honours Major, Biology, Biomedical Science Stream

Honours Major/Minor, Biology Major

Honours Major/Minor, Biology Major, Biomedical Science Stream

Honours Minor, Biology

iBSc Biology Specialized Honours

iBSc Biology Honours Major

iBSc Biology Honours Major, Biomedical Science Stream

iBSc Biology Honours Major/Minor, Biology Major

iBSc Biology Honours Major/Minor, Biology Major, Biomedical Science Stream

Bachelor, Environmental Biology

Honours Major, Environmental Biology

Honours Major, Environmental Biology

Honours Major/Minor, Environmental Biology Major

Honours Minor, Environmental Biology

4. Type of Modification: Changes to program or academic regulations as a result of the transition to the new grading schemes

5. Effective Date: FW2023-2024
-

6. Describe the proposed changes to the program or academic regulations. (**Not required if A is checked**)

Proposed changes are in keeping with current requirements, which add a major GPA requirement for Honours programs. The GPA change maintains same minimum average GPA on the major.

7. Provide the rationale for the proposed changes that is rooted in academic standards, fairness to students, and the program learning outcomes. (**Not required if A is checked**)

As this is not a change in degree requirements no rationale is required (rationale was previously approved).

8. Summarize the consultation undertaken within the program and with relevant academic or non-academic units, such as the Dean or Principal's Office and the Office of the University Registrar. (**Not required if A is checked**)

Consulted Associate Dean, Students and was approved by department.

9. 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.

Instructions:

- Reproduce only the sections in which GPA changes are being made for the program/certificate/diploma. Please ensure to capture all references to the GPA.
- Reproduce relevant content for all degree options within a program (Specialized Honours, Honours, 90-credit, Honours Minor, etc).
- Denote deletions/changes with ~~strikethrough~~ in the LEFT column and additions/changes

with **bold, blue, underlined** type in the RIGHT column.

- An example is provided below for reference.

Existing Program/Certificate/Diploma Regulations	New Program/Certificate/Diploma Regulations
The program core (24 credits) is defined as: • <u>SC/BIOL 1000 3.00</u> and <u>SC/BIOL 1001 3.00</u>; • <u>SC/BIOL 2070 3.00</u> or any three of <u>SC/BIOL 2010 4.00</u>, <u>SC/BIOL 2030 4.00</u>, <u>SC/BIOL 2050 4.00</u>. Both <u>SC/CHEM 2020 3.00</u> and <u>SC/CHEM 2021 3.00</u> may replace one of these three biology courses; • additional courses from the following for a total of at least 18 2000-level credits: <u>SC/BIOL 2010 4.00</u>, <u>SC/BIOL 2020 3.00</u>, <u>SC/BIOL 2021 3.00</u>, <u>SC/BIOL 2030 4.00</u>, <u>SC/BIOL 2040 3.00</u>, <u>SC/BIOL 2050 4.00</u>, <u>SC/BIOL 2060 3.00</u>, <u>SC/BIOL 2070 3.00</u>, both <u>SC/CHEM 2020 3.00</u> and <u>SC/CHEM 2021 3.00</u>.	The program core (24 credits) is defined as: • <u>SC/BIOL 1000 3.00</u> and <u>SC/BIOL 1001 3.00</u>; • <u>SC/BIOL 2070 3.00</u> or any three of <u>SC/BIOL 2010 4.00</u>, <u>SC/BIOL 2030 4.00</u>, <u>SC/BIOL 2050 4.00</u>. Both <u>SC/CHEM 2020 3.00</u> and <u>SC/CHEM 2021 3.00</u> may replace one of these three biology courses; • additional courses from the following for a total of at least 18 2000-level credits: <u>SC/BIOL 2010 4.00</u>, <u>SC/BIOL 2020 3.00</u>, <u>SC/BIOL 2021 3.00</u>, <u>SC/BIOL 2030 4.00</u>, <u>SC/BIOL 2040 3.00</u>, <u>SC/BIOL 2050 4.00</u>, <u>SC/BIOL 2060 3.00</u>, <u>SC/BIOL 2070 3.00</u>, both <u>SC/CHEM 2020 3.00</u> and <u>SC/CHEM 2021 3.00</u>.
Bachelor Program A. General education: • non-science requirement: 12 credits; • mathematics: <u>SC/MATH 1505 6.00</u>, or six credits from <u>SC/MATH 1013 3.00</u>, <u>SC/MATH 1014 3.00</u>, <u>SC/MATH 1025 3.00</u>; • computer science: <u>LE/EECS 1520 3.00</u> or <u>LE/EECS 1530 3.00</u> or <u>LE/EECS 1540 3.00</u>; • foundational science: one of <u>SC/CHEM 1000 3.00</u> and <u>SC/CHEM 1001 3.00</u> (prerequisites for <u>SC/BIOL 2020 3.00</u> and <u>SC/CHEM 2020 3.00</u>); <u>SC/PHYS 1410 6.00</u>; <u>SC/PHYS 1420 6.00</u>; <u>SC/PHYS 1010 6.00</u>; <u>SC/ISCI 1310 6.00</u>; <u>SC/PHYS 1411 3.00</u> and <u>SC/PHYS 1412</u>	Bachelor Program A. General education: • non-science requirement: 12 credits; • mathematics: <u>SC/MATH 1505 6.00</u>, or six credits from <u>SC/MATH 1013 3.00</u>, <u>SC/MATH 1014 3.00</u>, <u>SC/MATH 1025 3.00</u>; • computer science: <u>LE/EECS 1520 3.00</u> or <u>LE/EECS 1530 3.00</u> or <u>LE/EECS 1540 3.00</u>; • foundational science: one of <u>SC/CHEM 1000 3.00</u> and <u>SC/CHEM 1001 3.00</u> (prerequisites for <u>SC/BIOL 2020 3.00</u> and <u>SC/CHEM 2020 3.00</u>); <u>SC/PHYS 1410 6.00</u>; <u>SC/PHYS 1420 6.00</u>; <u>SC/PHYS 1010 6.00</u>; <u>SC/ISCI 1310 6.00</u>; <u>SC/PHYS 1411 3.00</u> and <u>SC/PHYS 1412</u>

3.00; SC/PHYS 1421
3.00 and SC/PHYS 1422
3.00; SC/PHYS 1011
3.00 and SC/PHYS 1012 3.00; SC/ISCI
1301 3.00 and SC/ISCI 1302 3.00.

B. Major requirements:

- the program core specified above (24 credits);
- additional credits from biology courses, as required for an overall total of at least 46 credits from biology courses, including at least 12 credits at the 3000 level or above.

C. Science breadth: 24 credits in science disciplines outside the major, of which three credits must be at the 2000 level or above. 15 of these 24 credits are satisfied by the General Education requirement.

D. Upper level: a minimum of 18 credits at the 3000 level or above.

E. Additional elective credits, as required, for an overall total of 90 credits.

F. Standing requirements: a minimum overall grade point average of ~~4.00 (C)~~ is required in order to be eligible to graduate with a BSc degree (bachelor program).

Honours Programs

Specialized Honours Program

Students may follow a stream in biology, biomedical science or biotechnology.

A. General education:

- non-science requirement: 12 credits;
- mathematics: SC/MATH 1505 6.00, or six credits from SC/MATH 1013 3.00, SC/MATH 1014 3.00, SC/MATH 1025 3.00;

3.00; SC/PHYS 1421
3.00 and SC/PHYS 1422
3.00; SC/PHYS 1011
3.00 and SC/PHYS 1012 3.00; SC/ISCI
1301 3.00 and SC/ISCI 1302 3.00.

B. Major requirements:

- the program core specified above (24 credits);
- additional credits from biology courses, as required for an overall total of at least 46 credits from biology courses, including at least 12 credits at the 3000 level or above.

C. Science breadth: 24 credits in science disciplines outside the major, of which three credits must be at the 2000 level or above. 15 of these 24 credits are satisfied by the General Education requirement.

D. Upper level: a minimum of 18 credits at the 3000 level or above.

E. Additional elective credits, as required, for an overall total of 90 credits.

F. Standing requirements: a minimum overall grade point average of 1.70 (C-) is required in order to be eligible to graduate with a BSc degree (bachelor program).

Honours Programs

Specialized Honours Program

Students may follow a stream in biology, biomedical science or biotechnology.

A. General education:

- non-science requirement: 12 credits;
- mathematics: SC/MATH 1505 6.00, or six credits from SC/MATH 1013 3.00, SC/MATH 1014 3.00, SC/MATH 1025 3.00;

- computer science: [LE/EECS 1520 3.00](#) or [LE/EECS 1530 3.00](#) or [LE/EECS 1540 3.00](#);
- foundational science: one of [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) (prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#)); [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#).

Note that the biomedical science and biotechnology streams require specific courses (see below).

B. Major requirements:

Biology Stream

- The program core, as specified above (24 credits);
- [SC/BIOL 3100 2.00](#), [SC/BIOL 4000 8.00](#) or [SC/BIOL 4000 3.00](#);
- additional credits from biology courses, as required for an overall total of at least 68 credits from biology courses, including at least 18 credits at the 3000 or higher level, of which at least 12 credits are at the 4000 level.

Biomedical Science Stream

- [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#);
- one of [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI](#)

- computer science: [LE/EECS 1520 3.00](#) or [LE/EECS 1530 3.00](#) or [LE/EECS 1540 3.00](#);
- foundational science: one of [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) (prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#)); [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#).

Note that the biomedical science and biotechnology streams require specific courses (see below).

B. Major requirements:

Biology Stream

- The program core, as specified above (24 credits);
- [SC/BIOL 3100 2.00](#), [SC/BIOL 4000 8.00](#) or [SC/BIOL 4000 3.00](#);
- additional credits from biology courses, as required for an overall total of at least 68 credits from biology courses, including at least 18 credits at the 3000 or higher level, of which at least 12 credits are at the 4000 level.

Biomedical Science Stream

- [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#);
- one of [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI](#)

1301 3.00 and SC/ISCI 1302

3.00; HH/PSYC 1010 6.00;

- SC/BIOL 1000 3.00 and SC/BIOL 1001 3.00; SC/BIOL 2020 3.00; SC/BIOL 2021 3.00; SC/BIOL 2040 3.00; SC/BIOL 2070 3.00; SC/CHEM 2020 3.00 and SC/CHEM 2021 3.00; a minimum of one of SC/BIOL 2030 4.00 or SC/BIOL 2060 3.00; SC/BIOL 3100 2.00; SC/BIOL 4000 8.00 or SC/BIOL 4000 3.00;
- a minimum of nine credits chosen from the following courses: SC/BIOL 3060 4.00; SC/BIOL 3070 4.00; SC/BIOL 3110 3.00; SC/BIOL 3130 3.00; SC/BIOL 3150 4.00; SC/BIOL 3155 3.00; SC/BIOL 4010 3.00;
- additional biology credits from the following courses, as required, for an overall total of 68 biology credits: SC/BIOL 2010 4.00, SC/BIOL 2030 4.00, SC/BIOL 2060 3.00, SC/BIOL 3010 3.00, SC/BIOL 3060 4.00, SC/BIOL 3070 4.00, SC/BIOL 3071 3.00, SC/BIOL 3110 3.00, SC/BIOL 3120 3.00, SC/BIOL 3130 3.00, SC/BIOL 3140 4.00, SC/BIOL 3150 4.00, SC/BIOL 3155 3.00, SC/BIOL 4010 3.00, SC/BIOL 4020 3.00, SC/BIOL 4030 3.00, SC/BIOL 4061 3.00, SC/BIOL 4110 4.00, SC/BIOL 4141 3.00, SC/BIOL 4150 3.00, SC/BIOL 4151 3.00, SC/BIOL 4155 3.00, SC/BIOL 4200 3.00, SC/BIOL 4220 4.00, SC/BIOL 4270 3.00, SC/BIOL 4285 3.00, SC/BIOL 4290 4.00, SC/BIOL 4310 3.00, SC/BIOL 4320 3.00, SC/BIOL 4350 4.00, SC/BIOL 4360 3.00, SC/BIOL 4370 3.00, SC/BIOL 4380 3.00, SC/BIOL 4410 3.00, SC/BIOL 4450 4.00, SC/BIOL 4510 3.00;
- within the 68 biology credits, at least 18 credits must be at the 3000 level

1301 3.00 and SC/ISCI 1302

3.00; HH/PSYC 1010 6.00;

- SC/BIOL 1000 3.00 and SC/BIOL 1001 3.00; SC/BIOL 2020 3.00; SC/BIOL 2021 3.00; SC/BIOL 2040 3.00; SC/BIOL 2070 3.00; SC/CHEM 2020 3.00 and SC/CHEM 2021 3.00; a minimum of one of SC/BIOL 2030 4.00 or SC/BIOL 2060 3.00; SC/BIOL 3100 2.00; SC/BIOL 4000 8.00 or SC/BIOL 4000 3.00;
- a minimum of nine credits chosen from the following courses: SC/BIOL 3060 4.00; SC/BIOL 3070 4.00; SC/BIOL 3110 3.00; SC/BIOL 3130 3.00; SC/BIOL 3150 4.00; SC/BIOL 3155 3.00; SC/BIOL 4010 3.00;
- additional biology credits from the following courses, as required, for an overall total of 68 biology credits: SC/BIOL 2010 4.00, SC/BIOL 2030 4.00, SC/BIOL 2060 3.00, SC/BIOL 3010 3.00, SC/BIOL 3060 4.00, SC/BIOL 3070 4.00, SC/BIOL 3071 3.00, SC/BIOL 3110 3.00, SC/BIOL 3120 3.00, SC/BIOL 3130 3.00, SC/BIOL 3140 4.00, SC/BIOL 3150 4.00, SC/BIOL 3155 3.00, SC/BIOL 4010 3.00, SC/BIOL 4020 3.00, SC/BIOL 4030 3.00, SC/BIOL 4061 3.00, SC/BIOL 4110 4.00, SC/BIOL 4141 3.00, SC/BIOL 4150 3.00, SC/BIOL 4151 3.00, SC/BIOL 4155 3.00, SC/BIOL 4200 3.00, SC/BIOL 4220 4.00, SC/BIOL 4270 3.00, SC/BIOL 4285 3.00, SC/BIOL 4290 4.00, SC/BIOL 4310 3.00, SC/BIOL 4320 3.00, SC/BIOL 4350 4.00, SC/BIOL 4360 3.00, SC/BIOL 4370 3.00, SC/BIOL 4380 3.00, SC/BIOL 4410 3.00, SC/BIOL 4450 4.00, SC/BIOL 4510 3.00;
- within the 68 biology credits, at least 18 credits must be at the 3000 level

or higher, of which at least 12 credits must be at the 4000 level. This must also include a minimum of seven credits from 3000 level or higher biology courses with an associated laboratory component.

Biotechnology Stream

- [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#); [SC/PHYS 1410 6.00](#);
- one of [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#).
- [SC/BIOL 1000 3.00](#) and [SC/BIOL 1001 3.00](#), [SC/BIOL 2020 3.00](#), [SC/BIOL 2021 3.00](#), [SC/BIOL 2040 3.00](#), [SC/BIOL 2060 3.00](#), [SC/BIOL 2070 3.00](#) and both [SC/CHEM 2020 3.00](#) and [SC/CHEM 2021 3.00](#);
- [SC/CHEM 2080 4.00](#); [SC/CHEM 3070 3.00](#) or [SC/CHEM 3071 3.00](#) or [SC/CHEM 4050 3.00](#); [SC/CHEM 3080 4.00](#);
- [SC/BIOL 3100 2.00](#); [SC/BIOL 3110 3.00](#); [SC/BIOL 3130 3.00](#); [SC/BIOL 3140 4.00](#); [SC/BIOL 3150 4.00](#);
- [SC/BIOL 4000 8.00](#) or [SC/BIOL 4000 3.00](#); [SC/BIOL 4290 4.00](#);
- a minimum of 9 credits chosen from the following courses in lists A and B, with a minimum of six credits chosen from list A.
 - List A: [SC/BIOL 3010 3.00](#), [SC/BIOL 3120 3.00](#), [SC/BIOL 3155 3.00](#), [SC/BIOL 4020 3.00](#), [SC/BIOL 4030 3.00](#), [SC/BIOL 4061 3.00](#), [SC/BIOL 4285 3.00](#);

or higher, of which at least 12 credits must be at the 4000 level. This must also include a minimum of seven credits from 3000 level or higher biology courses with an associated laboratory component.

Biotechnology Stream

- [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#); [SC/PHYS 1410 6.00](#);
- one of [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#).
- [SC/BIOL 1000 3.00](#) and [SC/BIOL 1001 3.00](#), [SC/BIOL 2020 3.00](#), [SC/BIOL 2021 3.00](#), [SC/BIOL 2040 3.00](#), [SC/BIOL 2060 3.00](#), [SC/BIOL 2070 3.00](#) and both [SC/CHEM 2020 3.00](#) and [SC/CHEM 2021 3.00](#);
- [SC/CHEM 2080 4.00](#); [SC/CHEM 3070 3.00](#) or [SC/CHEM 3071 3.00](#) or [SC/CHEM 4050 3.00](#); [SC/CHEM 3080 4.00](#);
- [SC/BIOL 3100 2.00](#); [SC/BIOL 3110 3.00](#); [SC/BIOL 3130 3.00](#); [SC/BIOL 3140 4.00](#); [SC/BIOL 3150 4.00](#);
- [SC/BIOL 4000 8.00](#) or [SC/BIOL 4000 3.00](#); [SC/BIOL 4290 4.00](#);
- a minimum of 9 credits chosen from the following courses in lists A and B, with a minimum of six credits chosen from list A.
 - List A: [SC/BIOL 3010 3.00](#), [SC/BIOL 3120 3.00](#), [SC/BIOL 3155 3.00](#), [SC/BIOL 4020 3.00](#), [SC/BIOL 4030 3.00](#), [SC/BIOL 4061 3.00](#), [SC/BIOL 4285 3.00](#);

- List B: [SC/BIOL 3160](#)
[4.00](#) ([SC/BIOL 2010 4.00](#) is a prerequisite), [SC/BIOL 4010 3.00](#), [SC/BIOL 4040 3.00](#), [SC/BIOL 4150 3.00](#), [SC/BIOL 4151 3.00](#), [SC/BIOL 4160 3.00](#), [SC/BIOL 4270 3.00](#), [SC/BIOL 4370 3.00](#), [SC/BIOL 4510 3.00](#);

- additional biology credits as required for an overall total of at least 57 biology credits, including at least 12 credits at the 4000 level.

C. Science breadth: a total of 24 credits in science disciplines outside the major, of which three credits must be at the 2000 level or above. 15 of these 24 credits are satisfied by the General Education requirement. In the biomedical science and biotechnology streams, this requirement is fully satisfied by the above requirements.

D. Upper level: a minimum of 42 credits at the 3000 level or above.

E. Additional elective credits, as required, for an overall total of 120 credits.

F. Standing requirements: to declare Specialized Honours requires successful completion of at least 24 credits, a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all courses completed and a minimum cumulative credit-weighted grade point average of ~~6.00 (B)~~ over all biology courses completed.

To proceed in each year of a Specialized Honours program requires a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all courses completed and a minimum cumulative credit-weighted grade point average of ~~6.00 (B)~~ over all biology courses completed.

- List B: [SC/BIOL 3160](#)
[4.00](#) ([SC/BIOL 2010 4.00](#) is a prerequisite), [SC/BIOL 4010 3.00](#), [SC/BIOL 4040 3.00](#), [SC/BIOL 4150 3.00](#), [SC/BIOL 4151 3.00](#), [SC/BIOL 4160 3.00](#), [SC/BIOL 4270 3.00](#), [SC/BIOL 4370 3.00](#), [SC/BIOL 4510 3.00](#);

- additional biology credits as required for an overall total of at least 57 biology credits, including at least 12 credits at the 4000 level.

C. Science breadth: a total of 24 credits in science disciplines outside the major, of which three credits must be at the 2000 level or above. 15 of these 24 credits are satisfied by the General Education requirement. In the biomedical science and biotechnology streams, this requirement is fully satisfied by the above requirements.

D. Upper level: a minimum of 42 credits at the 3000 level or above.

E. Additional elective credits, as required, for an overall total of 120 credits.

F. Standing requirements: to declare Specialized Honours requires successful completion of at least 24 credits, a minimum cumulative credit-weighted grade point average of [2.00 \(C\)](#) over all courses completed and a minimum cumulative credit-weighted grade point average of [2.70 \(B-\)](#) over all biology courses completed.

To proceed in each year of a Specialized Honours program requires a minimum cumulative credit-weighted grade point average of [2.00 \(C\)](#) over all courses completed and a minimum cumulative credit-weighted grade point average of [2.70 \(B-\)](#) over all biology courses completed.

To graduate in a Specialized Honours program requires successful completion of all Faculty requirements and departmental required courses, a minimum cumulative credit-weighted grade point average of ~~6.00 (B)~~ over all biology courses completed, and a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all courses completed.

Honours Major Program (BSc)

In addition to the Biology Honours Major, students may follow a stream in biomedical science.

Biology Honours Major

A. General education:

- non-science requirement: 12 credits;
- mathematics: [SC/MATH 1505 6.00](#), or six credits from [SC/MATH 1013 3.00](#), [SC/MATH 1014 3.00](#), [SC/MATH 1025 3.00](#);
- computer science: [LE/EECS 1520 3.00](#) or [LE/EECS 1530 3.00](#) or [LE/EECS 1540 3.00](#);
- foundational science: one of [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) (prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#)); [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#).

Note that the biomedical science stream requires specific courses (see below).

B. Major requirements:

To graduate in a Specialized Honours program requires successful completion of all Faculty requirements and departmental required courses, a minimum cumulative credit-weighted grade point average of [2.70 \(B-\)](#) over all biology courses completed, and a minimum cumulative credit-weighted grade point average of [2.00 \(C\)](#) over all courses completed.

Honours Major Program (BSc)

In addition to the Biology Honours Major, students may follow a stream in biomedical science.

Biology Honours Major

A. General education:

- non-science requirement: 12 credits;
- mathematics: [SC/MATH 1505 6.00](#), or six credits from [SC/MATH 1013 3.00](#), [SC/MATH 1014 3.00](#), [SC/MATH 1025 3.00](#);
- computer science: [LE/EECS 1520 3.00](#) or [LE/EECS 1530 3.00](#) or [LE/EECS 1540 3.00](#);
- foundational science: one of [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) (prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#)); [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#).

Note that the biomedical science stream requires specific courses (see below).

B. Major requirements:

Biology stream

- The program core, as specified above (24 credits);
- additional credits from biology courses, as required, for an overall total of at least 51 credits from biology courses, including at least 18 credits at the 3000 or higher level, of which at least 12 credits are at the 4000 level.

Biomedical Science Stream

- [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#);
- one of [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#); [HH/PSYC 1010 6.00](#);
- [SC/BIOL 1000 3.00](#) and [SC/BIOL 1001 3.00](#), [SC/BIOL 2020 3.00](#), [SC/BIOL 2021 3.00](#), [SC/BIOL 2040 3.00](#), [SC/BIOL 2070 3.00](#), [SC/CHEM 2020 3.00](#) and [SC/CHEM 2021 3.00](#); a minimum of one of [SC/BIOL 2030 4.00](#) or [SC/BIOL 2060 3.00](#);
- a minimum of nine credits chosen from the following courses: [SC/BIOL 3060 4.00](#); [SC/BIOL 3070 4.00](#); [SC/BIOL 3100 2.00](#); [SC/BIOL 3110 3.00](#); [SC/BIOL 3130 3.00](#); [SC/BIOL 3150 4.00](#); [SC/BIOL 3155 3.00](#); [SC/BIOL 4010 3.00](#);
- additional biology credits from the following courses, as required, for an overall total of 51 biology credits: [SC/BIOL 2010 4.00](#), [SC/BIOL 2030 4.00](#), [SC/BIOL 2060 3.00](#), [SC/BIOL 3010 3.00](#), [SC/BIOL 3060 4.00](#), [SC/BIOL 3070 4.00](#), [SC/BIOL 3071 3.00](#), [SC/BIOL](#)

Biology stream

- The program core, as specified above (24 credits);
- additional credits from biology courses, as required, for an overall total of at least 51 credits from biology courses, including at least 18 credits at the 3000 or higher level, of which at least 12 credits are at the 4000 level.

Biomedical Science Stream

- [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#);
- one of [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#); [HH/PSYC 1010 6.00](#);
- [SC/BIOL 1000 3.00](#) and [SC/BIOL 1001 3.00](#), [SC/BIOL 2020 3.00](#), [SC/BIOL 2021 3.00](#), [SC/BIOL 2040 3.00](#), [SC/BIOL 2070 3.00](#), [SC/CHEM 2020 3.00](#) and [SC/CHEM 2021 3.00](#); a minimum of one of [SC/BIOL 2030 4.00](#) or [SC/BIOL 2060 3.00](#);
- a minimum of nine credits chosen from the following courses: [SC/BIOL 3060 4.00](#); [SC/BIOL 3070 4.00](#); [SC/BIOL 3100 2.00](#); [SC/BIOL 3110 3.00](#); [SC/BIOL 3130 3.00](#); [SC/BIOL 3150 4.00](#); [SC/BIOL 3155 3.00](#); [SC/BIOL 4010 3.00](#);
- additional biology credits from the following courses, as required, for an overall total of 51 biology credits: [SC/BIOL 2010 4.00](#), [SC/BIOL 2030 4.00](#), [SC/BIOL 2060 3.00](#), [SC/BIOL 3010 3.00](#), [SC/BIOL 3060 4.00](#), [SC/BIOL 3070 4.00](#), [SC/BIOL 3071 3.00](#), [SC/BIOL](#)

3100 2.00, SC/BIOL 3110 3.00, SC/BIOL 3120 3.00, SC/BIOL 3130 3.00, SC/BIOL 3140 4.00, SC/BIOL 3150 4.00, SC/BIOL 3155 3.00, SC/BIOL 4000 3.00, SC/BIOL 4000 8.00, SC/BIOL 4010 3.00, SC/BIOL 4020 3.00, SC/BIOL 4030 3.00, SC/BIOL 4061 3.00, SC/BIOL 4110 4.00, SC/BIOL 4141 3.00, SC/BIOL 4150 3.00, SC/BIOL 4151 3.00, SC/BIOL 4155 3.00, SC/BIOL 4200 3.00, SC/BIOL 4220 4.00, SC/BIOL 4270 3.00, SC/BIOL 4285 3.00, SC/BIOL 4290 4.00, SC/BIOL 4310 3.00, SC/BIOL 4320 3.00, SC/BIOL 4350 4.00, SC/BIOL 4360 3.00, SC/BIOL 4370 3.00, SC/BIOL 4380 3.00, SC/BIOL 4410 3.00, SC/BIOL 4450 4.00, SC/BIOL 4510 3.00;

- within the 51 biology credits at least 18 credits must be at the 3000 level or higher, of which at least 12 credits must be at the 4000 level. This must also include a minimum of seven credits from 3000 level or higher biology courses with an associated laboratory component.

C. Science breadth: a total of 24 credits in science disciplines outside the major, of which three credits must be at the 2000 level or above. 15 of these 24 credits are satisfied by the General Education requirement. In the biomedical science stream this requirement is fully satisfied by the above requirements.

D. Upper level: 42 credits at the 3000 level or above.

E. Additional elective credits, as required, for an overall minimum total of 85 credits from science disciplines (including the major) and an overall total of 120 credits.

3100 2.00, SC/BIOL 3110 3.00, SC/BIOL 3120 3.00, SC/BIOL 3130 3.00, SC/BIOL 3140 4.00, SC/BIOL 3150 4.00, SC/BIOL 3155 3.00, SC/BIOL 4000 3.00, SC/BIOL 4000 8.00, SC/BIOL 4010 3.00, SC/BIOL 4020 3.00, SC/BIOL 4030 3.00, SC/BIOL 4061 3.00, SC/BIOL 4110 4.00, SC/BIOL 4141 3.00, SC/BIOL 4150 3.00, SC/BIOL 4151 3.00, SC/BIOL 4155 3.00, SC/BIOL 4200 3.00, SC/BIOL 4220 4.00, SC/BIOL 4270 3.00, SC/BIOL 4285 3.00, SC/BIOL 4290 4.00, SC/BIOL 4310 3.00, SC/BIOL 4320 3.00, SC/BIOL 4350 4.00, SC/BIOL 4360 3.00, SC/BIOL 4370 3.00, SC/BIOL 4380 3.00, SC/BIOL 4410 3.00, SC/BIOL 4450 4.00, SC/BIOL 4510 3.00;

- within the 51 biology credits at least 18 credits must be at the 3000 level or higher, of which at least 12 credits must be at the 4000 level. This must also include a minimum of seven credits from 3000 level or higher biology courses with an associated laboratory component.

C. Science breadth: a total of 24 credits in science disciplines outside the major, of which three credits must be at the 2000 level or above. 15 of these 24 credits are satisfied by the General Education requirement. In the biomedical science stream this requirement is fully satisfied by the above requirements.

D. Upper level: 42 credits at the 3000 level or above.

E. Additional elective credits, as required, for an overall minimum total of 85 credits from science disciplines (including the major) and an overall total of 120 credits.

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses, a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all biology courses completed, and a minimum cumulative credit-weighted grade point average of 5.00 (C+) over all courses completed.

Honours Double Major Program

All Honours BSc degree candidates should consult departmental advisers as early as possible concerning course requirements for particular Honours Double Major programs. Possible subject combinations for Honours Double Major BSc degree programs are listed under Undergraduate Degree Programs in the Faculty of Science Undergraduate Degree and Certificate Programs section. Students should consult with a departmental advisor to plan their studies in order to meet the requirements for both majors and their prerequisites.

A. General education:

- non-science requirement: 12 credits;
- mathematics: [SC/MATH 1505 6.00](#), or six credits from [SC/MATH 1013 3.00](#), [SC/MATH 1014 3.00](#), [SC/MATH 1025 3.00](#);
- computer science: [LE/EECS 1520 3.00](#) or [LE/EECS 1530 3.00](#) or [LE/EECS 1540 3.00](#);
- foundational science: one of [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) (prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#)); [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011](#)

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses, a minimum cumulative credit-weighted grade point average of [2.00 \(C\)](#) over all biology courses completed, and a minimum cumulative credit-weighted grade point average of [2.00 \(C\)](#) over all courses completed.

Honours Double Major Program

All Honours BSc degree candidates should consult departmental advisers as early as possible concerning course requirements for particular Honours Double Major programs. Possible subject combinations for Honours Double Major BSc degree programs are listed under Undergraduate Degree Programs in the Faculty of Science Undergraduate Degree and Certificate Programs section. Students should consult with a departmental advisor to plan their studies in order to meet the requirements for both majors and their prerequisites.

A. General education:

- non-science requirement: 12 credits;
- mathematics: [SC/MATH 1505 6.00](#), or six credits from [SC/MATH 1013 3.00](#), [SC/MATH 1014 3.00](#), [SC/MATH 1025 3.00](#);
- computer science: [LE/EECS 1520 3.00](#) or [LE/EECS 1530 3.00](#) or [LE/EECS 1540 3.00](#);
- foundational science: one of [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) (prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#)); [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011](#)

3.00 and SC/PHYS 1012 3.00; SC/ISCI 1301 3.00 and SC/ISCI 1302 3.00.

B. Major requirements:

- SC/BIOL 1000 3.00 and SC/BIOL 1001 3.00;
- at least 12 credits from 2000-level biology courses in the program core;
- additional credits from biology courses, as required for an overall total of at least 42 credits from biology courses, including at least 18 credits at the 3000 level or above, of which at least 12 credits are at the 4000 level;
- the course requirements for the second major .

C. Science breadth: a total of 24 credits in science disciplines outside the major, of which three credits must be at the 2000 level or above. 15 of these 24 credits are satisfied by the General Education requirement. Satisfied if the other major is another science discipline.

D. Upper level: 42 credits at the 3000 level or above.

E. Additional elective credits, as required for an overall total of 120 credits.

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses, a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all biology courses completed, and a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all courses completed.

Honours Major/Minor Program

An Honours Major in biology may be combined with an Honours Minor in another subject area in an Honours Major/Minor BSc

3.00 and SC/PHYS 1012 3.00; SC/ISCI 1301 3.00 and SC/ISCI 1302 3.00.

B. Major requirements:

- SC/BIOL 1000 3.00 and SC/BIOL 1001 3.00;
- at least 12 credits from 2000-level biology courses in the program core;
- additional credits from biology courses, as required for an overall total of at least 42 credits from biology courses, including at least 18 credits at the 3000 level or above, of which at least 12 credits are at the 4000 level;
- the course requirements for the second major .

C. Science breadth: a total of 24 credits in science disciplines outside the major, of which three credits must be at the 2000 level or above. 15 of these 24 credits are satisfied by the General Education requirement. Satisfied if the other major is another science discipline.

D. Upper level: 42 credits at the 3000 level or above.

E. Additional elective credits, as required for an overall total of 120 credits.

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses, a minimum cumulative credit-weighted grade point average of 2.00 (C) over all biology courses completed, and a minimum cumulative credit-weighted grade point average of 2.00 (C) over all courses completed.

Honours Major/Minor Program

An Honours Major in biology may be combined with an Honours Minor in another subject area in an Honours Major/Minor BSc

degree program. Possible subject combinations are listed under Undergraduate Degree Programs in the Faculty of Science Undergraduate Degree and Certificate Programs section.

Students may follow a stream within the Honours Major/Minor program in Biomedical Science (stream requirements are listed under the Biology Honours Major program). This stream may be combined with other approved science minors.

A. General education:

- non-science requirement: 12 credits;
- mathematics: [SC/MATH 1505 6.00](#), or six credits from [SC/MATH 1013 3.00](#), [SC/MATH 1014 3.00](#), [SC/MATH 1025 3.00](#);
- computer science: [LE/EECS 1520 3.00](#) or [LE/EECS 1530 3.00](#) or [LE/EECS 1540 3.00](#);
- foundational science: one of [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) (prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#)); [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#).

B. Major requirements:

Biology stream

- the program core as specified above (24 credits);
- additional credits from biology courses, as required, for an overall total of at least 51 credits from biology courses, including at least 18 credits at the 3000 or higher level, of

degree program. Possible subject combinations are listed under Undergraduate Degree Programs in the Faculty of Science Undergraduate Degree and Certificate Programs section.

Students may follow a stream within the Honours Major/Minor program in Biomedical Science (stream requirements are listed under the Biology Honours Major program). This stream may be combined with other approved science minors.

A. General education:

- non-science requirement: 12 credits;
- mathematics: [SC/MATH 1505 6.00](#), or six credits from [SC/MATH 1013 3.00](#), [SC/MATH 1014 3.00](#), [SC/MATH 1025 3.00](#);
- computer science: [LE/EECS 1520 3.00](#) or [LE/EECS 1530 3.00](#) or [LE/EECS 1540 3.00](#);
- foundational science: one of [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) (prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#)); [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#).

B. Major requirements:

Biology stream

- the program core as specified above (24 credits);
- additional credits from biology courses, as required, for an overall total of at least 51 credits from biology courses, including at least 18 credits at the 3000 or higher level, of

which at least 12 credits are at the 4000 level.

- The course requirements for the minor.

Biomedical Science Stream

- [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#);
- one of [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#); [HH/PSYC 1010 6.00](#);
- [SC/BIOL 1000 3.00](#) and [SC/BIOL 1001 3.00](#), [SC/BIOL 2020 3.00](#), [SC/BIOL 2021 3.00](#), [SC/BIOL 2040 3.00](#), [SC/BIOL 2070 3.00](#), [SC/CHEM 2020 3.00](#) and [SC/CHEM 2021 3.00](#); a minimum of one of [SC/BIOL 2030 4.00](#) or [SC/BIOL 2060 3.00](#);
- a minimum of nine credits chosen from the following courses: [SC/BIOL 3060 4.00](#); [SC/BIOL 3070 4.00](#); [SC/BIOL 3100 2.00](#); [SC/BIOL 3110 3.00](#); [SC/BIOL 3130 3.00](#); [SC/BIOL 3150 4.00](#); [SC/BIOL 3155 3.00](#); [SC/BIOL 4010 3.00](#);
- additional biology credits from the following courses, as required, for an overall total of 51 biology credits: [SC/BIOL 2010 4.00](#), [SC/BIOL 2030 4.00](#), [SC/BIOL 2060 3.00](#), [SC/BIOL 3010 3.00](#), [SC/BIOL 3060 4.00](#), [SC/BIOL 3070 4.00](#), [SC/BIOL 3071 3.00](#), [SC/BIOL 3100 2.00](#), [SC/BIOL 3110 3.00](#), [SC/BIOL 3120 3.00](#), [SC/BIOL 3130 3.00](#), [SC/BIOL 3140 4.00](#), [SC/BIOL 3150 4.00](#), [SC/BIOL 3155 3.00](#), [SC/BIOL 4000 3.00](#), [SC/BIOL 4000 8.00](#), [SC/BIOL](#)

which at least 12 credits are at the 4000 level.

- The course requirements for the minor.

Biomedical Science Stream

- [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#);
- one of [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#); [HH/PSYC 1010 6.00](#);
- [SC/BIOL 1000 3.00](#) and [SC/BIOL 1001 3.00](#), [SC/BIOL 2020 3.00](#), [SC/BIOL 2021 3.00](#), [SC/BIOL 2040 3.00](#), [SC/BIOL 2070 3.00](#), [SC/CHEM 2020 3.00](#) and [SC/CHEM 2021 3.00](#); a minimum of one of [SC/BIOL 2030 4.00](#) or [SC/BIOL 2060 3.00](#);
- a minimum of nine credits chosen from the following courses: [SC/BIOL 3060 4.00](#); [SC/BIOL 3070 4.00](#); [SC/BIOL 3100 2.00](#); [SC/BIOL 3110 3.00](#); [SC/BIOL 3130 3.00](#); [SC/BIOL 3150 4.00](#); [SC/BIOL 3155 3.00](#); [SC/BIOL 4010 3.00](#);
- additional biology credits from the following courses, as required, for an overall total of 51 biology credits: [SC/BIOL 2010 4.00](#), [SC/BIOL 2030 4.00](#), [SC/BIOL 2060 3.00](#), [SC/BIOL 3010 3.00](#), [SC/BIOL 3060 4.00](#), [SC/BIOL 3070 4.00](#), [SC/BIOL 3071 3.00](#), [SC/BIOL 3100 2.00](#), [SC/BIOL 3110 3.00](#), [SC/BIOL 3120 3.00](#), [SC/BIOL 3130 3.00](#), [SC/BIOL 3140 4.00](#), [SC/BIOL 3150 4.00](#), [SC/BIOL 3155 3.00](#), [SC/BIOL 4000 3.00](#), [SC/BIOL 4000 8.00](#), [SC/BIOL](#)

[4010 3.00, SC/BIOL 4020 3.00, SC/BIOL 4030 3.00, SC/BIOL 4061 3.00, SC/BIOL 4110 4.00, SC/BIOL 4141 3.00, SC/BIOL 4150 3.00, SC/BIOL 4151 3.00, SC/BIOL 4155 3.00, SC/BIOL 4200 3.00, SC/BIOL 4220 4.00, SC/BIOL 4270 3.00, SC/BIOL 4285 3.00, SC/BIOL 4290 4.00, SC/BIOL 4310 3.00, SC/BIOL 4320 3.00, SC/BIOL 4350 4.00, SC/BIOL 4360 3.00, SC/BIOL 4370 3.00, SC/BIOL 4380 3.00, SC/BIOL 4410 3.00, SC/BIOL 4450 4.00, SC/BIOL 4510 3.00;](#)

- within the 51 biology credits at least 18 credits must be at the 3000 level or higher, of which at least 12 credits must be at the 4000 level. This must also include a minimum of seven credits from 3000 level or higher biology courses with an associated laboratory component.

C. Science breadth: a total of 24 credits in science disciplines outside the major, of which three credits must be at the 2000 level or above. 15 of these 24 credits are satisfied by the General Education requirement. Satisfied if the minor is another science discipline.

D. Upper level: 42 credits at the 3000 level or above.

E. Additional elective credits, as required for an overall total of 120 credits.

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses, a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all biology courses completed, and a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all courses completed.

[4010 3.00, SC/BIOL 4020 3.00, SC/BIOL 4030 3.00, SC/BIOL 4061 3.00, SC/BIOL 4110 4.00, SC/BIOL 4141 3.00, SC/BIOL 4150 3.00, SC/BIOL 4151 3.00, SC/BIOL 4155 3.00, SC/BIOL 4200 3.00, SC/BIOL 4220 4.00, SC/BIOL 4270 3.00, SC/BIOL 4285 3.00, SC/BIOL 4290 4.00, SC/BIOL 4310 3.00, SC/BIOL 4320 3.00, SC/BIOL 4350 4.00, SC/BIOL 4360 3.00, SC/BIOL 4370 3.00, SC/BIOL 4380 3.00, SC/BIOL 4410 3.00, SC/BIOL 4450 4.00, SC/BIOL 4510 3.00;](#)

- within the 51 biology credits at least 18 credits must be at the 3000 level or higher, of which at least 12 credits must be at the 4000 level. This must also include a minimum of seven credits from 3000 level or higher biology courses with an associated laboratory component.

C. Science breadth: a total of 24 credits in science disciplines outside the major, of which three credits must be at the 2000 level or above. 15 of these 24 credits are satisfied by the General Education requirement. Satisfied if the minor is another science discipline.

D. Upper level: 42 credits at the 3000 level or above.

E. Additional elective credits, as required for an overall total of 120 credits.

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses, a minimum cumulative credit-weighted grade point average of **2.00 (C)** over all biology courses completed, and a minimum cumulative credit-weighted grade point average of **2.00 (C)** over all courses completed.

Honours Minor

- [SC/BIOL 1000 3.00](#) and [SC/BIOL 1001 3.00](#);
- at least 12 credits from biology courses at the 2000 level;
- at least nine credits from biology courses at the 3000 or higher level, including at least three credits at the 4000 level;
- additional credits from biology courses at the 2000 or higher level, as required for an overall total of at least 30 credits from biology courses.

Note: it is recommended that students interested in cell biology, genetics, molecular biology and biochemistry take the following courses:[SC/BIOL 1000 3.00](#) and [SC/BIOL 1001 3.00](#), [SC/CHEM 1000 3.00](#), [SC/CHEM 1001 3.00](#), [SC/BIOL 2020 3.00](#), [SC/BIOL 2021 3.00](#), [SC/BIOL 2040 3.00](#), [SC/BIOL 2070 3.00](#), [SC/CHEM 2020 3.00](#) and [SC/CHEM 2021 3.00](#), [SC/BIOL 1000 3.00](#) and [SC/BIOL 1001 3.00](#), [SC/CHEM 1000 3.00](#), [SC/CHEM 1001 3.00](#), [SC/BIOL 2020 3.00](#), [SC/BIOL 2021 3.00](#), [SC/BIOL 2040 3.00](#), [SC/BIOL 2070 3.00](#), [SC/CHEM 2020 3.00](#) and [SC/CHEM 2021 3.00](#), plus a minimum of nine additional credits from biology courses at the 3000 or higher level. For other areas of interest, students are advised to choose their 2000-level biology courses wisely, based on the prerequisites for the courses they wish to take at the 3000 or higher level. Check the course outlines in this publication for course prerequisites.

International Bachelor of Science

All Honours iBSc degree candidates must complete an international component in addition to the normal requirements of biology and the BSc. For further information about the international Bachelor of Science, refer to the International Bachelor of Arts and International Bachelor of Science in the

Honours Minor

- [SC/BIOL 1000 3.00](#) and [SC/BIOL 1001 3.00](#);
- at least 12 credits from biology courses at the 2000 level;
- at least nine credits from biology courses at the 3000 or higher level, including at least three credits at the 4000 level;
- additional credits from biology courses at the 2000 or higher level, as required for an overall total of at least 30 credits from biology courses.

Note: it is recommended that students interested in cell biology, genetics, molecular biology and biochemistry take the following courses:[SC/BIOL 1000 3.00](#) and [SC/BIOL 1001 3.00](#), [SC/CHEM 1000 3.00](#), [SC/CHEM 1001 3.00](#), [SC/BIOL 2020 3.00](#), [SC/BIOL 2021 3.00](#), [SC/BIOL 2040 3.00](#), [SC/BIOL 2070 3.00](#), [SC/CHEM 2020 3.00](#) and [SC/CHEM 2021 3.00](#), [SC/BIOL 1000 3.00](#) and [SC/BIOL 1001 3.00](#), [SC/CHEM 1000 3.00](#), [SC/CHEM 1001 3.00](#), [SC/BIOL 2020 3.00](#), [SC/BIOL 2021 3.00](#), [SC/BIOL 2040 3.00](#), [SC/BIOL 2070 3.00](#), [SC/CHEM 2020 3.00](#) and [SC/CHEM 2021 3.00](#), plus a minimum of nine additional credits from biology courses at the 3000 or higher level. For other areas of interest, students are advised to choose their 2000-level biology courses wisely, based on the prerequisites for the courses they wish to take at the 3000 or higher level. Check the course outlines in this publication for course prerequisites.

International Bachelor of Science

All Honours iBSc degree candidates must complete an international component in addition to the normal requirements of biology and the BSc. For further information about the international Bachelor of Science, refer to the International Bachelor of Arts and International Bachelor of Science in the

Faculty of Science programs of study section.

Specialized Honours in Biology (Honours iBSc)

A. General education:

- non-science requirement: 12 credits (may be satisfied in whole or part by courses in the international component);
- mathematics: [SC/MATH 1505 6.00](#), or six credits from [SC/MATH 1013 3.00](#), [SC/MATH 1014 3.00](#), [SC/MATH 1025 3.00](#);
- computer science: [LE/EECS 1520 3.00](#) or [LE/EECS 1530 3.00](#) or [LE/EECS 1540 3.00](#);
- foundational science: one of [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) (prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#)); [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#).

B. Major requirements:

- the program core as specified above (24 credits);
- [SC/BIOL 3100 2.00](#);
- [SC/BIOL 4000 8.00](#) or [SC/BIOL 4000 3.00](#);
- additional credits from biology courses, as required for an overall total of at least 62 credits from biology courses, including at least 18 credits at the 3000 or higher level, of which at least 12 credits are at the 4000 level.

Faculty of Science programs of study section.

Specialized Honours in Biology (Honours iBSc)

A. General education:

- non-science requirement: 12 credits (may be satisfied in whole or part by courses in the international component);
- mathematics: [SC/MATH 1505 6.00](#), or six credits from [SC/MATH 1013 3.00](#), [SC/MATH 1014 3.00](#), [SC/MATH 1025 3.00](#);
- computer science: [LE/EECS 1520 3.00](#) or [LE/EECS 1530 3.00](#) or [LE/EECS 1540 3.00](#);
- foundational science: one of [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) (prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#)); [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#).

B. Major requirements:

- the program core as specified above (24 credits);
- [SC/BIOL 3100 2.00](#);
- [SC/BIOL 4000 8.00](#) or [SC/BIOL 4000 3.00](#);
- additional credits from biology courses, as required for an overall total of at least 62 credits from biology courses, including at least 18 credits at the 3000 or higher level, of which at least 12 credits are at the 4000 level.

In addition, the following must be completed for the international component:

- a minimum of 12 credits of language study in one of the languages offered at York University;
- a minimum of 12 credits of non-science courses with an international component (refer to sample list of courses in the section on international degrees), which will also serve to meet the non-science requirement of the general education component;
- an additional six credits of language study or non-science international component courses, for a total of 30 credits;
- one to two exchange terms abroad as a full-time student at an institution with which York University has a formal exchange agreement.

C. Science breadth: 24 credits in science disciplines outside the major, of which three credits must be at the 2000 level or above. 15 of these 24 credits are satisfied by the above requirements.

D. Upper level: a minimum of 42 credits at the 3000 level or above.

E. Additional elective credits, as required, for an overall total of 120 credits.

F. Standing requirement: to declare Specialized Honours requires successful completion of at least 24 credits, a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all courses completed and a minimum cumulative credit-weighted grade point average of ~~6.00 (B)~~ over all biology courses completed.

To proceed in each year of a Specialized Honours program requires a minimum cumulative credit-weighted grade point

In addition, the following must be completed for the international component:

- a minimum of 12 credits of language study in one of the languages offered at York University;
- a minimum of 12 credits of non-science courses with an international component (refer to sample list of courses in the section on international degrees), which will also serve to meet the non-science requirement of the general education component;
- an additional six credits of language study or non-science international component courses, for a total of 30 credits;
- one to two exchange terms abroad as a full-time student at an institution with which York University has a formal exchange agreement.

C. Science breadth: 24 credits in science disciplines outside the major, of which three credits must be at the 2000 level or above. 15 of these 24 credits are satisfied by the above requirements.

D. Upper level: a minimum of 42 credits at the 3000 level or above.

E. Additional elective credits, as required, for an overall total of 120 credits.

F. Standing requirement: to declare Specialized Honours requires successful completion of at least 24 credits, a minimum cumulative credit-weighted grade point average of **2.00 (C)** over all courses completed and a minimum cumulative credit-weighted grade point average of **2.70 (B-)** over all biology courses completed.

To proceed in each year of a Specialized Honours program requires a minimum cumulative credit-weighted grade point

average of ~~5.00 (C+)~~ over all courses completed and a minimum cumulative credit-weighted grade point average of ~~6.00 (B)~~ over all biology courses completed.

To graduate in a Specialized Honours program requires successful completion of all Faculty requirements and departmental required courses, a minimum cumulative credit-weighted grade point average of ~~6.00 (B)~~ over all biology courses completed, and a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all courses completed.

Honours Major Program (iBSc)

Students may follow a stream within the Honours Major program in biomedical science.

A. General education:

- non-science requirement: 12 credits (may be satisfied in whole or part by courses in the international component).
- mathematics: [SC/MATH 1505 6.00](#), or six credits from [SC/MATH 1013 3.00](#), [SC/MATH 1014 3.00](#), [SC/MATH 1025 3.00](#);
- computer science: [LE/EECS 1520 3.00](#) or [LE/EECS 1530 3.00](#) or [LE/EECS 1540 3.00](#);
- foundational science: one of [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) (prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#)); [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#).

average of [2.00 \(C\)](#) over all courses completed and a minimum cumulative credit-weighted grade point average of [2.70 \(B-\)](#) over all biology courses completed.

To graduate in a Specialized Honours program requires successful completion of all Faculty requirements and departmental required courses, a minimum cumulative credit-weighted grade point average of [2.70 \(B-\)](#) over all biology courses completed, and a minimum cumulative credit-weighted grade point average of [2.00 \(C\)](#) over all courses completed.

Honours Major Program (iBSc)

Students may follow a stream within the Honours Major program in biomedical science.

A. General education:

- non-science requirement: 12 credits (may be satisfied in whole or part by courses in the international component).
- mathematics: [SC/MATH 1505 6.00](#), or six credits from [SC/MATH 1013 3.00](#), [SC/MATH 1014 3.00](#), [SC/MATH 1025 3.00](#);
- computer science: [LE/EECS 1520 3.00](#) or [LE/EECS 1530 3.00](#) or [LE/EECS 1540 3.00](#);
- foundational science: one of [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) (prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#)); [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#).

B. Major requirements:

Biology stream

- the program core as specified above (24 credits);
- additional credits from biology courses, as required, for an overall total of at least 45 credits from biology courses (42 credits if [SC/CHEM 2020 3.00](#) and [SC/CHEM 2021 3.00](#) are chosen in the core);

Biomedical Science Stream (iBSc)

- [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#);
- one of [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#); [HH/PSYC 1010 6.00](#);
- [SC/BIOL 1000 3.00](#) and [SC/BIOL 1001 3.00](#), [SC/BIOL 2020 3.00](#), [SC/BIOL 2021 3.00](#), [SC/BIOL 2040 3.00](#), [SC/BIOL 2070 3.00](#), [SC/CHEM 2020 3.00](#) and [SC/CHEM 2021 3.00](#); a minimum of one of [SC/BIOL 2030 4.00](#) or [SC/BIOL 2060 3.00](#);
- a minimum of nine credits chosen from the following courses: [SC/BIOL 3060 4.00](#); [SC/BIOL 3070 4.00](#); [SC/BIOL 3110 3.00](#); [SC/BIOL 3130 3.00](#); [SC/BIOL 3150 4.00](#); [SC/BIOL 3155 3.00](#); [SC/BIOL 4010 3.00](#);
- additional biology credits from the following courses, as required, for an overall total of 42 biology credits: [SC/BIOL 2010 4.00](#), [SC/BIOL 2030 4.00](#), [SC/BIOL 2060 3.00](#), [SC/BIOL 3010 3.00](#), [SC/BIOL 3060 4.00](#), [SC/BIOL 3070](#)

B. Major requirements:

Biology stream

- the program core as specified above (24 credits);
- additional credits from biology courses, as required, for an overall total of at least 45 credits from biology courses (42 credits if [SC/CHEM 2020 3.00](#) and [SC/CHEM 2021 3.00](#) are chosen in the core);

Biomedical Science Stream (iBSc)

- [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#);
- one of [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#); [HH/PSYC 1010 6.00](#);
- [SC/BIOL 1000 3.00](#) and [SC/BIOL 1001 3.00](#), [SC/BIOL 2020 3.00](#), [SC/BIOL 2021 3.00](#), [SC/BIOL 2040 3.00](#), [SC/BIOL 2070 3.00](#), [SC/CHEM 2020 3.00](#) and [SC/CHEM 2021 3.00](#); a minimum of one of [SC/BIOL 2030 4.00](#) or [SC/BIOL 2060 3.00](#);
- a minimum of nine credits chosen from the following courses: [SC/BIOL 3060 4.00](#); [SC/BIOL 3070 4.00](#); [SC/BIOL 3110 3.00](#); [SC/BIOL 3130 3.00](#); [SC/BIOL 3150 4.00](#); [SC/BIOL 3155 3.00](#); [SC/BIOL 4010 3.00](#);
- additional biology credits from the following courses, as required, for an overall total of 42 biology credits: [SC/BIOL 2010 4.00](#), [SC/BIOL 2030 4.00](#), [SC/BIOL 2060 3.00](#), [SC/BIOL 3010 3.00](#), [SC/BIOL 3060 4.00](#), [SC/BIOL 3070](#)

[4.00, SC/BIOL 3071 3.00, SC/BIOL 3100 2.00, SC/BIOL 3110 3.00, SC/BIOL 3120 3.00, SC/BIOL 3130 3.00, SC/BIOL 3140 4.00, SC/BIOL 3150 4.00, SC/BIOL 3155 3.00, SC/BIOL 4000 3.00, SC/BIOL 4000 8.00, SC/BIOL 4010 3.00, SC/BIOL 4020 3.00, SC/BIOL 4030 3.00, SC/BIOL 4061 3.00, SC/BIOL 4110 4.00, SC/BIOL 4141 3.00, SC/BIOL 4150 3.00, SC/BIOL 4151 3.00, SC/BIOL 4155 3.00, SC/BIOL 4200 3.00, SC/BIOL 4220 4.00, SC/BIOL 4270 3.00, SC/BIOL 4285 3.00, SC/BIOL 4290 4.00, SC/BIOL 4310 3.00, SC/BIOL 4320 3.00, SC/BIOL 4350 4.00, SC/BIOL 4360 3.00, SC/BIOL 4370 3.00, SC/BIOL 4380 3.00, SC/BIOL 4410 3.00, SC/BIOL 4450 4.00, SC/BIOL 4510 3.00;](#)

- within the 42 biology credits at least 18 credits must be at the 3000 level or higher, of which at least 12 credits must be at the 4000 level. This must also include a minimum of seven credits from 3000 level or higher biology courses with an associated laboratory component.

In addition, the following must be completed for the international component:

- a minimum of 12 credits of language study in one of the languages offered at York University;
- a minimum of 12 credits of non-science courses with an international component (refer to sample list of courses in the section on international degrees), which will also serve to meet the non-science requirement of the general education component;
- an additional six credits of language study or non-science international

[4.00, SC/BIOL 3071 3.00, SC/BIOL 3100 2.00, SC/BIOL 3110 3.00, SC/BIOL 3120 3.00, SC/BIOL 3130 3.00, SC/BIOL 3140 4.00, SC/BIOL 3150 4.00, SC/BIOL 3155 3.00, SC/BIOL 4000 3.00, SC/BIOL 4000 8.00, SC/BIOL 4010 3.00, SC/BIOL 4020 3.00, SC/BIOL 4030 3.00, SC/BIOL 4061 3.00, SC/BIOL 4110 4.00, SC/BIOL 4141 3.00, SC/BIOL 4150 3.00, SC/BIOL 4151 3.00, SC/BIOL 4155 3.00, SC/BIOL 4200 3.00, SC/BIOL 4220 4.00, SC/BIOL 4270 3.00, SC/BIOL 4285 3.00, SC/BIOL 4290 4.00, SC/BIOL 4310 3.00, SC/BIOL 4320 3.00, SC/BIOL 4350 4.00, SC/BIOL 4360 3.00, SC/BIOL 4370 3.00, SC/BIOL 4380 3.00, SC/BIOL 4410 3.00, SC/BIOL 4450 4.00, SC/BIOL 4510 3.00;](#)

- within the 42 biology credits at least 18 credits must be at the 3000 level or higher, of which at least 12 credits must be at the 4000 level. This must also include a minimum of seven credits from 3000 level or higher biology courses with an associated laboratory component.

In addition, the following must be completed for the international component:

- a minimum of 12 credits of language study in one of the languages offered at York University;
- a minimum of 12 credits of non-science courses with an international component (refer to sample list of courses in the section on international degrees), which will also serve to meet the non-science requirement of the general education component;
- an additional six credits of language study or non-science international

component courses, for a total of 30 credits;

- one to two exchange terms abroad as a full-time student at an institution with which York University has a formal exchange agreement.

C. Science breadth: 24 credits in science disciplines outside the major, of which three credits must be at the 2000 level or above. 15 of these 24 credits are satisfied by the above requirements.

D. Upper level: a minimum of 42 credits at the 3000 level or above.

E. Additional elective credits, as required, for an overall total of 85 credits from science disciplines (including the major) and an overall total of 120 credits.

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses, a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all biology courses completed, and a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all courses completed.

Honours Major/Minor Program (iBSc)

Students may follow a stream within the Honours Major/Minor program in biomedical science (stream requirements are listed under the Biology Honours Major program). This stream may be combined with other approved science minors.

A. General Education:

- non-science requirement: 12 credits (may be satisfied in whole or part by courses in the international component);

component courses, for a total of 30 credits;

- one to two exchange terms abroad as a full-time student at an institution with which York University has a formal exchange agreement.

C. Science breadth: 24 credits in science disciplines outside the major, of which three credits must be at the 2000 level or above. 15 of these 24 credits are satisfied by the above requirements.

D. Upper level: a minimum of 42 credits at the 3000 level or above.

E. Additional elective credits, as required, for an overall total of 85 credits from science disciplines (including the major) and an overall total of 120 credits.

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses, a minimum cumulative credit-weighted grade point average of 2.00 (C) over all biology courses completed, and a minimum cumulative credit-weighted grade point average of 2.00 (C) over all courses completed.

Honours Major/Minor Program (iBSc)

Students may follow a stream within the Honours Major/Minor program in biomedical science (stream requirements are listed under the Biology Honours Major program). This stream may be combined with other approved science minors.

A. General Education:

- non-science requirement: 12 credits (may be satisfied in whole or part by courses in the international component);

- mathematics: [SC/MATH 1505 6.00](#), or six credits from [SC/MATH 1013 3.00](#), [SC/MATH 1014 3.00](#), [SC/MATH 1025 3.00](#);
- computer science: [LE/EECS 1520 3.00](#) or [LE/EECS 1530 3.00](#) or [LE/EECS 1540 3.00](#)
- foundational science: one of [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) (prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#)); [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#).

B. Major requirements:

Biology stream

- the program core as specified above (24 credits);
- additional credits from biology courses, as required, for an overall total of at least 45 credits from biology courses (42 if [SC/CHEM 2020 3.00](#) and [SC/CHEM 2021 3.00](#) are chosen in the core), including at least 18 credits at the 3000 or higher level, of which at least 12 credits are at the 4000 level;
- the course requirements for the minor.

Biomedical science stream

- [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#);
- one of [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421](#)

- mathematics: [SC/MATH 1505 6.00](#), or six credits from [SC/MATH 1013 3.00](#), [SC/MATH 1014 3.00](#), [SC/MATH 1025 3.00](#);
- computer science: [LE/EECS 1520 3.00](#) or [LE/EECS 1530 3.00](#) or [LE/EECS 1540 3.00](#)
- foundational science: one of [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) (prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#)); [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#).

B. Major requirements:

Biology stream

- the program core as specified above (24 credits);
- additional credits from biology courses, as required, for an overall total of at least 45 credits from biology courses (42 if [SC/CHEM 2020 3.00](#) and [SC/CHEM 2021 3.00](#) are chosen in the core), including at least 18 credits at the 3000 or higher level, of which at least 12 credits are at the 4000 level;
- the course requirements for the minor.

Biomedical science stream

- [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#);
- one of [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421](#)

3.00 and SC/PHYS 1422
3.00; SC/PHYS 1011
3.00 and SC/PHYS 1012 3.00; SC/ISCI
1301 3.00 and SC/ISCI 1302
3.00; HH/PSYC 1010 6.00;

- SC/BIOL 1000 3.00 and SC/BIOL 1001
3.00, SC/BIOL 2020 3.00, SC/BIOL
2021 3.00, SC/BIOL 2040
3.00, SC/BIOL 2070 3.00, SC/CHEM
2020 3.00 and SC/CHEM 2021 3.00; a
minimum of one of SC/BIOL 2030
4.00 or SC/BIOL 2060 3.00;
- a minimum of nine credits chosen
from the following courses: SC/BIOL
3060 4.00, SC/BIOL 3070
4.00, SC/BIOL 3110 3.00, SC/BIOL
3130 3.00, SC/BIOL 3150
4.00, SC/BIOL 3155 3.00, SC/BIOL
4010 3.00;
- additional biology credits from the
following courses, as required, for an
overall total of 42 biology
credits: SC/BIOL 2010 4.00, SC/BIOL
2030 4.00, SC/BIOL 2060
3.00, SC/BIOL 3010 3.00, SC/BIOL
3060 4.00, SC/BIOL 3070
4.00, SC/BIOL 3071 3.00, SC/BIOL
3100 2.00, SC/BIOL 3110
3.00, SC/BIOL 3120 3.00, SC/BIOL
3130 3.00, SC/BIOL 3140
4.00, SC/BIOL 3150 4.00, SC/BIOL
3155 3.00, SC/BIOL 4000
3.00, SC/BIOL 4000 8.00, SC/BIOL
4010 3.00, SC/BIOL 4020
3.00, SC/BIOL 4030 3.00, SC/BIOL
4061 3.00, SC/BIOL 4110
4.00, SC/BIOL 4141 3.00, SC/BIOL
4150 3.00, SC/BIOL 4151
3.00, SC/BIOL 4155 3.00, SC/BIOL
4200 3.00, SC/BIOL 4220
4.00, SC/BIOL 4270 3.00, SC/BIOL
4285 3.00, SC/BIOL 4290
4.00, SC/BIOL 4310 3.00, SC/BIOL
4320 3.00, SC/BIOL 4350
4.00, SC/BIOL 4360 3.00, SC/BIOL
4370 3.00, SC/BIOL 4380

3.00 and SC/PHYS 1422
3.00; SC/PHYS 1011
3.00 and SC/PHYS 1012 3.00; SC/ISCI
1301 3.00 and SC/ISCI 1302
3.00; HH/PSYC 1010 6.00;

- SC/BIOL 1000 3.00 and SC/BIOL 1001
3.00, SC/BIOL 2020 3.00, SC/BIOL
2021 3.00, SC/BIOL 2040
3.00, SC/BIOL 2070 3.00, SC/CHEM
2020 3.00 and SC/CHEM 2021 3.00; a
minimum of one of SC/BIOL 2030
4.00 or SC/BIOL 2060 3.00;
- a minimum of nine credits chosen
from the following courses: SC/BIOL
3060 4.00, SC/BIOL 3070
4.00, SC/BIOL 3110 3.00, SC/BIOL
3130 3.00, SC/BIOL 3150
4.00, SC/BIOL 3155 3.00, SC/BIOL
4010 3.00;
- additional biology credits from the
following courses, as required, for an
overall total of 42 biology
credits: SC/BIOL 2010 4.00, SC/BIOL
2030 4.00, SC/BIOL 2060
3.00, SC/BIOL 3010 3.00, SC/BIOL
3060 4.00, SC/BIOL 3070
4.00, SC/BIOL 3071 3.00, SC/BIOL
3100 2.00, SC/BIOL 3110
3.00, SC/BIOL 3120 3.00, SC/BIOL
3130 3.00, SC/BIOL 3140
4.00, SC/BIOL 3150 4.00, SC/BIOL
3155 3.00, SC/BIOL 4000
3.00, SC/BIOL 4000 8.00, SC/BIOL
4010 3.00, SC/BIOL 4020
3.00, SC/BIOL 4030 3.00, SC/BIOL
4061 3.00, SC/BIOL 4110
4.00, SC/BIOL 4141 3.00, SC/BIOL
4150 3.00, SC/BIOL 4151
3.00, SC/BIOL 4155 3.00, SC/BIOL
4200 3.00, SC/BIOL 4220
4.00, SC/BIOL 4270 3.00, SC/BIOL
4285 3.00, SC/BIOL 4290
4.00, SC/BIOL 4310 3.00, SC/BIOL
4320 3.00, SC/BIOL 4350
4.00, SC/BIOL 4360 3.00, SC/BIOL
4370 3.00, SC/BIOL 4380

3.00, SC/BIOL 4450 4.00, SC/BIOL 4510 3.00;

- within the 42 biology credits at least 18 credits must be at the 3000 level or higher, of which at least 12 credits must be at the 4000 level. This must also include a minimum of seven credits from 3000 level or higher biology courses with an associated laboratory component;
- the course requirements for the minor.

In addition, the following must be completed for the international component:

- a minimum of 12 credits of language study in one of the languages offered at York University;
- a minimum of 12 credits of non-science courses with an international component (refer to sample list of courses in the section on international degrees), which will also serve to meet the non-science requirement of the general education component;
- an additional six credits of language study or non-science international component courses, for a total of 30 credits;
- one to two exchange terms abroad as a full-time student at an institution with which York University has a formal exchange agreement.

C. Science breadth: a total of 24 credits in science disciplines outside the major, of which three credits must be at the 2000 level or above. On the biology stream, 15 of these 24 credits are satisfied by the General Education requirement. In the biomedical science stream this requirement is fully satisfied by the above requirements.

3.00, SC/BIOL 4450 4.00, SC/BIOL 4510 3.00;

- within the 42 biology credits at least 18 credits must be at the 3000 level or higher, of which at least 12 credits must be at the 4000 level. This must also include a minimum of seven credits from 3000 level or higher biology courses with an associated laboratory component;
- the course requirements for the minor.

In addition, the following must be completed for the international component:

- a minimum of 12 credits of language study in one of the languages offered at York University;
- a minimum of 12 credits of non-science courses with an international component (refer to sample list of courses in the section on international degrees), which will also serve to meet the non-science requirement of the general education component;
- an additional six credits of language study or non-science international component courses, for a total of 30 credits;
- one to two exchange terms abroad as a full-time student at an institution with which York University has a formal exchange agreement.

C. Science breadth: a total of 24 credits in science disciplines outside the major, of which three credits must be at the 2000 level or above. On the biology stream, 15 of these 24 credits are satisfied by the General Education requirement. In the biomedical science stream this requirement is fully satisfied by the above requirements.

Satisfied if the minor is another science discipline.

D. Upper level: 42 credits at the 3000 level or above.

E. Additional elective credits, as required, for an overall total of 120 credits.

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses, a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all biology courses completed, and a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all courses completed.

Important note: some major/minor combinations will require students to complete more than 120 credits. Students are advised to consult minor requirements as early as possible and to plan their program of study in consultation with an academic adviser and the iBSc supplemental calendar. Courses taken to meet requirements of the minor can also count as international component and/or non-science requirements for the BSc General Education Requirement. In fact, in order to complete the degree requirements within the minimum number of credits some double counting will be necessary. Minors that can, with appropriate planning, be completed with the biology major within 120 credits include African studies, culture and expression, East Asian studies, environmental studies, European studies, geography, German studies, French studies, history, international development studies, Italian culture, Italian studies, Latin American and Caribbean studies, Portuguese studies, psychology, race, ethnicity and indigeneity, South Asian studies and Spanish.

Satisfied if the minor is another science discipline.

D. Upper level: 42 credits at the 3000 level or above.

E. Additional elective credits, as required, for an overall total of 120 credits.

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses, a minimum cumulative credit-weighted grade point average of 2.00 (C) over all biology courses completed, and a minimum cumulative credit-weighted grade point average of 2.00 (C) over all courses completed.

Important note: some major/minor combinations will require students to complete more than 120 credits. Students are advised to consult minor requirements as early as possible and to plan their program of study in consultation with an academic adviser and the iBSc supplemental calendar. Courses taken to meet requirements of the minor can also count as international component and/or non-science requirements for the BSc General Education Requirement. In fact, in order to complete the degree requirements within the minimum number of credits some double counting will be necessary. Minors that can, with appropriate planning, be completed with the biology major within 120 credits include African studies, culture and expression, East Asian studies, environmental studies, European studies, geography, German studies, French studies, history, international development studies, Italian culture, Italian studies, Latin American and Caribbean studies, Portuguese studies, psychology, race, ethnicity and indigeneity, South Asian studies and Spanish.

ENVIRONMENTAL BIOLOGY

Program Core

The program core (35 or 36 credits) is defined as:

- [SC/BIOL 1000 3.00](#) and [SC/BIOL 1001 3.00](#);
- [SC/ENVB 2050 4.00](#);
- [SC/BIOL 2060 3.00](#);
- [SC/BIOL 2070 3.00](#) or [SC/BIOL 2010 4.00](#); [SC/BIOL 2030 4.00](#) (both [SC/CHEM 2020 3.00](#) and [SC/CHEM 2021 3.00](#) may replace one of the two 4 credit biology courses);
- additional courses as required for a total of at least 18 2000-level credits chosen from the following:
 - [SC/BIOL 2010 4.00](#),
 - [SC/BIOL 2020 3.00](#) (cross-listed to: [SC/BCHM 2020 3.00](#)),
 - [SC/BIOL 2021 3.00](#) (cross-listed to: [SC/BCHM 2021 3.00](#)),
 - [SC/BIOL 2030 4.00](#),
 - [SC/BIOL 2040 3.00](#),
 - [SC/BIOL 2070 3.00](#),
 - [SC/CHEM 2020 3.00](#),
 - [SC/CHEM 2021 3.00](#);
- [SC/ENVB 3001 2.00](#) (cross-listed to: [SC/BIOL 3001 2.00](#)) or [SC/ENVB 3001 3.00](#) (cross-listed to: [SC/BIOL 3001 3.00](#));
- [SC/ENVB 3170 3.00](#);
- [SC/ENVB 4245 3.00](#) (cross-listed to: [SC/BIOL 4245 3.00](#));
- [SC/BIOL 4255 3.00](#) (cross-listed to: [EU/ENVS 4111 3.00](#)).

Note: both [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) are required as prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#) if they are chosen in the program core.

ENVIRONMENTAL BIOLOGY

Program Core

The program core (35 or 36 credits) is defined as:

- [SC/BIOL 1000 3.00](#) and [SC/BIOL 1001 3.00](#);
- [SC/ENVB 2050 4.00](#);
- [SC/BIOL 2060 3.00](#);
- [SC/BIOL 2070 3.00](#) or [SC/BIOL 2010 4.00](#); [SC/BIOL 2030 4.00](#) (both [SC/CHEM 2020 3.00](#) and [SC/CHEM 2021 3.00](#) may replace one of the two 4 credit biology courses);
- additional courses as required for a total of at least 18 2000-level credits chosen from the following:
 - [SC/BIOL 2010 4.00](#),
 - [SC/BIOL 2020 3.00](#) (cross-listed to: [SC/BCHM 2020 3.00](#)),
 - [SC/BIOL 2021 3.00](#) (cross-listed to: [SC/BCHM 2021 3.00](#)),
 - [SC/BIOL 2030 4.00](#),
 - [SC/BIOL 2040 3.00](#),
 - [SC/BIOL 2070 3.00](#),
 - [SC/CHEM 2020 3.00](#),
 - [SC/CHEM 2021 3.00](#);
- [SC/ENVB 3001 2.00](#) (cross-listed to: [SC/BIOL 3001 2.00](#)) or [SC/ENVB 3001 3.00](#) (cross-listed to: [SC/BIOL 3001 3.00](#));
- [SC/ENVB 3170 3.00](#);
- [SC/ENVB 4245 3.00](#) (cross-listed to: [SC/BIOL 4245 3.00](#));
- [SC/BIOL 4255 3.00](#) (cross-listed to: [EU/ENVS 4111 3.00](#)).

Note: both [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) are required as prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#) if they are chosen in the program core.

Bachelor Program

A. General education:

- non-science requirement: 12 credits. [EU/ENVS 1000 6.00](#) is recommended for students interested in taking additional environmental studies courses;
- mathematics: [SC/MATH 1505 6.00](#) or six credits from [SC/MATH 1013 3.00](#), [SC/MATH 1014 3.00](#), [SC/MATH 1025 3.00](#);
- computer science: [LE/EECS 1520 3.00](#) or [LE/EECS 1530 3.00](#) or [LE/EECS 1540 3.00](#);
- foundational science: one of [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) (prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#)); [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#).

B. Major requirement:

- the program core, as specified above (35 or 36 credits);
- additional credits from the following list of courses for an overall total of at least 42 credits from environmental biology and biology courses of which at least 12 credits are at the 3000 or higher level:
 - [SC/ENVB 3002 2.00](#) (cross-listed to: [SC/BIOL 3002 2.00](#)),
 - [SC/ENVB 3002 3.00](#) (cross-listed to: [SC/BIOL 3002 3.00](#)),
 - [SC/BIOL 3150 4.00](#),
 - [SC/BIOL 3200 3.00](#),
 - [SC/ENVB 3170 3.00](#),

Bachelor Program

A. General education:

- non-science requirement: 12 credits. [EU/ENVS 1000 6.00](#) is recommended for students interested in taking additional environmental studies courses;
- mathematics: [SC/MATH 1505 6.00](#) or six credits from [SC/MATH 1013 3.00](#), [SC/MATH 1014 3.00](#), [SC/MATH 1025 3.00](#);
- computer science: [LE/EECS 1520 3.00](#) or [LE/EECS 1530 3.00](#) or [LE/EECS 1540 3.00](#);
- foundational science: one of [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) (prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#)); [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#).

B. Major requirement:

- the program core, as specified above (35 or 36 credits);
- additional credits from the following list of courses for an overall total of at least 42 credits from environmental biology and biology courses of which at least 12 credits are at the 3000 or higher level:
 - [SC/ENVB 3002 2.00](#) (cross-listed to: [SC/BIOL 3002 2.00](#)),
 - [SC/ENVB 3002 3.00](#) (cross-listed to: [SC/BIOL 3002 3.00](#)),
 - [SC/BIOL 3150 4.00](#),
 - [SC/BIOL 3200 3.00](#),
 - [SC/ENVB 3170 3.00](#),

- [SC/ENVB 3250 4.00](#) (cross-listed to: [SC/BIOL 3250 4.00](#)),
- [SC/ENVB 3270 3.00](#) (cross-listed to: [SC/BIOL 3270 3.00](#)),
- [SC/ENVB 3280 4.00](#) (cross-listed to: [SC/BIOL 3280 4.00](#)),
- [SC/ENVB 3290 4.00](#) (cross-listed to: [SC/BIOL 3290 4.00](#)),
- [SC/BIOL 3500 3.00](#) (cross-listed to: [EU/GEOG 3500 3.00](#), [SC/GEOG 3500 3.00](#)),
- [SC/BIOL 4085 4.00](#),
- [SC/ENVB 4095 3.00](#) (cross-listed to: [SC/BIOL 4095 3.00](#)),
- [SC/ENVB 4230 4.00](#) (cross-listed to: [SC/BIOL 4230 4.00](#)),
- [SC/ENVB 4245 3.00](#) (cross-listed to: [SC/BIOL 4245 3.00](#)),
- [SC/ENVB 4250 3.00](#) (cross-listed to: [SC/BIOL 4250 3.00](#)),
- [SC/ENVB 4255 3.00](#),
- [SC/ENVB 4265 3.00](#) (cross-listed to: [SC/BIOL 4265 3.00](#)),
- [SC/BIOL 4305 3.00](#),
- [SC/BIOL 4390 3.00](#),
- [SC/ENVB 4700 3.00](#) (cross-listed to: [SC/BIOL 4700 3.00](#)),
- [SC/BIOL 4710 3.00](#);
- [SC/GEOG 1400 6.00](#).

C. Science breadth: 24 credits in science disciplines outside the major, of which three credits must be at the 2000 level or above. 21 of these 24 credits are satisfied by the above requirements.

D. Upper level: a minimum of 18 credits at the 3000 level or above.

E. Additional elective credits, as required, for an overall total of 90 credits.

F. Standing requirements: a minimum overall grade point average of ~~4.00 (C)~~ is required in order to be eligible to graduate with a BSc degree (bachelor program).

- [SC/ENVB 3250 4.00](#) (cross-listed to: [SC/BIOL 3250 4.00](#)),
- [SC/ENVB 3270 3.00](#) (cross-listed to: [SC/BIOL 3270 3.00](#)),
- [SC/ENVB 3280 4.00](#) (cross-listed to: [SC/BIOL 3280 4.00](#)),
- [SC/ENVB 3290 4.00](#) (cross-listed to: [SC/BIOL 3290 4.00](#)),
- [SC/BIOL 3500 3.00](#) (cross-listed to: [EU/GEOG 3500 3.00](#), [SC/GEOG 3500 3.00](#)),
- [SC/BIOL 4085 4.00](#),
- [SC/ENVB 4095 3.00](#) (cross-listed to: [SC/BIOL 4095 3.00](#)),
- [SC/ENVB 4230 4.00](#) (cross-listed to: [SC/BIOL 4230 4.00](#)),
- [SC/ENVB 4245 3.00](#) (cross-listed to: [SC/BIOL 4245 3.00](#)),
- [SC/ENVB 4250 3.00](#) (cross-listed to: [SC/BIOL 4250 3.00](#)),
- [SC/ENVB 4255 3.00](#),
- [SC/ENVB 4265 3.00](#) (cross-listed to: [SC/BIOL 4265 3.00](#)),
- [SC/BIOL 4305 3.00](#),
- [SC/BIOL 4390 3.00](#),
- [SC/ENVB 4700 3.00](#) (cross-listed to: [SC/BIOL 4700 3.00](#)),
- [SC/BIOL 4710 3.00](#);
- [SC/GEOG 1400 6.00](#).

C. Science breadth: 24 credits in science disciplines outside the major, of which three credits must be at the 2000 level or above. 21 of these 24 credits are satisfied by the above requirements.

D. Upper level: a minimum of 18 credits at the 3000 level or above.

E. Additional elective credits, as required, for an overall total of 90 credits.

F. Standing requirements: a minimum overall grade point average of [1.70 \(C-\)](#) is required in order to be eligible to graduate with a BSc degree (bachelor program).

Honours Programs

Honours Major Program

A. General education:

- non-science requirement: 12 credits. [EU/ENVS 1000 6.00](#) is recommended for students interested in taking additional environmental studies courses;
- mathematics: [SC/MATH 1505 6.00](#) or six credits from [SC/MATH 1013 3.00](#), [SC/MATH 1014 3.00](#), [SC/MATH 1025 3.00](#). (**Note:** students intending to combine environmental biology with applied mathematics, chemistry, computer science, earth and atmospheric science, mathematics, mathematics for education, physics and astronomy or statistics should not take [SC/MATH 1505 6.00](#).);
- computer science: [LE/EECS 1520 3.00](#) or [LE/EECS 1530 3.00](#) or [LE/EECS 1540 3.00](#);
- foundational science: one of [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) (prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#)); [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#).

Note: both [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) are required as prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#) in the program core.

Honours Programs

Honours Major Program

A. General education:

- non-science requirement: 12 credits. [EU/ENVS 1000 6.00](#) is recommended for students interested in taking additional environmental studies courses;
- mathematics: [SC/MATH 1505 6.00](#) or six credits from [SC/MATH 1013 3.00](#), [SC/MATH 1014 3.00](#), [SC/MATH 1025 3.00](#). (**Note:** students intending to combine environmental biology with applied mathematics, chemistry, computer science, earth and atmospheric science, mathematics, mathematics for education, physics and astronomy or statistics should not take [SC/MATH 1505 6.00](#).);
- computer science: [LE/EECS 1520 3.00](#) or [LE/EECS 1530 3.00](#) or [LE/EECS 1540 3.00](#);
- foundational science: one of [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) (prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#)); [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#).

Note: both [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) are required as prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#) in the program core.

B. Major requirements:

- The program core as specified above (35 or 36 credits);
- [SC/ENVB 4700 3.00](#);
- additional credits from the following list of courses for an overall total of at least 51 credits from environmental biology and biology courses, including at least 18 credits at the 3000 or higher level, of which at least 12 credits must be at the 4000 level:
 - [SC/ENVB 3002 2.00](#) (cross-listed to: [SC/BIOL 3002 2.00](#)),
 - [SC/ENVB 3002 3.00](#) (cross-listed to: [SC/BIOL 3002 3.00](#)),
 - [SC/BIOL 3150 4.00](#),
 - [SC/BIOL 3200 3.00](#),
 - [SC/ENVB 3250 4.00](#) (cross-listed to: [SC/BIOL 3250 4.00](#)),
 - [SC/ENVB 3270 3.00](#) (cross-listed to: [SC/BIOL 3270 3.00](#)),
 - [SC/ENVB 3280 4.00](#) (cross-listed to: [SC/BIOL 3280 4.00](#)),
 - [SC/ENVB 3290 4.00](#) (cross-listed to: [SC/BIOL 3290 4.00](#)),
 - [SC/BIOL 3500 3.00](#) (cross-listed to: [EU/GEOG 3500 3.00](#), [SC/GEOG 3500 3.00](#)),
 - [SC/ENVB 4000 3.00](#) or [SC/ENVB 4000 8.00](#),
 - [SC/BIOL 4085 4.00](#),
 - [SC/ENVB 4095 3.00](#) (cross-listed to: [SC/BIOL 4095 3.00](#)),
 - [SC/ENVB 4200 3.00](#),
 - [SC/ENVB 4230 4.00](#) (cross-listed to: [SC/BIOL 4230 4.00](#)),
 - [SC/ENVB 4250 3.00](#) (cross-listed to: [SC/BIOL 4250 3.00](#)),
 - [SC/ENVB 4265 3.00](#) (cross-listed to: [SC/BIOL 4265 3.00](#)),
 - [SC/BIOL 4305 3.00](#),
 - [SC/BIOL 4390 3.00](#),
 - [SC/BIOL 4710 3.00](#);
- [SC/GEOG 1400 6.00](#).

B. Major requirements:

- The program core as specified above (35 or 36 credits);
- [SC/ENVB 4700 3.00](#);
- additional credits from the following list of courses for an overall total of at least 51 credits from environmental biology and biology courses, including at least 18 credits at the 3000 or higher level, of which at least 12 credits must be at the 4000 level:
 - [SC/ENVB 3002 2.00](#) (cross-listed to: [SC/BIOL 3002 2.00](#)),
 - [SC/ENVB 3002 3.00](#) (cross-listed to: [SC/BIOL 3002 3.00](#)),
 - [SC/BIOL 3150 4.00](#),
 - [SC/BIOL 3200 3.00](#),
 - [SC/ENVB 3250 4.00](#) (cross-listed to: [SC/BIOL 3250 4.00](#)),
 - [SC/ENVB 3270 3.00](#) (cross-listed to: [SC/BIOL 3270 3.00](#)),
 - [SC/ENVB 3280 4.00](#) (cross-listed to: [SC/BIOL 3280 4.00](#)),
 - [SC/ENVB 3290 4.00](#) (cross-listed to: [SC/BIOL 3290 4.00](#)),
 - [SC/BIOL 3500 3.00](#) (cross-listed to: [EU/GEOG 3500 3.00](#), [SC/GEOG 3500 3.00](#)),
 - [SC/ENVB 4000 3.00](#) or [SC/ENVB 4000 8.00](#),
 - [SC/BIOL 4085 4.00](#),
 - [SC/ENVB 4095 3.00](#) (cross-listed to: [SC/BIOL 4095 3.00](#)),
 - [SC/ENVB 4200 3.00](#),
 - [SC/ENVB 4230 4.00](#) (cross-listed to: [SC/BIOL 4230 4.00](#)),
 - [SC/ENVB 4250 3.00](#) (cross-listed to: [SC/BIOL 4250 3.00](#)),
 - [SC/ENVB 4265 3.00](#) (cross-listed to: [SC/BIOL 4265 3.00](#)),
 - [SC/BIOL 4305 3.00](#),
 - [SC/BIOL 4390 3.00](#),
 - [SC/BIOL 4710 3.00](#);
- [SC/GEOG 1400 6.00](#).

C. Science breadth: 24 credits in science disciplines outside the major, of which three credits must be at the 2000 level or above. 21 of these 24 credits are satisfied by the above requirements.

D. Upper level: a minimum of 42 credits at the 3000 level or above.

E. Additional elective credits, as required, for an overall minimum total of 85 credits from science disciplines (including the major) and an overall total of 120 credits.

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses, a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all environmental biology and biology courses completed, and a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all courses completed.

Honours Double Major Program

All BSc Honours degree candidates should consult departmental advisors as early as possible concerning course requirements for particular Honours Double Major programs. Possible subject combinations for BSc Honours Double Major degree programs are listed in the Undergraduate Degree and Certificate Programs section of the Faculty Rules.

A. General education:

- non-science requirement: 12 credits. [EU/ENVS 1000 6.00](#) is recommended for students interested in taking additional environmental studies courses:
- mathematics: [SC/MATH 1505 6.00](#) or six credits from [SC/MATH 1013 3.00](#), [SC/MATH 1014 3.00](#), [SC/MATH 1025 3.00](#). (Note: students intending

C. Science breadth: 24 credits in science disciplines outside the major, of which three credits must be at the 2000 level or above. 21 of these 24 credits are satisfied by the above requirements.

D. Upper level: a minimum of 42 credits at the 3000 level or above.

E. Additional elective credits, as required, for an overall minimum total of 85 credits from science disciplines (including the major) and an overall total of 120 credits.

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses, a minimum cumulative credit-weighted grade point average of [2.00 \(C\)](#) over all environmental biology and biology courses completed, and a minimum cumulative credit-weighted grade point average of [2.00 \(C\)](#) over all courses completed.

Honours Double Major Program

All BSc Honours degree candidates should consult departmental advisors as early as possible concerning course requirements for particular Honours Double Major programs. Possible subject combinations for BSc Honours Double Major degree programs are listed in the Undergraduate Degree and Certificate Programs section of the Faculty Rules.

A. General education:

- non-science requirement: 12 credits. [EU/ENVS 1000 6.00](#) is recommended for students interested in taking additional environmental studies courses:
- mathematics: [SC/MATH 1505 6.00](#) or six credits from [SC/MATH 1013 3.00](#), [SC/MATH 1014 3.00](#), [SC/MATH 1025 3.00](#). (Note: students intending

to combine environmental biology with applied mathematics, chemistry, computer science, earth and atmospheric science, mathematics, mathematics for education, physics and astronomy or statistics should not take [SC/MATH 1505 6.00.](#));

- computer science: [LE/EECS 1520 3.00](#) or [LE/EECS 1530 3.00](#) or [LE/EECS 1540 3.00](#);
- foundational science: one of [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) (prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#)); [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#).

B. Major requirements:

- [SC/BIOL 1000 3.00](#) and [SC/BIOL 1001 3.00](#);
- [SC/ENVB 2050 4.00](#);
- [SC/BIOL 2060 3.00](#);
- any two of:
 - [SC/BIOL 2010 4.00](#),
 - [SC/BIOL 2020 3.00](#),
 - [SC/BIOL 2021 3.00](#),
 - [SC/BIOL 2030 4.00](#),
 - [SC/BIOL 2040 3.00](#),
 - [SC/BIOL 2070 3.00](#).
 - Both [SC/CHEM 2020 3.00](#) and [SC/CHEM 2021 3.00](#) may replace one of these two biology courses.
- [SC/ENVB 3001 2.00](#) or [SC/ENVB 3001 3.00](#);
- additional credits from the following list of courses for an overall total of at least 42 credits from

to combine environmental biology with applied mathematics, chemistry, computer science, earth and atmospheric science, mathematics, mathematics for education, physics and astronomy or statistics should not take [SC/MATH 1505 6.00.](#));

- computer science: [LE/EECS 1520 3.00](#) or [LE/EECS 1530 3.00](#) or [LE/EECS 1540 3.00](#);
- foundational science: one of [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) (prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#)); [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#).

B. Major requirements:

- [SC/BIOL 1000 3.00](#) and [SC/BIOL 1001 3.00](#);
- [SC/ENVB 2050 4.00](#);
- [SC/BIOL 2060 3.00](#);
- any two of:
 - [SC/BIOL 2010 4.00](#),
 - [SC/BIOL 2020 3.00](#),
 - [SC/BIOL 2021 3.00](#),
 - [SC/BIOL 2030 4.00](#),
 - [SC/BIOL 2040 3.00](#),
 - [SC/BIOL 2070 3.00](#).
 - Both [SC/CHEM 2020 3.00](#) and [SC/CHEM 2021 3.00](#) may replace one of these two biology courses.
- [SC/ENVB 3001 2.00](#) or [SC/ENVB 3001 3.00](#);
- additional credits from the following list of courses for an overall total of at least 42 credits from

environmental biology and biology courses, including at least 18 credits at the 3000 or higher level, of which at least 12 credits must be at the 4000 level:

- [SC/ENVB 3002 2.00](#) (cross-listed to: [SC/BIOL 3002 2.00](#)),
- [SC/ENVB 3002 3.00](#) (cross-listed to: [SC/BIOL 3002 3.00](#)),
- [SC/BIOL 3150 4.00](#),
- [SC/ENVB 3170 3.00](#),
- [SC/BIOL 3200 3.00](#),
- [SC/ENVB 3250 4.00](#) (cross-listed to: [SC/BIOL 3250 4.00](#)),
- [SC/ENVB 3270 3.00](#) (cross-listed to: [SC/BIOL 3270 3.00](#)),
- [SC/ENVB 3280 4.00](#) (cross-listed to: [SC/BIOL 3280 4.00](#)),
- [SC/ENVB 3290 4.00](#) (cross-listed to: [SC/BIOL 3290 4.00](#)),
- [SC/BIOL 3500 3.00](#) (cross-listed to: [EU/GEOG 3500 3.00](#), [SC/GEOG 3500 3.00](#)),
- [SC/ENVB 4000 3.00](#) or [SC/ENVB 4000 8.00](#),
- [SC/BIOL 4085 4.00](#),
- [SC/ENVB 4095 3.00](#) (cross-listed to: [SC/BIOL 4095 3.00](#)),
- [SC/ENVB 4200 3.00](#),
- [SC/ENVB 4230 4.00](#) (cross-listed to: [SC/BIOL 4230 4.00](#)),
- [SC/ENVB 4245 3.00](#) (cross-listed to: [SC/BIOL 4245 3.00](#)),
- [SC/ENVB 4250 3.00](#) (cross-listed to: [SC/BIOL 4250 3.00](#)),
- [SC/ENVB 4255 3.00](#),
- [SC/ENVB 4265 3.00](#) (cross-listed to: [SC/BIOL 4265 3.00](#)),
- [SC/BIOL 4305 3.00](#),
- [SC/BIOL 4390 3.00](#),
- [SC/ENVB 4700 3.00](#) (cross-listed to: [SC/BIOL 4700 3.00](#)),
- [SC/BIOL 4710 3.00](#)

C. Science breadth: 24 credits in science disciplines outside the major, of which three credits must be at the 2000 level or above.

environmental biology and biology courses, including at least 18 credits at the 3000 or higher level, of which at least 12 credits must be at the 4000 level:

- [SC/ENVB 3002 2.00](#) (cross-listed to: [SC/BIOL 3002 2.00](#)),
- [SC/ENVB 3002 3.00](#) (cross-listed to: [SC/BIOL 3002 3.00](#)),
- [SC/BIOL 3150 4.00](#),
- [SC/ENVB 3170 3.00](#),
- [SC/BIOL 3200 3.00](#),
- [SC/ENVB 3250 4.00](#) (cross-listed to: [SC/BIOL 3250 4.00](#)),
- [SC/ENVB 3270 3.00](#) (cross-listed to: [SC/BIOL 3270 3.00](#)),
- [SC/ENVB 3280 4.00](#) (cross-listed to: [SC/BIOL 3280 4.00](#)),
- [SC/ENVB 3290 4.00](#) (cross-listed to: [SC/BIOL 3290 4.00](#)),
- [SC/BIOL 3500 3.00](#) (cross-listed to: [EU/GEOG 3500 3.00](#), [SC/GEOG 3500 3.00](#)),
- [SC/ENVB 4000 3.00](#) or [SC/ENVB 4000 8.00](#),
- [SC/BIOL 4085 4.00](#),
- [SC/ENVB 4095 3.00](#) (cross-listed to: [SC/BIOL 4095 3.00](#)),
- [SC/ENVB 4200 3.00](#),
- [SC/ENVB 4230 4.00](#) (cross-listed to: [SC/BIOL 4230 4.00](#)),
- [SC/ENVB 4245 3.00](#) (cross-listed to: [SC/BIOL 4245 3.00](#)),
- [SC/ENVB 4250 3.00](#) (cross-listed to: [SC/BIOL 4250 3.00](#)),
- [SC/ENVB 4255 3.00](#),
- [SC/ENVB 4265 3.00](#) (cross-listed to: [SC/BIOL 4265 3.00](#)),
- [SC/BIOL 4305 3.00](#),
- [SC/BIOL 4390 3.00](#),
- [SC/ENVB 4700 3.00](#) (cross-listed to: [SC/BIOL 4700 3.00](#)),
- [SC/BIOL 4710 3.00](#)

C. Science breadth: 24 credits in science disciplines outside the major, of which three credits must be at the 2000 level or above.

15 of these 24 credits are satisfied by the above requirements. Satisfied if the second major is another science discipline.

D. Upper level: a minimum of 42 credits at the 3000 level or above.

E. Additional elective credits, as required, for an overall total of 120 credits.

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses, a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all environmental biology and biology courses completed, and a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all courses completed.

Honours Major/Minor Program

An Honours Major in environmental biology may be combined with an Honours Minor in another subject area in a BSc Honours Major/Minor degree program. Possible subject combinations are listed in the Undergraduate Degree and Certificate Programs section of the Faculty Rules.

A. General education:

- non-science requirement: 12 credits. [EU/ENVS 1000 6.00](#) is recommended for students interested in taking additional environmental studies courses:
- mathematics: [SC/MATH 1505 6.00](#) or six credits from [SC/MATH 1013 3.00](#), [SC/MATH 1014 3.00](#), [SC/MATH 1025 3.00](#). (Note: students intending to combine environmental biology with applied mathematics, chemistry, computer science, earth and atmospheric science, mathematics, mathematics for education, physics and astronomy or

15 of these 24 credits are satisfied by the above requirements. Satisfied if the second major is another science discipline.

D. Upper level: a minimum of 42 credits at the 3000 level or above.

E. Additional elective credits, as required, for an overall total of 120 credits.

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses, a minimum cumulative credit-weighted grade point average of [2.00 \(C\)](#) over all environmental biology and biology courses completed, and a minimum cumulative credit-weighted grade point average of [2.00 \(C\)](#) over all courses completed.

Honours Major/Minor Program

An Honours Major in environmental biology may be combined with an Honours Minor in another subject area in a BSc Honours Major/Minor degree program. Possible subject combinations are listed in the Undergraduate Degree and Certificate Programs section of the Faculty Rules.

A. General education:

- non-science requirement: 12 credits. [EU/ENVS 1000 6.00](#) is recommended for students interested in taking additional environmental studies courses:
- mathematics: [SC/MATH 1505 6.00](#) or six credits from [SC/MATH 1013 3.00](#), [SC/MATH 1014 3.00](#), [SC/MATH 1025 3.00](#). (Note: students intending to combine environmental biology with applied mathematics, chemistry, computer science, earth and atmospheric science, mathematics, mathematics for education, physics and astronomy or

statistics should not take [SC/MATH 1505 6.00](#).);

- computer science: [LE/EECS 1520 3.00](#) or [LE/EECS 1530 3.00](#) or [LE/EECS 1540 3.00](#);
- foundational science: one of [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) (prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#)); [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#).

B. Major requirements:

- the program core as specified above (35 to 36 credits);
- [SC/ENVB 4700 3.00](#);
- additional credits from the following list of courses for an overall total of at least 51 credits from environmental biology and biology courses, including at least 18 credits at the 3000 or higher level, of which at least 12 credits must be at the 4000 level:
 - [SC/ENVB 3002 2.00](#) (cross-listed to: [SC/BIOL 3002 2.00](#)),
 - [SC/ENVB 3002 3.00](#) (cross-listed to: [SC/BIOL 3002 3.00](#)),
 - [SC/BIOL 3150 4.00](#),
 - [SC/BIOL 3200 3.00](#),
 - [SC/ENVB 3250 4.00](#) (cross-listed to: [SC/BIOL 3250 4.00](#)),
 - [SC/ENVB 3270 3.00](#) (cross-listed to: [SC/BIOL 3270 3.00](#)),
 - [SC/ENVB 3280 4.00](#) (cross-listed to: [SC/BIOL 3280 4.00](#)),
 - [SC/ENVB 3290 4.00](#) (cross-listed to: [SC/BIOL 3290 4.00](#)),

statistics should not take [SC/MATH 1505 6.00](#).);

- computer science: [LE/EECS 1520 3.00](#) or [LE/EECS 1530 3.00](#) or [LE/EECS 1540 3.00](#);
- foundational science: one of [SC/CHEM 1000 3.00](#) and [SC/CHEM 1001 3.00](#) (prerequisites for [SC/BIOL 2020 3.00](#) and [SC/CHEM 2020 3.00](#)); [SC/PHYS 1410 6.00](#); [SC/PHYS 1420 6.00](#); [SC/PHYS 1010 6.00](#); [SC/ISCI 1310 6.00](#); [SC/PHYS 1411 3.00](#) and [SC/PHYS 1412 3.00](#); [SC/PHYS 1421 3.00](#) and [SC/PHYS 1422 3.00](#); [SC/PHYS 1011 3.00](#) and [SC/PHYS 1012 3.00](#); [SC/ISCI 1301 3.00](#) and [SC/ISCI 1302 3.00](#).

B. Major requirements:

- the program core as specified above (35 to 36 credits);
- [SC/ENVB 4700 3.00](#);
- additional credits from the following list of courses for an overall total of at least 51 credits from environmental biology and biology courses, including at least 18 credits at the 3000 or higher level, of which at least 12 credits must be at the 4000 level:
 - [SC/ENVB 3002 2.00](#) (cross-listed to: [SC/BIOL 3002 2.00](#)),
 - [SC/ENVB 3002 3.00](#) (cross-listed to: [SC/BIOL 3002 3.00](#)),
 - [SC/BIOL 3150 4.00](#),
 - [SC/BIOL 3200 3.00](#),
 - [SC/ENVB 3250 4.00](#) (cross-listed to: [SC/BIOL 3250 4.00](#)),
 - [SC/ENVB 3270 3.00](#) (cross-listed to: [SC/BIOL 3270 3.00](#)),
 - [SC/ENVB 3280 4.00](#) (cross-listed to: [SC/BIOL 3280 4.00](#)),
 - [SC/ENVB 3290 4.00](#) (cross-listed to: [SC/BIOL 3290 4.00](#)),

- [SC/BIOL 3500 3.00](#) (cross-listed to: [EU/GEOG 3500 3.00](#), [SC/GEOG 3500 3.00](#)),
- [SC/ENVB 4000 3.00](#) or [SC/ENVB 4000 8.00](#),
- [SC/BIOL 4085 4.00](#),
- [SC/ENVB 4095 3.00](#) (cross-listed to: [SC/BIOL 4095 3.00](#)),
- [SC/ENVB 4200 3.00](#),
- [SC/ENVB 4230 4.00](#) (cross-listed to: [SC/BIOL 4230 4.00](#)),
- [SC/ENVB 4250 3.00](#) (cross-listed to: [SC/BIOL 4250 3.00](#)),
- [SC/ENVB 4265 3.00](#) (cross-listed to: [SC/BIOL 4265 3.00](#)),
- [SC/BIOL 4305 3.00](#),
- [SC/BIOL 4390 3.00](#),
- [SC/BIOL 4710 3.00](#);
- [SC/GEOG 1400 6.00](#);
- the course requirements for the minor.

C. Science breadth: 24 credits in science disciplines outside the major, of which three credits must be at the 2000 level or above. 21 of these 24 credits are satisfied by the above requirements. Satisfied if the minor is another science discipline.

D. Upper level: a minimum of 42 credits at the 3000 level or above.

E. Additional elective credits, as required, for an overall total of 120 credits.

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses, a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all environmental biology and biology courses completed, and a minimum cumulative credit-weighted grade point average of ~~5.00 (C+)~~ over all courses completed.

Honours Minor

- [SC/BIOL 3500 3.00](#) (cross-listed to: [EU/GEOG 3500 3.00](#), [SC/GEOG 3500 3.00](#)),
- [SC/ENVB 4000 3.00](#) or [SC/ENVB 4000 8.00](#),
- [SC/BIOL 4085 4.00](#),
- [SC/ENVB 4095 3.00](#) (cross-listed to: [SC/BIOL 4095 3.00](#)),
- [SC/ENVB 4200 3.00](#),
- [SC/ENVB 4230 4.00](#) (cross-listed to: [SC/BIOL 4230 4.00](#)),
- [SC/ENVB 4250 3.00](#) (cross-listed to: [SC/BIOL 4250 3.00](#)),
- [SC/ENVB 4265 3.00](#) (cross-listed to: [SC/BIOL 4265 3.00](#)),
- [SC/BIOL 4305 3.00](#),
- [SC/BIOL 4390 3.00](#),
- [SC/BIOL 4710 3.00](#);
- [SC/GEOG 1400 6.00](#);
- the course requirements for the minor.

C. Science breadth: 24 credits in science disciplines outside the major, of which three credits must be at the 2000 level or above. 21 of these 24 credits are satisfied by the above requirements. Satisfied if the minor is another science discipline.

D. Upper level: a minimum of 42 credits at the 3000 level or above.

E. Additional elective credits, as required, for an overall total of 120 credits.

F. Standing requirements: to graduate in an Honours program requires successful completion of all Faculty requirements and departmental required courses, a minimum cumulative credit-weighted grade point average of [2.00 \(C\)](#) over all environmental biology and biology courses completed, and a minimum cumulative credit-weighted grade point average of [2.00 \(C\)](#) over all courses completed.

Honours Minor

An Honours minor in environmental biology may be combined with an Honours major in another subject area. Possible subject combinations are listed in the Undergraduate Degree and Certificate Programs section of the Faculty Rules.

- [SC/BIOL 1000 3.00](#) and [SC/BIOL 1001 3.00](#);
- [SC/ENVB 2050 4.00](#);
- [SC/BIOL 2060 3.00](#);
- any two of:
 - [SC/BIOL 2010 4.00](#),
 - [SC/BIOL 2020 3.00](#),
 - [SC/BIOL 2021 3.00](#),
 - [SC/BIOL 2030 4.00](#),
 - [SC/BIOL 2040 3.00](#),
 - [SC/BIOL 2070 3.00](#);
 - Both [SC/CHEM 2020 3.00](#) and [SC/CHEM 2021 3.00](#) may substitute for one of these two biology courses.
- [SC/ENVB 3001 2.00](#) (cross-listed to: [SC/BIOL 3001 2.00](#)) or [SC/ENVB 3001 3.00](#) (cross-listed to: [SC/BIOL 3001 3.00](#));
- additional credits from the following list of courses for an overall total of at least nine credits from environmental biology and biology courses at the 3000 or 4000 level:
 - [SC/ENVB 3002 2.00](#) (cross-listed to: [SC/BIOL 3002 2.00](#)),
 - [SC/ENVB 3002 3.00](#) (cross-listed to: [SC/BIOL 3002 3.00](#)),
 - [SC/BIOL 3150 4.00](#),
 - [SC/ENVB 3170 3.00](#),
 - [SC/BIOL 3200 3.00](#),
 - [SC/ENVB 3250 4.00](#) (cross-listed to: [SC/BIOL 3250 4.00](#)),
 - [SC/ENVB 3270 3.00](#) (cross-listed to: [SC/BIOL 3270 3.00](#)),
 - [SC/ENVB 3280 4.00](#) (cross-listed to: [SC/BIOL 3280 4.00](#)),
 - [SC/ENVB 3290 4.00](#) (cross-listed to: [SC/BIOL 3290 4.00](#)),

An Honours minor in environmental biology may be combined with an Honours major in another subject area. Possible subject combinations are listed in the Undergraduate Degree and Certificate Programs section of the Faculty Rules.

- [SC/BIOL 1000 3.00](#) and [SC/BIOL 1001 3.00](#);
- [SC/ENVB 2050 4.00](#);
- [SC/BIOL 2060 3.00](#);
- any two of:
 - [SC/BIOL 2010 4.00](#),
 - [SC/BIOL 2020 3.00](#),
 - [SC/BIOL 2021 3.00](#),
 - [SC/BIOL 2030 4.00](#),
 - [SC/BIOL 2040 3.00](#),
 - [SC/BIOL 2070 3.00](#);
 - Both [SC/CHEM 2020 3.00](#) and [SC/CHEM 2021 3.00](#) may substitute for one of these two biology courses.
- [SC/ENVB 3001 2.00](#) (cross-listed to: [SC/BIOL 3001 2.00](#)) or [SC/ENVB 3001 3.00](#) (cross-listed to: [SC/BIOL 3001 3.00](#));
- additional credits from the following list of courses for an overall total of at least nine credits from environmental biology and biology courses at the 3000 or 4000 level:
 - [SC/ENVB 3002 2.00](#) (cross-listed to: [SC/BIOL 3002 2.00](#)),
 - [SC/ENVB 3002 3.00](#) (cross-listed to: [SC/BIOL 3002 3.00](#)),
 - [SC/BIOL 3150 4.00](#),
 - [SC/ENVB 3170 3.00](#),
 - [SC/BIOL 3200 3.00](#),
 - [SC/ENVB 3250 4.00](#) (cross-listed to: [SC/BIOL 3250 4.00](#)),
 - [SC/ENVB 3270 3.00](#) (cross-listed to: [SC/BIOL 3270 3.00](#)),
 - [SC/ENVB 3280 4.00](#) (cross-listed to: [SC/BIOL 3280 4.00](#)),
 - [SC/ENVB 3290 4.00](#) (cross-listed to: [SC/BIOL 3290 4.00](#)),

- [SC/BIOL 3500 3.00](#) (cross-listed to: [EU/GEOG 3500 3.00](#), [SC/GEOG 3500 3.00](#)),
- [SC/BIOL 4085 4.00](#),
- [SC/ENVB 4095 3.00](#) (cross-listed to: [SC/BIOL 4095 3.00](#)),
- [SC/BIOL 4200 3.00](#),
- [SC/ENVB 4095 3.00](#),
- [SC/ENVB 4230 4.00](#) (cross-listed to: [SC/BIOL 4230 4.00](#)),
- [SC/ENVB 4245 3.00](#) (cross-listed to: [SC/BIOL 4245 3.00](#)),
- [SC/ENVB 4250 3.00](#) (cross-listed to: [SC/BIOL 4250 3.00](#)),
- [SC/ENVB 4255 3.00](#),
- [SC/ENVB 4265 3.00](#) (cross-listed to: [SC/BIOL 4265 3.00](#)),
- [SC/BIOL 4305 3.00](#),
- [SC/BIOL 4390 3.00](#),
- [SC/ENVB 4700 3.00](#) (cross-listed to: [SC/BIOL 4700 3.00](#)),
- [SC/BIOL 4710 3.00](#);
- additional credits from the above listed environmental biology and biology courses at the 2000 or higher level, as required for an overall total of at least 30 environmental biology or biology credits.

- [SC/BIOL 3500 3.00](#) (cross-listed to: [EU/GEOG 3500 3.00](#), [SC/GEOG 3500 3.00](#)),
- [SC/BIOL 4085 4.00](#),
- [SC/ENVB 4095 3.00](#) (cross-listed to: [SC/BIOL 4095 3.00](#)),
- [SC/BIOL 4200 3.00](#),
- [SC/ENVB 4095 3.00](#),
- [SC/ENVB 4230 4.00](#) (cross-listed to: [SC/BIOL 4230 4.00](#)),
- [SC/ENVB 4245 3.00](#) (cross-listed to: [SC/BIOL 4245 3.00](#)),
- [SC/ENVB 4250 3.00](#) (cross-listed to: [SC/BIOL 4250 3.00](#)),
- [SC/ENVB 4255 3.00](#),
- [SC/ENVB 4265 3.00](#) (cross-listed to: [SC/BIOL 4265 3.00](#)),
- [SC/BIOL 4305 3.00](#),
- [SC/BIOL 4390 3.00](#),
- [SC/ENVB 4700 3.00](#) (cross-listed to: [SC/BIOL 4700 3.00](#)),
- [SC/BIOL 4710 3.00](#);
- additional credits from the above listed environmental biology and biology courses at the 2000 or higher level, as required for an overall total of at least 30 environmental biology or biology credits.

New Grading Schemes: Template for Program and/or Academic Regulation Changes

This template should be used for changes to program and/or academic regulations (e.g. changes to admission, degree and program requirements) resulting from the transition to the new grading schemes effective FW2023-2024.

Once this template has been completed and reviewed by the appropriate Faculty-level governance body/bodies, it should be submitted to ASCP via a [MachForm](#) (at the hyperlink) by no later than April 7, 2021.

1. Please select **ONE** of the two checkboxes below.

☒ **A.** The changes described below:

- 1) consist of a mathematical conversion of GPA requirements from the current to the new grading schemes in accordance with the conversion scales **OR**
- 2) align with the minimum undergraduate thresholds outlined in *the Policy on York University Grading Schemes*

☐ **B.** The changes described below **do not** meet the criteria outlined in A, i.e. they represent a change to GPA requirements that varies from the mathematical conversion and University standard or include elements such as major GPA, course grade or graduation requirements.

If you require clarity about which category is most appropriate, please contact the ASCP Secretary at kwhite1@yorku.ca.

2. Program: Science and Technology Studies

3. Degree Designation: (List all degree options within the program) Majors and Minors

4. Type of Modification: Changes to program or academic regulations as a result of the transition to the new grading schemes (Additional detail may be added) TBD

5. Effective Date: FW2023-2024

6. Describe the proposed changes to the program or academic regulations. (**Not required if A is checked**)

7. Provide the rationale for the proposed changes that is rooted in academic standards, fairness to students, and the program learning outcomes. (**Not required if A is checked**)

8. Summarize the consultation undertaken within the program and with relevant academic or non-academic units, such as the Dean or Principal's Office and the Office of the University Registrar. (**Not required if A is checked**)

9. 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.

Instructions:

- Reproduce only the sections in which GPA changes are being made for the program/certificate/diploma. Please ensure to capture all references to the GPA.
- Reproduce relevant content for all degree options within a program (Specialized Honours, Honours, 90-credit, Honours Minor, etc).
- Denote deletions/changes with ~~strikethrough~~ in the LEFT column and additions/changes with **bold, blue, underlined** type in the RIGHT column.
- An example is provided below for reference.

Existing Program/Certificate/Diploma Regulations	New Program/Certificate/Diploma Regulations
Program name Specialized Honours BA Graduation Requirement: students must successfully complete (pass) at least 120 credits which meet the Faculty's degree and program requirements with a cumulative grade point average of at least 5.00. Honours BA Graduation Requirement: students must successfully complete (pass) at least 120 credits which meet the Faculty's degree and program requirements with a cumulative grade point average of at least 5.00. BA Graduation Requirement: students must successfully complete (pass) at least 90 credits which meet the Faculty's degree and program requirements with a cumulative grade point average of at least 4.00. Honours Double Major BA The Honours BA program described above may be pursued jointly with approved Honours Double Major degree programs. Honours Major/Minor BA The Honours BA program described above may be pursued jointly with approved Honours Minor degree programs. Honours iBA Graduation Requirement: students must successfully complete (pass) at least 120 credits which meet the Faculty's degree and program requirements with a cumulative grade point average of at least 5.00.	Program name Specialized Honours BA Graduation Requirement: students must successfully complete (pass) at least 120 credits which meet the Faculty's degree and program requirements with a cumulative grade point average of at least <u>2.00</u>. Honours BA Graduation Requirement: students must successfully complete (pass) at least 120 credits which meet the Faculty's degree and program requirements with a cumulative grade point average of at least <u>2.00</u>. BA Graduation Requirement: students must successfully complete (pass) at least 90 credits which meet the Faculty's degree and program requirements with a cumulative grade point average of at least <u>1.70</u>. Honours Double Major BA No change. Honours Major/Minor BA No change. Honours iBA Graduation Requirement: students must successfully complete (pass) at least 120 credits which meet the Faculty's degree and program requirements with a cumulative grade point average of at least <u>2.00</u>. iBA Graduation Requirement: students must successfully complete (pass) at least 90 credits which meet the Faculty's degree and

iBA

Graduation Requirement: students must successfully complete (pass) at least 90 credits which meet the Faculty's degree and program requirements with a cumulative grade point average of at least ~~4.00~~.

Honours Double Major iBA

The Honours iBA program described above may be pursued jointly with any Honours Double Major BA program

Honours Major/Minor iBA

The Honours iBA program described above may be pursued jointly with any Honours Minor BA program

program requirements with a cumulative grade point average of at least [1.70](#).

Honours Double Major iBA

No change.

Honours Major/Minor iBA

No change.

Science for the Future

Faculty of Science Strategic Plan 2021–2025

Fostering
discovery.
Engaging
community.
Inspiring
futures.



science



Science for the Future

Preamble: Contingency mechanism

This strategic plan represents our forward-looking approach to the next five years (2021–2025). In 2021, there remains considerable uncertainty regarding the global COVID-19 pandemic and the return to in-person learning on university campuses. As the pandemic continues to evolve, it is possible that a further extension to online learning will be required. In this scenario, the Faculty of Science will pivot to a contingency plan focused on remote learning and support for research, strengthening its online teaching and learning capabilities and investing significant resources into e-learning and technology enhancement.

Vision

Fostering discovery. Engaging community. Inspiring futures.

Mission

The Faculty of Science is a hub of research and teaching excellence, fostering scientific discovery and tackling global challenges to create positive change in our world. Our students learn from leading scientists and benefit from a contemporary curriculum and hands-on opportunities, enabling their transition to impactful careers. Our researchers collaborate and engage globally and here at home, enhancing our academic excellence, diversity, and our capacity to build a better future for everyone. Our dedicated, service-oriented staff allow our Faculty community to flourish.



Strategic Priority:

TEACHING & LEARNING

GOAL

Provide students with a high-quality education and the knowledge, skills, and credentials they desire to successfully transition into rewarding and impactful careers.

INITIATIVES

- 1** Deliver high-quality academic programs in high-demand fields that reflect the aspirations of students; meet or exceed University-established enrolment targets for both domestic and international students.
- 2** Identify and target geographic markets for international enrolment growth; create strategic initiatives that promote and position the Faculty of Science as a preferred collaborator and partner on the international stage.
- 3** Develop and promote high-quality, leading-edge curriculum that will differentiate the Faculty of Science, such as:
 - a. In-demand programs that correspond directly to societal needs.
 - b. In-demand micro-credentials, certificate programs, and professional degrees that enhance employability.
 - c. Increased intra- and inter-faculty collaborative programs.
 - d. Optimized online and blended in-person/online courses and programs to diversify learning.
 - e. Advancement of academic programming at the forthcoming Markham campus.
- 4** Excel in teaching through pedagogical excellence and innovation; support and acknowledge faculty members' pedagogical efforts.
 - a. Promote teaching excellence through training, workshops, and engagement with all faculty members, working with the Committee on Teaching and Learning (CoTL) and the Teaching Commons.
 - b. Encourage and promote avenues for constructive and impactful learning evaluations.
- 5** Promote alignment of course learning outcomes, teaching and learning activities, and assessments, to be confirmed in curriculum reviews. Improve communication between Dean's Office and departments regarding the outcomes of curriculum reviews and implementation. Promote and support curricular mapping of programs within each unit.
- 6** Recognize teaching excellence through internal and external award nominations and celebration of these achievements; track nominations and awards at department and Faculty levels.



Strategic Priority:

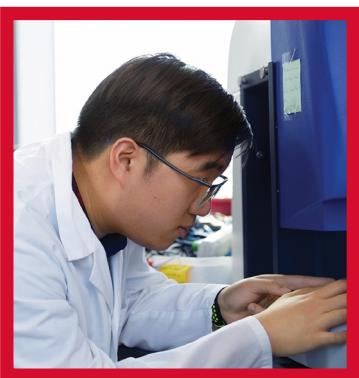
RESEARCH

GOAL

Foster research excellence through recruitment and retention, recognition, and support of world-class faculty and trainees, combined with a targeted focus on existing and emerging areas of research excellence, making the Faculty a hub of cutting-edge research and innovation in both fundamental and applied areas. Promote impactful, research-intensive culture across the Faculty.

INITIATIVES

- 1 Identify research strengths and areas of concentration to leverage and grow, such as those that:
 - a. Align with the UN's Sustainable Development Goals and tackle key societal challenges.
 - b. Are global, diverse, and collaborative.
- 2 Substantially increase external research funding compared to 2015–2020 average levels from diversified sources including government, industry, foundations, and philanthropy, in part by supporting strategic/team applications (e.g., CFI, ORF, NFRF-T, CREATE, Genome Canada) and potential commercialization opportunities.
 - a. Encourage formation of Organized Research Units to help support these endeavours.
 - b. Encourage engagement by all faculty in research activities.
- 3 Raise the number, visibility, and impact of research chair appointments with a view to strengthening and building research clusters in the aforementioned areas.
- 4 Promote our research successes to key audiences to reinforce their relevance to our community; track and measure the impacts of these promotional efforts.
 - a. Support researchers' engagement in public outreach efforts to communicate their research to broader audiences, including industry and policymakers.
- 5 Support and centrally track research awards, enabling more faculty across all ranks to receive major internal (e.g., President's Research Excellence Award) and external research awards and honours (e.g., FRSC, NSERC McDonald Fellowships, Sloan Fellowships, CIFAR Global Scholar Awards).
- 6 Expand research connections and partnerships with industry and government – locally, nationally, and internationally.
- 7 Optimize and strengthen our internal research support mechanisms for researchers and students.
 - a. Keep research infrastructure competitive and develop sustainable models for maintenance and support of centralized and shared equipment, including YSciCore (our core facility for microscopy, nuclear magnetic resonance, and mass spectrometry).
 - b. Provide enhanced personalized grant and award development support.



Strategic Priority:

STUDENT EXPERIENCE & SUCCESS

GOAL

Using a student-focused lens, provide supports that enhance our students' experience in the Faculty of Science and facilitate their success during their time with us and beyond.

INITIATIVES

- 1 Consistently measure and improve student satisfaction, performance, and retention using validated tools.
- 2 Improve quality and efficiency of undergraduate advising and support:
 - a. Measure and improve quality, consistency, and response time of advising across departments and the Faculty.
 - b. Improve quality, accessibility, and organization of Faculty of Science online resources and contact channels for current and prospective students.
- 3 Enhance experiential learning opportunities and access to career paths:
 - a. Increase co-op, experiential learning, research, and industry mentorship opportunities; create experiential education experiences available to all science majors.
 - b. Create mechanisms to support faculty interaction and engagement with industry.
 - c. Create a science alumni network for mentorship, networking, and career opportunities for students and recent graduates.
 - d. Expand opportunities for research (e.g., summer research awards) and experiential learning (e.g., Mitacs placements, co-op programs) for students at all levels.
- 4 Establish new undergraduate and graduate scholarships/awards and bursaries for both domestic and international students; increase support to help students identify and apply to available scholarships and bursaries, including external awards.
- 5 Support and work with Faculty of Graduate Studies and other relevant Faculties/ partners to offer professional development opportunities for postdoctoral fellows and graduate students.
- 6 Initiate partnerships and collaborations to leverage the GTA entrepreneurial ecosystem (e.g., MaRS, ventureLAB, other incubators/accelerators) and existing university resources (e.g., YSpace) to help prepare our students for the job market and open opportunities to entrepreneurial career paths.
- 7 Ensure that diversity and accessibility are reflected in curricula and program offerings:
 - a. Create more opportunities for all students to have international exchange and field course experiences.
 - b. Add and improve existing supports to ensure a supportive and equitable educational and cultural environment for all students.
 - c. Improve accessibility and accommodations for students with disabilities.



Strategic Priority:

ORGANIZATIONAL EXCELLENCE

GOAL

Make the Faculty of Science an enabling, empowering, and inclusive community that attracts and retains high-quality faculty, staff, researchers, and students. Encourage and promote individual excellence as well as collaboration and teamwork.

INITIATIVES

- 1 Implement the principles of Equity, Diversity and Inclusion (EDI) in every aspect of the Faculty of Science community; increase and improve communication surrounding related goals and initiatives.
- 2 Incorporate accessibility fully into our planning, keeping in mind the requirements under the *Accessibility for Ontarians with Disabilities Act* for all public and private institutions to be fully accessible by 2025.
- 3 Actively support the mental and physical wellbeing of faculty, researchers, staff, and students by supporting, promoting, and increasing awareness around the university's mental and physical health resources.
- 4 Implement Dean's Space Strategy Taskforce Report to strategically manage our Faculty's space needs; upgrade and create spaces for students, teaching, research, and services that are welcoming, collaborative, accessible, and help attract and retain students, faculty, researchers, and staff.
- 5 Support the ongoing professional development of our faculty, researchers, and staff with resources and programming, and communication of available supports.
- 6 Promote a culture of community, collaboration, and celebration of our successes within the Faculty:
 - a. Provide more opportunities for faculty, researchers, staff, and students to give input and feedback for improvement to all aspects of our Faculty.
 - b. Support and facilitate Faculty-wide events/programs that promote intellectual and social interactions across disciplines and departments, and between students, faculty, staff, and researchers.
 - c. Solicit, support, and track nominations for awards and honours for faculty, staff, researchers, students, and alumni to celebrate their contributions to our success.
- 7 Enhance transparency and communication surrounding Faculty governance, operation, and key metrics to encourage and support strategic decision-making by all members of the Faculty.



Strategic Priority:

REPUTATION, ENGAGEMENT & OUTREACH

GOAL

Promote the Faculty of Science effectively to key audiences both within and outside of York University. Offer innovative outreach programs that raise the profile, reputation, and impact of the Faculty of Science.

INITIATIVES

- 1** Develop a strategic and comprehensive communications plan targeted to Faculty of Science constituencies and stakeholders, including: Prospective and current students; decision makers (parents/guardians); faculty and staff; alumni and recent grads; industry; government/funders; prospective and current donors, and internal/external media.
- 2** Raise the profile of the Faculty by promoting its research, teaching, student, and alumni successes both internally within the university and externally to media and the public. Offer supports to enable this, including:
 - a. Communications, social media, and marketing resources and best practices for faculty, researchers, and staff.
 - b. Raising awareness of and encouraging participation in communications/media training offered by central communications.
- 3** Continue to serve and engage the wider community through innovative outreach programs including:
 - a. Continuation and expansion of programs for children/youth, high school students, teachers, and the general public.
 - b. Identification of and outreach to underrepresented communities.
 - c. Opportunities for the general public to directly engage with Faculty of Science research and faculty members.
 - d. International engagement and outreach programs in identified target markets.
- 4** Foster alumni connectivity and new alumni engagement opportunities to expand our reach and profile.
- 5** Work with York University's Advancement team to increase efforts and outcomes of philanthropic activities.





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science

