



FACULTY OF SCIENCE

COUNCIL OF THE FACULTY OF SCIENCE

Notice of Meeting

**Tuesday, November 13, 2018
at 3:00pm – 4:30pm
306 Lumbers**

Agenda

1. Call to Order and Approval of Agenda
2. Chair's Remarks
3. Approval of Minutes of October 9, 2018 meeting
4. Business Arising
5. Inquiries and Communications
 - Senate Synopsis: meeting of September 27, 2018
 - Senate Synopsis: meeting of October 25, 2018
6. Dean's Report to Council
7. Associate Deans' and Head of Bethune College Remarks
8. Reports from Science Representatives on Senate Committees
9. Reports from Standing Committees of Council
 - 9.1 Executive Committee
 - Ratification of Student Representative nominations (item for action)
 - 9.2 Curriculum Committee (consent agenda items)
10. Other Business
 - 10.1 Update: FSc Decanal Search Committee
 - 10.2 York Cares United Way campaign (5 minutes): Stephen Childs, Senior Institutional Analyst - Surveys & Special Projects
 - 10.2 Faculty Council Discussions of Freedom of Speech Policy Initiative



FACULTY OF SCIENCE

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**Tuesday, October 9, 2018
at 3:00pm – 4:30pm
306 Lumbers**

Minutes

Attendance: M. Armour (Vice-Chair) D. R. Hastie, M. Xu, EJ Janse van Rensburg, A. Mun, M. McCall, J. Lazenby, K. M. Kenton; P. L. Lakin-Thomas, D. Hossain, R. L. Metcalfe, J. V. Pavri, Elwick, J. Steeves, N. Madras, T. Baumgartner, D. Dev, A. Gideon, R. Noormohammadi, G. Sohal, C. Girgis, R. Cheung, S. Siyakatshana (Assistant Secretary)

Guests: W. Booth, B. Sheeller & H. McLellan

1. Call to Order and Approval of Agenda

M. H. Armour, Vice-Chair of Council called the meeting to order and the Agenda was adopted with a notation that President Lenton's presentation was changed to be the first item on the Agenda.

However, for purposes of these minutes, her presentation is inputted under Other Business.

2. Chair's Remarks

The Vice-Chair of Council, welcomed Council members and proceeded to read the Acknowledgement From The Land script, which honours and respects the Aboriginal People.

2. Approval of Minutes of September 11, 2018 meeting

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

3. Business Arising

There was no Business Arising.

4. Inquiries and Communications

There were no reports.

5. Dean's Report to Council

Interim Dean Janse van Rensburg reported on the Ontario Universities' Fair 2018. He also thanked all faculty members who participated in the fair.

He reminded Council on the Convocation ceremony, scheduled on the next day, October 10th. He encouraged faculty to attend the ceremony and support their colleague, Nantel Bergeron, Department of Mathematics & Statistics who was being honoured as a 2018 Distinguished Research Professor.

He informed faculty that the 2018 President's Research Excellence Awards were now live online with a deadline of November 24th at 5:00pm.

He added that this year there was an additional category, that is, the President's Research Impact Award. He encouraged nominations from faculty.

He also reminded faculty about the Faculty of Science Research and Graduate Mentorship Awards and the Research Teaching Awards. The deadline for all these awards is November 30th.

The Dean made the following announcements;

- Applications for the third batch of York Science Fellowships was now live online with a deadline of January 4, 2019. He hoped that the Faculty will continue funding this initiative.
- Communicator in Residence, Molly Segal was now on campus and would hold a workshop; Taxonomy of an audio story on how radio journalist and podcasters make stories out of science, featuring Guest Speaker Sonya Buyting from CBC News.
- York Science Saturdays offered by Science Engagement Programs, returns on October 13th.
- Cora Young (Chemistry) presented a talk on Arctic pollution as part of the Toronto Public Library's "Our Fragile Planet" series.
- Kenton Kroker (STS) delivered the John Augustine Lecture, "How to be a Scientific Physician in Ontario, circa 1882," at the Lakehead Summer School 2018 for the Thunder Bay Medical Society.

- Y-File featured research by Chun Peng (Biology) that showed that microRNA miR-218-5p is a key contributor to the development of preeclampsia, a complication of pregnancy.
- Public Lecture Series: October 4 – 27. Biodiversity Conversation in the Twenty-First Century.

6. Associate Deans' and Head of Bethune College Remarks

Associate Dean Jennifer Steeves made the following announcements;

- NSERC discovery grant application: applications due to the Research Office, 48 hours before the NSERC deadline of November 1st.
- NSERC RTI applications – internal deadline is October 23rd and NSERC deadline is October 25. She added that for both the NSERC DG and the RTI, faculty will need to submit a signed ORS checklist and a final copy of the budget indicating any Faculty commitments.
- She reported that her office received eight applications; 3 Tier-1; 4 Tier-2; and 1 Early Career-Tier2. She noted that all applicants were very strong and they have already been reviewed by the Research Awards Committee and a final recommendation was made to the Dean.
- They have launched the YSF competition with a deadline of January 4, 2019; Five awards – one to each department.

- She also reminded Faculty on the call for the President's Research Excellence Awards with a deadline of November 24th.
- Two applications were submitted to VPRI office for the Royal Society Foundation iNOI

Associate Dean Steeves ended her report by reminding faculty about the Faculty of Science Teaching Awards nominations, deadline is November 30th.

Associate Dean Don Hastie reminded faculty members to submit their CVs as per the Call. He informed members who had just returned from their sabbatical leave to submit sabbatical reports before November 1st.

Lastly, D. Hastie informed Council that departments should expect to receive an Academic Equipment Fund call early this year as necessitated by the introduction of the Sharp Budget Model.

7. Reports from Science Representatives on Senate Committees

There were no reports.

8. Reports from Standing Committees of Council

9.1 Executive Committee

Ratification of nominations to Senate and Standing Committees of FSc Council

A motion was moved, seconded and carried to approve the nominations as presented.

9.2 Curriculum Committee

A motion was moved, seconded and carried with one abstention to approve all the Curriculum Committee as presented.

9. Other Business

10.1 Budget Consultation: Rhonda Lenton, President, Lisa Philipps, Provost and Vice-President Academic & Carol McAulay, Vice-President Finance & Administration

President Lenton introduced her presentation by informing Council that after a long struggle at an attempt to balance the budget the University had finally managed to do so. Now that the university is able to generate surpluses, the President wanted to know from Science what are our absolute crucial priorities that we need to invest in?

In light of the uncertainty as it relates to the new government, President Lenton highlighted the implications that could impact York University. She also applauded Faculties for working hard in order to address year end deficits. Currently, most Faculties balanced their budgets and when they make a surplus they are using some of that money to pay down the negative carried forward from the previous years. In addition, they also invest some of their surplus funds. The President stated that York was well in alignment with the other institutions when it came to its spending for the core academic priorities, libraries, student services, excetra. She however, noted that our

university was falling behind when it came to physical plan and deferred maintenance.

Provost Lisa Philipps talked about the university's strengths and achievements, investing in the University Academic Plan and the York University Operating Budget.

President Lenton engaged Council members in discussing the most urgent priority needs of Science. Faculty members expressed grave concerns regarding the unsatisfactory standard of technology in classrooms, research laboratories and the unreliable Moodle system. Faculty members reiterated on the need to improve research facilities and maintain teaching laboratory infrastructure. They voiced the need to increase faculty compliment and research intensification as well as the need to improve student experience. Faculty members also lamented on the UIT service.

President Rhonda recommended that Deans of Faculty present their budgets to departments. She also encouraged Faculties to ensure that the Teaching Commons department was actually serving their needs.

President Lenton concluded her presentation by assuring Council that her office will continue to conduct the university wide consultations. A summary will be written up and shared with all Faculties.

Budget consultation presentation can be reviewed on the link below,
http://www.yorku.ca/finance/documents/Budget_Consultation_Fall_2018.pdf

10.2. Update: Procedures for establishing the Search
Committee for the new Dean of the Faculty of
Science

M. H. Armour alerted Council to look out for the
nomination and evoting emails within the next couple of
days.

Meeting adjourned.

M. H. Armour
Vice-Chair of Council

S. Siyakatshana
Assistant Secretary of Council

**The 649th Meeting of Senate
held on Thursday, September 27, 2018**

Remarks

The Chair of Senate, Professor Franck van Breugel of the Lassonde School of Engineering, greeted continuing and new Senators. Senate Executive member Professor Carl Ehrlich served as Acting Vice-Chair in the absence of Professor Alison Macpherson.

Senators were encouraged to attend a “Community Forum on Renewing Institutional Focus” sponsored by Senate Executive, on Thursday, October 4, 2018 from 4:30 to 6:00 p.m. in Accolade West 206. The idea emerged from a suggestion made by three Senators that there should be a discussion of this kind at Senate, and the Executive Committee felt that a community forum would be a more appropriate venue. The President and Provost will be in attendance along with members of the Executive Committee. The Chair also urged Senators to join in celebrating graduating students at the Fall Convocation ceremonies.

President Rhonda Lenton announced that Anne Russon, Glendon, and Nantel Bergeron, Science, will be honoured as Distinguished Research Professors at Convocation. She thanked Ananya Mukherjee-Reed, Dean of the Faculty of Liberal Arts and Professional Studies, as she takes up the position of Provost, Okanagan Campus at UBC. She also congratulated Lisa Philipps on her appointment as Provost and Vice-President Academic, as well as the first Deputy Provost Markham, Rui Wang, and the new Dean of the Faculty of Graduate Studies, Thomas Loebel.

Regarding public policy matters, President Lenton discussed the possible implications of the Ernst and Young audit of provincial spending conducted for the provincial government, core elements of York’s mission and vision that should resonate with Queen’s Park, and sector-wide advocacy undertaken by the Council of Ontario Universities to position universities favourably. In response to the government’s mandating of a free speech policy by January 1, 2019, Osgoode Professor Lorne Sossin has agreed to lead an initiative that will engage the community and governing bodies that will be announced in the coming weeks.

As York regains momentum following the strike, the senior administration is committed to constructive engagement through a dialogue aimed at aligning resources with academic priorities, addressing key policy questions, and finding solutions to pressing challenges.

A new award has been established to honour Dr Robert Everett of the University Secretariat. The award in his name will recognize up to three students (undergraduate or graduate) for valuable and significant contributions to University governance.

Reports

Under the auspices of the Academic Policy, Planning and Research Committee, Provost Philipps presented the Autumn Report on Complement and Enrolment.

Approvals

On a recommendation from the Executive Committee, Senate elected Robert Heynen, Assistant Professor, Liberal Arts and Professional Studies, and Pamela Millet, Associate Professor, Education, to the Academic Standards, Curriculum and Pedagogy Committee.

Senate approved recommendations of its Academic Standards, Curriculum and Pedagogy Committee to:

- close the 15-credit College - University Accounting Bridge Program, School of Administrative Studies, Liberal Arts and Professional Studies
- close the Diploma in Theatre & Performance Studies, in the Graduate Program in Theatre & Performance Studies, AMPD / Graduate Studies
- change admission and degree requirements for the Master of Real Estate and Infrastructure, Schulich / Graduate Studies
- authorize the granting of degrees at the University's convocations held in Fall 2018, February 2019 (Convocation *In Absentia*) and Spring 2019, and individually to students at any point during the year who have fulfilled the degree program requirements for receipt of degrees; authorize the granting of diplomas and certificates at the University's Convocations held in Fall 2018, February 2019 (Convocation *In Absentia*) and Spring 2019, and individually to students at any point during the year who have fulfilled the requirements for receipt of diplomas and certificates; and authorize the forwarding of recommendations for certification by the Faculty of Education to the Ontario College of Teachers for those students who have been deemed "recommended for certification" by the Council of the Faculty of Education.

Committee Information Reports

As they presented reports at the inaugural meeting of 2018-2019, the Chairs of Senate committees briefly described their roles on behalf of Senate, how they conduct business and items Senate can expect to come to the floor from them during the year.

Executive (Professor Carl Ehrlich, Acting Vice-Chair)

The Executive Committee's information items included the following:

- approval of Senate committee members nominated by Faculty Councils

- current vacancies on Senate committees, and in the Council of Ontario Universities Academic Colleague position
- actions taken under Summer Authority
- the Committee's monitoring of the academic disruption
- the Committee's priorities for 2018-2019
- University Secretariat initiatives in support of governance and Senate
- suggestions by committees for facilitated discussions at Senate
- Senate meeting dates for 2018-2019 with changes approved for December
- the results of the Senator and Senate committee member surveys conducted in June and how they help inform the Executive's priorities
- a new agenda package layout, with all appendices compiled together
- a summary of actions taken by Senate in 2017-2018
- Committee and Sub-Committee membership for 2018-2019

Academic Policy, Planning and Research (Professor Les Jacobs, Chair)

APPRC shared its priorities for the year, which include planning for the Markham Centre Campus and a review of the University's academic unit structures. Consultations on the budget were launched earlier in the day when APPRC met with Provost Philipps and Vice-President Finance and Administration Carol McAulay, and provided input.

The Committee also provided information on the following items:

- ways that the Committee will fulfill its mandate and resources for Senators
- its concurrence with proposals to establish the Carswell Chair for the Public Understanding of Astronomy (subsequently approved by the Board of Governors) and amend the SSHRC Research Opportunity Grants Program
- the latest developments in Markham Centre Campus Planning
- ongoing attention paid to student / faculty ratios in conjunction with complement planning discussions
- an electronic curriculum vitae exercise geared toward modernizing practices
- Sub-Committee members for 2018-2019

Academic Standards, Curriculum and Pedagogy (Professor Kim Michasiw, Chair)

ASCP provided information on its priorities for the year, which include revisions to the Common Grading Scheme for Undergraduate Faculties and a review of select Senate policies / regulations in the context of UAP priorities and emerging pressures to address any gaps in legislation. Other information items reported were the following:

- a minor change to degree requirements for the Honours Minor program in Marketing housed in the School of Administrative Studies, Faculty of Liberal Arts and Professional Studies

- the focus of recent discussions of the Markham Centre Campus curriculum and pedagogy
- programs at other universities approved by the ministry in 2017-18

Appeals (Professor Simone Pisana, Chair)

Professor Pisana provided an overview of the Committee's role and function on behalf of the Committee.

Awards (Professor Brenda Spotton Visano, Chair)

Professor Spotton Visano provided an overview of the Committee's role and function on behalf of the Committee and highlighted the upcoming call for nominations for the President's Research Excellence Awards – the President's Emerging Research Leadership Award, the newly-created President's Research Impact Award, and the President's Research Excellence Award. The Committee has explored possible means by which to increase nominations for all awards and to ensure the fullest recognition of diverse achievements (in regard to which it commended the Canada Research Chairs (CRC) [Unconscious Bias Training Module](#)).

Tenure and Promotions, Tenure and Promotions Appeals (Professor Thomas Baumgartner, Co-Chair)

Professor Baumgartner provided an overview of the Committee's role and function on behalf of the Committee and Co-Chair.

Additional information about this Meeting

Please refer to the full Senate agenda and supplementary material posted online with the September 27, 2018 meeting for details about these items.

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

October Meeting of Senate

Senate's next meeting will be held at 3:00 p.m. on Thursday, October 25, 2018.

The Senate Executive-sponsored **Community Forum on Renewing Institutional Focus** will be held on Thursday, October 4, 2018 from 4:30 to 6:00 p.m. in Accolade West 206

**The 650th Meeting of Senate
held on Thursday, October 25, 2018**

Remarks

The Chair of Senate, Professor Franck van Breugel, welcomed new Deans Alice Hovorka, Environmental Studies, and Jane Goodyer, Lassonde, and expressed condolences on the passing of Professor Emeritus Robert Cox, a former member of the Department of Political Science, Robert L. R. Overing, the founding dean of York's Faculty of Education, and Jack Ellis, a former Associate Dean of the Faculty of Environmental Studies and Chair of Senate APPC. The Chair drew Senators' attention to the correspondence requested at the September meeting of Senate pertaining to a recommendation by two Senators to amend the Senate rules on decorum, which had been included in the agenda for the October meeting.

Reflecting on the October 4 Senate sponsored Community Forum, President Lenton highlighted the University's commitment to diversity, inclusion and social justice, which ensures there is no shortage of robust discussion and debate. However, the understanding that well-intentioned people dedicated to the success of the university hold different views is essential to productive discussion and debate. President Lenton affirmed her commitment to working with the entire University community to move forward from the labour disruption and to follow up on the takeaways of the forum under the purview of the administration. With challenging times ahead in the current provincial environment, it will be essential for the York community to rally together and find points of consensus.

Other comments made by President Lenton included the following.

- the work of the Free Speech Policy Working Group and its public consultations, to be held on November 2 (Glendon) and November 6 (Keele) (additional information is available on the [University Secretariat website](#))
- explorations with the University's Markham Centre Campus partners on whether there are means of moving forward with the Campus, following the announcement of the cancellation of provincial funding
- an acknowledgement of the contributions of those involved in the YUFA negotiations to the successful ratification of the agreement
- the Indigenous Council of York's first Community Engagement Session on the Indigenous Framework on November 22 (due to high demand, the session is at capacity, but [information about the Framework](#) is available online)

Reports

Academic Colleague to the Council of Ontario Universities

Senator David Mutimer attended a recent meeting of the COU Colleagues and the Council in the absence of an appointed Academic Colleague for York, where the discussion centred on free speech on campus. The Colleagues' discussion focused on how institutions can support faculty and students in fostering a climate of free expression, with the importance of a pedagogy specific to locations and experiences emerging as a predominant theme. In the Council meeting, where Colleagues and university Executive Heads met together, the Colleagues shared a series of scenarios to generate discussion on the practical supports that can be put into place to make institutional free speech policies meaningful and effective.

Approvals

On a recommendation from the Executive Committee, Senate elected Andrea Davis, Associate Professor, Department of Humanities, Liberal Arts & Professional Studies, to the role of Academic Colleague to the Council of Ontario Universities.

Senate approved the recommendations of its Academic Standards, Curriculum and Pedagogy Committee to:

- Establish a Type 2 graduate Diploma in Communication, Culture and Leadership in Canada, Schulich / Graduate Studies, conditional on the name of the program being changed to the Diploma in Communication, Culture and Leadership in Canadian Business
- Change the degree requirements for the MA program in Social and Political Thought, Department of Social Science, LA&PS / Graduate Studies
- Change the degree requirements for the BA and BA (Honours) programs in Business & Society, Department of Social Science, LA&PS

Committee Information Reports

Executive (Professor Alison Macpherson, Vice-Chair)

The Executive Committee's information items included the following:

- approval of Senate committee members nominated by Faculty Councils
- approval of members of Senate committees nominated by student Senators
- the Committee's monitoring of the academic disruption, which includes the development of a report of remediation options and actions taken by the Executive Committee and Senate during the disruption, to be shared with Senate at an upcoming meeting

- Senate committee priorities for 2018-2019, including the addition of a Senate discussion of the *Principles Governing a President Search* to the Executive Committee's priorities in response to input received at the September Senate meeting and the Community Forum
- report on the Senate sponsored Community Forum on Renewing Institutional Focus
- work underway on the freedom of speech policy
- Committee and Sub-Committee membership for 2018-2019

Academic Policy, Planning and Research (Professor Les Jacobs, Chair)

APPRC provided information on these items:

- confirmation of its priorities for 2018-2019
- on the university budget consultations, the Committee's input to the Provost and Vice-President Finance and Administration on the areas where the University Fund resources should be directed
- process planning for a new / "revised" faculty composed of Geography, the Faculty of Environmental Studies and other possible units
- plans to hold an academic planning forum in early December
- defining an action plan on Incomparable Metrics to track the University's success in research and scholarship through indicators
- discussions with the Deans and Principal on Faculty academic plans, to take place from Spring to Fall 2019
- an electronic curriculum vitae exercise geared toward modernizing practice

ASCP (Professor Kim Michasiw, Chair)

Information items reported by ASCP were the following:

- minor changes to the requirements for the MA and PhD programs in Sociology, LA&PS / Graduate Studies
- minor changes to the requirements for the Professional LLM Specializing in Securities Law, Osgoode / Graduate Studies
- sessional dates for three academic years, from SU2019 to FW2021-2022

APPRC-ASCP Joint Report (Professors Les Jacobs and Kim Michasiw)

The APPRC-ASCP Joint Sub-Committee on Quality Assurance transmitted to Senate a collection of Final Assessment Reports from completed Cyclical Program Reviews in the Department of Social Science, LA&PS, as required by the York University Quality Assurance Procedures.

Tenure and Promotions (Professor Lily Cho, Co-Chair)

Tenure and Promotions transmitted its 2017-2018 Annual Report to Senate, which addressed tenure and promotions data for 2017-2018 and the full committee review of unit-level standards scheduled for early 2019, as well as other items.

Tenure and Promotions Appeals (Professor Parissa Safai, Chair)

The 2017-2018 Annual Report of the Tenure and Promotions Appeals Committee was transmitted to Senate.

Additional Information about this Meeting

Please refer to the full Senate agenda and supplementary material posted online with the October 25, 2018 meeting for details about these items.

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

November Meeting of Senate

Senate's next meeting will be held at 3:00 p.m. on Thursday, November 22, 2018.

Executive Committee Report to Council
Ratification of Student Representative Nominations
November 2018

Committee	Student Name	Major	Term
Petitions	Alita Gideon	Biomedical Science	2018-19
APPC	Asma El Gaoud	Biology	2018-19
Appeals	Christopher Girgis	Biomedical Sciences	2018-19
Appeals & CEAS (Thurs)	Donovan Dev	Biology	2018-19
Research & Awards & Curriculum Committee	Gurpartap Sohal	Hns. Biology	2018-19
Curriculum	Jennifer Trinh	Biomedical Science	2018-19
Executive	Joshua Moyal	Biology	2018-19
Petitions	Romina Noormohammadi	Biomedical Sciences	2018-19
Tenure & Promotions	Rushi Patel	Biology	2018-19
Teaching & Learning	Steven Spector	Biomedical Sciences	2018-19
CEAS (Wed)	Subhay Anwar	Biotechnology	2018-19

COUNCIL OF THE FACULTY OF SCIENCE

Report of the Science Curriculum Committee

October 2018

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 October 30, 2018, 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 tinari@yorku.ca

Agenda

1.1 Biology

- 1.1.1 Change in calendar description: Biomedical Sciences streams (Honours Major, Specialized Honours, Honours Major/Minor, Honours Major (iBSC), Honours Major/Minor (iBSC))

1.2 Mathematics and Statistics

- 1.2.1 Change to Applied Math Program: addition of new stream (Financial Mathematics Stream)
- 1.2.2 Proposal to close Computational Mathematics program, BSc. Specialized Honours
- 1.2.3 New course: SC/MATH 3282 3.0 "Mathematical Finance"

1.3 BSc. Non-Science requirements

- 1.3.1 Change in BSc. Non-science requirements

1.4 Physics and Astronomy

- 1.4.1 Change in pre/co-requisite: SC/PHYS 3320 3.0 "Microsystems Technology"

1.5 Science and Technology Studies

- 1.5.1 New course: SC/STS 4650 3.0 "Science and Romanticism"
- 1.5.2 New course: SC/STS 4090 3.0 "Sciences in the Wild Laboratory Studies and Ethnography"

1.5.3 New course: SC/STS 4655 3.0 "From the Ark to the Anthropocene: Episodes in the History of the Earth and Environmental Sciences"

1.6 Chemistry

1.6.1 Change in degree requirements – "BSc. Chemistry"

Changes to Existing Course

Faculty:

Department:

Biology

Date of Submission:

Oct 1 2018

Course Number:

Biomedical Sciences
Stream

Effective Session:

Fall 2019

Course Title:

Type of Change:

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

Change From:

To:

Specialized Honours Program Biomedical Science Stream

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 4.00](#), [SC/BIOL 4370 3.00](#), [SC/BIOL 4380 3.00](#), [SC/BIOL 4450 4.00](#), [SC/BIOL 4510 3.00](#);

Specialized Honours Program Biomedical Science Stream

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 4.00](#), [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](#);

Honours Major Program (iBSC) Biomedical Science Stream

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 4.00](#), [SC/BIOL 4370 3.00](#), [SC/BIOL 4380 3.00](#), [SC/BIOL 4450 4.00](#), [SC/BIOL 4510 3.00](#);

Honours Major Program (iBSC) Biomedical Science Stream

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 4.00](#), [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](#);

Honours Major/Minor Program (iBSC) Biomedical Science Stream

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 4.00](#), [SC/BIOL 4370 3.00](#), [SC/BIOL 4380 3.00](#), [SC/BIOL 4450 4.00](#), [SC/BIOL 4510 3.00](#);

Honours Major/Minor Program (iBSC) Biomedical Science Stream

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 4.00](#), [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](#);

Rationale:

For several years BIOL 4410 has been informally approved as a course students in the Biomedical Sciences stream can take. This change just formalizes this.

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

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

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

Changes to the Financial Mathematics stream
Specialized Honours BA and Bsc in Applied Mathematics
Department of Mathematics and Statistics
Faculty of Science, York University

1) Overview

Computational Mathematics Program in the Department of Mathematics and Statistics offers Specialized Honours BSc degree in two areas of specialization (streams): (1) Applied and Industrial Mathematics and (2) Financial Mathematics. It is a challenging program aimed at our top students, that has unfortunately suffered from low enrolments over the last few years. One of the recommendations of the Cyclical Program review, completed in 2015, was to terminate the Computational Mathematics Program. Our view is that the Financial Mathematics stream has excellent potential for growth, provided that it is appropriately updated and moved to the Applied Mathematics program (following termination of the Computational Mathematics program). This proposal describes the changes that we want to make to the Financial Mathematics stream and explains how this stream will fit in the Applied Mathematics program.

2) Motivation and objectives

The main objective for a degree specializing in Financial Mathematics is to prepare students for a career as quantitative analysts (or "quants", as they are known in finance industry). Quants typically work in finance or insurance industry (for example, in commercial and investment banks, insurance companies, hedge funds, etc.) where they use mathematical and statistical tools to analyze various financial instruments and financial markets. This analysis usually involves developing mathematical models, writing computer programs, fitting models to market data, performing numerical computations, analyzing the results of these computations and providing insight and information for the decision making. A typical career path starts with a Bachelor degree in a field which emphasizes quantitative skills. This could be a degree majoring in Mathematics, Statistics, Engineering, Physics, and even Economics or Business (the latter two degrees would normally be combined with a minor in Mathematics or Statistics). A few quants find entry-level positions right after a Bachelor degree, however to build a successful career in this field one would typically require a Master's degree in one of the above quantitative areas, usually combined with taking graduate level Financial Mathematics courses. There exist a number of Master's programs which specifically prepare students for a career in Quantitative Finance, such as Mathematical Finance programs at the University of Toronto, McMaster University, University of Waterloo and the Graduate Diploma in Financial Engineering at York University. Thus, the main goal of the Specialized Honours degree in Financial Mathematics stream would be to give students an excellent preparation either for an entry-level position in finance industry or for their further studies at the Master's level.

Table 1: Counts of required credits for other Specialized Honours degrees in the department of Mathematics and Statistics (including the Mathematics/Statistics Core):

Applied Mathematics	68 credits
Mathematics	73 credits
Actuarial Program	73 credits
Mathematics for Education	58 credits
Statistics	70 credits
Computational Mathematics, Financial Mathematics stream (current)	83 credits
Applied Mathematics, Financial Mathematics stream (proposed)	69 credits

After numerous conversations with our alumni, who are currently employed in finance industry, and after reviewing the experience of teaching students in the Graduate Diploma in Financial Engineering program, we concluded that the following academic background is necessary for students to succeed:

- (a) strong background in Calculus, Linear Algebra, and some exposure to Real Analysis;
- (b) strong background in Probability, Statistics and Stochastic processes;
- (c) strong background in Numerical Analysis and knowledge of at least one computer programming language;
- (d) strong background in Mathematical Finance with some exposure to Economics.

Thus **our first objective** in modifying the Financial Mathematics stream is to ensure that students specializing in Financial Mathematics obtained adequate preparation in these four areas.

Our second objective is to reduce the total number of required courses in the Financial Mathematics stream. Currently the students in the Computational Mathematics program who specialize in Financial Mathematics are required to take a total of 83 credits, and we feel that this number of required courses is too high. This requirement is an outlier among other Specialized Honours degrees in the department of Mathematics and Statistics (see Table 1) and it creates a heavy burden for students by not giving them enough freedom in choosing their elective courses.

Table 2: Proposed Financial Mathematics stream

Mathematics/Statistics Core:			
MATH 1131 3.0	MATH 1200 3.0	MATH 1300 3.0	MATH 1310 3.0
MATH 1021 3.0	MATH 2022 3.0	MATH 2030 3.0	MATH 2310 3.0
Specialized Honours BA or Bsc, Financial Mathematics stream			
EECS 1560 3.0	MATH 2001 3.0	MATH 2131 3.0	MATH 2270 3.0
MATH 2280 3.0	MATH 2281 3.0	MATH 3241 3.0	MATH 3242 3.0
MATH 3271 3.0	MATH 3330 3.0	MATH 3282 3.0*	MATH 4090 3.0
MATH 4143 3.0	MATH 4430 3.0 or MATH 4431 3.0		MATH 4931 3.0

(*) **MATH 3282 3.0** is a proposed 3-rd year course on Financial Mathematics

In Table 2 we present our proposed course requirements for the Specialized Honours BA and BSc degree in Applied Mathematics, specializing in Financial Mathematics. We explicitly state the difference in course requirements between the new and old Financial Mathematics streams in section 4 below, where we also explain the rationale behind each change.

We would like to emphasize that the proposed stream has both BA and BSc options, thus a broader range of students could be admitted, particularly those lacking the science lab courses required for the current BSc-only program. We expect this to be particularly attractive to those students from the social sciences with multidisciplinary interests in finance, mathematics and theoretical economics.

3) New resources

We propose to create one additional course, MATH 3282 3.0 "Financial Mathematics", that would be required for students in the Specialized Honours BA or Bsc in Financial Mathematics stream of Applied Mathematics and for all students in the Actuarial Program. This course would focus on the following topics (*this is tentative – further discussion needed*):

- 1) Black-Scholes formula: Deriving the formula in probabilistic and PDE approaches
- 2) Volatility
- 3) Exotic options
- 4) Interest rate models
- 5) Interest rate derivatives

The rationale for creating this new course is explained below:

(i) Currently we do not have a third year course in Financial Mathematics, and there is only one fourth year course, MATH 4143 3.0, which covers numerical methods in math finance. Thus we are not able to cover material that is crucial for anyone hoping to pass interview for a quantitative analyst position.

(ii) This course would also serve well the students in our Actuarial Program. These students are currently required to take the two courses MATH 2280 and MATH 2281, which should prepare them for the exams FM and MFE of the Society of Actuaries. However, there are parts of the exam MFE which are not covered by these two courses, but that will be covered in the new course, MATH 3282.

We expect that the course will be very popular among our undergraduate students, with annual enrolments of 40+ students.

4) Comparing old versus new Financial Mathematics stream

Computational Mathematics program Financial Mathematics stream Specialized Honours BSc	Applied Mathematics program (proposed) Financial Mathematics stream Specialized Honours BA, BSc
Mathematics/Statistics Core (24 credits)	No change
CSE 1020 3.0, CSE 1030 3.0, CSE 2031 3.0	Replaced by EECS 1560 3.0 see item (1) below
ECON 1000 3.0, ECON 1010 3.0	Recommend (but not require) to take ECON 1000 3.0, ECON 1010 3.0, ECON 2300 3.0, ECON 2350 3.0, ECON 4400 3.0 see item (2) below
MATH 2131 3.0, MATH 2270 3.0 MATH 2280 3.0, MATH 2281 3.0 MATH 3241 3.0, MATH 3242 3.0 MATH 3271 3.0, MATH 3330 3.0 MATH 4090 3.0, MATH 4143 3.0 MATH 4430 3.0 or MATH 4431 3.0	No change
MATH 2031 1.0, MATH 3243 1.0	Removed these two courses see item (3) below
MATH 2041 3.0, MATH 3090 3.0	Removed these two courses see item (4) below
3 additional credits selected from MATH courses (without second digit "5") at the 4000 level to make the total of such courses at least 12 credits.	Added the following courses MATH 2001 3.0 MATH 3282 3.0 (new 3-rd year course on Mathematical Finance) MATH 4931 3.0 see items (5) , (6) and (7) below
Total number of required credits: Mathematics/Statistics Core (24 credits) + 59 credits = 83 credits	Total number of required credits: Mathematics/Statistics Core (24 credits) + 45 credits = 69 credits

(1) EECS 1560 3.0 "Introduction to Computing for Mathematics and Statistics" is a required course for almost all programs in the department of Mathematics and Statistics. This course teaches students to use MATLAB to solve computational problems. It covers objective (c) on page 2 and helps to prepare students for MATH 4143 3.0.

(2) Some knowledge of Economics would be desirable, but it is not crucial, for students aspiring for a career in quantitative finance. Removing these courses from the list of required courses would allow students more freedom in choosing elective courses and would lower the total number of required courses, thus helping us reach our second objective in section 2. At the same time, we would advise the students to take the above five ECON courses as electives, so that they can be used to satisfy General Education requirements. The course descriptions for these five courses are provided in Appendix A.

(3) MATH 2031 1.0, MATH 3243 1.0 were designed as capstone courses that would satisfy the communication skills requirements in UUDLEs. The department is now looking into other ways to satisfy this requirement, and these courses will no longer be offered. We would like to point out that that communication skills requirement can be satisfied by MATH 4090 3.0, which involves final project presentations and discussions (see section 5 on UUDLEs below).

(4) MATH 2041 3.0 "Symbolic computation laboratory I" teaches students symbolic computing in the Maple environment. These skills are not directly relevant for students aspiring for a career in quantitative finance, as Maple programming environment is hardly used there. From this point of view, MATLAB is a much more useful programming language, and this would be covered by EECS 1560 3.0.

MATH 3090 3.0 "Computational Mathematics" is a course about mathematical modeling and solving practical problems numerically. Similar skills (at a more advanced level) are covered in MATH 4090 3.0, so we have decided not to require MATH 3090 3.0.

Thus we have decided to remove MATH 2041 3.0 and MATH 3090 3.0 from the list of required courses, which would allow students more freedom in choosing elective courses and would lower the total number of required courses, thus helping us reach our second objective in section 2.

(5) MATH 2001 3.0 is the first of a sequence of three courses in Real Analysis. As we mentioned in section 2, a typical career path in quantitative finance would require getting a Master's degree in Financial Mathematics or related field, which means that students would have to take courses in Measure Theory. Real Analysis is a prerequisite for a Measure Theory course.

(6) MATH 3282 3.0 is a new course that we propose to develop, see section 3 for more details.

(7) MATH 4931 3.0 "Simulation and the Monte Carlo method" would be a very useful course for students aspiring for a career in quantitative finance, since Monte Carlo methods is the foundation of most numerical algorithms for derivative pricing and risk management.

5) Alignment with Learning Outcomes for Applied Mathematics program

The new proposed Financial Mathematics stream aligns perfectly with these learning outcomes, since there is a large overlap in courses with Honours BA or Bsc degree in Applied Mathematics program. Below we present the learning outcomes for BA and Bsc honours degrees in the Applied

Mathematics Program. This lists the skills that we expect our students to achieve before graduation and the courses in the program where these skills can be learned/practiced. We emphasize in bold font the courses in the new proposed Financial Mathematics stream that satisfy each particular requirement, and in square brackets we list other courses in this stream that are also relevant (but which were not listed in the original UUDLEs document).

Expectations for BA (Hons) and BSc (Hons) degrees The graduating students are expected to have demonstrated the following:

Depth and Breadth of Knowledge.

- (i) deep knowledge of the key concepts and methodologies in the mathematical foundations of the discipline. This is achieved through the courses listed in the Mathematics/Statistics core, **MATH 1131, 1200, 1300, 1310, 1021, 2022, 2030, 2310, and MATH 2270, 3241**, 3260, 3170, **3271**
- (ii) familiarity with computer programming, MATH 2041 and **CSE 1560**
- (iii) a developed sense of interdisciplinary perspective, an understanding of how these disciplines intersect and interact. **CSE 1560, MATH 4090**, Lab requirements for BSc and 24 credit requirement for BA
- (iv) critical thinking and analytical skills (all the above listed MATH courses)

Knowledge of Methodologies

- (i) detailed knowledge of methods and techniques of Numerical Analysis and Mathematical Modelling, **MATH 3241, 3242, 4090**
- (ii) knowledge of other areas of Applied Mathematics, their tools and methodology, MATH 3170, 3260 [**MATH 4090**]
- (iv) employ technology effectively, including computer software, to investigate open-ended problems and to illustrate mathematical and statistical concepts and solutions to these problems, MATH 2041 [**MATH 4143**]

Application of Knowledge

- (i) familiarity with examples of applications of Computational Mathematics for solving practical problems, **MATH 4090**
- (ii) ability to use a range of established techniques to analyse a practical problem, propose a solution, implement and test the solution, **MATH 4090**

Communication Skills

- (i) ability to collect, pack and unpack information, and present it to a range of audiences, including colleagues, team members and faculty members, MATH 2031, 3243 [**MATH 4090**]
- (ii) ability to present an intuitive mathematical idea, questions and problems as well as rigorous mathematical proofs both orally and in writing, MATH 2031, MATH 3243 [**MATH 4090**]
- (iii) ability to discuss mathematical problems, theories and methods for their solution, MATH 2031, MATH 3243 [**MATH 4090**]

Awareness and Limitations of Knowledge

- (i) graduates should be able to understand the limitations and analyze the inherent computational complexity of various numerical algorithms, **MATH 3241, 3242, 4090**
- (ii) should be familiar with such concepts as Model Uncertainty, computational cost, etc.
- (iii) should be aware of the many important problems in Applied Mathematics which are still unsolved.

Autonomy and Professional Capacity

- (i) graduates are expected to demonstrate professionalism and to be able to work both independently and with others
- (ii) the ability to manage their own learning in changing circumstances, both within and outside the discipline and to select an appropriate program of further study
- (iii) behaviour consistent with academic integrity and social responsibility

Appendix: Course descriptions/learning outcomes for recommended courses from the Department of Economics

ECON 1000 3.0 «Introduction to Microeconomics»

Course Description / Learning Objectives "The Theory of Economics does not furnish a body of settled conclusions immediately applicable to policy. It is a method rather than a doctrine, an apparatus of the mind, a technique of thinking which helps its possessor to draw correct conclusions." – John Maynard Keynes The ECON 1000/1010 courses present a general overview of the subject matter of economics. This 1000 course introduces the principles and methods of

economics with emphasis on microeconomic theory. Topics include basic concepts of demand and supply, utility analysis and demand, production and costs, pricing in competitive and monopolistic markets, market failure, and government regulation. Note: Successful completion of this course, together with AP/ECON 1010, is required for all students who intend to pursue additional courses in economics at the 2000, 3000, and 4000 level and in order to pursue degree studies in economics, business economics, and financial and business economics. Course credit exclusions: GL/ECON 2500, SB/INTL 1200 3.00, AP/ECON 1900.

ECON 1010 3.0 «Introduction to Macroeconomics»

Course Description: Introduces the principles and methods of economics with emphasis on macroeconomic theory. Topics include basic models of national income and employment determination, fiscal policy, banking and monetary policy, the theory of international trade and finance, and contemporary macro-economic issues such as unemployment, inflation, and government budget policy. Note: Successful completion of this course, together with AP/ECON 1000 3.00, is required for all students who intend to pursue additional courses in economics at the 2000, 3000, and 4000 level and in order to pursue degree studies in economics, business economics, and financial and business economics. Course credit exclusions: GL/ECON 2510 3.00, SB/INTL 1210 3.00. Note: Acceptable course substitutes are available in the Calendar. PRIOR TO FALL 2009: Course credit exclusions: AK/AS/ECON 1010 3.00, GL/ECON 2510 3.00, SB/INTL 1210 3.00.

ECON 2300 3.0 « Intermediate Microeconomic Theory I»

Course Description: Studies how individuals, households, and firms make decisions given the incentives and constraints of their economic environment. Topics include consumer decision-making, production and costs, competitive equilibrium, and the role of prices in a market economy. Prerequisites: AP/ECON 1000 3.00, AP/ECON 1010 3.00, and AP/ECON 1530 3.00, or equivalents. Prerequisites/Co-requisites: AP/ECON 1540 3.00. Course credit exclusion: GL/ECON 3230 6.00. PRIOR TO FALL 2009: Course credit exclusions: AK/AS/ECON 2300 3.00, GL/ECON 3230 6.00.

ECON 2350 3.0 «Intermediate Microeconomic Theory II»

Course Description: Applies the analytical tools from AP/ECON 2300 3.00 to analyze resource allocation in imperfectly competitive markets and factor pricing in alternative market structures. Considers basic concepts of general equilibrium and welfare economics. Prerequisite: AP/ECON 2300 3.00 or equivalent. Course credit exclusion: GL/ECON 3230 6.00. PRIOR TO FALL 2009: Course credit exclusions: AK/AS/ECON 2350 3.00, GL/ECON 3230 6.00.

ECON 4400 3.0 «Financial Economics»

Course Description: Analyzes investment and financing decisions, the separation between ownership and control, the risk inherent in decision-making, and how shareholders' wealth and utility are maximized. Topics include net present value, capital budgeting, efficiency of capital markets, treatment of risk, valuation of debt, dividend policy, short-term financing, and financial strategy. Prerequisites: AP/ECON 2300 3.00 and AP/ECON 2350 3.00 or equivalents. Course credit exclusions: AP/ADMB 3530 3.00, AP/ADMS 3530 3.00, GL/ECON 4310 3.00. PRIOR TO FALL 2009: Course credit exclusions: AK/ADMS 3530 3.00, AK/ECON 4082 3.00, AS/ECON 4400 3.00, GL/ECON 4310 3.00, SB/FINE 2000 3.00, SB/FINE 3100 3.00.

Proposal for closing the Computational Mathematics (Specialized Honours, BSc) program

Major modification of an existing program in the Department of Mathematics and Statistics

18/10/24

Prepared by: Alexey Kuznetsov

Description of the proposed changes and the rationale

The Computational Mathematics program has always struggled with low enrollments. During the Cyclical Program Review in 2015, the Review Committee noted that “the Computational Math program is mostly inactive” and recommended that this program be terminated, which is the goal of this proposal.

The Computational Math program has two streams: (i) Applied and Industrial Mathematics and (ii) Financial Mathematics. We feel that the second stream (Financial Mathematics), if properly updated, has good potential to attract students. Thus we also submit a companion proposal for creating a new Financial Mathematics stream in the existing Applied Mathematics Program.

Overview of the consultation undertaken and assessment of impact on other programs

The idea terminating the Computational Mathematics program was the result of various discussions held during the last cyclic program review. This review involved various retreats open to the entire department, as well as students. As is usual, and required by the cyclic review, the departmental offerings were reviewed by a team of outside consultants.

Accommodation of currently enrolled students

Currently enrolled students will be given a choice to finish the Computational Mathematics program or to switch to Applied Mathematics program. In the latter case, the UPD or Sectional Director would, if they decide it is warranted, allow students to replace certain courses with others they deem appropriate.

COMMITTEE ON ACADEMIC STANDARDS, CURRICULUM AND PEDAGOGY TEMPLATE

NEW COURSE PROPOSAL FORM

Faculty:
Indicate all relevant
Faculty(ies)

Science

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

Mathematics and Statistics,
MATH

Date of Submission:

Course Number:
Special Topics courses
Include variance (e.g.
HUMA 3000C 6.0,
Variance is "C")

MATH 3282 3.0

Var:

Academic Credit Weight:
Indicate both the fee, and
MTCU weight if different from
academic weight (e.g. AC=6,
FEE=8, MET=6)

3

Course Title:
The official name of the
course as it will appear in
the Undergraduate
Calendar and on the
Repository

Mathematical Finance

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

Mathematical Finance

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

Brief Course Description:

Maximum 2000 characters

(approximately 300 words including spaces and punctuation).

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

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

A comprehensive introduction to continuous-time Mathematical Finance. This course introduces Brownian motion and Ito calculus and covers interest rate models and derivatives, the Black-Scholes model and the Black-Scholes partial differential equation, implied volatility and Merton's optimal portfolio problem. This course, together with MATH 2281 3.0 "Models for Financial Economics", prepares students for topics covered in the IFM and QFI Core exams of the Society of Actuaries.

Prerequisites: SC/MATH 2131 3.0, SC/MATH 2281 3.0

Generic Course Description:

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

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

Not Applicable

Expanded Course**Description:**

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

This course is designed to follow MATH 2281, which deals mostly with discrete-time models, whereas MATH 3282 focuses on continuous-time models in Mathematical Finance. The following topics will be covered: Brownian motion and elements of stochastic calculus, the concepts of real-world and risk-neutral probabilities, interest rate models and derivatives, the Black-Scholes model, deriving and solving the Black-Scholes partial-differential equation, various kinds of volatility (eg actual, realized, implied, etc), deriving the optimal portfolio in Merton's problem and proving its optimality. This course, together with MATH 2281 3.0 "Models for Financial Economics", prepares students for topics covered in the IFM and QFI Core exams of the Society of Actuaries. Three lecture hours per week plus one hour of faculty led tutorials per week.

Key learning objectives:

- 1) Students will understand the fundamentals of stochastic calculus as they apply to option pricing.
- 2) Students will understand the quantitative tools and techniques for modeling the term structure of interest rates and pricing interest rate derivatives.
- 3) Students will understand the motivation for and the assumptions behind the Black-Scholes model, be able to derive and solve the Black-Scholes equation.
- 4) Students will understand the concept of implied volatility and its use in Financial Industry.
- 5) Students will understand the main principles for solving stochastic optimal control problems on the example of Merton's optimal portfolio problem.

Course Design:

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

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

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

The course will have the traditional three-hour-per-week lecture component and evaluation based on quizzes and/or assignments, midterm test(s) and the final exam. The lectures will focus on theory and applications, whereas the mandatory weekly faculty-led tutorials will be devoted to presenting and discussing practical examples and solving exercises/problems, including problems from past MFE/QFI Core exams (IFM replaces MFE starting from July 2018). This last component (solving problems from past MFE/QFI Core exams) will be a crucial part of the course in that it will help prepare students to pass the IFM/QFI Core exams of the Society of Actuaries.

Depending on instructor's preferences and teaching style, this course could also include team projects instead of (or in addition to) some of the above-mentioned methods of evaluation.

Instruction:

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

1) This course will be mandatory for students in our Actuarial Program and for students in the new Financial Mathematics stream in the Applied Mathematics program. There will be one section of this course, which will run annually, preferably in the Winter term.

2) At least four faculty members in the Department of Mathematics and Statistics will be able to teach this course:

Prof. Tom Salisbury
 Prof. Hyejin Ku
 Prof. Yang Shen
 Prof. Alexey Kuznetsov

3) Prof. Tom Salisbury will likely teach this course in the Winter 2020.

4) Three lecture hours plus one-hour mandatory faculty-led tutorial per week, for 12 weeks.

Evaluation:

A detailed percentage breakdown of the basis of evaluation in the proposed course must be provided. If the course is to be integrated, the additional requirements for graduate students are to be listed. If the course is amenable to technologically mediated forms of delivery please identify how the integrity of learning evaluation will be maintained. (e.g. will "on-site" examinations be required, etc.)

Evaluation criteria will be decided by the instructor teaching the course, but the following is one possible percentage breakdown:
i) 5 (approximately bi-weekly) assignments: 20%
ii) two midterm tests: 20% each
iii) final exam: 40%

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

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

Also please list any online resources.

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

**LIBRARY
SUPPORT
STATEMENT
MUST BE
INCLUDED.**

- [1] R. McDonald "Derivatives Markets", 3rd edition, Pearson, 2013
- [2] P. Willmott, "Paul Willmott Introduces Quantitative Finance", 2nd Edition, Wiley, 2007
- [3] A. Hirsa and S. H. Neftci, "An Introduction to the Mathematics of Financial Derivatives", 3rd Edition, Academic Press, 2013
- [4] E. Chen, S. Alafsson, D. Nel, "Problems and Solutions in Mathematical Finance: Stochastic Calculus", Wiley, 2014
- [5] J.C. Hull "Options, Futures and other derivatives", 10th edition, Pearson, 2018

Other Resources:

A statement regarding the adequacy of physical resources (equipment, space, etc.) must be appended. If other resources will be required to mount this course, please explain
COURSES WILL NOT BE APPROVED UNLESS IT IS CLEAR THAT ADEQUATE RESOURCES ARE AVAILABLE TO SUPPORT IT.

The only requirement is a lecture room with a computer/projector that is big enough for 50 students. Another required resource is the faculty led tutorial.

Course Rationale:

The following points should be addressed in the rationale: How the course contributes to the learning objectives of the program / degree. The relationship of the proposed course to other existing offerings, particularly in terms of overlap in objectives and/or content. If inter-Faculty overlap exists, some indication of consultation with the Faculty affected should be given. The expected enrolment in the course.

Creating a new third-year course in Mathematical Finance is a key component of the plan of updating and strengthening the Financial Mathematics stream, which is currently part of the Computational Mathematics program, but will be moved to Applied Mathematics program once the Computational Mathematics program is shut down. The main defect of the existing Financial Mathematics stream is that it has no third-year course in the subject: we have two relevant second-year courses, MATH 2280 “The mathematical theory of interest” and MATH 2281 “Models for Financial Economics” and a fourth-year course MATH 4143 “Scientific Computation for Financial Applications”. The course MATH 4143 is devoted to numerical methods whereas the two second-year courses MATH 2280 and 2281 cannot treat anything beyond introductory material in Mathematical Finance, since the second-year students lack mathematical maturity to understand more advanced concepts. Therefore, a significant portion of important material is not covered in the current form of Financial Mathematics stream: in particular, students graduating currently in Financial Mathematics stream have little or no exposure to interest rate models and derivatives, to Ito Calculus and to Stochastic Optimal Control. The main objective of the proposed course MATH 3282 is to fill this gap and cover these important areas of Mathematical Finance.

This course will also play an important role for our Actuarial Program: together with MATH 2281 “Models for Financial Economics” course, the proposed course MATH 3282 will prepare students for IFM/QFI Core Exams of the Society of Actuaries (prior to July 1, 2018, IFM exam was called the MFE exam). At the moment some important topics of the IFM/QFI exams (such as interest rate models and derivatives and stochastic calculus) are not covered in sufficient depth in MATH 2281, and MATH 3282 will help to remedy this problem.

The proposed course, MATH 3282, will be required for all students in our Actuarial Program and in the new Financial Mathematics stream in the Applied Mathematics Program. This course will also be popular with students in our Applied Mathematics and Statistics programs, who may take it as an elective. We expect enrollments to be quite large, at least 40-50 students annually in the first several years, probably increasing in the future.

Faculty and Department Approval for Cross-listings:

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

Dept: _____	Signature (Authorizing cross-listing)	Department _____	Date _____
Dept: _____	Signature (Authorizing cross-listing)	Department _____	Date _____
Dept: _____	Signature (Authorizing cross-listing)	Department _____	Date _____

Accessible format can be provided upon request.

MATH 3282 (Mathematical Finance)

William Denton (Libraries)

25 October 2018

Abstract

The Steacie Science and Engineering Library is well positioned to support this course, but full support of a Finance Mathematics stream will require some collection development.

I have reviewed the course proposal for MATH 3282 (Mathematical Finance) and can state that York University Libraries (YUL) has the required resources to support this course through the following: books (print and online), encyclopædias and handbooks; journals (print and online); online databases and other electronic resources; access to all YUL holdings and to other libraries through interlibrary loan; and ongoing purchases of new resources based on course requirements.

The course proposal bibliography mentions five books. YUL holds four of them now, either at Steacie, the Bronfman Business Library or online: Eric Chin, Sverrir Ólafsson and Dian Nel, *Problems and Solutions in Mathematical Finance: Stochastic Calculus* (2014); Ali Hirsa and Salih N. Neftci, *An Introduction to the Mathematics of Financial Derivatives* (2013, 3rd ed.); John C. Hull, *Options, Futures, and Other Derivatives* (2018, 10th ed.); and Paul Wilmott, *Paul Wilmott Introduces Quantitative Finance* (2007, 2nd ed.). We do not hold Robert L. McDonald's *Derivatives Markets* (2013, 3rd ed.) but I have ordered a copy. Any of the print books can be put on course reserve.

YUL holds hundreds of books on relevant subjects, such as [Finance — Mathematical models](#), [Options \(Finance\) — Prices — Mathematical models](#), [Business mathematics](#), [Interest rate futures](#) and of course probability and statistics. We also have research guides for [mathematics](#) and [finance](#) (managed by YUL's finance librarian, who is happy to help math students when appropriate).

The creation of a new Financial Mathematics stream will require some collection development, and I will consult with the relevant faculty about this.

More generally, collection development is an ongoing process based on a commitment to developing library resources that are in alignment with the university's curricular and research activities. Additional resources can be purchased for the library. Please forward any requests for purchase to me.

Librarians also provide library research skills and information literacy workshops to students on topics including: formulating search strategies in different databases; evaluating information sources; and research management programs such as Mendeley and Zotero, and integration with \LaTeX and \TeX .

Respectfully submitted,

William Denton <wdenton@yorku.ca>
Librarian / Scholarly Analytics; Mathematics and Statistics
102N Steacie Science and Engineering Library, x20006

Motion for the October Curriculum Meeting from Alex Mills, committee member:

Currently, the rules regarding the taking of non-science general education courses include the following provision:

Humanities and social science courses cross-listed with science and technology studies (STS) courses cannot count towards this requirement.

Motion:

To amend the above provision to read as follows:

Humanities and social science courses cross-listed with science and technology studies (STS) courses or which are listed as Course Credit Exclusions (CCEs) cannot count towards this requirement.

**CURRICULUM COMMITTEE TEMPLATE
CHANGES TO EXISTING COURSE PROPOSAL FORM**

Note: Any section shaded blue **must** be completed for Engineering related courses **in addition** to the other sections

Faculty:
Indicate all relevant Faculty(ies) i.e. LAPS/SC/LE

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

ESSE	Date of Submission:	January 4, 2018
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Effective Session for Change:

Term: (e.g., Fall; Winter; Summer)	Fall	Year:	2018
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Course Number:
Special Topics courses
Include variance (e.g. HUMA 3000C 6.0, Variance is "C")

LE/ENG 3320	Var:	Academic Credit Weight: Indicate both the fee, and MET weight if different from academic weight (e.g. AC=6, FEE=8, MET=6)	3.00
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Course Title:
The official name of the course as it will appear in the Undergraduate Calendar and on the Repository

	Microsystems Technology
--	-------------------------

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

	Microsystems Technology
--	-------------------------

Is this course cross-listed? (Yes/No)

Yes

If yes, cross-listed to: (please complete details below)

Faculty:	SC	Rubric:	PHYS	Course #:	3320	Weight:	3.00
Faculty:		Rubric:		Course #:		Weight:	
Faculty:		Rubric:		Course #:		Weight:	

Type of Change (check all that apply): (click check box to enable check-mark option)

- in course number / year-level
- in calendar description (editorial)
- in course credit exclusion(s)
- in credit value
- in pre-requisite(s)/co-requisite(s)
- in course format/delivery mode

in course title (editorial)

in cross-listing

retire/expire course

other (please specify):

(Change From):	(Change To):
<p>Example: Delete this text.</p> <p>Prerequisite: SC/PHYS 2020 3.00; SC/PHYS 2211 1.00; SC/PHYS 2060 3.00 recommended; SC/PHYS 2212 1.00 recommended. Corequisite: SC/PHYS 3050 3.00 recommended.</p>	<p>Example: <u>Add</u> this text.</p> <p>Prerequisite: SC/PHYS 2020 3.00</p>

Academic Rationale for Changes

The following points should be included in the rationale:

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

Our space engineering students do not take SC/PHYS 2211 anymore and PHYS 2211 is not necessary to take ENG 3320;

SC/PHYS 2060, SC/PHYS 2212, SC/PHYS 3050 are recommended but not necessary so we need to remove them from prerequisites.

Notes:

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

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 in this form. 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.

Accreditation Unit Breakdown: Indicate the revised accreditation unit breakdown as a percentage and unit(s) in the appropriate subject matter areas. Definitions are provided in Appendix A		Math	Natural Science	Compl Studies	Eng. Science	Eng. Design	
	Percentage						
	Units						
If the sum of engineering science and engineering design exceeds 50% of the total, indicate which P.Eng. faculty could be possible instructors for this course:							

Expanded Course Description:

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

Expanded Description including topics and theories:

Please include the following as part of your submission, as appropriate:

- details of how engineering design (if any) will be included in the course
- detailed schedule of topics, especially as they relate to engineering science and engineering design content
- a description of the laboratory experience and computer experience included in the course

Course Learning Objectives: Course learning objectives are statements of the overall learning and teaching intentions for the course and represent what the instructor would expect students to learn and retain in the course. They articulate what the teacher plans to achieve in the course.



Course Design:

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

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

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

<p>Course Learning Outcomes:</p> <p>List the course learning outcomes/indicators that will be achieved by the end of this course, and map these to the appropriate CEAB graduate attributes and UDLEs.</p> <p>These course learning outcomes will be assessed and measured in the course for accreditation purposes.</p>	<p><i>Please select those Degree Level Expectations that will be addressed in the course</i></p> <p>Undergraduate Degree Level Expectations</p> <ul style="list-style-type: none"> <input type="checkbox"/> Depth and breadth of knowledge <input type="checkbox"/> Knowledge of methodologies <input type="checkbox"/> Application of knowledge <input type="checkbox"/> Communication skills <input type="checkbox"/> Awareness of limits of knowledge <input type="checkbox"/> Autonomy and professional capacity 	<p><i>Please select those CEAB Graduate Attributes that will be addressed in the course (see appendix B for definitions)</i></p>
	<p>Learning outcomes articulate what the student will achieve by the end of the course. They provide a framework for assessment by stating what you expect the learners to be able to demonstrate after completing the course.</p> <p>A succinct learning outcome specifies the tasks students are expected to be able to perform and the level of competence expected for the tasks.</p>	

Instruction:

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

Faculty and Department/Division Approval for changes to Cross-listings:

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

Dept.: _____
Signature (Authorizing cross-list) Department Date

Dept.: _____
Signature (Authorizing cross-list) Department Date

Dept.: _____
Signature (Authorizing cross-list) Department Date

APPENDIX A: Accreditation Units

Accreditation Units (AUs) are defined on an hourly basis for an activity which is granted academic credit and for which the associated number of hours corresponds to the actual contact time between the student and the faculty members, or designated alternates, responsible for delivering the program:

- 1 AU** = One hour of lecture (corresponding to 50 minutes of activity)
- 0.5 AU** = One hour of laboratory or scheduled tutorial

Engineering design integrates mathematics, basic sciences, engineering sciences and complementary studies in developing elements, systems and processes to meet specific needs. It is a creative, iterative and often open-ended process subject to constraints which may be governed by standards or legislation to varying degrees depending upon the discipline. These constraints may relate to economic, health, safety, environmental, social or other pertinent interdisciplinary factors.

[The primary feature distinguishing engineering science from engineering design is the open ended nature of the problems. A design question runs along the lines of “design a system that meets the following specifications” whereas an engineering science question is “for the following example, calculate X, Y, and Z”]

Engineering science subjects normally have their roots in mathematics and basic sciences, but carry knowledge further toward creative applications. They may involve the development of mathematical or numerical techniques, modelling, simulation and experimental procedures. Application to the identification and solution of practical engineering problems is stressed. Such subjects include the applied aspects of strength of materials, fluid mechanics, thermodynamics, electrical and electronic circuits, soil mechanics, automatic control, aerodynamics, transport phenomena and elements of materials science, geoscience, computer science, environmental studies and

other subjects pertinent to the discipline. In addition, the curriculum should include engineering science content which imparts an appreciation of important elements of other engineering disciplines.

[i.e. the subject may be science, but the aim is towards practical applications, with practical examples.]

The basic (natural) sciences component of the curriculum must include elements of physics and chemistry; elements of life sciences and earth sciences may also be included in this category. These subjects are intended to impart an understanding of natural phenomena and relationships through the use of analytical and/or experimental techniques.

Mathematics includes appropriate elements of linear algebra, differential and integral calculus, differential equations, probability, statistics, numerical analysis and discrete mathematics.

Complementary studies in humanities, social sciences, arts, management, engineering economics and communication that complement the technical content of the curriculum.

[If a course is to include a complementary studies component, a portion of the grading must be allocated accordingly, e.g. part of the grade is for the grammar of a report.]

APPENDIX B: CEAB GRADUATE ATTRIBUTES

Section	Graduate Attribute	Description
3.1.1	Knowledge base for Engineering	Demonstrated competence in university level mathematics, natural sciences, engineering fundamentals, and specialized engineering knowledge appropriate to the program.
3.1.2	Problem Analysis	An ability to use appropriate knowledge and skills to identify, formulate, analyze, and solve complex engineering problems in order to reach substantiated conclusions.
3.1.3	Investigation	An ability to conduct investigations of complex problems by methods that include appropriate experiments, analysis and interpretation of data, and synthesis of information in order to reach valid conclusions.
3.1.4	Design	An ability to design solutions for complex, open-ended engineering problems and to design systems, components or processes that meet specified needs with appropriate attention to health and safety risks, applicable standards, and economic, environmental, cultural and societal considerations.
3.1.5	Use of Engineering Tools	An ability to create, select, apply, adapt, and extend appropriate techniques, resources, and modern engineering tools to a range of engineering activities, from simple to complex, with an understanding of the associated limitations.
3.1.6	Individual and Team Work	An ability to work effectively as a member and leader in teams, preferably in a multi-disciplinary setting.
3.1.7	Communication Skills	An ability to communicate complex engineering concepts within the profession and with society at large. Such ability includes reading, writing, speaking and listening, and the ability to comprehend and write effective reports and design documentation, and to give and effectively respond to clear instructions.
3.1.8	Professionalism	An understanding of the roles and responsibilities of the professional engineer in society, especially the primary role of protection of the public and the public interest.
3.1.9	Impact of Engineering on Society and the Environment	An ability to analyze social and environmental aspects of engineering activities. Such ability includes an understanding of the interactions that engineering has with the economic, social, health, safety, legal, and cultural aspects of society, the uncertainties in the prediction of such interactions; and the concepts of sustainable design and development and environmental stewardship.
3.1.10	Ethics and Equity	An ability to apply professional ethics, accountability, and equity.
3.1.11	Economics and Project Management	An ability to appropriately incorporate economics and business practices including project, risk, and change management into engineering practice and to understand their limitations.
3.1.12	Life-Long Learning	An ability to identify and to address their own educational needs in a changing world in ways sufficient to maintain their competence and to allow them to contribute to the advancement of knowledge.

INTEROFFICE MEMORANDUM

TO: CURRICULIUM COMMITTEE

FROM: JANAKI DECAMILLIS

SUBJECT: SC/PHYS 3320 3.0 (ORIG), LE/ENG 3320 3.0 (XLIST)

DATE: OCTOBER 18TH, 2018

CC: MARSHALL MCCALL
MARKO HORBATSCH
CRISTALINA DEL BIONDO
SUSY RIBEIRO

Please note:

This curriculum submission is a joint submission and has been approved by both the department of Physics and Astronomy and Lassonde School of Engineering.

COMMITTEE ON ACADEMIC STANDARDS, CURRICULUM AND PEDAGOGY TEMPLATE

NEW COURSE PROPOSAL FORM

Faculty:

Indicate all relevant
Faculty(ies)

Science

Department:

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

Science and Technology Studies STS

Date of Submission:

9 Oct 2018

Course Number:

Special Topics courses
Include variance (e.g.
HUMA 3000C 6.0,
Variance is "C")

STS 4650

Var:**Academic Credit Weight:**

Indicate both the fee, and
MTCU weight if different from
academic weight (e.g. AC=6,
FEE=8, MET=6)

3.0

Course Title:

The official name of the
course as it will appear in
the Undergraduate
Calendar and on the
Repository

Science and Romanticism

Short Title:

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

Science and Romanticism

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

**Brief Course
Description:**

**Maximum 2000
characters**

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

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

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

This course examines the many important interactions of science and Romanticism that took place between roughly 1770 and 1830, and to show how these resonated throughout the nineteenth and twentieth centuries and continue to make themselves felt up to the present. Romanticism is a European wide movement that flourished in England and above all in German lands in the decades surrounding the French Revolution. Contrary to much received opinion, which depicts Romanticism as a reaction against Enlightenment, science and reason, this course shows Romantic thinkers were deeply concerned with nature and science, particularly with the way humans understood their relationship to nature, and rejected mechanical and reductive explanations of nature in favour of more organic and holistic accounts of nature. Romanticism made itself felt in practically all areas of science, and was especially important in all areas of science that deal with development or change over time; it also gave us the modern notion of research and the research university. Romanticism was fundamental in giving science an interconnected view of nature, in showing that there is more to be learned by seeing the relationship between things than in isolating them. Chemistry had an important place for many romantic thinkers, as it was the link between inanimate and animate nature. Romanticism was also crucial for the very idea of the environment, for the evolutionary thinking of Darwin and others, and for showing that the physical sciences such as chemistry were the crucial link between inorganic and organic nature. This course will also show how modern ideas of the research university are related to Romantic ideas of research, and to show that the many deep connections between artistic and scientific approaches to nature. Scientific, literary and philosophical texts and ideas will be considered. Some of the key figures who may be studied in this course are Goethe, J. W. Ritter, Coleridge, Novalis, Schelling, Alexander von Humboldt, Darwin, Ernst Haeckel, W. Heisenberg and E. O. Wilson.

**Generic Course
Description:**

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

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

This course explores the many interactions of science and Romanticism that emerged between 1770 and 1830 and which resonate into the present. Topics include: holistic explanations and the critique of mechanism; romanticism and reshaping scientific disciplines (physics, chemistry, geology, biology) and the origins and growth of the research university.

This course is for students in 3rd or 4th year (i.e. will need to have completed 60 credits). There are no other specific prerequisites or exclusions.

Expanded Course Description:

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

This course examines the many important interactions of science and Romanticism that emerged between roughly 1770 and 1830, and have stayed with us in various forms into the present. Romanticism is a European wide movement that flourished in England and above all in German lands in the decades surrounding the French Revolution. Contrary to much received opinion, which depicts Romanticism as a reaction against Enlightenment, science and reason, this course shows Romantic thinkers were deeply concerned with nature and science, particularly with the way humans understood their relationship to nature, and rejected mechanical and reductive explanations of nature in favour of more organic and holistic accounts of nature. Romanticism made itself felt in practically all areas of science, including chemistry, physical sciences, geology and the life sciences; it was also crucial for developing the idea of the environment and how it might be studied; indeed the very idea of research and the modern research university was developed by romantic thinkers. Scientific, literary and philosophical texts and ideas will be considered. Some of the key figures who may be studied in this course are Goethe, J. W. Ritter, Coleridge, Novalis, Schelling, Humphry Davy, Alexander von Humboldt, Darwin, Haeckel, Heisenberg, and E. O. Wilson.

The topics of this course will consider the ways in which romantic thinkers rejected some of the received notions of science and their contribution to new conceptions of the sciences. Specific topics include: mechanistic views of nature and their critique by romantic thinkers, as expressed in philosophical and literary works; the contributions of romanticism to general views of Science; the interactions of Romanticism with chemistry, colour theory, geology, and the life sciences. The relationships between science and ideologies, including political and social ideologies. An important part of this course will be to show that Romanticism was not simply a rejection of some received ideas about science, it also played a key part in reconfiguring disciplines, such as chemistry, and creating new and emerging disciplines such as biology and geology.

Learning outcomes will include the ability to analyze and think critically about a challenging body of historical, primary sources. Students will also learn to present their ideas in oral presentation and group work. Students will learn to express complex ideas in written work. An important outcome of this course will be learning how to think outside of the box of received ideas and disciplines. Students will come to see that science became more dynamic and broader in scope, when it looked to see things as interconnected, rather in strict isolation.

Course Design:

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

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

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

This is a seminar course in which students will meet regularly for 3 hour each week. Typically this would be in one 3 hour meeting, though depending on the needs of the Department and Faculty, this could be split in 2 meetings per week.

Students will learn through lecturing and, even more importantly, through in-class discussion with each other and the course director. Students will read challenging texts and will also learn to express the ideas of those texts through formal presentations and written work.

Instruction:

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

1. Once every other year, initially. More, if there is demand
2. Ernie Hamm.
3. Ernie Hamm
4. 36 hrs, 3hrs wk, 12 week term

Evaluation:

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

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

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

participation: 10%
 presentations, in class: 20%
 term paper: 50%
 final exam: 20%

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

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

Also please list any online resources.

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

LIBRARY SUPPORT STATEMENT MUST BE INCLUDED.

- R. M. Brain, R. S. Cohen, O. Knudsen, eds. *Hans Christian Ørsted and the Romantic Legacy in Science: Ideas, Disciplines, Practices* (Dordrecht: Springer, 2007), selections.
- A. Cunningham and N. Jardine, eds., *Romanticism and the Sciences* (Cambridge: Cambridge University Press, 1990), selections.
- A. Wulf, *The Invention of Nature: Alexander von Humboldt's New World* (New York: Knopf, 2015), selections.
- S. T. Coleridge, *Hints Towards the Formations of a More Comprehensive Theory of Life* (London: Churchill, 1848)
- J. W. v. Goethe, *Scientific Studies*, transl. D. Miller (Princeton: Princeton University Press, 1995), selections.
- Alexander von Humboldt, *Views of Nature*, ed. S. T. Jackson and L. D. Walls, transl. M. W. Person (Chicago: University of Chicago Press, 2014), selections.
- Hans Christian Oersted, *The Soul in Nature*, transl. L. and J. B. Horner (London: Bohn, 1852), selections.
- Novalis, Henry von Ofterdingen (New York: Ungar, 1964), ch. 5.
- Jean Paul [J.P. F. Richter], selections, translated by Thomas Carlyle, online.
- J. W. Ritter, *Key Texts of Johann Wilhelm Ritter (1776-1810) on the Science and Art of Nature*, transl. J. Holland (Brill: Leiden, 2010), selections.
- F. W. J. Schelling, *Ideas for a Philosophy of Nature* (Cambridge, 1982).
- Charles Darwin, *Origin of Species* (Selections)
- E. O. Wilson, *Consilience: The Unity of Knowledge* (New York: Knopf, 1998), selections.

Other Resources:

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

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

No special resources are required for this course.

The class will meet in a typical seminar room, equipped with computer and screen or projector.

Course Rationale:

The following points should be addressed in the rationale:

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

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

The expected enrolment in the course.

This course fills a gap in the 4th year offerings in Science and Technology Studies. It will challenge students to think about the history of science and its cultural relations in a focused way. Students will be challenged to rethink some commonly held assumptions about the development of science and particular scientific disciplines. Students in this course will learn to see the connection between philosophical ideas and scientific practices, and they will have extensive opportunities to express their ideas in discussion and written form.

There is no course like this one at York University. It will be open to upper level students in Science and from other faculties, including LAPS & AMPD (there is no overlap in those faculties).

Expected enrolment: 20

Faculty and Department Approval for Cross-listings:

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

Dept: _____ Signature _____
(Authorizing cross-listing) Department Date

Dept: _____ Signature _____
Signature (Authorizing cross-listing) Department Date

Dept: _____ Signature _____
(Authorizing cross-listing) Department Date

**STEACIE SCIENCE & ENGINEERING LIBRARY
YORK UNIVERSITY**

MEMORANDUM

To: Ernie Hamm, Associate Professor, Department of Science and Technology Studies

From: Minglu Wang, Research Data Management / Science Librarian

Re: STS 4650 – Science and Romanticism

Date: October 1, 2018

I have reviewed the course proposal and attached bibliography for **STS 4650 - Science and Romanticism** and can state that the York University Libraries have the required resources to support this undergraduate level course.

Please be aware that the library offers the following services to help students with their research:

- A librarian can go to the classroom or tutorial and introduce students to the various resources available at the library including electronic journals, e-books, and databases.
- A librarian is also available for individual consultations with students to help them find the materials they need for their research.
- A librarian can be available as a user on the course Moodle page to answer student questions using the Forum discussion, provide links to resources in the course, and post handouts presented in face-to-face instruction.

The following textbooks listed in the course bibliography are **not** currently owned by the library, but will be ordered soon:

- J. W. v. Goethe, *Scientific Studies*, transl. D. Miller (Princeton: Princeton University Press, 1995), selections.
- Hans Christian Oersted, *The Soul in Nature*, transl. L. and J. B. Horner (London: Bohn, 1852), selections.
- F. W. J. Schelling, *Ideas for a Philosophy of Nature* (Cambridge, 1982).

The following textbooks listed in the course bibliography are owned by the library:

- R. M. Brain, R. S. Cohen, O. Knudsen, eds. *Hans Christian Ørsted and the Romantic Legacy in Science: Ideas, Disciplines, Practices* (Dordrecht: Springer, 2007), selections.
- Cunningham and N. Jardine, eds., *Romanticism and the Sciences* (Cambridge: Cambridge University Press, 1990), selections.
- Wulf, *The Invention of Nature: Alexander von Humboldt's New World* (New York: Knopf, 2015), selections.
- S. T. Coleridge, *Hints Towards the Formations of a More Comprehensive Theory of Life* (London: Churchill, 1848)
- J. W. Ritter, *Key Texts of Johann Wilhelm Ritter (1776-1810) on the Science and Art of Nature*, transl. J. Holland (Brill: Leiden, 2010), selections.
- Charles Darwin, *Origin of Species* (Selections)
- E. O. Wilson, *Consilience: The Unity of Knowledge* (New York: Knopf, 1998), selections.

Another translated version of the following textbook listed in the course bibliography is owned by the library, and the following version will be ordered soon:

- Alexander von Humboldt, *Views of Nature*, ed. S. T. Jackson and L. D. Walls, transl. M. W. Person (Chicago: University of Chicago Press, 2014), selections.

The following textbooks listed in the course bibliography can be downloaded online:

- Novalis, Henry von Ofterdingen (New York: Ungar, 1964), ch. 5.
- Jean Paul [J.P. F. Richter], selections, translated by Thomas Carlyle, online.

**STEACIE SCIENCE & ENGINEERING LIBRARY
YORK UNIVERSITY**

MEMORANDUM

If you would like a copy of these textbooks placed on reserve at the library for students' use, please place a reserve request by visiting reserves.library.yorku.ca. For more information about course reserves, please visit: <http://www.library.yorku.ca/web/ask-services/facultyinstructor-support/places-items-on-reserve/>.

The following electronic resources licensed by the library may be of help to the students in this course:

- **History of Science, Technology and Medicine**
Describes journal articles, conference proceedings, books, book reviews, and dissertations in the history of science, technology, and medicine and allied historical fields. The database integrates the Isis Current Bibliography of the History of Science, the Current Bibliography in the History of Technology (Technology and Culture), the Bibliografia Italiana di Storia della Scienza and the Welcome Library for the History and Understanding of Medicine. Updated quarterly; covers 1975-present.
- **Historical Abstracts**
Covers world history, excluding North America, from 1450 to the present era. It indexes journals from around the world and also includes books and dissertations. Includes articles on the History and Philosophy of Science. Coverage is from 1954 - present.
- **Philosophers Index**
Good coverage of philosophy-related aspects of science and technology. Indexes articles, anthologies, book reviews, books and essays in anthologies. It is international in scope and not limited to any one period or culture. Coverage is from 1940 - present.
- **Scholars Portal**
Indexes and Databases bring together a number of different online journals and other resources into one search engine. Use these tools to find citations, abstracts and/or full text articles, reports and other resources on your topic. Both scholarly and popular articles may be included.
- **JSTOR**
Used by millions for research, teaching, and learning. With more than a thousand academic journals and over 1 million images, letters, and other primary sources, JSTOR is one of the world's most trusted sources for academic content.

Interlibrary loan and document delivery options are available through RACER for any additional information needs that may come up. Books can also be requested through this system free of charge. Registration and requesting is available from: <http://www.library.yorku.ca/cms/resource-sharing/services-for-york-faculty-and-students/illrequestform/>.

Collection development in the library is ongoing, and is based on a commitment to developing library resources that are in alignment with the University's curricular and research activities. Additional books in this field will be added to the library collection as they are published. Please forward any requests for purchase to me (mingluwa@yorku.ca) or submit your purchase request by using the form at <http://www.library.yorku.ca/online/purchase.php>

A Science and Technology Studies subject guide has been created and is maintained by subject librarians. Resources and links will be added upon request: <http://researchguides.library.yorku.ca/sts>

In summary, I state that we are well positioned to support this course. If you have any questions, please do not hesitate to contact me.

Sincerely,

Minglu Wang, Research Data Management / Science Librarian
Steacie Science & Engineering Library
416-736-2100 x 40075 mingluwa@yorku.ca

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

NEW COURSE PROPOSAL FORM

Faculty:

Indicate all relevant
Faculty(ies)

Science

Department:

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

STS

**Date of
Submission:**

Sept 19, 2018

Course Number:

Special Topics
courses
Include variance
(e.g.
HUMA 3000C 6.0,
Variance is "C")

4090

Var:

Academic Credit Weight:

3.0

Course Title:

The official name of
the course as it will
appear in the
Undergraduate
Calendar and on the
Repository

Science in the Wild: Laboratory Studies and Ethnography

Short Title:

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

Science in the Wild: Laboratory Studies and Ethnography

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

**Brief Course
Description:**

**Maximum 2000
characters**

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

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

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

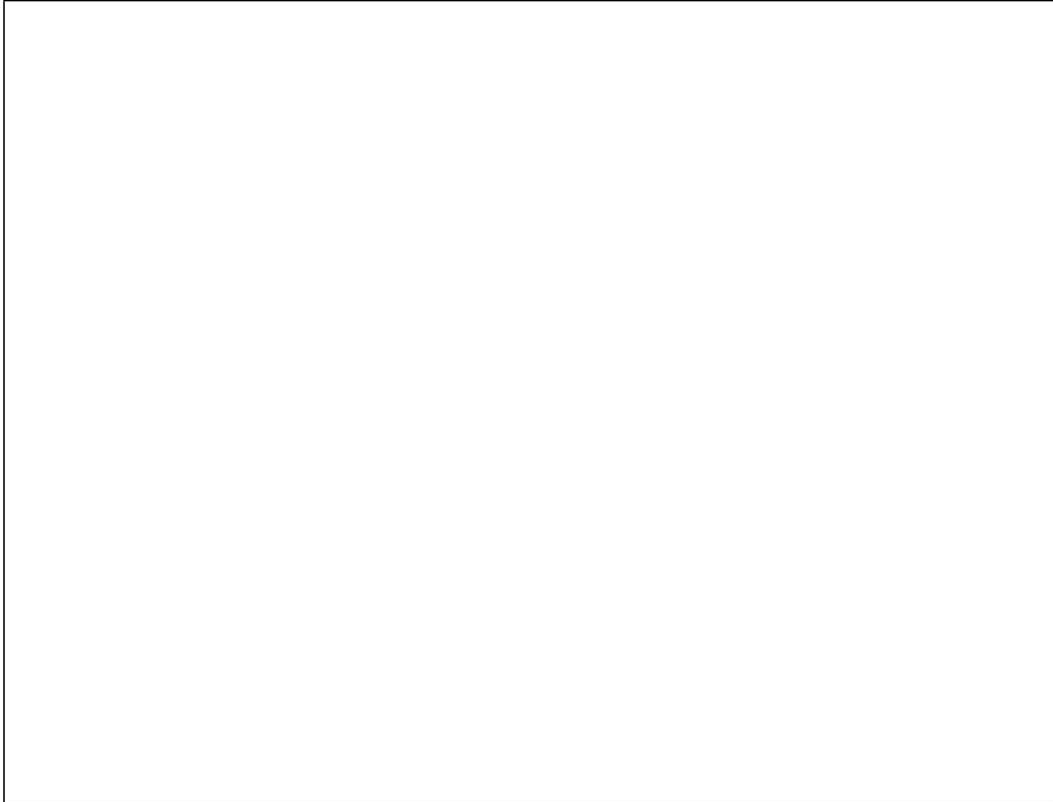
This course is a hands-on introduction to the anthropological study of science-in-the-making. Students develop practical skills in qualitative ethnographic methods by conducting interviews with practicing scientists, and observing laboratory research. Through weekly readings and fieldwork assignments, students develop a broad understanding of scientific practice. By analyzing their own field notes and interview transcripts, students work towards producing an ethnographic account of laboratory life.

Prerequisites: 60 credits of which a minimum of 6 are in STS, or by permission with the instructor.

Generic Course Description:

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

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



Expanded Course Description:

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

This course follows a seminar format. The students alternate between working through particular theoretical and/or ethnographic texts, and discussing their own research projects. The first part of the class is dedicated to seminar discussions of weekly readings. The second part is engaged in a hands-on workshop on ethnographic methods. In addition, weekly fieldnotes and writing assignments are due on Moodle at the end of the week (on Fridays). To make sure that the students get the most out of the class, they have to read their classmates' postings before they come to class and come prepared with comments and questions.

Week 1: Introduction: Welcome to the Lab**Overview of the week**

The students learn about laboratory life through jove.com. They identify five laboratories that they might be able to study and ask for permission to study them.

In class:

1. Introduction.
2. Students identify 5 laboratories they have some connections to and might be able to do fieldwork in.
3. Visit the Online Journal of Visualized Experiments: <http://www.jove.com/>

*** Post notes about their first contacts with their laboratories at the end of the week.

Week 2: What is the Anthropology of Science?**Overview of the Week:**

Secure a lab placement and write a brief report (1-2 pages) and produce their Ethics Review <http://research.info.yorku.ca/ore/human-participants/>

There is also a research ethics tutorial the students are required to take first, and then print off their results.

<http://tcps2core.ca/welcome>

In class:**Readings:**

* Sharon Traweek, 'Prologue: An Anthropologist Studies Physicists,' In *Beamtimes and Lifetimes: The world of high-energy physicists* (Cambridge, Mass.: Harvard University Press, 1988), 1-17.

*Latour, Bruno & Steve Woolgar, 'From Order to Disorder,' 'An anthropologist visits the laboratory' and 'Photograph File' in *Laboratory*

Life: The Construction of Scientific Facts (Princeton: Princeton University Press, 1986), 15-103.

Workshop: Check in: progress in gaining access to their fieldsite. Discuss Ethnographic methods, TCPS 2: CORE, General Ethics Review.

*** Post a brief description of the laboratory they will be studying at the end of the week.

Week 3: What are Ethnographic Methods?

Overview:

This week we discuss what it means to observe and to do a “thick description”. The students conduct 3 hours of fieldwork in their lab and post their fieldnotes by the end of the week.

In class:

Readings:

*Clifford Geertz, “Thick Description: toward an interpretative theory of culture” in *The Interpretation of Cultures* (New York: Basic Books, 1973), 3-30.

* Erving Goffman, “On Fieldwork,” in Emerson, Robert M (ed.), *Contemporary field research Perspectives and Formulations* (Long Grove: Waveland Press, 2001), 153-158.

Workshop: Exercise in class

*** Post 2 pages of field notes on the organization of the lab, on who works there and what they are doing at the end of the week.

Week 4: Instruments of Visualization

Overview:

This week we discuss practices of seeing and visualizing and talk about instruments and machines. The students perform 3 hours of observation and post a 3 page report.

In class:

Readings:

* Sharon Traweek, “Inventing Machines that Discover Nature,” in *Beamtimes and Lifetimes*.

* Ian Hacking, “Microscopes,” in *Representing and Intervening: Introductory Topics in the Philosophy of Natural Science* (Cambridge: Cambridge University Press, 1983), 186-209.

Workshop: Exercise in class.

*** 3 page-report focused on instruments, machines, methods of detection in

the laboratory posted at the end of the week.

*** Read everyone's 3 page report over the weekend.

Week 5: Instruments of Recording

Overview:

Students conduct 2 interviews (30 min) and transcribe one by end of the week.

In class

Readings:

* Hélène Mialet, "Reading Hawking's Presence: An Interview with a Self-Effacing Man," *Critical Inquiry* 29 (2003): 571-598.

Workshop: Conducting and Transcribing Interviews and discuss reports.

*** Post a transcript of one interview. Post due at the end of the week.

Week 6: Machines and Users

Overview:

We discuss the body/machine interface. Students perform 3 hours of fieldwork. They learn how to analyze a transcript. They post a one page analysis of their transcript by the end of the week.

In class:

Readings:

* Gary Lee Downey, *The Machine in Me, An Anthropologist Sits Among Computer Engineers* (New York and London: Routledge, 2000), 134-210.

Workshop: Read everyone's posted transcript before class. Highlight interesting passages and word choices, and bring to class.

Friday

*** Post a 1-page Analysis of their Transcript. Post due at the end of the week.

Week 7: Blurring the boundaries between subjects and objects.

Overview: Perform 3 hours of observation. Post 3 pages of raw fieldnotes.

In Class

Readings:

* Natasha Myers, "Animating Mechanism: Animations and the Propagation of Affect in the Lively Arts of Protein Modeling" *Science Studies* 19 (2006): 6-30.

* Davis Gail, "What is a humanized mouse? Remaking the species and

spaces of translational medicine,” *Body & Society* 18 (2012): 126-155.

* Sophia Roosth, “Screaming yeast: sonocytology, cytoplasmic milieus, and cellular subjectivities,” *Critical Inquiry* 35 (2009): 332-350.

Workshop: Students discuss analysis of their transcripts.

*** Post 3 pages of raw Fieldnotes. Post due at the end of the week.

Week 8: Sharing Suffering

Overview:

Perform 3 hours of observation. Post a 3-page ethnographic account.

In class:

Readings:

* Hugh Gusterson, “Bodies and Machines” in *Nuclear Rites: A Weapons Laboratory at the End of the Cold War* (Berkeley: University of California Press, 1998).

* Donna Haraway, *When Species Meet* (Saint Paul: University of Minnesota Press, 2008), chap. 3, “Sharing Suffering.”

Workshop: Ethnographic Accounts.

*** Post 3-page ethnographic account. Post due at the end of the week.

Week 9: Another other: Animals

Students have to do fieldwork (3 hours) and post their fieldnotes at the end of the week.

In class

Readings:

* Donna Haraway, *When Species Meet* (Saint Paul: University of Minnesota Press, 2008), chap. 4 and 5.

*** Post 3-page ethnographic account. Post due at the end of the week.

Week 10: Ethnographic studies of the Internet

In class

Readings:

* Chris Kelty et. al., “Collaboration, Coordination, and Composition: Fieldwork after the Internet,” in Faubion & Marcus (eds.) *Fieldwork Is Not What It Used to Be* (2009), 79-96.

* Kim Fortun “Scaling and Visualizing Multi-sited Ethnography.” In Falzon (ed.) *Multi-Sited Ethnography: Theory, praxis and Locality in Contemporary Research* (2009), 73-86.

Week 11: Future Politics of Laboratory Studies

In class

Reading:

* Park Doing, “Give me a laboratory and I will raise a discipline: the past, present, and future politics of laboratory studies in STS,” in Hackett, Edward J. Olga Amsterdamska, Michael Lynch and Judy Wajcman (eds.), *The Handbook of Science and Technology Studies* (Cambridge and London, MIT Press: 2008), 279-295.

* Oron Catts, and Gary Cassm, “Labs shut open. A biotech hands-on workshop for artists.” In: da costa, Beatriz and Kavita Philip (eds.), *Tactical Biopolitics. Art, Activism and Technoscience* (Cambridge and London. MIT: 2008), xi-xiv

Workshop: Formal Presentation of students’ work (10 minutes).

Week 12: Conclusion

Students present an outline of their final papers.

Learning outcomes:

Students learn about canonical texts in sociology, sociology of science, anthropology, anthropology of science and STS and how to read them in their context. They learn how to pinpoint arguments and do close readings of a text.

They learn how to relate these texts to hands-on practice.

Students understand how science is done in practice. What kinds of problems scientists encounter, what they do and how they do it.

They learn how to do interviews and analyze them, how to do observation, to write an ethics protocol, and a piece of ethnography.

Course Design:

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

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

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

- We go back and forth between studying theories and classical ethnographies and examining everyday experience in the laboratory.
- Students share their work online and learn how to read, analyze, and write collaboratively in class.
- On average, students are required to do three hours of preparation per week for each class (excluding work on major assignments). They also do 3 hours of observation per week.

Instruction:

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

1. This 3-credit, 12 week course, will be offered once a year, preferably in the fall or winter term depending on when STS 3090 is offered.

2- Mialet. Conor Douglas has indicated he is able and willing to teach the course if Mialet is unavailable.

3-Mialet

.4- In addition to three hours of class time, one designated office hour would also be held each week for student consultation.

Evaluation:

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

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

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

Readings and Assignments:

All readings are available on Moodle. Students post their field assignments on Moodle each week on or before the due date so that members of the class can read each other’s assignments before the weekly workshop.

Participation:

100% Attendance and full participation in lectures and workshops is mandatory. If students know in advance that they have to miss a lecture or workshop, they must contact the instructor ahead of time. Missed days will require the students to submit a 2-page double-spaced written response to the readings.

In this class students are assessed by the quality of their contributions during Seminars and Workshops, and by their written assignments.

Seminar and Workshop Participation (based on students’ contribution to discussion on the readings): 20%

Ethnographic fieldwork (18 hours of observation, field notes, transcripts): 25%

Writing assignments (3 pages each): 25%

1 Oral Presentation: 10%

1 Final Paper (10 pages): 20%

Because the workshops aim to generate insights collectively, building the discussion on students’ weekly assignments, it is imperative that students complete their assignments on time. Late assignments are penalized. For an assignment handed in one day late, the student loses one grade; two days late, the students lose two grades, etc.

Bibliography:

A READING LIST MUST BE INCLUDED FOR ALL NEW COURSES

The Library has requested that the reading list contain complete bibliographical information, such as full name of author,

—Oron Catts, and Gary Cassm, “Labs shut open. A biotech hands-on workshop for artists.” In: da costa, Beatriz and Kavita Philip (eds.), *Tactical Biopolitics. Art, Activism and Technoscience* (Cambridge and London. MIT: 2008), xi-xiv

—Clifford Geertz, “Thick Description: toward an interpretative theory of culture” in *The Interpretation of Cultures* (New York: Basic Books, 1973), 3-30.

—Davis Gail, “What is a humanized mouse? Remaking the species and spaces of translational medicine,” *Body & Society* 18 (2012): 126-155.

—Donna Haraway, *When Species Meet* (Saint Paul: University of Minesota Press, 2008), chap. 3, “Sharing Suffering.”

—Erving Goffman, “On Fieldwork,” in Emerson, Robert M (ed.), *Contemporary field research Perspectives and Formulations* (Long Grove:

title, year of publication, etc., and that you distinguish between required and suggested readings. A statement is required from the bibliographer responsible for the discipline to indicate whether resources are adequate to support the course.

Also please list any online resources.

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

**LIBRARY
SUPPORT
STATEMENT MUST
BE INCLUDED.**

Waveland Press, 2001), 153-158,

—Gary Lee Downey, *The Machine in Me, An Anthropologist Sits Among Computer Engineers*, (New York and London: Routledge, 2000), 134-210

—Hélène Mialet, “Reading Hawking’s Presence: An Interview with a Self-Effacing Man,” *Critical Inquiry* 29 (2003): 571-598.

—Hugh Gusterson, “Bodies and Machines” in *Nuclear Rites: A Weapons Laboratory at the End of the Cold War* (Berkeley: University of California Press, 1998).

—Ian Hacking, “Microscopes,” in *Representing and Intervening: Introductory Topics in the Philosophy of Natural Science* (Cambridge: Cambridge University Press, 1983), 186-209

—Latour, Bruno & Steve Woolgar, ‘From Order to Disorder,’ ‘An anthropologist visits the laboratory’ and ‘Photograph File’ in *Laboratory Life: The Construction of Scientific Facts* (Princeton: Princeton University Press, 1986), 15-103.

—Natasha Myers, “Animating Mechanism: Animations and the Propagation of Affect in the Lively Arts of Protein Modeling” *Science Studies* 19 (2006): 6-30.

—Park Doing, “Give me a laboratory and I will raise a discipline: the past, present, and future politics of laboratory studies in STS,” in Hackett, Edward J. Olga Amsterdamska,

—Michael Lynch and Judy Wajcman (eds.), *The Handbook of Science and Technology Studies* (Cambridge and London, MIT Press: 2008), 279-295.

—Sharon Traweek, ‘Prologue: An Anthropologist Studies Physicists,’ In *Beamtimes and Lifetimes: The world of high-energy physicists* (Cambridge, Mass.: Harvard University Press, 1988), 1-17.

—Sharon Traweek, “Inventing Machines that Discover Nature,” in *Beamtimes and Lifetimes*.

—Sophia Roosth, “Screaming yeast: sonocytology, cytoplasmic milieus, and cellular subjectivities,” *Critical Inquiry* 35 (2009): 332-350.

—Chris Kelty et. al., “Collaboration, Coordination, and Composition: Fieldwork after the Internet,” in Faubion & Marcus (eds.) *Fieldwork Is Not What It Used to Be* (2009), 79-96.

—Kim Fortun “Scaling and Visualizing Multi-sited Ethnography.” In Falzon (ed.) *Multi-Sited Ethnography: Theory, praxis and Locality in Contemporary Research*) (2009), 73-86.

Other Resources:

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

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

This course requires a room with internet access and possibility of showing movies. It also requires a classroom that allows students to work in groups.

Required Materials:

Tape recorder and voice recording tapes, digital voice recorder, or recording apps on smartphones.

Course Rationale:

The following points should be addressed in the rationale:

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

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

The expected

This course will attract students from humanities, social sciences, engineering, computer sciences, biology, physics, and STS.

Students will be able to learn about observations and theories developed by sociologists, anthropologists and scholars of STS on how science is done in practice. They will also learn what kinds of skills are required to become an ethnographer and how to develop these skills (e.g., how to do an interview, observe a situation, analyze interviews, write a piece of ethnography). In other words, they will learn theories about science, how scientists do what they do, how social scientists (anthropologists, ethnographers) do what they do, and how to develop similar techniques and skills.

Enrolment would be 15 (max).

Faculty and Department Approval for Cross-listings:

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

Dept: _Signature (Authorizing cross-listing) _____
Department Date

Dept: _Signature (Authorizing cross-listing) _____
Department Date

Dept: _Signature (Authorizing cross-listing) _____
Department Date

**STEACIE SCIENCE & ENGINEERING LIBRARY
YORK UNIVERSITY**

Library Support Statement

To: James Elwick, Associate Professor, Department of Science and Technology Studies

From: Minglu Wang, Research Data Management / Science Librarian

Re: STS 4090 – Science in the Wild: Laboratory Studies and Ethnography

Date: October 3, 2018

I have reviewed the course proposal and attached bibliography for **STS 4090 – Science in the Wild** and can state that the York University Libraries have the required resources to support this undergraduate level course.

Please be aware that the library offers the following services to help students with their research:

- A librarian can go to the classroom or tutorial and introduce students to the various resources available at the library including electronic journals, e-books, and databases.
- A librarian is also available for individual consultations with students to help them find the materials they need for their research.
- A librarian can be available as a user on the course Moodle page to answer student questions using the Forum discussion, provide links to resources in the course, and post handouts presented in face-to-face instruction.

The following textbook listed in the course bibliography is **not** currently owned by the library, but will be ordered soon:

—Kim Fortun “Scaling and Visualizing Multi-sited Ethnography.” In Falzon (ed.) *Multi-Sited Ethnography: Theory, praxis and Locality in Contemporary Research* (2009), 73-86.

The following textbooks and articles listed in the course bibliography are owned by the library:

- Oron Catts, and Gary Cassm, “Labs shut open. A biotech hands-on workshop for artists.” In: da costa, Beatriz and Kavita Philip (eds.), *Tactical Biopolitics. Art, Activism and Technoscience* (Cambridge and London. MIT: 2008), xi-xiv
- Clifford Geertz, “Thick Description: toward an interpretative theory of culture” in *The Interpretation of Cultures* (New York: Basic Books, 1973), 3-30.
- Davis Gail, “What is a humanized mouse? Remaking the species and spaces of translational medicine,” *Body & Society* 18 (2012): 126-155.
- Donna Haraway, *When Species Meet* (Saint Paul: University of Minesota Press, 2008), chap. 3, “Sharing Suffering.”
- Erving Goffman, “On Fieldwork,” in Emerson, Robert M (ed.), *Contemporary field research Perspectives and Formulations* (Long Grove: Waveland Press, 2001), 153-158,
- Gary Lee Downey, *The Machine in Me, An Anthropologist Sits Among Computer Engineers*, (New York and London: Routledge, 2000), 134-210
- Hélène Mialet, “Reading Hawking’s Presence: An Interview with a Self-Effacing Man,” *Critical Inquiry* 29 (2003): 571-598.
- Hugh Gusterson, “Bodies and Machines” in *Nuclear Rites: A Weapons Laboratory at the End of the Cold War* (Berkeley: University of California Press, 1998).
- Ian Hacking, “Microscopes,” in *Representing and Intervening: Introductory Topics in the Philosophy of Natural Science* (Cambridge: Cambridge University Press, 1983), 186-209
- Latour, Bruno & Steve Woolgar, ‘From Order to Disorder,’ ‘An anthropologist visits the laboratory’ and ‘Photograph File’ in *Laboratory Life: The Construction of Scientific Facts* (Princeton: Princeton University Press, 1986), 15-103.

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—Natasha Myers, “Animating Mechanism: Animations and the Propagation of Affect in the Lively Arts of Protein Modeling” *Science Studies* 19 (2006): 6-30.

—Park Doing, “Give me a laboratory and I will raise a discipline: the past, present, and future politics of laboratory studies in STS,” in Hackett, Edward J. Olga Amsterdamska, Michael Lynch and Judy Wajcman (eds.), *The Handbook of Science and Technology Studies* (Cambridge and London, MIT Press: 2008), 279-295.

—Sharon Traweek, ‘Prologue: An Anthropologist Studies Physicists,’ In *Beamtimes and Lifetimes: The world of high-energy physicists* (Cambridge, Mass.: Harvard University Press, 1988), 1-17.

—Sharon Traweek, “Inventing Machines that Discover Nature,” in *Beamtimes and Lifetimes*.

—Sophia Roosth, “Screaming yeast: sonocytology, cytoplasmic milieus, and cellular subjectivities,” *Critical Inquiry* 35 (2009): 332-350.

—Chris Kelty et. al., “Collaboration, Coordination, and Composition: Fieldwork after the Internet,” in Faubion & Marcus (eds.) *Fieldwork Is Not What It Used to Be* (2009), 79-96.

If you would like a copy of these textbooks placed on reserve at the library for students' use, please place a reserve request by visiting reserves.library.yorku.ca. For more information about course reserves, please visit: <http://www.library.yorku.ca/web/ask-services/facultyinstructor-support/places-items-on-reserve/>.

The following electronic resources licensed by the library may be of help to the students in this course:

- **History of Science, Technology and Medicine**
Describes journal articles, conference proceedings, books, book reviews, and dissertations in the history of science, technology, and medicine and allied historical fields. The database integrates the Isis Current Bibliography of the History of Science, the Current Bibliography in the History of Technology (Technology and Culture), the Bibliografia Italiana di Storia della Scienza and the Welcome Library for the History and Understanding of Medicine. Updated quarterly; covers 1975-present.
- **Anthropology Plus**
As a compilation of the Royal Anthropological Institute's Anthropological Index and Harvard University's Anthropological Literature databases, Anthropology Plus is the world's most comprehensive index covering the fields of anthropology, archaeology, and related interdisciplinary research. This database offers worldwide indexing of journals from the early 19th century to today, providing extensive indexing of journal articles, reports, and commentaries.
- **Anthrosource**
The premier online portal serving the research, teaching and practicing needs of anthropologists. An online service of the American Anthropological Association (AAA), AnthroSource offers access to more than 100 years of anthropological knowledge. AnthroSource provides current content from AAA's diverse portfolio of 32 anthropological publications which includes journals, books, monographs, bulletins and newsletters.
- **Sociological Abstracts**
Abstracts and indexes the international literature in sociology and related disciplines in the social and behavioral sciences. The database provides abstracts of journal articles and citations to book reviews drawn from thousands of serials publications, and also provides abstracts of books, book chapters, dissertations, and conference papers.
- **Social Sciences Index**
Provides access to a wide assortment of the most important English-language journals published in the U.S. and elsewhere, with abstracting and indexing of over 625 periodicals as far back as 1983, nearly 400 of which are peer-reviewed. Social Sciences Abstracts covers the latest concepts, trends, opinions, theories and methods from both applied and theoretical aspects of the social sciences.
- **Sociology Database**

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Library Support Statement

This is a small database, containing only a portion of the records from Sociological Abstracts. About 700 journals and other publications are indexed.

- **Scholars Portal**
Indexes and Databases bring together a number of different online journals and other resources into one search engine. Use these tools to find citations, abstracts and/or full text articles, reports and other resources on your topic. Both scholarly and popular articles may be included.
- **JSTOR**
Used by millions for research, teaching, and learning. With more than a thousand academic journals and over 1 million images, letters, and other primary sources, JSTOR is one of the world's most trusted sources for academic content.

Interlibrary loan and document delivery options are available through RACER for any additional information needs that may come up. Books can also be requested through this system free of charge. Registration and requesting is available from: <http://www.library.yorku.ca/cms/resourcesharing/services-for-york-faculty-and-students/illrequestform/>.

Collection development in the library is ongoing, and is based on a commitment to developing library resources that are in alignment with the University's curricular and research activities. Additional books in this field will be added to the library collection as they are published. Please forward any requests for purchase to me (mingluwa@yorku.ca) or submit your purchase request by using the form at <http://www.library.yorku.ca/online/purchase.php>

A Science and Technology Studies subject guide has been created and is maintained by subject librarians. Resources and links will be added upon request: <http://researchguides.library.yorku.ca/sts>

In summary, I state that we are well positioned to support this course. If you have any questions, please do not hesitate to contact me.

Sincerely,

Minglu Wang, Research Data Management / Science Librarian
Steacie Science & Engineering Library
416-736-2100 x 40075 mingluwa@yorku.ca

STS 4655 COMMITTEE ON ACADEMIC STANDARDS, CURRICULUM AND PEDAGOGY TEMPLATE

NEW COURSE PROPOSAL FORM

Faculty:

Indicate all relevant
Faculty(ies)

Science

Department:

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

Science and Technology Studies STS

Date of Submission:

18 September 2018

Course Number:

Special Topics courses
Include variance (e.g.
HUMA 3000C 6.0,
Variance is "C")

STS 4655

Var:**Academic Credit Weight:**

Indicate both the fee, and
MTCU weight if different from
academic weight (e.g. AC=6,
FEE=8, MET=6)

3.0

Course Title:

The official name of the
course as it will appear in
the Undergraduate
Calendar and on the
Repository

From the Ark to the Anthropocene: Episodes in the History of the Earth and Environmental Sciences.
--

Short Title:

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

From the Ark to the Anthropocene

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

Brief Course Description:

Maximum 2000 characters

(approximately 300 words including spaces and punctuation).

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

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

Generic Course Description:

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

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

This course examines the history of the geo-sciences from the early modern period to the present. The transition from a static, unchanging view of the earth to a dynamic and historical view of nature is one of the most important achievements in the history of science. Likewise, the development of ideas of the environment, of an interconnected nature, and evolutionary thinking, are deeply rooted in and connected to changing views of the earth, its history and development over time. This course will examine how that change took place, beginning with a consideration of early attempts to give the earth a chronology, and the ways in which naturalists made use of ideas borrowed from the study of human history to make sense of the history of the earth. Natural philosophical theories of the earth, palaeontology, the origins of geology in the decades around 1800, ideas of mountain formation, plate tectonics and impact theory are among the topics that may be covered in this course. This course will also show that mining and resource exploitation, often treated as merely utilitarian or an application of knowledge, have for centuries played an important part in the history of the geosciences and our understanding of the earth. An important aim is to show that the geosciences should not be treated in isolation from other sciences and broader culture.

This course examines episodes in the history of the geo-sciences and environmental sciences from the seventeenth century to the present. Topics range from: chronologies of the earth; Enlightenment theories of the earth; fossils, extinction and the origins of palaeontology; mining and its relations to the geosciences; the development of plate tectonics; meteor impact theory; ideas of the Anthropocene. The course emphasizes the connections between scientific, philosophical, technological and social change.

This course is for students in 3rd or 4th year. Students need to have completed 60 credits, otherwise there are no specific prerequisites or exclusions.

Expanded Course Description:

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

This course will cover topics ranging from the early modern through to the present and will consider work that had its origins largely, though not exclusively, in the European-Atlantic world. A number of key figures and problems will be considered, such as:

- the relationship between seventeenth-century attempts at chronology, the interpretation of sacred texts, and views of the earth
- changing ideas of fossils, their origin and their place in earth history
- the political and social relations of various accounts of the earth's history – gradualist explanations of geological change as opposed to explanations that involved radical or revolutionary change
- the deep connections and interactions between mining and mineral exploitation and the development of geology
- the relationship between geology and biology, specifically the ways in which developments in geology led to more all-encompassing views of nature, and laid much of the conceptual groundwork for evolutionary biology
- the development of scientific disciplines as a social process
- the problem of explaining the origins of mountains
- the development of a dynamic view of the earth's crust, continental drift and plate tectonics
- interactions of geology and religion
- international competition, nation building, national rivalry and conflict in relation to the geosciences
- the origins and growth of impact theory
- the shift from earth science to planetary science
- humans, environmental change and geology: the rise of the Anthropocene

This course has no specific prerequisites, though students do need to be in their 3rd or 4th year of study to enroll. All students will be expected to do substantial amounts of reading and will be required to participate in discussions and do formal written work. This is an historical course and students will need to learn how to think about change in the history of science; students will also need to think across disciplines as they engage with scientific, philosophical and social thought.

Course Design:

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

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

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

This is a seminar course in which students will meet regularly for 3 hour each week. Typically this would be in one 3 hour meeting, though depending on the needs of the Department and Faculty, this could be split in 2 meetings per week.

Students will learn through lecturing and, even more importantly, through in-class discussion with each other and the course director. Students will read challenging texts and will also learn to express the ideas of those texts through formal presentations and written work.

Instruction:

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

1. Once every other year, initially. More, if there is demand
2. Ernie Hamm.
3. Ernie Hamm
4. 36 hrs, 3hrs wk, 12 week term

Evaluation:

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

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

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

participation: 10%
 presentations, in class: 20%
 term paper: 50%
 final exam: 20%

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

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

Also please list any online resources.

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

LIBRARY SUPPORT STATEMENT MUST BE INCLUDED.

- M. J. S. Rudwick, *Earth's Deep History: How it Was Discovered and Why it Matters* (Cambridge University Press, 2014). Required.
- Martina Kölbl-Ebert, *From Local Patriotism to a Planetary Perspective: Impact Crater Research in Germany, 1930s-1970s* (Ashgate, 2015), selections.
- Henry Frankel, *The Continental Drift Controversy*, 4 vols. (Cambridge University Press, 2012), selections.
- Mott Greene, *Geology in the Nineteenth Century: Changing Views of a Changing World* (Cornell University Press, 1982), selections.
- Mott Greene, *Alfred Wegener: Science, Exploration and the Theory of Continental Drift* (Johns Hopkins University Press, 2015), selections.
- Rachel Laudan, *From Mineralogy to Geology: The Foundations of a Science, 1650-1830* (University of Chicago Press, 1987), selections.
- G. L. de Buffon, *Natural History, Containing a Theory of the Earth* [1749] (London, 1797), selections.
- Charles Darwin, *Structure and Distribution of Coral Reefs* (London, 1842), Darwin Online, selections.
- Alexander von Humboldt, "On the Structure and Mode of Action of Volcanoes in Different Parts of the Earth," in *Views of Nature* transl. M. W. Person (University of Chicago Press, 2014).
- Charles Lyell, *Principles of Geology*, 3 vols. (London, 1830-33), selections.
- Eduard Suess, *The Face of the Earth*, transl. H. B. C. Sollas, 5 vols. [1883-1909] (Oxford: Clarendon, 1904-1924), selections.
- A. Wegener, *Origin of the Oceans and Continents* [1922] (Dover 1966).
- Jan Zalasiewicz, Mark Willians, Alan Haywood and Mike Ellis, "The Anthropocene: A New Epoch of Geological Time?" *Philosophical Transactions of the Royal Society A* 368 (2011), 835-841

Other Resources:

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

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

No special resources are required for this course.

The class will meet in a typical seminar room, equipped with computer and screen or projector.

Course Rationale:

The following points should be addressed in the rationale:

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

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

The expected enrolment in the course.

This course fills a gap in the 4th year offerings in Science and Technology Studies. It will challenge students to examine in some depth one of the most fundamental transformations in science over the last four centuries, the change from a static to a historical and dynamic view of the earth. This transition is inseparable from the development of the disciplines of geology and palaeontology and, in turn, laid the foundation for evolutionary thinking. Some of these subjects might be briefly addressed in STS 2010, STS 3740, or STS 3760, but none offer an in-depth study of the subject matter of this course, which is unique among STS courses.

The learning objectives of the course are threefold:

- 1) Students will be required to read and engage with the works of natural philosophers, natural historians, geologists and others written between about 1650 and the present. Students will be encouraged to draw connections between texts and see the relationship between scientific ideas and practices in a much more focused way than is possible in STS 2010.
- 2) Understanding that change in the history of science can only be understood by considering the larger historical picture—science does not take place in some sort of pristine laboratory, but in a world of conflicting ideas and practices, of institutions, social conventions and politics. This will make this an excellent course to take alongside or, as the case may be, before STS 4501.
- 3) Expressing and articulating complex ideas in discussion and in prose.

There is no course like this one at York University. It will be open to upper level students in Science and all other faculties.

Faculty and Department Approval for Cross-listings:

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

Dept: _____ Signature _____
(Authorizing cross-listing) Department Date

Dept: _____ Signature _____
Signature (Authorizing cross-listing) Department Date

Dept: _____ Signature _____
(Authorizing cross-listing) Department Date

**STEACIE SCIENCE & ENGINEERING LIBRARY
YORK UNIVERSITY**

MEMORANDUM

To: Ernie Hamm, Associate Professor, Department of Science and Technology Studies

From: Minglu Wang, Research Data Management / Science Librarian

Re: STS 4655 – From the Ark to Anthropocene

Date: October 1, 2018

I have reviewed the course proposal and attached bibliography for **STS 4655 – From the Ark to Anthropocene** and can state that the York University Libraries have the required resources to support this undergraduate level course.

Please be aware that the library offers the following services to help students with their research:

- A librarian can go to the classroom or tutorial and introduce students to the various resources available at the library including electronic journals, e-books, and databases.
- A librarian is also available for individual consultations with students to help them find the materials they need for their research.
- A librarian can be available as a user on the course Moodle page to answer student questions using the Forum discussion, provide links to resources in the course, and post handouts presented in face-to-face instruction.

The following textbooks listed in the course bibliography are **not** currently owned by the library, but will be ordered soon:

- Martina Kölbl-Ebert, *From Local Patriotism to a Planetary Perspective: Impact Crater Research in Germany, 1930s-1970s* (Ashgate, 2015), selections.
- Mott Greene, *Alfred Wegener: Science, Exploration and the Theory of Continental Drift* (Johns Hopkins University Press, 2015), selections.
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- Jan Zalasiewicz, Mark Willians, Alan Haywood and Mike Ellis, "The Anthropocene: A New Epoch of Geological Time?" *Philosophical Transactions of the Royal Society A* 368 (2011), 835-841

Another translated version of the following textbook listed in the course bibliography is owned by the library, and the following version will be ordered soon:

- Alexander von Humboldt, *Views of Nature*, ed. S. T. Jackson and L. D. Walls, transl. M. W. Person (Chicago: University of Chicago Press, 2014), selections.

**STEACIE SCIENCE & ENGINEERING LIBRARY
YORK UNIVERSITY**

MEMORANDUM

If you would like a copy of these textbooks placed on reserve at the library for students' use, please place a reserve request by visiting reserves.library.yorku.ca. For more information about course reserves, please visit: <http://www.library.yorku.ca/web/ask-services/facultyinstructor-support/places-items-on-reserve/>.

The following electronic resources licensed by the library may be of help to the students in this course:

- **History of Science, Technology and Medicine**
Describes journal articles, conference proceedings, books, book reviews, and dissertations in the history of science, technology, and medicine and allied historical fields. The database integrates the Isis Current Bibliography of the History of Science, the Current Bibliography in the History of Technology (Technology and Culture), the Bibliografia Italiana di Storia della Scienza and the Welcome Library for the History and Understanding of Medicine. Updated quarterly; covers 1975-present.
- **Historical Abstracts**
Covers world history, excluding North America, from 1450 to the present era. It indexes journals from around the world and also includes books and dissertations. Includes articles on the History and Philosophy of Science. Coverage is from 1954 - present.
- **Philosophers Index**
Good coverage of philosophy-related aspects of science and technology. Indexes articles, anthologies, book reviews, books and essays in anthologies. It is international in scope and not limited to any one period or culture. Coverage is from 1940 - present.
- **Scholars Portal**
Indexes and Databases bring together a number of different online journals and other resources into one search engine. Use these tools to find citations, abstracts and/or full text articles, reports and other resources on your topic. Both scholarly and popular articles may be included.
- **JSTOR**
Used by millions for research, teaching, and learning. With more than a thousand academic journals and over 1 million images, letters, and other primary sources, JSTOR is one of the world's most trusted sources for academic content.

Interlibrary loan and document delivery options are available through RACER for any additional information needs that may come up. Books can also be requested through this system free of charge. Registration and requesting is available from: <http://www.library.yorku.ca/cms/resource-sharing/services-for-york-faculty-and-students/illrequestform/>.

Collection development in the library is ongoing, and is based on a commitment to developing library resources that are in alignment with the University's curricular and research activities. Additional books in this field will be added to the library collection as they are published. Please forward any requests for purchase to me (mingluwa@yorku.ca) or submit your purchase request by using the form at <http://www.library.yorku.ca/online/purchase.php>

A Science and Technology Studies subject guide has been created and is maintained by subject librarians. Resources and links will be added upon request: <http://researchguides.library.yorku.ca/sts>

In summary, I state that we are well positioned to support this course. If you have any questions, please do not hesitate to contact me.

Sincerely,

Minglu Wang, Research Data Management / Science Librarian
Steacie Science & Engineering Library
416-736-2100 x 40075 mingluwa@yorku.ca

Non-Major Modification Program Changes

1. Program: Chemistry
 2. Degree Designation: BSc Chemistry
 3. Type of Modification: changes to degree requirements
 4. Effective Date: Fall 2019
-

5. State what the changes are:

Currently, the Seneca-York Chemistry Coregistration option is only available to students in the Honours Major BSc in Chemistry. The proposed change is to broaden the eligibility of the Seneca-York Chemistry Coregistration option to include students in the BSc degree in Chemistry.

6. Provide the rationale for the proposed changes that is rooted in the program learning outcomes:

The Seneca-York Chemistry Coregistration option affords students the ability to take 2-5 selected courses at Seneca College as electives within their York degree. Those courses carry the SC/SENE rubric and are listed in Appendix A. They have been approved by Science Faculty Council in 2016-2017. They were chosen in part because they all have laboratory components that train students in industry-standard procedures using industry-standard instruments, and train them in standards and proper documentation practices. This option thus provides a strong experiential learning opportunity in a way that York could not without a significant investment in resources, and greatly enhances the prospects on the job market for those students interested in laboratory-based careers in the private sector and in government.

The program learning outcomes (PLOs), which are based on the UUDLEs, are met with the current degree requirements. The proposed change is therefore not meant to address any lacunae but to offer alternate paths to meeting the PLOs with a greater variety of available electives. We anticipate, however, that the proposed change will significantly enhance the ability of students to meet those specific PLOs that deal with laboratory activities and professionalism as well as communication skills.

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 B.

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:

This option was developed beginning in 2015 at the suggestion of the School of Biological Sciences and Applied Chemistry at Seneca College and in thorough consultation with them.

Since the proposed change has no impact on other degree programs, consultations with other York units were not needed.

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 resources are required.

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

As the proposed change will not affect the ability of current BSc students to graduate, we intend to allow current students to choose this option and thereby graduate with the new degree requirements.

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

Eligible Seneca Courses
York-Seneca Coregistration Option

Seneca Course Number and Title	York Course Number (same title)	cce
TAC333 Techniques in Analytical Chemistry	SENE 2081 3.0	CHEM 3080 4.0
TAC357 Techniques in Analytical Chemistry	SENE 2082 3.0	CHEM 3080 4.0
CMI333 Chemical Instrumentation	SENE 2083 3.0	
PHA333 Pharmaceutical Analysis	SENE 2084 3.0	
EII533 Environmental Impact of Industrial Processes	SENE 3072 3.0	
PHT533 Pharmacology and Applied Toxicology	SENE 3073 3.0	CHEM 2550 3.0
PPF633 Pharmaceutical Product Formulations	SENE 3074 3.0	
CMI533 Chemical Instrumentation	SENE 3083 3.0	
PHA533 Pharmaceutical Analysis – Advanced	SENE 3084 3.0	
PTC633 Polymer Technology	SENE 3091 3.0	CHEM 3090 3.0

Appendix B

Contributions to Program Learning Outcomes
York-Seneca Coregistration Option for the BSc Chemistry degree

Seneca Course Number and Title	Contributions to the Program Learning Outcomes for the BSc degree in Chemistry
TAC333 Techniques in Analytical Chemistry	Ib. understanding of advanced concepts, methods and assumptions in chosen areas of chemistry
TAC357 Techniques in Analytical Chemistry	Ic. the ability to apply learning from other areas (e.g. math, physics)
CMI333 Chemical Instrumentation	Id. the ability to carry out basic chemical laboratory activities safely and reliably
PHA333 Pharmaceutical Analysis	Ie. an awareness of some current issues relating to chemistry in chosen areas
EII533 Environmental Impact of Industrial Processes	IIb. the ability to collect, organize, analyze, interpret and present basic types of quantitative and qualitative data in all subdisciplines
PHT533 Pharmacology and Applied Toxicology	IIIa. the ability to effectively apply basic problem-solving skills consistent with the scientific method in all subdisciplines and advanced skills in chosen areas
PPF633 Pharmaceutical Product Formulations	IIIb. the ability to identify appropriate experimental approaches to answering questions consistent with the scientific method in chosen areas
CMI533 Chemical Instrumentation	IVa. the ability to communicate basic chemical concepts to peers and to a scientific audience (orally and in writing)
PHA533 Pharmaceutical Analysis – Advanced	IVb. the ability to communicate basic scientific ideas outside of chemistry to peers and to a scientific audience (orally and in writing)
PTC633 Polymer Technology	V.a Acquisition of interpersonal and professional skills: the ability to effectively work with others in laboratory and class settings
	V.b Acquisition of interpersonal and professional skills: initiative, personal responsibility and accountability in laboratory and class settings
	V.c Acquisition of interpersonal and professional skills: behaviour consistent with academic integrity and social responsibility

Calendar Copy Changes

Chemistry Faculty of Science Program-Specific Degree Requirements

Current Calendar Copy

Bachelor Program

[...]

B. Major requirements:

- the program core, as specified above (28 credits);
- SC/CHEM 2050 4.00 (or SC/BIOL 2070 3.00 and one of SC/BCHM 2020 3.00 or SC/BIOL 2020 3.00, in which case SC/BIOL 1000 3.00 and SC/BIOL 1001 3.00 are pre-requisites);
- at least 15 credits from chemistry courses at the 3000 or higher level (Note: SC/CHEM 3080 4.00 is strongly advised.).
-

C. Science breadth:

[...]

Proposed Calendar Copy

Bachelor Program

[...]

B. Major requirements:

- the program core, as specified above (28 credits);
- SC/CHEM 2050 4.00 (or SC/BIOL 2070 3.00 and one of SC/BCHM 2020 3.00 or SC/BIOL 2020 3.00, in which case SC/BIOL 1000 3.00 and SC/BIOL 1001 3.00 are pre-requisites);
- at least 15 credits from chemistry courses at the 3000 or higher level (Note: SC/CHEM 3080 4.00 is strongly advised.).
- **Co-registration option: Students may take 6-15 credits of certain SC/SENE courses to help satisfy the Major and upper-year requirements but not the Science breadth requirement while co-registered for one term at Seneca@York, and in adherence to Senate legislation and Seneca College standards, deadlines and procedures. For these purposes, students may choose from the following SC/SENE courses in analytical and instrumental technology, pharmaceutical technology and material science: SC/SENE 2081 3.00, SC/SENE 2082 3.00, SC/SENE 2083 3.00, SC/SENE 2084 3.00, SC/SENE 3072 3.00, SC/SENE 3073 3.00, SC/SENE 3074 3.00, SC/SENE 3083 3.00, SC/SENE 3084 3.00, SC/SENE 3091 3.00. Students completing at least 6 credits of these**

SC/SENE courses are exempted from the core requirement for SC/CHEM 3001 3.00. Once completed, SC/SENE courses will appear on the York transcript and the grades earned will count in the York grade point average calculations.

C. Science breadth:

[...]

York Working Group on Free Speech Policies¹

Mandate, Policy Principles & Resources

1. Background:

On August 30, 2018, the Ontario Provincial Government announced its intention to assure free speech protections at publicly funded Universities and Colleges. It is requiring every publicly-assisted college and university to develop and publicly post by January 1, 2019 its own free speech policy that meets the government's minimum standards. Those minimum standards have been stated as:

- A definition of freedom of speech.
- Principles based on the University of Chicago Statement on Principles of Free Expression:
 - Universities and colleges should be places for open discussion and free inquiry.
 - The university/college should not attempt to shield students from ideas or opinions that they disagree with or find offensive.
 - While members of the university/college are free to criticize and contest views expressed on campus, they may not interfere with the freedom of others to express their views.
 - Speech that violates the law or constitutes harassment or a threat is not allowed.
- That existing student discipline measures apply to students whose actions are contrary to the policy (e.g. ongoing disruptive protesting that significantly interferes with the ability of an event to proceed).
- That institutions shall consider official student groups' compliance with the policy as a condition for ongoing financial support or recognition, and encourage student unions to adopt policies that align with the free speech policy.
- That the college/university uses existing mechanisms to handle complaints and ensure compliance. Complaints that remain unresolved may be referred to the Ontario Ombudsman.
- That by September 1, 2019, the institution shall prepare an annual report on implementation progress, publish it online and submit it to the Higher Education Quality Council of Ontario (HEQCO).

¹ In these documents the terms "freedom of speech" and "freedom of expression" are used interchangeably.

2. Working Group and Mandate

In light of York's extensive, existing policy commitments with respect to free speech, the President established a Working Group on York's Free Speech Policies, in order to:

- (i) identify and integrate into a single, consolidated policy document York's policies relating to free speech;
- (ii) consult York community members on how best to address gaps or areas which require modifications in York's existing policies;
- (ii) determine if there are any gaps which need to be addressed or areas which require modifications to York's existing policies, and if so what process should be followed for such reform; and
- (iv) present recommendations for a consolidated policy statement, and related initiatives, in response to the Government requirement.

The Working Group consists of:

Chair: Lorne Sossin, Presidential Advisor on Community Engagement

Thabit A.J. Abdullah, Professor & Chair, Department of History, Liberal Arts and Professional Studies

Paul Axelrod, Professor Emeritus, Education

Jamie Cameron, Professor, Osgoode Hall Law School

Mazen J Hamadeh, Associate Professor, Health and Head of Stong College (Member of Senate Executive)

Marshall McCall, Professor and Chair, Department of Physics and Astronomy, Science

Heather Shipley, Advisor, Education & Communications, Centre for Human Rights, Equity, and Inclusion

John Wu, Schulich School of Business/Osgoode Hall Law School, Student Senator (Member of Senate Executive)

The Working Group is supported by Maureen Armstrong and Robert Everett of the Office of the University Secretary and General Counsel, and assisted by Sarah Cantrell, Assistant Vice-President Institutional Planning and Analysis, who also sits on a working group on this issue at the COU.

The Working Group will circulate a draft consolidated statement of policy document and invite comment and discussion by students, faculty and staff at in-person and digital consultations in November, 2018. The policy will be finalized in December, 2018.

3. (Draft) Definition of Freedom of Speech

The directive from MTCU requires Universities to adopt a definition of free speech for purposes of its protection and regulation. It is noteworthy that while the existing policy framework reflects a deep commitment and broad protection of expressive freedom, it is not a term that has been subject to a single definition at York University.

While discussion of the scope of expressive freedom has been and will continue to be important, the Working Group takes as its point of departure the existing legal definition of free expression by the Supreme Court of Canada in the context of section 2(b) of the *Charter of Rights and Freedoms*. In framing this constitutional protection of the *Charter* protection of “freedom of thought, belief, opinion and expression, including freedom of the press and other media of communication,” the Supreme Court of Canada in *Irwin Toy Ltd. v. Quebec (Attorney General)*, [1989] 1 S.C.R. 927, provided the following description of “expression”:

"Expression" has both a content and a form, and the two can be inextricably connected. Activity is expressive if it attempts to convey meaning. That meaning is its content. Freedom of expression was entrenched in our Constitution and is guaranteed in the Quebec *Charter* so as to ensure that everyone can manifest their thoughts, opinions, beliefs, indeed all expressions of the heart and mind, however unpopular, distasteful or contrary to the mainstream. Such protection is, in the words of both the Canadian and Quebec Charters, "fundamental" because in a free, pluralistic and democratic society we prize a diversity of ideas and opinions for their inherent value both to the community and to the individual. (at p.968.)

This approach to free expression is reflected in the variety of free speech protection and regulation within several existing policies and procedures at York University.

Following past periods of strife at York, then President Shoukri issued statements on “free speech,” in which he described York’s approach to free speech in the following terms,

“Universities exist for the discussion of often difficult and uncomfortable ideas in a civil and respectful academic environment, because this is a critically important way to protect genuine freedom of thought and opinion.”

...

“It is the responsibility of those with strong views on either side of this debate to conduct themselves in a way that does not demonize others, nor create an

atmosphere where intolerance is the inevitable outcome. Equally we will not tolerate members of our community engaging in speech or actions which may be or be perceived to be threatening. Nor is it acceptable to attempt to disrupt or interfere with events on campus, even if some may find them distasteful. This includes actions by groups from outside the University, who have been warned that we will not tolerate attempts to silence students expressing themselves.”

We observe that the “Chicago Statement” referred to in the MTCU letter of September 12, 2018, captures a similar approach in the following terms: “Because the University is committed to free and open inquiry in all matters, it guarantees all members of the University community the broadest possible latitude to speak, write, listen, challenge, and learn. Except insofar as limitations on that freedom are necessary to the functioning of the University, the University of Chicago fully respects and supports the freedom of all members of the University community “to discuss any problem that presents itself.”

4. (Draft) Principles for a Freedom of Speech Statement of Policy

Free speech protection and regulation is governed by a variety of policies at York University. That said, until now, those protections and regulations have not been synthesized and consolidated into a separate and free-standing free speech policy at the University. In so doing, we are mindful that many of the most important aspects of assuring expressive freedom takes place not in the articulation of policies but in how policies are interpreted, applied and enforced. For this reason, we believe transparency, consistency and fairness in the administration of these policies is vital. The annual report in response to the MTCU directive is an important aspect of transparency, but the development of guidelines, tool-kits, best practices, education and training are important as well.

Attached as Appendix A is an overview of relevant legislation and policies.

Since the Working Group is developing a statement of policy on free speech drawn from existing policy frameworks, some aspects of the directive can be addressed simply by highlighting how these policies are responsive. For example, York’s existing Code of Student Rights and Responsibilities addresses the requirement in the directive relating to student discipline. Further, the question of how student groups deal with expressive freedom, and their relationship to York’s policies, is addressed through York’s existing Regulations Regarding Student Organizations.

With the recognition that the administration of policies relating to free speech can be enhanced by a clear set of governing principles, and in light of the importance of consolidating and clearly conveying the relevant policies relating to free speech, we have identified the following principles applicable to free speech at York University:

1) Open discourse, where points of view are freely and vigorously expressed and debated, is central to the mission of York University. Every effort must be made to ensure the protection and promotion of free speech.

2) Expressive freedom at York University is subject to the limits that are prescribed by law; these include the *Criminal Code* (prohibiting hate propaganda), the Ontario *Human Rights Code* and other laws (such as legal requirements of confidentiality and privacy protection).

3) The university is a distinctive setting. Academic freedom protects certain kinds of speech in certain settings at the University, and where it applies, additional protections from Senate policies, collective agreements and elsewhere may also apply. Like free speech generally, academic freedom is vital to the mission of the University but not absolute. Short of “hate speech,” there may also be legitimate constraints on speech at the University, inside and outside the classroom, that arise from an assessment of disproportionate impact for certain individuals and groups, the evolving standards of professional practice, and other contextual assessments. Faculty, for example, are not permitted to humiliate students. Under the Code of Student Rights and Responsibilities, students are required to treat community members with respect. Policies on sexual violence and harassment and racism set out other important constraints on the content of speech on campus. Such constraints should be applied with care so that legitimate dialogue is not unduly stifled.

4) Free speech activities at York University are also subject to a range of University policies and procedures, including policies on the temporary use of space, postering, use of computing facilities and others. Some of these policies and procedures relate to logistics and costs for events such as security; others may relate to the internal rules of various faculties, centres, institutes, student groups, etc. An inclusive approach to free speech is the underlying assumption and commitment of these policies and procedures. To reiterate, provided that the policies and procedures of the University are respected, speakers should be permitted to make their presentations free from interruption, threats or harassment.

5) As a general approach, protections for free speech on campus should be interpreted broadly, while constraints to free speech should be interpreted narrowly. To the extent that constraints on free speech exist at the University, they relate to the content of speech, not to the speaker. Even where some community members may find the presence of a particular speaker on campus upsetting or offensive, however, this cannot interfere with the right of groups to invite controversial speakers or the right of those speakers to share their views.

Appendix “A”: Relevant Legislation and Policies

A. Governing Legal Framework

The framework for understanding and disseminating York’s policies with respect to free speech includes both a range of policy instruments within the University, and a range of legal instruments outside the University which govern conduct within the University. Some of these legal instruments are set out below (as well as relevant excerpts from those instruments) – and please note that this is not an exhaustive list.

York University Act, 1965 -

<http://secretariat.info.yorku.ca/governance-documents/york-university-act-1965/>

4. The objects and purposes of the University are,
 - (a) the advancement of learning and the dissemination of knowledge; and
 - (b) the intellectual, spiritual, social, moral and physical development of its members and the betterment of society.

Criminal Code (R.S.C., 1985, c. C-46)

<https://laws-lois.justice.gc.ca/eng/acts/C-46/section-319.html>

Hate Propaganda

Advocating genocide

318 (1) Every one who advocates or promotes genocide is guilty of an indictable offence and liable to imprisonment for a term not exceeding five years.

- Definition of *genocide*

(2) In this section, *genocide* means any of the following acts committed with intent to destroy in whole or in part any identifiable group, namely,

- (a) killing members of the group; or
- (b) deliberately inflicting on the group conditions of life calculated to bring about its physical destruction.

- Consent

(3) No proceeding for an offence under this section shall be instituted without the consent of the Attorney General.

Public incitement of hatred

319 (1) Every one who, by communicating statements in any public place, incites hatred against any identifiable group where such incitement is likely to lead to a breach of the peace is guilty of

- (a) an indictable offence and is liable to imprisonment for a term not exceeding two years; or
- (b) an offence punishable on summary conviction.

Wilful promotion of hatred

(2) Every one who, by communicating statements, other than in private conversation, wilfully promotes hatred against any identifiable group is guilty of

- (a) an indictable offence and is liable to imprisonment for a term not exceeding two years; or
- (b) an offence punishable on summary conviction.

Defences

(3) No person shall be convicted of an offence under subsection (2)

- (a) if he establishes that the statements communicated were true;
- (b) if, in good faith, the person expressed or attempted to establish by an argument an opinion on a religious subject or an opinion based on a belief in a religious text;
- (c) if the statements were relevant to any subject of public interest, the discussion of which was for the public benefit, and if on reasonable grounds he believed them to be true; or
- (d) if, in good faith, he intended to point out, for the purpose of removal, matters producing or tending to produce feelings of hatred toward an identifiable group in Canada.

***Human Rights Code, R.S.O. 1990, c. H-19* –**

<https://www.ontario.ca/laws/statute/90h19>

“Ontario’s *Human Rights Code* is clear – the right of people to express their opinion is protected.” “Expressing Support for Freedom of Expression” (2011) - <http://www.ohrc.on.ca/en/annual-report-2010-2011-looking-back-moving-forward/expressing-support-freedom-expression>

Charter of Rights and Freedoms –

<https://laws-lois.justice.gc.ca/eng/Const/page-15.html>

Fundamental freedoms

2. Everyone has the following fundamental freedoms:

- (a) freedom of conscience and religion;
- (b) freedom of thought, belief, opinion and expression, including freedom of the press and other media of communication;
- (c) freedom of peaceful assembly; and
- (d) freedom of association.

As a general matter, Universities do not constitute “government” within the meaning of s.32 of the *Charter*, and therefore fall outside the ambit of its application. The question as to whether *Charter* protects expressive freedom under section 2(b) on campus continues to be the subject of debate, though the current state of the law reflects the view that the *Charter* itself does not apply—see

BC Civil Liberties Association v. University of Victoria, 2016 BCCA 162 (CanLII), <https://www.canlii.org/en/bc/bcca/doc/2016/2016bccca162/2016bccca162.html?searchUrlHash=AAAAAAAAAAEAFTlwMTUgQkNTQyAzOSAOQ2FuTEIJKQAAAEACy8yMDE1YmNzYzM5AQ&resultIndex=1>

That said, definition of “free speech” in *Charter* jurisprudence informs scope of concept within other legal instruments and University policies.

B. Existing University Policies and Policy Statements

What follows is a list of the key policies which govern free speech at York University, and some excerpts from those policies of particular relevance to expressive freedom on campus. Again this list is not exhaustive. For example, the policy below on student governments and organizations refers to additional guidelines which may be contained in the hundreds of separate constitutions and internal policies of each student group and organization.

B.1 York University Policies and Plans

University Academic Plan 2015-2020

<http://secretariat.info.yorku.ca/senate/academic-policy-planning-and-research-committee/university-academic-plan-2015-2020-uap/>.

Our Mission Statement includes: We test the boundaries and structures of knowledge. We cultivate the critical intellect.

Our Values are:

Excellence: York strives for excellence in teaching and learning (or pedagogies), academic programs and research/scholarly/ creative pursuits enriching as well as educating, enabling as well as informing through fostering intellectual curiosity, innovation, and creativity.

Progressive: York is open minded, forward looking and flexible. We embrace innovative approaches, technologies and perspectives to solve problems, develop new understandings, solutions and discoveries that have an impact on our world.

Inclusivity and diversity: York is a welcoming and approachable campus embracing global perspectives and differences in cultures, people and thinking, by engaging communities in collegial dialogue and supporting diversity awareness and cross-cultural knowledge

Social justice and equity: York is socially responsible, and committed to the pursuit of social justice and equity issues to continuously challenge and transform society's understanding and existing norms through civic, scientific and cultural actions.

Sustainability: York values environmental, social, and fiscal sustainability through its programs, physical environment, and fiduciary practices.

Code of Student Rights and Responsibilities - <https://oscr.students.yorku.ca/student-conduct>

Introduction

York University is a place of research, teaching and learning where people value civility, diversity, equity, honesty and respect in their direct and indirect interactions with one another. Freedom of expression, freedom of association, freedom to study and to learn, freedom to engage in research, and the freedom to write and to publish are all recognized as central to the mission of the institution. It is acknowledged that these values can only be meaningful, and these freedoms fully realized, in an atmosphere of safety and security. All York students have rights and responsibilities as outlined in this document and are expected to uphold the identified values for the benefit of the entire York community.

...

4. All students have the rights and responsibilities articulated in the preamble. In keeping with these rights and responsibilities, students are responsible for conducting themselves in a way that supports research, teaching and learning, and upholding an atmosphere of civility, diversity, equity and respect in their interactions with others. Students should strive to make the campus safe, to

support the dignity of individuals and groups, and to uphold individual and collective rights and responsibilities.

Program Specific Codes of Conduct

There are a variety of program specific policies and requirements which relate to free speech at York – for example, the “Social Media” policy for students in the BScN (Nursing) program incorporates a series of profession-wide restrictions on the use of social media - <https://secretariat-policies.info.yorku.ca/policies/school-of-nursing-policy-on-social-media/> which in turn forms part of a broader set of professional behavior requirements - <http://secretariat-policies.info.yorku.ca/policies/student-professional-behaviour-policy-bscn/>

Regulations Regarding Student Government/Organizations

<https://secretariat-policies.info.yorku.ca/policies/presidential-regulation-number-4-regulations-regarding-student-governments-organizations/>

10.(a) Students may form organizations to promote activities, causes or projects in which they are interested.

(b) Upon approval or authorization by the relevant body, such organizations are eligible to

- (i) receive grants from a sponsor, including a student government or a faculty, college, department or other academic unit, and
- (ii) receive funds generated by a levy approved in accordance with these regulations.

(c) All such organizations must, prior to receiving funds, provide the Provost with

- (1) a copy of their constitution or equivalent written statement of purposes and goals,
- (2) a current listing of the names and addresses of executive officers, including the treasurer or equivalent, and
- (3) an undertaking to observe the general regulations and policies of the university and the regulations and procedures governing financial accountability.

Policy on Temporary Use of University Space

<https://secretariat-policies.info.yorku.ca/policies/temporary-use-of-university-space-policy/>

1. Members of the York University community are encouraged and allowed to hold events and to engage in the full expression of their opinions on the University’s premises, subject only to the principles and procedures outlined herein.

2. The lands and buildings of York University are private property and the University reserves the right to control access to its campuses, and the use of its space and facilities.
3. Persons who are not students, faculty, staff or members of a governing body of York University are considered guests of the University.
4. Members of the University and others may use University space provided that it is reserved in advance for organized purposes and that it is used in compliance with all University policies and regulations and municipal by-laws. For example, and without limiting the generality of the foregoing, users must comply with the University's food and alcohol policies, parking regulations, smoking restrictions, fire and safety requirements, etc. Federal and Provincial statutes and municipal by-laws relating to private property and the rights of individuals will apply without condition.
5. The University upholds the principles of freedom of speech and freedom from intimidation and harassment. All persons having access to and use of University space shall observe these principles, and the laws of Canada.

Policy on Postering

<https://secretariat-policies.info.yorku.ca/policies/postering-guidelines/>

7. With the exception of University approved regulatory notices, postering inside classrooms, lecture halls and other teaching spaces is prohibited. Posters and documents relating to class instruction or other programmatic use of the teaching space are permitted, but shall be removed upon vacating the room/space.

Policy on Acceptance and Display of Commemorative Artwork

<https://secretariat-policies.info.yorku.ca/policies/acceptance-and-display-of-commemorative-art-work-guidelines/>

3. In determining whether to accept and display a work, the following considerations will apply:

The artistic merit of the work

The degree of difficulty of maintaining and the cost of insuring the work

Any special security measures required to protect the work

Whether the work or the individual or event it commemorates is so controversial as to engender activity which would compromise the work, the facilities or the activities of the university.

Hate Propaganda – Guidelines

<https://secretariat-policies.info.yorku.ca/policies/hate-propaganda-guidelines/>

1. York University reaffirms its commitment to provide an environment conducive to freedom of enquiry and expression where all members of the community may learn, teach, work and live, free from prejudice, **inequality and discrimination based on grounds enumerated in the Ontario Human Rights Code**. In such an environment there is no place for hate propaganda.

Policy Concerning Racism

<https://secretariat-policies.info.yorku.ca/policies/racism-policy-and-procedures/>

1. York University affirms that the racial and ethnocultural diversity of its community is a source of excellence, enrichment and strength.
2. York University affirms its commitment to human rights, and, in particular, to the principle that every member of the York community has a right to equitable treatment without harassment or discrimination on the grounds prohibited by the Ontario Human Rights Code, including race and ethnicity.
3. York University acknowledges its on-going responsibility to foster fairness and respect, to create and maintain a positive working and learning environment and to promote anti-racism.

Policy on Sexual Violence

<https://secretariat-policies.info.yorku.ca/policies/sexual-violence-policy-on/>

Sexual Harassment:

- a. Unwanted sexual attention of a persistent or abusive nature, made by a person who knows or ought reasonably to know that such attention is unwanted;
- b. The making of an implied or express promise of reward for complying with a sexually oriented request;
- c. The making of an implied or express threat of reprisal, in the form of actual reprisal or the denial of opportunity, for refusal to comply with a sexually oriented request; and/or
- d. Sexually oriented remarks and behaviour which may reasonably be perceived to create a negative psychological and emotional environment for work and study.

Sexual Violence:

Any sexual act or act targeting a person's sexuality, gender identity or gender expression, whether the act is physical or psychological in nature, that is committed, threatened or attempted against a person without the person's consent and includes sexual assault, sexual harassment, stalking, indecent exposure, voyeurism and sexual exploitation.

Policy on Computing and Information Technology Facilities

<http://secretariat-policies.info.yorku.ca/policies/computing-and-information-technology-facilities-senate-policy/>

2. Computing and information technology facilities may be used only in a manner which does not contravene York University's relevant policies, codes, agreements, and network protocols, and provincial and federal laws.

Policy on Workplace Harassment Prevention

<http://secretariat-policies.info.yorku.ca/policies/workplace-harassment-prevention-policy/>

The term, “workplace harassment” means engaging in a course of vexatious comment or conduct against a worker in a workplace that is known or ought reasonably to be known to be unwelcome; or workplace sexual harassment.

1. York University is committed to protecting all persons working for York University and shall take reasonable precautions to prevent workplace harassment.
2. Anyone who engages in workplace harassment shall be subject to complaint procedures, investigation, remedies, sanctions and discipline up to and including termination.

Policy on Special Events and Visits of High Profile Guests

<http://secretariat-policies.info.yorku.ca/policies/special-events-and-visits-of-high-profile-guests-to-the-university-policy/>

To ensure that special events and visits of high profile guests to the University are properly arranged and staged, the President shall, from time to time, establish formal procedures applicable to all members of the University community. These procedures will ensure the application of consistent standards for University events and will address appropriate protocol and operational considerations, including, but not limited to, co-ordination for scheduling within the University calendar, evaluating the adequacy of the budget to the project requirements, space, risk assessment, security arrangements, invitations, publicity & media relations, hosting.

B.2 Senate Motions and Policies:

In addition to University policy, Senate has also adopted a range of policies and motions which contribute to the framework of freedom of speech protections at York

Senate's Hortative Motion to SSHRC on Academic Freedom and the Role of the University (June 2009)

That the Senate of York University express to the *Social Science and Humanities Research Council* (SSHRC) its support for universities to organize and host academic conferences free from government intervention.

That the Senate of York University confirm that the principles of academic freedom prevail with regard to all academic activities undertaken under the auspices of the university as also expressed by the President of the University, the Chair and Chair-designate of the Board of Governors.

Senate Policy on Responsible Conduct of Research - <https://secretariat-policies.info.yorku.ca/policies/misconduct-in-academic-research-policy/>

Senate Policy on Faculty Responsibilities - <https://secretariat-policies.info.yorku.ca/policies/responsibilities-of-faculty-members-statement-and-procedures/>

3. The statement of collegial responsibilities which follows pre-supposes an understanding of the traditional values of university life--that receiving an appointment at a university has meant and still means to most colleagues a commitment to a life of scholarship and creativity, and that the full professional energies of faculty members will be placed at the service of the academy and their disciplines. A tenured appointment guarantees freedom of thought and action to its holders. With this guarantee comes a commitment to the community of one's academic peers to use those freedoms for the purposes for which they are intended. This shared trust must not be abused, either by inordinate or indiscreet paid activity which fails to meet the general criteria outlined below, or by failure to fulfil one's university obligations. A university cannot function by constantly coercing faculty members to live up to their scholarly or creative responsibilities, or to refrain from taking on outside paid work which is neither reflective nor innovative. However, the university must nonetheless be in a position to account to all of its members and to society at large for the way in which those responsibilities are discharged. It must therefore possess knowledge of the behaviour which will permit such an accounting, and must accept responsibility for dealing with abuse.

Senate Policy on Disruptive and/or Harassing Behaviour in Academic Situations (2006)

<http://secretariat-policies.info.yorku.ca/policies/disruptive-andor-harassing-behaviour-in-academic-situations-senate-policy/>

Policy

Senate affirms that no individual or group of individuals shall cause by action, threat or otherwise, a disturbance that obstructs any academic activity organized by the university or its units.

York is committed to policies that support the teaching and learning of controversial subject matter. Students and instructors are, however, expected to maintain a teaching and learning environment that is physically safe and conducive to effective teaching and learning for all concerned, and to be civil and respectful at all times within the learning environment, including within classrooms, laboratories, libraries, study halls and other places where academic activities are conducted and in areas proximate to those where academic activities are taking place.

It shall be the responsibility of the course director or other supervisor to determine the appropriate academic response and follow-up resulting from a disruption.

C. Statements from York Presidents:

<https://www.yorku.ca/secretariat/senate/committees/apprc/documents/AcadFreedom/YorkUniversityStatementsandDeclarations2009-2010.pdf>

President 's Statement on Free Speech: A Reminder of Our Rights and Responsibilities (26 February 2010)

“It is the responsibility of those with strong views on either side of this debate to conduct themselves in a way that does not demonize others, nor create an atmosphere where intolerance is the inevitable outcome. Equally we will not tolerate members of our community engaging in speech or actions which may be or be perceived to be threatening. Nor is it acceptable to attempt to disrupt or interfere with events on campus, even if some may find them distasteful. This includes actions by groups from outside the University, who have been warned that we will not tolerate attempts to silence students expressing themselves.”

University statement on building academic communities (June 16, 2009)

President's Statement on Academic Freedom and the Role of the University (May 21, 2009)

D. York Collective Agreements

YUFA, OHFA and CUPE collective agreements all include reference to “academic freedom” – for example, the YUFA-York Collective Agreement provides:

10.01 The parties agree to continue their practice of upholding, protecting, and promoting academic freedom as essential to the pursuit of truth and the fulfilment of the University's objectives. Academic freedom includes the freedom of an employee to examine, question, teach, and learn; to disseminate his/her opinion(s) on any questions related to his/her teaching, professional activities, and research both inside and outside the classroom; to pursue without interference or reprisal, and consistent with the time constraints imposed by his/her other University duties, his/her research, creative or professional activities, and to freely publish and make public the results thereof; to criticize the University or society at large; and to be free from institutional censorship. Academic freedom does not require neutrality on the part of the individual, nor does it preclude commitment on the part of the individual. Rather, academic freedom makes such commitment possible.

10.02 When exercising their rights of action and expression as citizens, employees shall endeavour to ensure that their private actions or expressions are not interpreted as representing positions of York University. Any published views of the Administration concerning yufa shall be clearly identified as representing the views of the York University Administration.

The Working Group does not see this policy exercise as derogating from any of the rights or procedures contained in collective agreements to which York is a party.

E. York Task Forces, Reviews and Inquiries

York's president announced the creation of a Task Force on Student Life, Learning & Community (2009) "Rights and Responsibilities Within the University" - https://www.yorku.ca/president/communication/reports/docs/TaskForce_FINALREPORT.pdf

"32. The most important principle that needs to guide the action of the University on the matters considered by this Task Force is (from our Terms of Reference) the University's unwavering commitment to fundamental values of free expression, free inquiry, and respect for genuine diversity of thought and opinion. The core missions of the University are research, teaching and learning. We foster the scholarly and civic development of the University's students in a safe and secure learning environment. Preservation of academic freedom and free and open exchange of ideas and opinion for and by all members of the community through respectful debate are central to these missions.

33. It follows that universities are and should be sites of scholarly, intellectual and political engagement, places in which provocative questions can be asked which intentionally seek to disturb the status quo and which need to be raised free of intimidation and harassment. Universities are and should be places of

controversy. Intimidation or harassment of members of the community in an attempt to limit their freedom of inquiry or expression of opinion has no place on a university campus. Fully respecting expressive freedom in a manner consistent with the laws of Canada means that points of view with which some or even the vast majority of us may disagree, which for some of us may even be intolerable, must be able to be raised and explored in a variety of academic and scholarly venues.

34. We affirm the principle that the University must be open to the widest range of reasoned debate and argument and that attempts to prevent such free academic inquiry, whether from other members of the University community or from external groups, are inconsistent with the purpose of the University.

35. Universities must also proactively protect free expression including speakers whose views may be deemed to be controversial. This is particularly important in our case because from the information we have been given, it seems that the most disruptive incidents that have occurred on campus, those which have interfered with classes (and which should be noted are fewer in number than the general impression that has effectively circulated in the media and even within our own campus) have occurred when rival groups attempt to ‘shut down’ one another. These are confrontations, in short, in which student groups attempt to stifle one another’s expressive freedom through intimidating or harassing behaviours. These are also the events in which tensions are at their highest and in which the possibility of violence is the most pressing. Part of the protection of freedom of expression is the prevention of its abuse. Expression used to silence others is not defensible.”

Iacobucci Report https://www.yorku.ca/acreview/presidents_response.pdf (2009)

F. Centre for Human Rights, Equity and Inclusion

Resource Guides:

- Hate Propaganda: A Guide for Students, Faculty & Staff
- La propagande haineuse : Guide pour les étudiants, les membres de la Faculté et le personnel
- Sexual Harassment: A Guide for Students, Faculty, & Staff
- Sexual Assault: A Guide for Students, Faculty, and Staff
- Gender Expression/Gender Identity: A Guide for Students, Faculty, & Staff (Inclusive Language)
- Accommodating Creed (Religion): A Guide for Students, Faculty, & Staff
- Accommodating Disability: A Guide for Students, Faculty, & Staff
- Accommodating Family: A Guide for Students, Faculty, & Staff
- Faculty Resource Guide: Teaching Students with Disabilities
- Understanding Racism: A Guide for Students, Faculty, & Staff

Inclusion Lens: Event Management Tool

- Inclusion Lens - an Event Management Tool designed to assist York University in engaging all peoples in events!