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## FACULTY OF SCIENCE

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### COUNCIL OF THE FACULTY OF SCIENCE

**Notice of Meeting**  
**Tuesday, 10 October 2017**  
**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 September 12, 2017 meeting
4. Business Arising
5. Inquiries and Communications
  - Senate Synopsis: Meeting of September 28, 2017
6. Dean's Report to Council
7. Associate Deans' and Bethune Master's Remarks
8. Reports from Science Representatives on Senate Committees
9. Reports from Standing Committees of Council
  - 9.1 *Science Curriculum Committee (item for consent)*
10. Other Business
  - 10.1 Presentation: York Cares United Way Campaign, by Amanda Hickman – Senior Advancement Officer



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## FACULTY OF SCIENCE

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COUNCIL OF THE FACULTY OF SCIENCE  
**Tuesday, September 12, 2017**  
**at 3:00pm - 4:30pm**  
**306 Lumbers**

### Minutes

**Attendance:** J. Amanatidis, D. Golemi-Kotra, P. Wilson, T. Baumgartner, J. Clark, R. Jayawardhana, P. Lakin-Thomas, N. Nivillac, R. Tsushima, P. Wilson, S. Morin, EJ Janse van Rensburg, M. Caplan, M. Xu, D. Hossain, K. Kroker, A. Rafie, D. Hastie, N. Madras, K. Maltman, W. Tholen, E. Hessels, T. Kirchner, P. Potvin, P. Szeptycki, M. McCall, J. Sequeira (Assistant Secretary)

**Guests:** D. D'Angelo, H. McLellan, B. Sheeler, M. Jiang, D. Keramidas, D. Markatas, Q. Zha

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

The Chair, D. Golemi-Kotra, called the meeting to order and the Agenda was adopted as presented with a friendly amendment to add an item under agenda no. 5 – 'Consultation – Search for the Vice-President Academic and Provost'.

2. **Chair's Remarks**

D. Golemi-Kotra welcomed Council members to the meeting.

3. **Minutes of May 10, 2017 meeting**

A motion was moved, seconded and carried that the Minutes of May 10, 2017, be approved with an amendment to read the amount donated by Berna and Earle Nestmann as \$100,000 as opposed to \$100,00 in the minutes.

4. **Business Arising**

There was none.

5. **Inquiries and Communications**

5.1 Council noted the Senate Synopses of May 25, 2017 and June 15, 2017 meetings.

## 5.2 Consultation – Search for the Vice-President Academic and Provost.

Members provided feedback to the two committee members present. Additionally, any thoughts related to the questions raised in the memo that was circulated to members about the search, should be communicated to the same email address to which nominations should be sent, i.e., [yorkuvpap@odgersberndtson.com](mailto:yorkuvpap@odgersberndtson.com)

## 6. Dean's Report to Council

Dean Ray Jayawardhana began his remarks by welcoming Council members to the first fall meeting. He extended a special welcome to the new Chair of Council – D. Golemi-Kotra and Vice-Chair of Council – P. Wilson.

The Dean presented his report as follows:

### *2017 Summer Undergraduate Research Conference*

The Dean remarked that there were 19 NSERC and 19 DURA awardees from FSc this summer. More than 30 FSc and FoH students participated in the conference. He congratulated the winners and highlighted the following FSc students:

- 1<sup>st</sup> prize for poster presentation: Ling Lin, 3<sup>rd</sup> year Math & Stat student, supervisor: Prof. Augustine Wong.
- 1<sup>st</sup> prize for oral presentation: Joel George, 3<sup>rd</sup> year Biomedical Science student, supervisor: Prof. Carol Bucking.

### *Solar Fair event hosted by York University Observatory & Let's Talk Science:*

The Dean noted that the event attracted close to 2,000 people on August 21. He thanked the student volunteers in

particular, staff and all those involved in organizing this event.

### *Canada 150 Research Chairs:*

The Dean informed members that at rather short notice, FSc was able to put forward four nominations in response to the call for nominations to the Canada 150 Research Chairs. YorkU was allocated a maximum dollar value of \$3M per year (a combination of \$350K and \$1M award values). YorkU has submitted four nominations, including a \$1M and \$350K nomination from Science. He particularly thanked the departments for compiling the advertisements and running searches, and Associate Dean – S. Morin and her team, for all their efforts in putting together the nomination packages for the faculty.

### *York Science Communicator in Residence*

The Dean informed Council that he is most impressed by the caliber of the applicants and that offers will be made shortly, following the recommendations of the selection panel. He elaborated that the Resident(s) would be expected to interact with faculty, researchers, students and staff, get to know eminent researchers within the faculty, host talks/workshops related to science communications, and perhaps moderate a public event.

### *Enrolment update*

The Dean was very pleased to report that domestic enrolment has increased by 22% and international enrolment by 16% in comparison to the last academic year. Significant gains have been made in the Biology, Biochemistry and Statistics programs in particular.

### *Administrative Leaders*

The Dean introduced the following new Chairs to Council;

- K. Kroker, Chair – Department of Science & Technology Studies, succeeding E. Hamm;
- R. Tsushima, Chair – Department of Biology, succeeding S. Benchimol;

Additionally, the Dean thanked D. Hastie for agreeing to continue as the Chair of Department of Chemistry until June 2018 and EJ Janse van Rensburg for agreeing to continue as Associate Dean – Faculty Affairs until June 2018.

### *New Faculty and Staff members*

The Dean welcomed seven new faculty (including one starting January 2018) and six new staff members to the faculty.

The Dean congratulated the following newly-promoted faculty members:

- C. Bergevin, Associate Professor
- J. Elwick, Associate Professor
- P. Hall, Full Professor
- D. Ifa, Associate Professor
- M. Johnson, Associate Professor
- H. Ku, Full Professor
- G. Lavoie, Full Professor
- C. Lortie, Full Professor
- R. McLaren, Full Professor

### *Recognitions*

-Peter Backx: CIHR Project Grant, \$749,700 for a five-year project studying circulatory and respiratory health

-Chun Peng: CIHR Project Grant, \$715,275 over five years to study “MicroRNA-218s and their regulated signaling networks in placental development and preeclampsia”

-Paul Delaney: ASP Klumpke-Roberts Award

### *Faculty Complement*

The Dean was pleased to report that FSc has secured approval for ten new faculty hires for 2018 in the following areas:

- 2 Canada Research Chairs (Tier 1 & Tier 2) in Visual Science
- Biology: Molecular Evolution, Assistant Professor & Neuroscience, open rank
- Math & Stats: Applied Mathematics, Assistant Professor Alternate Stream. Assistant Lecturer
- Physics & Astronomy: Biophysics, Assistant Professor and Experimental Neutrino Physics (with Fermilab), open rank
- Science & Technology Studies: Contemporary Issues, Assistant Professor
- Division of Natural Science: Alternate Stream, Assistant Professor

### *Media:*

The Dean highlighted the following features in the media:

- AmroZayed’s research received extensive media coverage in The Economist, Los Angeles Times, Washington Post, PBS, NPR, CBC, Toronto Star, National Post, The Scientist, Nature, Motherboard and many more outlets around the world.
- Jianhong Wu and his research on mapping black-legged ticks in Canada was highlighted in The Globe and Mail.
- Dasantila Golemi-Kotra and Gerald Audette were featured in the Summer 2017 YorkU Alumni magazine.
- CTV news covered the event from the PanAm stadium

-Paul Delaney spoke to VICE Motherboard about how to make a pair of DIY solar glasses, as well as to Globe News, CTV News, CBC TV, The Star, Newstalk 1010 and other outlets about the eclipse, Perseid Meteor shower and other astronomy-related events.

-Ray Jayawardhana was interviewed on CBC Radio Metro Morning and CBC TV News Network (from Idaho).

-Norbert Bartel spoke to Newstalk 1010 about the solar eclipse and the 40<sup>th</sup> anniversary of the launch of Voyager II and Voyager I.

-George Conidis, PhD student, co-hosted eclipse coverage with CBC TV

#### *Upcoming events:*

The Dean encouraged all members to attend the following upcoming events:

September 13: IACPES Symposium on Atmospheric Chemistry and Physics & Annual Harold Schiff Lecture.

September 14: Carswell gift announcement

September 21: FSc Forum for Faculty & Staff

In collaboration with the Toronto Public Library, FSc will present a series of talks titled 'Chronicles of a Peculiar Universe', details of which are as follows:

October 11: Prof. P. Hall, 'Quasar, Quasar, Burning Bright'

October 12: Prof. J. Moores, 'How to Get to Mars?'

October 17 & November 16: George Conidis, PhD student, 'The Social Habits of Galaxies'

November 11: Alexandra Terrana, PhD student, 'The Secrets of Our Dark Universe'

November 14: Prof. P. Delaney. 'Is Anyone Home?'

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

#### *Remarks – A. Mills, Associate Dean – Students*

In the absence of AD – A. Mills, AD – Janse van Rensburg read out the following summary for Markham campus:

Work continues on developing our three programs:

- BSc Medical Biotechnology (mature program of ~ 600 students by 2026)

- BSc Entrepreneurial Science (mature program of ~ 200 students by 2026)

- MSc (professional) Biotechnology (mature program of 20 to 40 students, depending upon placements that can be Arranged).

- MSc and PhD thesis degrees will be executed in research labs at Markham, but will not constitute new programs there, and will be linked to grad student groups at Keele

Work continues on planning facilities:

-Many meetings have been held to discuss details

-Teaching space (lecture rooms, activity rooms, wet labs)

-Capstone course needs

-Research space (wet labs, computer)

-Juxtaposing professorial-stream offices with research labs and vivarium

-Meetings involve RPG planning and Diamond Schmidt architects

Work continues on governance:

-Search for Vice-Provost Markham

-Representation on Senate

-Relationships with Keele

-No new departments at Markham

Work continues on planning for hires:

-Probably 12 research stream professors and 8 alternate stream professors

*Remarks – EJ Janse van Rensburg, Associate Dean - Faculty*  
AD Janse van Rensburg welcomed all new faculty members to FSc. He extended an invitation to all pre-tenure faculty members to attend the monthly on-boarding sessions.

Additionally, AD – Janse van Rensburg reminded members and departments of the following:

- Advancement to candidacy files are due in the Dean’s Office on 22 September 2017
- Faculty members who are contemplating retirement, are required to provide a minimum of nine (9) months written notice of the date on which they plan to retire.
- All faculty members are urged to ensure that their mandated Health & Safety training is up to date. The link to the health and safety training page is–  
<http://hr.info.yorku.ca/health-safety-training/>

*Remarks – S. Morin, Associate Dean, Research & Graduate Education*

Farquharson Renovation Update: AD – S. Morin acknowledged that it has been difficult for the current occupants of the building to carry out their research without disruptions during the renovation. The contractor wanted to perfectly decouple the west wing while still occupied by researchers. However, the contractor continues to struggle to stop the dust from travelling from the east side to the west side, even though the two buildings are not connected anymore. As a result of this, a huge clean up was conducted. The original design plans for the lobby of Farquharson were not approved by Heritage Toronto, which required new plans to be created for approval. Delays in permit acquisition will delay the completion of the project from April

2018 to July 2018. Finally, AD – S. Morin was happy to inform members that demolition is now completed.

The Master of Bethune, J. Amanatides, updated Council on the following:

- 900 new FSc students attended academic orientation.
- peer tutoring will commence on 18 September in the Life Science Learning Common
- Science Student Caucus elections were announced, deadline for nominations is 22 September and elections will be held later in the month.

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

There were no reports.

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

*9.1 Executive Committee*

Council moved, seconded and carried a motion to ratify additional nominations of 2017-18 Vacancies Report on Senate and FSc Committees as presented.

*9.2 Reports from Committees*

Council also noted the annual reports from the Petitions Committee and the FSc T&P Senate Review Committee.

**10. Other Business**

Prof. K. Maltman informed members that YUFA is continuing work on certain long-standing, large-scale pension issues. These issues involve under-assessments of members' pensionable incomes and under-contributions to members' pension accounts resulting from the unfortunate use by

Pension and Benefits of procedures for handling certain types of one-time payment, received while members were/are on reduced-pay (sabbatical or IRL) status, which violate the terms of the Pension Plan document. These errors can have a significant negative impact on a member's eventual pension (in some cases by more than \$1000 per year), and hence are important to identify and get corrected. The general problem was first raised in 2011, but still remains unresolved. With a preliminary list of those affected over a limited y-year sample period, prepared by Pension and Benefits in April 2013, found to be incomplete, despite having 458 entries, YUFA is keen to identify as many cases of members known to have been affected as possible, in order to ensure that any future lists are actually complete, and that all affected members will be identified as such, and have the errors in their pension accounts corrected. Later this month, YUFA will be issuing an newsletter on this problem, and will email the membership the link to a set of worksheets which will allow individual members to determine whether or not their individual pension accounts are likely to have been affected. Council members are urged to take this exercise seriously, fill out the appropriate worksheet(s) if they find they have been affected, and send the completed worksheets to YUFA. Members are also urged to make sure that current retirees in their departments have access to these worksheets, especially those who have retired in the period between about 2007 and 2015, where the effects of the errors can be especially large.

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D.Golemi-Kotra, Chair of Council

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J. Sequeira, Assistant Secretary of Council

# The Senate of York University

## Meeting Synopsis

The 637th Meeting of Senate  
held on Thursday, September 28, 2017

### Remarks

The Chair of Senate, Professor Lesley Beagrie of the Faculty of Health, greeted continuing and new Senators and commenced the meeting with the following Indigenous land acknowledgement:

*York University acknowledges its presence on the traditional territory of many Indigenous Nations. The area known as Tkaronto has been care taken by the Anishinabek Nation, the Haudenosaunee Confederacy, the Huron-Wendat, and the Métis. It is now home to many Indigenous Peoples. We acknowledge the current treaty holders, the Mississaugas of the New Credit First Nation. This territory is subject of the Dish With One Spoon Wampum Belt Covenant, an agreement to peaceably share and care for the Great Lakes region.*

This acknowledgement was developed and provided by the Aboriginal Education Council and will be read at the outset of future meetings. The Chair also welcomed President Lenton, Interim Provost Lisa Philipps and the new Vice-Provost Students Lucy Fromowitz. Out of a strong commitment to respect, collegiality, equity and diversity, the Chair will endeavor to maximize participation at meetings. It was gratifying that committees have already signaled their interest in pursuing quality objectives as set out in the University Academic Plan 2015-2020.

In her first address as the President of York University, Rhonda Lenton spoke of the great honour of serving and supporting faculty, students, staff and alumni in her new role. Her vision for York and priorities in the years ahead flows out of the University's Mission Statement, Provostial White Paper of 2010, and UAP. York's growth to the third largest Canadian university in less than 60 years is without precedent, and has been made possible by an enduring commitment to the public good, accessibility, excellence, impact, connectivity and progressivity. Unmatched opportunities await, and the University can capitalize on them through innovation, strengthened collegial governance, adherence to values, and a focus on planning objectives. It can also leverage the subway opening and transportation hub adjacent to the Keele campus to great advantage, just as new athletic facilities have attracted competitors and spectators from near and far. President Lenton will hold a series of fireside chats in Faculties, and expressed her willingness to meet with Faculty Councils. Strategic Mandate Agreement 2 will be signed off by the provincial government this week, but it is not too soon to begin a sustained collegial dialogue in anticipation of SMA 3, where funding will be tied more closely to system-wide and institutional metrics. Individuals slated to receive honorary degrees at Fall Convocation ceremonies include Vincent Tao, Rudy Bratty and Ron Mock.

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

# The Senate of York University

## Meeting Synopsis

### Academic Colleague to the Council of Ontario Universities

In his first report of the year, the Academic Colleague to the Council of Ontario Universities, Professor David Leyton-Brown, described his role on behalf of Senate and the structure, mandates and processes governing COU and its constituent bodies. The Colleague will report frequently to Senate on policy discussions and developments.

### Approvals

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

- change the name of the Diploma in Arts and Media Administration to the Diploma in Arts, Media and Entertainment Management, Schulich School of Business / Faculty of Graduate Studies
- change admission and degree requirements for the PhD Program in Business Administration, Schulich School of Business / Faculty of Graduate Studies
- change degree requirements for the Master of Business Analytics Program, Schulich School of Business / Faculty of Graduate Studies
- change the number of required credits for the Diploma in Intermediate Accounting, Schulich School of Business / Faculty of Graduate Studies
- change admission and degree requirements for the Executive MBA Program in India, Schulich School of Business / Faculty of Graduate Studies
- change requirements for the PhD Program in Gender, Feminist & Women's Studies Program, Liberal Arts & Professional Studies / Glendon / Faculty of Graduate Studies
- authorize the granting of degrees at the University's Convocations held in Fall 2017, February 2018 (Convocation *In Absentia*) and Spring 2018 to those students who have fulfilled the degree program requirements for receipt of the degrees; 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; authorize the granting of diplomas and certificates at the University's Convocations held in Fall 2017, February 2018 (Convocation *In Absentia*) and Spring 2018 to those students who have fulfilled requirements for receipt of the diplomas and certificates

### Major Reports

Under the auspices of the Academic Policy, Planning and Research Committee, its Chair, Professor Thomas Loebel, facilitated discussion of an options paper on Models for Collegial Governance Structures for Markham Centre Campus prepared by the

# **The Senate of York University**

## **Meeting Synopsis**

Provost with contributions from the University Secretariat and others. A summary of the discussion will be provided to the Provost and APPRC. Markham planning remains a standing item on the APPRC agenda and Senate will have timely, meaningful opportunities to participate in discussions during the year ahead.

### **Committee Information Items**

As they presented reports at the inaugural meeting of 2017-2018, the Chairs of Senate committees briefly described their roles on behalf of Senate, how they conduct business and items Senate can expect will come to the floor from them during the year.

#### **Executive (Professor Franck van Breugel, Vice-Chair)**

The Executive Committee's information items included the following:

- a request that Senate committee chairs of Senate committees take a few moments to describe the role played by their committees on behalf of Senate, how they conduct business, and what major items to expect in the coming year.
- the committee's comments on the Markham Centre Campus governance paper (see major reports, above)
- approval of Senate committee members nominated by Faculty Councils
- actions taken under summer authority
- the process for nominating members of Senate committee and other positions, and current vacancies
- Senate meeting dates for 2017-2018 with changes approved for December, February and June
- the results of Senator and Senate committee member surveys conducted in April and how they help inform the Executive's priorities
- a summary of actions taken by Senate in 2016-2017
- communications between Senate and Faculty Councils and requests made of Councils
- University Secretariat initiatives in support of governance

#### **Academic Policy, Planning and Research (Professor Thomas Loebel, Chair)**

APPRC provided information on these items:

- the Committee's commitment to fulfilling its mandate on behalf of Senate
- Implementation of the University Academic Plan
- emerging priorities for 2017-2018
- the availability and utility of the Provost's June 2017 year-end report which highlight Institutional Integrated Resource Plan working group recommendations
- the process for renewing the Strategic Research Plan and engagement with Senate and the collegium

# The Senate of York University

## Meeting Synopsis

- expected Markham Centre Campus planning
- members of APPRC sub-committees for 2017-2018

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

ASCP shared the July 2017 funding approval decisions report of the Ministry of Advanced Education and Skills Development (MAESD) and advised that it had approved changes to program requirements for the following graduate programs:

PhD in Kinesiology and Health Science  
MA, MSc and PhD in Geography  
PhD in Mechanical Engineering

### **Appeals (Professor Natalie Coulter, Chair)**

In accordance with Senate policy, the Committee reported that it had agreed with a recommendation of the Faculty of Liberal Arts and Professionals Studies Committee on Teaching, Learning and Student Success to rescind the degree of Bachelor of Arts conferred on a student in 2017 and that the official transcript record the reason for this action.

### **Awards (Professor Robert Kenedy, Chair)**

The Committee reported approval of a change to nominations procedures for Distinguished Research Professorship candidates to allow files to be held over for reconsideration the following year should the nominator wish.

### **Tenure and Promotions (Professor Simone Bohn and Professor Victor Shea, Co-Chairs)**

Professor Shea 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 28, 2017 meeting for details about these items.

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

### **September Meeting of Senate**

Senate's next meeting will be held at 3:00 p.m. on **Thursday, October 26, 2017**.

FACULTY OF SCIENCE  
Science Curriculum Committee

AGENDA

1.1 Natural Science

- 1.1.1 Change in course credit exclusion: SC/NATS 1740 6.0 “Astronomy”
- 1.1.2 Addition of NATS acronym to Academic Calendar description

1.2 Physics

- 1.2.1 Change in course format/mode of delivery: SC/ PHYS 4270 4.0 “Astronomical Techniques”

1.3 Biology

- 1.3.1 Change in pre/co-requisites: SC/BIOL 4020 3.0 “Genomics”

1.4 Chemistry

- 1.4.1 Change in pre/co-requisites and cross-listing: SC/BIOL 3071 3.0 (originally cross-listed as SC/BCHM/CHEM 3071 3.0) “Pharmaceutical Discovery”
- 1.4.2 Change in pre/co-requisites: SC/BIOL 3010 3.0 cross-listed as SC/CHEM 3050 3.0 & SC/BCHM 3010 3.0 “Advanced Biochemistry”
- 1.4.3 Change in pre/co-requisites: SC/BIOL 3051 3.0 (cross-listed as SC/BCHM/CHEM 3051 3.0) “Macromolecules of Biochemical Interest”
- 1.4.4 Change in pre/co-requisites: SC/BIOL 4051 3.0 (cross-listed as SC/BCHM/CHEM 4050 3.0) “Bioanalytical Chemistry”
- 1.4.5 Change in pre/co-requisites: SC/CHEM 2011 3.0 “Introduction to Thermodynamics”
- 1.4.6 Change in pre/co-requisites: SC/CHEM 3080 8.0 “Instrumental Methods of Analysis”
- 1.4.7 Change in pre/co-requisites: SC/CHEM 4021 3.0 “Synthetic Organic Chemistry”
- 1.4.8 Change in pre/co-requisites: SC/CHEM 4023 3.0 “Physical Organic Chemistry”
- 1.4.9 Change in pre/co-requisites: SC/CHEM 4030 3.0 “Instrumental Methods in Inorganic Chemistry”

- 1.4.10 Change in pre/co-requisites: SC/CHEM 4031 3.0 “Advanced Inorganic Chemistry”
- 1.4.11 Change in pre/co-requisites: SC/CHEM 4081 3.0 “Principles and Applications of Mass Spectrometry”
- 1.4.12 Change in course credit exclusion: SC/CHEM 3010 3.0 “Physical Chemistry”
- 1.4.13 Change in course credit exclusion: SC/CHEM 3011 3.0 “Physical Chemistry”
- 1.4.14 Change in course credit exclusion: SC/CHEM 3020 3.0 “Intermediate Organic Chemistry I”
- 1.4.15 Change in course credit exclusion: SC/CHEM 3030 3.0 “Transition Metal Chemistry”
- 1.4.16 Change in pre/co-requisites and course credit exclusion: SC/CHEM 3021 3.0 “Intermediate Organic Chemistry II”
- 1.4.17 Change in pre/co-requisites and course credit exclusion: SC/CHEM 3031 3.0 “Physical Inorganic Chemistry”

# Changes to Existing Course

**Faculty:**

**Department:**

Natural Science

**Date of Submission:**

Sept 8, 2017

**Course Number:**

NATS 1740

**Effective Session:**

17/18

**Course Title:**

Astronomy

**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 characters) | <input type="checkbox"/> | retire/expire course                    |
| <input checked="" type="checkbox"/> | other (please specify): add CCE                           | <input type="checkbox"/> |                                         |

**Change From:**

**To:**

Course credit exclusions: SC/NATS 1880 6.00, SC/NATS 1570 3.00. NCR Note: No credit will be retained if this course is taken after the successful completion of SC/PHYS 1070 3.00. Not open to any students enrolled in the Astronomy stream.

Course credit exclusions: SC/NATS 1880 6.00, SC/NATS 1570 3.00, **SC/NATS 1585 3.00**. NCR Note: No credit will be retained if this course is taken after the successful completion of SC/PHYS 1070 3.00. Not open to any students enrolled in the Astronomy stream.

**Rationale:**

NATS 1585 3.0 has NATS 1740 6.00 listed as a CCE but this inclusion is absent in the reverse and needs to be updated.

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

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

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

## Program Proposal

1. Program: **NA**
  2. Degree Designation: **NA**
  3. Type of Modification: (Example: changes to program requirements)
    - **Addition of acronym to Academic Calendar description**
  4. Effective Date: **as soon as possible**
- 

5. Provide a general description of the proposed changes to the program.

**I would like to place a motion to the Curriculum Committee that the acronym “NATS” be added to the Academic Calendar description**

## Natural Science

### Faculty of Science

The natural science (**NATS**) courses are designed, as part of the BA and iBA general education program, to acquaint those students not intending to be professionally concerned with science with the outlook, methods and some of the achievements of science.

See <http://calendars.students.yorku.ca/2017-2018/programs>

6. Provide the rationale for the proposed changes.

**The acronym “NATS” is synonymous with Natural Science and used widely, and in some cases exclusively, by students and other members of the York community. Adding it to the description will facilitate a search for the Division of Natural Science within the Academic Calendar. Currently entering “NATS” into the search bar renders a failed search.**

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

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

# Changes to Existing Course

**Faculty:**
**Department:**

Physics and Astronomy

**Date of Submission:**

May 2017

**Course Number:**

PHYS 4270 4.0

**Effective Session:**

Fall 2018

**Course Title:**

Astronomical Techniques

**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 checked="" type="checkbox"/> in course format/mode of delivery * |
| <input type="checkbox"/> in Calendar description (max. 40 words or 200 characters) | <input type="checkbox"/> retire/expire course                           |
| <input type="checkbox"/> other (please specify):                                   | <input type="checkbox"/>                                                |

**Change From:**
**To:**

Duration of lecture of 60 minutes per week (once per week over two terms).

Duration of lecture of 90 minutes per week (once per week over two terms).

**Rationale:**

The motivation for this course is to introduce senior-level undergraduate students to contemporary techniques currently practiced by professional astronomers. In the past, a 50-minute lecture component per week was sufficient to introduce students to the underlying ideas which they were then required to practice outside the classroom through astronomy laboratory projects.

With the development of modern computer hardware and software, as well as the modern pedagogical approaches to effective learning in the physical sciences, there is a need to modify the approach to the lectures. In particular, a more effective strategy is to use the “flipped classroom” approach in which a brief overview lecture of about 25-30 minutes is followed by a problem-solving session in small groups for about 45 minutes followed by a few-minute wrap-up. As the most recent instructor in this course, Prof. De Robertis tried to adopt this pedagogical strategy into a 50-minute lecture, with limited success; there is insufficient time in a 50-minute lecture for it to work. An 80-minute lecture would allow a greater opportunity for success. The second most recent instructor in the course, Prof. Hall, wholeheartedly supports this change.

This change will not impact the workload for the course; the additional 30 minutes a week in class working on problem-solving is balanced by an equivalent reduction in problem-solving homework assignments intended for students to work on outside of class. The astronomy laboratory projects will continue as before.

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 Existing Courses & Degree Programs

**Department:**  **Date of Submission:**

**Course Number:**  **Effective Session:**

**Course Title:**

**Type of Change:**

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

**Change From:**

**To:**

SC/BIOL 2060 3.00 or SC/MATH 2560 3.00 or SC/MATH 2565 3.00 or HH/PSYC 2020 6.00 or HH/PSYC 2021 3.00 (or equivalent); <del>SC/BIOL 3110 3.00; SC/BIOL 3200 3.00.</del>	SC/BIOL 2060 3.00 or SC/MATH 2560 3.00 or SC/MATH 2565 3.00 or HH/PSYC 2020 6.00 or HH/PSYC 2021 3.00 (or equivalent); <b>SC/BIOL 3130 3.00</b>
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------

**Rationale:**

This proposed change aligns the prerequisites of the two "omics" courses, *genomics* (BIOL 4020, this document) and *proteomics* (BIOL 4030).

Molecular Biology II (BIOL 3130) is required to ensure students to ensure students in BIOL 4020 have a strong foundation in gene expression and high-throughput applications. BIOL 3110 is required for BIOL 3130, so the change to BIOL 3130 maintains the BIOL 3110 prerequisite. BIOL 3200 no longer fits with the course curriculum.

Note: For course proposals involving cross-listings, integrations and degree credit exclusions, approval from all of the relevant Faculties/department/divisions 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 (Form 1) 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 ATSG indicating whether resources are adequate to support the course.

# Changes to Existing Course

**Faculty:**
**Department:**

Biology

**Date of Submission:**

Sept. 2017

**Course Number:**

 SC/BIOL 3071 3.0  
 (originally cross-listed as  
 SC/BCHM/CHEM 3071 3.0)

**Effective Session:**

Fall/Winter 2018

**Course Title:**

Pharmaceutical Discovery

**Type of Change:**

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

**Change From:**

 Prerequisites: SC/BIOL 2020 3.00 or SC/BCHM 2020 3.00 or SC/CHEM 2050 4.00 or ~~SC/BIOL 2020 4.00 or SC/BCHM 2020 4.00~~; SC/CHEM 2020 6.00 or SC/CHEM 2021 3.00. Course credit exclusion: SC/CHEM 3075 3.00.

**To:**

 Prerequisites: SC/BIOL 2020 3.00 or SC/BCHM 2020 3.00 or SC/CHEM 2050 4.00; SC/CHEM 2020 6.00 or SC/CHEM 2021 3.00. Course credit exclusion: SC/CHEM 3075 3.00.  
**Cross-listed to SC/BCHM 3071 3.0 and SC/BIOL 3071 3.0.**
**Rationale:**

This proposal aims to (a) simplify the pre-requirements by removing mentions of older courses not offered for many years in favour of replacement courses still offered, and (b) restore the cross-listings to BCHM 3071 and BIOL 3071 (currently only listed as CHEM 3071).

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 Existing Course

**Faculty:** SC

**Department:**

Biology

**Date of Submission:**

Sept. 2017

**Course Number:**

SC/BIOL 3010 3.0  
cross-listed as SC/CHEM 3050  
3.0 & SC/BCHM 3010 3.0

**Effective Session:**

Fall/Winter 2018

**Course Title:**

Advanced Biochemistry

**Type of Change:**

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

**Change From:**

Prerequisites: SC/BIOL 2020 3.00 or SC/BCHM 2020 3.00 or SC/CHEM 2050 4.00 or ~~SC/BIOL 2020 4.00 or SC/BCHM 2020 4.00~~; SC/CHEM 2020 6.00 or SC/CHEM 2021 3.00.

**To:**

Prerequisites: SC/BIOL 2020 3.00 or SC/BCHM 2020 3.00 or SC/CHEM 2050 4.00; SC/CHEM 2020 6.00 or SC/CHEM 2021 3.00.

**Rationale:**

This proposal aims to simplify the pre-requirements by removing mentions of older courses not offered for many years in favour of replacement courses still offered.

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 Existing Course

**Faculty:**
**Department:**

Biology

**Date of Submission:**

Sept. 2017

**Course Number:**

 SC/BIOL 3051 3.0  
 (cross-listed as  
 SC/BCHM/CHEM 3051 3.0)

**Effective Session:**

Fall/Winter 2018

**Course Title:**

Macromolecules of Biochemical Interest

**Type of Change:**

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

**Change From:**

 Prerequisites: SC/CHEM 2020 6.00 or SC/CHEM 2021 3.00 and either SC/CHEM 2050 4.00 or SC/BCHM 2020 3.00 or SC/BIOL 2020 3.00 or ~~SC/BCHM 2020 4.00 or SC/BIOL 2020 4.00.~~
**To:**

Prerequisites: SC/CHEM 2020 6.00 or SC/CHEM 2021 3.00 and either SC/CHEM 2050 4.00 or SC/BCHM 2020 3.00 or SC/BIOL 2020 3.00.

**Rationale:**

This proposal aims to simplify the pre-requirements by removing mentions of older courses not offered for many years in favour of replacement courses still offered.

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 Existing Course

**Faculty:**
**Department:**

Biology

**Date of Submission:**

Sept. 2017

**Course Number:**

 SC/BIOL 4051 3.0  
 (cross-listed as  
 SC/BCHM/CHEM 4050 3.0)

**Effective Session:**

Fall/Winter 2018

**Course Title:**

Bioanalytical Chemistry

**Type of Change:**

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

**Change From:**
**To:**

 Prerequisites: SC/BIOL 2020 3.00 or SC/BCHM 2020 3.00 or  
 SC/ CHEM 2050 4.00 or ~~SC/BIOL 2020 4.00 or SC/BCHM  
 2020 4.00; SC/BIOL 2021 4.00 or SC/BCHM 2021 4.00;~~  
 SC/CHEM 2020 6.00 or SC/CHEM 2021 3.00.

 Prerequisites: SC/BIOL 2020 3.00 or SC/BCHM 2020  
 3.00 or SC/ CHEM 2050 4.00; SC/BIOL 2021 **3.00** or  
 SC/BCHM 2021 **3.00**; SC/CHEM 2020 6.00 or  
 SC/CHEM 2021 3.00.

**Rationale:**

This proposal aims to simplify the pre-requirements by removing mentions of older courses not offered for many years in favour of replacement courses still offered, and correcting the credit value of the current versions of SC/BCHM/ BIOL 2021.

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 Existing Course

**Faculty:**
**Department:**

Chemistry

**Date of Submission:**

Sept. 21, 2017

**Course Number:**

2011 3.0

**Effective Session:**

F18

**Course Title:**

Introduction to Thermodynamics

**Type of Change:**

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

**Change From:**

This course is an introduction to equilibrium chemical thermodynamics. The three laws of thermodynamics and the thermodynamic state functions are described. Many applications are considered, including the operation of heat engines, phase transformations, thermochemistry and chemical reaction equilibria. Three lecture hours, one tutorial hour. One term. Three credits. Prerequisites: ~~SC/MATH 1013 3.00; SC/MATH 1014 3.00; SC/CHEM 1000 3.00 or SC/CHEM 1001 3.00.~~ Prior to Fall 2009: Prerequisites: ~~AS/SC/MATH 1013 3.00; AS/SC/MATH 1014 3.00; SC/CHEM 1000 3.00 or SC/CHEM 1001 3.00.~~

**To:**

This course is an introduction to equilibrium chemical thermodynamics. The three laws of thermodynamics and the thermodynamic state functions are described. Many applications are considered, including the operation of heat engines, phase transformations, thermochemistry and chemical reaction equilibria. Three lecture hours, one tutorial hour. One term. Three credits. Prerequisites: SC/MATH 1014 3.00, **or SC/MATH 1505 6.0 with a minimum grade of B;** SC/CHEM 1001 3.00 **or SC/CHEM 1100 4.0.**

**Rationale:**

This proposal (a) removes older, irrelevant pre-requisites, (b) specifies the most relevant of the CHEM 1000+1001 pair, (c) allows Engineering students to take this course as an elective without reference to the c.c.e. between CHEM 1000 and 1100, and (d) allows those not having followed the MATH 1013+1014 or 1300+1310 sequences (e.g. BIOL & KINE students) to take this course as preparation for Pharmacy.

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 Existing Course

**Faculty:**
**Department:**

Chemistry

**Date of Submission:**

Sept. 21, 2017

**Course Number:**

3080 8.0

**Effective Session:**

F18

**Course Title:**

Instrumental Methods of Analysis

**Type of Change:**

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

**Change From:**

The theory and application of a variety of modern instrumental methods. Topics include basic electronics, signal processing, electroanalytical methods, optical spectroscopy, atomic absorption and emission spectroscopy, chromatography and mass spectrometry. This course covers applications relevant to modern chemical analysis. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisites: SC/CHEM 2080 4.00; SC/PHYS 1010 6.00 or SC/PHYS 1410 6.00. Course Credit Exclusions: SC/SENE 2081 3.00 and SC/SENE 2082 3.00

**To:**

The theory and application of a variety of modern instrumental methods. Topics include basic electronics, signal processing, electroanalytical methods, optical spectroscopy, atomic absorption and emission spectroscopy, chromatography and mass spectrometry. This course covers applications relevant to modern chemical analysis. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisites: SC/CHEM 2080 4.00; SC/PHYS 1010 6.00 or SC/PHYS 1410 6.00 **or SC/PHYS 1420 6.0.** Course Credit Exclusions: SC/SENE 2081 3.00 and SC/SENE 2082 3.00

**Rationale:**

This change acknowledges the equivalency of the three PHYS courses.

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 Existing Course

**Faculty:**
**Department:**

Chemistry

**Date of Submission:**

Sept. 21, 2017

**Course Number:**

4021 3.0

**Effective Session:**

F18

**Course Title:**

Synthetic Organic Chemistry

**Type of Change:**

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

**Change From:**

A course concentrating on strategies of synthesizing complex molecules, with emphasis on carbon-carbon bond-forming reactions, blocking groups, regioselectivity and stereochemical methods. Three lecture hours. One term. Three credits. Prerequisite: SC/CHEM 3021 3.00 or SC/CHEM 3021 4.00.

**To:**

A course concentrating on strategies of synthesizing complex molecules, with emphasis on carbon-carbon bond-forming reactions, blocking groups, regioselectivity and stereochemical methods. Three lecture hours. One term. Three credits. Prerequisite: SC/CHEM 3021 3.00.

**Rationale:**

This change removes reference to an old course last offered 2010-2011.

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 Existing Course

**Faculty:**
**Department:**

Chemistry

**Date of Submission:**

Sept. 21, 2017

**Course Number:**

4023 3.0

**Effective Session:**

F18

**Course Title:**

Physical Organic Chemistry

**Type of Change:**

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

**Change From:**

Advanced topics, including methods for determining mechanisms, the study of reactive intermediates (carbocations, carbanions, carbenes, carbon radicals), acid catalysis and other aspects of mechanistic organic chemistry. Three lecture hours. One term. Three credits. Prerequisite: SC/CHEM 3021 3.00 or ~~SC/CHEM 3021 4.00~~.

**To:**

Advanced topics, including methods for determining mechanisms, the study of reactive intermediates (carbocations, carbanions, carbenes, carbon radicals), acid catalysis and other aspects of mechanistic organic chemistry. Three lecture hours. One term. Three credits. Prerequisite: SC/CHEM 3021 3.00.

**Rationale:**

This change removes reference to an old course last offered 2010-2011.

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 Existing Course

**Faculty:**
**Department:**

Chemistry

**Date of Submission:**

Sept. 21, 2017

**Course Number:**

4030 3.0

**Effective Session:**

F18

**Course Title:**

Instrumental Methods in Inorganic Chemistry

**Type of Change:**

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

**Change From:**

Theory and applications of instrumental methods for investigating the structure and properties of inorganic and organometallic compounds. Magnetic resonance techniques (NQR and ESR), ultraviolet-visible, infrared, Raman and resonance Raman spectroscopy are introduced and discussed. Three lecture hours. First term. Three credits. Prerequisite: SC/CHEM 3031 3.00 or SC/CHEM 3031 4.00.

**To:**

Theory and applications of instrumental methods for investigating the structure and properties of inorganic and organometallic compounds. Magnetic resonance techniques (NQR and ESR), ultraviolet-visible, infrared, Raman and resonance Raman spectroscopy are introduced and discussed. Three lecture hours. First term. Three credits. Prerequisite: SC/CHEM 3031 3.00.

**Rationale:**

This change removes reference to an old course last offered 2010-2011.

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 Existing Course

**Faculty:**
**Department:**

Chemistry

**Date of Submission:**

Sept. 21, 2017

**Course Number:**

4031 3.0

**Effective Session:**

F18

**Course Title:**

Advanced Inorganic Chemistry

**Type of Change:**

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

**Change From:**

Advanced topics in inorganic chemistry, including organometallic, synthesis, reaction types, fluxionality and analysis. Three lecture hours. Three credits. Prerequisite: SC/CHEM 3030 3.00 or SC/CHEM 3030 4.00; SC/CHEM 3031 3.00 or SC/CHEM 3031 4.00 is recommended.

**To:**

Advanced topics in inorganic chemistry, including organometallic, synthesis, reaction types, fluxionality and analysis. Three lecture hours. Three credits. Prerequisite: SC/CHEM 3030 3.00; SC/CHEM 3031 3.00 is recommended.

**Rationale:**

This change removes reference to old courses last offered 2010-2011.

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 Existing Course

**Faculty:**
**Department:**

Chemistry

**Date of Submission:**

Sept. 21, 2017

**Course Number:**

4081 3.0

**Effective Session:**

F18

**Course Title:**

Principles and Applications of Mass Spectrometry

**Type of Change:**

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

**Change From:**

This course will develop Mass Spectrometry as an analytical tool in chemistry and biochemistry, at an advanced level. The course will be delivered in three sections: instrumentation, theory and applications. Topics will include ionization, mass analyzers, ion dissociation, ion mobility, qualitative and quantitative analysis with various applications, including in the health and medical sciences. Three lecture hours. One term. Three credits. Prerequisites: SC/CHEM 3020 3.00 ~~or SC/CHEM 3020 4.00~~; SC/CHEM 3080 4.00.

**To:**

This course will develop Mass Spectrometry as an analytical tool in chemistry and biochemistry, at an advanced level. The course will be delivered in three sections: instrumentation, theory and applications. Topics will include ionization, mass analyzers, ion dissociation, ion mobility, qualitative and quantitative analysis with various applications, including in the health and medical sciences. Three lecture hours. One term. Three credits. Prerequisites: SC/CHEM 3020 3.00 **or** SC/CHEM 3080 4.00.

**Rationale:**

This change removes reference to an old course last offered 2010-2011 and allows students who have one of the two prerequisites.

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

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

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

# Changes to Existing Course

**Faculty:**
**Department:**

Chemistry

**Date of Submission:**

Sept. 21, 2017

**Course Number:**

3010 3.0

**Effective Session:**

F18

**Course Title:**

Physical Chemistry

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

**Change From:**

An introduction to quantum mechanics, spectroscopy and statistical thermodynamics with applications to atoms and small molecules. Electronic structure and chemical bonds. Three lecture hours per week. First term. Three credits. Prerequisites: SC/CHEM 2011 3.00, SC/CHEM 2030 3.00. ~~Course credit exclusions: SC/CHEM 3010 4.00.~~

**To:**

An introduction to quantum mechanics, spectroscopy and statistical thermodynamics with applications to atoms and small molecules. Electronic structure and chemical bonds. Three lecture hours per week. First term. Three credits. Prerequisites: SC/CHEM 2011 3.00, SC/CHEM 2030 3.00.

**Rationale:**

This change removes reference to an old course last offered 2010-2011.

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 Existing Course

**Faculty:**
**Department:**

Chemistry

**Date of Submission:**

Sept. 21, 2017

**Course Number:**

3011 3.0

**Effective Session:**

F18

**Course Title:**

Physical Chemistry

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

**Change From:**

This is an introductory course in chemical kinetics as applied primarily to reactions in the gas phase but also in solution and at electrode surfaces. Three lecture hours per week. One term. Three credits. Prerequisite: SC/CHEM 2011 3.00  
 Course credit exclusions: SC/CHEM 3011 4.00

**To:**

This is an introductory course in chemical kinetics as applied primarily to reactions in the gas phase but also in solution and at electrode surfaces. Three lecture hours per week. One term. Three credits. Prerequisite: SC/CHEM 2011 3.00.

**Rationale:**

This change removes reference to an old course last offered 2010-2011.

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 Existing Course

**Faculty:**
**Department:**

Chemistry

**Date of Submission:**

Sept. 21, 2017

**Course Number:**

3020 3.0

**Effective Session:**

F18

**Course Title:**

Intermediate Organic Chemistry I

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

**Change From:**

Intermediate topics in NMR spectroscopy and mass spectrometry, carbanion and enol chemistry and introductory heterocyclic chemistry, with biochemical examples. Three lecture hours and one tutorial hour per week. One term. Three credits. Prerequisite: SC/CHEM 2020 6.00 or SC/CHEM 2021 3.00. ~~Course credit exclusion: SC/CHEM 3020 4.00.~~

**To:**

Intermediate topics in NMR spectroscopy and mass spectrometry, carbanion and enol chemistry and introductory heterocyclic chemistry, with biochemical examples. Three lecture hours and one tutorial hour per week. One term. Three credits. Prerequisite: SC/CHEM 2020 6.00 or SC/CHEM 2021 3.00.

**Rationale:**

This change removes reference to an old course last offered 2010-2011.

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 Existing Course

**Faculty:**
**Department:**

Chemistry

**Date of Submission:**

Sept. 21, 2017

**Course Number:**

3030 3.0

**Effective Session:**

F18

**Course Title:**

Transition Metal Chemistry

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

**Change From:**

The chemistry of the transition metals is discussed from an historical perspective and within the context of modern theories of bonding, structure and spectroscopy. Topics include classical coordination compounds, organometallics, metallocenes, metal carbonyls and bioinorganic chemistry. Three lecture hours and two tutorial hours per week. One term. Three credits. Prerequisites: SC/CHEM 2021 3.00 or SC/CHEM 2020 6.00; SC/CHEM 2030 3.00. ~~Course credit exclusion: SC/CHEM 3030 4.00.~~

**To:**

The chemistry of the transition metals is discussed from an historical perspective and within the context of modern theories of bonding, structure and spectroscopy. Topics include classical coordination compounds, organometallics, metallocenes, metal carbonyls and bioinorganic chemistry. Three lecture hours and two tutorial hours per week. One term. Three credits. Prerequisites: SC/CHEM 2021 3.00 or SC/CHEM 2020 6.00; SC/CHEM 2030 3.00.

**Rationale:**

This change removes reference to an old course last offered 2010-2011.

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 Existing Course

**Faculty:**
**Department:**

Chemistry

**Date of Submission:**

Sept. 21, 2017

**Course Number:**

3021 3.0

**Effective Session:**

F18

**Course Title:**

Intermediate Organic Chemistry II

**Type of Change:**

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

**Change From:**

A course building on Intermediate Organic Chemistry I, dealing with a variety of advanced reactions and stereochemistry. Three lecture hours per week. One term. Three credits. Prerequisite: SC/CHEM 3020 3.00 or SC/CHEM 3020 4.00. ~~Course credit exclusion: SC/CHEM 3021 4.00.~~

**To:**

A course building on Intermediate Organic Chemistry I, dealing with a variety of advanced reactions and stereochemistry. Three lecture hours per week. One term. Three credits. Prerequisite: SC/CHEM 3020 3.00.

**Rationale:**

This change removes reference to an old course last offered 2010-2011.

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 Existing Course

**Faculty:**
**Department:**

Chemistry

**Date of Submission:**

Sept. 21, 2017

**Course Number:**

3031 3.0

**Effective Session:**

F18

**Course Title:**

Physical Inorganic Chemistry

**Type of Change:**

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

**Change From:**

An introduction to physical and theoretical methods in inorganic chemistry. Topics are selected from the following: atomic structure and spectra, molecular orbital and ligand field theory, bonding, electronic spectroscopy, magnetism of metal complexes, photochemistry, electrochemistry, solid state chemistry, metal-metal bonding. Three lecture hours per week. One term. Three credits. Prerequisite: SC/CHEM 3030 3.00 or 4.00. ~~Course credit exclusions: SC/CHEM 3031 4.00.~~

**To:**

An introduction to physical and theoretical methods in inorganic chemistry. Topics are selected from the following: atomic structure and spectra, molecular orbital and ligand field theory, bonding, electronic spectroscopy, magnetism of metal complexes, photochemistry, electrochemistry, solid state chemistry, metal-metal bonding. Three lecture hours per week. One term. Three credits. Prerequisite: SC/CHEM 3030 3.00.

**Rationale:**

This change removes references to old courses last offered 2010-2011.

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.