



## OFFICE OF THE ASSOCIATE VICE-PRESIDENT, ACADEMIC

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 Canada V5A 1S6

**MEMORANDUM**

|                  |                                                                                 |                                                                                    |                |
|------------------|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------|
| <b>ATTENTION</b> | Senate                                                                          | <b>DATE</b>                                                                        | August 7, 2015 |
| <b>FROM</b>      | Andrew Gemino, Acting Chair                                                     | <b>PAGES</b>                                                                       | 1/2            |
| <b>RE:</b>       | Senate Committee on<br>Undergraduate Studies<br>Faculty of Science (SCUS 15-31) |  |                |

**For information:**

Acting under delegated authority at its meeting of August 6, 2015 SCUS approved the following curriculum revisions effective Summer 2016.

1. Department of Biomedical Physiology and Kinesiology (SCUS 15-31b)

- (i) Title and description change for BPK 207
- (ii) Admission requirement changes to the Behavioural Neuroscience Honours program
- (iii) Remove BPK 461 from the Behavioural Neuroscience Major and Honours programs

2. Department of Chemistry (SCUS 15-31c)

- (i) Continuance requirement changes to the Chemistry Major programs

3. Department of Earth Sciences (SCUS-15-31d)

- (i) Prerequisite change for EASC 205 & 207

4. Department of Molecular Biology and Biochemistry (SCUS 15-31e)

- (i) Title change for MBB 491
- (ii) Title, description and prerequisite change for MBB 481, 482, 483
- (iii) Title change for MBB 490, 496

5. Department of Statistics and Actuarial Science (SCUS 15-31f)

- (i) Prerequisite change for STAT 270 and description change for STAT 285
- (ii) Prerequisite change for STAT 300W, 305

6. Department of Mathematics (SCUS 15-31g)

- (i) Description and prerequisite change to MATH 125, 126 (effective Fall 2016)



**FACULTY OF SCIENCE**  
Dean of Science

**SCUS 15-31b**

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Canada V5A 1S6

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**MEMORANDUM**

|                  |                                                                                                                                            |             |               |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------|
| <b>ATTENTION</b> | Senate Committee for<br>Undergraduate Studies, SFU                                                                                         | <b>DATE</b> | July 27, 2015 |
| <b>FROM</b>      | Carl Lowenberger, Chair, Science<br>UCC                                                                                                    |             |               |
| <b>RE:</b>       | Submission of Undergraduate Curriculum Business from the Faculty of<br>Science for inclusion on the Agenda of the August 2015 SCUS Meeting |             |               |

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**BPK**

Motion 1: Change the title and description for BPK 207

*Motion 2: Update calendar language for Behavioural Neuroscience Major Program - not required to go through SCUS as it is editorial in nature.*

Motion 3: Update calendar language and admissions language for the Behavioural Neuroscience Honours program descriptions.

Motion 4: Remove BPK 461: Physiology of Aging from the list of Upper Division electives in the Behavioural Neuroscience Major program.

Motion 5: Remove BPK 461: Physiology of Aging from the list of Upper Division electives in the Behavioural Neuroscience Honours program.

**CHEMISTRY**

Motion: Proposed introduction of maintenance (continuance) GPA for Chemistry majors

**EARTH SCIENCES**

Motion 1: Prerequisite change for EASC 205

**Motion 2: Description change for EASC 207**

## **MBB**

**Motion 1: title change and prerequisite changes to MBB 481-5, 482-5, 483-5**

**Motion 2: Title Change to MBB 490-2**

**Motion 3: Title Change to MBB 491-5**

**Motion 4: Title Change to MBB 496-6**

## **STATS**

**Motion 1: Description change to STAT 270**

**Motion 2: Description change to STAT 285**

**Motion 3: Prereq change to STAT 300W**

**Motion 4: Prereq change to STAT 305**

## **MATH**

**Motion 1: Update calendar language for the Math and Computing Science Joint Major program.**

**Motion 2: Description and prerequisite change to Math 125**

**Motion 3: Description and prerequisite change to Math 126**



Department of  
Biomedical Physiology and Kinesiology  
Faculty of Science

July 2, 2015

Faculty of Science  
Simon Fraser University  
8888 University Drive  
Burnaby, BC V5A 1S6

To: Carl Lowenberger Associate Dean, Faculty of Science;

RE: Undergraduate Program changes for the Department of Biomedical Physiology and Kinesiology

**1. BPK Motion: Change the title and description for BPK 207**

**Rationale:** The change in title is to reflect the evolution in content and the manner in which this course is taught. This title is more inclusive than the previous one. The change in description follows the same logic.

**3. BPK Motion: Make the following changes to the Behavioural Neuroscience Honours program description.**

**Rationale :**

- (1) To make procedures for behavioural neuroscience students more consistent across the two departments.
- (2) To better reflect how the program has evolved in the past two years.

**4. BPK Motion: Remove BPK 461: Physiology of Aging from the list of Upper Division electives in the Behavioural Neuroscience Major program.**

**Rationale :** BPK 461 is not an appropriate upper division option for the program.



Department of  
Biomedical Physiology and Kinesiology  
Faculty of Science

**5. BPK Motion: Remove BPK 461: Physiology of Aging from the list of Upper Division electives in the Behavioural Neuroscience Honours program.**

**Rationale :** BPK 461 is not an appropriate upper division option for the program.

Sincerely,

A handwritten signature in black ink, appearing to read "Ryan Dill", with a stylized flourish at the end.

Ryan Dill  
Senior Lecturer  
Undergraduate Program Committee Chair  
Department of Biomedical Physiology and Kinesiology  
Faculty of Science  
SFU

COURSE SUBJECT BPK NUMBER 207 TITLE Human Motor Systems

## INSTRUCTIONS (OVERALL):

1. Using Microsoft Word draft changes using the following guideline. Paste in box below.
2. Rationale must be included. If more space is needed than provided below, please use the provided text box on page 2 of this document.
3. Indicate term = Fall, Spring, Summer

## TYPE OF CHANGES RECOMMENDED

Please type 'X' for the appropriate revision(s):

|  |               |  |        |   |       |   |             |  |              |  |          |
|--|---------------|--|--------|---|-------|---|-------------|--|--------------|--|----------|
|  | Course number |  | Credit | X | Title | X | Description |  | Prerequisite |  | Deletion |
|--|---------------|--|--------|---|-------|---|-------------|--|--------------|--|----------|

## WORDING/DESCRIPTION EDITS

1. Indicate deleted or changed text using striketrough.
2. Indicate added or new text using underline.
3. Equivalent courses: preclusion statement should read:
  - a. Students with credit for x cannot take y for further credit.

BPK 207 ~~Human Motor Systems~~ Sensorimotor Control and Learning (3)

Students are introduced to basic concepts in ~~human motor systems~~ the sensorimotor planning and control underlying goal direction of movement. Topics ~~include including~~ the factors and disorders affecting movement, sensory and motor physiology, problems of planning/control of movements, the role of the nervous system in integrating sensory and motor systems to produce movement sensorimotor integration, current theories of motor control, and motor learning are discussed. Taught from a behavioral and neurophysiological perspective ~~and that~~ explores psychological influences on motor control. ~~Research from a variety of distinct areas is integrated to provide a coherent picture of our understanding of human motor systems.~~ Students with credit for KIN 207 may not take this course for further credit. Prerequisite: BPK (or KIN) 142 or permission of instructor.

## SAMPLE

POL 223 ~~Canadian-American~~ Political Economy (3)

~~An introductory study of America's~~ Canada's political economy, stressing the interrelated nature of Canada's economic and political life. ~~The course~~ Focuses on current economic problems and policies, taking into account the geographical, historical and political environments. Topics include the resource and industrial structures, research and development, the public sector, fiscal and monetary policy, the role of the state, trade and foreign ownership, energy, regional disparity, corporate concentration and the political economy of federalism.

~~This course is identical to CNS 280 and students cannot take both courses for credit.~~  
Students with credit for CNS 280 cannot take POL 223 for further credit.

~~Recommended Pre-requisite:~~ POL 100 or 101W.

Breadth – Social Sciences.

## RATIONALE

If more space is needed, please use the provided text box on page 2 of this document

The change in title is to reflect the evolution in content and the manner in which this course is taught. This title is more inclusive than the previous one. The change in description follows the same logic.

## EFFECTIVE TERM AND YEAR, FOR CHANGES

Fall, Spring, Summer and year (please enter in textbox)

2016 SUMMER

### 3. BPK Motion: Make the following changes to the Behavioural Neuroscience Honours program description.

To:

Bachelor of Science

The Behavioural Neuroscience Honours program is a four-year undergraduate program that provides students with a strong foundation in the biological and behavioral sciences. The program is designed to prepare students for graduate study or careers in research, education, and industry. The program is co-chaired by the Department of Psychology and the Department of Neuroscience. The program is currently offered as a Bachelor of Science degree.

#### Admission Requirements

Before applying for admission, students must have completed a minimum of ~~60~~75 units in the behavioural ~~behavioral~~ neuroscience major program with a minimum 3.00 cumulative grade point average (CGPA).

~~Students desiring to complete an honours program in biomedical physiology and kinesiology will find the admission requirements listed at <http://students.sfu.ca/calendar/programs/kinesiology/honours/bachelor-of-science.html>. Students desiring to complete an honours program in psychology will find the admission requirements listed at <http://students.sfu.ca/calendar/programs/psychology/honours/bachelor-of-arts.html>.~~

Application requires submission of a completed Honours approval form, posted on the BPK website [www.sfu.ca/bpk/undergrad\\_program/forms.html](http://www.sfu.ca/bpk/undergrad_program/forms.html), along with the student's most recent advising transcript, to one of the Behavioural Neuroscience Program Co-chairs.

#### Rationale :

- (1) To make procedures for behavioural neuroscience students more consistent across the two departments.
- (2) To better reflect how the program has evolved in the past two years.

**4. BPK Motion: Remove BPK 461: Physiology of Aging from the list of Upper Division electives in the Behavioural Neuroscience Major program.**

**To:**

Behavioural Neuroscience Major

Upper Division Requirements

BIOMEDICAL PHYSIOLOGY AND KINESIOLOGY

and three additional units selected from the following

BISC 405 - Neurobiology (3)

BPK 336 - Histology (3)

BPK 407 - Human Physiology Laboratory (3)

BPK 415 - Neural Control of Movement (3) \*

BPK 446 - Neurological Disorders (3) \*

BPK 448 - Rehabilitation of Movement Control (3) \*

~~BPK 461 - Physiological Aspects of Aging (3)~~

BPK 496 - Directed Study I (3) or BPK 498 - Directed Study II (3)

**Rationale :** BPK 461 is not an appropriate upper division option for the program.

**5. BPK Motion: Remove BPK 461: Physiology of Aging from the list of Upper Division electives in the Behavioural Neuroscience Honours program.**

**To:**

Behavioural Neuroscience Honours

Upper Division Requirements

BIOMEDICAL PHYSIOLOGY AND KINESIOLOGY

and three additional units selected from the following

BISC 405 - Neurobiology (3)

BPK 336 - Histology (3)

BPK 407 - Human Physiology Laboratory (3)

BPK 415 - Neural Control of Movement (3) \*

BPK 446 - Neurological Disorders (3) \*

BPK 448 - Rehabilitation of Movement Control (3) \*

~~BPK 461 - Physiological Aspects of Aging (3)~~

BPK 496 - Directed Study I (3) or BPK 498 - Directed Study II (3)

**Rationale :** BPK 461 is not an appropriate upper division option for the program.

## Chemistry Agenda Item for FacSci UCC meeting July 9/15

**Proposed introduction of a maintenance GPA for Chemistry Majors**

This proposal was unanimously approved by the Chemistry Department at the Departmental meeting of April 29, 2015 and thus is being brought to the Faculty of Science Undergraduate Curriculum Committee for consideration.

**Motion:** To introduce the requirement of a minimum Faculty of Science CGPA level of 2.20 that must be maintained in order for Chemistry Majors to remain in the program, as outlined in the proposed calendar entry below.

**Rationale:**

In order to maintain an acceptable academic standard in students graduating with a Chemistry Major degree from SFU, the Chemistry Department has decided that raising the minimum GPA requirements is appropriate and necessary. While affecting only a very small minority of students, the Department thinks that the introduction of a threshold GPA above the university minimum of 2.0 (specifically to 2.20 for the Faculty of Science CGPA) will send a message both externally and internally regarding expectations for and quality of the Chemistry Major program. Ideally, knowledge of the increased GPA requirements among students would further motivate weaker students to raise their performance. Likewise, setting the GPA requirement higher than the university minimum should make our students *as a group* more competitive in the eyes of potential employers, as it will signal our department's commitment to high academic standards. This change will therefore benefit all SFU Chemistry graduates.

Other programs in Science utilize a maintenance GPA, specifically BPK (2.20 on Science CGPA) and MBB (2.5 on lower division requirements); the current proposal is substantially modeled on the policy currently utilized by BPK.

If implemented in Spring 2015, this proposal would have impacted only 6% of the 228 declared Chemistry Majors and is thus not expected to cause substantial strains to the program as a whole.

Note that this proposal has no impact on Honours students (who already have a 3.0 minimum CGPA requirement in their program). It also will not be applied to students in the Chemistry Minor program or the Chemistry-Earth Sciences or Chemistry-MBB programs.

**Proposed Calendar Entry (to be placed directly prior to Program Requirements Section)****Continuance Requirement for Chemistry Majors**

After a student has completed 20 units in Science, a Science cumulative grade point average (CGPA) of not less than 2.20 is required for continuance as a Chemistry Major. Students whose Science CGPA falls below 2.20, will be sent a warning letter and, if after the subsequent term of study the Science CGPA remains less than 2.20, the students shall be withdrawn from the Chemistry Major. This does not preclude re-entry to the program if the CGPA subsequently recovers. If, after completing 90 or more units, a student's Science CGPA falls below a 2.20, but remains above 2.00, the student will be allowed to complete the Major.

|                |      |        |     |       |                           |
|----------------|------|--------|-----|-------|---------------------------|
| COURSE SUBJECT | EASC | NUMBER | 205 | TITLE | Introduction to Petrology |
|----------------|------|--------|-----|-------|---------------------------|

**INSTRUCTIONS (OVERALL):**

1. Using Microsoft Word draft changes using the following guideline. Paste in box below.
2. Rationale must be included. If more space is needed than provided below, please use the provided text box on page 2 of this document.
3. Indicate term = Fall, Spring, Summer

**TYPE OF CHANGES RECOMMENDED**

Please type 'X' for the appropriate revision(s):

|  |               |  |        |  |       |  |             |   |              |  |          |
|--|---------------|--|--------|--|-------|--|-------------|---|--------------|--|----------|
|  | Course number |  | Credit |  | Title |  | Description | X | Prerequisite |  | Deletion |
|--|---------------|--|--------|--|-------|--|-------------|---|--------------|--|----------|

**WORDING/DESCRIPTION EDITS**

1. Indicate deleted or changed text using striketrough.
2. Indicate added or new text using underline.
3. Equivalent courses: preclusion statement should read:
  - a. Students with credit for x cannot take y for further credit.

Prerequisite: EASC 202, CHEM 122, PHYS 102, or 121 or 126 or 141, and PHYS 130 or ~~134~~ 132 and 133 (unless PHYS 141 taken).

**SAMPLE**POL 223 ~~Canadian-American~~ Political Economy (3)

~~An introductory study of America's~~ Canada's political economy, stressing the interrelated nature of Canada's economic and political life. ~~The course~~ Focuses on current economic problems and policies, taking into account the geographical, historical and political environments. Topics include the resource and industrial structures, research and development, the public sector, fiscal and monetary policy, the role of the state, trade and foreign ownership, energy, regional disparity, corporate concentration and the political economy of federalism.

~~This course is identical to CNS 280 and students cannot take both courses for credit.~~

Students with credit for CNS 280 cannot take POL 223 for further credit.

~~Recommended Pre-requisite:~~ POL 100 or 101W.

Breadth – Social Sciences.

**RATIONALE**

If more space is needed, please use the provided text box on page 2 of this document

PHYS 131 is discontinued in Fall 2015 and replaced with PHYS 132 and PHYS 133.

EFFECTIVE TERM AND YEAR, FOR CHANGES

SUMMER 2016

|                |      |        |     |       |                                    |
|----------------|------|--------|-----|-------|------------------------------------|
| COURSE SUBJECT | EASC | NUMBER | 207 | TITLE | Introduction to Applied Geophysics |
|----------------|------|--------|-----|-------|------------------------------------|

**INSTRUCTIONS (OVERALL):**

1. Using Microsoft Word draft changes using the following guideline. Paste in box below.
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3. Indicate term = Fall, Spring, Summer

**TYPE OF CHANGES RECOMMENDED**

Please type 'X' for the appropriate revision(s):

|               |        |       |             |   |              |          |
|---------------|--------|-------|-------------|---|--------------|----------|
| Course number | Credit | Title | Description | X | Prerequisite | Deletion |
|---------------|--------|-------|-------------|---|--------------|----------|

**WORDING/DESCRIPTION EDITS**

1. Indicate deleted or changed text using strikethrough.
2. Indicate added or new text using underline.
3. Equivalent courses: preclusion statement should read:
  - a. Students with credit for x cannot take y for further credit.

Prerequisite: MATH 152, PHYS 102, or 121 or 126 or 141, and PHYS 130 or ~~131~~ 132 and 133 (unless PHYS 141 taken).

**SAMPLE**

POL 223 ~~Canadian-American~~ Political Economy (3)

~~An introductory study of America's~~ Canada's political economy, stressing the interrelated nature of Canada's economic and political life. ~~The course~~ Focuses on current economic problems and policies, taking into account the geographical, historical and political environments. Topics include the resource and industrial structures, research and development, the public sector, fiscal and monetary policy, the role of the state, trade and foreign ownership, energy, regional disparity, corporate concentration and the political economy of federalism.

~~This course is identical to CNS 280 and students cannot take both courses for credit.~~

Students with credit for CNS 280 cannot take POL 223 for further credit.

Recommended Pre-requisite: POL 100 or 101W.

Breadth – Social Sciences.

**RATIONALE**

If more space is needed, please use the provided text box on page 2 of this document

PHYS 131 is discontinued in Fall 2015 and replaced with PHYS 132 and PHYS 133.

EFFECTIVE TERM AND YEAR, FOR CHANGES SUMMER 2016

## MEMO

Department of  
Molecular Biology &  
Biochemistry

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|           |                                                                |     |
|-----------|----------------------------------------------------------------|-----|
| ATTENTION | Carl Lowenberger, Associate Dean of Science                    | TEL |
| BB        |                                                                |     |
| FROM      | Ingrid Northwood, MBB undergraduate Curriculum Committee Chair |     |
| RE        | Proposed agenda items to July 9, 2015 FOSUCC meeting           |     |
| DATE      | July 27, 2015                                                  |     |

At it's meeting of June 5, 2015, the MBB department approved the following curricular program changes:

- 1: Title change and pre-requisite changes to MBB 481-5, MBB 482-5, MB 483-5. These course, which are taken together, constitute the honours portion of an MBB degree and the titles and pre-reqs have been modified to provide consistency and clarity to students
- 2: Title change to MBB 490-2. The title has been changed to provide consistency among our research and directed readings courses.
- 3: Title change to MBB 491-5. The title has been changed to provide consistency among our research and directed readings courses.
- 4: Title change to MBB 496-6. The title has been changed to provide consistency among our research and directed readings courses

Please place these proposals on the agenda of the next meeting of the Faculty of Science Undergraduate Studies Curriculum Committee

|                |     |        |     |       |                            |
|----------------|-----|--------|-----|-------|----------------------------|
| COURSE SUBJECT | MBB | NUMBER | 491 | TITLE | Undergraduate Research (5) |
|----------------|-----|--------|-----|-------|----------------------------|

## INSTRUCTIONS (OVERALL):

1. Using Microsoft Word draft changes using the following guideline. Paste in box below.
2. Rationale must be included. If more space is needed than provided below, please use the provided text box on page 2 of this document.
3. Indicate term = Fall, Spring, Summer

## TYPE OF CHANGES RECOMMENDED

Please type 'X' for the appropriate revision(s):

| Course number | Credit | x | Title | Description | Prerequisite | Deletion |
|---------------|--------|---|-------|-------------|--------------|----------|
|---------------|--------|---|-------|-------------|--------------|----------|

## WORDING/DESCRIPTION EDITS

1. Indicate deleted or changed text using strikethrough.
2. Indicate added or new text using underline.
3. Equivalent courses: preclusion statement should read:
  - a. Students with credit for x cannot take y for further credit.

Title change: ~~Undergraduate Research~~  
Independent Study Semester (5)

## SAMPLE

POL 223 ~~Canadian-American~~ Political Economy (3)

An introductory study of America's ~~Canada's~~ political economy, stressing the interrelated nature of Canada's economic and political life. ~~The course~~ Focuses on current economic problems and policies, taking into account the geographical, historical and political environments. Topics include the resource and industrial structures, research and development, the public sector, fiscal and monetary policy, the role of the state, trade and foreign ownership, energy, regional disparity, corporate concentration and the political economy of federalism.

~~This course is identical to CNS 280 and students cannot take both courses for credit.~~

Students with credit for CNS 280 cannot take POL 223 for further credit.

~~Recommended Pre-requisite:~~ POL 100 or 101W.

Breadth – Social Sciences.

## RATIONALE

If more space is needed, please use the provided text box on page 2 of this document

Over the years MBB has accumulated quite a bit of inconsistency in the titles of its undergraduate research courses and we are now in the process of standardizing all the titles to make it more clear to students what each course is and what the requirements are.

EFFECTIVE TERM AND YEAR, FOR CHANGES

Fall, Spring, Summer and year (please enter in textbox)

2016 SUMMER

RATIONALE

|                |     |        |     |       |                                                               |
|----------------|-----|--------|-----|-------|---------------------------------------------------------------|
| COURSE SUBJECT | MBB | NUMBER | 481 | TITLE | <b>Individual Study<br/>Semester: Research<br/>Design (5)</b> |
|----------------|-----|--------|-----|-------|---------------------------------------------------------------|

## INSTRUCTIONS (OVERALL):

1. Using Microsoft Word draft changes using the following guideline. Paste in box below.
2. Rationale must be included. If more space is needed than provided below, please use the provided text box on page 2 of this document.
3. Indicate term = Fall, Spring, Summer

## TYPE OF CHANGES RECOMMENDED

Please type 'X' for the appropriate revision(s):

|               |        |   |       |   |             |   |              |          |
|---------------|--------|---|-------|---|-------------|---|--------------|----------|
| Course number | Credit | x | Title | x | Description | x | Prerequisite | Deletion |
|---------------|--------|---|-------|---|-------------|---|--------------|----------|

## WORDING/DESCRIPTION EDITS

1. Indicate deleted or changed text using strikethrough.
2. Indicate added or new text using underline.
3. Equivalent courses: preclusion statement should read:
  - a. Students with credit for x cannot take y for further credit.

Title change: Individual Study Semester-Research-Design Honours Thesis (5)

Description change: Part 1 of a 3-part ~~honors-honours~~ degree program, the individual studies semester (ISS). The ISS provides students with the opportunity to carry out full time laboratory research in molecular biology and biochemistry. The grade for MBB 481 encompasses the research design aspect of the ISS, consisting of the honours thesis a written proposal and final report. Students may not receive credit for both MBB481 and MBB493

Prerequisite change : Enrolment in the MBB or Biological Physics Honors Honours Program, a minimum of 3.0 CGPA and 3.0 UD GPA and permission of the MBB department. Co-requisite: MBB 482-5 and MBB 483-5, Prerequisite MBB 308, MBB 309W and MBB 331

## SAMPLE

POL 223 ~~Canadian-American~~ Political Economy (3)

~~An introductory study of America's~~ Canada's political economy, stressing the interrelated nature of Canada's economic and political life. ~~The course~~ Focuses on current economic problems and policies, taking into account the geographical, historical and political environments. Topics include the resource and industrial structures, research and development, the public sector, fiscal and monetary policy, the role of the state, trade and foreign ownership, energy, regional disparity, corporate concentration and the political economy of federalism.

~~This course is identical to CNS 280 and students cannot take both courses for credit. Students with credit for CNS 280 cannot take POL 223 for further credit.~~

~~Recommended Pre-requisite:~~ POL 100 or 101W.

Breadth – Social Sciences.

## RATIONALE

If more space is needed, please use the provided text box on page 2 of this document

Over the years MBB has accumulated quite a bit of inconsistency in the titles of it's undergraduate research courses and we are now in the process of standardizing all the titles to make it more clear to students what each course is and what the requirements are.

EFFECTIVE TERM AND YEAR, FOR CHANGES

Fall, Spring, Summer and year (please enter in textbox)

2016 SUMMER

RATIONALE

|                |     |        |     |       |                                                           |
|----------------|-----|--------|-----|-------|-----------------------------------------------------------|
| COURSE SUBJECT | MBB | NUMBER | 482 | TITLE | Individual Study<br>Semester: Research<br>Performance (5) |
|----------------|-----|--------|-----|-------|-----------------------------------------------------------|

## INSTRUCTIONS (OVERALL):

1. Using Microsoft Word draft changes using the following guideline. Paste in box below.
2. Rationale must be included. If more space is needed than provided below, please use the provided text box on page 2 of this document.
3. Indicate term = Fall, Spring, Summer

## TYPE OF CHANGES RECOMMENDED

Please type 'X' for the appropriate revision(s):

|  |               |  |        |   |       |   |             |   |              |  |          |
|--|---------------|--|--------|---|-------|---|-------------|---|--------------|--|----------|
|  | Course number |  | Credit | x | Title | x | Description | x | Prerequisite |  | Deletion |
|--|---------------|--|--------|---|-------|---|-------------|---|--------------|--|----------|

## WORDING/DESCRIPTION EDITS

1. Indicate deleted or changed text using strikethrough.
2. Indicate added or new text using underline.
3. Equivalent courses: preclusion statement should read:
  - a. Students with credit for x cannot take y for further credit.

Title change: Individual Study Semester-Research  
Performance Honours Research Performance (5)

Description change : Part 2 of a 3-part ~~honors~~ honours degree program, the individual study semester (ISS). The ISS provides students with the opportunity to carry out full time laboratory research in molecular biology and biochemistry. The grade for MBB 482 encompasses the research performance aspect of the ISS. ~~Students may not receive credit for both MBB 482 and MBB 493.~~

Prerequisite change: Enrolment in the MBB or Biological Physics ~~Honors~~ Honours Program, a minimum of 3.0 CGPA and 3.0 UDGPA and permission of the MBB department. Co-requisite: MBB 481-5 and MBB 483-5, Prerequisite: MBB 308, MBB 309W and MBB 331

## SAMPLE

POL 223 ~~Canadian-American~~ Political Economy (3)

~~An introductory study of America's~~ Canada's political economy, stressing the interrelated nature of Canada's economic and political life. ~~The course~~ Focuses on current economic problems and policies, taking into account the geographical, historical and political environments. Topics include the resource and industrial structures, research and development, the public sector, fiscal and monetary policy, the role of the state, trade and foreign ownership, energy, regional disparity, corporate concentration and the political economy of federalism.

~~This course is identical to CNS 280 and students cannot take both courses for credit.~~  
Students with credit for CNS 280 cannot take POL 223 for further credit.

~~Recommended Pre-requisite:~~ POL 100 or 101W

Breadth – Social Sciences.

## RATIONALE

If more space is needed, please use the provided text box on page 2 of this document

Over the years MBB has accumulated quite a bit of inconsistency in the titles of it's undergraduate research courses and we are now in the process of standardizing all the titles to make it more clear to students what each course is and what the requirements are.



EFFECTIVE TERM AND YEAR, FOR CHANGES

Fall, Spring, Summer and year (please enter in textbox)

RATIONALE

|                |     |        |     |       |                                                     |
|----------------|-----|--------|-----|-------|-----------------------------------------------------|
| COURSE SUBJECT | MBB | NUMBER | 483 | TITLE | Individual Study Semester<br>Research Reporting (5) |
|----------------|-----|--------|-----|-------|-----------------------------------------------------|

## INSTRUCTIONS (OVERALL):

1. Using Microsoft Word draft changes using the following guideline. Paste in box below.
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3. Indicate term = Fall, Spring, Summer

## TYPE OF CHANGES RECOMMENDED

Please type 'X' for the appropriate revision(s):

|  |               |  |        |   |       |   |             |   |              |  |          |
|--|---------------|--|--------|---|-------|---|-------------|---|--------------|--|----------|
|  | Course number |  | Credit | x | Title | x | Description | x | Prerequisite |  | Deletion |
|--|---------------|--|--------|---|-------|---|-------------|---|--------------|--|----------|

## WORDING/DESCRIPTION EDITS

1. Indicate deleted or changed text using strikethrough.
2. Indicate added or new text using underline.
3. Equivalent courses: preclusion statement should read:
  - a. Students with credit for x cannot take y for further credit.

Title change: Independent Study Semester ~~Research Reporting~~ Honours Thesis Defense (5)

Description change: Part 3 of a 3-part ~~honors-honours~~ honours degree program, the individual study semester (ISS). The ISS provides students with the opportunity to carry out full time laboratory research in molecular biology and biochemistry. The grade for MBB 483 encompasses the ~~research-reporting defense~~ defense component of the ISS, ~~Students may not receive credit for both MBB 481 and MBB 493~~

Prerequisite change: Enrolment in the MBB or Biological Physics ~~Honors Honours~~ Honours Program, a minimum of 3.0 CGPA and 3.0 UD GPA and permission of the MBB department. Co-requisite: MBB 481-5 and MBB 482-5, Prerequisite MBB 308, MBB 309W and MBB 331

## SAMPLE

POL 223 ~~Canadian-American~~ Political Economy (3)

~~An introductory study of America's~~ Canada's political economy, stressing the interrelated nature of Canada's economic and political life. ~~The course focuses on~~ current economic problems and policies, taking into account the geographical, historical and political environments. Topics include the resource and industrial structures, research and development, the public sector, fiscal and monetary policy, the role of the state, trade and foreign ownership, energy, regional disparity, corporate concentration and the political economy of federalism.

~~This course is identical to CNS 280 and students cannot take both courses for credit.~~

Students with credit for CNS 280 cannot take POL 223 for further credit.

~~Recommended Pre-requisite:~~ POL 100 or 101W.

Breadth – Social Sciences.

## RATIONALE

If more space is needed, please use the provided text box on page 2 of this document

Over the years MBB has accumulated quite a bit of inconsistency in the titles of it's undergraduate research courses and we are now in the process of standardizing all the titles to make it more clear to students what each course is and what the requirements are.

EFFECTIVE SUMMER 2016

COURSE SUBJECT MBB NUMBER 490 TITLE Directed Study in Advanced Topics Biochemistry (2)

**INSTRUCTIONS (OVERALL):**

1. Using Microsoft Word draft changes using the following guideline. Paste in box below.
2. Rationale must be included. If more space is needed than provided below, please use the provided text box on page 2 of this document.
3. Indicate term = Fall, Spring, Summer

**TYPE OF CHANGES RECOMMENDED**

Please type 'X' for the appropriate revision(s):

| Course number | Credit | x | Title | Description | Prerequisite | Deletion |
|---------------|--------|---|-------|-------------|--------------|----------|
|---------------|--------|---|-------|-------------|--------------|----------|

**WORDING/DESCRIPTION EDITS**

1. Indicate deleted or changed text using strikethrough.
2. Indicate added or new text using underline.
3. Equivalent courses: preclusion statement should read:
  - a. Students with credit for x cannot take y for further credit.

Title change : ~~Directed Study in Advanced Topics Biochemistry~~ Readings in Molecular Biology and Biochemistry (2)

**SAMPLE**

POL 223 ~~Canadian-American~~ Political Economy (3)

~~An introductory study of America's~~ Canada's political economy, stressing the interrelated nature of Canada's economic and political life. ~~The course~~ Focuses on current economic problems and policies, taking into account the geographical, historical and political environments. Topics include the resource and industrial structures, research and development, the public sector, fiscal and monetary policy, the role of the state, trade and foreign ownership, energy, regional disparity, corporate concentration and the political economy of federalism.

~~This course is identical to CNS 280 and students cannot take both courses for credit.~~

Students with credit for CNS 280 cannot take POL 223 for further credit.

Recommended Pre-requisite: POL 100 or 101W.

Breadth – Social Sciences.

**RATIONALE**

If more space is needed, please use the provided text box on page 2 of this document

Over the years MBB has accumulated quite a bit of inconsistency in the titles of its undergraduate research courses and directed readings courses and we are now in the process of standardizing all the titles to make it more clear to students what each course is and what the requirements are

EFFECTIVE SUMMER 2016

|                |     |        |     |       |                                                                      |
|----------------|-----|--------|-----|-------|----------------------------------------------------------------------|
| COURSE SUBJECT | MBB | NUMBER | 496 | TITLE | Joint Honours<br>Undergraduate Directed<br>Readings and Research (6) |
|----------------|-----|--------|-----|-------|----------------------------------------------------------------------|

## INSTRUCTIONS (OVERALL):

1. Using Microsoft Word draft changes using the following guideline. Paste in box below.
2. Rationale must be included. If more space is needed than provided below, please use the provided text box on page 2 of this document.
3. Indicate term = Fall, Spring, Summer

## TYPE OF CHANGES RECOMMENDED

Please type 'X' for the appropriate revision(s):

| Course<br>number | Credit | x | Title | Description | Prerequisite | Deletion |
|------------------|--------|---|-------|-------------|--------------|----------|
|------------------|--------|---|-------|-------------|--------------|----------|

## WORDING/DESCRIPTION EDITS

1. Indicate deleted or changed text using strikethrough.
2. Indicate added or new text using underline.
3. Equivalent courses: preclusion statement should read:
  - a. Students with credit for x cannot take y for further credit.

Title change: ~~Joint Honours Undergraduate Directed Readings and Research- Independent Study Semester Joint Honours MBB-BUS or CMPT-MBB (6)~~

## SAMPLE

POL 223 ~~Canadian-American~~ Political Economy (3)

An introductory study of ~~America's~~ Canada's political economy, stressing the interrelated nature of Canada's economic and political life. ~~The course~~ Focuses on current economic problems and policies, taking into account the geographical, historical and political environments. Topics include the resource and industrial structures, research and development, the public sector, fiscal and monetary policy, the role of the state, trade and foreign ownership, energy, regional disparity, corporate concentration and the political economy of federalism.

~~This course is identical to CNS 280 and students cannot take both courses for credit.~~  
Students with credit for CNS 280 cannot take POL 223 for further credit.

~~Recommended Pre-requisite:~~ POL 100 or 101W.

Breadth – Social Sciences.

## RATIONALE

If more space is needed, please use the provided text box on page 2 of this document

Over the years MBB has accumulated quite a bit of inconsistency in the titles of its undergraduate research courses and we are now in the process of standardizing all the titles to make it more clear to students what each course is and what the requirements are.

EFFECTIVE TERM AND YEAR, FOR CHANGES

Fall, Spring, Summer and year (please enter in textbox)

2016 SUMMER

RATIONALE

## MEMO

Statistics & Actuarial Science  
SC K10545  
8888 University Drive  
Burnaby, BC Canada  
V5A 1S6

TEL: 778.782.3803

FAX: 778.782.4368

[www.stat.sfu.ca](http://www.stat.sfu.ca)

**ATTENTION: Kathryn White, Coordinator  
Academic Programs**

**FROM: Sadika Jungic, Manager Academic and  
Administrative Services**

**TEL: 23665**

**RE: Course Changes – STAT 270, 285, 300W and 305**

**Department of Statistics & Actuarial Science**

**DATE: June 23, 2015**

Hi Kathryn,

Please find attached four Course Change forms for our STAT 270, 285, 300W and 305 Change to be considered for the next FS UCC meeting.

These changes were discussed and approved at the departmental meeting held on June 19, 2015.

Please let me know if you have any questions on this matter or if there are any other relevant requirements at this time.

  
\_\_\_\_\_  
Regards,  
Sadika Jungic, Manager  
Academic and Administrative Services  
Department of Statistics and Actuarial Science

|                |      |        |     |       |                                            |
|----------------|------|--------|-----|-------|--------------------------------------------|
| COURSE SUBJECT | STAT | NUMBER | 270 | TITLE | Introduction to Probability and Statistics |
|----------------|------|--------|-----|-------|--------------------------------------------|

**INSTRUCTIONS (OVERALL):**

1. Using Microsoft Word draft changes using the following guideline. Paste in box below.
2. Rationale must be included. If more space is needed than provided below, please use the provided text box on page 2 of this document.
3. Indicate term = Fall, Spring, Summer

**TYPE OF CHANGES RECOMMENDED**

Please type 'X' for the appropriate revision(s):

|  |               |  |        |  |       |  |             |   |              |  |          |
|--|---------------|--|--------|--|-------|--|-------------|---|--------------|--|----------|
|  | Course number |  | Credit |  | Title |  | Description | x | Prerequisite |  | Deletion |
|--|---------------|--|--------|--|-------|--|-------------|---|--------------|--|----------|

**WORDING/DESCRIPTION EDITS**

1. Indicate deleted or changed text using strike through.
2. Indicate added or new text using underline.
3. Equivalent courses: preclusion statement should read:
  - a. Students with credit for x cannot take y for further credit.

Prerequisite or Corequisite: MATH  
152 or 155 or 158

**SAMPLE**POL 223 ~~Canadian-American~~ Political Economy (3)

An introductory study of ~~America's~~ Canada's political economy, stressing the interrelated nature of Canada's economic and political life. ~~The course~~ Focuses on current economic problems and policies, taking into account the geographical, historical and political environments. Topics include the resource and industrial structures, research and development, the public sector, fiscal and monetary policy, the role of the state, trade and foreign ownership, energy, regional disparity, corporate concentration and the political economy of federalism.

~~This course is identical to CNS 280 and students cannot take both courses for credit.~~

Students with credit for CNS 280 cannot take POL 223 for further credit.

~~Recommended Pre-requisite:~~ POL 100 or 101W.

Breadth – Social Sciences.

**RATIONALE**

If more space is needed, please use the provided text box on page 2 of this document

According to the Calendar a Corequisite is: 'A requirement that must be fulfilled AT THE SAME TIME as enrollment in the class' which is not the case for STAT 270. Courses taken in prior semesters are equally accepted as prerequisites.  
EFFECTIVE SUMMER 2016

|                |      |        |     |       |                                                   |
|----------------|------|--------|-----|-------|---------------------------------------------------|
| COURSE SUBJECT | STAT | NUMBER | 285 | TITLE | Intermediate<br>Probability and<br>Statistics (3) |
|----------------|------|--------|-----|-------|---------------------------------------------------|

**INSTRUCTIONS (OVERALL):**

1. Using Microsoft Word draft changes using the following guideline. Paste in box below.
2. Rationale must be included. If more space is needed than provided below, please use the provided text box on page 2 of this document.
3. Indicate term = Fall, Spring, Summer

**TYPE OF CHANGES RECOMMENDED**

Please type 'X' for the appropriate revision(s):

|                          |               |                          |        |                          |       |                                     |             |                          |              |                          |          |
|--------------------------|---------------|--------------------------|--------|--------------------------|-------|-------------------------------------|-------------|--------------------------|--------------|--------------------------|----------|
| <input type="checkbox"/> | Course number | <input type="checkbox"/> | Credit | <input type="checkbox"/> | Title | <input checked="" type="checkbox"/> | Description | <input type="checkbox"/> | Prerequisite | <input type="checkbox"/> | Deletion |
|--------------------------|---------------|--------------------------|--------|--------------------------|-------|-------------------------------------|-------------|--------------------------|--------------|--------------------------|----------|

**WORDING/DESCRIPTION EDITS**

1. Indicate deleted or changed text using strikethrough.
2. Indicate added or new text using underline.
3. Equivalent courses: preclusion statement should read:
  - a. Students with credit for x cannot take y for further credit.

This course is a continuation of STAT 270. Review of probability models, procedures for statistical inference from survey results and experimental data. Statistical model building. Elementary design of experiments and regression methods. Introduction to categorical data analysis. ~~This course may not be taken for credit by students who have credit for STAT 330 prior to Fall 2003.~~

**SAMPLE**

POL 223 ~~Canadian-American~~ Political Economy (3)

~~An introductory study of America's~~ Canada's political economy, stressing the interrelated nature of Canada's economic and political life. ~~The course~~ Focuses on current economic problems and policies, taking into account the geographical, historical and political environments. Topics include the resource and industrial structures, research and development, the public sector, fiscal and monetary policy, the role of the state, trade and foreign ownership, energy, regional disparity, corporate concentration and the political economy of federalism.

~~This course is identical to CNS 280 and students cannot take both courses for credit.~~

Students with credit for CNS 280 cannot take POL 223 for further credit.

~~Recommended Pre-requisite:~~ POL 100 or 101W.

Breadth – Social Sciences.

**RATIONALE**

If more space is needed, please use the provided text box on page 2 of this document

It's been more than 10 year since the preclusion was imposed and it is now redundant since STAT 285 is a prerequisite for STAT 330.  
Therefore, students technically can not register for STAT 285 if they have STAT 330 on their record.

## EFFECTIVE TERM AND YEAR, FOR CHANGES

Fall, Spring, Summer and year (please enter in textbox)

2016

SUMMER

RATIONALE

|                |      |        |      |       |                                 |
|----------------|------|--------|------|-------|---------------------------------|
| COURSE SUBJECT | STAT | NUMBER | 300W | TITLE | Statistics<br>Communication (3) |
|----------------|------|--------|------|-------|---------------------------------|

## INSTRUCTIONS (OVERALL):

1. Using Microsoft Word draft changes using the following guideline. Paste in box below.
2. Rationale must be included. If more space is needed than provided below, please use the provided text box on page 2 of this document.
3. Indicate term = Fall, Spring, Summer

## TYPE OF CHANGES RECOMMENDED

Please type 'X' for the appropriate revision(s):

|                          |               |                          |        |                          |       |                          |             |                                     |              |                          |          |
|--------------------------|---------------|--------------------------|--------|--------------------------|-------|--------------------------|-------------|-------------------------------------|--------------|--------------------------|----------|
| <input type="checkbox"/> | Course number | <input type="checkbox"/> | Credit | <input type="checkbox"/> | Title | <input type="checkbox"/> | Description | <input checked="" type="checkbox"/> | Prerequisite | <input type="checkbox"/> | Deletion |
|--------------------------|---------------|--------------------------|--------|--------------------------|-------|--------------------------|-------------|-------------------------------------|--------------|--------------------------|----------|

## WORDING/DESCRIPTION EDITS

1. Indicate deleted or changed text using strikethrough.
2. Indicate added or new text using underline.
3. Equivalent courses: preclusion statement should read:
  - a. Students with credit for x cannot take y for further credit.

Prerequisite or Corequisite: STAT 350.

## SAMPLE

POL 223 ~~Canadian-American~~ Political Economy (3)

~~An introductory study of America's~~ Canada's political economy, stressing the interrelated nature of Canada's economic and political life. ~~The course~~ Focuses on current economic problems and policies, taking into account the geographical, historical and political environments. Topics include the resource and industrial structures, research and development, the public sector, fiscal and monetary policy, the role of the state, trade and foreign ownership, energy, regional disparity, corporate concentration and the political economy of federalism.

~~This course is identical to CNS 280 and students cannot take both courses for credit.~~

Students with credit for CNS 280 cannot take POL 223 for further credit.

~~Recommended Pre-requisite:~~ POL 100 or 101W

Breadth – Social Sciences.

## RATIONALE

If more space is needed, please use the provided text box on page 2 of this document

According to the Calendar a Corequisite is: 'A requirement that must be fulfilled AT THE SAME TIME as enrollment in the class' which is not the case for STAT 300W. STAT 350 taken in prior semesters are equally accepted as prerequisites.

EFFECTIVE SUMMER 2016

|                |      |        |     |       |                                                                         |
|----------------|------|--------|-----|-------|-------------------------------------------------------------------------|
| COURSE SUBJECT | STAT | NUMBER | 305 | TITLE | Introduction to<br>Biostatistical<br>Methods for Health<br>Sciences (3) |
|----------------|------|--------|-----|-------|-------------------------------------------------------------------------|

**INSTRUCTIONS (OVERALL):**

1. Using Microsoft Word draft changes using the following guideline. Paste in box below.
2. Rationale must be included. If more space is needed than provided below, please use the provided text box on page 2 of this document.
3. Indicate term = Fall, Spring, Summer

**TYPE OF CHANGES RECOMMENDED**

Please type 'X' for the appropriate revision(s):

|               |        |       |             |   |              |          |
|---------------|--------|-------|-------------|---|--------------|----------|
| Course number | Credit | Title | Description | X | Prerequisite | Deletion |
|---------------|--------|-------|-------------|---|--------------|----------|

**WORDING/DESCRIPTION EDITS**

1. Indicate deleted or changed text using strike through.
2. Indicate added or new text using underline.
3. Equivalent courses: preclusion statement should read:
  - a. Students with credit for x cannot take y for further credit.

Prerequisite: ~~STAT 201 or 203~~ any STAT course (except STAT 100), or BUEC 232, or ARCH 376.  
Statistics major and honors students may not use this course to satisfy the required number of elective units of upper division statistics. However, they may include the course to satisfy the total number of required units of upper division credit.

**SAMPLE**

POL 223 ~~Canadian-American~~ Political Economy (3)

~~An introductory study of America's~~ Canada's political economy, stressing the interrelated nature of Canada's economic and political life. ~~The course~~ Focuses on current economic problems and policies, taking into account the geographical, historical and political environments. Topics include the resource and industrial structures, research and development, the public sector, fiscal and monetary policy, the role of the state, trade and foreign ownership, energy, regional disparity, corporate concentration and the political economy of federalism.

~~This course is identical to CNS 280 and students cannot take both courses for credit.~~

Students with credit for CNS 280 cannot take POL 223 for further credit.

~~Recommended Pre-requisite:~~ POL 100 or 101W.

Breadth – Social Sciences.

**RATIONALE**

If more space is needed, please use the provided text box on page 2 of this document

Students transferring from colleges who want to take a STAT minor or a Health Science major (introduced in Spring 2013) often have an introductory STAT class which transfers to STAT 101 or STAT 270. We do not expect them to go back and take STAT 201 or 203 (for which, in some cases, they would not receive further credit).

Any introductory statistics course (except STAT 100) will give students a sufficient background preparation for STAT 305.

EFFECTIVE TERM AND YEAR, FOR CHANGES

Fall, Spring, Summer and year (please enter in textbox)

; 2016 SUMMER

RATIONALE

|                |      |        |     |       |                                                                       |
|----------------|------|--------|-----|-------|-----------------------------------------------------------------------|
| COURSE SUBJECT | MATH | NUMBER | 125 | TITLE | Introduction to mathematical methods in the physical sciences - I (3) |
|----------------|------|--------|-----|-------|-----------------------------------------------------------------------|

## INSTRUCTIONS (OVERALL):

1. Using Microsoft Word draft changes using the following guideline. Paste in box below.
2. Rationale must be included. If more space is needed than provided below, please use the provided text box on page 2 of this document.
3. Indicate term = Fall, Spring, Summer

## TYPE OF CHANGES RECOMMENDED

Please type 'X' for the appropriate revision(s):

|  |               |  |        |  |       |   |             |   |              |  |          |
|--|---------------|--|--------|--|-------|---|-------------|---|--------------|--|----------|
|  | Course number |  | Credit |  | Title | X | Description | X | Prerequisite |  | Deletion |
|--|---------------|--|--------|--|-------|---|-------------|---|--------------|--|----------|

## WORDING/DESCRIPTION EDITS

1. Indicate deleted or changed text using strickethrough.
2. Indicate added or new text using underline.
3. Equivalent courses: preclusion statement should read:
  - a. Students with credit for x cannot take y for further credit.

~~Review of sequences and series, complex numbers and link to polar coordinates, vectors and parametric curves, introduction to multivariate integration, solution of first and second order ODE, linear independence, introduction to Fourier Series. Approximation algorithms for simple ODE systems.~~

Review of limits and differentiation. Complex numbers and link to polar coordinates. Mathematics of kinematics, including vectors and parametric curves. Area and Riemann sums. Definite and indefinite integration. Fundamental Theorems of Calculus. Techniques of integration and approximation of integrals. Series and tests of convergence. Taylor series. Solution of first and constant-coefficient second order ODE.

Prerequisite: Math 152 or equivalent MATH 150 or MATH 151 or MATH 154 with a grade of at least B or IB Mathematics HL with a score of 6 or better or AP Calculus AB or BC with a grade of at least 4, or BC Calculus 12 and a pass on the Calculus Challenge Exam. And Permission of the Department. Corequisite Recommended  
corequisite: Physics 125.

## SAMPLE

POL 223 ~~Canadian~~ American Political Economy (3)

~~An introductory study of America's~~ Canada's political economy, stressing the interrelated nature of Canada's economic and political life. ~~The course~~ Focuses on current economic problems and policies, taking into account the geographical, historical and political environments. Topics include the resource and industrial structures, research and development, the public sector, fiscal and monetary policy, the role of the state, trade and foreign ownership, energy, regional disparity, corporate concentration and the political economy of federalism.

~~This course is identical to CNS 280 and students cannot take both courses for credit.~~

Students with credit for CNS 280 cannot take POL 223 for further credit.

Recommended-Pre-requisite: POL 100 or 101W.

Breadth – Social Sciences.

## RATIONALE

If more space is needed, please use the provided text box on page 2 of this document

(Please see page 2 below)



EFFECTIVE TERM AND YEAR, FOR CHANGES

Fall, Spring, Summer and year (please enter in textbox)

Fall 2016

RATIONALE

More space if needed.

The goal of MATH 125 and 126 when they were initially proposed was to recruit good students who have taken Calculus and AP Physics in high school to take an enriched first year Physics sequence (PHYS 125 then PHYS 126) together with an enriched Calculus sequence (MATH 125 then MATH 126). We set the prerequisite for MATH 125 to be MATH 152 Calculus II or equivalents (AP Calculus BC or IB Calculus HL). Only 2 students out of the 6 who eventually took MATH 125 for the first offering in the Fall of 2014 met that prerequisite.

The proposed changes change the content of MATH 125 to cover integral calculus, so that students who have taken only differential calculus (MATH 151 or high school equivalent) can take MATH 125. Students who pass MATH 125 will then be able to take Mathematics courses which list MATH 152 as a prerequisite.

PHYS 125, which was previously listed as a corequisite, is now recommended, so that Chemistry majors and Applied Mathematics majors can also take MATH 125. They would normally take PHYS 120 together with MATH 125 and PHYS 121 with MATH 126. In this way we hope to build the enrollment in MATH 125 to 30 students.

|                |      |        |     |       |                                                                        |
|----------------|------|--------|-----|-------|------------------------------------------------------------------------|
| COURSE SUBJECT | MATH | NUMBER | 126 | TITLE | Introduction to mathematical methods in the physical sciences - II (3) |
|----------------|------|--------|-----|-------|------------------------------------------------------------------------|

## INSTRUCTIONS (OVERALL):

1. Using Microsoft Word draft changes using the following guideline. Paste in box below.
2. Rationale must be included. If more space is needed than provided below, please use the provided text box on page 2 of this document.
3. Indicate term = Fall, Spring, Summer

## TYPE OF CHANGES RECOMMENDED

Please type 'X' for the appropriate revision(s):

|                          |               |                          |        |                          |       |                                     |   |             |                                     |   |              |                          |          |
|--------------------------|---------------|--------------------------|--------|--------------------------|-------|-------------------------------------|---|-------------|-------------------------------------|---|--------------|--------------------------|----------|
| <input type="checkbox"/> | Course number | <input type="checkbox"/> | Credit | <input type="checkbox"/> | Title | <input checked="" type="checkbox"/> | X | Description | <input checked="" type="checkbox"/> | X | Prerequisite | <input type="checkbox"/> | Deletion |
|--------------------------|---------------|--------------------------|--------|--------------------------|-------|-------------------------------------|---|-------------|-------------------------------------|---|--------------|--------------------------|----------|

## WORDING/DESCRIPTION EDITS

1. Indicate deleted or changed text using strikethrough.
2. Indicate added or new text using underline.
3. Equivalent courses: preclusion statement should read:
  - a. Students with credit for x cannot take y for further credit.

Partial differentiation and applications. Taylor series of functions of two variables. Method of characteristics for 1-D transport and wave equations. Similarity solutions including plane waves, traveling waves and scaling solutions, with applications in the physical sciences. Introduction to vector calculus, including differentiation, decomposition via potentials. Curvilinear coordinate systems. Multivariate integration, including Green's, the Stokes and the Divergence theorem. Introduction to abstract vector spaces. Linear independence. Inner products and orthogonality. Some applications of infinite dimensional vector spaces. Fourier Series.

Prerequisite: A grade of C+ or higher in Math 125 or Math 152 AND Physics 125. And permission of the Department.  
Corequisite Recommended corequisite: Physics 126.

## SAMPLE

POL 223 ~~Canadian-American~~ Political Economy (3)

~~An introductory study of America's~~ Canada's political economy, stressing the interrelated nature of Canada's economic and political life. ~~The course~~ Focuses on current economic problems and policies, taking into account the geographical, historical and political environments. Topics include the resource and industrial structures, research and development, the public sector, fiscal and monetary policy, the role of the state, trade and foreign ownership, energy, regional disparity, corporate concentration and the political economy of federalism.

~~This course is identical to CNS 280 and students cannot take both courses for credit.~~

Students with credit for CNS 280 cannot take POL 223 for further credit.

~~Recommended Pre-requisite:~~ POL 100 or 101W.

Breadth - Social Sciences.

## RATIONALE

If more space is needed, please use the provided text box on page 2 of this document

(Please see page 2 below)

EFFECTIVE FALL 2016

More space if needed.

The goal of MATH 125 and 126 when they were initially proposed was to recruit good students who have taken Calculus and AP Physics in high school to take an enriched first year Physics sequence (PHYS 125 then PHYS 126) together with an enriched Calculus sequence (MATH 125 then MATH 126). We set the prerequisite for MATH 125 to be MATH 152 Calculus II or equivalents (AP Calculus BC or IB Calculus HL). Only 2 students out of the 6 who eventually took MATH 125 for the first offering in the Fall of 2014 met that prerequisite, and so the course content and prerequisites for MATH 125 are being modified to suit a wider group of students. Students who pass MATH 125 will now be able to take Mathematics courses which list MATH 152 as a prerequisite, and MATH 152 has now been added as an alternative prerequisite for MATH 126.

The proposed changes change the content of MATH 125 to cover integral calculus, so that students who have taken only differential calculus (MATH 151 or high school equivalent) can take MATH 125. The course material for MATH 126 is being adjusted accordingly, to include some material that is no longer contained in the modified MATH 125.

PHYS 125 is no longer a required corequisite for MATH 125, and is thus no longer an appropriate prerequisite for MATH 126.

PHYS 126, which was previously listed as a corequisite for MATH 126, is now recommended, so that Chemistry majors and Applied Mathematics majors can also take MATH 126. They would normally take PHYS 120 together with MATH 125 and PHYS 121 with MATH 126. In this way we hope to build the enrollment in MATH 126 to 30 students.