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**MEMORANDUM**

| | | | |
|---|---|---|---|
| **ATTENTION** | Senate | **DATE** | January 10, 2014 |
| **FROM** | Gordon Myers, Chair<br>Senate Committee on<br>Undergraduate Studies | **PAGES** | 1/2 |
| **RE:** | Faculty of Science (SCUS 14-03) | | |

For information:

Acting under delegated authority at its meeting of January 9, 2014 SCUS approved the following curriculum revisions effective Fall 2014.

1. Department of Statistics and Actuarial Science (SCUS 14-03a)

   (i) Prerequisite change to STAT 101, 201, 203, 380

2. Department of Earth Sciences (SCUS 14-03b)

   (i) Prerequisite change to EASC 306

3. Department of Molecular Biology and Biochemistry (SCUS 14-03c)

   (i) Course number change to MBB 300
   (ii) Prerequisite change to MBB 441, 442, 461, 462

4. Department of Chemistry (SCUS 14-03d)

   (i) New Course Proposal: CHEM 484-10, Two-Semester Undergraduate Research

5. Department of Physics (SCUS 14-03e)

   (i) Description and prerequisite change to PHYS 125, 126
   (ii) Credit and description change to PHYS 432
   (iii) Prerequisite change for PHYS 102

6. Department of Mathematics (SCUS 14-03f)

(i) New Course Proposals:
- MATH 125-3, Introduction to Mathematical Methods in the Physical Sciences I
- MATH 126-3, Introduction to Mathematical Methods in the Physical Sciences II

(ii) Course deletion of MACM 202

7. Biomedical Physiology and Kinesiology (SCUS 14-03g)

(i) Requirement changes to the Behavioral Neuroscience Major and Honors Programs

(ii) Prerequisite change to BPK 326, 306

8. Department of Biological Sciences (SCUS 14-03h)

(i) New Course Proposal: BISC 298-3, Introduction to Undergraduate Research

SIMON FRASER UNIVERSITY

Office of the Dean/

MEMORANDUM

To: Jo Hinchliffe
Senate Committee on
Undergraduate Studies

From: George Agnes, Associate Dean, Academic
Faculty of Science
UG Curriculum Committee

Subject: Faculty of Science Agenda Items for SCUS

Date: December 22, 2013

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The Undergraduate Curriculum Committee in the Faculty of Science has approved the following business items;

1. **Department of STATISTICS AND ACTUARIAL SCIENCE (STAT)**
   - **1.1) STAT 380; Motion – change to the prerequisite**
   - **1.2) STAT 101, STAT 201, and STAT 203; Motion – change to the description of these courses (update with respect to language)**

2. **Department of EARTH SCIENCES (EASC)**
   - **2.1) EASC 306; Motion –change to the prerequisite**

3. **Department of MOLECULAR BIOLOGY AND BIOCHEMISTRY (MBB)**
   - **3.1 MBB 300; Motion – change of name (to MBB 400)**
   - **3.2 MBB 441, MBB 442, MBB 461, MBB 462; Motion - changes to the prerequisites for these courses**

4. **Department of CHEMISTRY (CHEM)**
   - **4.1 CHEM 484; Motion - new course proposal**

5. **Department of PHYSICS (PHYS)**
   - **5.1 PHYS 125, PHYS 126; Motion – similar changes to the description and prerequisite**
   - **5.2 PHYS 432; Motion – change to prerequisite**

6. Department of MATHEMATICS (MATH)
    - 6.1 Calendar language to MATH program descriptions; Motion - add CMPT 130 and CMPT 135 as eligible options to existing MATH major and honors programs
    - 6.2 Calendar language to MATH program descriptions; Motion - add PHYS 140 and PHYS 141 to existing MATH major and honors programs
    - 6.3 Calendar language to MACM program descriptions (requirements for computing sciences & updates to lower division and upper division course requirements); Motion - add CMPT 127 and other updates to MACM major and honors programs
    - 6.4 New course proposals; MATH 125 and MATH 126; Motion – approve the two new course proposals
    - 6.5 Course deletion; MACM 202; Motion – delete this course

7. Department of BIOMEDICAL PHYSIOLOGY AND KINESIOLOGY (BPK)
    - 7.1 Calendar changes to Behavioral Neuroscience Major & Honors Program; Motion – approve calendar entry changes to theses programs
    - 7.2 BPK 326; Motion – change to the prerequisite
    - 7.3 BPK 306; Motion change to the prerequisite
    - 7.4 Updates to calendar language for Biomedical Physiology Major & Honors programs; Motion – approve calendar entry changes to these programs

8. Department of Biological Sciences (BISC)
    - 8.1 BISC 298; Motion – new course proposal

Please place these items on the agenda of the next meeting of the Senate Committee on Undergraduate Studies.

Thank you.

George Agnes

SFU

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

# COURSE CHANGE/DELETION

## EXISTING COURSE, CHANGES RECOMMENDED

Please check appropriate revision(s):

☐ Course number ☐ Credit ☐ Title ☐ Description ■ Prerequisite ☐ Course deletion ☐ Learning Outcomes

Indicate number of hours for: Lecture 3 Seminar _____ Tutorial _____ Lab _____

**FROM**
Course Subject/Number STAT 101
Credits 3

**TO**
Course Subject/Number _____
Credits _____

**TITLE**

(1) LONG title for calendar and schedule, no more than 100 characters including spaces and punctuation.

**FROM:**

Introduction to Statistics

**TO:**

(2) SHORT title for enrollment and transcript, no more than 30 characters including spaces and punctuation.

**FROM:**

**TO:**

**DESCRIPTION**
**FROM:**

**DESCRIPTION**
**TO:**

**PREREQUISITE**

Does this course replicate the content of a previously approved course to such an extent that students should not receive credit for both courses? If so, this should be **noted in the prerequisite**.

**FROM:** Students with credit for ARCH 376, BUEC 232 (formerly 332) or STAT 270 (formerly MATH 272 and 371) may not subsequently receive credit for STAT 101-3. Students with credit for STAT 102, 201, 203 (formerly STAT 103), 301, MATH 101 or 102 may not take STAT 101 for further credit.

**PREREQUISITE**

**TO:** Students with credit for ~~either~~ ANY OF ARCH 376, BUEC 232, STAT 201, 203 or 270 may not subsequently receive credit for STAT 101-3.

**LEARNING OUTCOMES**

**RATIONALE**

To remove old, non-existing, courses from the Calendar course descriptions.

Effective term and year Fall 2014

SFU

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION

**EXISTING COURSE, CHANGES RECOMMENDED**

Please check appropriate revision(s):

☐ Course number ☐ Credit ☐ Title ☐ Description ☒ Prerequisite ☐ Course deletion ☐ Learning Outcomes

Indicate number of hours for: Lecture 3 Seminar _____ Tutorial _____ Lab _____

**FROM**
Course Subject/Number STAT 201
Credits 3

**TO**
Course Subject/Number _____
Credits _____

**TITLE**

(1) LONG title for calendar and schedule, no more than 100 characters including spaces and punctuation.

**FROM:**

Statistics for the Life Sciences

**TO:**

(2) SHORT title for enrollment and transcript, no more than 30 characters including spaces and punctuation.

**FROM:**

**TO:**

**DESCRIPTION**
**FROM:**

**DESCRIPTION**
**TO:**

**PREREQUISITE**

Does this course replicate the content of a previously approved course to such an extent that students should not receive credit for both courses? If so, this should be **noted in the prerequisite**.

**FROM:** Prerequisite: 30 units. Students with credit for STAT 101, 102, 203 (formerly 103), 270 (formerly MATH 272) or 301 may not take STAT 201 for further credit.

**PREREQUISITE**

**TO:** Prerequisite: 30 units. Students with credit for ~~either~~ ANY OF STAT 101, 203 or 270 may not take STAT 201 for further credit.

**LEARNING OUTCOMES**

**RATIONALE**

To remove old, non-existing, courses from the Calendar course descriptions.

Effective term and year Fall 2014

SFU

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

# COURSE CHANGE/DELETION

## EXISTING COURSE, CHANGES RECOMMENDED

Please check appropriate revision(s):

☐ Course number ☐ Credit ☐ Title ☐ Description ■ Prerequisite ☐ Course deletion ☐ Learning Outcomes

Indicate number of hours for: Lecture 3 Seminar _____ Tutorial _____ Lab _____

**FROM**
Course Subject/Number STAT 203
Credits 3

**TO**
Course Subject/Number _____
Credits _____

**TITLE**

(1) LONG title for calendar and schedule, no more than 100 characters including spaces and punctuation.

**FROM:**

Introduction to Statistics for the Social Sciences

**TO:**

(2) SHORT title for enrollment and transcript, no more than 30 characters including spaces and punctuation.

**FROM:**

**TO:**

**DESCRIPTION**
**FROM:**

**DESCRIPTION**
**TO:**

**PREREQUISITE**

Does this course replicate the content of a previously approved course to such an extent that students should not receive credit for both courses? If so, this should be **noted in the prerequisite**.

**FROM:** Students with credit for STAT 101, 102, 103, 201, 270, ARCH 376 or, BUEC 232 (formerly 332), may not subsequently receive credit for this course. Recommended: a research methods course such as SA 255, CRIM 120, POL 213 or equivalent is recommended prior to taking STAT 203.

**PREREQUISITE**

**TO:** Students with credit for ~~either~~ ANY OF STAT 101, 201, 270, ARCH 376 or BUEC 232 may not subsequently receive credit for this course. Recommended: a research methods course such as SA 255, CRIM 220, POL 213 or equivalent is recommended prior to taking STAT 203.

**LEARNING OUTCOMES**

**RATIONALE**

To remove old, non-existing, courses from the Calendar course descriptions.

Effective term and year Fall 2014

SFU

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION

**EXISTING COURSE, CHANGES RECOMMENDED**

Please check appropriate revision(s):

☐ Course number ☐ Credit ☐ Title ☐ Description ■ Prerequisite ☐ Course deletion ☐ Learning Outcomes

Indicate number of hours for: Lecture _____ Seminar _____ Tutorial _____ Lab _____

**FROM**
Course Subject/Number STAT 380

Credits _____

**TO**
Course Subject/Number _____

Credits _____

**TITLE**

(1) LONG title for calendar and schedule, no more than 100 characters including spaces and punctuation.

**FROM:**

**TO:**

(2) SHORT title for enrollment and transcript, no more than 30 characters including spaces and punctuation.

**FROM:**

**TO:**

**DESCRIPTION**
**FROM:**

**DESCRIPTION**
**TO:**

**PREREQUISITE**

Does this course replicate the content of a previously approved course to such an extent that students should not receive credit for both courses? If so, this should be **noted in the prerequisite**.

**FROM:** STAT 330

**PREREQUISITE**

**TO:** STAT 330, or all of: STAT 285, MATH 208, and MATH 251.

**LEARNING OUTCOMES**

**RATIONALE**

Having STAT 330 as the only prerequisite for STAT 380 is preventing students in the Operations Research and in the Management and Systems Scinece programs to take STAT 380. The students in these two programs are not required to take STAT 330.
STAT 380 is a required course for the MSSC program and one of four required from the list of five courses for the OR program.

Effective term and year Spring 2015

SFU

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

# COURSE CHANGE/DELETION

**EXISTING COURSE, CHANGES RECOMMENDED**

Please check appropriate revision(s):

☐ Course number ☐ Credit ☐ Title ☐ Description ■ Prerequisite ☐ Course deletion ☐ Learning Outcomes

Indicate number of hours for: Lecture _____ Seminar _____ Tutorial _____ Lab _____

**FROM**
Course Subject/Number EASC 306

Credits 3

**TO**
Course Subject/Number _____

Credits _____

**TITLE**

(1) LONG title for calendar and schedule, no more than 100 characters including spaces and punctuation.

**FROM:**

Field Geology II

**TO:**

(2) SHORT title for enrollment and transcript, no more than 30 characters including spaces and punctuation.

**FROM:**

**TO:**

**DESCRIPTION**
**FROM:**

**DESCRIPTION**
**TO:**

**PREREQUISITE**

Does this course replicate the content of a previously approved course to such an extent that students should not receive credit for both courses? If so, this should be **noted in the prerequisite**.

**FROM:** EASC 201, 204, 205, 206

**PREREQUISITE**

**TO:** Prerequisite/Corequisite: EASC 201, 204, 205, and 206

**LEARNING OUTCOMES**

**RATIONALE**

This is to correct an error that occurred in a previous course change - the course had and should remain prerequisite/corequisite of EASC 201, 204, 205, and 206.

Effective term and year Spring 2014

SFU

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION

**EXISTING COURSE, CHANGES RECOMMENDED**

Please check appropriate revision(s):

☒ Course number ☐ Credit ☐ Title ☐ Description ☐ Prerequisite ☐ Course deletion ☐ Learning Outcomes

Indicate number of hours for: Lecture 2 Seminar _____ Tutorial _____ Lab _____

**FROM**
Course Subject/Number MBB300

**TO**
Course Subject/Number MBB400

Credits 1

Credits 1

**TITLE**

(1) LONG title for calendar and schedule, no more than 100 characters including spaces and punctuation.

**FROM:**

Selected Topics in Biotechnology and Business

**TO:**

(2) SHORT title for enrollment and transcript, no more than 30 characters including spaces and punctuation.

**FROM:**

**TO:**

**DESCRIPTION**
**FROM:**

**DESCRIPTION**
**TO:**

**PREREQUISITE**

Does this course replicate the content of a previously approved course to such an extent that students should not receive credit for both courses? If so, this should be **noted in the prerequisite**.

**FROM:**

**PREREQUISITE**
**TO:**

**LEARNING OUTCOMES**

Gain an overall picture of the biotechnology industry.
Understand it's relationship to universities, research, governments, pharmaceutical industry, venture capital sector and business community.
Be able to discuss and write about these issues with competance.

**RATIONALE**

MBB300 has been an integral and important part of the MBB-BUS JMA and because of it's value we would like to make it accessible to more students including graduate students and therefore need to change the course number to 400 so that we can include a graduate component. Moreover, MBB has added a new course, MBB 342: introduction to Genomics and Bioinformatics that was created to serve as an introductory course for all our "omics" courses so that overlap of introductory material could be removed and more sophisticated topics added to the 400 level "omics" courses (MBB441, MBB442, MBB461, MBB462). The computer science course pre-requisite for two of these courses (MBB441, MBB442) has been removed because it is now a pre-requisite for MBB342.

Effective term and year Fall 2014/1147

SFU

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION

**EXISTING COURSE, CHANGES RECOMMENDED**

Please check appropriate revision(s):

☐ Course number ☐ Credit ☐ Title ☐ Description ■ Prerequisite ☐ Course deletion ☐ Learning Outcomes

Indicate number of hours for: Lecture _____ Seminar _____ Tutorial _____ Lab _____

**FROM**
Course Subject/Number MBB 441

**TO**
Course Subject/Number _____

Credits _____

Credits _____

**TITLE**

(1) LONG title for calendar and schedule, no more than 100 characters including spaces and punctuation.

**FROM:**

Bioinformatics

**TO:**

(2) SHORT title for enrollment and transcript, no more than 30 characters including spaces and punctuation.

**FROM:**

**TO:**

**DESCRIPTION**
**FROM:**

**DESCRIPTION**
**TO:**

**PREREQUISITE**

Does this course replicate the content of a previously approved course to such an extent that students should not receive credit for both courses? If so, this should be **noted in the prerequisite**.

**FROM:** MBB 331and an introductory computer science course or equivalent

**PREREQUISITE**

**TO:** MBB 331 and MBB 342

**LEARNING OUTCOMES**

**RATIONALE**

MBB has added a new course, MBB 342: introduction to Genomics and Bioinformatics that was created to serve as an introductory course for all our "omics" courses so that overlap of introductory material could be removed and more sophisticated topics added to the 400 level "omics" courses. The computer science course pre-requisite has been removed because it is now a pre-requisite for MBB342

Effective term and year Fall 2014/ 1147

SFU

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION

**EXISTING COURSE, CHANGES RECOMMENDED**

Please check appropriate revision(s):

☐ Course number ☐ Credit ☐ Title ☐ Description ■ Prerequisite ☐ Course deletion ☐ Learning Outcomes

Indicate number of hours for: Lecture _____ Seminar _____ Tutorial _____ Lab _____

**FROM**
Course Subject/Number MBB 442

Credits _____

**TO**
Course Subject/Number _____

Credits _____

**TITLE**

(1) LONG title for calendar and schedule, no more than 100 characters including spaces and punctuation.

**FROM:**

Proteomics

**TO:**

(2) SHORT title for enrollment and transcript, no more than 30 characters including spaces and punctuation.

**FROM:**

**TO:**

**DESCRIPTION**
**FROM:**

**DESCRIPTION**
**TO:**

**PREREQUISITE**

Does this course replicate the content of a previously approved course to such an extent that students should not receive credit for both courses? If so, this should be **noted in the prerequisite**.

**FROM:** MBB 321, MBB 322 and an introductory computer science course or equivalent

**PREREQUISITE**

**TO:** MBB 321, MBB322 and MBB 342

**LEARNING OUTCOMES**

**RATIONALE**

MBB has added a new course, MBB 342: introduction to Genomics and Bioinformatics that was created to serve as an introductory course for all our "omics" courses so that overlap of introductory material could be removed and more sophisticated topics added to the 400 level "omics" courses. The computer science course pre-requisite has been removed because it is now a pre-requisite for MBB342.

Effective term and year

Fall 2014/ 1147

SFU

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION

**EXISTING COURSE, CHANGES RECOMMENDED**

Please check appropriate revision(s):

☐ Course number ☐ Credit ☐ Title ☐ Description ■ Prerequisite ☐ Course deletion ☐ Learning Outcomes

Indicate number of hours for: Lecture _____ Seminar_____ Tutorial _____ Lab _____

**FROM**
Course Subject/Number MBB 461

**TO**
Course Subject/Number _____

Credits _____

Credits_____

**TITLE**

(1) LONG title for calendar and schedule, no more than 100 characters including spaces and punctuation.

**FROM:**

Comparative Genomics

**TO:**

(2) SHORT title for enrollment and transcript, no more than 30 characters including spaces and punctuation.

**FROM:**

**TO:**

**DESCRIPTION**
**FROM:**

**DESCRIPTION**
**TO:**

**PREREQUISITE**

Does this course replicate the content of a previously approved course to such an extent that students should not receive credit for both courses? If so, this should be **noted in the prerequisite**.

**FROM:** MBB 331

**PREREQUISITE**

**TO:** MBB 331 and MBB 342

**LEARNING OUTCOMES**

**RATIONALE**

MBB has added a new course, MBB 342: introduction to Genomics and Bioinformatics that was created to serve as an introductory course for all our "omics" courses so that overlap of introductory material could be removed and more sophisticated topics added to the 400 level "omics" courses.

Effective term and year

Fall 2014/ 1147

SFU

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION

**EXISTING COURSE, CHANGES RECOMMENDED**

Please check appropriate revision(s):

☐ Course number ☐ Credit ☐ Title ☐ Description ■ Prerequisite ☐ Course deletion ☐ Learning Outcomes

Indicate number of hours for: Lecture _____ Seminar_____ Tutorial _____ Lab _____

**FROM**
Course Subject/Number MBB 462

**TO**
Course Subject/Number _____

Credits _____

Credits_____

**TITLE**

(1) LONG title for calendar and schedule, no more than 100 characters including spaces and punctuation.

**FROM:**

Human Genomics

**TO:**

(2) SHORT title for enrollment and transcript, no more than 30 characters including spaces and punctuation.

**FROM:**

**TO:**

**DESCRIPTION**
**FROM:**

**DESCRIPTION**
**TO:**

**PREREQUISITE**

Does this course replicate the content of a previously approved course to such an extent that students should not receive credit for both courses? If so, this should be **noted in the prerequisite**.

**FROM:** MBB 331 or permission of the instructor

**PREREQUISITE**

**TO:** MBB 331 and MBB 342

**LEARNING OUTCOMES**

**RATIONALE**

MBB has added a new course, MBB 342: introduction to Genomics and Bioinformatics that was created to serve as an introductory course for all our "omics" courses so that overlap of introductory material could be removed and more sophisticated topics added to the 400 level "omics" courses.

Effective term and year Fall 2014/ 1147

SFU

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL



**COURSE SUBJECT/NUMBER** CHEM 484

**COURSE TITLE**

LONG — for Calendar/schedule, no more than 100 characters including spaces and punctuation

Two-Semester Undergraduate Research in Chemistry

**AND**

SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation

2-Semester Undergrad Research

**CAMPUS** where course will be taught: ☑ Burnaby ☐ Surrey ☐ Vancouver ☐ Great Northern Way ☐ Off campus

**COURSE DESCRIPTION (FOR CALENDAR). 50-60 WORDS MAXIMUM. ATTACH A COURSE OUTLINE TO THIS PROPOSAL.**

Experimental and/or theoretical research normally over two consecutive semesters; preparation of a written report and oral presentation in research seminar format. Admission requires selection of a faculty supervisor and submission of a research proposal. Prospective students must contact the chemistry advisor to register their interest in this course before the last day of classes of the previous term. The research proposal is due by the end of the examination period preceding the research term.

**REPEAT FOR CREDIT** ◉ NO ○ YES How many times? Within a term? ○ YES ◉ NO

**LIBRARY RESOURCES**

NOTE: Senate has approved (S.93-11) that no new course should be approved by Senate until funding has been committed for necessary library materials. Each new course proposal must be accompanied by a library report and, if appropriate, confirmation that funding arrangements have been addressed.

Library report status in progress

**RATIONALE FOR INTRODUCTION OF THIS COURSE**

This course will allow 4th year students to engage in an extensive research project over a two-semester period. This will permit students to conduct more wide-ranging, challenging and high-impact research compared to the current one-semester offerings, which restrict the types of research and the goals being pursued due to the limited time available to the students.

The introduction of this course was the strongest curriculum-related recommendation of the Canadian Society for Chemistry Accreditation review team.

**SCHEDULING AND ENROLLMENT INFORMATION**

Indicate effective **term and year** course would first be offered and planned **frequency** of offering thereafter:

Fall 2014. Students are individually enrolled with specific faculty researchers and thus it will be offered every term subject to student interest. Note that Chemistry is requesting the use of the "In-Progress" grade to be assessed at the end of term one (as per discussions with the Registrar), with the final grade applied at the end of term two.

Will this be a required or elective course in the curriculum? ○ Required ◉ Elective

What is the probable enrollment when offered? Estimate: 5 per year

**CREDITS**
Indicate number of credits (units): 10

| Indicate number of hours for: | Lecture | Seminar | Tutorial | Lab | Other |
|---|---|---|---|---|---|
| | | | | 10 hrs per week | |

**FACULTY** Which of your present CFL faculty have the expertise to offer this course?

All faculty

**WQB DESIGNATION** (attach approval from Curriculum Office)

None

**PREREQUISITE**
Does this course replicate the content of a previously-approved course to such an extent that students should not receive credit for both courses? If so, this should be **noted in the prerequisite**.

Permission of the department; knowledge of chemistry at an advanced level. Normally taken after completion of 300 level course requirements. No credit will be given for CHEM 481 or CHEM 483 if CHEM 484 is completed.

**COREQUISITE**

None.

**STUDENT LEARNING OUTCOMES**
Upon satisfactory completion of the course students will be able to:

Conduct chemistry-based research at a high level. Development of analytic skills, oral and written communication skills (eg. presenations and an undergraduate thesis document in appropriate scientific language and format. Students will be exposed to skills, responsibilities, and expectations for successful continuation thru graduate studies.

**FEES**
Are there any proposed student fees associated with this course other than tuition fees? ○ YES ◉ NO

## RESOURCES

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc:

None

## OTHER IMPLICATIONS

| | | | |
|---|---|---|---|
| Articulation agreement reviewed? | ○ YES | ○ NO | ◉ Not applicable |
| Exam required: | ○ YES | ◉ NO | |
| Criminal Record Check required: | ○ YES | ◉ NO | |

## APPROVALS: APPROVAL IS SIGNIFIED BY DATE AND APPROPRIATE SIGNATURE.

1 **Departmental approval indicates that the Department or School has approved the content of the course, and has consulted with other Departments/Schools/Faculties regarding proposed course content and overlap issues.**

_____

**Chair, Department/School** **Date**

_____

**Chair, Faculty Curriculum Committee** **Date**

2 **Faculty approval indicates that all the necessary course content and overlap concerns have been resolved, and that the Faculty/School/Department commits to providing the required Library funds.**

_____

**Dean or designate** **Date**

LIST which other Departments, Schools and Faculties have been consulted regarding the proposed course content, including overlap issues. Attach documentary evidence of responses.

N/A

Other Faculties' approval indicates that the Dean(s) or Designate of other Faculties AFFECTED by the proposed new course support(s) the approval of the new course:

_____ Date _____

_____ Date _____

3 **SCUS approval indicates that the course has been approved for implementation subject, where appropriate, to financial issues being addressed.**

**COURSE APPROVED BY SCUS (Chair of SCUS):**

_____ Date _____

**Changes to Physics 125/126**

As part of the INSPIRE initiative, we are creating an Accelerated Research Cohort (ARC) for talented young scientists. This initiative requires enriched content for core courses in first year science. Physics already has an enriched stream for first-year:

- Physics 125: Mechanics and Special Relativity (offered each fall)
- Physics 126: Electricity, Magnetism and Light (offered each spring)

Theses courses were introduced nearly ten years ago as a way to offer a more challenging experience to students with excellent preparation in physics and mathematics. However, no corresponding math course has been created until now. The content of these courses will now be coordinated with the content of a new pair of math courses (also numbered 125/126). For this reason, the pre-requisites and co-requisites have been updated. The descriptions are also updated to better reflect what is taught in these courses. We also expect the students in these courses to take a set of enriched chemistry courses at the same time (once those chemistry courses become available).

SFU

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

# COURSE CHANGE/DELETION

## EXISTING COURSE, CHANGES RECOMMENDED

Please check appropriate revision(s):

☐ Course number ☐ Credit ☐ Title ■ Description ■ Prerequisite ☐ Course deletion ☐ Learning Outcomes

Indicate number of hours for: Lecture 3 Seminar _____ Tutorial 1 Lab _____

**FROM**
Course Subject/Number 125 PHYS
Credits 3

**TO**
Course Subject/Number _____
Credits _____

## TITLE

(1) LONG title for calendar and schedule, no more than 100 characters including spaces and punctuation.

**FROM:**
Mechanics and Special Relativity

**TO:**

(2) SHORT title for enrollment and transcript, no more than 30 characters including spaces and punctuation.

**FROM:**
Mechanics and Special Relativity

**TO:**

## DESCRIPTION

**FROM:**
Newtonian mechanics and special relativity for students with good preparation in physics and mathematics. Topics include Newtonian particle mechanics, angular momentum, torque, conservation laws, gravitation, and special relativity. Students with credit for PHYS 101, 120 or PHYS 140 may not take PHYS 125 for further credit.

**TO:**
An enriched course in mechanics for students with good preparation in physics and mathematics. Special relativity and classical topics such as translational and rotational dynamics and conservation laws will be given a much more sophisticated treatment than in our other first-year courses. Students with credit for PHYS 101, 120 or PHYS 140 may not take PHYS 125 for further credit.

## PREREQUISITE

Does this course replicate the content of a previously approved course to such an extent that students should not receive credit for both courses? If so, this should be **noted in the prerequisite**.

**FROM:** Greater than 85% in both BC Pre-Calculus 12 & BC Physics 12, or a grade of A in PHYS 100, or equivalent. Co-requisite: MATH 150 or 151 or 154 must precede or be taken concurrently. Quantitative.

**TO:** Permission of the department. Co-requisite: MATH 125.

## LEARNING OUTCOMES

## RATIONALE

Existing course for well-prepared students is now being coordinated with a new co-requisite math course. At the same time, we decided to change the calendar description to more accurately reflect what is done in the course. The prereq change to "permission of the department" is because these students will be screened by a committee to ensure that they should be in this course, rather than simply relying on highschool math and physics grades.

Effective term and year Fall 2014

SFU

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

# COURSE CHANGE/DELETION

## EXISTING COURSE, CHANGES RECOMMENDED

Please check appropriate revision(s):

☐ Course number ☐ Credit ☐ Title ☒ Description ☒ Prerequisite ☐ Course deletion ☐ Learning Outcomes

Indicate number of hours for: Lecture 3 Seminar _____ Tutorial 1 Lab _____

**FROM**
Course Subject/Number 126 PHYS
Credits 3

**TO**
Course Subject/Number _____
Credits _____

## TITLE

(1) LONG title for calendar and schedule, no more than 100 characters including spaces and punctuation.

**FROM:**
Electricity, Magnetism and Light

**TO:**

(2) SHORT title for enrollment and transcript, no more than 30 characters including spaces and punctuation.

**FROM:**
Electricity, Magnetism and Light

**TO:**

## DESCRIPTION

**FROM:**

Electricity, magnetism, and the electromagnetic character of light for students with good preparation in physics and mathematics. Topics include waves, simple electrical circuits, electricity, magnetism, the unifications of electromagnetism in relativity, light as an electromagnetic wave, and photons. Students with credit in PHYS 102, 121 or 141 may not take this course for further credit.

**DESCRIPTION**

**TO:**

An enriched course in electromagnetism for students with good preparation in physics and mathematics. Classical topics such as waves, electricity and magnetism, as well as wave particle duality and the birth of Quantum Mechanics, will be given a much more sophisticated treatment than in our other first year courses. Students with credit in PHYS 102, 121 or 141 may not take this course for further credit.

## PREREQUISITE

Does this course replicate the content of a previously approved course to such an extent that students should not receive credit for both courses? If so, this should be **noted in the prerequisite**.

**FROM:** Prerequisite: PHYS 125 or a grade of A or better in PHYS 120 or PHYS 140. Corequisite: MATH 152 or 155 must precede or be taken concurrently. Quantitative.

**PREREQUISITE**

**TO:** PHYS 125 and permission of the department. Co-requisite: MATH 126.

## LEARNING OUTCOMES

## RATIONALE

Existing course for well-prepared students is now being coordinated with a new co-requisite math course. At the same time, we decided to change the calendar description to more accurately reflect what is done in the course. The prereq is changed since it will no longer be possible to enter this course from another first year physics stream (eg. 120). Permission of the department is added to protect against students who have taken 125 in the past from taking this course.

Effective term and year Fall 2014

## Changes to Physics 432

Physics 432 is our honours thesis course. It is currently structured to be completed in a single term and is valued at 5 credits. We have found that few students can perform a full honours research project and thesis in 13 weeks. Hence, this proposal is to extend the course to a two-term course. Students would be awarded an interim grade at Christmas but would be required to complete 8 months in order to get the 6 credits awarded for the course. The first term would involve research but would also involve meeting project milestones, including the writing of a research plan. The second term would include the conclusion of the research, the writing of a thesis and a public presentation of the work.

The primary changes are:

- Change from 1 term to 2 terms
- Change from 5 credits to 6 credits

SFU

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

# COURSE CHANGE/DELETION

## EXISTING COURSE, CHANGES RECOMMENDED

Please check appropriate revision(s):

☐ Course number ■ Credit ☐ Title ■ Description ☐ Prerequisite ☐ Course deletion ☐ Learning Outcomes

Indicate number of hours for: Lecture _____ Seminar _____ Tutorial _____ Lab 6

**FROM**
Course Subject/Number PHYS 432
Credits 5

**TO**
Course Subject/Number 432
Credits 6

## TITLE

(1) LONG title for calendar and schedule, no more than 100 characters including spaces and punctuation.

**FROM:**

Undergraduate Honours Thesis

**TO:**

(2) SHORT title for enrollment and transcript, no more than 30 characters including spaces and punctuation.

**FROM:**

**TO:**

## DESCRIPTION

**FROM:**

Undergraduate research and preparation of an honours thesis. The research project may be in experimental or theoretical physics. Prospective students must obtain agreement of a faculty member willing to supervise the project, and submit the project to the physics department for approval at least two months prior to enrolling for the course. The research must be done during the term in which the student is enrolled for the course, and may not be part of a co-op practicum. The course will be graded on the basis of the honours thesis, which must be submitted before the end of the term.

## DESCRIPTION

**TO:**

Undergraduate research and preparation of an honours thesis over two consecutive semesters. The research project may be in experimental or theoretical physics. Prospective students must obtain agreement of a faculty member willing to supervise the project.

## PREREQUISITE

Does this course replicate the content of a previously approved course to such an extent that students should not receive credit for both courses? If so, this should be **noted in the prerequisite**.

**FROM:** Prerequisite: All students interested in taking this course must consult with their faculty supervisor regarding prerequisites; normally requires PHYS 431.

## PREREQUISITE

**TO:** Prerequisite: All students interested in taking this course must consult with their faculty supervisor regarding prerequisites.

## LEARNING OUTCOMES

## RATIONALE

The current 1-term, 5 credit honours thesis course is not working well. Even very good students have difficulty performing high-level research and writing the thesis in a single term. Given the depth of project required, we decided that awarding a total of 6 credits over 2 consecutive semesters was more appropriate. The prereqs were changed because some honours programmes do not require PHYS 431 and theory projects are perfectly acceptable. Students will be awarded an 'IP' grade at the end of the first semester.

Effective term and year Fall 2014

SFU

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

# COURSE CHANGE/DELETION

## EXISTING COURSE, CHANGES RECOMMENDED

Please check appropriate revision(s):

☐ Course number ☐ Credit ☐ Title ☐ Description ■ Prerequisite ☐ Course deletion ☐ Learning Outcomes

Indicate number of hours for: Lecture _____ Seminar _____ Tutorial _____ Lab _____

**FROM**
Course Subject/Number PHYS 102

**TO**
Course Subject/Number _____

Credits _____

Credits _____

**TITLE**

(1) LONG title for calendar and schedule, no more than 100 characters including spaces and punctuation.

**FROM:**

**TO:**

(2) SHORT title for enrollment and transcript, no more than 30 characters including spaces and punctuation.

**FROM:**

**TO:**

**DESCRIPTION**
**FROM:**

**DESCRIPTION**
**TO:**

**PREREQUISITE**

Does this course replicate the content of a previously approved course to such an extent that students should not receive credit for both courses? If so, this should be **noted in the prerequisite**.

**FROM:** Prerequisite: PHYS 101 or 120 or 125 or 140. Recommended corequisite: MATH 152 or 155 or 158. Students are encouraged to take PHYS 130 at the same time as PHYS 102. Quantitative/Breadth-Science.

**PREREQUISITE**

**TO:** Prerequisite: Phys 101 or 120 or 125 or 140. Co-requisite BISC 100 or 101 or 102. Recommended co-requisite MATH 152, 155 or 158, PHYS 130.

**LEARNING OUTCOMES**

**RATIONALE**

This business corrects a past typographical error

Effective term and year Fall 2014

SFU

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL



**COURSE NUMBER** Math125

**COURSE TITLE**

LONG — for Calendar/schedule, no more than 100 characters including spaces and punctuation

Introduction to mathematical methods in the physical sciences-I

**AND**

SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation

Math methods for Phys.Sci.-I

**CREDITS**

Indicate number of credits for: Lecture 3 Seminar _____ Tutorial 1 Lab _____

**COURSE DESCRIPTION (FOR CALENDAR). 3-4 LINES MAXIMUM. ATTACH A COURSE OUTLINE TO THIS PROPOSAL.**

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.

**PREREQUISITE**

Math 152 or equivalent. Permission of the Department.

**COREQUISITE**

Physics 125

**SPECIAL INSTRUCTIONS**

That is, does this course replicate the content of a previously-approved course to such an extent that students should not receive credit for both courses.? If so, this should be **noted in the prerequisiite**.

**COURSES(S) TO BE DELETED IF THIS COURSE IS APPROVED**
**NOTE: APPROPRIATE DOCUMENT FOR DELETION MUST BE SUBMITTED TO SCUS**

**RATIONALE FOR INTRODUCTION OF THIS COURSE**

The goal of this course is to provide students enrolled in Physics 125 with an early introduction to mathematical concepts which are frequently used in the physical sciences, simultaneous with their application in Phys. 125. It is assumed these students have received advanced placement credit for MATH 151 and MATH 152 (Calculus I and II). The course will be tightly coordinated with Physics 125, and follows a 'just in time' approach. The emphasis is on a formal first introduction to the material.

## SCHEDULING AND ENROLLMENT INFORMATION

Indicate effective **term and year** course would first be offered and planned **frequency** of offering thereafter:

Fall 2014. Every year.

(NOTE: There is a two-term wait for implementation of any new course.)

Indicate if there is a waiver required: ☐ YES ☐ NO Will this be a required or elective course in the curriculum? ☑ Required ☐ Elective

What is the probable enrollment when offered? Estimate 30

Which of your present CFL faculty have the expertise to offer this course?

All research faculty in applied mathematics.

Are there any proposed student fees associated with this course other than tuition fees? ☐ YES ☑ NO
(If yes, attach mandatory supplementary fee approval form.)

## RESOURCE IMPLICATIONS

NOTE: Senate has approved (S.93-11) that no new course should be approved by Senate until funding has been committed for necessary library materials. Each new course proposal must be accompanied by a library report and, if appropriate, confirmation that funding arrangements have been addressed.

Campus where course will be taught Burnaby

Library report status

Provide details on how existing instructional resources will be redistributed to accommodate this new course. For example, will another course be eliminated or will the frequency of offering of other courses be reduced; are there changes in pedagogical style or class sizes that allow for this additional course offering?

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc:

N/A

Articulation agreement reviewed? ☐ YES ☐ NO ☐ Not applicable

## OTHER IMPLICATIONS

## APPROVALS

1 **Departmental approval indicates that the Department or School has approved the content of the course, and has consulted with other Departments/Schools/Faculties regarding proposed course content and overlap issues.**

_____

**Chair, Department/School** **Date**

_____

**Chair, Faculty Curriculum Committee** **Date**

2 **Faculty approval indicates that all the necessary course content and overlap concerns have been resolved, and that the Faculty/School/Department commits to providing the required Library funds.**

_____

**Dean or designate** **Date**

LIST which other Departments, Schools and Faculties have been consulted regarding the proposed course content, including overlap issues. Attach documentary evidence of responses.

Other Faculties approval indicated that the Dean(s) or Designate of other Faculties AFFECTED by the proposed new course support(s) the approval of the new course:

_____ Date _____

_____ Date _____

3 **SCUS approval indicates that the course has been approved for implementation subject, where appropriate, to financial issues being addressed.**

**COURSE APPROVED BY SCUS (Chair of SCUS):**

_____ Date _____

**APPROVAL IS SIGNIFIED BY DATE AND APPROPRIATE SIGNATURE.**

SFU

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL



**COURSE NUMBER** Math 126

**COURSE TITLE**

LONG — for Calendar/schedule, no more than 100 characters including spaces and punctuation

Introduction to mathematical methods in the physical sciences-II

**AND**

SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation

Math methods for Phys. Sci.-II

**CREDITS**

Indicate number of credits for: Lecture 3 Seminar _____ Tutorial 1 Lab _____

**COURSE DESCRIPTION (FOR CALENDAR). 3-4 LINES MAXIMUM. ATTACH A COURSE OUTLINE TO THIS PROPOSAL.**

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, decompositions via potentials. 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.

**PREREQUISITE**

A grade of C+ or higher in Math 125 AND Physics 125. Permission of the Department.

**COREQUISITE**

Physics 126

**SPECIAL INSTRUCTIONS**

That is, does this course replicate the content of a previously-approved course to such an extent that students should not receive credit for both courses.? If so, this should be **noted in the prerequisiite**.

**COURSES(S) TO BE DELETED IF THIS COURSE IS APPROVED**
**NOTE: APPROPRIATE DOCUMENT FOR DELETION MUST BE SUBMITTED TO SCUS**

**RATIONALE FOR INTRODUCTION OF THIS COURSE**

The goal of this course is to provide students enrolled in Physics 126 with an early introduction to mathematical concepts which are frequently used in the physical sciences, simultaneous with their application in Phys. 126. The course will be tightly coordinated with Physics 126, and follows a 'just in time' approach. The emphasis is on a formal first introduction to the material.

## SCHEDULING AND ENROLLMENT INFORMATION

Indicate effective **term and year** course would first be offered and planned **frequency** of offering thereafter:

Spring 2015. Every year.

(NOTE: There is a two-term wait for implementation of any new course.)

Indicate if there is a waiver required: ☐ YES ☐ NO Will this be a required or elective course in the curriculum? ☑ Required ☐ Elective

What is the probable enrollment when offered? Estimate 30

Which of your present CFL faculty have the expertise to offer this course?

All research faculty in applied mathematics.

Are there any proposed student fees associated with this course other than tuition fees? ☐ YES ☑ NO
(If yes, attach mandatory supplementary fee approval form.)

## RESOURCE IMPLICATIONS

NOTE: Senate has approved (S.93-11) that no new course should be approved by Senate until funding has been committed for necessary library materials. Each new course proposal must be accompanied by a library report and, if appropriate, confirmation that funding arrangements have been addressed.

Campus where course will be taught Burnaby

Library report status

Provide details on how existing instructional resources will be redistributed to accommodate this new course. For example, will another course be eliminated or will the frequency of offering of other courses be reduced; are there changes in pedagogical style or class sizes that allow for this additional course offering?

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc:

N/A

Articulation agreement reviewed? ☐ YES ☐ NO ☐ Not applicable

## OTHER IMPLICATIONS

## APPROVALS

1 **Departmental approval indicates that the Department or School has approved the content of the course, and has consulted with other Departments/Schools/Faculties regarding proposed course content and overlap issues.**

_____

**Chair, Department/School** **Date**

_____

**Chair, Faculty Curriculum Committee** **Date**

2 **Faculty approval indicates that all the necessary course content and overlap concerns have been resolved, and that the Faculty/School/Department commits to providing the required Library funds.**

_____

**Dean or designate** **Date**

LIST which other Departments, Schools and Faculties have been consulted regarding the proposed course content, including overlap issues. Attach documentary evidence of responses.

Other Faculties approval indicated that the Dean(s) or Designate of other Faculties AFFECTED by the proposed new course support(s) the approval of the new course:

_____ Date _____

_____ Date _____

3 **SCUS approval indicates that the course has been approved for implementation subject, where appropriate, to financial issues being addressed.**

**COURSE APPROVED BY SCUS (Chair of SCUS):**

_____ Date _____

**APPROVAL IS SIGNIFIED BY DATE AND APPROPRIATE SIGNATURE.**

SFU

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

# COURSE CHANGE/DELETION

## EXISTING COURSE, CHANGES RECOMMENDED

Please check appropriate revision(s):

☐ Course number ☐ Credit ☐ Title ☐ Description ☐ Prerequisite ■ Course deletion ☐ Learning Outcomes

Indicate number of hours for: Lecture _____ Seminar _____ Tutorial _____ Lab _____

**FROM**
Course Subject/Number MACM 202
Credits 4

**TO**
Course Subject/Number _____
Credits _____

**TITLE**

(1) LONG title for calendar and schedule, no more than 100 characters including spaces and punctuation.

**FROM:**

**TO:**

(2) SHORT title for enrollment and transcript, no more than 30 characters including spaces and punctuation.

**FROM:**

**TO:**

**DESCRIPTION**
**FROM:**

**DESCRIPTION**
**TO:**

**PREREQUISITE**

Does this course replicate the content of a previously approved course to such an extent that students should not receive credit for both courses? If so, this should be **noted in the prerequisite**.

**FROM:**

**PREREQUISITE**

**TO:**

**LEARNING OUTCOMES**

**RATIONALE**

MACM 202-4 Mathematical Modeling and Computation is no longer offered.
It has been replaced with
MACM 203-2 Computing with Linear Algebra
MACM 204-2 Computing with Calculus

Effective term and year

**BPK motions for FSUCC Meeting Dec 12th, 2013 – Ryan Dill**

SCUS 14-03g(i)

(agnes memo # 7.1)

**BPK Motion : Make the following changes to the Behavioral Neuroscience Major and Honors Programs.**

a. Require BPK 326- Functional Anatomy instead of BPK 324- Principles of Human Anatomy.
b. Highlight importance of BPK 415, 446 and 448 by requiring two of them. The other one may be counted towards three units of electives.
c. Add BISC 405 – Neurobiology to list of electives.

**Rationale:**
These changes will highlight the most BNS relevant courses in our program while still allowing for significant flexibility. It is not feasible to require all three of the most relevant 4th year courses as only one professor teaches each of them and there will be years when one or more are not offered due to study leave.

**FROM:**
Upper Division Requirements

Students complete a total of 45 units, including 42 required units as shown below.

BIOMEDICAL PHYSIOLOGY AND KINESIOLOGY

Students complete 21 units, including all of

BPK 305 - Human Physiology I (3)
BPK 306 - Human Physiology II (Principles of Physiological Regulation) (3)
BPK 324 - Principles of Human Anatomy (3)
BPK 426 - Neuromuscular Anatomy (3)
and nine additional units selected from the following

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) *

**TO:**

UPPER DIVISION REQUIREMENTS

Students complete a total of 45 units, including ***43*** required units as shown below.

BIOMEDICAL PHYSIOLOGY AND KINESIOLOGY

Students complete ~~21~~ ***22*** units, including all of

BPK 305 - Human Physiology I (3)

BPK 306 - Human Physiology II (Principles of Physiological Regulation) (3)

~~BPK 324 - Principles of Human Anatomy (3)~~

***BPK 326 - Functional Anatomy (4)***

BPK 426 - Neuromuscular Anatomy (3)

~~and nine additional units selected from the following~~

***and six additional units from the following***

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

***BPK 446 - Neurological Disorders (3)***

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

***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) ✗

~~* One of ***BPK*** 496 or ***BPK*** 498 may be used toward the nine units.~~

~~***#If not counted above***~~ 3 KEEP IN.

**(agnes agenda item # 7.4)**

**BPK Motion: Add BISC 202 to the list of required courses for the Biomedical Physiology Major program.**

**FROM:**

Program Requirements
Students complete 120-121 units for this major program, as specified below.

Lower Division Requirements

Students complete all of

BISC 101 - General Biology (4)
BISC 102 - General Biology (4)
CHEM 121 - General Chemistry and Laboratory I (4)
CHEM 122 - General Chemistry II (2)
CHEM 126 - General Chemistry Laboratory II (2)
CHEM 281 - Organic Chemistry I (4)
CHEM 282 - Organic Chemistry II (2)
BPK 142 - Introduction to Kinesiology (3)
BPK 201 - Biomechanics (3)
BPK 205 - Introduction to Human Physiology (3)
BPK 207 - Human Motor Systems (3)
STAT 201 - Statistics for the Life Sciences (3)
MBB 222 - Molecular Biology and Biochemistry (3)
MBB 231 - Cellular Biology and Biochemistry (3)
and one of

MATH 150 - Calculus I with Review (4)
MATH 151 - Calculus I (3)
MATH 154 - Calculus I for the Biological Sciences (3)
and one of

MATH 152 - Calculus II (3)
MATH 155 - Calculus II for the Biological Sciences (3)
and one of

PHYS 101 - Physics for the Life Sciences I (3)
PHYS 120 - Mechanics and Modern Physics (3)
PHYS 125 - Mechanics and Special Relativity (3)
PHYS 140 - Studio Physics - Mechanics and Modern Physics (4)

and one of

PHYS 102 - Physics for the Life Sciences II (3)
PHYS 121 - Optics, Electricity and Magnetism (3)
PHYS 126 - Electricity, Magnetism and Light (3)
PHYS 141 - Studio Physics - Optics, Electricity and Magnetism (4)

**TO:**

Program Requirements
Students complete 120-121 units for this major program, as specified below.

Lower Division Requirements

Students complete all of

BISC 101 - General Biology (4)
BISC 102 - General Biology (4)
***BISC 202 – Genetics (3)***
CHEM 121 - General Chemistry and Laboratory I (4)
CHEM 122 - General Chemistry II (2)
CHEM 126 - General Chemistry Laboratory II (2)
CHEM 281 - Organic Chemistry I (4)
CHEM 282 - Organic Chemistry II (2)
BPK 142 - Introduction to Kinesiology (3)
BPK 201 - Biomechanics (3)
BPK 205 - Introduction to Human Physiology (3)
BPK 207 - Human Motor Systems (3)
STAT 201 - Statistics for the Life Sciences (3)
MBB 222 - Molecular Biology and Biochemistry (3)
MBB 231 - Cellular Biology and Biochemistry (3)

and one of

MATH 150 - Calculus I with Review (4)
MATH 151 - Calculus I (3)
MATH 154 - Calculus I for the Biological Sciences (3)
and one of

MATH 152 - Calculus II (3)
MATH 155 - Calculus II for the Biological Sciences (3)
and one of

PHYS 101 - Physics for the Life Sciences I (3)
PHYS 120 - Mechanics and Modern Physics (3)
PHYS 125 - Mechanics and Special Relativity (3)
PHYS 140 - Studio Physics - Mechanics and Modern Physics (4)
and one of

PHYS 102 - Physics for the Life Sciences II (3)
PHYS 121 - Optics, Electricity and Magnetism (3)
PHYS 126 - Electricity, Magnetism and Light (3)
PHYS 141 - Studio Physics - Optics, Electricity and Magnetism (4)

(agnes memo # 7.4 continued)

**BPK Motion: Add BISC 202 to the list of required courses for the Biomedical Physiology Honors program.**

**FROM:**

Program Requirements

Students complete a total of 132 units as specified below.

Minimum Grade

Honours students must achieve a minimum CGPA of 3.00 on all relevant measures (CGPA, upper division grade point average, department grade point average, department upper division grade point average).

Lower Division Requirements

A total of 54-56 lower division units in required, as follows.

Students complete all of

BISC 101 - General Biology (4)
BISC 102 - General Biology (4)
CHEM 121 - General Chemistry and Laboratory I (4)
CHEM 122 - General Chemistry II (2)
CHEM 126 - General Chemistry Laboratory II (2)
CHEM 281 - Organic Chemistry I (4)
CHEM 282 - Organic Chemistry II (2)
BPK 142 - Introduction to Kinesiology (3)
BPK 201 - Biomechanics (3)
BPK 205 - Introduction to Human Physiology (3)
BPK 207 - Human Motor Systems (3)
STAT 201 - Statistics for the Life Sciences (3)
MBB 222 - Molecular Biology and Biochemistry (3)
MBB 231 - Cellular Biology and Biochemistry (3)
and one of

MATH 150 - Calculus I with Review (4)
MATH 151 - Calculus I (3)
MATH 154 - Calculus I for the Biological Sciences (3)
and one of

MATH 152 - Calculus II (3)
MATH 155 - Calculus II for the Biological Sciences (3)
and one of

PHYS 101 - Physics for the Life Sciences I (3)
PHYS 120 - Mechanics and Modern Physics (3)
PHYS 125 - Mechanics and Special Relativity (3)
PHYS 140 - Studio Physics - Mechanics and Modern Physics (4)
and one of

PHYS 102 - Physics for the Life Sciences II (3)
PHYS 121 - Optics, Electricity and Magnetism (3)
PHYS 126 - Electricity, Magnetism and Light (3)
PHYS 141 - Studio Physics - Optics, Electricity and Magnetism (4)

**TO:**

Program Requirements
Students complete a total of 132 units as specified below.

Minimum Grade
Honours students must achieve a minimum CGPA of 3.00 on all relevant measures (CGPA, upper division grade point average, department grade point average, department upper division grade point average).

Lower Division Requirements

A total of ***57-59*** lower division units in required, as follows.

Students complete all of

BISC 101 - General Biology (4)
BISC 102 - General Biology (4)
***BISC 202 – Genetics (3)***
CHEM 121 - General Chemistry and Laboratory I (4)
CHEM 122 - General Chemistry II (2)
CHEM 126 - General Chemistry Laboratory II (2)
CHEM 281 - Organic Chemistry I (4)
CHEM 282 - Organic Chemistry II (2)
BPK 142 - Introduction to Kinesiology (3)
BPK 201 - Biomechanics (3)
BPK 205 - Introduction to Human Physiology (3)
BPK 207 - Human Motor Systems (3)
STAT 201 - Statistics for the Life Sciences (3)
MBB 222 - Molecular Biology and Biochemistry (3)
MBB 231 - Cellular Biology and Biochemistry (3)
and one of

MATH 150 - Calculus I with Review (4)
MATH 151 - Calculus I (3)
MATH 154 - Calculus I for the Biological Sciences (3)
and one of

MATH 152 - Calculus II (3)
MATH 155 - Calculus II for the Biological Sciences (3)
and one of

PHYS 101 - Physics for the Life Sciences I (3)
PHYS 120 - Mechanics and Modern Physics (3)
PHYS 125 - Mechanics and Special Relativity (3)
PHYS 140 - Studio Physics - Mechanics and Modern Physics (4)
and one of

PHYS 102 - Physics for the Life Sciences II (3)
PHYS 121 - Optics, Electricity and Magnetism (3)
PHYS 126 - Electricity, Magnetism and Light (3)
PHYS 141 - Studio Physics - Optics, Electricity and Magnetism (4)

SFU

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION

**EXISTING COURSE, CHANGES RECOMMENDED**

Please check appropriate revision(s):

☐ Course number ☐ Credit ☐ Title ☐ Description ■ Prerequisite ☐ Course deletion ☐ Learning Outcomes

Indicate number of hours for: Lecture _____ Seminar _____ Tutorial _____ Lab _____

| **FROM** | **TO** |
|---|---|
| Course Subject/Number _____ | Course Subject/Number BPK 326 |
| Credits _____ | Credits 4 |

**TITLE**

(1) Long title for calendar and schedule, no more than 100 characters including spaces and punctuation.

| **FROM:** | **TO:** |
|---|---|
| | |

(2) Short title for enrollment and transcript, no more than 30 characters including spaces and punctuation.

| **FROM:** | **TO:** |
|---|---|
| | |

| **DESCRIPTION** | **DESCRIPTION** |
|---|---|
| **FROM:** | **TO:** |
| | |

**PREREQUISITE**

Does this course replicate the content of a previously approved course to such an extent that students should not receive credit for both courses? If so, this should be **noted in the prerequisite**.

| **FROM:** | **TO:** |
|---|---|
| REQ-BPK (or KIN) 142, 201, 205 and at least 60 units of undergraduate course credit. | REQ-BPK (or KIN) 142, 201, 205 and at least 60 units<br>Behavioral Neuroscience Major and Honors students require BPK (or KIN) 142, 205, PSYC 280 and at least 60 units |

**LEARNING OUTCOMES**

**RATIONALE**

This change will allow Behavioral Neuroscience students to take the now required BPK 326, as they are not required to take BPK 201. PSYC 280 is required for the BNS program and covers some neural anatomy.

Effective term and year ~~Fall 2014~~

SFU

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

# COURSE CHANGE/DELETION

## EXISTING COURSE, CHANGES RECOMMENDED

Please check appropriate revision(s):

☐ Course number ☐ Credit ☐ Title ☐ Description ■ Prerequisite ☐ Course deletion ☐ Learning Outcomes

Indicate number of hours for: Lecture _____ Seminar _____ Tutorial _____ Lab _____

**FROM**

Course Subject/Number _____

Credits _____

**TO**

Course Subject/Number BPK 306

Credits 3

**TITLE**

(1) Long title for calendar and schedule, no more than 100 characters including spaces and punctuation.

**FROM:**

**TO:**

(2) Short title for enrollment and transcript, no more than 30 characters including spaces and punctuation.

**FROM:**

**TO:**

**DESCRIPTION**

**FROM:**

**DESCRIPTION**

**TO:**

**PREREQUISITE**

Does this course replicate the content of a previously approved course to such an extent that students should not receive credit for both courses? If so, this should be **noted in the prerequisite**.

**FROM:**

REQ-BPK (or KIN) 201, 205, MBB 231 (or 201), MATH 155 (or 152). Non-majors require BPK (or KIN) 205 (or BISC 305), MBB 231 (or 201) plus permission of the instructor.

**PREREQUISITE**

**TO:**

REQ-BPK (or KIN) 205, 207, MBB 231 (or 201), MATH 155 (or 152). Non-majors require BPK (or KIN) 205 (or BISC 305), MBB 231 (or 201) plus permission of the instructor.

**LEARNING OUTCOMES**

**RATIONALE**

This change will facilitate Behavioral Neuroscience students taking BPK 306, as they are not required to take BPK 201, but are required to take BPK 207 as part of their program.

Effective term and year ~~Fall 2014~~

SFU

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL



**COURSE SUBJECT/NUMBER** BISC 298

**COURSE TITLE**

LONG — for Calendar/schedule, no more than 100 characters including spaces and punctuation

Introduction to Undergraduate Research IN BIOLOGICAL SCIENCES

**AND**

SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation

Introduction to Undergraduate Research

**CAMPUS** where course will be taught: ☑ Burnaby ☐ Surrey ☐ Vancouver ☐ Great Northern Way ☐ Off campus

**COURSE DESCRIPTION (FOR CALENDAR). 50-60 WORDS MAXIMUM. ATTACH A COURSE OUTLINE TO THIS PROPOSAL.**

Directed study that provides exposure to laboratory or field methods in a research lab with the Department of Biological Sciences. A student may enrol in this course only with prior written agreement of a faculty member to act as a research supervisor.

**REPEAT FOR CREDIT** ○ NO ◉ YES How many times? once Within a term? ○ YES ◉ NO

**LIBRARY RESOURCES**

NOTE: Senate has approved (S.93-11) that no new course should be approved by Senate until funding has been committed for necessary library materials. Each new course proposal must be accompanied by a library report and, if appropriate, confirmation that funding arrangements have been addressed.

Library report status status - application required

**RATIONALE FOR INTRODUCTION OF THIS COURSE**

The Department of Biological Sciences has students wanting to gain experience in research laboratories before they have completed their lower division courses and are eligible to enrol in BISC 497/8/9. Faculty in some labs are not able to provide research opportunities for volunteers because they may not commit to a specific lab schedule as a volunteer. This course provides an opportunity for engaged undergraduates to gain early exposure to a research lab, and receive the required OHS and technical training in an area of biological sciences.

**SCHEDULING AND ENROLLMENT INFORMATION**

Indicate effective **term and year** course would first be offered and planned **frequency** of offering thereafter:

1144; ~~Summer~~ FALL 2014; every semester

Will this be a required or elective course in the curriculum? ○ Required ◉ Elective

What is the probable enrollment when offered? Estimate: 5 students

**CREDITS**
Indicate number of credits (units): three

| Indicate number of hours for: | Lecture | Seminar | Tutorial | Lab | Other |
|---|---|---|---|---|---|
| | | | | 3 | |

**FACULTY** Which of your present CFL faculty have the expertise to offer this course?

S. Bisgrove, F. Breden, B. Crespi, D. Green, G. Gries, I. Novales-Flamarique, W. Palen, G. Rintoul, T. Williams, R. Ydenberg

**WQB DESIGNATION** (attach approval from Curriculum Office)

none

**PREREQUISITE**
Does this course replicate the content of a previously-approved course to such an extent that students should not receive credit for both courses? If so, this should be **noted in the prerequisite**.

~~Permission of instructor/supervisor~~.

**COREQUISITE**

none

**STUDENT LEARNING OUTCOMES**
Upon satisfactory completion of the course students will be able to:

Students will understand the importance of safety procedures in the laboratory or field.

Students will have improved their technical and/or analytical skills necessary to pursue independent research.

Students will be familiar with the research conducted within a lab at SFU and have an appreciation for the methods and techniques used to address questions in an active area of research within biological sciences.

Students will have participated in independent research conducted in a research laboratory or field.

**FEES**
Are there any proposed student fees associated with this course other than tuition fees? ○ YES ◉ NO

## RESOURCES

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc:

As required, students would need access to the online and inhouse safety training courses.

## OTHER IMPLICATIONS

| | | | |
|---|---|---|---|
| Articulation agreement reviewed? | ○ YES | ○ NO | ◉ Not applicable |
| Exam required: | ○ YES | ◉ NO | |
| Criminal Record Check required: | ○ YES | ◉ NO | |

## APPROVALS: APPROVAL IS SIGNIFIED BY DATE AND APPROPRIATE SIGNATURE.

1 **Departmental approval indicates that the Department or School has approved the content of the course, and has consulted with other Departments/Schools/Faculties regarding proposed course content and overlap issues.**

_____

**Chair, Department/School** **Date**

_____

**Chair, Faculty Curriculum Committee** **Date**

2 **Faculty approval indicates that all the necessary course content and overlap concerns have been resolved, and that the Faculty/School/Department commits to providing the required Library funds.**

_____

**Dean or designate** **Date**

LIST which other Departments, Schools and Faculties have been consulted regarding the proposed course content, including overlap issues. Attach documentary evidence of responses.

NA

Other Faculties' approval indicates that the Dean(s) or Designate of other Faculties AFFECTED by the proposed new course support(s) the approval of the new course:

_____ Date _____

_____ Date _____

3 **SCUS approval indicates that the course has been approved for implementation subject, where appropriate, to financial issues being addressed.**

**COURSE APPROVED BY SCUS (Chair of SCUS):**

_____ Date _____