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MEMORANDUM

ATTENTION Senate
FROM Wade Parkhouse, Chair of Senate
Graduate Studies Committee (SGSC)
RE: Faculty of Science

DATE November 17, 2016
No. GS2016.40

A handwritten signature in blue ink, appearing to read 'Wade Parkhouse'.

For information:

Acting under delegated authority at its meeting of November 7, 2016, SGSC approved the following curriculum changes, **effective Summer 2017** (except where noted):

Department of Molecular Biology and Biochemistry

- a) New course: MBB 728 Microbial Pathogenesis (**effective Spring 2018**)
- b) Course change (description, other): MBB 727
- c) Course change (other): MBB 821
- d) Course change (description): MBB 861
- e) Course deletions:
 - MBB 822 Cell and Molecular Biology Colloquium
 - MBB 823 Cell and Molecular Biology Colloquium
 - MBB 862 Biomolecular Structure and Function Colloquium
 - MBB 863 Biomolecular Structure and Function Colloquium
- f) Program change: Doctor of Philosophy in Molecular Biology and Biochemistry
- g) Program change: Master of Science in Molecular Biology and Biochemistry

Department of Statistics and Actuarial Sciences

New course: STAT 652 Statistical Learning and Prediction (**effective Fall 2017**)

MEMO

Faculty of Science

ATTENTION Wade Parkhouse, Dean, Graduate Studies

FROM Peter Ruben, Associate Dean, Research and Graduate
Studies, Faculty of Science

RE New graduate course and removal of courses in Department of
Molecular Biology and Biochemistry – degree audit program

DATE October 12, 2016

TIME 2:27 PM

The introduction of a new course, MBB 728, “Microbiol Pathogenesis”, revised calendar entries, and changes to and removal of other courses in MBB are submitted as part of the degree audit program and SFU calendar clean-up. These changes have been approved by the FGSC and are forwarded for approval by the Senate Graduate Studies Committee. Please include these items on the next SGSC agenda.



P. Ruben

MOLECULAR BIOLOGY AND BIOCHEMISTRY

Memorandum

To: Chair, Faculty Graduate Studies Committee, Faculty of Science

Re: Changes due to the standardized formatting and SFU Calendar clean-up that is happening with the degree audit project

From: Mark Paetzel, Chair, MBB Graduate Studies Committee

Date: October 4, 2016

We are requesting approval of the following changes due to the standardized formatting and SFU Calendar clean-up that is happening with the degree audit project:

1. Revised SFU Calendar entries for:

- a. **Molecular Biology and Biochemistry Doctor of Philosophy** (current & revised calendar entries attached)
 - *There have been no changes to the program requirements.*
 - *However, we have eliminated four courses as per 3. and 4. below. MBB 821 and MBB 861 are both changed to repeat for credit. Three completions allowed. Therefore, MBB 822 & 823 and MBB 862 & 863 are no longer required.*
 - *We are requesting that the Interdisciplinary Oncology Graduate Specialization be moved below the **Program Length** section under **Other** as a small percentage of students are impacted by this and we would like to make sure students see the **Program Length** section – if below the Specialization, students may not read to the end.*
- b. **Molecular Biology and Biochemistry Master of Science** (current and revised calendar entries attached)
 - *There have been no changes to the program requirements.*
 - *However, we have eliminated four courses as per 3. and 4. below. Same explanation as above.*
 - *We are requesting that the Interdisciplinary Oncology Graduate Specialization be moved below the **Program Length** section under **Other** as a small percentage of students are impacted by this and we would like to make sure students see the **Program Length** section – if below the Specialization, students may not read to the end.*

2. ~~Proposal to Terminate a Program – Bioinformatics Graduate Diploma~~ (attached)

- 3. MBB 821: Cell and Molecular Biology Colloquium – graduate course change**
MBB 822: Cell and Molecular Biology Colloquium – graduate course deletion
MBB 823: Cell and Molecular Biology Colloquium – graduate course deletion
MBB 821 have been updated and MBB 822 & 823 deleted due to calendar clean up .
(three forms attached)

- 4. MBB 861: Biomolecular Structure and Function Colloquium – graduate course change**
MBB 862: Biomolecular Structure and Function Colloquium – graduate course deletion
MBB 863: Biomolecular Structure and Function Colloquium – graduate course deletion
MBB 861 have been updated and MBB 862 & 863 deleted due to calendar clean up .
(three forms attached)

5. **MBB 727: Immune System II: Immune Responses in Health and Disease – graduate course change (attached)**
6. **MBB 728: Microbial Pathogenesis – new graduate course proposal (form and MBB 428 and MBB 728 outlines attached)**

Sincerely,

A handwritten signature in black ink, appearing to read 'M. W. Paetzel', written in a cursive style.

Dr. M.W. Paetzel
mpaetzel@sfu.ca



New Graduate Course Proposal

Please save the form before filling it out to ensure that the information will be saved properly.

Course Subject (eg. PSYC)	MBB	Number (eg. 810)	728	Units (eg. 4)	3
Course title (max 100 characters including spaces and punctuation) Microbial Pathogenesis					
Short title (for enrollment/transcript - max 30 characters) Microbial Pathogenesis					
Course description for SFU Calendar * The molecular strategies that bacterial and viral pathogens use to colonize the human body and cause disease will be studied. Emphasis will be placed on specific microbes and their virulence factors, secretion systems, toxins and surface adhesins. Strategies for combating microbial infections - antibiotics, antiviral agents and vaccines - will be discussed in detail.					
Rationale for introduction of this course Previously taught as a special topics course combined with MBB 428: Microbial Pathogenesis. As this course is often taught it was decided to create MBB 728: Microbial Pathogenesis. See attached page for further explanation with regards to BISC 820: Molecular Mechanisms of Microbial Pathogenesis.					
Effective term and year Spring 2018			Course delivery (eg 3 hrs/week for 13 weeks) 3 hrs/week for 13 weeks		
Frequency of offerings/year 1			Estimated enrollment/offering 5		
Equivalent courses (These are previously approved courses that replicate the content of this course to such an extent that students should not receive credit for both courses.) MBB 420, MBB 428, MBB 829, or BISC 820 under the same title of this course					
Prerequisite and/or Corequisite **					
Criminal record check required? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, then add this requirement as a prerequisite.					
Campus where course will be taught <input checked="" type="checkbox"/> Burnaby <input type="checkbox"/> Surrey <input type="checkbox"/> Vancouver <input type="checkbox"/> Great Northern Way <input type="checkbox"/> Off campus					
Course Components <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Seminar <input type="checkbox"/> Lab <input type="checkbox"/> Research <input type="checkbox"/> Practicum <input type="checkbox"/> Online <input type="checkbox"/>					
Grading Basis <input checked="" type="checkbox"/> Letter grades <input type="checkbox"/> Satisfactory/Unsatisfactory <input type="checkbox"/> In Progress/Complete				Capstone course? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Repeat for credit? *** <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Total completions allowed? <u>1</u>		Repeat within a term? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Required course? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Final exam required? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Additional course fees? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Combined with an undergrad course? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, identify which undergraduate course and what the additional course requirements are for graduate students: MBB 428. See attached course outlines for MBB 428 and MBB 728 with highlighted differences.					

* Course descriptions should be brief and should never begin with phrases such as "This course will..." or "The purpose of this course is..." If the grading basis is satisfactory/unsatisfactory include this in the description.

** If a course is only available to students in a particular program, that should be stated in the prerequisite.

*** This mainly applies to a Special Topics or Directed Readings course.

RESOURCES

If additional resources are required to offer this course, the department proposing the course should be prepared to provide information on the source(s) of those additional resources.

Faculty member(s) who will normally teach this course Lisa Craig
Additional faculty members, space, and/or specialized equipment required in order to offer this course

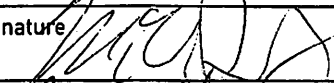
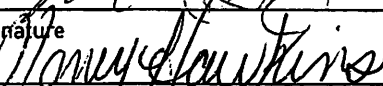
CONTACT PERSON

Department / School / Program MBB	Contact name Mimi Fourie	Contact email mbb@sfu.ca
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DEPARTMENTAL APPROVAL

REMINDER: New courses must be identified on a cover memo and confirmed as approved when submitted to FGSC/SGSC. Remember to also include the course outline.

Non-departmentalized faculties need not sign

Department Graduate Program Committee Mark Paetzel	Signature 	Date Sept. 27, 2016
Department Chair Nancy Hawkins	Signature 	Date Sept. 27, 2016

LIBRARY REVIEW

Library review done? YES

Course form, outline, and reading list must be sent by FGSC to lib-courseassessment@sfu.ca for a review of library resources.

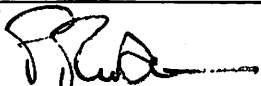
OVERLAP CHECK

Overlap check done? YES N/A

The course form and outline must be sent by FGSC to the chairs of each FGSC (fgsc-list@sfu.ca) to check for an overlap in content. An overlap check is not required for some courses (ie. Special Topics, Capstone, etc.)

FACULTY APPROVAL

This approval indicates that all the necessary course content and overlap concerns have been resolved, and that the Faculty/Department commits to providing the required Library funds and any other necessary resources.

Faculty Graduate Studies Committee (FGSC) Peter Rosen	Signature 	Date 12 Oct 2016
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SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee (SGSC) Wade Parkhouse	Signature 	Date NOV 17 2016
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ADMINISTRATIVE SECTION (for DGS office only)

Course Attribute: _____
 Course Attribute Value: _____
 Instruction Mode: _____
 Attendance Type: _____

If different from regular units:
 Academic Progress Units: _____
 Financial Aid Progress Units: _____

RATIONALE FOR MBB 728 AND BISC 820 – SAME COURSE (MICROBIAL PATHOGENESIS) WITH DIFFERENT COURSE SUBJECTS AND NUMBERS

Drs. Lisa Craig (MBB) and Margo Moore (BISC) together developed the Microbial Pathogenesis course for its first offering in 2006. Drs. Craig and Moore co-taught this course for some offerings and Dr. Craig taught it on her own for others and continues to teach it on her own. This course is offered as both an undergraduate course and a graduate course. The undergraduate Microbial Pathogenesis course was initially a Special Topics course, MBB 420, and eventually became MBB 428. The graduate version has been listed as a BISC course (BISC 881, 829, 880) when Dr. Moore co-teaches these courses, and as an MBB course (MBB 829) when it is taught by Dr. Craig alone.

While Dr. Craig has been teaching these courses on her own for the past two offerings and is scheduled to teach it on her own in 2017, the courses will likely be co-taught by Drs. Craig and Moore again in the future. Dr. Moore may also wish to offer the graduate course as a stand-alone BISC course. Thus, both the MBB 728 and the BISC 820 graduate Microbial Pathogenesis courses should remain on the calendar as active courses. These courses will not be offered concurrently and students cannot obtain credit for both MBB 728 and BISC 820.

Spring 2017 - MBB 728 G100

MICROBIAL PATHOGENESIS (3)

Calendar Description:

The molecular strategies that bacterial and viral pathogens use to colonize the human body and cause disease will be studied. Emphasis will be placed on specific microbes and their virulence factors, secretion systems, toxins and surface adhesins. Strategies for combating microbial infections - antibiotics, antiviral agents and vaccines - will be discussed in detail.

Course Details:

This is a lecture-based course with three 50-minute lectures each week. Lecture topics include bacterial and viral biology and structure, virulence mechanisms and host response, as well as antibiotics, antiviral agents and vaccines and the role of the human microbiota in health and disease. Lectures will focus on individual pathogens and the diseases they cause. An emphasis will be placed on the structural biology of these virulence systems. Students are expected to attend all lectures, to give two presentations on high impact papers from current literature, and write a term paper. Students who have taken MBB 420, MBB 428, MBB 829, or BISC 820 under the same title cannot take this course for further credit.

Lecture topics typically include:

Host immune response

Overview of virus structure

Viral pathogens

- Poliovirus
- Influenza virus
- Human immunodeficiency virus (HIV)
- Ebola virus
- Variola (smallpox)
- Human papilloma virus (HPV)
- Herpes simplex virus (HSV)

Antiviral agents

Bacterial pathogens

- *Listeria monocytogenes*
- *Mycobacterium tuberculosis*
- *Bacillus anthracis*
- *Streptococci, Enterococci, Staphylococcus aureus*
- *Pseudomonas aeruginosa*
- pathogenic *E. coli*
- *Vibrio cholerae*
- pathogenic *Neisseria*
- *Helicobacter pylori*

Antibiotics and resistance

Human microbiota

Vaccines

Prions

Grading

Presentations 80%

Term paper 20%

MBB 428 – Microbial Pathogenesis

CALENDAR DESCRIPTION:

The molecular strategies that bacterial and viral pathogens use to colonize the human body and cause disease will be studied. Emphasis will be placed on specific microbes and their virulence factors, secretion systems, toxins and surface adhesins. Strategies for combating microbial infections - antibiotics, antiviral agents and vaccines - will be discussed in detail.

COURSE DETAILS:

This is a lecture-based course with three 50-minute lectures and one 50-minute tutorial each week. Lecture topics include bacterial and viral biology and structure, virulence mechanisms and host response, as well as antibiotics, antiviral agents and vaccines and the role of the human microbiota in health and disease. Lectures will focus on individual pathogens and the diseases they cause. An emphasis will be placed on the structural biology of these virulence systems. Students are expected to attend all lectures and complete weekly assignments. Tutorials are optional and will feature a review of the assignments and lecture material.

Prerequisites: MBB 322; BISC 303 or equivalent is recommended but not required.

Lecture topics typically include:

Host immune response

Overview of virus structure

Viral pathogens

- Poliovirus
- Influenza virus
- Human immunodeficiency virus (HIV)
- Ebola virus
- Variola (smallpox)
- Human papilloma virus (HPV)
- Herpes simplex virus (HSV)

Antiviral agents

Bacterial pathogens

- *Listeria monocytogenes*
- *Mycobacterium tuberculosis*
- *Bacillus anthracis*
- *Streptococci, Enterococci, Staphylococcus aureus*
- *Pseudomonas aeruginosa*
- pathogenic *E. coli*
- *Vibrio cholerae*
- pathogenic *Neisseria*
- *Helicobacter pylori*

Antibiotics and resistance

Human microbiota

Vaccines

Prions

Grading

Two midterm exams and a non-cumulative final exam	60%
Assignments	40%



Graduate Course Change

Attach a separate document if more space is required.

Course Subject/Number	MBB 727	Units	3	Effective Term and Year	Summer 2017
Course Title	Immune System II: Immune Responses in Health and Disease				
Rationale for Change:	An updated description that more accurately summarizes the course material is needed.				

Proposed Changes (Check all that apply)

Course number
 Units*
 Title
 Description
 Prerequisite
 Other _____

Complete only the fields to be changed

FROM	TO
Course Subject/Number	Course Subject/Number
Units	Units*
Course Title	Course Title (max 100 characters)
Course Short Title	Course Short Title (max 30 characters)
Description The immunologic response to bacterial, viral and parasitic infections, immunological diseases, such as autoimmune diseases, immunodeficiency, hypersensitivity reactions (including asthma and allergy and transplantation-rejection reactions. Immunotherapeutics and vaccine development. Students with credit for MBB 427, HSCI 427, or HSCI 727 may not complete MBB 727 for credit.	Description Immunological responses towards bacterial, viral and parasitic infections. The basis of vaccines, primary immunodeficiencies, and the mechanisms by which the immune system causes allergy, autoimmune diseases, and organ transplant rejection. Immune responses towards cancer and therapeutic modulation of immune responses to protect against the indicated diseases will also be discussed. Students with credit for MBB 427, HSCI 427, or HSCI 727 may not complete MBB 727 for credit.
Prerequisite	Prerequisite
Other	Other

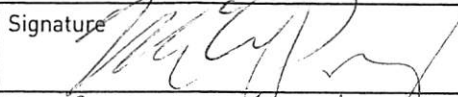
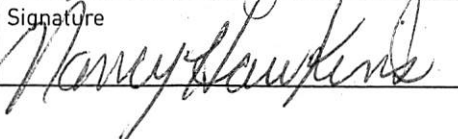
* Program requirements may need to be revised when course units are changed. Please review the calendar and submit any relevant program revisions resulting from this course change.

REMINDER: All course changes must be identified on a cover memo and confirmed as approved when submitted to FGSC and SGSC.

CONTACT PERSON

Department / School / Program MBB	Contact name Mimi Fourie	Contact email mbb@sfu.ca
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DEPARTMENTAL APPROVAL

Department Graduate Program Committee Mark Paetzel	Signature 	Date Sept. 27, 2016
Department Chair Nancy Hawkins	Signature 	Date Sept. 27, 2016

FACULTY APPROVAL

Faculty Graduate Studies Committee (FGSC) PETER RUBEN	Signature 	Date 12 Oct 2016
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SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee (SGSC) Wade Parkhouse	Signature 	Date NOV 17 2016
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ADMINISTRATIVE SECTION (for DGS office only)

Course Attribute: _____
 Course Attribute Value: _____
 Instruction Mode: _____
 Attendance Type: _____

If different from regular units:
 Academic Progress Units: _____
 Financial Aid Progress Units: _____



Graduate Course Change

Attach a separate document if more space is required.

Course Subject/Number	MBB 821	Units	1	Effective Term and Year	Summer 2017
Course Title	Cell and Molecular Biology Colloquium				
Rationale for Change:	(See MBB 822 and 823 included.) Requesting to delete MBB 822 and MBB 823 and allowing students to take MBB 821 up to 3 times for credit. SFU Calendar clean up as part of the Degree Audit Project.				

Proposed Changes (Check all that apply)

- Course number
 Units*
 Title
 Description
 Prerequisite
 Other _____

Complete only the fields to be changed

FROM	TO
Course Subject/Number	Course Subject/Number
Units	Units*
Course Title	Course Title (max 100 characters)
Course Short Title	Course Short Title (max 30 characters)
Description Recent research articles on the molecular mechanisms underlying cellular activities will be presented and discussed by students and faculty, with an emphasis on critical analysis of the concepts and experimental design and methods. A student may not take more than 3 units of Cell and Molecular Biology Colloquium courses, including BISC 821, 822, 823. Students who have taken BISC 821, 822 or 823 may not receive credit for this course.	Description Recent research articles on the molecular mechanisms underlying cellular activities will be presented and discussed by students and faculty, with an emphasis on critically analyzing concepts, experimental design, and methodology. A student may not take more than 3 units of colloquia for credit.
Prerequisite	Prerequisite
Other	Other Repeat for credit. Total completions = 3. Total units allowed = 3.

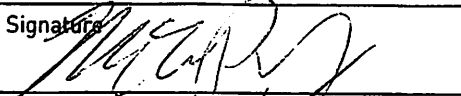
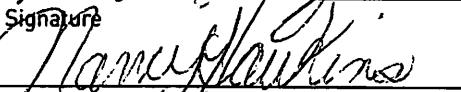
* Program requirements may need to be revised when course units are changed. Please review the calendar and submit any relevant program revisions resulting from this course change.

REMINDER: All course changes must be identified on a cover memo and confirmed as approved when submitted to FGSC and SGSC.


CONTACT PERSON

Department / School / Program MBB	Contact name Mimi Fourie	Contact email mbb@sfu.ca
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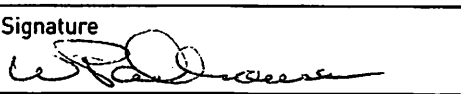
DEPARTMENTAL APPROVAL

Department Graduate Program Committee Mark Paetzel	Signature 	Date Sept. 27, 2016
Department Chair Nancy Hawkins	Signature 	Date Sept. 27, 2016

FACULTY APPROVAL

Faculty Graduate Studies Committee (FGSC) PETER RUBEN	Signature 	Date 12 Oct 2016
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SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee (SGSC) Wade Parkhouse	Signature 	Date NOV 17 2016
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ADMINISTRATIVE SECTION (for DGS office only)

Course Attribute: _____
 Course Attribute Value: _____
 Instruction Mode: _____
 Attendance Type: _____

If different from regular units:
 Academic Progress Units: _____
 Financial Aid Progress Units: _____



Graduate Course Change

Attach a separate document if more space is required.

Course Subject/Number	MBB 861	Units	1	Effective Term and Year	Summer 2017
Course Title	Biomolecular Structure and Function Colloquium				
Rationale for Change:	(See MBB 862 and 863 included.) Requesting to delete MBB 862 and MBB 863 and allowing students to take MBB 861 up to 3 times for credit. SFU Calendar clean up as part of the Degree Audit Project				

Proposed Changes (Check all that apply)

- Course number
 Units*
 Title
 Description
 Prerequisite
 Other _____

Complete only the fields to be changed

FROM	TO
Course Subject/Number	Course Subject/Number
Units	Units*
Course Title	Course Title (max 100 characters)
Course Short Title	Course Short Title (max 30 characters)
Description	Description
Prerequisite	Prerequisite
Other	Other Repeat for credit. Total completions = 3. Total units allowed = 3.

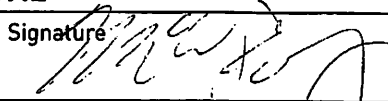

* Program requirements may need to be revised when course units are changed. Please review the calendar and submit any relevant program revisions resulting from this course change.

REMINDER: All course changes must be identified on a cover memo and confirmed as approved when submitted to FGSC and SGSC.

CONTACT PERSON

Department / School / Program MBB	Contact name Mimi Fourie	Contact email mbb@sfu.ca
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DEPARTMENTAL APPROVAL

Department Graduate Program Committee Mark Paetzel	Signature 	Date Sept. 27, 2016
Department Chair Nancy Hawkins	Signature 	Date Sept. 27, 2016

FACULTY APPROVAL

Faculty Graduate Studies Committee (FGSC) Peter Ruben	Signature 	Date 12 Oct 2016
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SENATE GRADUATE STUDIES COMMITTEE APPROVAL

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ADMINISTRATIVE SECTION (for DGS office only)

Course Attribute: _____
 Course Attribute Value: _____
 Instruction Mode: _____
 Attendance Type: _____

If different from regular units:
 Academic Progress Units: _____
 Financial Aid Progress Units: _____



Graduate Course Deletion

A course can be deleted if it has not been offered in the previous seven years or if there is no chance of it being offered again. Once a course has been deleted for a minimum of 10 years, the course subject and number can be re-used.

Course Subject/Number	MBB 822	Units	1
Course Title	Cell and Molecular Biology Colloquium		
Reason for Deletion	(See MBB 821 and 823 included.) Requesting to delete MBB 822 and MBB 823 and allowing students to take MBB 821 up to 3 times for credit.		
Effective Term and Year:	Summer 2017		

Before Submission to SGSC check the following:

Is this course required for degree completion?

YES

NO

Do any program calendar entries need to be changed as a result of this deletion?

YES

NO

Does the departmental website need to be updated?

YES

NO

Additional information for any YES responses:

SFU Calendar clean up as part of the Degree Audit Project

REMINDER: All course deletions must be identified on a cover memo and confirmed as approved when submitted to FGSC and SGSC.

CONTACT PERSON

Department / School / Program	Contact name	Contact email
MBB	Mimi Fourie	mbb@sfu.ca

DEPARTMENTAL APPROVAL

Department Graduate Program Committee	Signature	Date
Mark Paetzel		Sept. 27, 2016
Department Chair	Signature	Date
Nancy Hawkins		Sept. 27, 2016

FACULTY APPROVAL

Faculty Graduate Studies Committee (FGSC)	Signature	Date
		12 Oct 2016

SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee (SGSC)	Signature	Date
Wade Parkhouse		NOV 17 2016



Graduate Course Deletion

A course can be deleted if it has not been offered in the previous seven years or if there is no chance of it being offered again. Once a course has been deleted for a minimum of 10 years, the course subject and number can be re-used.

Course Subject/Number MBB 823	Units 1
Course Title Cell and Molecular Biology Colloquium	
Reason for Deletion (See MBB 821 and 822 included.) Requesting to delete MBB 822 and MBB 823 and allowing students to take MBB 821 up to 3 times for credit.	
Effective Term and Year: Summer 2017	

Before Submission to SGSC check the following:

Is this course required for degree completion?

YES

NO

Do any program calendar entries need to be changed as a result of this deletion?

YES

NO

Does the departmental website need to be updated?

YES

NO

Additional information for any YES responses:

SFU Calendar clean up as part of the Degree Audit Project

REMINDER: All course deletions must be identified on a cover memo and confirmed as approved when submitted to FGSC and SGSC.

CONTACT PERSON

Department / School / Program MBB	Contact name Mimi Fourie	Contact email mbb@sfu.ca
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DEPARTMENTAL APPROVAL

Department Graduate Program Committee Mark Paetzel	Signature 	Date Sept. 27, 2016
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FACULTY APPROVAL

Faculty Graduate Studies Committee (FGSC) Peter Kuban	Signature 	Date 12 Oct 2016
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SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee (SGSC) Wade Parkhouse	Signature 	Date NOV 17 2016
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Graduate Course Deletion

A course can be deleted if it has not been offered in the previous seven years or if there is no chance of it being offered again. Once a course has been deleted for a minimum of 10 years, the course subject and number can be re-used.

Course Subject/Number	MBB 862	Units	1
Course Title	Biomolecular Structure and Function Colloquium		
Reason for Deletion	(See MBB 861 and 863 included.) Requesting to delete MBB 862 and MBB 863 and allowing students to take MBB 861 up to 3 times for credit.		
Effective Term and Year:	Summer 2017		

Before Submission to SGSC check the following:

- Is this course required for degree completion? YES NO
- Do any program calendar entries need to be changed as a result of this deletion? YES NO
- Does the departmental website need to be updated? YES NO

Additional information for any YES responses:
SFU Calendar clean up as part of the Degree Audit Project

REMINDER: All course deletions must be identified on a cover memo and confirmed as approved when submitted to FGSC and SGSC.

CONTACT PERSON

Department / School / Program	Contact name	Contact email
MBB	Mimi Fourie	mbb@sfu.ca

DEPARTMENTAL APPROVAL

Department Graduate Program Committee	Signature	Date
Mark Paetzel		Sept. 27, 2016
Department Chair	Signature	Date
Nancy Hawkins		Sept. 27, 2016

FACULTY APPROVAL

Faculty Graduate Studies Committee (FGSC)	Signature	Date
		12 Oct 2016

SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee (SGSC)	Signature	Date
Wade Parkhouse		NOV 17 2016



Graduate Course Deletion

A course can be deleted if it has not been offered in the previous seven years or if there is no chance of it being offered again. Once a course has been deleted for a minimum of 10 years, the course subject and number can be re-used.

Course Subject/Number	MBB 863	Units	1
Course Title Biomolecular Structure and Function Colloquium			
Reason for Deletion (See MBB 861 and 862 included.) Requesting to delete MBB 862 and MBB 863 and allowing students to take MBB 861 up to 3 times for credit.			
Effective Term and Year: Summer 2017			

Before Submission to SGSC check the following:

Is this course required for degree completion?

YES

NO

Do any program calendar entries need to be changed as a result of this deletion?

YES

NO

Does the departmental website need to be updated?

YES

NO

Additional information for any YES responses:

SFU Calendar clean up as part of the Degree Audit Project

REMINDER: All course deletions must be identified on a cover memo and confirmed as approved when submitted to FGSC and SGSC.

CONTACT PERSON

Department / School / Program MBB	Contact name Mimi Fourie	Contact email mbb@sfu.ca
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DEPARTMENTAL APPROVAL

Department Graduate Program Committee Mark Paetzel	Signature 	Date Sept. 27, 2016
Department Chair Nancy Hawkins	Signature 	Date Sept. 27, 2016

FACULTY APPROVAL

Faculty Graduate Studies Committee (FGSC) Peter Rubin	Signature 	Date 12 Oct 2016
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SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee (SGSC) Wade Parkhouse	Signature 	Date NOV 17 2016
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SIMON FRASER UNIVERSITY
ENGAGING THE WORLD

STUDENT SERVICES
Fall Calendar

Please note:

To view the Summer 2016 Academic Calendar go to <http://www.sfu.ca/students/calendar/2016/summer.html>

Department of Molecular Biology and Biochemistry
Simon Fraser University Calendar | Fall 2016

Molecular Biology and Biochemistry

DOCTOR OF PHILOSOPHY

This program provides advanced education and research training for a career in academia, industry, or the public sector, and emphasizes a research apprenticeship in combination with relevant course work. Students learn from and collaborate with researchers from a range of disciplines related to molecular biology and biochemistry (MBB). The program will be of interest to those wishing to use cutting edge laboratory and/or computational approaches to address research problems in biology, biochemistry or biomedical disciplines.

Admission Requirements

Students who possess a master of science (MSc) degree may apply to the molecular biology and biochemistry graduate program committee to be admitted to the doctor of philosophy (PhD) program. Exceptional students who have a bachelor of science (BSc) degree and relevant research experience may also be considered for entry. Applicants must have identified a senior supervisor who is willing to consider their application. Applicants should contact faculty members directly to discuss their research interests and confirm the availability of funding and space in their research group. Only students having identified a proposed senior supervisor will be considered for program admission.

Program Requirements

Students who enter the program with a bachelor of science (BSc) degree, or equivalent, are required to complete a minimum total of 18 units, at least 15 of which must be in graduate courses.

All students must complete:

MBB 801 - Student Seminar in Molecular Biology and Biochemistry I (3)

MBB 806 - PhD Graduate Research Candidacy Examination (3) +

and one unit of MBB colloquia by completing one of

MBB 821 - Cell and Molecular Biology Colloquium (1)

MBB 822 - Cell and Molecular Biology Colloquium (1)

MBB 823 - Cell and Molecular Biology Colloquium (1)

MBB 861 - Biomolecular Structure and Function Colloquium (1)

MBB 862 - Biomolecular Structure and Function Colloquium (1)

MBB 863 - Biomolecular Structure and Function Colloquium (1)

and another 11 units selected from other graduate courses, chosen in consultation with the supervisory committee and which can include appropriate courses from MBB and/or other departments. Two of these 11 units can come from colloquia and/or journal clubs, with journal clubs being completed as one-unit directed readings courses.

Entry with an MSc

Students who enter the program with a master of science (MSc) degree are required to complete a minimum of six units including both of:

MBB 801 - Student Seminar in Molecular Biology and Biochemistry I (3)

MBB 806 - PhD Graduate Research Candidacy Examination (3) ++

If MBB 801-3 has already been taken by the student, the remaining three units must be completed by taking appropriate graduate courses or colloquia.

Students are expected to attend the Department of Molecular Biology and Biochemistry research seminar series and participate regularly in a journal club. Journal clubs are discussion groups that focus on the current research literature, and can be in the form of the MBB colloquia, or informal groups consisting of the members of one or more research laboratories.

Students must maintain a minimum GPA of 3.0

+ enrol at the earliest opportunity following four terms of program enrolment

++ completed at the first opportunity following two terms of program enrolment

Thesis

The emphasis of the program is on original research. An original thesis contributing to new knowledge is presented and defended according to graduate general regulation 1.7.5. The defense includes a public seminar on the contents of the thesis.

Interdisciplinary Oncology Graduate Specialization (IOGS)

This specialization is for students who are interested in gaining exposure to diverse facets of cancer-related research. Application to the program is through the Interdisciplinary Oncology Steering Committee. The PhD requirements for this specialization are as follows:

Entry with a BSc or equivalent:

Students who enter the program with a Bachelor of Science (BSc) degree, or equivalent, will complete all of:

MBB 801 - Student Seminar in Molecular Biology and Biochemistry I (3)

MBB 806 - PhD Graduate Research Candidacy Examination (3) +

ONC 502 - Concepts in Oncology (3)

ONC 510 - Seminars in Oncology (3)

and one unit of MBB colloquia by completing one of

MBB 821 - Cell and Molecular Biology Colloquium (1)

MBB 822 - Cell and Molecular Biology Colloquium (1)

MBB 823 - Cell and Molecular Biology Colloquium (1)

MBB 861 - Biomolecular Structure and Function Colloquium (1)

MBB 862 - Biomolecular Structure and Function Colloquium (1)

MBB 863 - Biomolecular Structure and Function Colloquium (1)

and at least two of the following elective courses*

ONC 548 - Rotation in Oncology (3)

BPK 851 - Recent Advances in Experimental Carcinogenesis (3)

MBB 746 - Cell Death and Cell Survival (3)

MBB 762 - Human Genomics (3)

BISC 834 - Essential Cell Biology (3)

HSCI 775 - Seminar in Molecular Mechanisms of Epigenetics (3)

HSCI 776 - Seminar in Molecular Basis of Drug Action and Environmental Exposure (3)

HSCI 778 - Seminar in Molecular Epidemiology of Infectious Diseases (3)

*Note: Any relevant Special Topics course from any department may be included upon permission of the IOGS Steering Committee. Oncology related courses at other institutions may also be used to satisfy the elective requirement. Please consult with the Interdisciplinary Oncology Graduate Specialization Steering Committee for queries regarding course eligibility.

Entry with an MSc Degree:

Students who enter the IOGS program with a Master of Science (MSc) degree will complete the following courses:

MBB 801 - Student Seminar in Molecular Biology and Biochemistry I (3) *

MBB 806 - PhD Graduate Research Candidacy Examination (3) ++

ONC 502 - Concepts in Oncology (3)

ONC 510 - Seminars in Oncology (3)

If a student has already completed the specialization as an MSc student, they may still enroll in the IOGS as a PhD student upon approval by the IOGS steering committee. Note that in this circumstance, ONC 510-3 must be taken for credit again in the PhD program, but ONC 502-3 cannot be taken again for credit.

Research

The major portion of the PhD specialization program will be devoted to original research. An original Thesis which contributes to new knowledge must be presented and defended at the end of the degree program in accordance with SFU Graduate General Regulations. In addition, all MBB PhD candidates must present a public seminar on their research.

* If MBB 801 has already been completed, then a minimum three courses are required, i.e. MBB 806, ONC 502 and ONC 510.

+ enrol at the earliest opportunity following four terms of program enrolment

++ completed at the first opportunity following two terms of program enrolment

Academic Requirements within the Graduate General Regulations

All graduate students must satisfy the academic requirements that are specified in the graduate general regulations, as well as the specific requirements for the program in which they are enrolled, as listed above.

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REVISED
CALENDAR ENTRY

Molecular Biology and Biochemistry

DOCTOR OF PHILOSOPHY

Description of Program

This program provides advanced education and research training for a career in academia, industry, or the public sector, and emphasizes a research apprenticeship in combination with relevant course work. Students learn from and collaborate with researchers from a range of disciplines related to molecular biology and biochemistry (MBB). The program will be of interest to those wishing to use cutting edge laboratory and/or computational approaches to address research problems in biology, biochemistry or biomedical disciplines.

Admission Requirements

Applicants must satisfy the University admission requirements as stated in Graduate General Regulations 1.3 in the SFU Calendar. Students who possess a master of science (MSc) degree may apply to the molecular biology and biochemistry graduate program committee to be admitted to the doctor of philosophy (PhD) program. Exceptional students who have a bachelor of science (BSc) degree and relevant research experience may also be considered for entry. Applicants must have identified a senior supervisor who is willing to consider their application. Applicants should contact faculty members directly to discuss their research interests and confirm the availability of funding and space in their research group. Only students having identified a proposed senior supervisor will be considered for program admission.

Program Requirements

This program consists of required courses, elective courses, and a thesis.

Entry with an MSc Degree

Students must complete

MBB 801 - Student Seminar in Molecular Biology and Biochemistry I (3) *

and a candidacy examination

MBB 806 - PhD Graduate Research Candidacy Examination (3)**

and a thesis

MBB 899 - PhD Thesis (6)

* This course can be replaced by an appropriate graduate course or colloquia if completed previously.

** Must be taken no later than the 5th term of program enrolment.

Entry with a BSc or equivalent

Students who enter the program with a bachelor of science (BSc) degree, or equivalent, are required to complete a minimum of 18 units of course work. At least 15 units must be from graduate courses.

Students must complete

MBB 801 - Student Seminar in Molecular Biology and Biochemistry I (3)

and one unit of MBB colloquia by completing one of

MBB 821 - Cell and Molecular Biology Colloquium (1)

MBB 841 - Genomics and Bioinformatics Colloquium (1)

MBB 861 - Biomolecular Structure and Function Colloquium (1)

REVISED CALENDAR ENTRY

and an additional 11 elective units (at least eight units must be from graduate courses)*

and a candidacy examination

MBB 806 - PhD Graduate Research Candidacy Examination (3)**

and a thesis

MBB 899 - PhD Thesis (6)

* The elective units are chosen in consultation with the supervisory committee and can include appropriate courses from MBB and/or other departments. Two of these 11 units can come from colloquia and/or journal clubs, with journal clubs being completed as one-unit directed readings courses.

** Must be taken no later than the 5th term of program enrolment.

Research Seminar Series and Journal Clubs

Students are expected to attend the Department of Molecular Biology and Biochemistry research seminar series and participate regularly in a journal club. Journal clubs are discussion groups that focus on the current research literature, and can be in the form of the MBB colloquia, or informal groups consisting of the members of one or more research laboratories.

Thesis

The emphasis of the program is on original research. An original thesis contributing to new knowledge is presented and defended according to the Graduate General Regulations. The defence includes a public seminar on the contents of the thesis.

Program Length

Students are expected to complete the program requirements in 12 to 15 terms.

Other Information

Interdisciplinary Oncology Graduate Specialization (IOGS)

This specialization is for students who are interested in gaining exposure to diverse facets of cancer-related research. Application to the program is through the Interdisciplinary Oncology Steering Committee. The major portion of the PhD specialization program will be devoted to original research. An original thesis which contributes to new knowledge must be presented and defended at the end of the degree program in accordance with SFU Graduate General Regulations. In addition, all MBB PhD candidates must present a public seminar on their research.

The PhD requirements for this specialization are as follows:

Entry with an MSc Degree

Students must complete all of

MBB 801 - Student Seminar in Molecular Biology and Biochemistry I (3) *

ONC 502 - Concepts in Oncology (3)

ONC 510 - Seminars in Oncology (3)

and a candidacy examination

MBB 806 - PhD Graduate Research Candidacy Examination (3)**

REVISED
CALENDAR ENTRY

and a thesis

MBB 899 - PhD Thesis (6)

If a student has already completed the specialization as an MSc student, they may still enroll in the IOGS as a PhD student upon approval by the IOGS steering committee. Note that in this circumstance, ONC 510-3 must be taken for credit again in the PhD program, but ONC 502-3 cannot be taken again for credit.

* If MBB 801 has already been completed, then a minimum of three courses are required, i.e. ONC 502, ONC 510, and MBB 806.

** Must be taken no later than the 5th term of program enrolment.

Entry with a BSc or equivalent

Students must complete all of

MBB 801 - Student Seminar in Molecular Biology and Biochemistry I (3)

ONC 502 - Concepts in Oncology (3)

ONC 510 - Seminars in Oncology (3)

and one unit of MBB colloquia by completing one of

MBB 821 - Cell and Molecular Biology Colloquium (1)

MBB 841 - Genomics and Bioinformatics Colloquium (1)

MBB 861 - Biomolecular Structure and Function Colloquium (1)

and at least two of the following elective courses*

ONC 548 - Rotation in Oncology (3)

BPK 851 - Recent Advances in Experimental Carcinogenesis (3)

MBB 746 - Cell Death and Cell Survival (3)

MBB 762 - Human Genomics (3)

BISC 834 - Essential Cell Biology (3)

HSCI 775 - Seminar in Molecular Mechanisms of Epigenetics (3)

HSCI 776 - Seminar in Molecular Basis of Drug Action and Environmental Exposure (3)

HSCI 778 - Seminar in Molecular Epidemiology of Infectious Diseases (3)

and a candidacy examination

MBB 806 - PhD Graduate Research Candidacy Examination (3)**

and a thesis

MBB 899 - PhD Thesis (6)

* Any relevant special topics course from any department may be included upon permission of the IOGS steering committee. Oncology related courses at other institutions may also be used to satisfy the elective requirement. Please consult with the IOGS steering committee for queries regarding course eligibility.

** Must be taken no later than the 5th term of program enrolment.

Academic Requirements within the Graduate General Regulations

All graduate students must satisfy the academic requirements that are specified in the Graduate General Regulations, as well as the specific requirements for the program in which they are enrolled.



Please note:

To view the Summer 2016 Academic Calendar go to <http://www.sfu.ca/students/calendar/2016/summer.html>

Department of Molecular Biology and Biochemistry
Simon Fraser University Calendar | Fall 2016

Molecular Biology and Biochemistry

MASTER OF SCIENCE

This program provides advanced education and research training for a career in academia, industry or the public sector and emphasizes development of research skills in combination with relevant course work. The program is of interest to those wishing to use cutting edge laboratory and/or computational approaches to address research problems in biology, biochemistry or biomedical disciplines.

Admission Requirements

Applicants must have a bachelor's degree in a relevant discipline and should preferably have research experience. In addition, applicants must have found a senior supervisor who is willing to support their application. Applicants should contact faculty members directly to discuss their research interests and confirm the availability of funding and space in their research group. Only students having a proposed senior supervisor can be considered for admission to the program.

Program Requirements

Students must complete 12 units of graduate courses, including

MBB 801 - Student Seminar in Molecular Biology and Biochemistry I (3)

and one unit of MBB colloquia by completing one of

MBB 821 - Cell and Molecular Biology Colloquium (1)

MBB 822 - Cell and Molecular Biology Colloquium (1)

MBB 823 - Cell and Molecular Biology Colloquium (1)

MBB 861 - Biomolecular Structure and Function Colloquium (1)

MBB 862 - Biomolecular Structure and Function Colloquium (1)

MBB 863 - Biomolecular Structure and Function Colloquium (1)

and another eight units selected from other graduate courses, chosen in consultation with the supervisory committee and which can include appropriate courses from MBB and/or other departments. Two of these eight units can come from colloquia and/or journal clubs, with journal clubs being completed as one-unit directed readings courses.

Students must maintain a minimum GPA of 3.0.

Students are expected to attend the Department of Molecular Biology and Biochemistry research seminar series and participate regularly in a journal club. Journal clubs are discussion groups that focus on the current research literature, and can be in the form of the MBB colloquia, or informal groups consisting of the members of one or more research laboratories.

Thesis

A major part of the program is original research. A thesis describing the research is submitted and defended in accordance with Graduate General Regulations.

Interdisciplinary Oncology Graduate Specialization (IOGS)

This specialization is for students who are interested in gaining exposure to diverse facets of cancer-related research. Application to the program is through the Interdisciplinary Oncology Steering Committee. The MSc course requirements for this specialization are as follows:

Students complete the following graduate courses, including

MBB 801 - Student Seminar in Molecular Biology and Biochemistry I (3)
ONC 502 - Concepts in Oncology (3)
ONC 510 - Seminars in Oncology (3)

and one unit of MBB colloquia by completing one of:

MBB 821 - Cell and Molecular Biology Colloquium (1)
MBB 822 - Cell and Molecular Biology Colloquium (1)
MBB 823 - Cell and Molecular Biology Colloquium (1)
MBB 861 - Biomolecular Structure and Function Colloquium (1)
MBB 862 - Biomolecular Structure and Function Colloquium (1)
MBB 863 - Biomolecular Structure and Function Colloquium (1)

And at least one of the following elective courses*

ONC 548 - Rotation in Oncology (3)
BPK 851 - Recent Advances in Experimental Carcinogenesis (3)
MBB 746 - Cell Death and Cell Survival (3)
MBB 762 - Human Genomics (3)
BISC 834 - Essential Cell Biology (3)
HSCI 775 - Seminar in Molecular Mechanisms of Epigenetics (3)
HSCI 776 - Seminar in Molecular Basis of Drug Action and Environmental Exposure (3)
HSCI 778 - Seminar in Molecular Epidemiology of Infectious Diseases (3)

*Note: Any relevant Special Topics course from any department may be included upon permission of the IOGS Steering Committee. Oncology related courses at other institutions may also be used to satisfy the elective requirement. Please consult with the Interdisciplinary Oncology Graduate Specialization Steering Committee for queries regarding course eligibility.

MSc Research

A major part of the MSc specialization program will be devoted to original research. A thesis describing the work must be submitted and defended in accordance with SFU Graduate General Regulations.

Academic Requirements within the Graduate General Regulations

All graduate students must satisfy the academic requirements that are specified in the graduate general regulations, as well as the specific requirements for the program in which they are enrolled, as listed above.

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REVISED
CALENDAR ENTRY

Molecular Biology and Biochemistry

MASTER OF SCIENCE

Description of Program

This program provides advanced education and research training for a career in academia, industry or the public sector and emphasizes development of research skills in combination with relevant course work. The program is of interest to those wishing to use cutting edge laboratory and/or computational approaches to address research problems in biology, biochemistry or biomedical disciplines.

Admission Requirements

Applicants must satisfy the University admission requirements as stated in Graduate General Regulations 1.3 in the SFU Calendar. Applicants must have a bachelor's degree in a relevant discipline and should preferably have research experience. In addition, applicants must have found a senior supervisor who is willing to support their application. Applicants should contact faculty members directly to discuss their research interests and confirm the availability of funding and space in their research group. Only students having a proposed senior supervisor can be considered for admission to the program.

Program Requirements

This program consists of required courses, elective courses, and a thesis for a minimum of 30 units.

Students must complete

MBB 801 - Student Seminar in Molecular Biology and Biochemistry I (3)

and one unit of MBB colloquia by completing one of

MBB 821 - Cell and Molecular Biology Colloquium (1)

MBB 841 - Genomics and Bioinformatics Colloquium (1)

MBB 861 - Biomolecular Structure and Function Colloquium (1)

and an additional eight elective graduate units

(These courses are chosen in consultation with the supervisory committee and can include appropriate courses from MBB and/or other departments. Two of these eight units can come from colloquia and/or journal clubs, with journal clubs being completed as one-unit directed readings courses.)

and a thesis

MBB 898 - MSc Thesis (18)

A major part of the program is original research. A thesis describing the research is submitted and defended in accordance with Graduate General Regulations.

Research Seminar Series and Journal Clubs

Students are expected to attend the Department of Molecular Biology and Biochemistry research seminar series and participate regularly in a journal club. Journal clubs are discussion groups that focus on the current research literature, and can be in the form of the MBB colloquia, or informal groups consisting of the members of one or more research laboratories.

Program Length

Students are expected to complete the program requirements in six terms.

REVISED
CALENDAR ENTRY

Other Information

Interdisciplinary Oncology Graduate Specialization (IOGS)

This specialization is for students who are interested in gaining exposure to diverse facets of cancer-related research. Application to the program is through the interdisciplinary oncology graduate specialization steering committee. The program consists of required courses, elective courses, and a thesis for a minimum of 30 units.

The MSc program requirements for this specialization are as follows:

Students must complete the following

MBB 801 - Student Seminar in Molecular Biology and Biochemistry I (3)

ONC 502 - Concepts in Oncology (3)

ONC 510 - Seminars in Oncology (3)

and one unit of MBB colloquia by completing one of

MBB 821 - Cell and Molecular Biology Colloquium (1)

MBB 822 - Cell and Molecular Biology Colloquium (1)

MBB 823 - Cell and Molecular Biology Colloquium (1)

MBB 861 - Biomolecular Structure and Function Colloquium (1)

MBB 862 - Biomolecular Structure and Function Colloquium (1)

MBB 863 - Biomolecular Structure and Function Colloquium (1)

and at least one of the following elective courses*

ONC 548 - Rotation in Oncology (3)

BPK 851 - Recent Advances in Experimental Carcinogenesis (3)

MBB 746 - Cell Death and Cell Survival (3)

MBB 762 - Human Genomics (3)

BISC 834 - Essential Cell Biology (3)

HSCI 775 - Seminar in Molecular Mechanisms of Epigenetics (3)

HSCI 776 - Seminar in Molecular Basis of Drug Action and Environmental Exposure (3)

HSCI 778 - Seminar in Molecular Epidemiology of Infectious Diseases (3)

and a thesis

MBB 898 - MSc Thesis (18)

A major part of the MSc specialization program will be devoted to original research. A thesis describing the work must be submitted and defended in accordance with SFU Graduate General Regulations.

*Note: Any relevant special topics course from any department may be included upon permission of the IOGS steering committee. Oncology related courses at other institutions may also be used to satisfy the elective requirement. Please consult with the IOGS steering committee for queries regarding course eligibility.

Academic Requirements within the Graduate General Regulations

All graduate students must satisfy the academic requirements that are specified in the Graduate General Regulations, as well as the specific requirements for the program in which they are enrolled.

MEMO

ATTENTION Senate Graduate Studies Committee	TEL
FROM Peter Ruben, Chair, Faculty of Science Graduate Program Committee	
RE New graduate course, Statistics and Actuarial Sciences	
DATE October 12, 2016	TIME 3:33 PM

The Faculty Graduate Studies Committee in the Faculty of Science approves the a new graduate course, STAT 652 “Statistical Learning and Prediction” to be offered by the Department of Statistics and Actuarial Sciences. This is a course intended for students outside the Department of Statistics and Actuarial Science. Please forward the forms to SGSC for approval.



SFU

faculty of science

Statistics & Actuarial Science

October 4, 2016

contact information

Tim Swartz
Professor
T:(778) 782-4579
F:(778) 782-4368
tim@stat.sfu.ca

To: Peter Ruben
Faculty of Science Graduate Studies Committee

Re: Course Proposal - STAT 652-3: Statistical Learning and Prediction

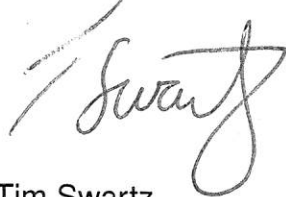
mailing address

Dept of Stats/Actsci
8888 University Drive
Burnaby, BC Canada
V5A 1S6

We propose the introduction of the course STAT 652-3 (Statistical Learning and Prediction) which is an introduction to modern supervised and unsupervised statistical learning methods. This course is intended for graduate students outside of the Department of Statistics and Actuarial Science and will be cross listed with STAT 452-3, a course intended for Statistics undergraduate majors.

This proposal is to be presented to the Faculty of Science Graduate Curriculum Committee for consideration of having the course added to the Calendar.

The course was approved by the Department of Statistics and Actuarial Science at the December 11/15 Departmental meeting.



Tim Swartz
Graduate Chair, Stats/ActSci



New Graduate Course Proposal

Please save the form before filling it out to ensure that the information will be saved properly.

Course Subject (eg. PSYC)	STAT	Number (eg. 810)	652	Units (eg. 4)	3
Course title (max 100 characters including spaces and punctuation) <i>ST</i> Introduction to Statistical Learning and Prediction					
Short title (for enrollment/transcript - max 30 characters) Intro to Stat Learning					
Course description for SFU Calendar * An introduction to the essential modern supervised and unsupervised statistical learning methods. Topics include review of linear regression, classification, statistical error measurement, flexible regression and classification methods, clustering and dimension reduction.					
Rationale for introduction of this course Statistical learning and prediction methods are rapidly becoming the methods of choice for data analysis in business, industry, and research. They are also important components of many research programs in statistics. There is increasing demand for graduands with the skilled that this course would cover, and the department has been receiving requests to mount a course that addresses this need. The department currently has a graduate-level course, Stat 852, that covers closely related topics. However, the level of instruction in Stat 852 makes it inaccessible to graduate students from non-mathematical disciplines. Stat 652 would be taught at a more introductory level with greater emphasis on application and interpretation. This course would be co-listed as Stat 452 for access by undergraduate students, who would be poorly served by Stat 852.					
Effective term and year Fall 2017			Course delivery (eg 3 hrs/week for 13 weeks) 3 hrs/week for 13 weeks		
Frequency of offerings/year once per year			Estimated enrollment/offering 10		
Equivalent courses (These are previously approved courses that replicate the content of this course to such an extent that students should not receive credit for both courses.) STAT 452 - in the process of approval <i>approved ST</i>					
Prerequisite and/or Corequisite ** Stat 302 or Stat 305 or Stat 350 or equivalent.					
Criminal record check required? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, then add this requirement as a prerequisite.					
Campus where course will be taught <input checked="" type="checkbox"/> Burnaby <input type="checkbox"/> Surrey <input type="checkbox"/> Vancouver <input type="checkbox"/> Great Northern Way <input type="checkbox"/> Off campus					
Course Components <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Seminar <input type="checkbox"/> Lab <input type="checkbox"/> Research <input type="checkbox"/> Practicum <input type="checkbox"/> Online <input type="checkbox"/>					
Grading Basis <input checked="" type="checkbox"/> Letter grades <input type="checkbox"/> Satisfactory/Unsatisfactory <input type="checkbox"/> In Progress/Complete				Capstone course? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Repeat for credit? *** <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Total completions allowed? _____		Repeat within a term? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Required course? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Final exam required? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Additional course fees? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Combined with an undergrad course? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, identify which undergraduate course and what the additional course requirements are for graduate students: STAT 452 No additional course requirements for graduate students					

* Course descriptions should be brief and should never begin with phrases such as "This course will..." or "The purpose of this course is..." If the grading basis is satisfactory/unsatisfactory include this in the description.

** If a course is only available to students in a particular program, that should be stated in the prerequisite.

*** This mainly applies to a Special Topics or Directed Readings course.

RESOURCES

If additional resources are required to offer this course, the department proposing the course should be prepared to provide information on the source(s) of those additional resources.

Faculty member(s) who will normally teach this course Bornn, Campbell, Loughin, Bingham, and likely others
Additional faculty members, space, and/or specialized equipment required in order to offer this course None

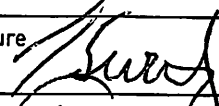
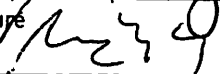
CONTACT PERSON

Department / School / Program Statistics and Actuarial Science	Contact name Sadika Jungic	Contact email sjungic@sfu.ca
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DEPARTMENTAL APPROVAL

REMINDER: New courses must be identified on a cover memo and confirmed as approved when submitted to FGSC/SGSC. Remember to also include the course outline.

Non-departmentalized faculties need not sign

Department Graduate Program Committee Tim Swartz	Signature 	Date Mar 8/16
Department Chair Tom Loughin	Signature 	Date 8 Mar 16

LIBRARY REVIEW

Library review done? YES

Course form, outline, and reading list must be sent by FGSC to lib-courseassessment@sfu.ca for a review of library resources.

OVERLAP CHECK

Overlap check done? YES N/A

The course form and outline must be sent by FGSC to the chairs of each FGSC (fgsc-list@sfu.ca) to check for an overlap in content. An overlap check is not required for some courses (ie. Special Topics, Capstone, etc.)

FACULTY APPROVAL

This approval indicates that all the necessary course content and overlap concerns have been resolved, and that the Faculty/Department commits to providing the required Library funds and any other necessary resources.

Faculty Graduate Studies Committee (FGSC) Peter Ruben	Signature 	Date 12 Oct 2016
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SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee (SGSC) Wade Parkhouse	Signature 	Date NOV 17 2016
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ADMINISTRATIVE SECTION (for DGS office only)

Course Attribute: _____
 Course Attribute Value: _____
 Instruction Mode: _____
 Attendance Type: _____

If different from regular units:
 Academic Progress Units: _____
 Financial Aid Progress Units: _____

Course Outline for STAT 452/652 Introduction to Statistical Learning and Prediction

Prerequisite:

Stat 302 or Stat 305 or Stat 350 or equivalent

Calendar Description:

An introduction to the essential modern supervised and unsupervised statistical learning methods. Topics include review of linear regression, classification, statistical error measurement, flexible regression and classification methods, clustering and dimension reduction.

Proposed Textbook:

Gareth James, Daniela Witten, Trevor Hastie and Robert Tibshirani (2013). *An Introduction to Statistical Learning with Applications in R*. New York: Springer. Available online here: <http://troy.lib.sfu.ca/record=b6251074~S1a> ISBN-13: 978-1461471370.

Outline:

1. Statistical Learning and Prediction
2. Measuring prediction error
3. Linear regression essentials and extensions
4. Classification: Predicting categorical data
5. Variable selection in linear regression
6. Non-linear regression methods
7. Trees and ensembles
8. Additional modern prediction methods
9. Unsupervised learning: clustering and dimension reduction

Grading Scheme

Assignments are essential to learning this material and may count for a large proportion of the overall grade (e.g., up to 40%). Exams and/or projects would make up the rest of the course grade. For example, one project might be a prediction task where all students receive some data and have to use the data to construct a prediction model. Models are tested on a large hold-out set of data.