

OFFICE OF THE ASSOCIATE VICE-PRESIDENT, ACADEMIC AND
ASSOCIATE PROVOST8888 University Drive,
Burnaby, BC
Canada V5A 1S6TEL: 778.782.4636
FAX: 778.782.5876avpcio@sfu.ca
www.sfu.ca/vpacademic

MEMORANDUM

ATTENTION Senate
FROM Bill Krane, Chair
Senate Committee on Undergraduate
Studies
RE: Faculty of Science

DATE June 3, 2011
PAGES 1/2

For information:

Acting under delegated authority at its meeting of June 2, 2011, SCUS approved the following curriculum revisions effective Spring 2012:

1. Department of Biological Sciences (SCUS 11-34a)
 - (a) Pre-requisite change for BISC 101, 102
2. Department of Chemistry (SCUS 11-34b)
 - (a) Description change for CHEM 191-3
 - (b) New Course Proposal: CHEM 109-4, Introduction to Chemistry for Health Careers
3. Department of Molecular Biology and Biochemistry (SCUS 11-34c)
 - (a) Pre-requisite change for MBB 222-3
 - (b) Change to the Lower Division Core Requirements
 - (c) New Course Proposals:
 - MBB 446-3, Cell Death and Cell Survival
 - MBB 462-3, Human Genomics

Senators wishing to consult a more detailed report of curriculum revisions may do so on the Web at http://www.sfu.ca/senate/Senate_agenda.html following the posting of the agenda. If you are unable to access the information, please call 778-782-3168 or email shelley_gair@sfu.ca.



TO: Bill Krane, Chair, SCUS

FROM: Rolf Mathewes, Associate Dean
Faculty of Science

RE: Faculty of Science
Undergraduate Curriculum
Items

DATE: May 16, 2011

The Faculty of Science has approved the following, which must now be considered by SCUS.

Please place these items on the agenda of the next SCUS meeting.

1. Biological Sciences

~~Include "Typical Lower Division Core Program" section in the online version of the Calendar~~

BISC 101 and BISC 102 – change in ~~description~~ prerequisite

2. Chemistry

a) CHEM 191-3 – Change in description

b) CHEM 109-4 – New course proposal (part of the Aboriginal Pre-Health Program)

3. Molecular Biology and Biochemistry

a) MBB 222-3 Prerequisite change

b) Program Change

c) MBB 446-3, MBB462-3 - New course proposals

A handwritten signature in black ink, appearing to read "R. Mathewes", is written over a horizontal line.
R. Mathewes

Enclosure

c. J. Hinchliffe, C. Cupples



SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION
OCTOBER 2007

EXISTING COURSE, CHANGES RECOMMENDED

Please check appropriate revision(s):

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

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

FROM

TO

Course Number BISC 101 _____ Course Number _____

Credit Hour _____ Credit Hour _____

TITLE

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

General Biology

_____	_____
_____	_____
_____	_____

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

_____	_____
_____	_____
_____	_____

DESCRIPTION _____ DESCRIPTION _____

_____	_____
_____	_____
_____	_____

PREREQUISITE _____ Prerequisite: high school biology 12 (or equivalent) with a grade of C or better, or BISC 100. BISC 101 and 102 may be taken in any order, and are available for B-Sci credit, but are primarily designed to deliver prerequisite information to BISC majors and related departments and Faculties. Non-science students are encouraged to earn their B-Sci units in other BISC breadth courses (e.g. BISC 110, 111 and 112). Breadth-Science.

RATIONALE _____

PREREQUISITE _____ Prerequisite: high school biology 12 (or equivalent) with a grade of C or better, or BISC 100. BISC 101 and 102 may be taken in any order, and are available for B-Sci credit, but are primarily designed to deliver prerequisite information to BISC majors and related departments and Faculties. Non-science students are encouraged to earn their B-Sci units in other BISC breadth courses (e.g. BISC 100 or 110). Breadth-Science.

BISC 111 and BISC 112 have not been offered in recent memory.

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**.

Effective term and year Fall 2011 _____



SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION
OCTOBER 2007

EXISTING COURSE, CHANGES RECOMMENDED

Please check appropriate revision(s):

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

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

FROM

TO

Course Number BISC 102 _____ Course Number _____

Credit Hour _____ Credit Hour _____

TITLE

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

General Biology

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

DESCRIPTION _____ DESCRIPTION _____

PREREQUISITE. Prerequisite: high school biology 12 (or equivalent) with a grade of C or better, or BISC 100. BISC 101 and 102 may be taken in any order, and are available for B-Sci credit, but are primarily designed to deliver prerequisite information to BISC majors and related departments and Faculties. Non-science students are encouraged to earn their B-Sci units in other BISC breadth courses (e.g. BISC 110, 111 and 112). Breadth-Science.

RATIONALE

PREREQUISITE. Prerequisite: high school biology 12 (or equivalent) with a grade of C or better, or BISC 100. BISC 101 and 102 may be taken in any order, and are available for B-Sci credit, but are primarily designed to deliver prerequisite information to BISC majors and related departments and Faculties. Non-science students are encouraged to earn their B-Sci units in other BISC breadth courses (e.g. BISC 100 or 110). Breadth-Science.

BISC 111 and BISC 112 have not been offered in recent memory.

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.**

Effective term and year Fall 2011



EXISTING COURSE, CHANGES RECOMMENDED

SCUS 11-34b

Please check appropriate revision(s)

☐ Course number ☐ Credit ☐ Title ☒ Description ☐ Prerequisite ☐ Deletion

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

FROM :

TO:

Course Number CHEM 191 Course Number CHEM 191 Credit

Hour 3 Credit Hour 3

TITLE

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

Living in a Materials World: From the Stone Age to Nanoscience

Living in a Materials World: From the Stone Age to Nanoscience

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

Living in a Materials World

Living in a Materials World

DESCRIPTION

A survey of materials that have been used throughout human history, from stone, bone and wood to modern plastics and superconductors. The chemical principles that give rise to different materials' properties will be examined, with an emphasis of how small changes at the molecular level can have important implications in everyday life. We will also trace the development of new materials and how they have been perceived and studied throughout the ages. Intended for both science and non-science students. Quantitative/Breadth-Science.

A survey of materials that have been used throughout human history, from stone, bone and wood to modern plastics and superconductors. The chemical principles that give rise to different materials' properties will be examined, with an emphasis of how small changes at the molecular level can have important implications in everyday life. Issues of sustainability and the environmental impact of materials will be discussed. Intended for both science and non-science students. Quantitative/Breadth-Science.

PREREQUISITE

none

none

RATIONALE

The new course description reflects the existing emphasis on sustainability and the environmental impact of materials.

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**.

Effective term and year Spring 2012

M. Leggett (chemistry DOGS chair)

SIMON FRASER UNIVERSITY
Senate Committee for Undergraduate Studies
NEW COURSE PROPOSAL

Course Number: CHEM 109-4

Course Title:

Long - for calendar/schedule no more than 100 characters including spaces/punctuation

Introduction to Chemistry for Health Careers

AND

Short - for registration/transcript no more than 30 characters including spaces/punctuation

Intro to Chem for Health

Indicate number of hours for Lect (3) Sem () Tut (2) Lab (2)

Course Description (for Calendar). Attach a course outline to this proposal.

General concepts of chemistry for those with no chemistry background interested in pursuing careers in health sciences. Principles of atomic structure, chemical bonding, gases, liquids and solutions, chemical kinetics and equilibrium are covered. The chemistry of everyday materials, drugs and poisons, and environmental issues are surveyed. ~~IS OPEN ONLY TO STUDENTS IN THE ABORIGINAL PRE-HEALTH PROGRAM.~~

Prerequisite: Math 12 or equivalent. Students with credit for high school chemistry 12 (or equivalent), or any university chemistry course may not take this course for credit. ~~Students may not count both CHEM 109 and CHEM 110 or 111 for credit.~~

Corequisite: If credit for Math 12 not obtained then Math 100 or Calculus I (Math 150/151/154)

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 pre-requisite.

Course(s) to be dropped if this course is approved:

Rationale for Introduction of this Course:

The Aboriginal Pre-Health Program was recently awarded Senate approved bridging status offering credit and acceptance into SFU upon successful completion. It is a two term program with 7 required courses, one of which is an introductory course in Chemistry. The program has two main goals: 1) to encourage and equip Aboriginal (First Nations, Metis and Inuit) high school graduates and mature students to pursue and succeed in health careers; 2) to increase the representation of Aboriginal people in sciences and at Simon Fraser University.

During the pilot phase, the chemistry component was offered in partnership with Douglas College. This year, the Vice-President Academic has specifically requested that the Department of Chemistry offer this course in order to maximize the educational pathway within SFU. The proposed course, CHEM 109-4, will fulfill the chemistry component of the Aboriginal Pre-Health Program. The first offering of this course will be restricted to participants in this program.

Scheduling and Registration Information:

Indicate effective **semester/year** course would be first offered and planned **frequency** of offering thereafter. Spring 2012 , once per year

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

Indicate if there is a Waiver required YES X NO

Will this be a required or elective course in the curriculum?

REQUIRED X ELECTIVE

What is the probable enrolment when offered? ESTIMATE 10-20

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

As this is an introductory course it could be taught by any current chemistry faculty member.

Are there any proposed student fees associated with this course other than tuition fees? (if so, attach mandatory supplementary fee approval form) YES NO X

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: _____SURREY_____

Library report status __Approval attached_____

Provide details on how existing instructional resources will be redistributed to accommodate this new course. For instance, 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?

Funding for this course provided by Continuing Studies.

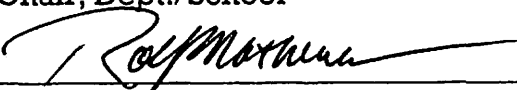
List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc.

The laboratory component will make use of the new Chem/Bio lab space on the Surrey campus

Approvals

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

 _____ May 13/11 _____
Chair, Dept./School Date

 _____ May 16/11 _____
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/Department commits to providing the required Library funds.

_____ Date: _____
Dean or Designate

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 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: _____

Approval is signified by date and appropriate signature.

SAMPLE COURSE OUTLINE

CHEM 109 - 4

Introduction to Chemistry for Health Careers Semester 20xx-x

Instructor: TBA

Description/topics: General fundamental concepts and nomenclature; stoichiometry and chemical calculations; nuclear and atomic structures, the periodic table, the chemical bond; the properties of gases, liquids, solids and solutions; chemical kinetics and chemical equilibrium. The chemistry of everyday materials, drugs and poisons, and real world environmental issues are surveyed.
3 hours/week lecture; 2 hour/week tutorial; 4 lab hours in alternate weeks.

Lectures Topics

- | | |
|---|--|
| 1 | Units, Measurements, Significant Figures |
| 3 | Basic concepts; Matter, Atoms, Nucleus |
| 2 | Electronic structure, the Periodic Table |
| 1 | Chemical Nomenclature |

Midterm Exam I

- | | |
|---|--|
| 3 | The Mole, Chemical Formula Reactions and Equations |
| 3 | Stoichiometry |
| 1 | States of Matter and Energy |
| 3 | Gas Laws |
| 2 | Solutions, Concentration and Molarity |

Midterm Exam II

- | | |
|---|---|
| 2 | Ionic and Covalent Bonding |
| 3 | Reaction Rates and Chemical Equilibrium, Solubility Equilibrium |
| 4 | Acids and Bases |

4 Oxidation and Reduction

Laboratory Experiments: (alternate weeks)

Lab 1: Physical properties and Physical change

Lab 2: Chemical properties and Chemical change

Lab 3: Stoichiometry and Limiting Reagent

Lab 4: Gas Laws

Lab 5: Acids and Bases

Lab 6: Oxidation-Reduction

Grading: Problem Sets, i-clicker and participation 15%; 2 Midterms 25%; Final Exam 40%; Laboratory 20%.
Students must pass both the laboratory and lecture components of the course in order to pass Chem 109.

Required texts: Stoker, "Introduction to Chemical Principles", 10th Ed. 2010, Prentice Hall.
A Lab Manual will be distributed at the first laboratory lecture.

Recommended texts: None

Materials/supplies: i-Clicker, Scientific calculator: Aurex SC6145 Scientific Calculator

Prerequisite/corequisite: B.C. High School Math 12 (or equivalent) (or MATH 100, corequisite). No previous training in chemistry is required for this course. Students with credit for high school Chem 12(or equiv.) or any university chemistry course may not take CHEM 109 for further credit. If BC high school Math 12 credit not obtained, then Math 100 or Calculus I (Math 150/151/154) must be taken as a corequisite to Chem 109.
Students may not count both CHEM 109 and CHEM 110 or 111 for credit.



SCUS 11-34c

MEMO

Department of
Molecular Biology &
Biochemistry

8888 University Drive
Burnaby BC V5A 1S6

T: 778.782.5630
F: 778-782-5583

www.sfu.ca/mbb

ATTENTION **Rolf Mathewes**

TEL

FROM **Ingrid Northwood; undergrad prog. coordinator-
MBB**

RE **1 pre-requisite change, 1 program change, 2 new courses**

DATE **April 11, 2011**

TIME

A course pre-requisite change: for MBB222- Molecular Biology and Biochemistry. Because of recent changes in the Chemistry department MBB would like to add Chem283-3 as a pre-or co-req to MBB222.

Program Change form: reflects the addition of Chem282 OR Chem283 as fulfilling MBB requirements.

2 New courses are being proposed: Both have been taught as special topics courses and well received and both fulfill the external review mandate of more specialized elective courses for MBB majors.

MBB446: Cell Death and Cell Survival – an examination of various types of cell death and survival mechanisms and their relationship to disease with a focus on cancer and therapeutic strategies

MBB462: Human Genomics – the organization of the human genome and the role of genomic variation in health and disease; genomics and personalized medicine; intellectual property and privacy issues.



SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION
OCTOBER 2007



Existing Course, Changes Recommended

Please check appropriate revision(s):

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

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

FROM

TO

Course Number MBB 222

Course Number MBB 222

Credit Hour 3

Credit Hour 3

TITLE

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

Molecular Biology and Biochemistry _____

Molecular Biology and Biochemistry _____

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

Molec Biol and Biochem _____

Molec Biol and Biochem _____

DESCRIPTION

The structure, function and synthesis of proteins, RNA and DNA and their interrelated biological functions within the cell. An introduction to molecular biology techniques and methods of protein purification and analysis.

DESCRIPTION

The structure, function and synthesis of proteins, RNA and DNA and their interrelated biological functions within the cell. An introduction to molecular biology techniques and methods of protein purification and analysis.

PREREQUISITE

Prerequisite: CHEM 281 with a grade of C- or better. Corequisite or prerequisite: CHEM 282.

PREREQUISITE

Prerequisite: CHEM 281 with a grade of C- or better. Corequisite or prerequisite: CHEM 282
OR CHEM 283

RATONALE

The Chemistry department has modified Chem 282-2 such that it will now end 2/3 of the way through the semester and continue as Chem 283-3. MBB students should have the option of choosing either Chem 282-2 OR Chem 283-3 to fulfill their requirements.

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 **NO**

Effective term and year Fall, 2011(1117)

Approvals:

[Signature]
Chair, Department/School

Chair, Faculty Curriculum Committee

Chair, SCUS

Mar 31, 2011
Date

Date

Date

SIMON FRASER UNIVERSITY
Program Change Form

Program: MBB

From:

Lower Division Core Requirements
Chem 282-2

To:

Lower Division Core Requirements
Chem 282-2 **OR Chem 283-3**

Rationale:

The Chemistry department has modified Chem 282-2 such that it will now end 2/3 of the way through the semester and continue as Chem 283-3. MBB students should have the option of choosing either Chem 282-2 OR Chem 283-3 to fulfill their requirements.

Effective date: Fall, 2011 (1117)

Approvals



Chair, Department/School

Nov 31, 2011

Date

Chair, Faculty Curriculum Committee

Date

Chair, SCUS

Date



COURSE NUMBER MBB 446

COURSE TITLE

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

Cell Death and Cell Survival

AND

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

Cell Death and Cell Survival

CREDITS

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

COURSE DESCRIPTION (FOR CALENDAR). 3-4 LINES (50-60 WORDS) MAXIMUM. ATTACH A COURSE OUTLINE TO THIS PROPOSAL.

An examination of various types of cell death and cell survival mechanisms and their relationship to disease with a focus on cancer and therapeutic strategies. Students who took MBB440 with the same title may not take MBB446 for credit.

PREREQUISITE **MBB322 and MBB331**
 Or permission of the instructor

COREQUISITE **none**

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 prerequisite. **NO**

COURSES(S) TO BE DELETED IF THIS COURSE IS APPROVED

NOTE: APPROPRIATE DOCUMENT FOR DELETION MUST BE SUBMITTED TO SCUS

None

RATIONALE FOR INTRODUCTION OF THIS COURSE

This is an elective course designed to expose students to an in-depth analysis of current research in a very important field. The course has been taught as a special topics course (MBB440/839) and was well received by students. Many faculty in MBB, Biological Sciences, Kinesiology and the Faculty of Health Science are actively engaged in research into the causes of disease. The external review of the MBB Department recommended that more upper division, specialized elective courses be made available to MBB majors.



SCHEDULING AND ENROLLMENT INFORMATION

Indicate effective **term and year** course would first be offered and planned **frequency** of offering thereafter: **Spring (1121)**

Anticipated frequency thereafter: every second 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? **Elective**

What is the probable enrollment when offered? **Estimate 30-60**

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

The course will be taught by Dr. Sharon Gorski, a new MBB faculty member. Other MBB faculty that could potentially teach this course are Dr. Hawkins and Dr. Quarmby

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: approved see <http://www.lib.sfu.ca/collections/course-assessments>

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?

No courses will be eliminated. Dr. Gorski is one of the new MBB faculty members with joint appointments in the Genome Sciences Center of the BC Cancer Agency. We anticipate that this course will be very appealing to many MBB and Bioscience majors and possibly some Biomedical Physiology and Kinesiology and Health Science majors.

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc: **none**

The lab/workshops will be operated in the MBB computer teaching lab using existing hardware and software.

Articulation agreement reviewed? ☐ YES ☐ NO ☒ Not applicable

OTHER IMPLICATIONS NONE

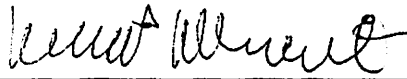


SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL
3 OF 3 PAGES

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.

 April 1, 2011
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.

Not applicable.

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.

MOLECULAR BIOLOGY AND BIOCHEMISTRY

MBB 446-3

Cell Death and Cell Survival

Instructor: Dr. Sharon Gorski, Office: TASC2 8006

Description/topics: The balance between cell death and cell survival is important for normal development. Alterations in these processes can lead to human diseases including cancer. In this course, we will study various types of cell death and cell survival mechanisms and their relationships to disease with a focus on cancer. We will also investigate anti-cancer therapeutic strategies that target specific components of cell death and cell survival pathways. Topics will include the following:

- Cancer basics
- Oncogenes and Tumor Suppressors
- Cell growth
- Cell survival mechanisms
- Types of cell death: morphology and molecules
- Autophagy: dual roles in life and death
- Targeted anti-cancer therapeutics

In addition, we will explore recent selected special topics related to the discovery of mechanisms contributing to cancer cell survival. These may include:

- Cancer Immunology
- Characterizing cancer genomes
- Chromosomal aberrations and proteomic alterations in cancer
- Cancer stem cells

Grading: Class exams (3 x 20% = 60% total), Class participation (10%), Writing Assignment (30%)

Required texts: None. This course will be based largely on primary literature and review articles.

Recommended texts: The Biology of Cancer, Robert A. Weinberg, 2006, Garland Publishing (for background reading)

Prerequisite/corequisite: Pre-requisite: MBB 322, MBB 331



COURSE NUMBER **MBB 462**_____

COURSE TITLE

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

Human Genomics

AND

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

Human Genomics

CREDITS

Indicate number of credits for: Lecture **3 hrs**_____ Seminar_____ Tutorial **1hr** Lab_____

COURSE DESCRIPTION (FOR CALENDAR). 3-4 LINES (50-60 WORDS) MAXIMUM. ATTACH A COURSE OUTLINE TO THIS PROPOSAL.

The organization of the human genome and the role of genomic variation in health and disease.

Genomics and personalized medicine; intellectual property and privacy issues. Students who took MBB440 under this same title may not receive credit for MBB462.

PREREQUISITE

MBB 331

Or permission of the instructor

COREQUISITE

none

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 prerequisite. **NO**

COURSES(S) TO BE DELETED IF THIS COURSE IS APPROVED

NOTE: APPROPRIATE DOCUMENT FOR DELETION MUST BE SUBMITTED TO SCUS

None

RATIONALE FOR INTRODUCTION OF THIS COURSE

This is an elective course designed to expose students to an in-depth analysis of current research in a very important field. The course has been taught as a special topics course (MBB440/839) and was well received by students. Many faculty in MBB, Biological Sciences, Kinesiology and the Faculty of Health Science are actively engaged in research into the causes of disease. The external review of the MBB Department recommended that more upper division, specialized elective courses be made available to MBB majors. The course will be included in the anticipated Genomics B.Sc. program for which a LOI has been approved.



SCHEDULING AND ENROLLMENT INFORMATION

Indicate effective **term and year** course would first be offered and planned **frequency** of offering thereafter: Fall **(1127)**

Anticipated frequency thereafter: once per year in the Spring semester.

(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? **Elective**

What is the probable enrollment when offered? **Estimate 30-60**

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

The course will be taught by Dr. Robert Holt, a regular MBB faculty member. Other MBB faculty who could potentially teach this course are Dr. Chen and Dr. Jones

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: approved see <http://www.lib.sfu.ca/collections/course-assessments>

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?

No courses will be eliminated. Dr. Holt is one of the new MBB faculty members with joint appointments in the Genome Sciences Center at the BC Cancer Agency. We anticipate that this course will be very appealing to many MBB and Bioscience majors and possibly some Biomedical Physiology and Kinesiology and Health Science majors.

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc: **none**

The lab/workshops will be operated in the MBB computer teaching lab using existing hardware and software.

Articulation agreement reviewed? ☐ YES ☐ NO ☒ Not applicable

OTHER IMPLICATIONS NONE



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.

[Signature] April 1, 2011
Chair, Department/School Date

[Signature] May 16, 2011
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.

The proposed Genomics B.Sc. program and courses were developed by an interdepartmental and interfaculty committee consisting of representatives from MBB, Biological Sciences, Biological Physiology and Kinesiology and the Faculty of Health Sciences.

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.

MOLECULAR BIOLOGY AND BIOCHEMISTRY

MBB 462-3

Human Genomics

Instructor: Dr. R. Holt, Office: TASC2 8003

Description/topics: This course will focus on the organization of the human genome and the role of genome variation in health and disease. Ancillary topics of direct relevance to human genomics, such as personalized medicine and intellectual property will also be covered. Instruction will include lecture material, and in depth consideration of selected seminal papers in human genomics.

Topics will include the following:

- Landscape of the human genome
- How the human genome was sequenced
- Who owns your genome - genomics and intellectual property
- Human genome variation – polymorphism and complex disease
- Human genome variation – can genomics enable personalized medicine?
- Human genome variation - cancer genomes
- Genomics of the adaptive immune system
- Ancient genomes
- Synthetic genes, synthetic genomes
- Human proteomics
- Other current topics in human genomics

Grading: Biweekly exams (30 min) on lecture material and assigned reading (60% of grade). Three short (1-2 page) summaries/critiques of papers selected from primary literature (30% of grade). Participation (10% of grade).

Required text: None

Recommended text: **Recombinant DNA: Genes and Genomes — A Short Course** Third Edition. 2007.

Genomes 3 Third Edition. 2006. By Terry A. Brown

Prerequisite: MBB 331