SFU OFFICE OF THE ASSOCIATE VICE-PRESIDENT, ACADEMIC AND ASSOCIATE PROVOST

8888 University Drive,
Burnaby, BC
Canada V5A 1S6

TEL: 778.782.4636
FAX: 778.782.5876

avpcio@sfu.ca
www.sfu.ca/vpacademic

MEMORANDUM

ATTENTION	Senate	DATE	February 4, 2011
FROM	Bill Krane, Chair Senate Committee on Undergraduate Studies	PAGES	1/1
RE:	Faculty of Science (SCUS 11-12)		

For information:

Acting under delegated authority at its meeting of February 3, 2011, SCUS approved the following curriculum revisions effective Fall 2011:

1. Biological Sciences (SCUS 11-12a)

   (i) Change in prerequisite for BISC 405

2. Department of Biomedical Physiology and Kinesiology (SCUS 11-12b)

   (i) Deletion of the Health and Physiological Sciences concentration

   (ii) Prerequisite change to KIN 426

   (iii) Course name and description change to KIN 431

   (iv) Change description and prerequisite for KIN 308 and add to list of upper division electives for Biomedical Physiology majors and Kinesiology majors in Active Health and Rehabilitation Concentration and the Ergonomics Concentration

   (v) Removal of KIN 221 from Health & Fitness Certificate

   (vi) Revise Upper Division requirements to allow students in Active Health and Rehabilitation concentration to take both Kin 301 and 407 with one counting as an upper division elective.

   (vii) Modify Behavioural Neuroscience Major and Honours Programs
   - Remove PHYS 130 and replace it with 2 units of electives
   - Change MBB 221 to MBB 201 in BNS Major and Minor

   (viii) Deletion of Kin 367-3, 383-3, 416-3, 442-3, 467-3, 485-4, 486-3

   (ix) W designation for KIN 417

3. Department of Mathematics (SCUS 11-12c)

(i) Prerequisite changes for Math 252, 309, 314, 418, 419, 461, 462, 467 and 470
(ii) Title change for Math 439
(iii) New Course Proposal for Math 441-3, Commutative Algebra and Algebraic Geometry

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.

SFU

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 _____ Seminr _____ Tutorial _____ Lab _____

FROM	**TO**
Course Number BISC405	Course Number
Credit Hour	Credit Hour

TITLE

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

Neurobiology	

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

DESCRIPTION	DESCRIPTION

PREREQUISITE	PREREQUISITE
BISC305. Students who have completed BISC 472 under the title 'Neurobiology' may not complete BISC 405 for further credit.	BISC305 or KIN 305 with a C- or better. Students who have completed BISC 472 under the title 'Neurobiology' may not complete BISC 405 for further credit.

RATIONALE

BISC 305 and KIN 305 cover similar material and adding KIN 305 as an alternate prerequisite would make this course more accessible to Biomedical Physiology and Kinesiology students.

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

BPK MOTIONS for FSUCC meeting – January 17th 2011

DELETE THE

1. MOTION : ~~Remove~~ Health and Physiological Sciences concentration ~~from the Kinesiology Major. This concentration has been replaced by the Biomedical Physiology Major.~~

2. MOTION : Change Pre requisites for Kin 426 – Neuromuscular Anatomy

a. Delete PSYC 280-Introduction to Biological Psychology
b. Add Kin 324 as pre requisite.

FROM : Prerequisite: KIN 325 or KIN 326 or PSYC 280

TO : Prerequisite: KIN 324 or KIN 325 or KIN 326

Rationale: - Instructor finds the students are not adequately prepared with only PSYC 280 as a pre-requisite. Kin 426 is currently required in the Behavioral Neuroscience program. KIN 324 is also required in the Behavioral Neuroscience program and is an acceptable pre requisite for Kin 426.

3. MOTION : To change Kin 431 – Name and Description

From:

Environmental Carcinogenesis

An introduction to core concepts in the field of environmental carcinogenesis. Emphasis will be on the complex interactions of lifestyle factors, carcinogen exposure, genetic susceptibility and dietary habits as determinants of cancer risk. Class work will include discussions of new techniques to monitor exposure to environmental carcinogens and of regulatory aspects of governmental agencies towards carcinogenic agents, as well as approaches being used by such agencies in risk assessment.

To:

Integrative Cancer Biology

Core concepts in cancer biology ranging from the clinical and pathological basis of carcinogenesis to the molecular and cellular changes involved in cancer development. Emphasis will be on the complex interactions of lifestyle factors, genetics and social cultural determinants on cancer risk.

Rationale : Update reflects changes to course content by primary instructor Miriam Rosin.

SFU

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION

EXISTING COURSE, CHANGES RECOMMENDED

Please check appropriate revision(s):

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

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

FROM	TO
Course Number KIN 426	Course Number KIN 426
Credits (Units) 3	Credits (Units) 3

TITLE

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

Neuromuscular Anatomy	Neuromuscular Anatomy

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

DESCRIPTION

DESCRIPTION

PREREQUISITE
Prerequisite: KIN 325 or KIN 326 or PSYC 280

PREREQUISITE
Prerequisite: KIN 324 or KIN 325 or KIN 326

RATIONALE

Instructor finds the students are not adequately prepared with only PSYC 280 as a pre-requisite. Kin 426 is currently required in the Behavioral Neuroscience program. KIN 324 is also required in BNS program and is an acceptable pre requisite.

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 Summer 2011

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION

EXISTING COURSE, CHANGES RECOMMENDED

Please check appropriate revision(s):

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

Indicate number of hours for: Lecture 2 Seminar ____ Tutorial 1 Lab ____

FROM	TO
Course Number: Kin 431	Course Number: Kin 431
Credits (Units): 3	Credits (Units): 3

TITLE

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

Environmental Carcinogenesis	Integrative Cancer Biology

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

DESCRIPTION

An introduction to core concepts in the field of environmental carcinogenesis. Emphasis will be on the complex interactions of lifestyle factors, carcinogen exposure, genetic susceptibility and dietary habits as determinants of cancer risk. Class work will include discussions of new techniques to

PREREQUISITE

MBB 231 (or MBB 201) and at least 90 units.

DESCRIPTION

Core concepts in cancer biology ranging from the clinical and pathological basis of carcinogenesis to the molecular and cellular changes involved in cancer development. Emphasis will be on the complex interactions of lifestyle factors, genetics and social cultural determinants on cancer risk.

PREREQUISITE

MBB 231 (or MBB 201) and at least 90 units.

RATIONALE

Update reflects ongoing changes to course content.

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: Summer 2011

SFU

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION

EXISTING COURSE, CHANGES RECOMMENDED

Please check appropriate revision(s):

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

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

FROM	TO
Course Number Kin 308	Course Number Kin 308
Credits (Units) 3	Credits (Units) 3

TITLE

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

Experiments and Models in Systems Physiology	Experiments and Models in Systems Physiology

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

DESCRIPTION Measurement, analysis and modeling of human physiological systems from a biomedical engineering perspective. Topics include data acquisition, muscle mechanics, nerves and reflexes, metabolism, movement, cardiovascular function, and pulmonary function	DESCRIPTION Lab exercises will provide a hands-on experience in the acquisition of physiological data and mathematical and computer modeling of physiological systems. Lectures will provide an advanced understanding of select human physiological systems.
PREREQUISITE KIN 208. Recommended: MATLAB Experience.	PREREQUISITE KIN 208 or all of KIN 205, KIN 201, STAT 201 and a strong mathematical background.

RATIONALE

Changes will allow KIN and BIF majors to enroll in the course. Currently it is only for Biomedical Engineering students. An introduction to MATLAB has been incorporated into the course.

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 Summer 2011

4. MOTION : Change the **description** and **pre-requisites** for **KIN 308-Experiments and Models in Systems Physiology**

Description:

From:
Measurement, analysis and modeling of human physiological systems from a biomedical engineering perspective. Topics include data acquisition, muscle mechanics, nerves and reflexes, metabolism, movement, cardiovascular function, and pulmonary function.

To:
Lab exercises will provide a hands-on experience in the acquisition of physiological data and mathematical and computer modeling of physiological systems. Lectures will provide an advanced understanding of select human physiological systems.

Prerequisite:

From:
KIN 208. Recommended: MATLAB Experience.

To:
KIN 208 or all of KIN 205, KIN 201, STAT 201 and a strong mathematical background.

Rationale: Changes will allow KIN and BIF majors to enroll in the course. Currently it is only for Biomedical Engineering students. An introduction to MATLAB has been incorporated into the course.

5. MOTION : Add *KIN 308-3 Experiments and Models in Systems Physiology* to list of upper division requirement options for ;

1. Biomedical Physiology majors
2. Kinesiology majors in both the Active Health and Rehabilitation Concentration and the Ergonomics Concentration.

For 1 Biomedical Physiology major

TO :

Biomedical Physiology Major - Upper Division Requirements

Students complete 46-47 upper division units in the following courses, each of which must be completed with a grade of C- or higher.

Students complete all of

Students admitted in September 2006 or later are also required to complete the University's writing, quantitative and breadth (WQB) requirements, which includes the requirement of completing three units of writing-intensive credit at the upper division. The W component may be included within the 52 upper division unit total for this general program.

6. MOTION : Delete Kin 221 from Health and Fitness Certificate.

Rationale : Kin 221 – special topics in kinesiology is not listed in any of our other programs as an elective or requirement. For consistency we would like to eliminate it form the Health and Fitness Certificate. We considered adding it elsewhere, but it is very rarely offered. It was last offered as the alternate to MBB 221 for Kin majors, which is now offered as MBB 201.

7. MOTION : Allow students in Active Health and Rehabilitation concentration of the Kin Major to take both Kin 301 and 407; counting one as an upper division elective.

Rationale :

Currently Kin majors in the Ergonomics concentration and BIF majors are required to take one of 301/407 and may count the other as an elective. The UPC would like to extend this option to the Active Health and Rehabilitation concentration of the Kin Major.

FROM : Kinesiology Major – Upper Division Core
All students complete the following 19 units, including all of

KIN 304W-3 Inquiry and Measurement in Kinesiology†
KIN 305-3 Human Physiology I
KIN 306-3 Human Physiology II
KIN 326-4 Functional Anatomy
KIN 340-3 Active Health: Behavior and Promotion

and one of*

KIN 301-3 Biomechanics Laboratory
KIN 407-3 Human Physiology Laboratory

†KIN 304W satisfies the University's breadth requirements of three upper division units in writing
*Students *specializing in the ergonomics and human factors concentration* can complete both KIN 301 and 407, and count one as an elective.

TO: Kinesiology Major - Upper Division Core
All students complete the following 19 units, including all of

KIN 304W-3 Inquiry and Measurement in Kinesiology†
KIN 305-3 Human Physiology I
KIN 306-3 Human Physiology II
KIN 326-4 Functional Anatomy
KIN 340-3 Active Health: Behavior and Promotion
and one of*

KIN 301-3 Biomechanics Laboratory
KIN 407-3 Human Physiology Laboratory
†KIN 304W satisfies the University's breadth requirements of three upper division units in writing
*Students can complete both KIN 301 and 407, and count one as an elective.

8. Modify Behavioural Neuroscience Major and Honours Programs
a. Delete PHYS 130 and replace it with 2 units of electives
b. Change MBB 221 to MBB 201 in BNS Major and Honours

Rationale : Theses changes were made to all of our other programs several years ago and should have been carried forward to the Behavioral Neuroscience Major and Honors programs.

9. Delete the Following courses from the calendar and from the list of upper division electives for the;

Biomedical Physiology Major, Honors and Minor
Kinesiology Major – Active Health and Rehabilitation Concentration
Kinesiology Major – Ergonomics Concentration
Kinesiology Minor
Behavioral Neuroscience Major and Honors

Kin 367-3 – Psychology of Motor Skill Acquisition
Kin 383-3 – Human Machine and Human Computer Interaction
Kin 416-3 – Control of Limb Mechanics
Kin 442-3 – Biomedical Systems
Kin 467-3 – Human Motor Control
Kin 485-4 - Human Factors in the Underwater Environment
Kin 486-3 – Ergonomics in the Design of Consumer Products

Rationale: These courses have not been offered for several years and the course designers have retired. Kin 383 and Kin 486 will no longer be offered as part of the Ergonomics concentration.

UNIVERSITY CURRICULUM & INSTITUTIONAL LIAISON
OFFICE OF THE VICE PRESIDENT ACADEMIC AND PROVOST

MEMO

ADDRESS
8888 UNIVERSITY DRIVE
BURNABY BC V5A 1S6
CANADA

ATTENTION Rolf Mathews, Associate Dean, FSci TEL

FROM SUSAN RHODES, Assistant Director, University Curriculum and Institutional Liaison

RE WQB designation approvals for FSci course

DATE January 27, 2011

TIME 3:46 PM

The University Curriculum Office has approved the following designation for a Faculty of Science department course:

KIN 417 Obesity, Adipocyte Function and Weight Management – W – effective 1121

Please forward this memo to FSciUCC and SCUS for approval.

SFU

SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION
NOVEMBER 2009

EXISTING COURSE, CHANGES RECOMMENDED

SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION
OCTOBER 2007

Please check appropriate revision(s)

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

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

FROM :	TO:
Course Number MATH 252-3	Course Number _____ Credit
Hour_____	Credit Hour _____

TITLE

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

Vector Calculus	

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

DESCRIPTION

PREREQUISITE

Prerequisite: MATH 240 or 232, and 251. Students with credit for MATH 254 may not take MATH 252 for further credit. Quantitative.	Co-requisite: MATH 240 or 232. Prerequisite: MATH 251. Students with credit for MATH 254 may not take MATH 252 for further credit. Quantitative.

RATIONALE

New ordering of material in both 252 and 232/240 mean that the classes can be taken simultaneously.

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
NOVEMBER 2009

EXISTING COURSE, CHANGES RECOMMENDED

SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION
OCTOBER 2007

Please check appropriate revision(s)

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

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

FROM :	TO:
Course Number MATH 309-3 Credit Hour	Course Number Credit Hour
TITLE	
(1) Long title for calendar and schedule. no more than 100 characters including spaces and punctuation.	
Continuous Optimization	
(2) Short title for enrollment and transcript. no more than 30 characters including spaces and punctuation.	
DESCRIPTION	
PREREQUISITE	
Prerequisite: MATH 240 or 232, and 251. Recommended: MATH 308. Quantitative.	Prerequisite: MATH 240 or 232, and 251. Quantitative.

RATIONALE

To update prerequisites to reflect current syllabus

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

SFU

SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION
NOVEMBER 2009

EXISTING COURSE, CHANGES RECOMMENDED

SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION
OCTOBER 2007

Please check appropriate revision(s)

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

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

FROM :	TO:
Course Number MATH 314-3	Course Number _____ Credit
Hour_____	Credit Hour _____

TITLE

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

Introduction to Fourier Methods and Partial Differential Equations	

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

DESCRIPTION

PREREQUISITE

Prerequisite: MATH 252 (or 254) and 310, and computing experience. Quantitative.	Prerequisite: MATH 310; and one of 252, 254, or 251 with a grade of B+ or better. Quantitative.

RATIONALE

To broaden access for capable non-major students.

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

SFU

SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION
NOVEMBER 2009

EXISTING COURSE, CHANGES RECOMMENDED

SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION
OCTOBER 2007

Please check appropriate revision(s)

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

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

FROM :	**TO:**
Course Number **MATH 418-3**	Course Number
Credit Hour	Credit Hour

TITLE

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

Partial Differential Equations	

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

DESCRIPTION

PREREQUISITE

Prerequisite: MATH 314 (or PHYS 384) or permission of the department. Recommended: MATH 242 and 320. Quantitative.	Prerequisite: MATH 310 and one of (MATH 314, 320, 322, PHYS 384). Students may also register with MATH 254 and MATH 310, both with grades of at least A-. Quantitative.

RATIONALE

To broaden access for capable non-major students.

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
NOVEMBER 2009

EXISTING COURSE, CHANGES RECOMMENDED

SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION
OCTOBER 2007

Please check appropriate revision(s)

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

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

FROM :	TO:
Course Number MATH 419-3	Course Number
Credit Hour	Credit Hour

TITLE

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

Linear Analysis	

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

DESCRIPTION

PREREQUISITE

Prerequisite: MATH 240 (or MATH 232 with a grade of at least B+) and MATH 320. Recommended: MATH 252. Quantitative.	Prerequisite: MATH 232/240 and one of (MATH 314, 320, 322, PHYS 384). Quantitative.

RATIONALE

To broaden access for capable non-major students.

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

NOVEMBER 2009

EXISTING COURSE, CHANGES RECOMMENDED

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION

OCTOBER 2007

Please check appropriate revision(s)

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

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

FROM :	TO:
Course Number MATH 461-3 _____ Credit Hour _____	Course Number _____ Credit Hour _____

TITLE

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

Continuous Mathematical Models	

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

DESCRIPTION

PREREQUISITE

Prerequisite: MATH 314 and MACM 316. Students with credit for MATH 361 may not take MATH 461 for further credit. Quantitative.	Prerequisite: MATH 310 and one of (MATH 314, 316, 418, PHYS 384). Students may also register with MATH 251 and Math 310, both with grades of at least B+. Quantitative.

RATIONALE

To broaden access for capable non-major students.

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

SFU

SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION

NOVEMBER 2009

EXISTING COURSE, CHANGES RECOMMENDED

SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION

OCTOBER 2007

Please check appropriate revision(s)

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

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

FROM :	TO:
Course Number MATH 462-3	Course Number
Credit Hour	Credit Hour

TITLE

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

Fluid Dynamics	

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

DESCRIPTION

PREREQUISITE

Prerequisite: MATH 314 or PHYS 384, MATH 322. Quantitative.	Prerequisite: One of (MATH 314, 418, PHYS 384) or (MATH 251 and 310, both with grades of at least B+). Quantitative.

RATIONALE

To broaden access for capable non-major students.

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

NOVEMBER 2009

EXISTING COURSE, CHANGES RECOMMENDED

SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION

OCTOBER 2007

Please check appropriate revision(s)

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

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

FROM :	**TO:**
Course Number MATH 467-3	Course Number _____ Credit
Hour _____	Credit Hour _____

TITLE

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

Dynamical Systems	

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

DESCRIPTION

PREREQUISITE

Prerequisite: MATH 310. Recommended: MATH 320. Quantitative.	Prerequisite: MATH 310. Quantitative.

RATIONALE

To update prerequisites to reflect current syllabus.

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

SFU

SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION
NOVEMBER 2009

EXISTING COURSE, CHANGES RECOMMENDED

SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION
OCTOBER 2007

Please check appropriate revision(s)

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

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

FROM :	**TO:**
Course Number MATH 470-3	Course Number _____ Credit
Hour _____	Credit Hour _____

TITLE

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

Variational Calculus	

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

DESCRIPTION

PREREQUISITE

Prerequisite: MATH 314 or PHYS 384. Recommended: MATH 320. Quantitative.	Prerequisite: MATH 310 and one of (MATH 314, 320, 322, PHYS 384). Students may also register with MATH 254 and MATH 310, both with grades of at least A-. Quantitative.

RATIONALE

To update prerequisites to reflect current syllabus & to broaden access for capable non-major students.

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
NOVEMBER 2009

EXISTING COURSE, CHANGES RECOMMENDED

SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

COURSE CHANGE/DELETION
OCTOBER 2007

Please check appropriate revision(s)

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

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

FROM :	**TO:**
Course Number MATH 439	Course Number
Credit Hour	Credit Hour

TITLE

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

Algebra IV: Special Topics in Algebra	Selected Topics in Algebra

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

DESCRIPTION

PREREQUISITE

RATIONALE

Drop "Algebra IV" from the title

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

COURSE NUMBER MATH 441

COURSE TITLE

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

Commutative Algebra and Algebraic Geometry

AND

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

Comm. Algebra & Algebraic Geom

CREDITS

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

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

A study of ideals and varieties. Topics include affine varieties, ideals, the Hilbert basis theorem, resultants and elimination, Hilbert's Nullstellensatz, irreducible varieties and prime ideals, decomposition of varieties, polynomial mappings, quotient rings, projective space and projective varieties.

PREREQUISITE

MATH 340

COREQUISITE

SPECIAL INSTRUCTIONS

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

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

RATIONALE FOR INTRODUCTION OF THIS COURSE

We have been offering the content of this course under MATH 439: Algebra IV Topics in algebra in 2008 and 2010 and now that we have decided on content we wish to give the offering a regular title.

SCHEDULING AND ENROLLMENT INFORMATION

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

Spring 2012 then every other year alternating MATH 439/ MATH 441

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

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

What is the probable enrollment when offered? Estimate 15

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

Jason Bell , Nils Bruin, Michael Monagan

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

RESOURCE IMPLICATIONS

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

Campus where course will be taught Burnaby

Library report status

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

We will be sharing the teaching resources allocated to MATH 439 with MATH 441 every other year.

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

none

Articulation agreement reviewed? ☐ YES ☐ NO ☑ Not applicable

OTHER IMPLICATIONS

APPROVALS

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

24.01.11

Chair, Department/School **Date**

25/01/11

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/School/Department commits to providing the required Library funds.**

SEE ATTACHED EMAIL 09 Dec 2010

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.

Student Services - Q-approval given. Please see attached memo.

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.

MATH 441 - Commutative Algebra and Algebraic Geometry

Topics:
A study of ideals and varieties. Topics include affine varieties, ideals, the Hilbert basis theorem, resultants and elimination, Hilbert's Nullstellensatz, irreducible varieties and prime ideals, decomposition of varieties, polynomial mappings, quotient rings, projective space and projective varieties. Additional topics depending on the instructor: Groebner bases and automatic theorem proving in geometry, Bezout's theorem, dimension, and elliptic curves.

Outline:
An introduction to the objects of algebraic geometry: polynomials (in one or more variables over a field), varieties (solutions of systems of polynomial equations), ideals, Groebner bases, and quotient rings. This is a generalization of the theory of linear systems and linear algebra to treat systems of non-linear polynomial equations. The discovery of Groebner bases by Bushberger in 1965, followed by the development of software implementations for computing Groebner bases has made possible a very constructive approach to this subject. Throughout the course we will be using Maple for doing calculations.

Ideals and Varieties:
Polynomials, ideals and varieties
Curves and surfaces in two and three dimensions
Parametrizations of affine varieties

Groebner Bases:
The division algorithm, the Hilbery basis theorem and Groebner bases
Buchbergers algorithm in two and three dimensions
Parametrizations of affine varieties

Elimination Theory
Elimination theory, implicitization of curves and surfaces, unique factorization, and polynomial resultants.

Hilberts Nullstellensutz and ideal decomposition
Hilberts Nullstellensatz
Decomposition of varieties and the primary decomposition of ideals
Quotient rings

Applications
Geometric Theorem proving, circle packing problems

Grading: Homework 60% Final exam 40%

Required Textbook:
Ideals, Varieties and Algorithms, 3rd Edition, Author: Cox, Little and O'Shea
Publisher: Springer-Verlag, Year: 2007, ISBN: 387356509

Prerequisite:
MATH 340

SFU

UNIVERSITY CURRICULUM & INSTITUTIONAL LIAISON
OFFICE OF THE VICE PRESIDENT ACADEMIC AND PROVOST

MEMO

ADDRESS
8888 UNIVERSITY DRIVE
BURNABY BC V5A 1S6
CANADA

ATTENTION JoAnne Hennessey | TEL

FROM SUSAN RHODES, Assistant Director, University Curriculum and Institutional Liaison

RE MATH 441 Q designation

DATE December 14, 2010

TIME 2:17 PM

Please be advised that the University Curriculum Office has approved Q designation for MATH 441 (Commutative Algebra and Algebraic Geometry). This information can be forwarded to the Faculty of Science Undergraduate Committee for the upcoming January 2011 meeting, and then on to SCUS for final approval.