



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
FROM Daniel Leznoff, Chair
Senate Committee on
Undergraduate Studies
RE: Program Changes

DATE March 2, 2018

PAGES 1/4

For information:

Acting under delegated authority at its meeting of March 1, 2018 SCUS approved the following curriculum revisions effective Fall 2018.

a. Faculty of Applied Sciences (SCUS 18-16)

1. Mechatronic Systems Engineering

- (i) Changes to the MSE internal transfer requirements
- (ii) Changes to the Co-op requirement for the Mechatronic Systems Engineering and Business Double Degree Major program

b. Faculty of Arts and Social Sciences (SCUS 18-17)

1. Cognitive Science Program (SCUS 18-17a)

- (i) Lower division requirement change to the Cognitive Science Major, Honours and Minor programs

2. Department of English (SCUS 18-17b)

- (i) Requirement change to the Writing and Rhetoric Certificate

3. Department of History (SCUS 18-17c)

- (i) Lower and upper division requirement changes to:
 - History Major and Honours programs
 - History and English Joint Major
 - History and Gender, Sexuality, and Women's Studies Joint Major
 - History and Humanities Joint Major
 - History and World Literature Joint Major

- (ii) Requirement changes (calendar formatting) to:
 - English and History Joint Major
 - History and Gender, Sexuality, and Women's Studies Joint Major
 - History and Humanities Joint Major
 - History and World Literature Joint Major
 - History Minor and Extended Minor programs

4. Department of Linguistics (SCUS 18-17d)

- (i) Lower division requirement change to:
 - Linguistics Major, Honours and Extended Minor programs
 - Computing Science and Linguistics Joint Major
 - First Nations Studies and Linguistics Joint Major
 - Linguistics and Anthropology Joint Major
 - Linguistics of Speech Science Certificate
 - Teaching ESL Linguistics Certificate
- (ii) Admission requirement change to:
 - Linguistics Major, Honours, Minor and Extended Minor programs
 - Computing Science and Linguistics Joint Major
 - First Nations Studies and Linguistics Joint Major
 - Linguistics and Anthropology Joint Major
- (iii) Continuation requirement change to:
 - Linguistics Major, Minor and Extended Minor programs
 - Linguistics of Speech Science Certificate

5. Department of Philosophy (SCUS 18-17e)

- (i) Lower division requirement change for:
 - Philosophy Major, Honours and Extended Minor programs
 - Philosophy and Health Sciences Joint Major
 - Philosophy and Humanities Joint Major
- (ii) Upper division requirement change for:
 - Philosophy Major and Honours programs
 - Philosophy Major with a Concentration in Law and Philosophy program
 - Philosophy and Health Sciences Joint Major
- (iii) Requirement change to the Ethics Certificate

c. Beedie School of Business (SCUS 18-18)

- (i) Requirement changes to the Business Analytics and Decision Making Certificate

d. Faculty of Communication, Art and Technology (SCUS 18-19)

1. School for the Contemporary Arts (SCUS 18-19a)

(i) Continuance change for the Post Baccalaureate Diploma

2. School of Interactive Arts and Technology (SCUS 18-19b)

(i) Changes to the continuance requirements for the Interactive Arts and Technology Minor

(ii) Upper division requirement changes to the

- IAT BA, BSc
- BA Honours and BSc Honours
- SIAT Minor
- Communication and Interactive Arts and Technology Joint Major and Business Joint Major programs
- Interactive Arts and Technology Major and Honours - BA and BSc

e. Faculty of Environment (SCUS 18-20)

1. Sustainable Development Program (SCUS 18-20a)

(i) Admission, Upper and lower division requirement changes to the Development and Sustainability Minor

(ii) Requirement changes to the Sustainable Community Development Certificate program

(iii) Requirement changes to the Post Baccalaureate Diploma

2. School of Resource and Environmental Management (SCUS 18-20b)

(i) Requirement changes to the REM Major

3. Faculty of Environment (SCUS 18-20c)

(i) Requirement changes to the Joint Major in Business and Environment

f. Faculty of Science (SCUS 18-21)

1. Department of Statistics and Actuarial Science (SCUS 18-21a)

(i) Upper division requirement changes for the STAT major program

2. Department of Mathematics (SCUS 18-21b)

(i) Lower division requirement changes to the Applied Mathematics Major and Honours programs

3. Department of Earth Sciences (SCUS 18-21c)

(i) Lower division requirement changes to the EASC Major, Honours and EASC-CHEM Joint Major and EASC-CHEM Joint Honours

4. Department of Chemistry (SCUS 18-21d)

(i) Lower division requirement changes to the Chemistry and MBB Joint Major and Chemistry and MBB Joint Honours programs

5. Department of Molecular Biology and Biochemistry (SCUS 18-21e)

(i) Upper division requirement changes to the MBB Majors and Honours programs



8888 University Drive,
Burnaby, BC
Canada V5A 1S6

TEL: 778.782.4724
FAX: 778.782.5802

www.fas.sfu.ca

MEMORANDUM

ATTENTION	Daniel Leznoff, Chair Senate Committee on Undergraduate Studies	DATE	February 8, 2018
FROM	Kevin Oldknow, Associate Dean Faculty of Applied Sciences	PAGES	
RE:	Program changes		

The FAS Undergraduate Curriculum Committee in the Faculty of Applied Sciences has approved the following **program changes**:

- 1.) Mechatronic Systems Engineering
 - I. Calendar Change
 - Revision to MSE internal transfer requirements
 - Revision to Co-op requirement for MSE-BUS dual degree

Internal transfer:

Under Internal transfer section in the **Summer 2018** SFU Calendar listing for MSE (currently only available in draft version).

Simon Fraser University students who wish to transfer to Mechatronic Systems Engineering must meet the following requirements.

Internal Transfer from another Simon Fraser University Program

1. a CGPA of at least 2.67 (B-)
2. registration in at least 12 credits units in the term prior to admission
3. no more than 5 repeats
4. meeting high school admission requirements (~~Math 12, Physics 12, and English 12~~)

MSE items for FAU UCC meeting scheduled for February 8, 2018

I. Co-op requirement for MSE – Business Dual degree

Background:

The wording in the calendar for the co-op requirement for the MSE Business Dual degree is vague and has created confusion among students.

<http://www.sfu.ca/students/calendar/2018/spring/programs/mechatronic-systems-engineering-and-business-double-degree-program/major/bachelor-of-applied-science-and-bachelor-of-business-administration.html>

MSE items for FAU UCC meeting scheduled for February 8, 2018

Mechatronic Systems Engineering and Business Double Degree Program Major

Bachelor of Applied Science and Bachelor of Business Administration

This double-degree major program leads to a bachelor of applied science degree and a bachelor of business administration degree.

Admission Requirements

Admission is normally via the mechatronic systems engineering major (MSE). Students are admitted based on a CGPA of 3.0 obtained on the first 30 units of the mechatronic systems engineering major plus ECON 105. Otherwise, MSE majors may later gain admission by meeting the competitive requirements for entry into the Beedie School of Business. Beedie business students may gain admission by meeting the internal transfer requirements of the mechatronic systems engineering major.

Co-operative Education Work Experience

~~This double degree program includes a mandatory co-operative education program of at least three (3) and up to five (5) work terms of practical work experience. During the first two years, students may complete up to two optional co-op terms including one non technical engineering experience (MSE 193) and one business practicum (BUS 225).~~

~~After the first two years, students complete three mandatory work terms, and it is strongly recommended that at least one is in engineering industry (MSE 293, 393, 493), one is in business (BUS 225, 325, 326, 327) and a third is in industry, business or in a special co-op term (MSE 294, 394, 494).~~

~~Special co-op terms may include, but is not restricted to, self directed, entrepreneurial, service or research co-op work terms.~~

~~Permission of the FAS/Mechatronics co-op office is required.~~

~~This double degree program requires the completion of a minimum of three mandatory engineering co-operative education work terms (MSE 293/294, MSE 393/394, and MSE 493/494). Dual- degree students may also take up to two additional co-op terms in Business (BUS 225, 325, 326, 327). These additional co-op terms will NOT count towards the three mandatory engineering co-op terms.~~

MSE items for FAU UCC meeting scheduled for February 8, 2018

From: Andrew Gemino <gemino@sfu.ca>
Subject: Re: MSE-Business Dual Degree
Date: Thu, 18 Aug 2016 17:52:19 -0700
To: Ahmad B Rad <arad@sfu.ca>
X-Mailer: iPhone Mail (13B143)

Hello Ahmad

It was good to meet you too.

The proposed change has little effect on our side of the degree program so I am happy to approve the change.

My apologies for the delay.

Andrew

Sent from my iPhone

On Aug 18, 2016, at 3:00 PM, Ahmad B Rad <arad@sfu.ca> wrote:

Hi Andrew,

It was nice to meet you this morning. I sent you two emails on June 20th and July 29th regarding the MSE-Business Double Degree respectively. Both emails are also included in this email.

Also we have replaced MACM 316 with another course MSE211. As it also applies to the double degree program, I am told that in order to go ahead with calendar changes, your approval is also needed.

I appreciate your response.

Regards,

Ahmad

Date: Mon, 20 Jun 2016 11:21:16 -0700
To: "Andrew Gemino" <gemino@sfu.ca>
From: Ahmad B Rad <arad@sfu.ca>
Subject: Re: MSE-Business Dual Degree
Cc: Stephanie DeRapp <sda43@sfu.ca>, Farid Golnaraghi <mfgolnar@sfu.ca>

Good morning Dr. Gemino,

I am the Undergraduate Chair of MSE program and would like to share with you a problem that we are currently facing with regards to co-op terms for MSE-Business Dual Degree students. The ambiguity arises as the type of co-op has not been explicitly indicated in the current calendar text. MSE would like to simplify the process and make the requirements clear to students. Here is the recommended text:

<<<

Proposed Changes to the Web content

This double degree programs requires the completion of minimum three mandatory engineering co-operative education work terms (MSE 293/294, MSE 393/394, and MSE 494/494). Dual-degree students may also take up to two additional co-ops in Business (BUSS 225, 325, 326, 327). These additional co-ops will NOT count towards the three required mandatory co-ops.

>>>

I look forward to hearing from you.

Ahmad

MSE items for FAU UCC meeting scheduled for February 8, 2018



SCUS 18-17a

Calendar Entry Change
Cognitive Science

Rationale for change:

LING is updating their courses

Effective term and year: 1187

The following program(s) will be affected by these changes:

COGS Honours

COGS Major

COGS Minor

Calendar Change: “to” and “from” sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

COGS Honours/Major

INTERMEDIATE COURSES

Students complete

LINGUISTICS

~~LING 221 - Introduction to Phonetics and Phonology (3)~~

~~LING 222 - Introduction to Syntax (3)~~

LING 282W - Writing for Linguistics (3)

COGS Minor

LINGUISTICS

Students who choose this discipline will complete

LING 220 - Introduction to Linguistics (3)

and ~~one of~~

~~LING 221 - Introduction to Phonetics and Phonology (3)~~

~~LING 222 - Introduction to Syntax (3)~~

LING 282W - Writing for Linguistics (3)



SCUS 18-17b

Calendar Entry Change

Name of Program or Name of Faculty English

Rationale for change:

We are requesting two changes. The first is simply clerical, reflecting the change in title of PUB 210W. The second change, in the final paragraph of the requirements and approved by the English Department Undergraduate Curriculum Committee (UCC) on Nov. 20, 2017, is more substantive. A number of students enrolled in the Writing and Rhetoric Certificate in the English Department have experienced difficulty accessing upper-level courses in other departments participating in the Certificate. Our concern is that in practice, the current requirements can compromise students' ability to complete the Certificate in a timely manner. Therefore we wish to remove the restriction on how many of the requirements a student may take in any one department.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Writing and Rhetoric Certificate (Department of English)

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

April 2016

Writing and Rhetoric Certificate

Students in this certificate will investigate the theories and methods of rhetorical analysis and production through a course sequence that reflects the interdisciplinary vitality of the field, drawing together studies of rhetoric in English, philosophy, linguistics, and communications.

Admission Requirements

Normal requirements for admission to Simon Fraser University apply. Prior to formal program admission, students must complete one of

ENGL 199W Introduction to University Writing (3)

LING 200 Introduction to the Description of English Grammar (3)

PHIL 110 Introduction to Logic and Reasoning (3)

PUB 210W ~~Writing to Purpose~~ **Fundamentals of Professional Writing** (3) [the name of which will change effective September 1, 2014 to Fundamentals of Professional Writing]

Program Requirements

A cumulative grade point average of 2.0 is required in the courses used for the certificate.

Students successfully complete a minimum total of 24 units, including
ENGL 214 - History and Principles of Rhetoric (3)

and four of

CMNS 304W - Communication in Everyday Life (4)

CMNS 331 - News Discourse as Political Communication (4)

CMNS 332 - Communication and Rhetoric (4)

ENGL 371 - Writing: Theory and Practice (4)

ENGL 375 - Studies in Rhetoric (4)

LING 160 - Language, Culture and Society (3)

PHIL 344 - Philosophy of Language (3)

PUB 212 - Public Relations and Public Engagement (3)

and two of

CMNS 432 - Political Communication, Public Opinion and Political Marketing (4)

CMNS 447 - Negotiation and Dialogue as Communication (4)

CMNS 452 - Race and the Media (4)

ENGL 470W - Studies in the English Language (4)

ENGL 475W - Topics in Rhetoric (4)



Of the seven required courses, ~~no more than four may be in any one department~~, while a minimum of three must be in the Department of English. Substitutions may be approved on a case-by-case basis by the advisor.

Calendar Entry Change

Department of History, Faculty of Arts and Social Sciences

Rationale for changes:

- adding existing courses to appropriate Groups (HIST 200, HIST 382)
- updating prerequisite language for Major and Honours to reflect recent changes to prerequisites for 300-level courses

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

- History Major
- History Honours
- History and English Joint Major
- History and Gender, Sexuality, and Women's Studies Joint Major
- History and Humanities Joint Major
- History and World Literature Joint Major

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Requested Change to Groups:

Program Requirements

Lower Division Requirements [...]

Group 4 – Global Comparative [...]

HIST 132 - Global Environmental History (3)

HIST 200 - Making History: Introduction to Historical Research (3) **HIST 249 - Classical Islamic Civilization (3)[...]**

Upper Division Requirements [...]

Group 2 – Americas HIST 377 - Environmental History (4)

HIST 382 - African-American History, since 1865 (4)

HIST 390 - Studies in History I (4) * [...]



Requested change to:

- History Major
- History Honours

Program Requirements

Lower Division Requirements [...]

Students registering in 400 division seminars should have an appropriate background in 100, 200 and/or 300 division history. Normally, students should complete 45 units (or equivalent) prior to enrolment in any upper division history course. ~~Students must complete at least nine lower division history units before enrolling in upper division work.~~ **Students must complete at least six lower division history units before enrolling in 300 division work and nine lower division history units before enrolling in 400 division work. [...]**

Requested change to:

- History and English Joint Major
- History and Gender, Sexuality, and Women's Studies Joint Major
- History and Humanities Joint Major
- History and World Literature Joint Major

History Lower Division Requirements [...]

~~Students must complete at least nine lower division history units before enrolling in upper division work.~~ **Students must complete at least six lower division history units before enrolling in 300 division work and nine lower division history units before enrolling in 400 division work.**



Calendar Entry Change

Department of History, Faculty of Arts and Social Sciences

Rationale for change:

- standardising language and format for two-subject joint major programs: as with the History and World Literature Joint Major page - replace Group course lists with links to the History Major page
- adding information about existing History Concentrations to the descriptions of Joint Majors between History and English, GSWS, Humanities, and World Literature. **NB** this change has been approved by the above mentioned units. Please refer to the correspondence above regarding the deletion of HIST 363 for approval from English, GSWS, and Humanities as these matters were dealt with simultaneously. Approval from World Literature has been appended to the Calendar Entry Change form.
- replace Concentration lists with links to the History Major page

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

- History and English Joint Major
- History and Gender, Sexuality, and Women's Studies Joint Major
- History and Humanities Joint Major
- History and World Literature Joint Major

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

~~Upper Division History~~

~~Students complete 24 units of 300 and 400 division history courses, of which 12 must be in 400 division. Students must complete at least one course from each group. Global/Comparative courses that are also included in another group may only be counted towards fulfilling the upper division course requirements for one group.~~

~~Group 1—Europe~~

~~HIST 304—Alexander the Great and the Quest for World Empire (4) or HS 304—Alexander the Great and the Quest for World Empire (4)~~

~~HIST 307—Selected Topics in Hellenic Studies (4) or HS 307—Selected Topics in Hellenic Studies (4)~~

~~HIST 314—British and Irish Society since the Mid 18th Century (4)~~

~~HIST 315—Politics and Society in England, 1500-1707 (4)~~

~~HIST 319—Modern France (4)~~

~~HIST 320—European Reformation (4)~~

~~HIST 321—State and Society in Early Modern Europe (4)~~

~~HIST 332—Politics and Culture in Modern Germany (4)~~
~~HIST 334—The Making of Imperial Russia (4)~~
~~HIST 335—The Soviet Project (4)~~
~~HIST 336—Ideas and Society in Early Modern Europe (4)~~
~~HIST 338—World War II (4)~~
~~HIST 339—The British Empire and Commonwealth (4)~~
~~HIST 345W—Selected Topics in European History (4)~~
~~HIST 347—STT—Family and Youth in Scotland (4)~~
~~HIST 349—Rome after Rome: The Byzantine Middle Ages from the end of Antiquity to the Crusades (4)~~
~~or HS 349—Rome after Rome: The Byzantine Middle Ages from the end of Antiquity to the Crusades (4)~~
~~HIST 359—Constructing the Nation State in Greece, the Balkans, and the Mediterranean (4) or HS 359—~~
~~Constructing the Nation State in Greece, the Balkans, and the Mediterranean (4)~~
~~HIST 362—Ireland from the Penal Era to Partition (4)~~
~~HIST 364—Traveller, Diplomatic, and Media Narratives in Greece, the Balkans and the Mediterranean (4)~~
~~or HS 364—Traveller, Diplomatic, and Media Narratives in Greece, the Balkans and the Mediterranean~~
~~(4)~~
~~HIST 390—Studies in History I (4) *~~
~~HIST 391—Studies in History II (4) *~~
~~HIST 401—Problems in Modern German History (4)~~
~~HIST 402—Renaissance Italy (4)~~
~~HIST 404—Protestants, Papists and Puritans: Culture and Belief in Early Modern England, 1500-1640 (4)~~
~~HIST 407—Popular Culture in Great Britain and Europe (4)~~
~~HIST 415—Victorian Britain (4)~~
~~HIST 416—The French Revolution (4)~~
~~HIST 417W—Problems in Modern French History (4)~~
~~HIST 419W—Problems in Modern Russian History (4)~~
~~HIST 420—Themes in Russian Imperial History (4)~~
~~HIST 422—Greece, 1935-1944: Occupation and Resistance (4) or HS 422—Greece, 1935-1944:~~
~~Occupation and Resistance (4)~~
~~HIST 433W—Italian Films, Italian Histories (4)~~
~~HIST 438W—Problems in the History of the British Empire (4)~~
~~HIST 439—Catholicism in Early Modern Europe (4)~~
~~HIST 441—Women, Property, and the Law in the Mediterranean (4) or HS 441—Women, Property, and~~
~~the Law in the Mediterranean (4)~~
~~HIST 445—Problems in Modern Italian History (4)~~
~~HIST 448—STT—Scots in the Atlantic World (4)~~
~~HIST 460—Themes in Byzantine History (4) or HS 460—Themes in Byzantine History (4)~~
~~HIST 462W—Religion, Ethnicity, and Politics in Twentieth Century Northern Ireland (4)~~
~~HIST 476—History of Modern Greece (4) or HS 476—History of Modern Greece (4)~~
~~HIST 485—Studies in History I (4) *~~
~~HIST 486—Studies in History II (4) *~~

* when topic is applicable

Group 2—The Americas

~~HIST 322—Atlantic and Pacific Migration (4)~~

~~HIST 323—The Canadian Prairies (4)~~
~~HIST 325—History of Aboriginal Peoples of North America to 1850 (4) or FNST 325—History of Aboriginal Peoples of North America to 1850 (4)~~
~~HIST 326—History of Aboriginal Peoples of North America Since 1850 (4) or FNST 326—History of Aboriginal Peoples of North America Since 1850 (4)~~
~~HIST 327—Canadian Labor and Working Class History (4)~~
~~HIST 330W—Controversies in Canadian History (4)~~
~~HIST 373—Conquest in North America, 1500-1900 (4)~~
~~HIST 374W—Selected Topics in the History of the Americas (4)~~
~~HIST 376—North American West (4)~~
~~HIST 377—Environmental History (4)~~
~~HIST 390—Studies in History I (4) *~~
~~HIST 391—Studies in History II (4) *~~
~~HIST 424—Problems in the Cultural History of Canada (4)~~
~~HIST 425W—Gender and History (4)~~
~~HIST 427—Problems in the History of Aboriginal Peoples (4)~~
~~HIST 428—Problems in the Social and Economic History of Canada (4)~~
~~HIST 430—French Americas (4)~~
~~HIST 432—Problems in Environmental History (4)~~
~~HIST 436—British Columbia (4)~~
~~HIST 440—Selected Topics in US History (4)~~
~~HIST 443W—Aboriginal Peoples, History and the Law (4) or FNST 443W—Aboriginal Peoples, History and the Law (4)~~
~~HIST 444W—Conceptualizing Atlantic Canada (4)~~
~~HIST 447W—The Nikkei Experience in North America (4)~~
~~HIST 454—Problems in the History of Sexuality (4)~~
~~HIST 455W—Race in the Americas (4)~~
~~HIST 458W—Problems in Latin American Regional History (4)~~
~~HIST 459W—Problems in the Political and Social History of Latin America (4)~~
~~HIST 485—Studies in History I (4) *~~
~~HIST 486—Studies in History II (4) *~~

* when topic is applicable

Group 3—Africa, Middle East, Asia

~~HIST 344—Themes in Modern East Africa (4)~~
~~HIST 348—A History of Twentieth Century South Africa (4)~~
~~HIST 350—The Ottoman Empire and Turkey (4)~~
~~HIST 352—Religion and Politics in Modern Iran (4)~~
~~HIST 354—Imperialism and Modernity in the Middle East (4)~~
~~HIST 355—The Arab Middle East in the Twentieth Century (4)~~
~~HIST 364—Traveller, Diplomatic, and Media Narratives in Greece, the Balkans and the Mediterranean (4) or HS 364—Traveller, Diplomatic, and Media Narratives in Greece, the Balkans and the Mediterranean (4)~~
~~HIST 366—Social and Cultural History of Modern China (4)~~
~~HIST 367—History of the People's Republic of China (4)~~

~~HIST 368W—Selected Topics in the History of the Wider World (4)~~
~~HIST 371—The Asia-Pacific War in Modern Japanese History (4)~~
~~HIST 388—Religion and Globalization (4)~~
~~HIST 390—Studies in History I (4) *~~
~~HIST 391—Studies in History II (4) *~~
~~HIST 441—Women, Property, and the Law in the Mediterranean (4) or HS 441—Women, Property, and the Law in the Mediterranean (4)~~
~~HIST 456—The Late Ottoman Empire: State, Culture and Social Transformation, 1750-1923 (4)~~
~~HIST 457—The Turkish Republic: Politics, Society, and Culture, 1918-Present (4)~~
~~HIST 464—Problems in Modern Asian History (4)~~
~~HIST 465—The Palestinian-Israeli Conflict (4)~~
~~HIST 465—The Palestinian-Israeli Conflict (4)~~
~~HIST 467—Modern Egypt (4)~~
~~HIST 468W—Problems in the History of Religion (4)~~
~~HIST 469—Islamic Social and Intellectual History (4)~~
~~HIST 471W—Women in Japanese History (1600-1952) (4)~~
~~HIST 472W—Problems in World History (4)~~
~~HIST 473W—Problems in Southern African History (4)~~
~~HIST 478—STT History of Law in Taiwan: Competing Regimes, Social Power, and Legal Culture (4)~~
~~HIST 479W—Contentious Problems in Modern Chinese History (4)~~
~~HIST 485—Studies in History I (4) *~~
~~HIST 486—Studies in History II (4) *~~

* when topic is applicable

Group 4 Global/Comparative

~~HIST 300—Historiography (4)~~
~~HIST 322—Atlantic and Pacific Migration (4)~~
~~HIST 334—The Making of Imperial Russia (4)~~
~~HIST 335—The Soviet Project (4)~~
~~HIST 358—Development, Aid and Difference in Historical Perspective (4) or IS 358—Development, Aid and Difference in Historical Perspective (4)~~
~~HIST 363—History of Technology (4)~~
~~HIST 372—Urban History (4)~~
~~HIST 373—Conquest in North America, 1500-1900 (4)~~
~~HIST 376—North American West (4)~~
~~HIST 388—Religion and Globalization (4)~~
~~HIST 390—Studies in History I (4) *~~
~~HIST 391—Studies in History II (4) *~~
~~HIST 420—Themes in Russian Imperial History (4)~~
~~HIST 425W—Gender and History (4)~~
~~HIST 441—Women, Property, and the Law in the Mediterranean (4) or HS 441—Women, Property, and the Law in the Mediterranean (4)~~
~~HIST 451—Oral History: Theories and Practices (4)~~
~~HIST 454—Problems in the History of Sexuality (4)~~
~~HIST 461—Oral History: Practicum (4)~~



~~HIST 463W – Rebellion and Revolution: Topics in the Theory and Practice of Resistance (4)~~

~~HIST 468W – Problems in the History of Religion (4)~~

~~HIST 469 – Islamic Social and Intellectual History (4)~~

~~HIST 472W – Problems in World History (4)~~

~~HIST 485 – Studies in History I (4) *~~

~~HIST 486 – Studies in History II (4) *~~

* when topic is applicable

Upper Division History Requirements

Students complete 24 units of 300 and 400 level history courses, of which 12 must be in 400 level. Students must complete at least one course from each group shown below. Global/Comparative courses that are also included in another group may only be counted towards fulfilling the upper division course requirements for one group.

Group 1 - Europe

Group 2 - The Americas

Group 3 - Africa, Middle East, Asia

Group 4 - Global/Comparative

[replace Group course lists with links to the History Major page]

Students in History joint major programs have the option of taking concentrations to enhance their programs.

Concentration in British History and Irish History

Concentration in Early Modern World History

Concentration in Middle Eastern and Islamic History

[The Concentrations above will be linked to the History Major page]



Calendar Entry Change

Department of History, Faculty of Arts and Social Sciences

Rationale for change:

- changing format for concentrations under History Minor and Extended Minor * NB Course deletion (HIST 363) and creation (HIST 185) were approved by History Department as a whole. Other changes were approved by History Undergraduate Program Committee.
- replace Concentration lists with links to the History Major page

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

- History Minor
- History Extended Minor

Calendar Change: “to” and “from” sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

~~Students in the History minor program have the option of taking concentrations to enhance their programs.~~

~~Concentration in British History and Irish History~~

~~Students may qualify for this concentration by completing~~

~~HIST 215 The Making of the British Isles (3)~~

~~and one of~~

~~HIST 314 British and Irish Society since the Mid 18th Century (4)~~

~~HIST 315 Politics and Society in England, 1500-1707 (4)~~

~~HIST 347 STT Family and Youth in Scotland (4)~~

~~HIST 339 The British Empire and Commonwealth (4)~~

~~HIST 362 Ireland from the Penal Era to Partition (4)~~

~~and four of~~

~~HIST 404 Protestants, Papists and Puritans: Culture and Belief in Early Modern England, 1500-1640 (4)~~

~~HIST 407 Popular Culture in Great Britain and Europe (4)~~

~~HIST 415 Victorian Britain (4)~~

~~HIST 438W Problems in the History of the British Empire (4)~~

~~HIST 448 STT Scots in the Atlantic World (4)~~

~~HIST 462W Religion, Ethnicity, and Politics in Twentieth Century Northern Ireland (4)~~

~~Concentration in Early Modern World History~~

~~Students qualify for this concentration by completing three of~~

~~HIST 101 Canada to Confederation (3)~~

~~HIST 104 The Americas from Colonization to Independence (3)~~



~~HIST 252—Islamic India (3)~~
~~HIST 254—China to 1800 (3)~~
~~HIST 325—History of Aboriginal Peoples of North America to 1850 (4)~~
~~HIST 373—Conquest in North America, 1500–1900 (4)~~
~~HIST 430—French Americas (4)~~
~~HIST 472W—Problems in World History (4)~~

and three of

~~HIST 220—Late Medieval and Renaissance Europe (3)~~
~~HIST 223—Early Modern Europe, 1500–1789 (3)~~
~~HIST 315—Politics and Society in England, 1500–1707 (4)~~
~~HIST 320—European Reformation (4)~~
~~HIST 321—State and Society in Early Modern Europe (4)~~
~~HIST 336—Ideas and Society in Early Modern Europe (4)~~
~~HIST 402—Renaissance Italy (4)~~
~~HIST 404—Protestants, Papists and Puritans: Culture and Belief in Early Modern England, 1500–1640 (4)~~
~~HIST 416—The French Revolution (4)~~
~~HIST 439—Catholicism in Early Modern Europe (4)~~
~~HIST 472W—Problems in World History (4)~~

At least four of these six required courses must be at the upper division. Other courses with appropriate content can be used for credit upon prior application to the advisor.

Concentration in Middle Eastern and Islamic History

Students may qualify for this concentration by completing two of

~~HIST 151—The Modern Middle East (3)~~
~~HIST 249—Classical Islamic Civilization (3)~~
~~HIST 252—Islamic India (3)~~
~~HIST 278—The Greeks in the Ottoman Empire (3)~~

and four of

~~HIST 350—The Ottoman Empire and Turkey (4)~~
~~HIST 352—Religion and Politics in Modern Iran (4)~~
~~HIST 354—Imperialism and Modernity in the Middle East (4)~~
~~HIST 355—The Arab Middle East in the Twentieth Century (4)~~
~~HIST 456—The Late Ottoman Empire: State, Culture and Social Transformation, 1750–1923 (4)~~
~~HIST 457—The Turkish Republic: Politics, Society, and Culture, 1918–Present (4)~~
~~HIST 465—The Palestinian-Israeli Conflict (4)~~
~~HIST 467—Modern Egypt (4)~~
~~HIST 469—Islamic Social and Intellectual History (4)~~

Students in History programs have the option of taking concentrations to enhance their programs.

Concentration in British History and Irish History

Concentration in Early Modern World History



Concentration in Middle Eastern and Islamic History

[The Concentrations above will be linked to the History Major page]



SCUS 18-17d

Calendar Entry Change Lower Division Requirements

Name of Program or Name of Faculty: Linguistics Major

Rationale for change: To accommodate the deletions of LING 221 and LING 222.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Linguistics Major Program

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Lower Division Requirements

Students complete all of

LING 220 - Introduction to Linguistics (3)

~~LING 221 - Introduction to Phonetics and Phonology (3)~~

~~LING 222 - Introduction to Syntax (3)~~

LING 282W - Writing for Linguistics (3)

and ~~six~~ **nine** additional lower division LING and/or FNLG units.



Calendar Entry Change Lower Division Requirements

Name of Program or Name of Faculty: Linguistics Honours Program

Rationale for change: To accommodate the deletion of two required courses and the addition of one new required course.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Linguistics Honours Program

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Lower Division Requirements

Students complete ~~all~~ **both of**

LING 220 - Introduction to Linguistics (3)

~~LING 221 - Introduction to Phonetics and Phonology (3)~~

~~LING 222 - Introduction to Syntax (3)~~

LING 282W - Writing for Linguistics (3)

and ~~six~~ **nine** additional lower division units in LING and/or FNLG courses.



Calendar Entry Change Lower Division Requirements

Name of Program or Name of Faculty Linguistics Extended Minor

Rationale for change: To accommodate the deletion of two required courses and the addition of one new required course.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Linguistics Extended Minor

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Lower Division Requirements

Students complete all both of

LING 220 - Introduction to Linguistics (3)

~~LING 221 - Introduction to Phonetics and Phonology (3)~~

~~LING 222 - Introduction to Syntax (3)~~

LING 282W - Writing for Linguistics (3)

and ~~six~~ **nine** additional units in lower division LING and/or FNLG courses.



Calendar Entry Change Lower Division Requirements

Name of Program or Name of Faculty Computing Science and Linguistics Joint Major

Rationale for change: To accommodate the deletion of two required courses and the addition of one new required course.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Computing Science and Linguistics Joint Major

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Lower Division Requirements

Linguistics Requirements

Students complete at least nine units, including ~~all of~~ **both**

LING 220 - Introduction to Linguistics (3)

~~LING 221 - Introduction to Phonetics and Phonology (3)~~

~~LING 222 - Introduction to Syntax (3)~~

LING 282W - Writing for Linguistics (3)



Calendar Entry Change Lower Division Requirements

Name of Program or Name of Faculty First Nations Studies and Linguistics Joint Major

Rationale for change: To accommodate the deletion of LING 221 and the addition of one new required course.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

First Nations Studies and Linguistics Joint Major

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Lower Division Linguistics Requirements

Students complete at least 15 units of lower division linguistics courses including both of

LING 220 - Introduction to Linguistics (3)

~~LING 221 - Introduction to Phonetics and Phonology (3)~~

LING 282W - Writing for Linguistics (3)

and nine additional 100 or 200 division LING and/or FNLG units. Note that LING ~~222~~ **282W** is required for ~~many~~ **all** upper division **Linguistics** courses.

Subject to approval by the program director, other lower division courses that have First Nations language content may be applied toward this program.



Calendar Entry Change Lower Division Requirements

Name of Program or Name of Faculty Linguistics and Anthropology Joint Major

Rationale for change: To accommodate the deletion of two required courses and the addition of one new required course.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Linguistics and Anthropology Joint Major

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Lower Division Linguistics Requirements

Students complete

LING 160 - Language, Culture and Society (3)

LING 220 - Introduction to Linguistics (3)

and one of

FNLG 130 - Practical Phonetics for First Nations Languages (3)

~~LING 221 - Introduction to Phonetics and Phonology (3)~~

LING 282W - Writing for Linguistics (3)

and six additional units in 100 and 200 division LING and/or FNLG courses. Note that LING ~~222~~ **282W** is required for ~~many~~ **all** upper division **Linguistics** courses.



Calendar Entry Change Lower Division Requirements

Name of Program or Name of Faculty: Linguistics – Linguistics of Speech Science Certificate

Rationale for change: To accommodate the deletion of a required course and the addition of a new required course.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Linguistics of Speech Science Certificate

Calendar Change: “to” and “from” sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Program Requirements

Students complete a total of 18 units including all of

~~LING 222 - Introduction to Syntax (3)~~

LING 200 - Introduction to English Sentence Analysis (3)

LING 290 - The Science of Speech (3)

LING 330 - Phonetics (3)

LING 350 - First Language Acquisition (3)



Calendar Entry Change Lower Division Requirements

Name of Program or Name of Faculty: Teaching ESL Linguistics Certificate

Rationale for change: To accommodate the deletion of a required course and the addition of a new required course.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Teaching ESL Linguistics Certificate

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Lower Division Requirements

Students complete all of

LING 111 - Introduction to English Vocabulary Analysis (3)

LING 200 - Introduction to Sentence Analysis (3)

LING 220 - Introduction to Linguistics (3)

~~LING 221 - Introduction to Phonetics and Phonology (3)~~

LING 282W - Writing for Linguistics (3)



Calendar Entry Change Admission Requirements

Name of Program or Name of Faculty Linguistics Major Program

Rationale for change: Two reasons:

1. The current admission standard is sending the wrong message about the difficulty of the discipline. Too many students enter Linguistics and cannot master the material at even a minimal level.

2. Because of the preceding, instruction is impeded and vital disciplinary content cannot be adequately built up to prepare students for upper division courses.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Linguistics Major Program

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Admission Requirements

An overall ~~2.25~~ **2.40** cumulative GPA and a minimum C+ grade in LING 220 is required for admission to the major and all joint major programs.



Calendar Entry Change Admission Requirements

Name of Program or Name of Faculty Linguistics Honours Program

Rationale for change: Two reasons:

1. The current admission standard is sending the wrong message about the difficulty of the discipline. Too many students enter Linguistics and cannot master the material at even a minimal level.

2. Because of the preceding, instruction is impeded and vital disciplinary content cannot be adequately built up to prepare students for upper division courses.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Linguistics Honours Program

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Admission Requirements

Applicants are required to

have completed LING 220, ~~221 and 222~~, **and LING 282W**, each with a minimum grade point average of 3.0



Calendar Entry Change: Admission Requirements

Name of Program or Name of Faculty: Linguistics Minor Program

Rationale for change: Two reasons:

1. The current admission standard is sending the wrong message about the difficulty of the discipline. Too many students enter Linguistics and cannot master the material at even a minimal level.

2. Because of the preceding, instruction is impeded and vital disciplinary content cannot be adequately built up to prepare students for upper division courses.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Linguistics Minor Program

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Admission Requirements

A cumulative grade point average (GPA) of ~~2.25~~ **2.40** and a minimum C+ grade in LING 220 is required for admission.



Calendar Entry Change Admission Requirements

Name of Program or Name of Faculty Linguistics Extended Minor

Rationale for change: Two reasons:

1. The current admission standard is sending the wrong message about the difficulty of the discipline. Too many students enter Linguistics and cannot master the material at even a minimal level.

2. Because of the preceding, instruction is impeded and vital disciplinary content cannot be adequately built up to prepare students for upper division courses.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Linguistics Extended Minor

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Admission Requirements

A cumulative grade point average (GPA) of ~~2.25~~ **2.40** and a minimum C+ grade in LING 220 is required for admission.



Calendar Entry Change Admission Requirements

Name of Program or Name of Faculty Joint Major Computing Science and Linguistics

Rationale for change: Same two reasons as for Linguistics Major, Extended Minor, and Minor changes:

1. The current admission standard is sending the wrong message about the difficulty of the discipline. Too many students enter Linguistics and cannot master the material at even a minimal level.

2. Because of the preceding, instruction is impeded and vital disciplinary content cannot be adequately built up to prepare students for upper division courses.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Joint Major Computing Science and Linguistics

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Admission Requirements

Linguistics Admission Requirements

An overall ~~2.25~~ **2.40** cumulative GPA and a minimum C+ grade in LING 220 are required for admission to the Linguistics major and all Linguistics joint major programs.



Calendar Entry Change Admission Requirements

Name of Program or Name of Faculty Joint Major First Nations Studies and Linguistics

Rationale for change: Same two reasons as for Linguistics Major, Extended Minor, and Minor changes:

1. The current admission standard is sending the wrong message about the difficulty of the discipline. Too many students enter Linguistics and cannot master the material at even a minimal level.
2. Because of the preceding, instruction is impeded and vital disciplinary content cannot be adequately built up to prepare students for upper division courses.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Joint Major First Nations Studies and Linguistics

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Admission Requirements

An overall ~~2.25~~ **2.40** cumulative GPA and a minimum C+ grade in LING 220 is required for admission to the major and all joint major programs.



Calendar Entry Change Admission Requirements

Name of Program or Name of Faculty Joint Major Linguistics and Anthropology

Rationale for change: Same two reasons as for Linguistics Major, Extended Minor, and Minor changes:

1. The current admission standard is sending the wrong message about the difficulty of the discipline. Too many students enter Linguistics and cannot master the material at even a minimal level.

2. Because of the preceding, instruction is impeded and vital disciplinary content cannot be adequately built up to prepare students for upper division courses.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Joint Major Linguistics and Anthropology

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Linguistics and Anthropology Joint Major

BACHELOR OF ARTS

An overall cumulative GPA of ~~2.25~~ **2.40** and a minimum C+ grade in LING 220 is required for admission.



Calendar Entry Change Continuation Requirements

Name of Program or Name of Faculty: Linguistics Major Program

Rationale for change: Quality of instruction in upper division Linguistics courses was being impaired by underperforming students.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Linguistics Major Program

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Continuation Requirements

After a student has completed 60 credits, a cumulative grade point average (CGPA) of not less than ~~2.25~~ **2.40** is required for continuance in the major program. Students whose CGPA falls below ~~2.25~~ **2.40** cannot enroll in any upper division LING courses. After their CGPA is restored to ~~2.25~~ **2.40**, students must meet with the departmental advisor to redeclare into the program.



Calendar Entry Change Continuation Requirements

Name of Program or Name of Faculty: Linguistics Minor Program

Rationale for change: Quality of instruction in upper division Linguistics courses was being impaired by underperforming students.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Linguistics Minor Program

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Continuation Requirements

After a student has completed 60 credits, a cumulative grade point average (CGPA) of not less than ~~2.25~~ **2.40** is required for continuance in the minor program. Students whose CGPA falls below ~~2.25~~ **2.40** cannot enroll in any upper division LING courses. After their CGPA is restored to ~~2.25~~ **2.40**, students must meet with the departmental advisor to redeclare into the program.



Calendar Entry Change Continuation Requirements

Name of Program or Name of Faculty: Linguistics Extended Minor Program

Rationale for change: Quality of instruction in upper division Linguistics courses was being impaired by underperforming students.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Linguistics Extended Minor Program

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Continuation Requirements

After a student has completed 60 credits, a cumulative grade point average (CGPA) of not less than ~~2.25~~ **2.40** is required for continuance in the extended minor program. Students whose CGPA falls below ~~2.25~~ **2.40** cannot enroll in any upper division LING courses. After their CGPA is restored to ~~2.25~~ **2.40**, students must meet with the departmental advisor to redeclare into the program.



Calendar Entry Change Continuation Requirements

Name of Program or Name of Faculty: Linguistics of Speech Science Certificate

Rationale for change: Quality of instruction in upper division Linguistics courses was being impaired by underperforming students.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Linguistics of Speech Science Certificate

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Continuation Requirements

After a student has completed 60 credits, a cumulative grade point average (CGPA) of not less than ~~2.25~~ **2.40** is required for continuance in the certificate program. Students whose CGPA falls below ~~2.25~~ **2.40** cannot enroll in any upper division LING courses. After their CGPA is restored to ~~2.25~~ **2.40**, students must meet with the departmental advisor to redeclare into the program.



Calendar Entry Change
Philosophy

Rationale for change:

Due to two course deletions, we are modifying the lower-division requirements for a variety of our programs.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes: Philosophy Major, Philosophy Honours, and Philosophy Extended Minor.

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Note: these requirements are identical for all three programs listed above, and so should be changed for each program.

Lower Division Requirements

Students complete a total of at least 15 units, including one of

~~PHIL 150 – History of Philosophy I (3)~~
~~PHIL 151 – History of Philosophy II (3)~~

and one of

~~PHIL 110 – Introduction to Logic and Reasoning (3)~~
~~PHIL 210 – Natural Deductive Logic (3)~~

and all of

~~PHIL 201 – Epistemology (3)~~
~~PHIL 203 – Metaphysics (3)~~
~~PHIL 221 – Ethical Theory (3)~~

Students complete the following 15 units by taking all of:



PHIL 110 – Introduction to Logic and Reasoning (3)
PHIL 150 – Great Works in the History of Philosophy (3)
PHIL 201 – Epistemology (3)
PHIL 203 – Metaphysics (3)
PHIL 221 – Ethical Theory (3)



Calendar Entry Change

Philosophy

Rationale for change:

Due to two course deletions, we are modifying the lower-division requirements for our joint major with Health Sciences

Effective term and year: Fall 2018

The following program(s) will be affected by these changes: Philosophy and Health Sciences Joint Major

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Lower Division Philosophy Requirements

In selecting lower division courses, students are advised to consider the prerequisite structure for upper division courses in philosophy.

Students complete a minimum of 12 units, including at least one of

PHIL 100W - Knowledge and Reality (3)

PHIL 120W - Moral Problems (3)

PHIL 121 - Global Justice (3)

PHIL 144 - Introduction to Philosophy of Science (3)

PHIL 150 - ~~History of Philosophy I (3)~~ **Great Works in the History of Philosophy (3)**

PHIL 151 - ~~History of Philosophy II (3)~~

and ~~one of~~

PHIL 110 - Introduction to Logic and Reasoning (3)

PHIL 210 - ~~Natural Deductive Logic (3)~~

and two of



PHIL 201 - Epistemology (3)
PHIL 203 - Metaphysics (3)
PHIL 221 - Ethical Theory (3)



Calendar Entry Change Philosophy

Rationale for change: We are adding PHIL 345W – Philosophy of Mathematics and so we would like it to fulfill a major requirement for our students.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:
Philosophy Major and Philosophy Honours.

Calendar Change: “to” and “from” sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Note: the upper-division requirements listed apply to both the Philosophy Major and Philosophy Honours, and so the changes should be made to both programs.

Upper Division Requirements

Students complete a total of at least 30 units, including one course at the 400 division, and at least one of

PHIL 320 - Social and Political Philosophy (3)
PHIL 321 - Topics in Moral Philosophy (3)
PHIL 322 - History of Ethics (3) *
PHIL 329 - Law and Philosophy (3)
PHIL 421W - Advanced Topics in Ethical Theory (4)

and at least one of

PHIL 302 - Topics in Epistemology and Metaphysics (3)
PHIL 341 - Philosophy of Science (3)
PHIL 343 - Philosophy of Mind (3)
PHIL 344 - Philosophy of Language (3)
PHIL 345W – Philosophy of Mathematics (3)

and at least two of

PHIL 322 - History of Ethics (3)
 PHIL 350 - Ancient Philosophy (3)
 PHIL 352 - 17th Century Philosophy (3)
 PHIL 356 - 18th Century Philosophy (3)
 PHIL 357 - Topics in the History of Philosophy (3)
 PHIL 358 - 19th Century Philosophy (3)
 PHIL 451W - Advanced Topics in the History of Philosophy (4)

* unless counted as a history stream requirement



Calendar Entry Change
Philosophy

Rationale for change: Philosophy is adding PHIL 345W – Philosophy of Mathematics and would like to allow it to fulfill a requirement for this degree program.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:
Joint Major in Philosophy and Health Sciences

Calendar Change: “to” and “from” sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Upper Division Philosophy Requirements

Students complete a total of 20 upper division philosophy units, including at least one of

PHIL 320 - Social and Political Philosophy (3)
PHIL 321 - Topics in Moral Philosophy (3)
PHIL 322 - History of Ethics (3)

and at least one of

PHIL 302 - Topics in Epistemology and Metaphysics (3)
PHIL 341 - Philosophy of Science (3)
PHIL 343 - Philosophy of Mind (3)
PHIL 344 - Philosophy of Language (3)
PHIL 345W – Philosophy of Mathematics (3)

and at least one of

PHIL 322 - History of Ethics (3) *
PHIL 350 - Ancient Philosophy (3)
PHIL 352 - 17th Century Philosophy (3)
PHIL 356 - 18th Century Philosophy (3)



PHIL 357 - Topics in the History of Philosophy (3)
PHIL 358 - 19th Century Philosophy (3)

and at least one 400 division philosophy course.

* if not taken in satisfaction of requirement above



Calendar Entry Change

Philosophy

Rationale for change:

Due to two course deletions, we are modifying the lower-division requirements for our joint major with Humanities

Effective term and year: Fall 2018

The following program(s) will be affected by these changes: Philosophy and Humanities Joint Major

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Philosophy Lower Division Requirements

Students complete 12 units ~~including all of~~ **by completing all of:**

PHIL 100W - Knowledge and Reality (3)

PHIL 120W - Moral Problems (3)

PHIL 150 – Great Works in the History of Philosophy (3)

PHIL 203 - Metaphysics (3)

~~and one of~~

~~PHIL 150 – History of Philosophy I (3)~~

~~PHIL 151 – History of Philosophy II (3)~~



Calendar Entry Change
Philosophy

Rationale for change: We are adding a course PHIL 345W – Philosophy of Mathematics and as such we wish to allow it to fulfill a requirement for the Philosophy Major with a Concentration in Law and Philosophy.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes: Philosophy Major with a Concentration in Law and Philosophy.

Calendar Change: “to” and “from” sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Philosophy Major: Concentration in Law and Philosophy

Students may qualify for this concentration by completing the Philosophy Major lower division requirements listed above and the following upper division requirements:

Students complete a total of at least 30 units, including

PHIL 329 - Law and Philosophy (3)

and at least three of

PHIL 320 - Social and Political Philosophy (3)

PHIL 321 - Topics in Moral Philosophy (3)

PHIL 322 - History of Ethics (3) *

PHIL 327 - Global Health Ethics (3)

PHIL 328 - Environmental Philosophy (3)

PHIL 421W - Advanced Topics in Ethical Theory (4)

and at least two of



PHIL 302 - Topics in Epistemology and Metaphysics (3)
PHIL 341 - Philosophy of Science (3)
PHIL 343 - Philosophy of Mind (3)
PHIL 344 - Philosophy of Language (3)
PHIL 345W – Philosophy of Mathematics (3)
PHIL 350 - Ancient Philosophy (3)
PHIL 352 - 17th Century Philosophy (3)
PHIL 356 - 18th Century Philosophy (3)
PHIL 357 - Topics in the History of Philosophy (3)
PHIL 358 - 19th Century Philosophy (3)

and at least one 400-level course in Philosophy



Calendar Entry Change Philosophy

Rationale for change:

We are aiming to streamline the PHIL requirements for the ethics certificate. In addition, we have completed a long-overdue process of surveying the curriculum in order to find courses in other departments that are relevant to the Ethics Certificate and including them as counting toward the credential.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:
Ethics Certificate

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Program Requirements

Core Courses

Students complete both of

~~PHIL 320 – Social and Political Philosophy (3)~~

~~PHIL 321 – Topics in Moral Philosophy (3)~~

and one of

~~PHIL 322 – History of Ethics (3)~~

~~PHIL 327 – Global Health Ethics (3)~~

~~PHIL 328 – Environmental Philosophy (3)~~

~~PHIL 421W – Advanced Topics in Ethical Theory (4)~~

Students complete three of:

PHIL 221 – Ethical Theory (3)
PHIL 320 – Social and Political Philosophy (3)
PHIL 321 – Topics in Moral Philosophy (3)
PHIL 322 – History of Ethics (3)
PHIL 327 – Global Health Ethics (3)
PHIL 328 – Environmental Philosophy (3)
PHIL 329 – Law and Philosophy (3)
PHIL 421W – Advanced Topics in Ethical Theory (4)

any 300 or 400 division PHIL special topics course in ethics (consult the philosophy undergraduate advisor to confirm whether a given special topics course qualifies as an ethics course)

Concentration in Ethics, Justice and Law

The stream is primarily for students in the School of Criminology, or those who are majoring in political science who wish to focus their studies around issues of ethics and justice as it relates to law.

Students complete three of

BUS 233 – Introduction to Business Law and Ethics (3)
ECON 427W - Industrial Organization: Law and Economics (3)
CRIM 314 - Mental Disorder, Criminality and the Law (3)
CRIM 331 - Advanced Criminal Law (3)
CRIM 333 - Gender, Law and the State (3)
CRIM 334 - Law and Human Reproduction (3)
CRIM 335 - Human Rights and Civil Liberties (3)
CRIM 338 - Philosophy of Law (3)
CRIM 429 - Indigenous Peoples and International Law (3) or FNST 429 - Indigenous Peoples and International Law (3)
GSWS 334 - Law and Human Reproduction (3)
POL 324 - The Canadian Constitution (4)
POL 330 – Protecting Human Rights: Courts, Constitutions and Legislatures (3)
POL 344 - International Law (4)
POL 348 – Theories of War, Peace and Conflict Resolution (3)
POL 351 – Immigration, Integration and Public Policy in Canada (3)
POL 417 - Human Rights Theories (4)
POL 421 – Rights, Equality and the Charter (4)
POL 422 – Canadian International Security Relations (4)
POL 447 – Theories of Global Political Economy (4)
PSYC 376 - Experimental Psychology and Law (3)

Concentration in Ethics, Business and Economics

This stream is intended for students in the Beedie School of Business, or those who are majoring in economics.

Students complete three of

- BUS 233 – Introduction to Business Law and Ethics (3)**
- ~~BUS 303 – Business, Society and Ethics (3)~~
- BUS 432 - International Human Resource Management (3)
- BUS 449 - Ethical Issues in Marketing (3)
- BUS 483 – Introduction to Employment Law for Business (4)**
- CRIM 336 - Corporate Crime and Corporate Regulation (3)
- ECON 342 - International Trade (3)
- ECON 354 - Comparative Economic Institutions (3)
- ECON 355W - Economic Development (4)
- ECON 392 - Public Economics: Role of Government (3)
- GSWS 308 - Women in the Economy: Paid and Unpaid Labour (4)
- GSWS 350 – Public Policy for Women (3)**

Concentration in Ethics and Global Justice

This stream is intended primarily for students in the Faculty of Arts and Social Sciences, or the Faculty of Health Sciences who wish to focus their studies around issues of justice in an international and multicultural context.

Students complete three of

- CRIM 315 - Restorative Justice (4)
- FNST 327 – Aboriginal Women in Canada (3)**
- FNST 353W – First Nations Heritage Stewardship (3)**
- FNST 401 - Aboriginal Peoples and Public Policy (3)
- FNST 419 - Aboriginal/Indigenous Justice (3)
- FNST 429 - Indigenous Peoples and International Law (3)
- FNST 433 – Indigenous Environmental Justice and Activism (4)**
- FNST 443W - Aboriginal Peoples, History and the Law (4)
- GSWS 308 - Women in the Economy: Paid and Unpaid Labour (4)

- GSWS 309 – Gender and International Development (3)**
- GSWS 312 – Immigrants, Women and Transnational Migration (3)**
- GSWS 314 - Race, Class and Gender (4)**
- GSWS 327 - Aboriginal Women in Canada (4)**
- HSCI 308 - Sickness and Wealth: Health in Global Perspective (3)**
- HSCI 319W - Applied Health Ethics (3)**
- HSCI 406 - Global Perspectives in Indigenous Health (3)**
- IS 200 – Historical Perspectives on Diplomacy, International Security and Law (3)**
- IS 220 – Wealth and Poverty of Nations (3)**
- IS 302 - Introduction to Humanitarian Intervention (4)**
- IS 303 – Ethnic Minorities, Identity Politics, and Conflict in Southeast Asia (3)**
- IS 305 – Challenging Power Around the Globe: Political Resistance and Protest (3)**
- IS 307 – International Ethics: Poverty, Environmental Change, and War (3)**
- IS 355 – Refugees and Forced Migration (3)**
- IS 358 – Development, Aid, and Difference in Historical Perspective (3)**
- IS 410 - Politics, Institutions and Development (4)**
- IS 423 – International Development Practice and Ethics (4)**
- IS 427 - Globalization, Poverty and Inequality (4)**
- POL 312 - Modern Political Thought (4)**
- POL 327 – Globalization and the Canadian State (3)**
- POL 330 – Protecting Human Rights: Courts, Constitutions and Legislatures (3)**
- POL 332 – Separatist Movements: Conflict and Accommodation (3)**
- POL 343 – Global Political Economy (3)**
- POL 344 - International Law (4)**
- POL 346 - International Organization (4)**
- POL 347 – Canadian Foreign Policy (3)**
- POL 348 – Theories of War, Peace and Conflict Resolution (3)**
- POL 350 – Public Policy for Women (3)**
- POL 351 – Immigration, Integration and Public Policy in Canada (3)**
- POL 411 - Normative Political Theory (4)**
- POL 415 – The Liberal Tradition and Its Critics (4)**
- POL 416 - Feminist Social and Political Thought (4)**
- POL 417 - Human Rights Theories (4)**
- POL 421 – Rights, Equality and the Charter (4)**
- POL 422 – Canadian International Security Relations (4)**
- POL 430 – Democracy in a Global World (4)**
- POL 447 – Theories of Global Political Economy (4)**
- POL 451 – Public Policy Analysis (4)**
- SA 302W – Global Problems and the Culture of Capitalism (3)**
- SA 325 – Political Sociology (3)**
- SA 331 – Politics of the Family (3)**
- SA 335 – Gender Relations and Social Issues (3)**
- SA 345 – Race, Immigration and the Canadian State (3)**
- SA 362 – Society and the Changing Global Division of Labour (3)**

SA 363 - Process of Development and Underdevelopment (SA) (4)
 SA 388 - Comparative Studies of Minority Indigenous Peoples (A) (4)
 SA 418 - International Health: Global Policies and Local Realities (A) (4)
SA 429 – Sex, Work, and International Capital (4)
 SA 430 - States, Cultures and Global Transitions (SA) (4)

Concentration in Ethics and the Environment

This stream is intended for students in the Faculty of Environment or students majoring in biological sciences or economics who wish to add a concentration in ethics to their studies. The SA and GSWS courses also opens this stream to Faculty of Arts and Social Sciences students and the broader University community.

Students complete three of

ARCH 365 - Archaeological Perspectives on Human Ecology (3)
 ARCH 386 - Archaeological Resource Management (3)
 BISC 204 - Introduction to Ecology (3)
 BISC 309 - Conservation Biology (3)
 BISC 419 - Wildlife Biology (3)
 BISC 440 - Biodiversity (3)
 ECON 260 - Environmental Economics (3)
 ECON 362 - Economics of Natural Resources (3)
 ENV 321 - Ecological Economics (4) or REM 321 - Ecological Economics (4)
FNST 433 – Indigenous Environmental Justice and Activism (4)
 GEOG 322 - World Resources (4)
 GEOG 325 - Geographies of Consumption (4)
 GEOG 381 - Territory, Power, State (4)
 GEOG 386 - Health Geography (4)
 GEOG 389W - Nature and Society (4)
 GEOG 440 - Property, Land, Society (4)
 HSCI 304 - Perspectives on Human Health and the Environment (3)
 REM 311 - Applied Ecology and Sustainable Environments (3)
 REM 356 - Institutional Arrangements for Sustainable Environmental Management (3)
 REM 445 - Environmental Risk Assessment (3)
 REM 471 - Forest Ecosystem Management (3)
 SA 326 - Ecology and Social Thought (S) (4)
 SA 371 - The Environment and Society (SA) (4)



MEMORANDUM

ATTENTION Senate Committee on Undergraduate Studies

FROM Dr. Peter Tingling, Associate Dean, Undergraduate Programs

RE: **Beedie Materials for upcoming SCUS meeting**

DATE February 19th, 2018

The Undergraduate Curriculum Committee in the Beedie School of Business approved the following program changes at their February 19th, 2018 meeting:

Fall 2018 Changes:

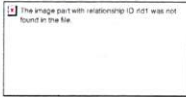
1. Business Analytics and Decision Making Certificate Changes

Would you please place this item on the March 1st, 2018 Senate Committee on Undergraduate Studies Agenda?

Sincerely,

A handwritten signature in green ink, appearing to be "Peter Tingling", is written over a circular stamp.

Dr. Peter Tingling
Associate Dean, Undergraduate Programs



Calendar Entry Change
Beedie School of Business Undergraduate Program

Rationale for change:

BUS 439 is the capstone course for the certificate, and all the other certificate courses should be completed first. Although this is indicated in the prerequisites, it is not clear in the current calendar language. The edits below will make that clearer for students who are pursuing the certificate.

Effective term and year:

Fall 2018

The following program(s) will be affected by these changes:

Business Analytics and Decision Making Certificate

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Program Requirements

Students must complete a minimum of 27 units, comprised of the following courses from across three concentrations.

Students complete all of

BUS 336 - Data and Decisions II (4)

BUS 362 - Business Process Analysis (4)

~~BUS 439 - Analytics Project (3)~~

BUS 445 - Customer Analytics (3)

BUS 462 - Business Analytics (3)

BUS 464 - Business Data Management (3)

and one of

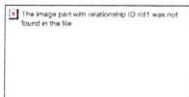
BUS 345 - Marketing Research (4)

BUS 440 - Simulation in Management Decision-making (4)

and one of

BUS 437 - Decision Analysis in Business (3)

BUS 441 - Web Analytics (3)



and the capstone course

BUS 439 – Analytics Project (3)*

***BUS 439 can only be taken once all the prerequisite courses have been completed with a grade of C- (C minus) or higher.**



SCUS 18-19a

Calendar Entry Change

Name of Program or Name of Faculty

School for the Contemporary Arts, Post Baccalaureate Diploma

Rationale for change:

The continuance policy change of 2.67 was applied to all the Majors. Unintentionally, Post Baccalaureate Diploma was not included.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Post Baccalaureate Diploma

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Contemporary Arts

POST BACCALAUREATE DIPLOMA

The Post Baccalaureate Diploma in the School for the Contemporary Arts is for students who already possess a university degree and want to pursue further advanced study in contemporary arts. The SCA PBD program requires thirty upper division SCA credits. As some students may want to take courses in more than one discipline, we offer flexibility in course selection for interested students. In some cases, prerequisite courses may be required. Placement is by AIP process (audition, interview or portfolio).

If a current SFU student is interested in receiving the PBD, all course selections and agreement documents are to be completed one year prior to graduation. The agreement document will be completed by the SCA advisor and sent to the student and area coordinator listing selected courses for the PBD.

Contact the CA Undergraduate Advisor (fpaadv@sfu.ca), or book your advising appointment by telephoning 778-782-3363, if you require assistance or have any questions.

Admission Requirements

The Post Baccalaureate Diploma (PBD) is a program of study for students who already possess a university degree (from SFU or elsewhere)—whether in the arts or another discipline. This program is intended for students who wish to augment their current career path with advanced studying any of the areas offered in the School for the Contemporary Arts. A PBD provides an alternative to the larger demands of full second degree.

Instructions:

Apply to SFU, using the regular SFU Undergraduate online procedure. Click here for application deadlines.

Then send in your transcript(s) to Student Services at SFU's Burnaby campus. Even if your first degree is from SFU, you need to apply for re-admission or re-activation by one of the deadlines above. Please refer to the Admissions page on Student Services website for complete SFU admission requirements.

Select Communication, Art and Technology (FCAT) as your faculty, Contemporary Arts as your subject area, and Post Baccalaureate Diploma as your program/plan.

In 3-4 weeks' time, you will receive an email from SFU Student Services containing your temporary user ID and password.

Use this ID and password to log into the Student Information System to pay your application fees and document evaluation fees (if any) by credit card. You may also pay these fees by cheque or money order - but online payment by credit card is the quickest method.

Once you have been accepted to SFU, be sure to check out the new student welcome page which will assist you with all the essentials like getting an email ID, enrolling in courses, paying tuition fees and lots of other useful information to help you start off right.

Sometimes PBD applicants get admitted to SFU as "Non-Degree" students, either in the Faculty of Applied Sciences, or the Faculty of Arts & Social Sciences. This is good. It does not mean you are not acceptable to the PBD program in Communication.

Accept SFU's offer of admission (re-admission or re-activation) and pay the confirmation deposit of \$250 (which goes towards tuition for your first semester). Then contact a Contemporary Arts Advisor to be internally approved to the CA PBD program on goSFU.

Contact the CA Undergraduate Advisor (fpaadv@sfu.ca), or book your advising appointment by telephoning 778-782-3363, if you require assistance or have any questions. Questions sent by email should ALWAYS include your full name & student number. In the event of any discrepancies between this page and the SFU calendar, the calendar shall take precedence.



PBD Graduation Requirements

Note: A CGPA and UD GPA of at least ~~3.0~~ **2.67** must be maintained to be in good standing in the PBD program, and to graduate from it.

At least 30 Upper Division credits (in courses numbered at 300 and above) in Contemporary Arts. Students may also be required to take some background, lower division courses in preparation for the advanced upper division courses.



Calendar Entry Change

Name of Program or Name of Faculty

Rationale for change:

This motion is aimed to implement a Continuance Policy for SIAT Minors to ensure the same continuity with the quality of students in our major programs.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Interactive Arts and Technology – Minor

<https://www.sfu.ca/students/calendar/2018/spring/programs/interactive-arts-and-technology/minor.html>

Calendar Change: “to” and “from” sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Interactive Arts and Technology Minor
Admission Requirements

Admission is competitive and based on the cumulative grade point average. Students whose first admission attempt is unsuccessful may improve their average by completing additional courses. Admission to the school is possible via three routes, as outlined below.

Route 1

These applicants come directly from BC high school 12 or have equivalent high school preparation in accordance with the requirements listed under the BC/Yukon high school section (see Admission Requirements).

Route 2

Internal transfer applicants are students who have already been admitted to another Simon Fraser University program, and now wish to be transfer to the School of Interactive Arts and Technology.

Transfer requirements:

Students may apply to the program after completing 18 units which must include 9 lower division IAT units chosen from IAT 100, 102, 103W, 106, 167, 201, 202, 206W, 222, 233, 235, 265 or 267.

Admission is selective and a minimum competitive CGPA will be required.

Route 3

These applicants apply to the School of Interactive Arts and Technology for direct transfer from another post-secondary institution.

Students apply to the program with the following:

- English Language admission requirement
- Quantitative and Analytical skills requirement
- Minimum 24 units of transferable coursework including one first year computer programming course; one first year Calculus course or one first year MACM course; and one first year English course.

Continuance Requirements

SIAT Minors must maintain a 2.0 CGPA and a 2.40 GPA in IAT courses. Students who fail below this continuance requirement will be placed on academic warning in the School of Interactive Arts and Technology. Once a student is on Academic Warning, they will have two semesters to bring up their GPA to 2.40 or higher. Failure to do so will result in removal from the IAT Minor. Students wishing to transfer back into the Minor program will need to meet the internal transfer requirements to obtain re-entry.

Lower Division Requirements

Students complete three of

IAT 100 - Digital Image Design (3) or IAT 110 - Visual Communication Design (3)
 IAT 102 - Graphic Design (3)
 IAT 201 - Human-Computer Interaction and Cognition (3)
 IAT 202 - New Media Images (3)
 IAT 222 - Interactive Arts (3)
 IAT 233 - Spatial Design (3)
 IAT 235 - Information Design (3)
 IAT 265 - Multimedia Programming for Art and Design (3)
 IAT 267 - Introduction to Technological Systems (3)



Upper Division Requirements

Students complete 15 upper division IAT units. Note that some upper division courses have lower division prerequisites.

Residency Requirements and Transfer Credit

- At least half of the program's total units must be earned through Simon Fraser University study.
- At least two thirds of the program's total upper division units must be earned through Simon Fraser University study.

Calendar Entry Change

Name of Program or Name of Faculty

Rationale for change:

The School of Interactive Arts and Technology (SIAT) curriculum structure uses a minimum number of essential prerequisites to allow for flexible access to courses across three main areas of concentration. To support an orderly progression through the curriculum, SIAT has historically used a minimum number of credits as a prerequisite mechanism for an orderly progression through the program. This has been distorted over the years, as the changes to the individual courses did not adhere to this curriculum design principle. This motion aims to correct this by stressing the importance of completing lower division requirements and the required upper division writing course (IAT 309W) before taking 400 level courses.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Interactive Arts and Technology - Bachelor of Arts

<https://www.sfu.ca/students/calendar/2018/spring/programs/interactive-arts-and-technology/major/bachelor-of-arts.html>

Interactive Arts and Technology - Bachelor of Science

<https://www.sfu.ca/students/calendar/2018/spring/programs/interactive-arts-and-technology/major/bachelor-of-science.html>

For BA, BSc, insert the following statement at the end of the "Upper Division Requirements" section (before the "Concentration" section).

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Lower Division Requirements

CMPT 166 - An Animated Introduction to Programming (3)

or an equivalent introductory programming course such as CMPT 102, 120, 125, 126, 128, or 130

IAT 100 - Digital Image Design (3)

IAT 102 - Graphic Design (3)

IAT 103W - Design Communication and Collaboration (3)

IAT 106 - Spatial Thinking and Communicating (3)
 IAT 167 - Digital Games: Genre, Structure, Programming and Play (3)
 IAT 201 - Human-Computer Interaction and Cognition (3)
 IAT 202 - New Media Images (3)
 IAT 206W - Media Across Cultures (3)
 IAT 222 - Interactive Arts (3)
 IAT 233 - Spatial Design (3)
 IAT 235 - Information Design (3)
 IAT 265 - Multimedia Programming for Art and Design (3)

or other approved second year programming course

IAT 267 - Introduction to Technological Systems (3)
 MATH 130 - Geometry for Computer Graphics (3)

Upper Division Requirements

A major in Interactive Arts in Technology requires 30 upper division IAT units. Of these, students must take

IAT 309W - Writing Methods for Research (3)

Of the total of 44 upper division units required to their degree, students must complete a total of 24 units chosen from the following arts courses to satisfy the BA requirements:

IAT 312 - Foundations of Game Design (3)
 IAT 313 - Narrative and New Media (3)
 IAT 320 - Body Interface (3)
 IAT 334 - Interface Design (3)
 IAT 343 - Animation (3)
 IAT 344 - Moving Images (3)
 IAT 380 - Special Topics in Interactive Arts and Technology (Arts) (3)
 IAT 431 - Speculative Design (3)
 IAT 438 - Interactive Objects and Environments (3)
 IAT 443 - Interactive Video (3)
 IAT 445 - Immersive Environments (3)
 IAT 480 - Special Topics in Interactive Arts and Technology (Arts) (3)

and any upper division course from communication (CMNS), publishing (PUB), cognitive science (COGS), contemporary arts (CA), human geography (GEOG), philosophy (PHIL), business (BUS), or psychology (PSYC).

To register for the 400 level courses, students must complete the lower division requirements as specified above and a required upper division writing course, IAT309W.

Calendar Entry Change

Name of Program or Name of Faculty

Rationale for change:

The School of Interactive Arts and Technology (SIAT) curriculum structure uses a minimum number of essential prerequisites to allow for flexible access to courses across three main areas of concentration. To support an orderly progression through the curriculum, SIAT has historically used a minimum number of credits as a prerequisite mechanism for an orderly progression through the program. This has been distorted over the years, as the changes to the individual courses did not adhere to this curriculum design principle. This motion aims to correct this by stressing the importance of completing lower division requirements and the required upper division writing course (IAT 309W) before taking 400 level courses.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Interactive Arts and Technology Honours – Bachelor of Arts

<https://www.sfu.ca/students/calendar/2018/spring/programs/interactive-arts-and-technology/honours/bachelor-of-arts.html>

Interactive Arts and Technology Honours – Bachelor of Science

<https://www.sfu.ca/students/calendar/2018/spring/programs/interactive-arts-and-technology/honours/bachelor-of-science.html>

For BA Honours, BSc Honours, insert the following statement at the end of the “Upper Division Requirements” section (before the “Concentration” section).

Calendar Change: “to” and “from” sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Lower Division Requirements

CMPT 166 - An Animated Introduction to Programming (3)

or an equivalent introductory programming course (CMPT 102, 120, 125, 126, 128, or 130)

IAT 100 - Digital Image Design (3)

IAT 102 - Graphic Design (3)

IAT 103W - Design Communication and Collaboration (3)
 IAT 106 - Spatial Thinking and Communicating (3)
 IAT 167 - Digital Games: Genre, Structure, Programming and Play (3)
 IAT 201 - Human-Computer Interaction and Cognition (3)
 IAT 202 - New Media Images (3)
 IAT 206W - Media Across Cultures (3)
 IAT 222 - Interactive Arts (3)
 IAT 233 - Spatial Design (3)
 IAT 235 - Information Design (3)
 IAT 265 - Multimedia Programming for Art and Design (3)

or other approved second year programming course

IAT 267 - Introduction to Technological Systems (3)
 MATH 130 - Geometry for Computer Graphics (3)

or equivalent

Upper Division Requirements

An Honours, Bachelor of Arts in Interactive Arts and Technology requires 48 upper division IAT units. Of these, students must take:

IAT 309W - Writing Methods for Research (3)

AND

Six (6) IAT units selected from Designated Honours courses from Route 1 OR Route 2:

Route 1

One of

IAT 801 - Qualitative Research Methods and Design (3)
 IAT 802 - Quantitative Research Methods and Design (3)
 IAT 806 - Interdisciplinary Design Approaches to Computing (3)

One of

IAT 490 - Honours Project I (3)
 IAT 491 - Honours Project II (3)

OR

Route 2

IAT 490 - Honours Project I (3)

IAT 491 - Honours Project II (3)

To satisfy the BA requirements of this program students complete a total of 24 units chosen from the following arts courses:

IAT 312 - Foundations of Game Design (3)

IAT 313 - Narrative and New Media (3)

IAT 320 - Body Interface (3)

IAT 334 - Interface Design (3)

IAT 340 - Sound Design (3)

IAT 343 - Animation (3)

IAT 344 - Moving Images (3)

IAT 380 - Special Topics in Interactive Arts and Technology (Arts) (3)

IAT 431 - Speculative Design (3)

IAT 438 - Interactive Objects and Environments (3)

IAT 443 - Interactive Video (3)

IAT 445 - Immersive Environments (3)

IAT 480 - Special Topics in Interactive Arts and Technology (Arts) (3)

and any upper division course from communication (CMNS), publishing (PUB), cognitive science (COGS), contemporary arts (CA), human geography (GEOG), philosophy (PHIL), business (BUS), or psychology (PSYC).

To register for the 400 level courses, students must complete the lower division requirements as specified above and a required upper division writing course, IAT309W.

Calendar Entry Change

Name of Program or Name of Faculty

Rationale for change:

The School of Interactive Arts and Technology (SIAT) curriculum structure uses a minimum number of essential prerequisites to allow for flexible access to courses across three main areas of concentration. To support an orderly progression through the curriculum, SIAT has historically used a minimum number of credits as a prerequisite mechanism for an orderly progression through the program. This has been distorted over the years, as the changes to the individual courses did not adhere to this curriculum design principle. This motion aims to correct this by stressing the importance of completing lower division requirements and a required upper division writing course before taking 400 level courses.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Interactive Arts and Technology Minor

<https://www.sfu.ca/students/calendar/2018/spring/programs/interactive-arts-and-technology/minor.html>

For the SIAT Minor, insert the following statement at the end of the "Upper Division Requirements" section.

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Lower Division Requirements

Students complete three of

IAT 100 - Digital Image Design (3) or IAT 110 - Visual Communication Design (3)

IAT 102 - Graphic Design (3)

IAT 201 - Human-Computer Interaction and Cognition (3)

IAT 202 - New Media Images (3)

IAT 222 - Interactive Arts (3)

IAT 233 - Spatial Design (3)

IAT 235 - Information Design (3)

IAT 265 - Multimedia Programming for Art and Design (3)

IAT 267 - Introduction to Technological Systems (3)

Upper Division Requirements

A major in Interactive Arts in Technology requires 30 upper division IAT units. Of these, students must take

IAT 309W - Writing Methods for Research (3)

Of the total of 44 upper division units required to their degree, students must complete a total of 24 units chosen from the following arts courses to satisfy the BA requirements:

- IAT 312 - Foundations of Game Design (3)
- IAT 313 - Narrative and New Media (3)
- IAT 320 - Body Interface (3)
- IAT 334 - Interface Design (3)
- IAT 343 - Animation (3)
- IAT 344 - Moving Images (3)
- IAT 380 - Special Topics in Interactive Arts and Technology (Arts) (3)
- IAT 431 - Speculative Design (3)
- IAT 438 - Interactive Objects and Environments (3)
- IAT 443 - Interactive Video (3)
- IAT 445 - Immersive Environments (3)
- IAT 480 - Special Topics in Interactive Arts and Technology (Arts) (3)

and any upper division course from communication (CMNS), publishing (PUB), cognitive science (COGS), contemporary arts (FPA), human geography (GEOG), philosophy (PHIL), business (BUS), or psychology (PSYC).

To register for the 400 level courses, students must complete the lower division requirements as specified above and an upper division writing course.

Calendar Entry Change

Name of Program or Name of Faculty

Rationale for change:

The School of Interactive Arts and Technology (SIAT) curriculum structure uses a minimum number of essential prerequisites to allow for flexible access to courses across three main areas of concentration. To support an orderly progression through the curriculum, SIAT has historically used a minimum number of credits as a prerequisite mechanism for an orderly progression through the program. This has been distorted over the years, as the changes to the individual courses did not adhere to this curriculum design principle. This motion aims to correct this by stressing the importance of completing lower division requirements and a required upper division writing course before taking 400 level courses.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Communication and Interactive Arts and Technology Joint Major

<https://www.sfu.ca/students/calendar/2018/spring/programs/communication-and-interactive-arts-and-technology/joint-major/bachelor-of-arts.html>

Communication and Interactive Arts and Technology Joint Major

<https://www.sfu.ca/students/calendar/2018/spring/programs/communication-and-interactive-arts-and-technology/joint-major/bachelor-of-science.html>

Interactive Arts and Technology and Business Joint Major

<https://www.sfu.ca/students/calendar/2018/spring/programs/interactive-arts-and-technology-and-business/joint-major/bachelor-of-arts-or-bachelor-of-business-administration.html>

Interactive Arts and Technology and Business Joint Major

<https://www.sfu.ca/students/calendar/2018/spring/programs/interactive-arts-and-technology-and-business/joint-major/bachelor-of-science.html>

Calendar Change: “to” and “from” sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Lower Division Requirements

Interactive Arts and Technology

CMPT 166 - An Animated Introduction to Programming (3)

or an equivalent introductory programming course such as CMPT 102, 120, 125, 126, 128, or 130

IAT 100 - Digital Image Design (3)

IAT 102 - Graphic Design (3)

IAT 167 - Digital Games: Genre, Structure, Programming and Play (3)

IAT 201 - Human-Computer Interaction and Cognition (3)

IAT 265 - Multimedia Programming for Art and Design (3)

MATH 130 - Geometry for Computer Graphics (3) or MACM 101 - Discrete Mathematics I (3)

and one of

IAT 222 - Interactive Arts (3)

IAT 235 - Information Design (3)

In addition, students are required to choose one concentration. Students will take one of the courses listed below that corresponds with their desired concentration.

IAT BA/BSc Requirements

Of the total of 44 upper division units required to their degree, students must complete a total of 24 units chosen from the following science courses to satisfy the BSc requirements:

IAT 333 - Interaction Design Methods (3)

IAT 336 - Materials in Design (3)

IAT 351 - Advanced Human-Computer Interaction (3)

IAT 352 - Internet Computing Technologies (3)

IAT 355 - Introduction to Visual Analytics (3)

IAT 381 - Special Topics in Interactive Arts and Technology (Science) (3)

IAT 410 - Advanced Game Design (3)

IAT 432 - Design Evaluation (3)

IAT 437 - Representation and Fabrication (3)

IAT 452 - Developing Design Tools (3)

IAT 455 - Computational Media (3)



IAT 481 - Special Topics in Interactive Arts and Technology (Science) (3)

Or upper division course from: computing science (CMPT), engineering science (ENSC), biomedical physiology and kinesiology (BPK), management and systems science (MSSC), mathematics (MATH), mathematics and computing science (MACM), cognitive science (COGS), or psychology (PSYC)

To register for 400 level courses students, must complete the IAT lower division requirements as specified above and a required upper division writing course.



Calendar Entry Change

Name of Program or Name of Faculty

Rationale for change:

The School of Interactive Arts and Technology has found that many students avoid taking 400-level courses to complete their upper division program requirements. The school wishes to improve the quality of education provided to our students by ensuring that they complete a minimum of two 400-level courses of at least 3 credits each, excluding directed studies courses.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Interactive Arts and Technology Major

Bachelor of Arts

<https://www.sfu.ca/students/calendar/2018/spring/programs/interactive-arts-and-technology/major/bachelor-of-arts.html>

Bachelor of Science

<https://www.sfu.ca/students/calendar/2018/spring/programs/interactive-arts-and-technology/major/bachelor-of-science.html>

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

From:

~~A major in Interactive Arts & Technology requires 30 upper division IAT units. Of these, students must take IAT 309W—Writing Methods for Research (3)"~~

To:



A major in Interactive Arts and Technology requires 30 upper division IAT units. Of these, student must take IAT 309W – Writing Methods for Research (3) and at least two 400-level courses of at least 3 credits each, excluding directed studies.

Calendar Entry Change

Name of Program or Name of Faculty

Rationale for change:

The School of Interactive Arts and Technology has found that many students avoid taking 400-level courses to complete their upper division program requirements. The school wishes to improve the quality of education provided to our students by ensuring that they complete a minimum of two 400-level courses of at least 3 credits each, excluding directed studies courses.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Interactive Arts and Technology Honours – Bachelor of Arts

<https://www.sfu.ca/students/calendar/2018/spring/programs/interactive-arts-and-technology/honours/bachelor-of-arts.html>

Interactive Arts and Technology Honours – Bachelor of Science

<https://www.sfu.ca/students/calendar/2018/spring/programs/interactive-arts-and-technology/honours/bachelor-of-science.html>

Calendar Change: “to” and “from” sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

From:

~~An Honours, Bachelor of Science/Bachelor of Arts in Interactive Arts and Technology requires 48 upper division IAT units. Of these, students must take:~~

~~IAT 309W – Writing Methods for Research (3)~~

To:

An Honours, Bachelors of Arts/Science in Interactive Arts and Technology requires 48 upper division IAT units. Of these, students must take: IAT 309W – Writing Methods for Research (3) and at least two 400-level IAT courses of at least 3 credits each, excluding directed studies.

**Calendar Entry Change****Sustainable Development Program – Faculty of Environment****Rationale for change:**

The Sustainable Community Development (SCD) program and the Development and Sustainability (DEVS) program merged in September 2017 into the Sustainable Development (SD) Program, but retained their original, separated credentials and courses.

We are currently changing some of the SD courses to create a more streamlined program, including deleting one of the required courses of the DEVS Minor and replacing it with another course. The DEVS Minor will also now incorporate other Sustainable Development (SD) courses as optional electives within the minor.

We are also adding more undergraduate courses from the Faculty of Environment's new undergraduate program in Resource and Environmental Management as this program didn't exist when the Minor was created, but has many courses that fit in this Minor.

Note that a calendar entry change form has already gone through to delete the GPA requirement for this program.

Effective term and year:

Fall 2018

The following program(s) will be affected by these changes:

none

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Development and Sustainability Minor

This minor program explores various aspects of **global** sustainability that arise from the complex relationship between development and the environment, including discussion of practice and policy issues in relation to problem-solving and examination of thematic areas at various scales (~~from~~ local to global) that enhance the quality of life. **Themes may include: Global South-Global North relations; environmental justice; biodiversity; food security; sustainable economic development; and the**

Sustainable Development Goals (SDGs). More information available at www.sfu.ca/susdevprogram.html

Admission Requirements

Interested students may declare this Minor through the Sustainable Development Program Advisor in the Faculty of Environment. Program entry is on a competitive basis and requires completion of 30 lower division units. A 2.75 cumulative grade point average (CGPA) is required. Students must also be in good standing in their major program's home department.

Lower Division Requirements

Students complete:

SD 281 201 - Introduction to Development and Sustainability Sustainable Communities, Sustainable World (3)

Upper Division Requirements

Students complete:

SD 301 – Building a Sustainable World: Concepts and Cases (4)

SD 401 – Issues Concepts and Cases in Development and Sustainability Development Goals Studio (4)

and 8 units chosen from the following **list of electives:** which must include at least two courses from outside the student's home unit (department, school, or faculty).

Sustainable Community Development

SD 381 – Building Sustainable Communities: Concepts and Cases ity Development Theory and Practice (4) or **REM 281 – Sustainable Community Development Theory and Practice (4)**

SD 481 – Sustainable Communities Leadership Lab (4) Social Enterprise for Sustainable Community Development (4) or **REM 481 – Social Enterprise for Sustainable Community Development (4)**

SD 483 – Leadership in Sustainable Community Development (4) or **REM 483 – Leadership in Sustainable Community Development (4)**

SD 499 – Special Topics in Sustainable Development (4)

Archaeology

ARCH 365 - Archaeological Perspectives on Human Ecology (3)
ARCH 377 - Historical Archaeology (5)
ARCH 385 - Paleoanthropology (5)
ARCH 386 - Archaeological Resource Management (3)

Communication

CMNS 342 - Science and Public Policy: Risk Communication (4)
CMNS 346 - Development Communication (4)
CMNS 347 - Communication in Conflict and Intervention (4)
CMNS 356 - Communication to Mitigate Disasters (4)
CMNS 388 - Special Topics in Communication (4)
CMNS 425 - Applied Communication for Social Issues (4)
CMNS 426 - Video Design for Social Communication (4)
CMNS 444 - Political Economy of International Communication (4)
CMNS 446 - Communication, Science and Technology (4)
CMNS 447 - Negotiation and Dialogue as Communication (4)

Economics

ECON 355W - Economic Development (4)

Education

EDUC 311 - Foundations in Aboriginal Education, Language, and Culture (3)
EDUC 370 - International and Intercultural Education (4)
EDUC 435 - Infusing Global Perspectives into Curriculum (4)
EDUC 441 - Multicultural and Anti-racist Education (4)
EDUC 452 - Environmental Education (8)

First Nations Studies

FNST 332 - Ethnobotany of British Columbia First Nations (3)
FNST 383 - Indigenous Technology: Art and Sustainability (4)
FNST 401 - Aboriginal Peoples and Public Policy (3)
FNST 403 - Indigenous Knowledge in the Modern World (3)

FNST 433 - Indigenous Environmental Justice and Activism (4)

Geography

GEOG 321 – Geographies of Global Capitalism (4)

GEOG 322 - World Resources (4)

~~GEOG 323 - Industrial Location (4)~~

GEOG 324 - Geography of Transportation (4)

GEOG 325 - Geographies of Consumption (4)

GEOG 327 - Geography of Tourism (4)

~~GEOG 382 - Population Geography (4)~~

GEOG 383 - Regional Development and Planning (4)

GEOG 389W - Nature and Society (4)

Health Sciences

HSCI 308 - Sickness and Wealth: Health in Global Perspective (3)

HSCI 340 - Social Determinants of Health (3)

HSCI 406 - Global Perspectives in Indigenous Health (3)

HSCI 412 - Health Communication (3)

HSCI 431 - The Global HIV/AIDS Epidemic (3)

History

HIST 322 - Atlantic and Pacific Migration (4)

HIST 363 - History of Technology (4)

HIST 377 - Environmental History (4)

HIST 427 - Problems in the History of Aboriginal Peoples (4)

HIST 432 - Problems in Environmental History (4)

HIST 458W - Problems in Latin American Regional History (4)

HIST 459W - Problems in the Political and Social History of Latin America (4)

Humanities

HUM 325 - The Humanities and the Natural World (4)

International Studies

IS 303 - Ethnic Minorities, Identity Politics, and Conflict in Southeast Asia (4)

IS 313W - Nationalism, Democracy and Development in Modern India (4)

IS 314 - National, Regional, and International Politics in Southeast Asia (4)

IS 358 - Development, Aid and Difference in Historical Perspective (4)

IS 409 - Special Topics I (4)
 IS 410 - Politics, Institutions and Development (4)
IS 412 - Central Asia: Democracy, Development and Conflicts (4)
IS 419 - Special Topics II (4)
 IS 429 - Special Topics III (4)
IS 421 - The Economics of International Organizations and Development (4)
IS 435 - Special Topics in Latin American Studies (4)

Political Science

POL 342 - Developing Countries in Global Politics (4)
 POL 343 - Global Political Economy (4)
 POL 346 - International Organization (4)
 POL 373 - Human Security (4)
 POL 374 - Africa in the Global Political Economy (4)
 POL 446W - International Relations in East Asia (4)
 POL 447 - Theories of Global Political Economy (4)

Resource and Environmental Management

REM 311- Applied Ecology and Sustainable Environments (3)
REM 350 - Sustainable Energy and Materials Management (4)
 REM 356 - Institutional Arrangements for Sustainable Environmental Management (3)
REM 370 - Global Resource Issues in Oceanography (3)
REM 445 - Environmental Risk Assessment (3)
REM 454 - Water Security (4)

Sociology and Anthropology

SA 302W - Global Problems and the Culture of Capitalism (SA) (4)
 SA 316 - Tourism and Social Policy (SA) (4)
SA 326 - Ecology and Social Thought (4)
 SA 363 - Process of Development and Underdevelopment (SA) (4)
 SA 371 - The Environment and Society (SA) (4)
 SA 396 - Selected Regional Areas (SA) (4)
 SA 418 - International Health: Global Policies and Local Realities (A) (4)
 SA 429 - Sex, Work, and International Capital (SA) (4)
 SA 430 - States, Cultures and Global Transitions (SA) (4)

Calendar Entry Change
Sustainable Development Program – Faculty of Environment

Rationale for change:

The purpose is to consolidate courses from the Sustainable Community Development (SCD) program and the Development and Sustainability (DEVS) program into one Certificate in Sustainable Development. These two programs merged in September 2017, but retained their original, separated credentials and courses. We now need to make the SD program more legible for students, and make both DEVS and SCD courses available within the undergraduate certificate.

Therefore, the Sustainable Community Development certificate will have its name changed to the Sustainable Development certificate to match the new program name. Two courses from the DEVS program will be added to the SD Certificate. Two courses from the SCD program will be eliminated from the certificate.

The proposed changes will make more efficient use of resources by consolidating two 200-level courses into one course, and deleting one 400-level course.

Effective term and year:

Fall 2018

The following program(s) will be affected by these changes:

none

Calendar Change: “to” and “from” sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Sustainable Community Development

CERTIFICATE

The Sustainable Development (SD) certificate program explores social, economic, and environmental sustainability in theory and practice, from local and international perspectives. Framed within the Sustainable Development Goals (SDGs), the certificate offers an applied, multi-disciplinary credential. Classes are small and highly participatory, involving learning through cases, real-world examples, guest speakers, projects, policy design and social enterprise development.

The program is developed to meet students' need for cost and time effective accreditation: (1) the SD courses may be applied to major or minor of a bachelor's degree while earning a practical credential; (2) several courses can be used to meet breadth requirements; (3) the certificate can also be earned as a stand-alone accreditation, without completing a degree; and (4) the required courses can be completed in three to four terms in the classroom or partly in the classroom and partly by distance education.

~~This certificate program offers basic accreditation in sustainable community development and is for those who seek a holistic, active, practical credential either as part of an undergraduate degree or as a stand-alone certificate. General certificate regulations apply. Courses completed for this certificate may also apply toward major or minor program requirements or toward a bachelor's degree under normal regulations. This program may also be completed by distance education.~~

Admission Requirements

Interested students may declare this certificate through the Sustainable Development Program Advisor in the Faculty of Environment.

General undergraduate admission to the university and formal application for program approval with the Sustainable Development Program. Students must normally complete 30 units before applying for the certificate.

Students may take SD courses without applying for the certificate and may apply SD courses and approved electives completed prior to admission already taken toward the certificate.

Application deadlines: May 1 for Fall term, October 1 for Spring term, February 1 for Summer term, Intersession and Summer session.

For complete application

information: <http://www.sfu.ca/susdevprogram/forms/scd-program-application-form.html>

<http://www.sfu.ca/susdevprogram/credentials/sustainable-community-development-scd-undergraduate-certificate.html>

Program Requirements

Students complete **five (5) courses** a minimum of 19 units of required courses and approved elective courses, **of which four (4) must be SD courses. Students must** attain at least a C+ grade in SD 281 and SD 381 for program continuance, and must maintain at least a **minimum** 2.5 cumulative grade point average (CGPA) in all SD courses to obtain the certificate.

Students complete all of:

SD 281 – ~~Introduction to Sustainable Communities~~, **Sustainable World Development** (3)

And Students complete 4-3 of the following upper division SD courses:

SD 301 – Building a Sustainable World: Concepts and Cases (4)

SD 381 – **Building Sustainable Communities: Concepts and Cases** ity Development Theory and Practice (4)

SD 401 – Sustainable Development Goals Studio (4)

SD 481 – ~~Social Enterprise for Sustainable Communities~~ **Leadership Lab** Development (4)

SD 483 – ~~Leadership in Sustainable Community Development~~ (4)

And one (1) elective chosen from ~~Students may take any of the following courses as an elective:~~

- **an additional upper-level SD course from list above**

- a list of approved multidisciplinary elective courses, or as approved by the program director

Students must complete at least one 300-level SD course (SD 301 or SD 381), and at least one SD 400-level course (SD 481 or 401) to obtain the certificate.

The remaining minimum of four units are selected from a list of pre-approved electives, or other electives approved by the director. These include SD 499 Special Topics, offered annually with a changing SD-related topic. Under circumstances where fieldwork or work experience is not available as part of a student's major, minor or co-op program, the student may apply to complete SD 494 Project as their elective. Selecting a three unit elective means that more than one elective will be required to fulfil the minimum units for completion of the certificate. Electives may be either upper or lower division courses, but must be approved by the director.

Students must have taken SD 281 to enroll in any 400-level SD course. Elective courses in other departments may have prerequisites not included here in this certificate program.

Transfer Credit

Transfer credit for work done at other institutions, before or after program admission, may be approved toward program fulfilment provided ~~they~~ it meets the program's requirements for sustainable community development relevance and ~~that at least half of the total unit~~ SFU's **residency** requirements are completed at Simon Fraser University. All other requirements for transfer credit under general undergraduate regulations apply.

Limits

General SFU Certificate regulations apply. Units applied to one certificate may not be applied to another Simon Fraser University certificate or diploma. Those who complete the undergraduate certificate cannot enroll in the **Post Baccalaureate Diploma in Sustainable Development**. Those who have completed the CED or sustainable community development (SCD) PBD may not enroll in this certificate. Those who have completed CED 400 or CED 402 may not complete SD 281 or SD 381 for credit toward the certificate.

More information available at www.sfu.ca/susdevprogram.html

Calendar Entry Change
Sustainable Development Program – Faculty of Environment

Rationale for change:

The Sustainable Community Development (SCD) program and the Development and Sustainability (DEVS) program merged in September 2017 into the Sustainable Development (SD) Program, but retained their original, separated credentials and courses.

We now need to make the SD program more legible for students by creating a unified identity, and making both DEVS and SCD courses available within the **Post Baccalaureate Diploma**.

Therefore:

the Sustainable Community Development Post Baccalaureate Diploma (PBD) will have its name changed to the Post Baccalaureate Diploma (PBD) in Sustainable Development to match the new program name.

Changes to the SD program courses (such as titles, modifications and deletions) will now be reflected in the PBD, including incorporating former DEVS courses into this diploma.

Effective term and year:

Fall 2018

The following program(s) will be affected by these changes:

none

Calendar Change: “to” and “from” sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Sustainable ~~Community~~ Development

POST BACCALAUREATE DIPLOMA

The Post Baccalaureate Diploma (PBD) in Sustainable Development is a post-undergraduate program. This program is for those with an undergraduate degree or equivalent. ~~people who have recently finished a degree and want to bridge to a Sustainability-related career or those with professional experience in Sustainability who wish to obtain an academic credential.~~ It is also an excellent fit for people who are making a major change of field. The diploma is applicable to a wide range of

occupational, professional and academic fields. By combining courses from several disciplines with a specially designed core of study and opportunities for guided practice, the program provides unique perspectives on sustainable community development.

This PBD combines courses in Sustainable Development (SD) theory and guided practice, plus upper division electives from various disciplines, permitting students to shape the diploma to their own interests. The diploma focuses on the community or city scale, while making linkages to the global scale, and includes a required, student-designed practicum/project to address a particular problem in SD.

The program may be completed entirely in the classroom or partly in the classroom and partly by distance education.

Admission Requirements

Admission is a two-step process: General undergraduate admission to the University and formal application for approval with the centre **Sustainable Development Program** is required. Students must complete a bachelor's degree or equivalent before applying to this program.

Application deadlines: May 1 for Fall term, October 1 for Spring term, February 1 for Summer term, Intersession and Summer session.

For complete application

information: <http://www.sfu.ca/susdevprogram/credentials/sustainable-community-development--scd-/post-baccalaureate-diploma.html>

Program Requirements

Students complete a total of 30 upper division units: core SD courses (16 units) and approved electives (14 units), including 16 units in the following required courses. Students must maintain a minimum grade point average of 2.5 on courses applied toward the diploma.

Students complete all of:

**SD 381 - ~~Building Sustainable Community Development Theory and Practice~~
Communities: Concepts and Cases (4)**

~~SD 483 - Leadership in Sustainable Community Development (4)~~

**SD 481 - ~~Social Enterprise for Sustainable Community Development~~ Sustainable
Communities Leadership Lab (4)**

SD 494 - Project in Sustainable Development (4)

And one of:

SD 301 - Building a Sustainable World: Concepts and Cases (4)

SD 401 - Sustainable Development Goals Studio (4)

SD 499 - Special Topics in Sustainable Development (4)

And 14 units of electives, chosen from:

a list of approved upper-division multidisciplinary elective courses, or with approval by the program director.

Some of the electives have prerequisites not included in the PBD requirements. Students are responsible for satisfying the prerequisites of all courses.

In addition to these required courses, students must complete at least 14 units in elective courses. Select electives from the SD electives (SD 491, 499) and from a variety of departments, in consultation with the Sustainable Development academic advisor. A list of pre-approved electives is available but students may also propose courses that meet the following requirements:

- the proposed course must be an upper-division course (300-400 division) or higher.
- the elective proposal must be submitted and approved, in writing, before enrolling and include the course description. Students should complete electives early in the enrollment period.
- the proposed course must meet the SD program's content requirements for being thematically related to SCD or applicable skills for SCD field work. It must be sufficiently related by topic to SCD (e.g. underdevelopment, regional planning, public planning processes) and/or provide research and other skills relevant to SCD practice (e.g. business management, organizational behavior, fieldwork methodologies, qualitative and quantitative analysis). Determination of relevance and applicability will be made by the SD director or their designate.
- a proposed directed studies course from another department requires a detailed study plan to be approved in advance by the SD director and the chosen faculty supervisor. The project's final report must be submitted to the director as well as to the named faculty member.

Students are responsible for prerequisite or other clearances to gain course entry. Many departments waive introductory courses for those with extensive experience. However, other Simon Fraser University departments give course enrollment priority to their own students and will not necessarily permit SCD students to enroll. Check all Calendar entries and consult both department and SD advisors before enrolling.

Other restrictions may apply.

Transfer Credit

Transfer credit for work done at other institutions, before or after admission to the program, may be approved **toward program fulfilment** provided it meets **SCD the program's** requirements for relevance to sustainable community development **relevance** and **SFU's residency requirements**, provided that at least 18 of the total units are completed at Simon Fraser University. All other requirements for transfer credit under general post baccalaureate programs regulations apply.

Applications for transfer credit must be initiated at the time of application for admission to Simon Fraser University or by requesting a Letter of Permission from the admissions office. A GPA of 2.5 in all required and elective courses must be maintained in order to be credited toward the diploma and for continuance in the program.

More information on program is available at the Sustainable Development website: www.sfu.ca/susdevprogram.html.

Limits

General SFU post baccalaureate diploma regulations apply.

Units applied to one diploma may not be applied to another Simon Fraser University certificate or diploma or degree.

Those who complete the Post Baccalaureate Diploma (PBD) in Sustainable Development cannot enroll in the Sustainable Development Certificate.

More information available at www.sfu.ca/susdevprogram.html

**Calendar Entry Change****Resource and Environmental Management Major – Faculty of Environment****Rationale for change:**

REM 355 was intended to be included in the earlier package of substantive modifications to the REM Major recently passed by Senate but we had a course overlap concern to resolve with Geography, so it was withdrawn from the package. That overlap concern has been rectified and we now seek approval for the course (separately) and its insertion into the REM Major program requirements, as noted below.

Effective term and year:

Fall 2018

The following program(s) will be affected by these changes:

Resource and Environmental Management (REM) Major

Calendar Change: “to” and “from” sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Resource and Environmental Management Sectors (choose two; one must be at the 400 level)

GEOG 327 - Geography of Tourism (4)

GEOG 385 - Agriculture and the Environment (4)

REM 350 - Sustainable Energy and Materials Management (4)

REM 355 - Sustainable Transportation Management (3)

REM 427 - Avalanche Risk Management (4)

REM 445 - Environmental Risk Assessment (3)

REM 454 - Water Security (4)

REM 471 - Forest Ecosystem Management (3)

REM 481 - Social Enterprise for Sustainable Community Development (4) or SD 481- Social Enterprise for Sustainable Community Development (4)



Calendar Entry Change Sustainable Business Joint Major

Rationale for change:

To remove a course no longer offered; to update the admission requirements to the Faculty of Environment; to clarify process for registration in the capstone course.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

Joint Major in Business and Environment (aka Joint Major in Sustainable Business)

Calendar Change:

“to” and “from” sections are not required. All deletions should be crossed out as follows:
~~sample.~~ All additions should be marked by a **bold**.

Sustainable Business Joint Major

BACHELOR OF BUSINESS ADMINISTRATION OR BACHELOR OF ENVIRONMENT

Students may opt for either a bachelor of environment degree from the Faculty of Environment, or a bachelor of business administration from the Beedie School of Business. The faculty from which the student chooses to complete a degree will govern faculty requirements.

Admission Requirements

Admission Requirements - Beedie School of Business

Internal transfer (Category 3 or 4) applicants should apply to Beedie by submitting a supplemental application form after completing 30 units, (including lower division requirements, except BUS 217W and BUS 254), meeting a minimum 2.30 overall SFU Business course grade point average and must either already be accepted to the Environment portion of the Joint Major or be eligible for admission that term. The

supplemental application can be found on Beedie's website. Students not accepted upon initial application may reapply. Unsuccessful applicants may appeal through the faculty admissions appeals committee.

Application Deadlines

Visit <http://beedie.sfu.ca/bba/apply> for application deadlines.

Admission Requirements - Environment

Criteria

To be accepted into the joint major requires approval by the Faculty of Environment and admission to the Beedie School of Business. For further details, see above under *Admission Requirements - Beedie School of Business*.

For approval by the Faculty of Environment, ~~students must complete at least 12 units from the list of courses required for the Environment portion of the joint major.~~ **students must meet with the Faculty of Environment advisor.**

Limitations

Students may complete either the Certificate in Environmental and Social Sustainability or the Sustainable Business joint major program, but not both the certificate and the joint major program.

Grade Requirements

In addition to normal university grade point average requirements, the Beedie School of Business requires a minimum 2.30 overall SFU Business course grade point average for entry into all 300 and 400 division business courses.

A minimum 2.30 overall Business course grade point average is required for graduation from a Business major, joint major, or double degree program.

For a course to be accepted as fulfilling a prerequisite, or for a lower division requirement, or for a core course to be accepted in a student's program in business, a student must have obtained a minimum grade of C- (C minus).

Course Limit

For those pursuing the BBA credential, students with fewer than 60 units may enrol in a maximum of 16 units per term. Those with 60 or more may enrol in a maximum of 18 units.

Letters of Permission

The Beedie School of Business does not normally approve letters of permission for students already enrolled at Simon Fraser University.

Program Requirements

The joint major is comprised of lower and upper division Business core requirements, lower and upper division Environment core requirements, cross-disciplinary focus courses, and a capstone course. Students will complete all upper and lower division requirements for both the Beedie School of Business and the Faculty of Environment*.

*Note: course overlap exists between the requirements for the Beedie and Environment portions of the joint major as, in many cases, students may choose either a Beedie or Environment course in order to satisfy a particular program requirement. Consequently, duplication of the list of the overlapping requirements exist under both areas.

Lower Division

Students complete all of

Business Lower Division Requirements

Students must complete all lower division required courses with a minimum C- grade.

Students must complete all of

BUS 217W - Critical Thinking in Business (3)
 BUS 251 - Financial Accounting I (3)
 BUS 254 - Managerial Accounting I (3)
 BUS 272 - Behavior in Organizations (3)
 ECON 103 - Principles of Microeconomics (4)
 ECON 105 - Principles of Macroeconomics (4)

and one of*

BUEC 232 - Data and Decisions I (4)
 GEOG 251 - Quantitative Geography (3)

STAT 270 - Introduction to Probability and Statistics (3)

one of

BUS 237 - Introduction to Business Technology Management (3)

GEOG 255 - Geographical Information Science I (3)

and one of

MATH 150 - Calculus I with Review (4)

MATH 151 - Calculus I (3)

MATH 154 - Calculus I for the Biological Sciences (3)

MATH 157 - Calculus I for the Social Sciences (3)

Environment Lower Division Requirements

Students complete a minimum of 21 units including

One of*

BUEC 232 - Data and Decisions I (4)

GEOG 251 - Quantitative Geography (3)

STAT 270 - Introduction to Probability and Statistics (3)

and one of

BUS 237 - Introduction to Business Technology Management (3)

GEOG 255 - Geographical Information Science I (3)

and one of

BISC 101 - General Biology (4)

BISC 102 - General Biology (4)

EVSC 100 - Introduction to Environmental Science (3)

GEOG 215 - Biogeography (3)

HSCI 100 - Human Biology (3)

and one of

EASC 101 - Dynamic Earth (3)

GEOG 111 - Earth Systems (3)

and one of

ARCH 100 - Ancient Peoples and Places (3)

GEOG 100 - Our World: Introducing Human Geography (3)

and one of

ENV 221 - Systems Thinking and the Environment (3)

~~ENV 222 - Environmental Controversy: An interdisciplinary study of environmental issues (3)~~

GEOG 241 - Social Geography (3)

GEOG 261 - Introduction to Urban Geography (3)

~~REM 281 - Introduction to Sustainable Community Development (3) or SD 281~~

~~- Introduction to Sustainable Community Development (3)~~

SD/REM 281 - Introduction to Sustainable Community Development (3)

and one of

ARCH 286 - Cultural Heritage Management (4)

~~SD 201 - Introduction to Development and Sustainability (3)~~

GEOG 221 - Economic Geography (3)

HSCI 160 - Global Perspectives on Health (3)

REM 100 - Global Change (3)

REM 200 - Introduction to Resource and Environmental Management in Canada (3)

It is recommended that students complete *BUS 202 - Foundations for Collaborative Work Environments (3)* in order to ensure they possess the foundational skills in communication and collaboration necessary for successful completion of upper division business coursework. Students wishing to register in BUS 202 should consult with an Undergraduate Academic Advisor in the Beedie School of Business.

* Students wishing to take BUS 336 must take BUEC 232 or STAT 270. GEOG 251 does not satisfy the prerequisite requirements of BUS 336.

Upper Division Requirements

Business Upper Division Requirements

Core Courses

The Beedie School of Business core courses must be completed, except as specifically modified below. Students must complete all core courses with a minimum C- grade.

Students complete all of:

BUS 312 - Introduction to Finance (4)



BUS 343 - Introduction to Marketing (3)

BUS 360W - Business Communication (4) ***

and one of

BUS 374- Organization Theory (3)

BUS 381- Introduction to Human Resource Management (3)

and one of

BUS 336 - Data and Decisions II (4) **

GEOG 352 - Spatial Analysis (4)

REM 412 - Environmental Modeling (3)

and one of

BUS 303 - Business, Society and Ethics (3)

ENV 320W - Ethics and the Environment (3)

PHIL 328 - Environmental Philosophy (3)

and one of

BUS 393 - Commercial Law (3)

~~ENV~~REM-319 - Environmental Law (3)

Additional Upper Division Business Requirements

Student must complete the following

BUS 361- Project Management (3)

BUS 475 - Sustainable Operations (3)

and one of

BUS 453 - Sustainable Innovation (3)

BUS 489 - Management Practices for Sustainability (3)

Environment Upper Division Requirements

Students must complete

one of

BUS 336 - Data and Decisions II (4)

GEOG 352 - Spatial Analysis (4)
GEOG 451 - Spatial Modeling (4)
REM 412 - Environmental Modeling (3)

and one of

BUS 303 - Business, Society and Ethics (3)
ENV 320W - Ethics and the Environment (3)
PHIL 328 - Environmental Philosophy (3)

and one of

BUS 393 - Commercial Law (3)
ENV REM 319 - Environmental Law (3)

And successful completion of the following upper division courses

~~ENV 321 - Ecological Economics (4)~~ or REM 321 - Ecological Economics (4)

and five of

ARCH 363 - Landscape Archaeology (3)
ARCH 365 - Archaeological Perspectives on Human Ecology (3)
ARCH 386 - Archaeological Resource Management (3)
~~SD 401 - Issues, Concepts and Cases in Development and Sustainability (4)~~
GEOG 321 - Geographies of Global Capitalism (4)
GEOG 322 - World Resources (4)
GEOG 323 - Industrial Location (4)
GEOG 324 - Geography of Transportation (4)
GEOG 325 - Geographies of Consumption (4)
GEOG 327 - Geography of Tourism (4)
GEOG 385 - Agriculture and the Environment (4)
REM 350 - Sustainable Energy and Materials Management (4)
REM 356 - Institutional Arrangements for Sustainable Environmental Management (3)
REM 370 - Global Resource Issues in Oceanography (3)
REM 445 - Environmental Risk Assessment (3)
REM 471 - Forest Ecosystem Management (3)
~~REM 381 - Sustainable Community Development Theory and Practice (4) or SD 381 - Sustainable Community Development Theory and Practice (4)~~
~~REM 481 - Social Enterprise for Sustainable Community Development (4) or SD 481 - Social Enterprise for Sustainable Community Development (4)~~
~~REM 483 - Leadership in Sustainable Community Development (4) or SD 483 - Leadership in Sustainable Community Development (4)~~
SD 301 - Building a Sustainable World: Concepts and Cases (4)

SD/REM 381 – Building Sustainable Communities: Concepts and Cases (4)
SD/REM 481 - Social Enterprise for Sustainable Community Development (4)

and one of**** [NOTE: Asterisks added here.]

ENV 495 - Environmental Capstone (4)
ENV 491 - Directed Study in Environment (3)
SD 494 - Project in Sustainable Development (4)

** Students wishing to take BUS 336-4 must take BUEC 232-4 or STAT 270-3. GEOG 251-3 does not satisfy the prerequisite requirements of BUS 336-4.

*** To be completed before the student's 75th unit and at Simon Fraser University in accordance with the WQB requirements.

****Students must meet with the Faculty of Environment advisor before selecting a capstone course.

Faculty of Environment Degree Requirements (BENV)

For all bachelor of environment (BEnv) programs (except the honours program), students complete 120 units, which includes

at least 45 upper division units, of which at least 30 upper division units must be completed at Simon Fraser University
satisfaction of the writing, quantitative, and breadth requirements
an overall cumulative grade point average (CGPA) and upper division CGPA of at least 2.0, and a program CGPA and upper division CGPA of at least 2.0

Writing, Quantitative, and Breadth Requirements

Students admitted to Simon Fraser University beginning in the fall 2006 term must meet writing, quantitative and breadth requirements as part of any degree program they may undertake. See [Writing, Quantitative, and Breadth Requirements](#) for university-wide information.

WQB Graduation Requirements

A GRADE OF C- OR BETTER IS REQUIRED TO EARN W, Q OR B CREDIT

Requirement	Units	Notes	
W - Writing	6	Must include at least one upper division course, taken at Simon Fraser U	
Q - Quantitative	6	Q courses may be lower or upper division	
B - Breadth	18	Designated Breadth	Must be outside the student's major subject, and may be 6 units Social Sciences: B-Soc 6 units Humanities: B-Hum 6 units Sciences: B-Sci
	6	Additional Breadth	6 units outside the student's major subject (may or may not will likely help fulfil individual degree program require Students choosing to complete a joint major, joint honours minors, an extended minor and a minor, or two minors (1 (designated or not designated) with courses completed i

Business Career Passport Requirements

Students who are admitted to the Beedie School of Business beginning in the Fall 2012 term will complete the Business Career Passport.

Students who are admitted to the Beedie School of Business beginning in the Fall 2017 term will complete the Business Career Passport as part of the Business Foundation Program within 12 months of the start of their program.

During the BBA program, students register in and complete six mandatory Business Career Passport workshops. The workshops may be completed in any order.

Enrollment and participation in workshops must be recorded with the Career Management Centre. For more information about the workshops, or to register, visit [the Beedie Community link](#) on the [Career Management Centre website](#).

Residency Requirements and Transfer Credit

At least half of the program's total units must be earned through Simon Fraser University study.

At least two thirds of the program's total upper division units must be earned through Simon Fraser University study.

Elective Courses

In addition to the courses listed above, students should consult an academic advisor to plan the remaining required elective courses.



Calendar Entry Change

SCUS 18-21a

Name of Program or Name of Faculty: STAT major, Faculty of Science

Rationale for change:

STAT courses can roughly be divided into data analysis and theoretical courses. The current requirements, as stated, allow students to complete the STAT major with only two upper division theoretical courses. The proposed change will force students to take at least four such courses (without changing the overall number of units required for the major).

Effective term and year: Fall 2018

The following program(s) will be affected by these changes:

STAT major

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Upper Division Requirements

List A: STAT 380, STAT 390, STAT 410, STAT 430, STAT 440, STAT 450, STAT 460, STAT 490, STAT 495

Students complete all of

STAT 330 - Introduction to Mathematical Statistics (3)

STAT 341 - Introduction to Statistical Computing and Exploratory Data Analysis - R (2)

STAT 342 - Introduction to Statistical Computing and Exploratory Data Analysis - SAS (2)

STAT 350 - Linear Models in Applied Statistics (3)

and 12 units in upper division STAT courses (**including a minimum of two courses on List A, and** excluding STAT 302, 305, 403)

and 9 units in additional upper division ACMA, MACM, MATH or STAT courses (excluding STAT 302, 305, 403). **Upper division STAT courses and MACM 316** The following are recommended.

For students who wish to seek accreditation with the Statistical Society of Canada, STAT 450 and at least one of STAT 410 or 430 are recommended.

~~STAT 410 – Statistical Analysis of Sample Surveys (3) *~~
~~STAT 430 – Statistical Design and Analysis of Experiments (3) *~~
~~STAT 440 – Learning from Big Data (3)~~
~~STAT 445 – Applied Multivariate Analysis (3)~~
~~STAT 450 – Statistical Theory (3) *~~
~~STAT 452 – Statistical Learning and Prediction (3)~~
~~STAT 460 – Bayesian Statistics (3)~~
~~STAT 475 – Applied Discrete Data Analysis (3)~~
~~STAT 485 – Applied Time Series Analysis (3)~~
~~STAT 490 – Selected Topics in Probability and Statistics (3)~~
~~STAT 495 – Directed Studies in Probability and Statistics (3)~~

~~* STAT 450 and at least one of STAT 410 or 430 are recommended for students who wish to seek accreditation with the Statistical Society of Canada.~~

**Calendar Entry Change: Lower Division Requirements for Applied Mathematics Major Program****Name of Program or Name of Faculty: Department of Mathematics**

Rationale for change: PHIL 210 has been discontinued.
Effective term and year: Fall 2018
The following program(s) will be affected by these changes: Applied Mathematics Major Program

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Program Requirements

Students complete at least 120 units of which at least 60 units are at the upper division level as specified below.

Lower Division Requirements

Students complete the following:

both of

CMPT 120 - Introduction to Computing Science and Programming I (3)
CMPT 129 - Introduction to Computing Science and Programming for Mathematics and Statistics (3)

(or equivalent: CMPT 125 (3) or CMPT 126 (3) or CMPT 128 (3))

or both of

CMPT 130 - Introduction to Computer Programming I (3)
CMPT 135 - Introduction to Computer Programming II (3)

and all of

MACM 203 - Computing with Linear Algebra (2) +
MACM 204 - Computing with Calculus (2) +
MATH 242 - Introduction to Analysis I (3)
MATH 251 - Calculus III (3)
MATH 252 - Vector Calculus (3)

STAT 270 - Introduction to Probability and Statistics (3)

and one of

MATH 150 - Calculus I with Review (4)

MATH 151 - Calculus I (3)

MATH 154 - Calculus I for the Biological Sciences (3) **

MATH 157 - Calculus I for the Social Sciences (3) **

and one of

MATH 152 - Calculus II (3) *

MATH 155 - Calculus II for the Biological Sciences (3) **

MATH 158 - Calculus II for the Social Sciences (3) **

and one of

MATH 232 - Applied Linear Algebra (3) **

MATH 240 - Algebra I: Linear Algebra (3)

and one of

PHYS 120 - Mechanics and Modern Physics (3)

PHYS 125 - Mechanics and Special Relativity (3)

PHYS 140 - Studio Physics - Mechanics and Modern Physics (4)

and one of

PHYS 121 - Optics, Electricity and Magnetism (3)

PHYS 126 - Electricity, Magnetism and Light (3)

PHYS 141 - Studio Physics - Optics, Electricity and Magnetism (4)

and at least one of

CMPT 225 - Data Structures and Programming (3)

ENSC 220 - Electric Circuits I (4)

MACM 201 - Discrete Mathematics II (3)

~~PHIL 210 - Natural Deductive Logic (3)~~

PHYS 211 - Intermediate Mechanics (3)

STAT 285 - Intermediate Probability and Statistics (3)

+ The following substitutions are also permitted.



They may not also be used to satisfy the upper division requirements below.

MACM 409 - Numerical Linear Algebra: Algorithms, Implementation and Applications (3) for MACM 203.

MACM 401 - Introduction to Computer Algebra (3) for MACM 204.

MACM 442 - Cryptography (3) for MACM 204.

* strongly recommended

** with a B grade or better

+ The following substitutions are also permitted. They may not be used to satisfy the upper division requirements below. MACM 409 - Numerical Linear Algebra: Algorithms, Implementation and Applications (3) for MACM 203. MACM 401 - Introduction to Computer Algebra (3) for MACM 204. MACM 442 - Cryptography (3) for MACM 204.

Upper Division Requirements

Students complete a minimum of 30 units, including all of

MACM 316 - Numerical Analysis I (3)

MATH 310 - Introduction to Ordinary Differential Equations (3)

MATH 314 - Introduction to Fourier Methods and Partial Differential Equations (3)

MATH 320 - Introduction to Analysis II (3)

MATH 322 - Complex Variables (3)

MATH 418 - Partial Differential Equations (3)

and at least one of

MATH 461 - Continuous Mathematical Models (3)

MATH 462 - Fluid Dynamics (3)

MATH 467 - Dynamical Systems (3)

and at least two of

MACM 401 - Introduction to Computer Algebra (3)

MACM 409 - Numerical Linear Algebra: Algorithms, Implementation and Applications (3)

MACM 416 - Numerical Analysis II (3)

MATH 308 - Linear Optimization (3)

MATH 309 - Continuous Optimization (3)

MATH 338 - Advanced Linear Algebra (3)

MATH 343 - Applied Discrete Mathematics (3)

MATH 345 - Introduction to Graph Theory (3)

MATH 419 - Linear Analysis (3)
MATH 424 - Complex Analysis (3)
MATH 425 - Real Analysis (3)
MATH 461 - Continuous Mathematical Models (3)
MATH 462 - Fluid Dynamics (3)
MATH 467 - Dynamical Systems (3)
MATH 470 - Variational Calculus (3)
MATH 495 - Selected Topics in Applied Mathematics (3)
PHYS 413 - Advanced Mechanics (3)
STAT 380 - Introduction to Stochastic Processes (3)

and one additional upper division MATH or MACM course, or any pre-approved quantitative upper division course offered by the Faculties of Applied Sciences, Arts and Social Sciences, Beedie School of Business or Faculty of Science. This course, if other than MATH or MACM, must be pre-approved by a department advisor. Students are encouraged to explore the option of completing courses outside the department and to discuss possibilities with a department advisor. Choices from the third group ("at least two of") must not include the course used to satisfy the second group ("at least one of"). At least three of the courses used to satisfy the upper division requirements must be at the 400 division.

Other Requirements

At least 44 of the units must be at the upper division. In the courses used to satisfy the upper division requirements, a grade point average (GPA) of at least 2.00 is required. In addition, University regulations require a cumulative GPA of at least 2.00 and an upper division GPA of at least 2.00.

These averages are computed on all courses completed at the University. See Grade Point Averages Needed for Graduation.

In addition to the above requirements, students must also satisfy Faculty of Science major program requirements as follows.

Calendar Entry Change: Lower Division Requirements for Applied Mathematics Honours Program

Name of Program or Name of Faculty: Department of Mathematics

Rationale for change: PHIL 210 has been discontinued.
Effective term and year: Fall 2018
The following program(s) will be affected by these changes: Applied Mathematics Honours Program.

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Program Requirements

Students complete at least 120 units of which at least 60 units are at the upper division level as specified below.

Lower Division Requirements

Students complete 40 units, including either

both of

CMPT 120 - Introduction to Computing Science and Programming I (3)
CMPT 129 - Introduction to Computing Science and Programming for Mathematics and Statistics (3)

(or equivalent: CMPT 125 (3) or CMPT 126 (3) or CMPT 128 (3))

or both of

CMPT 130 - Introduction to Computer Programming I (3)
CMPT 135 - Introduction to Computer Programming II (3)

and all of

MACM 203 - Computing with Linear Algebra (2) +
MACM 204 - Computing with Calculus (2) +
MATH 242 - Introduction to Analysis I (3)
MATH 251 - Calculus III (3)
MATH 252 - Vector Calculus (3)

STAT 270 - Introduction to Probability and Statistics (3)

and one of

PHYS 120 - Mechanics and Modern Physics (3)

PHYS 125 - Mechanics and Special Relativity (3)

PHYS 140 - Studio Physics - Mechanics and Modern Physics (4)

and one of

PHYS 121 - Optics, Electricity and Magnetism (3)

PHYS 126 - Electricity, Magnetism and Light (3)

PHYS 141 - Studio Physics - Optics, Electricity and Magnetism (4)

and one of

MATH 150 - Calculus I with Review (4)

MATH 151 - Calculus I (3) *

MATH 154 - Calculus I for the Biological Sciences (3) **

MATH 157 - Calculus I for the Social Sciences (3) **

and one of

MATH 152 - Calculus II (3) *

MATH 155 - Calculus II for the Biological Sciences (3) **

MATH 158 - Calculus II for the Social Sciences (3) **

and one of

MATH 232 - Applied Linear Algebra (3) **

MATH 240 - Algebra I: Linear Algebra (3) *

and at least one of

CMPT 225 - Data Structures and Programming (3)

ENSC 220 - Electric Circuits I (4)

MACM 201 - Discrete Mathematics II (3)

~~PHIL 210 - Natural Deductive Logic (3)~~

PHYS 211 - Intermediate Mechanics (3)

STAT 285 - Intermediate Probability and Statistics (3)

* strongly recommended

** with a B grade or better

+ The following substitutions are also permitted. They may not be used to satisfy the upper division requirements below. MACM 409 - Numerical Linear Algebra: Algorithms, Implementation and Applications (3) for MACM 203. MACM 401 - Introduction to Computer Algebra (3) for MACM 204. MACM 442 - Cryptography (3) for MACM 204.

Upper Division Requirements

Students complete 48 units, including all of

MACM 316 - Numerical Analysis I (3)
MATH 310 - Introduction to Ordinary Differential Equations (3)
MATH 314 - Introduction to Fourier Methods and Partial Differential Equations (3)
MATH 320 - Introduction to Analysis II (3)
MATH 322 - Complex Variables (3) \ MATH 418 - Partial Differential Equations (3)
MATH 498 - Communication and Research Skills in the Mathematical Sciences (1)
MATH 499W - Honours Research Project (5)

and at least one of

MATH 308 - Linear Optimization (3)
MATH 309 - Continuous Optimization (3)

and at least one of

MATH 461 - Continuous Mathematical Models (3)
MATH 462 - Fluid Dynamics (3)
MATH 467 - Dynamical Systems (3)

and at least one of

MACM 409 - Numerical Linear Algebra: Algorithms, Implementation and Applications (3)
MACM 416 - Numerical Analysis II (3)
MATH 470 - Variational Calculus (3)

and at least fifteen more upper division units, of which at least three must be chosen from the 400 level. These fifteen units may be selected from any MATH or MACM courses or from

CMPT 464 - Geometric Modelling in Computer Graphics (3)
PHYS 395 - Computational Physics (3)
PHYS 413 - Advanced Mechanics (3)
STAT 380 - Introduction to Stochastic Processes (3)

Other Requirements



At least 60 of the units must be at the upper division. A cumulative grade point average (CGPA) of at least 3.00 and an upper division grade point average of at least 3.00 are required. These averages are computed on all courses completed at the University. If both averages are at least 3.50, the designation 'first class' applies.



SCUS 18-21c

Calendar Entry Change

Name of Program or Name of Faculty

Rationale for change:

Removal – PHYS 130 as Physics will no longer be offering it.

Effective term and year:

Fall 2018

The following program(s) will be affected by these changes:

EASC Major

Calendar Change: “to” and “from” sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Lower Division Requirements

and all of

PHYS 101 - Physics for the Life Sciences I (3)**

PHYS 102 - Physics for the Life Sciences II (3)**

~~PHYS 130 - Physics for the Life Sciences Laboratory (2) **~~

PHYS 132 - Physics Laboratory I (1)**

PHYS 133 - Physics Laboratory II (1)**



Calendar Entry Change

Name of Program or Name of Faculty

Rationale for change: Removal – PHYS 130 as Physics will no longer be offering it.
Effective term and year: Fall 2018
The following program(s) will be affected by these changes: EASC Honours

Calendar Change: “to” and “from” sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Lower Division Requirements and all of PHYS 101 - Physics for the Life Sciences I (3)** PHYS 102 - Physics for the Life Sciences II (3)** PHYS 130 - Physics for the Life Sciences Laboratory (2)** PHYS 132 - Physics Laboratory I (1)** PHYS 133 - Physics Laboratory II (1)**

Calendar Entry Change

Name of Program or Name of Faculty

Rationale for changes:

Addition - CHEM 260 is a prerequisite for CHEM 316, 332 and 360.

Removal - PHYS 346 - Energy and the Environment is no longer being offered.

The remaining changes, specifically the order of appearance of the Geology and Environmental Geoscience Streams, now make it clearer which courses are required.

Effective term and year:

Fall 2018

The following program(s) will be affected by these changes:

EASC-CHEM Joint Major

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Lower Division Requirements

Students will complete a minimum of 73 units including all of

CHEM 121 - General Chemistry and Laboratory I (4)

CHEM 122 - General Chemistry II (2)

CHEM 126 - General Chemistry Laboratory II (2)

CHEM 215 - Introduction to Analytical Chemistry (4)

CHEM 230 - Inorganic Chemistry (3)

CHEM 236W - Inorganic Chemistry Laboratory (3)

CHEM 260 - Atoms, Molecules, Spectroscopy (4)

CHEM 281 - Organic Chemistry I (4)

EASC 101 - Dynamic Earth (3)

EASC 201 - Stratigraphy and Sedimentation (3)

EASC 202 - Introduction to Mineralogy (3)

EASC 204 - Structural Geology I (3)

EASC 205 - Introduction to Petrology (3)

EASC 206 - Field Geology I (2)

EASC 207 - Introduction to Applied Geophysics (3)

EASC 208 - Introduction to Geochemistry (3)

EASC 209W - Environmental Geoscience (4)

EASC 210 - Historical Geology (3)

MATH 151 - Calculus I (3) or MATH 150 - Calculus I with Review (4)

MATH 152 - Calculus II (3)

and one of

STAT 201 - Statistics for the Life Sciences (3)
STAT 270 - Introduction to Probability and Statistics (3)

and all of

PHYS 120 - Mechanics and Modern Physics (3)
PHYS 121 - Optics, Electricity and Magnetism (3)
PHYS 132 - Physics Laboratory I (1)
PHYS 133 - Physics Laboratory II (1)

or all of

PHYS 125 - Mechanics and Special Relativity (3)
PHYS 126 - Electricity, Magnetism and Light (3)
PHYS 132 - Physics Laboratory I (1)
PHYS 133 - Physics Laboratory II (1)

or both of

PHYS 140 - Studio Physics - Mechanics and Modern Physics (4)
PHYS 141 - Studio Physics - Optics, Electricity and Magnetism (4)

Upper Division Requirements

Students will complete a minimum of 42 units including all of

CHEM 316 - Introductory Instrumental Analysis (4)
CHEM 317 - Analytical Environmental Chemistry (2)
CHEM 332 - The Chemistry of Transition Metals (3)
CHEM 360 - Thermodynamics and Chemical Kinetics (3)
CHEM 371 - Chemistry of the Aqueous Environment (3)
CHEM 372 - Chemistry of the Atmospheric Environment (3)

and 3 units of 400-level CHEM not including CHEM 481-5, CHEM 483-5 or CHEM 484-10

and 3 additional units of upper division EASC courses

and all of

EASC 306 - Field Geology II (3)
EASC 308 - Field Geology III (3)

and one of

EASC 310W - Paleontology (3)

EASC 315W - Geochemistry of Natural Waters (3)

and one of

NUSC 341 - Introduction to Radiochemistry (3)

NUSC 344 - Nucleosynthesis and Distribution of the Elements (3)

PHYS 346 - Energy and the Environment (3)

ENVIRONMENTAL GEOSCIENCE STREAM

Students who choose this stream will complete all of

EASC 304 - Hydrogeology (3)

EASC 403 - Quaternary Geology (3)

GEOLOGY STREAM

Students who choose this stream will complete all of

EASC 301 - Igneous Petrology (3)

EASC 302 - Sedimentary Petrology (3)

~~and one of~~

~~EASC 310W - Paleontology (3)~~

~~EASC 315W - Geochemistry of Natural Waters (3)~~

~~and 3 additional units of 400-level EASC courses~~

~~and one of~~

~~NUSC 341 - Introduction to Radiochemistry (3)~~

~~NUSC 344 - Nucleosynthesis and Distribution of the Elements (3)~~

~~PHYS 346 - Energy and the Environment (3)~~

Calendar Entry Change

Name of Program or Name of Faculty

<p>Rationale for changes:</p> <p>Addition - CHEM 260 is a prerequisite for CHEM 316, 332 and 360.</p> <p>Removal - PHYS 346 - Energy and the Environment is no longer being offered.</p> <p>The remaining changes, specifically the order of appearance of the Geology and Environmental Geoscience Streams, now make it clearer which courses are required.</p>
<p>Effective term and year:</p> <p>Fall 2018</p>
<p>The following program(s) will be affected by these changes:</p> <p>EASC-CHEM Joint Honours</p>

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

<p>Lower Division Requirements</p> <p>Students will complete a minimum of 73 units including all of</p> <p>CHEM 121 - General Chemistry and Laboratory I (4)</p> <p>CHEM 122 - General Chemistry II (2)</p> <p>CHEM 126 - General Chemistry Laboratory II (2)</p> <p>CHEM 215 - Introduction to Analytical Chemistry (4)</p> <p>CHEM 230 - Inorganic Chemistry (3)</p> <p>CHEM 236W - Inorganic Chemistry Laboratory (3)</p> <p>CHEM 260 - Atoms, Molecules, Spectroscopy (4)</p> <p>CHEM 281 - Organic Chemistry I (4)</p> <p>EASC 101 - Dynamic Earth (3)</p> <p>EASC 201 - Stratigraphy and Sedimentation (3)</p> <p>EASC 202 - Introduction to Mineralogy (3)</p> <p>EASC 204 - Structural Geology I (3)</p> <p>EASC 205 - Introduction to Petrology (3)</p> <p>EASC 206 - Field Geology I (2)</p> <p>EASC 207 - Introduction to Applied Geophysics (3)</p> <p>EASC 208 - Introduction to Geochemistry (3)</p> <p>EASC 209W - Environmental Geoscience (4)</p> <p>EASC 210 - Historical Geology (3)</p>
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MATH 151 - Calculus I (3) or MATH 150 - Calculus I with Review (4)
MATH 152 - Calculus II (3)

and one of

STAT 201 - Statistics for the Life Sciences (3)
STAT 270 - Introduction to Probability and Statistics (3)

and all of

PHYS 120 - Mechanics and Modern Physics (3)
PHYS 121 - Optics, Electricity and Magnetism (3)
PHYS 132 - Physics Laboratory I (1)
PHYS 133 - Physics Laboratory II (1)

or all of

PHYS 125 - Mechanics and Special Relativity (3)
PHYS 126 - Electricity, Magnetism and Light (3)
PHYS 132 - Physics Laboratory I (1)
PHYS 133 - Physics Laboratory II (1)

or both of

PHYS 140 - Studio Physics - Mechanics and Modern Physics (4)
PHYS 141 - Studio Physics - Optics, Electricity and Magnetism (4)

Upper Division Requirements

Upper division units must total a minimum of 50 units in CHEM and EASC, including at least 26 units in upper division CHEM, and all of

CHEM 316 - Introductory Instrumental Analysis (4)
CHEM 317 - Analytical Environmental Chemistry (2)
CHEM 332 - The Chemistry of Transition Metals (3)
CHEM 360 - Thermodynamics and Chemical Kinetics (3)
CHEM 371 - Chemistry of the Aqueous Environment (3)
CHEM 372 - Chemistry of the Atmospheric Environment (3)

and 6 units of 400-level CHEM (which can include CHEM 481-5)

and all of

EASC 306 - Field Geology II (3)

EASC 308 - Field Geology III (3)

and one of

EASC 310W - Paleontology (3)

EASC 315W - Geochemistry of Natural Waters (3)

and one of

EASC 499 - Honours Thesis (6)

CHEM 481 - Undergraduate Research (5)

and one of

NUSC 341 - Introduction to Radiochemistry (3)

NUSC 344 - Nucleosynthesis and Distribution of the Elements (3)

~~PHYS 346 - Energy and the Environment (3)~~

ENVIRONMENTAL GEOSCIENCE STREAM

Students who choose this stream will complete all of

EASC 304 - Hydrogeology (3)

EASC 403 - Quaternary Geology (3)

GEOLOGY STREAM

Students who choose this stream will complete all of

EASC 301 - Igneous Petrology (3)

EASC 302 - Sedimentary Petrology (3)

and one of

~~EASC 310W - Paleontology (3)~~

~~EASC 315W - Geochemistry of Natural Waters (3)~~

~~and 3 additional units of 400-level EASC courses~~

and one of

~~EASC 499 - Honours Thesis (6)~~

~~CHEM 481 - Undergraduate Research (5)~~



~~and one of~~

~~NUSC 341 – Introduction to Radiochemistry (3)~~

~~NUSC 344 – Nucleosynthesis and Distribution of the Elements (3)~~

~~PHYS 346 – Energy and the Environment (3)~~



SCUS 18-21d

Calendar Entry Change: replacing 1st year PHYS lab courses

Name of Program or Name of Faculty: Chemistry and MBB Joint Major, Honours

Rationale for change: Physics cancelled PHYS 130: Physics for Life Sciences Laboratory (2) and replaced it with two courses, PHYS 132: Physics Laboratory I (1) and PHYS 133: Physics Laboratory II (1). Since PHYS 130 was a required course for 2 of the PHYS bundle options for Chem-MBB Joint Major and Joint Honours programs, it has been replaced with PHYS 132 and PHYS 133 for the PHYS 101/102 option, and added to the PHYS 125/126 option, which should have included PHYS 130 but did not. Chemistry has approved these changes.

Effective term and year: Fall 2018

The following program(s) will be affected by these changes: Chemistry and MBB Joint Major, Chemistry and MBB Joint Honours

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Lower Division Requirements

Students complete all of

CHEM 121 - General Chemistry and Laboratory I (4)
CHEM 122 - General Chemistry II (2)
CHEM 126 - General Chemistry Laboratory II (2)
CHEM 215 - Introduction to Analytical Chemistry (4)
CHEM 230 - Inorganic Chemistry (3)
CHEM 236W - Inorganic Chemistry Laboratory (3)
CHEM 260 - Atoms, Molecules, Spectroscopy (4)
CHEM 281 - Organic Chemistry I (4)
CHEM 283 - Organic Chemistry IIb (3)
CHEM 286 - Organic Chemistry Laboratory II (2)
MATH 152 - Calculus II (3)
BISC 101 - General Biology (4)
BISC 102 - General Biology (4)
BISC 202 - Genetics (3)
MBB 222 - Molecular Biology and Biochemistry (3)
MBB 231 - Cellular Biology and Biochemistry (3)

and one of

MATH 150 - Calculus I with Review (4)

MATH 151 - Calculus I (3)

and one of

STAT 201 - Statistics for the Life Sciences (3)

STAT 270 - Introduction to Probability and Statistics (3)

and all of

PHYS 120 - Mechanics and Modern Physics (3)

PHYS 121 - Optics, Electricity and Magnetism (3)

PHYS 132 - Physics Laboratory I (1)

PHYS 133 - Physics Laboratory II (1)

or all of

PHYS 125 - Mechanics and Special Relativity (3)

PHYS 126 - Electricity, Magnetism and Light (3)

PHYS 132 - Physics Laboratory I (1)

PHYS 133 - Physics Laboratory II (1)

or all of

PHYS 101 - Physics for the Life Sciences I (3)

PHYS 102 - Physics for the Life Sciences II (3)

~~PHYS 130 - Physics for the Life Sciences Laboratory (2)~~

PHYS 132 - Physics Laboratory I (1)

PHYS 133 - Physics Laboratory II (1)

or both of

PHYS 140 - Studio Physics - Mechanics and Modern Physics (4)

PHYS 141 - Studio Physics - Optics, Electricity and Magnetism (4)



SCUS 18-21e

Calendar Entry Change: PHYS 433 removed from UD course list

Name of Program or Name of Faculty: MBB Majors

Rationale for change: PHYS 433: Biological Physics Laboratory (3) is in the list of Upper Division courses, 5 of which have to be taken by MBB majors, but this course is no longer offered by Physics. (It has been merged with 2 other PHYS lab courses to make PHYS 332).

Effective term and year: Fall 2018

The following program(s) will be affected by these changes: MBB Majors, MBB Honours.

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample~~. All additions should be marked by a **bold**.

Upper Division Requirements

Students complete all of

MBB 308 - Molecular Biology Laboratory (3)

MBB 309W - Biochemistry Laboratory (4)

MBB 321 - Intermediary Metabolism (3)

MBB 322 - Molecular Physiology (3)

MBB 331 - Molecular Biology (3)

and a minimum of five courses chosen from the following list. There is no upper limit on the quantity in this list that can be completed.

HSCI 442 - Immunology Laboratory (4)

MBB 323 - Introduction to Physical Biochemistry (3)

MBB 324 - Protein Biochemistry (3)

MBB 342 - Introductory Genomics and Bioinformatics (3)

MBB 402 - Developmental Biology of Cell Signalling (3)

MBB 420 - Selected Topics in Contemporary Biochemistry (3)

MBB 421 - Nucleic Acids (3)

MBB 422 - Biomembranes (3)

MBB 423 - Protein Structure and Function (3)

MBB 424 - Membrane Transport Mechanisms (3)

MBB 426 - Immune System I: Basis of Innate and Adaptive Immunity (4)

MBB 427 - Immune System II: Immune Responses in Health and Disease (3)

MBB 428 - Microbial Pathogenesis (3)

MBB 429 - RNA-mediated Gene Regulation (3)

MBB 430 - Mechanisms of Secretory Transport (3)

MBB 431 - Cells and the Environment (3)

MBB 432 - Advanced Molecular Biology Techniques (4)

MBB 436 - Gene Expression (3)

MBB 438 - Human Molecular Genetics (3)
 MBB 440 - Selected Topics in Contemporary Molecular Biology (3)
 MBB 441 - Bioinformatics (3)
 MBB 443 - Protein Biogenesis and Degradation (3)
 MBB 446 - The Molecular Biology of Cancer (3)
 MBB 461 - Comparative Genomics (3)
 MBB 462 - Human Genomics (3)
 MBB 463 - Forensic Genomics (3)
 MBB 464 - From Genome to System (3)
~~PHYS 433 - Biological Physics Laboratory (3)~~