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**MEMORANDUM**

ATTENTION	Senate	DATE	May 3, 2024
FROM	Peter Hall, Chair	PAGES	1/2
RE:	Senate Committee on Undergraduate Studies Program Changes		

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**For information:**

Acting under delegated authority at its meeting of May 2, 2024 SCUS approved the following curriculum revisions effective Spring 2025.

**a. Faculty of Applied Sciences (SCUS 24-51)**
**1. School of Sustainable Energy Engineering**

(i) Requirement changes to the:

- Sustainable Energy Engineering Major
- Sustainable Energy Engineering Honours

**b. Faculty of Arts and Social Sciences (SCUS 24-52)**
**1. School of Criminology**

(i) Requirement changes to the:

- Police Studies Certificate
- Police Studies Minor
- Legal Studies Certificate

**2. School of Public Policy**

(i) Requirement changes to the Public Policy Minor

**c. Beedie School of Business (SCUS 24-53)**

(i) Changes to the Course Access Information and Grade Requirements

**d. Faculty of Education (SCUS 24-54)**

- (i) Upper division requirement changes to the French Education Minor

**e. Faculty of Environment (SCUS 24-55)**

**1. Department of Geography**

- (i) Lower division requirement changes to the:

- Climate Change and Society Minor
- Geo Business Joint Major
- Global Environmental Systems Major
- Global Environmental Systems Honours
- Human Geography Major
- Human Geography Honours
- Physical Geography Major
- Physical Geography Honours

- (ii) Upper division requirement changes to the: *(Fall 2025)*

- Human Geography Major
- Human Geography Honours

**f. Faculty of Science (SCUS 24-56)**

**1. Department of Physics**

- (i) Requirement changes to: *(Fall 2025)*

- Physics Major
- Physics Honours
- Applied Physics Major
- Applied Physics Honours

Senators wishing to consult a more detailed report of curriculum revisions may do so on the Senate Docushare repository at <https://docushare.sfu.ca/dsweb/View/Collection-12682>.



<b>Name of Program or Name of Faculty</b>
Sustainable Energy Engineering
<b>Rationale for change:</b>
Based on students' interest and alignment with the SEE program, GEOG 333 - Climate Crisis: Understanding a World on Fire, is considered relevant to the SEE program curriculum.
<b>Effective term and year:</b>
Spring 2025
<b>The following program(s) will be affected by these changes:</b>
Sustainable Energy Engineering Major Sustainable Energy Engineering 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**.

<p><b>Interdisciplinary Elective Courses</b></p> <p>To contribute to the program's focus on interdisciplinary knowledge, students must also take one of the following interdisciplinary electives</p> <p>GEOG 324 - Geography of Transportation (4)          GEOG 362W - Gentrification and Urban Change (4) or GEOG 362 - Gentrification and Urban Change (4)  <b>GEOG 333 - Climate Crisis: Understanding a World on Fire (4)</b></p>
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<p><b>Name of Program or Name of Faculty</b></p> <p>Sustainable Energy Engineering</p>
<p><b>Rationale for change:</b></p> <p>New elective course (SEE 465) was proposed by SEE and approved by SCUS. We would like to add the course to SEE calendar, under the elective courses list.</p>
<p><b>Effective term and year:</b></p> <p>Spring 2025</p>
<p><b>The following program(s) will be affected by these changes:</b></p> <p>Sustainable Energy Engineering Major Sustainable Energy Engineering 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**.

## Elective Courses

### Technical Elective Courses

Students must complete three technical elective courses from the following SEE Technical Elective list. With permission from the SEE undergraduate curriculum committee chair, students may replace one technical elective with either a directed study (SEE 486) or a special project laboratory course. Approved special topics courses may also be counted here.

ENSC 450 - VLSI Systems Design (4)  
ENSC 495 - Introduction to Microelectronic Fabrication (4)  
MSE 480 - Manufacturing Systems (3)  
MSE 481 - Industrial Control Systems (3)

SEE 460 - Additive Manufacturing and Sustainable Design (3)  
SEE 461 - Electronics Manufacturing and Assembly (3)  
SEE 462 - Manufacturing Processes and Materials (3)  
SEE 463 - Embedded Computer Systems (3)  
SEE 464 - Energy Systems Modeling for Buildings (3)  
**SEE 465 - Environmental Life Cycle Assessment and Sustainability (3)**  
SEE 475 - Special Topics in Sustainable Energy Engineering (3)  
SEE 476 - Special Topics in Sustainable Energy Engineering (3)  
SEE 477 - Special Topics in Sustainable Energy Engineering (3)



<b>Name of Program or Name of Faculty</b> Criminology
<b>Rationale for change:</b> CRIM 423 – Advanced Issues in Terrorism (3) has been approved by the School to count towards the completion of the Certificate in Police Studies. This course was approved previously when offered as a Special Topics course and should now be added to the full list of options to complete the Police Studies certificate.
<b>Effective term and year:</b> Spring 2025
<b>The following program(s) will be affected by these changes:</b> Police Studies Certificate

**Calendar Change:** All deletions should be crossed out as follows: ~~sample~~. All additions should be marked in **bold font**. Do not use “to” and “from” sections.

<p><b>Program Requirements</b></p> <p>This program consists of six courses (18 units) chosen from the following list. Students may choose to focus their studies by completing courses in several of the following clusters, or they may choose their six from any courses in the list, regardless of the clusters.</p> <p>Students may also choose any other 300 or 400 division course that is designated as a police studies course. Such courses may be offered by the School of Criminology (e.g. special topics courses), or other departments and faculties such as Department of Indigenous Studies, Department of Sociology and Anthropology, Department of Archaeology, School of Computing Science, Department of Psychology.</p> <p>See the school's advisor for further information.</p> <p>Note that some of the following courses may have prerequisites.</p> <p>All courses must be completed at Simon Fraser University.</p> <p><b>Minorities and the Criminal Justice System</b></p> <p>CRIM 311 - Social Inequalities and the Criminal Justice System (3)          CRIM 419 - Aboriginal/Indigenous Justice (3)</p>
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CRIM 429 - Indigenous Peoples and International Law (3)

### Forensic Studies

CRIM 355 - The Forensic Sciences (3)

CRIM 356 - The Forensic Sciences II (3)

CRIM 357 - Forensic Anatomy (3)

CRIM 451 - Advanced Techniques in Forensic Science (3)

CRIM 452 - Skeletal Pathology and Criminalistics (3)

### Restorative Justice

CRIM 315 - Restorative Justice (4)

CRIM 442 - Restorative Justice Practice: Advanced Topics (3) \*

\* When offered with a focus of policing

### Cybercrime

CRIM 380 - Introduction to Cybercrime (3)

CRIM 480 - Computer Forensics and Cybercrime (3)

CRIM 481 - Advanced Issues in Cybercrime (3)

### Crime Analysis and Crime Prevention

CRIM 350 - Techniques of Crime Prevention (3)

CRIM 352 - Environmental Criminology: Theory and Practice (3)

CRIM 433 - Communities and Crime (3)

CRIM 460 - Applied Crime Prevention (3)

### Special Types of Offenders or Crimes

CRIM 310 - Young Offenders and Criminal Justice: Advanced Topics (3)

CRIM 316 - Sexual Offenders and Sexual Offences (3)

CRIM 317 - Sex, Work, and the Law (3)

CRIM 413 - Terrorism (3)

**CRIM 423 - Advanced Issues in Terrorism (3)**

CRIM 454 - Criminal Profiling (3)

CRIM 459 - Organized Crime (3)

CRIM 464 - Street Gang Patterns and Policies (3)

### Key Issues in Policing

CRIM 314 - Mental Disorder, Criminality and the Law (3)

CRIM 351 - Police Accountability and Ethics (3)  
CRIM 410 - Decision-making in Criminal Justice (3)  
CRIM 453 - Policing Illegal Drug Markets (3)  
CRIM 455 - Advanced Issues in Policing (3)  
CRIM 456 - Investigative Psychology in Policing (3)  
CRIM 458 - Community Policing (3)

### Special Topics in Police Studies

CRIM 318 - Special Topics in Criminology (3) \*  
CRIM 416 - Current Issues in Criminology and Criminal Justice (3) \*  
CRIM 417 - Current Issues in Criminology and Criminal Justice (3) \*  
CRIM 418 - Current Issues in Criminology and Criminal Justice (3) \*

\* When offered with a focus of policing



<b>Name of Program or Name of Faculty</b> Criminology
<b>Rationale for change:</b> CRIM 423 – Advanced Issues in Terrorism (3) has been approved by the School to count towards the completion of the Police Studies Minor. This course was approved previously when offered as a Special Topics course and should now be added to full list of options to complete the Police Studies Minor
<b>Effective term and year:</b> Spring 2025
<b>The following program(s) will be affected by these changes:</b> Police Studies Minor

**Calendar Change:** All deletions should be crossed out as follows: ~~sample~~. All additions should be marked in **bold font**. Do not use “to” and “from” sections.

<b>Program Requirements</b>  <b>Lower Division Requirements</b>  All of  CRIM 101 - Introduction to Criminology (3) CRIM 131 - Introduction to the Criminal Justice System - A Total System Approach (3) CRIM 251 - Introduction to Policing (3)  <b>Upper Division Course Access and Requirements</b>  Students with a minimum 2.25 CGPA are eligible to enroll in upper division criminology courses upon successful completion of 60 units and criminology program declaration.  Note that same upper division course may not be used for formal credit in both the criminology major and the police studies minor. Students cannot obtain credit for both the post baccalaureate diploma in police studies and this minor program.  Students complete a minimum of 15 upper division units, chosen from the following list, or from any other 300 or 400 division course that is designated as a police studies course
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from either the School of Criminology (e.g. special topics courses), or from another department. See the School of Criminology's academic advisor for further information.

### Minorities and the Criminal Justice System

CRIM 311 - Social Inequalities and the Criminal Justice System (3)

CRIM 419 - Aboriginal/Indigenous Justice (3)

CRIM 429 - Indigenous Peoples and International Law (3)

### Forensic Studies

CRIM 355 - The Forensic Sciences (3)

CRIM 356 - The Forensic Sciences II (3)

CRIM 357 - Forensic Anatomy (3)

CRIM 451 - Advanced Techniques in Forensic Science (3)

CRIM 452 - Skeletal Pathology and Criminalistics (3)

### Restorative Justice

CRIM 315 - Restorative Justice (4)

CRIM 442 - Restorative Justice Practice: Advanced Topics (3) \*

**\*When offered with a focus of policing**

### Cybercrime

CRIM 380 - Introduction to Cybercrime (3)

CRIM 480 - Computer Forensics and Cybercrime (3)

CRIM 481 - Advanced Issues in Cybercrime (3)

### Crime Analysis and Crime Prevention

CRIM 350 - Techniques of Crime Prevention (3)

CRIM 352 - Environmental Criminology: Theory and Practice (3)

CRIM 433 - Communities and Crime (3)

CRIM 460 - Applied Crime Prevention (3)

### Special Types of Offenders or Crimes

CRIM 310 - Young Offenders and Criminal Justice: Advanced Topics (3)

CRIM 316 - Sexual Offenders and Sexual Offences (3)

CRIM 317 - Sex, Work, and the Law (3)

CRIM 413 - Terrorism (3)

**CRIM 423 - Advanced Issues in Terrorism (3)**

CRIM 454 - Criminal Profiling (3)  
CRIM 459 - Organized Crime (3)  
CRIM 464 - Street Gang Patterns and Policies (3)

### Key Issues in Policing

CRIM 314 - Mental Disorder, Criminality and the Law (3)  
CRIM 351 - Police Accountability and Ethics (3)  
CRIM 410 - Decision-making in Criminal Justice (3)  
CRIM 453 - Policing Illegal Drug Markets (3)  
CRIM 455 - Advanced Issues in Policing (3)  
CRIM 456 - Investigative Psychology in Policing (3)  
CRIM 458 - Community Policing (3)

### Special Topics in Police Studies

CRIM 318 - Special Topics in Criminology (3) \*  
CRIM 416 - Current Issues in Criminology and Criminal Justice (3) \*  
CRIM 417 - Current Issues in Criminology and Criminal Justice (3) \*  
CRIM 418 - Current Issues in Criminology and Criminal Justice (3) \*

\* When offered with a focus of policing

Declared criminology students may not take CRIM 301 for credit.

<p><b>Name of Program or Name of Faculty</b> Criminology</p>
<p><b>Rationale for change:</b> The School has approved a change to the Legal Studies Certificate requirements to one of either CRIM 335 - Human Rights and Civil Liberties or CRIM 338 - Philosophy of Law, plus five additional courses from the approved list of options.</p> <p>The reason for this change is two-fold:</p> <ol style="list-style-type: none"> <li>1. The Legal Studies Certificate currently has three required courses (CRIM 332 - Sociology of Law, CRIM 335 - Human Rights and Civil Liberties and CRIM 338 - Philosophy of Law). These courses are no longer offered on a regular basis, making it difficult for students to gain access to complete the certificate in a timely manner. This change will give students more flexibility to complete this certificate.</li> <li>2. This change will bring the Legal Studies Certificate's requirements more in line with the other certificates in CRIM by having one required course and the remaining courses completed from a list of options.</li> </ol>
<p><b>Effective term and year:</b> Spring 2025</p>
<p><b>The following program(s) will be affected by these changes:</b> Legal Studies Certificate</p>

**Calendar Change:** All deletions should be crossed out as follows: ~~sample~~. All additions should be marked in **bold font**. Do not use "to" and "from" sections.

<p><b>Program Declaration</b></p> <p>Students are eligible to apply for entry to the legal studies certificate program if</p> <ul style="list-style-type: none"> <li>• they have been admitted to Simon Fraser University (or are in the process of being admitted); and</li> <li>• they have completed and received grades for ONE of the following courses, with a final grade of C- or better</li> </ul> <p><del>CRIM 332 - Sociology of Law (3)</del>  CRIM 335 - Human Rights and Civil Liberties (3)  CRIM 338 - Philosophy of Law (3)</p> <p><b>Admission, Program Declaration, and Continuation</b></p>
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Applicants must meet university undergraduate admission deadlines as shown in this Calendar. Application forms and official documents must be submitted to Student Services. In addition to applying for University admission, students apply in writing to the School of Criminology's advisor for certificate program declaration.

To continue in the program, students must maintain a 2.25 cumulative grade point average (CGPA)\*. Students whose CGPA falls below 2.25 cannot enroll in any upper division CRIM courses.

\*transfer students who meet the criminology program declaration requirements upon admission to SFU may use their admission CGPA for declaration purposes

### Program Requirements

Students complete a total of six courses (18 units), including ~~all of~~ **one of**

~~CRIM 332 - Sociology of Law (3)~~  
CRIM 335 - Human Rights and Civil Liberties (3)  
CRIM 338 - Philosophy of Law (3)

and ~~three~~ **five** courses chosen from **the list below**.

**Note: Students who have completed both CRIM 335 and 338 need only complete four courses (12 units) from the list below.**

BUS 393 - Commercial Law (3)  
CRIM 310 - Young Offenders and Criminal Justice: Advanced Topics (3)  
CRIM 314 - Mental Disorder, Criminality and the Law (3)  
CRIM 317 - Sex, Work, and the Law (3)  
CRIM 330 - Criminal Procedure and Evidence (3)  
**CRIM 332 - Sociology of Law (3)**  
CRIM 344 - Sentencing: Theory, Law and Practice (3)  
CRIM 331 - Advanced Criminal Law (3)  
CRIM 416 - Current Issues in Criminology and Criminal Justice (3) \*  
CRIM 417 - Current Issues in Criminology and Criminal Justice (3) \*  
CRIM 418 - Current Issues in Criminology and Criminal Justice (3) \*  
CRIM 429 - Indigenous Peoples and International Law (3) or INDG 429 - Indigenous Peoples and International Law (3)  
CRIM 432 - Gender in the Courts and the Legal Profession (3)  
CRIM 437 - Crime and Misconduct in the Professions (3)  
CRIM 438 - Wrongful Convictions and Other Miscarriages of Justice (3)  
ECON 427W - Industrial Organization: Law and Economics (3)  
EDUC 445 - Legal Context of Teaching (4)

EDUC 446 - Law for the Classroom Teacher (4)  
 EDUC 448 - Teaching about Justice, Law and Citizenship (4)  
 GEOG 440 - Property, Land, Society (4)  
 GSWS 411 - Special Topics in Gender, Sexuality, and Women's Studies (4) \*\*  
 INDG 443W - Aboriginal Peoples, History and the Law (4) or HIST 443W - Aboriginal Peoples, History and the Law (4)  
 PHIL 320 - Social and Political Philosophy (3)  
 PHIL 321 - Topics in Moral Philosophy (3)  
 PHIL 326 - Topics in Law and Philosophy (3)  
 PHIL 329 - Law and Justice (3)  
 POL 324 - The Canadian Constitution (4)  
 POL 344 - International Law (4)  
 POL 346 - International Organization (4)  
 POL 351 - Immigration, Integration, and Public Policy in Canada (4)  
 POL 417 - Human Rights Theories (4)  
 POL 459 - Selected Topics in Governance (4) \*  
 PSYC 376 - Experimental Psychology and Law (3)  
 PSYC 379 - Clinical Forensic Psychology (3)  
 PSYC 476 - Advanced Topics in Law and Forensic Psychology (4)  
 WL 303 - Global Culture and Its Discontents (4)

Additional relevant courses may be added to the list of optional courses as they become available. Students are responsible for satisfying the prerequisites for all required courses. Courses must be completed at Simon Fraser University unless permission of the undergraduate chair is granted upon admission to this program. See the school's academic advisor for further information.

\* when offered as a legal studies topic

\*\* when offered as the topic Women and the Law

<b>Name of Program or Name of Faculty</b>  Public Policy
<b>Rationale for change:</b>  1. The updated courses reflect those which are offered regularly and have public policy relevance. 2. Steering committee voted to make these changes to further streamline the offering.
<b>Effective term and year:</b> Spring 2025
<b>The following program(s) will be affected by these changes:</b>  Public Policy Minor

**Calendar Change:** All deletions should be crossed out as follows: ~~sample~~. All additions should be marked in **bold font**. Do not use “to” and “from” sections.

<p>Public Policy Minor</p> <p>The minor in public policy is an interdisciplinary program that offers students the opportunity to learn applied public policy skills and practical analysis. The program provides diverse, interdisciplinary, analytical and applied approaches that prepare students for policy positions in the public, private, and not-for-profit sectors. Beyond the core courses in public policy, students can choose a variety of complementary courses related to applications of public policy in the real world.</p> <p><b>Admission Requirements</b>  <del>Students may apply for admission into the minor once they have completed the core lower division courses, and have achieved a CGPA of at least 2.0.</del></p> <p><b>Program Declaration</b>          Students may declare the minor once they have completed the required lower division core courses, <b>and have achieved a CGPA of at least 2.0.</b></p> <p><b>Course Information</b>          For a course to be accepted in the minor, a grade of C- or higher must be obtained.</p> <p><b>Program Requirements</b>  <del>Students complete the following lower division core courses.</del></p> <p><b>A total of 30 units are required to complete the program, of which at least 16 must be upper division as indicated below.</b></p>
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**One of**

ECON 103 - Principles of Microeconomics (4) ~~or~~

ECON 113 - Introduction to Microeconomics (3)

**ECON 105 - Principle of Macroeconomics (4)**

**ECON 115 - Introduction to Macroeconomics (3)**

and one of

PLCY 200 - Introduction to Public Policy (3)

POL 253 - Introduction to Public Policy (3)

Students complete the following upper division core courses:

PLCY 300 - Applied Public Policy Analysis (4)

PLCY 400 - Public Policy Capstone Seminar (4)

The remaining units are chosen from the following list of courses, and must include at least eight additional upper division units ~~for a total of at least 16 upper division units~~ for a program total of 30 units.

BUS 238 - Introduction to Entrepreneurship and Innovation (3)

CRIM 131- Introduction to the Criminal Justice System - A Total System Approach (3)

CRIM 135 - Introduction to Canadian Law and Legal Institutions: A Criminal Justice Perspective (3)

CRIM 241 - Introduction to Corrections (3)

CRIM 251 -Introduction to Policing (3)

**CRIM 311 – Social Inequalities and the Criminal Justice System (3)**

CRIM 340 - Criminal Justice Policy Making and Policy Analysis (3)

CRIM 343 -Correctional Practice (3)

CRIM 350 -Techniques of Crime Prevention (3)

CRIM 380 -Introduction to Cybercrime (3)

CRIM 413 -Terrorism (3)

CRIM 458 -Community Policing (3)

~~CRIM 464 - Street Gang Patterns and Policies (3)~~

ECON 102 - The World Economy (3)

ECON 104 - Economics and Government (3)

~~ECON 105 – Principles of Macroeconomics (4)~~

ECON 260 - Environmental Economics (3)

ECON 280 - Introduction to Labor Economics (3)

ECON 290 - Microeconomic Policy (3)

**GSWS 200 – Feminism without Borders (3)**

~~GSWS 204 – Sex and the City (3)~~

GSWS 305 - Gendering Economy: Paid and Unpaid Labour (4)

GSWS 312 - Immigrants, Women and Transnational Migration (4)

**INDG 286 – Indigenous Peoples of British Columbia: An Introduction (3)**

INDG 401 - Indigenous Peoples and Public Policy (3)

INDG 419 - Aboriginal/Indigenous Justice (3)



~~IS 101 – Global Challenges of the 21<sup>st</sup> Century: An Introduction to International Studies (3)~~

**IS 306 – State Failure and Reconstruction (4)**

**IS 307 – International Ethics: Poverty, Environmental Change and War (4)**

**IS 355 – Refugees and Forced Migration (4)**

~~IS 373 – Global Environmental Politics (4)~~

LBST 309 - Labour and Collective Bargaining (3)

LBST 310 - The Politics of Labour (3)

LBST 311 - Labour and the Environment (3)

LBST 313 - Introduction to Canadian Labour Law (3)

PHIL 120W - Moral and Legal Problems (3)

PHIL 121 - Global Justice (3)

PHIL 144 -Introduction to Philosophy of Science (3)

PHIL 270 -Data, Ethics and Society (3)

PHIL 310 -Logic, Proofs and Set Theory (3)

PHIL 315 -Formal Methods (3)

PHIL 320 - Social and Political Philosophy (3)

PHIL 326 - Topics in Law and Philosophy (3)

PHIL 329 - Law and Justice (3)

POL 150 -Science, Policy, and Innovation (3)

POL 221 - Introduction to Canadian Government (3)

POL 222 – Introduction to Canadian Politics (3)

POL 321- The Canadian Federal System (4)

~~POL 324 – The Canadian Constitution (4)~~

POL 350 - Public Policy for Women (4)

POL 351 - Immigration, Integration, and Public Policy in Canada (4)

POL 451W - Public Policy Analysis (4)

~~POL 452W – Energy Policy (4)~~

~~POL 457W – Technology and Innovation Policy (4)~~

~~SA 150 – Introduction to Sociology (S) (4)~~

**SA 200W – Power, Conflict and Change in Canadian Society (SA) (4)**

SA 315 -New Information Technology and Society (SA) (4)

SA 325 - Political Sociology (S) (4)

SA 340 - Social Issues and Social Policy Analysis (SA) (4)


**Name of Program or Name of Faculty**

Beedie School of Business

**Rationale for change:**

BUS 201, BUS 202, and BUS 203 are required first term course requirements, which should be completed within a student's first term of enrollment at the Beedie School of Business.

At this time, there are no mechanisms in place to enforce or require a student to take BUS 201 or BUS 202, and BUS 203 in their first term. Adding a block on this requirement ensures that students are actively pursuing mandatory first term courses in their first term of enrollment at the Beedie School of Business, which orients students to the expectations of the Beedie School of Business.

The block enables intervention with students to ensure support is received.

**Effective term and year:**

Spring 2025

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

Course Access and Grade Requirements

<https://www.sfu.ca/students/calendar/faculties-research/faculty-business/courseaccess-info-and-grade-requirements.html>

**Calendar Change:** All deletions should be crossed out as follows: ~~sample~~. All additions should be marked in **bold font**. Do not use "to" and "from" sections.

**Information About Access to Business Courses**

## LOWER DIVISION BUSINESS COURSE ENROLLMENT RESTRICTIONS

Students other than those accepted into a program in business may enroll in lower division business courses, except for the following courses, which are reserved for students in a business program and do not open at any time: BUS 203, BUS 201, BUS 202, and BUS 217W.

**Approved business major students must successfully complete BUS 201 or BUS 202 with a minimum grade of C-, and BUS 203 with a P grade, within their first enrolled term, subject to course offerings. Students who do not complete the courses within their first term will be blocked from enrolling into further 200 level business courses.**



<b>Name of Program or Name of Faculty</b> Faculty of Education
<b>Rationale for change:</b> <ol style="list-style-type: none"> <li>1. REMOVE: EDUC415 and EDUC416: These courses have not been taught in French for approximately 10 years. EDUC 415 (Designs for Learning: Secondary Mathematics) and EDUC 416 (Designs for Learning: Secondary Science) are being removed from the French Education Minor due to lack of student enrollment in the course sections taught in French over many years. REPLACE WITH: EDUC454Q: Adding EDUC-454Q offers the required Q course for students wanting to complete the B.Ed. as a second degree. This course is attractive to Secondary student teachers with a humanities as well as a science background.</li> <li>2. ADD EDUC 410 &amp; EDUC 382 as an option for either secondary or elementary tracks: Adding EDUC-410 (Identities/Teachers of French) and EDUC-382 (Diversity in Education: Theories, Policies &amp; Practices) as options for the Minor in French Education will allow students a choice that reflects their preparation needs as future teachers in K-12 French programs in BC schools.</li> <li>3. REMOVE THE LANGUAGE “plus: EDUC380”: This language is unnecessary given that the “*” language maintained in this proposal. EDUC 380 is designed to support students with lower levels of proficiency in French language and advisors will suggest students meeting that profile take EDUC380 as part of the “*”.</li> <li>4. Because at times, a French language version of any specific elementary or secondary course might not be offered, we have clarified the language to include “...unless unavailable in French” to the headings of secondary and elementary tracks.</li> </ol>
<b>Effective term and year:</b>  Spring 2025
<b>The following program(s) will be affected by these changes:</b>  French Education Minor

**Calendar Change:** All deletions should be crossed out as follows: ~~sample~~. All additions should be marked in **bold font**. Do not use “to” and “from” sections.

## French Education Minor

(...)

### Upper Division Requirements

Students complete a minimum of ~~15~~ **16** upper division EDUC units as specified below, including one of these taught in French:

EDUC 480 - Designs for Learning: French as a Second Language (4)

EDUC 481 - Designs for Learning: French Immersion Programs and Francophone Schools (4)

**For teaching at the Secondary level, students must also select from the following courses (taught in French, unless unavailable in French):**

~~(For teaching at the Secondary level)~~

at least one of

EDUC 414 - Designs for Learning: Secondary Social Studies (4)

~~EDUC 415 - Designs for Learning: Secondary Mathematics (4)~~

~~EDUC 416 - Designs for Learning: Secondary Science (4)~~

**EDUC 410 - Linguistic and Professional Identities of Bi/plurilingual Teachers of French (4)**

**EDUC 382 - Diversity in Education: Theories, Policies, Practices (4)**

**EDUC 454 - Quantitative Approaches to Environmental Education (4)**

**EDUC 380 - Introduction to Teaching French in Canadian Contexts (4) \***

~~(For teaching at the Elementary level, students must also select the following courses (taught in French unless unavailable in French):~~

at least two of

EDUC 474 - Designs for Learning: Elementary Social Studies (4)

EDUC 475 - Designs for Learning: Elementary Mathematics (4)

EDUC 476 - Designs for Learning: Elementary Science (4)

**EDUC 410 - Linguistic and Professional Identities of Bi/plurilingual Teachers of French (4)**

**EDUC 382 - Diversity in Education: Theories, Policies, Practices (4)**

**EDUC 380 - Introduction to Teaching French in Canadian Contexts (4) \***

Plus

~~EDUC 380 – Introduction to Teaching French in Canadian Contexts (4)~~

~~and/or upper division EDUC courses designed to enhance teaching skills selected from an approved list available at the time of registration, in order to bring the total to a minimum of 15 units.~~

**\* students with lower levels of proficiency in French language should take EDUC380**

**Students may choose additional courses from the French Education minor upper division requirements list above to meet the overall minimum 16 upper division EDUC units required for the French Education Minor.**



<b>Name of Program or Name of Faculty</b> Climate Change and Society Minor, Faculty of Environment
<b>Rationale for change:</b> REM/EVSC 334 and REM 370 within the Climate Science Group are infrequently offered or not offered, forcing students to complete GEOG 214 in the lower division requirements to continue with GEOG 314 and GEOG 414. GEOG 214 is to be made mandatory to ensure a seamless progression for students within the minor program.
<b>Effective term and year:</b> Spring 2025
<b>The following program(s) will be affected by these changes:</b>  Climate Change and Society Minor

**Calendar Change:** All deletions should be crossed out as follows: ~~sample~~. All additions should be marked in **bold font**. Do not use “to” and “from” sections.

<p><b>Lower Division Requirements</b></p> <p>Complete <del>both</del> <b>all</b> of</p> <p>GEOG 104 - Climate Change, Water, and Society (3)          GEOG 111 - Earth Systems (3)  <b>GEOG 214 - Weather and Climate (3)</b></p> <p>Complete one of</p> <p>EVSC 100 - Introduction to Environmental Science (3)          GEOG 100 - Our World: Introducing Human Geography (3)  <del>GEOG 214 - Weather and Climate (3)</del>          REM 100 - Global Change (3)</p>
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<b>Name of Program or Name of Faculty</b> Geo Business Joint Major, Faculty of Environment & Beedie School of Business
<b>Rationale for change:</b> The Department has hired an Assistant Professor of Indigenous Geographies.
<b>Effective term and year:</b> Spring 2025
<b>The following program(s) will be affected by these changes:</b>  Geo Business Joint Major

**Calendar Change:** All deletions should be crossed out as follows: ~~sample~~. All additions should be marked in **bold font**. Do not use “to” and “from” sections.

Geography Lower Division Requirements [...]
and two of
ARCH 286 - Cultural Heritage Management (3) INDG 101 - Introduction to Indigenous Studies (3) INDG 286 - Indigenous Peoples and British Columbia: An Introduction (3) REM 207 - Indigenous Peoples and Resource Management (3) <b>GEOG 267 - Introduction to Indigenous Land-Based Knowledge and Place-based Relationships (3)</b>

<b>Name of Program or Name of Faculty</b> Global Environmental Systems, Faculty of Environment
<b>Rationale for change:</b> The Department has hired an Assistant Professor of Indigenous Geographies.
<b>Effective term and year:</b> Spring 2025
<b>The following program(s) will be affected by these changes:</b>  Global Environmental Systems Major Global Environmental Systems Honours

**Calendar Change:** All deletions should be crossed out as follows: ~~sample~~. All additions should be marked in **bold font**. Do not use “to” and “from” sections.

Lower Division Requirements [...]
and one of
ARCH 273 - Archaeology of the New World (3) INDG 101 - Introduction to Indigenous Studies (3) INDG 286 - Indigenous Peoples and British Columbia: An Introduction (3) REM 207 - Indigenous Peoples and Resource Management (3) <b>GEOG 267 - Introduction to Indigenous Land-Based Knowledge and Place-based Relationships (3)</b>
[...]



<b>Name of Program or Name of Faculty</b> Human Geography, Faculty of Environment
<b>Rationale for change:</b> The Department has hired an Assistant Professor of Indigenous Geographies.
<b>Effective term and year:</b> Spring 2025
<b>The following program(s) will be affected by these changes:</b>  Human Geography Major Human Geography Honours

**Calendar Change:** All deletions should be crossed out as follows: ~~sample~~. All additions should be marked in **bold font**. Do not use “to” and “from” sections.

<p>Lower Division Requirements [...]</p> <p>and one of</p> <p>ARCH 273 - Archaeology of the New World (3)          INDG 101 - Introduction to Indigenous Studies (3)          INDG 286 - Indigenous Peoples and British Columbia: An Introduction (3)          REM 207 - Indigenous Peoples and Resource Management (3)  <b>GEOG 267 - Introduction to Indigenous Land-Based Knowledge and Place-based Relationships (3)</b></p>
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<b>Name of Program or Name of Faculty</b> Physical Geography, Faculty of Environment
<b>Rationale for change:</b> The Department has hired an Assistant Professor of Indigenous Geographies.
<b>Effective term and year:</b> Spring 2025
<b>The following program(s) will be affected by these changes:</b>  Physical Geography Major Physical Geography Honours

**Calendar Change:** All deletions should be crossed out as follows: ~~sample~~. All additions should be marked in **bold font**. Do not use “to” and “from” sections.

Lower Division Requirements  Common Requirements  [...]
and one of
ARCH 273 - Archaeology of the New World (3) INDG 101 - Introduction to Indigenous Studies (3) INDG 286 - Indigenous Peoples and British Columbia: An Introduction (3) REM 207 - Indigenous Peoples and Resource Management (3) <b>GEOG 267 - Introduction to Indigenous Land-Based Knowledge and Place-based Relationships (3)</b>
[...]

<b>Name of Program or Name of Faculty</b> Bachelor of Arts, Human Geography
<b>Rationale for change:</b> Upper division requirements need to be updated to better reflect changes in faculty teaching complement.
<b>Effective term and year:</b> Fall 2025
<b>The following program(s) will be affected by these changes:</b> Human Geography Major Human Geography Honours

**Calendar Change:** All deletions should be crossed out as follows: ~~sample~~. All additions should be marked in **bold font**. Do not use “to” and “from” sections.

<p><u>Human Geography Major</u>          Upper Division Requirements</p> <p>Students must complete a minimum of 40 upper division geography units, of which 36 must be drawn from the following three lists (<del>Economy &amp; Politics; Society &amp; Space; Urbanization &amp; Urbanism</del>) (<b>Geographic Political Economy; Space, Power and Difference; Geographies of the City</b>) as indicated below.</p> <p>At least one upper division course must be a 400-level course, <b>taken from these lists</b>. One of the choices must also be a W course to satisfy the student's upper division Writing requirement.</p> <p><del>Economy &amp; Politics (choose 2)</del></p> <p><b>Geographic Political Economy (choose 2)</b></p> <p><b>GEOG 304 – Geography of Wine (4)</b>  <b>GEOG 312 – Geography of Natural Hazards (4)</b>          GEOG 321 - Geographies of Global Capitalism (4)          GEOG 328 - Labour Geographies (4)          GEOG 333 - Climate Crisis: Understanding a World on Fire (4)  <b>GEOG 325 – Geographies of Consumption (4)</b>  <b>GEOG 327 – Geography of Tourism (4)</b>  <b>GEOG 377 – Environmental History (4)</b>          GEOG 381W - Territory, Power, State (4)  <b>GEOG 386 – Health Geography(4)</b></p>
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GEOG 389W - Nature and Society (4)  
 GEOG 421 - Geographical Political Economy (4)  
 GEOG 423 - Capitalist Natures (4)  
 GEOG 429 - Racial Capitalism and Beyond (4)  
**GEOG 432 - Problems in Environmental History (4)**  
 GEOG 440 - Property, Land, Society (4)  
**GEOG 486 - Health Care Geographies (4)**

~~Society & Space (choose 2)~~

**Space, Power and Difference (choose 2)**

~~GEOG 304 - Geography of Wine (4)~~  
~~GEOG 312 - Geography of Natural Hazards (4)~~  
~~GEOG 325 - Geographies of Consumption (4)~~  
~~GEOG 327 - Geography of Tourism (4)~~  
 GEOG 340 - Queer Geographies (4)  
**GEOG 364 - Cities and Crisis (4)**  
 GEOG 365 - Race, Resistance and Urban Space (4)  
~~GEOG 377 - Environmental History (4)~~  
 GEOG 382 - World on the Move (4)  
~~GEOG 386 - Health Geography (4)~~  
 GEOG 387 - Geography and Gender (4)  
**GEOG 429 - Racial Capitalism and Beyond (4)**  
~~GEOG 432 - Problems in Environmental History (4)~~  
 GEOG 465 - Geographies of Conquest and Liberation (4)  
~~GEOG 486 - Health Care Geographies (4)~~

~~Urbanization & Urbanism (choose 2)~~

**Geographies of the city (choose 2)**

GEOG 324 - Geography of Transportation (4)  
 GEOG 362W - Gentrification and Urban Change (4)  
 GEOG 363 - Urban Planning and Policy (4)  
 GEOG 364 - Cities and Crisis (4)  
 GEOG 365 - Race, Resistance and Urban Space (4)  
 GEOG 385 - Food and the City (4)  
 GEOG 424 - Cities, Transportation, Infrastructure (4)  
 GEOG 441 - Cities, Space, and Politics (4)  
 GEOG 442 - A World of Cities (4)  
 GEOG 449 - City and Environment (4)  
 GEOG 461 - Urban Change Studio (6)

(...)

## Human Geography Honours

### Upper Division Requirements

Students must complete a minimum of 44 upper division geography units, of which 36 must be drawn from the following three lists (~~Economy & Politics; Society & Space; Urbanization & Urbanism~~) (**Geographic Political Economy; Space, Power and Difference; Geographies of the City**) as indicated below. Upper division courses must include GEOG 491 - Honours Essay (4) and a second 400-level course and a W course from the lists below.

~~Economy & Politics (choose 2)~~

### **Geographic Political Economy (choose 2)**

**GEOG 304 – Geography of Wine (4)**  
**GEOG 312 – Geography of Natural Hazards (4)**  
 GEOG 321 - Geographies of Global Capitalism (4)  
 GEOG 328 - Labour Geographies (4)  
 GEOG 333 - Climate Crisis: Understanding a World on Fire (4)  
**GEOG 325 – Geographies of Consumption (4)**  
**GEOG 327 – Geography of Tourism (4)**  
**GEOG 377 – Environmental History (4)**  
 GEOG 381W - Territory, Power, State (4)  
**GEOG 386 – Health Geography(4)**  
 GEOG 389W - Nature and Society (4)  
 GEOG 421 - Geographical Political Economy (4)  
 GEOG 423 - Capitalist Natures (4)  
 GEOG 429 - Racial Capitalism and Beyond (4)  
**GEOG 432 – Problems in Environmental History (4)**  
 GEOG 440 - Property, Land, Society (4)  
**GEOG 486 – Health Care Geographies (4)**

~~Society & Space (choose 2)~~

### **Space, Power and Difference (choose 2)**

~~GEOG 304 – Geography of Wine (4)~~  
~~GEOG 312 – Geography of Natural Hazards (4)~~  
~~GEOG 325 – Geographies of Consumption (4)~~  
~~GEOG 327 – Geography of Tourism (4)~~  
 GEOG 340 - Queer Geographies (4)  
**GEOG 364 – Cities and Crisis (4)**  
 GEOG 365 - Race, Resistance and Urban Space (4)  
~~GEOG 377 – Environmental History (4)~~

GEOG 382 - World on the Move (4)  
~~GEOG 386 - Health Geography (4)~~  
 GEOG 387 - Geography and Gender (4)  
**GEOG 429 - Racial Capitalism and Beyond (4)**  
~~GEOG 432 - Problems in Environmental History (4)~~  
 GEOG 465 - Geographies of Conquest and Liberation (4)  
~~GEOG 486 - Health Care Geographies (4)~~  
 GEOG 492 - Advanced Theory and Methods for Human Geographers (4)

~~Urbanization & Urbanism (choose 2)~~

**Geographies of the city (choose 2)**

GEOG 324 - Geography of Transportation (4)  
 GEOG 362W - Gentrification and Urban Change (4)  
 GEOG 363 - Urban Planning and Policy (4)  
 GEOG 364 - Cities and Crisis (4)  
 GEOG 365 - Race, Resistance and Urban Space (4)  
 GEOG 385 - Food and the City (4)  
 GEOG 424 - Cities, Transportation, Infrastructure (4)  
 GEOG 441 - Cities, Space, and Politics (4)  
 GEOG 442 - A World of Cities (4)  
 GEOG 449 - City and Environment (4)  
 GEOG 461 - Urban Change Studio (6)  
 (...)



<b>Name of Program or Name of Faculty</b>  Physics
<b>Rationale for change:</b>  After being introduced to introductory python programming in CMPT 120, Physics students would benefit more from instruction on using python and computing in the context of physics-specific problems. This change would also streamline degree completion by ensuring that students are guaranteed space in their required courses and aid completion of the required number of UD credits.
<b>Effective term and year:</b>  Fall 2025
<b>The following program(s) will be affected by these changes:</b>  Physics Major

**Calendar Change:** All deletions should be crossed out as follows: ~~sample~~. All additions should be marked in **bold font**. Do not use “to” and “from” sections.

Lower Division Requirements (...) <del>and one of</del>  <del>CMPT 125 - Introduction to Computing Science and Programming II (3)</del> <del>CMPT 129 - Introduction to Computing Science and Programming for Mathematics and Statistics (3)</del> <del>MACM 203 - Computing with Linear Algebra (2)</del> <del>PHYS 395 - Computational Physics (3)</del>  and one of  MATH 150 - Calculus I with Review (4) MATH 151 - Calculus I (3)  (...)         Upper Division Requirements
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Complete all of

PHYS 313 - Special Relativity (3)

PHYS 321 - Intermediate Electricity and Magnetism (3)

PHYS 332W - Advanced Physics Laboratory I (4)

PHYS 344 - Thermal Physics (3)

PHYS 385 - Quantum II (3)

**PHYS 395 - Computational Physics (3)**

and a minimum of ~~12~~ **9** other upper division physics units to satisfy the physics subject area requirements for a major.



<p><b>Name of Program or Name of Faculty</b></p> <p>Physics</p>
<p><b>Rationale for change:</b></p> <p>i) After being introduced to introductory python programming in CMPT 120, Physics students would benefit more from instruction on using python and computing in the context of physics-specific problems. This change would also streamline degree completion by ensuring that students are guaranteed space in their required courses and aid completion of the required number of UD credits.</p> <p>ii) PHYS 431 Advanced Physics Lab II is redundant and will not be offered anymore. Students gain research breadth in the PHYS 332 lab, which was recently transformed to include a wider range of experiments, and students still gain research depth and further experience completing an honors thesis (PHYS 432). The number of UD PHYS electives are subsequently adjusted to meet SFU requirements.</p>
<p><b>Effective term and year:</b></p> <p>Fall 2025</p>
<p><b>The following program(s) will be affected by these changes:</b></p> <p>Physics Honours</p>

**Calendar Change:** All deletions should be crossed out as follows: ~~sample~~. All additions should be marked in **bold font**. Do not use “to” and “from” sections.

<p>Lower Division Requirements (...) <del>and one of</del></p> <p><del>CMPT 125 - Introduction to Computing Science and Programming II (3)</del>  <del>CMPT 129 - Introduction to Computing Science and Programming for Mathematics and Statistics (3)</del>  <del>MACM 203 - Computing with Linear Algebra (2)</del>  <del>PHYS 395 - Computational Physics (3)</del></p> <p>and one of</p> <p>MATH 150 - Calculus I with Review (4)  MATH 151 - Calculus I (3)</p>
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(...)

### Upper Division Requirements

Complete all of

PHYS 313 - Special Relativity (3)  
 PHYS 321 - Intermediate Electricity and Magnetism (3)  
 PHYS 332W - Advanced Physics Laboratory I (4)  
 PHYS 344 - Thermal Physics (3)  
 PHYS 384 - Methods of Theoretical Physics I (3)  
 PHYS 385 - Quantum II (3)  
**PHYS 395 - Computational Physics (3)**  
 PHYS 413 - Advanced Mechanics (3)  
 PHYS 415 - Quantum III (3)  
 PHYS 421 - Electromagnetic Waves (3)  
~~PHYS 431 - Advanced Physics Laboratory II (4)~~  
 PHYS 432 - Undergraduate Honours Thesis (6)  
 PHYS 445 - Statistical Physics (3)

and ~~nine~~ **a minimum of eight** additional upper division units in physics. MATH 462 can be used to meet this requirement.

<p><b>Name of Program or Name of Faculty</b></p> <p>Physics</p>
<p><b>Rationale for change:</b></p> <p>i) PHYS 395: After being introduced to introductory python programming in CMPT 120, Applied Physics students would benefit more from instruction on using python and computing in the context of physics-specific problems as part of their further computing requirements. This change would also streamline degree completion by ensuring that students are guaranteed space in a required courses and also aid completion of the required number of UD credits.</p> <p>ii) CMPT 129 is no longer offered.</p> <p>iii) PHYS 431 Advanced Physics Lab II is redundant and will not be offered anymore. Students gain research breadth in the PHYS 332 lab, which was recently transformed to include a wider range of experiments, and students still gain research depth and further experience completing an honors thesis (PHYS 432). The number of UD PHYS electives are subsequently adjusted to meet SFU requirements.</p>
<p><b>Effective term and year:</b></p> <p>Fall 2025</p>
<p><b>The following program(s) will be affected by these changes:</b></p> <p>Applied Physics Major</p>

**Calendar Change:** All deletions should be crossed out as follows: ~~sample~~. All additions should be marked in **bold font**. Do not use “to” and “from” sections.

<p>Lower Division Requirements (...) and <del>9</del> <b>6</b> units chosen from</p> <p>MACM 101 - Discrete Mathematics I (3) CMPT 120 - Introduction to Computing Science and Programming I (3) ** CMPT 125 - Introduction to Computing Science and Programming II (3) CMPT 128 - Introduction to Computing Science and Programming for Engineers (3) <del>CMPT 129 - Introduction to Computing Science and Programming for Mathematics</del> <del>and Statistics (3)</del> or any 200-level CMPT course</p>
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(...)

Upper Division Requirements

Complete all of

PHYS 313 - Special Relativity (3)  
 PHYS 321 - Intermediate Electricity and Magnetism (3)  
 PHYS 326 - Electronics and Instrumentation (4)  
 PHYS 332W - Advanced Physics Laboratory I (4)  
 PHYS 344 - Thermal Physics (3)  
 PHYS 385 - Quantum II (3)  
**PHYS 395 - Computational Physics (3)**  
 PHYS 421 - Electromagnetic Waves (3)

and a **minimum of 10** units selected from

CHEM 340 - Materials Chemistry (3)  
 ENSC 426 - High Frequency Electronics (4)  
 ENSC 495 - Introduction to Microelectronic Fabrication (4) \*\*  
 MATH 462 - Fluid Dynamics (3)  
 NUSC 341 - Introduction to Radiochemistry (3)  
 NUSC 346 - Radiochemistry Laboratory (3)  
 PHYS 365 - Semiconductor Device Physics (3)  
 PHYS 391 - Introduction to Observational Astrophysics (3)  
~~PHYS 395 - Computational Physics (3) + or MACM 316 - Numerical Analysis I (3)~~  
 PHYS 416 - Introduction to Quantum Information Science (3)  
~~PHYS 431 - Advanced Physics Laboratory II (4)~~  
 PHYS 455 - Modern Optics (3)  
 PHYS 465 - Solid State Physics (3)

\*\* the prerequisite ENSC 222 can be replaced by PHYS 326

+ recommended

<p><b>Name of Program or Name of Faculty</b></p> <p>Physics</p>
<p><b>Rationale for change:</b></p> <p>i) PHYS 395: After being introduced to introductory python programming in CMPT 120, Applied Physics students would benefit more from instruction on using python and computing in the context of physics-specific problems as part of their further computing requirements. This change would also streamline degree completion by ensuring that students are guaranteed space in a required courses and aid completion of the required number of UD credits.</p> <p>ii) CMPT 129 is no longer offered.</p> <p>iii) PHYS 431 Advanced Physics Lab II is redundant and will not be offered anymore. Students gain research breadth in the PHYS 332 lab, which was recently transformed to include a wider range of experiments, and students still gain research depth and further experience completing an honors thesis (PHYS 432).</p>
<p><b>Effective term and year:</b></p> <p>Fall 2025</p>
<p><b>The following program(s) will be affected by these changes:</b></p> <p>Applied Physics Honours</p>

**Calendar Change:** All deletions should be crossed out as follows: ~~sample~~. All additions should be marked in **bold font**. Do not use “to” and “from” sections.

<p>Lower Division Requirements</p> <p>Complete 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><b>CMPT 120 - Introduction to Computing Science and Programming I (3)**</b></p> <p>MATH 152 - Calculus II (3)</p> <p>MATH 251 - Calculus III (3)</p> <p>MATH 252 - Vector Calculus (3)</p> <p>MATH 260 - Introduction to Ordinary Differential Equations (3)</p> <p>PHYS 132 - Physics Laboratory I (1) *</p> <p>PHYS 133 - Physics Laboratory II (1) *</p>
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PHYS 201 - Physics Undergraduate Seminar (1)  
 PHYS 211 - Intermediate Mechanics (3)  
 PHYS 233 - Physics Laboratory III (3)  
 PHYS 234 - Physics Laboratory IV (3)  
 PHYS 255 - Vibrations and Waves (3)  
 PHYS 285 - Quantum I (3)

and one of

MATH 150 - Calculus I with Review (4)  
 MATH 151 - Calculus I (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 9 3 units chosen from

MACM 101 - Discrete Mathematics I (3)  
~~CMPT 120 - Introduction to Computing Science and Programming I (3) \*\*~~  
 CMPT 125 - Introduction to Computing Science and Programming II (3)  
 CMPT 128 - Introduction to Computing Science and Programming for Engineers (3)  
~~CMPT 129 - Introduction to Computing Science and Programming for Mathematics and Statistics (3)~~  
 or any 200-level CMPT course

\* students with credit for PHYS 140 and 141 are not required to complete PHYS 132 or 133

\*\* students with computing experience may be able to test out of CMPT 120

+ recommended

Upper Division Requirements

Complete all of

PHYS 313 - Special Relativity (3)  
 PHYS 321 - Intermediate Electricity and Magnetism (3)  
 PHYS 326 - Electronics and Instrumentation (4)  
 PHYS 332W - Advanced Physics Laboratory I (4)  
 PHYS 344 - Thermal Physics (3)  
 PHYS 384 - Methods of Theoretical Physics I (3)

PHYS 385 - Quantum II (3)

**PHYS 395 - Computational Physics (3)**

PHYS 421 - Electromagnetic Waves (3)

~~PHYS 431 - Advanced Physics Laboratory II (4)~~

PHYS 432 - Undergraduate Honours Thesis (6) ++

and a minimum of 14 additional units chosen from

CHEM 340 - Materials Chemistry (3)

ENSC 426 - High Frequency Electronics (4)

ENSC 495 - Introduction to Microelectronic Fabrication (4) \*\*

MATH 462 - Fluid Dynamics (3)

NUSC 341 - Introduction to Radiochemistry (3)

NUSC 346 - Radiochemistry Laboratory (3)

PHYS 365 - Semiconductor Device Physics (3)

PHYS 391 - Introduction to Observational Astrophysics (3)

~~PHYS 395 - Computational Physics (3) \* or MACM 316 - Numerical Analysis I (3)~~

PHYS 416 - Introduction to Quantum Information Science (3)

PHYS 455 - Modern Optics (3)

PHYS 465 - Solid State Physics (3)

Students considering physics graduate programs should also complete

PHYS 413 - Advanced Mechanics (3)

PHYS 415 - Quantum III (3)

PHYS 445 - Statistical Physics (3)

~~\* recommended~~

\*\* the prerequisite ENSC 222 can be replaced by PHYS 326

++ should be based on an industrially motivated project