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MEMORANDUM

ATTENTION Senate
FROM Wade Parkhouse, Chair
Senate Committee on
Undergraduate Studies
RE: Program Changes

DATE May 7, 2021
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For information:

Acting under delegated authority at its meeting of May 6, 2021, SCUS approved the following curriculum revisions effective Spring 2022.

a. Faculty of Environment (SCUS 21-47)
1. Department of Geography

(i) Upper division requirement changes to the:

- Human Geography Major
- Human Geography Honours
- Global Environmental Systems Major
- Global Environmental Systems Honours

2. School of Resource and Environmental Management

(i) Upper division requirement changes to the Sustainable Development Minor

(ii) Description, admission and requirement changes to the Sustainable Development Certificate

b. Faculty of Science (SCUS 21-48)
1. Department of Biomedical Physiology and Kinesiology

(i) Upper division requirement changes to the:

- Biomedical Physiology Major
- Biomedical Physiology Honours

2. Department of Earth Sciences

(i) Upper division requirement changes to the Geology Stream for the:

- Earth Sciences Major
- Earth Sciences 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>.

Name of Program or Name of Faculty BA Human Geography Major Program
Rationale for change: • GEOG 333 – Climate Crisis is a newly created course in the department. This change is intended to allow for the course’s articulation within the Human Geography major and honours programs. • GEOG 465 – Geographies of Conquest and Liberation is a newly created course in the department. This change is intended to allow for the course’s articulation within the Human Geography major and honours programs.
Effective term and year: Spring 2022
The following program(s) will be affected by these changes: BA Human Geography 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**.

(...)
Economy & Politics (choose 3) GEOG 321 - Geographies of Global Capitalism (4) GEOG 322W - World Resources (4) GEOG 328 - Labour Geographies (4) GEOG 333 – Climate Crisis (4) GEOG 381W - Territory, Power, State (4) GEOG 389W - Nature and Society (4) GEOG 421 - Geographical Political Economy (4) GEOG 423 - Capitalist Natures (4) GEOG 428 - World Forests (4) GEOG 440 - Property, Land, Society (4)
Society & Space (choose 3) 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 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 432 - Problems in Environmental History (4)
GEOG 465 – Geographies of Conquest and Liberation (4)
GEOG 486 - Health Care Geographies (4)

(...)

Name of Program or Name of Faculty BA Human Geography Honours Program
Rationale for change: • GEOG 333 – Climate Crisis is a newly created course in the department. This change is intended to allow for the course’s articulation within the Human Geography major and honours programs. • GEOG 465 – Geographies of Conquest and Liberation is a newly created course in the department. This change is intended to allow for the course’s articulation within the Human Geography major and honours programs.
Effective term and year: Spring 2022
The following program(s) will be affected by these changes: BA Human Geography 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**.

(...)
Economy & Politics (choose 3) GEOG 321 - Geographies of Global Capitalism (4) GEOG 322W - World Resources (4) GEOG 328 - Labour Geographies (4) GEOG 333 – Climate Crisis (4) GEOG 381W - Territory, Power, State (4) GEOG 389W - Nature and Society (4) GEOG 421 - Geographical Political Economy (4) GEOG 423 - Capitalist Natures (4) GEOG 428 - World Forests (4) GEOG 440 - Property, Land, Society (4)
Society & Space (choose 3) 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 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 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)
 (...)

Name of Program or Name of Faculty BEnv - Global Environmental Systems Major Program
Rationale for change: • GEOG 333 – Climate Crisis is a newly created course in the department. This change is intended to allow for the course’s articulation within the Global Environmental Systems major and honours programs. • GEOG 465 -Geographies of Conquest and Liberation is a newly created course in the department. This change is intended to allow for the course’s articulation within the Global Environmental Systems major and honours programs. • Reposition GEOG 449 within a different sub-stream of the GES major and honours programs in order to allow for greater curricular alignment
Effective term and year: Spring 2022
The following program(s) will be affected by these changes: Global Environmental Systems 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**.

(...)
Socio-economic and Political Systems (choose one)
ARCH 389 - Ethnoecology (3) GEOG 321 - Geographies of Global Capitalism (4) GEOG 322W - World Resources (4) GEOG 325 - Geographies of Consumption (4) GEOG 327 - Geography of Tourism (4) GEOG 333 – Climate Crisis (4) GEOG 340 - Queer Geographies (4) GEOG 362W - Geography of Urban Built Environments (4) GEOG 363 - Urban Planning and Policy (4) GEOG 365 - Race, Resistance and Urban Space (4) GEOG 377 - Environmental History (4) GEOG 381W - Territory, Power, State (4)

GEOG 382 - World on the Move (4)
 GEOG 386 - Health Geography (4)
 GEOG 387 - Geography and Gender (4)
 GEOG 423 - Capitalist Natures (4)
 GEOG 432 - Problems in Environmental History (4)
~~GEOG 449 - City and Environment (4)~~
 GSWS 314 - Race, Class and Gender (4)
 REM 319 - Environmental and Planning Law (3)
 REM 321 - Ecological Economics (4)
 REM 350 - Energy Management for a Sustainable Climate and Society (4)
 REM 356W - Environmental Policy (3)
 REM 454 - Water Security (4)

Environmental Justice (choose one)

GEOG 328 - Labour Geographies (4)
 GEOG 385 - Food and the City (4)
GEOG 449 - City and Environment (4)
GEOG 465 - Geographies of Conquest and Liberation (4)
 INDG 433 - Indigenous Environmental Justice and Activism (4)
 REM 320W - Ethics and the Environment (3)
 REM 407 - Indigenous Governance and Resource Relationships (4)

Name of Program or Name of Faculty BEnv - Global Environmental Systems Honours Program
Rationale for change: • GEOG 333 – Climate Crisis is a newly created course in the department. This change is intended to allow for the course’s articulation within the Global Environmental Systems major and honours programs. • GEOG 465 -Geographies of Conquest and Liberation is a newly created course in the department. This change is intended to allow for the course’s articulation within the Global Environmental Systems major and honours programs. • Reposition GEOG 449 within a different sub-stream of the GES major and honours programs in order to allow for greater curricular alignment
Effective term and year: Spring 2022
The following program(s) will be affected by these changes: Global Environmental Systems 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**.

(...)
Socio-economic and Political Systems (choose one)
ARCH 389 - Ethnoecology (3) GEOG 321 - Geographies of Global Capitalism (4) GEOG 322W - World Resources (4) GEOG 325 - Geographies of Consumption (4) GEOG 327 - Geography of Tourism (4) GEOG 333 – Climate Crisis (4) GEOG 340 - Queer Geographies (4) GEOG 362W - Geography of Urban Built Environments (4) GEOG 363 - Urban Planning and Policy (4) GEOG 365 - Race, Resistance and Urban Space (4) GEOG 377 - Environmental History (4) GEOG 381W - Territory, Power, State (4)

GEOG 382 - World on the Move (4)
 GEOG 386 - Health Geography (4)
 GEOG 387 - Geography and Gender (4)
 GEOG 423 - Capitalist Natures (4)
 GEOG 432 - Problems in Environmental History (4)
~~GEOG 449 - City and Environment (4)~~
 GSWS 314 - Race, Class and Gender (4)
 REM 319 - Environmental and Planning Law (3)
 REM 321 - Ecological Economics (4)
 REM 350 - Energy Management for a Sustainable Climate and Society (4)
 REM 356W - Environmental Policy (3)
 REM 454 - Water Security (4)

Environmental Justice (choose one)

GEOG 328 - Labour Geographies (4)
 GEOG 385 - Food and the City (4)
GEOG 449 - City and Environment (4)
GEOG 465 - Geographies of Conquest and Liberation (4)
 INDG 433 - Indigenous Environmental Justice and Activism (4)
 REM 320W - Ethics and the Environment (3)
 REM 407 - Indigenous Governance and Resource Relationships (4)

Name of Program or Name of Faculty Sustainable Development Minor (FENV) Sustainable Development Program (School of Resource and Environmental Management)
Rationale for change: REM recently put forward a program change to the Minor in Development and Sustainability, including a name change to “Sustainable Development Minor”. That proposal is now advancing through the curriculum approval process to be in place for Fall 2021. However, an additional tweak to the proposal would be beneficial as this could take advantage of a recently agreed change in the cross listing of a course included in the program description (ENSC 412, cross listed as ENV 412). The change involves converting the course code on ENV 412 to SD 412, so the course would now be listed under the new cross listing as “SD 412/ENSC 412”. Note the original proposal did not include the cross listing at all so this change also rectifies this omission. We are also taking the opportunity to correct an error in listing the units for SD 491 as “variable” instead of “3 units”.
Effective term and year: Spring 2022
The following program(s) will be affected by these changes: Sustainable Development 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**.

(...) Complete one of* BUS 453 - Sustainable Innovation (3) BUS 475 - Sustainable Operations (3) BUS 489 - Management Practices for Sustainability (3) ECON 460 - Seminar in Environmental Economics (3) ENSC 412 - Technologies, Cultures and a Sustainable World (3) GEOG 424 - Cities, Transportation, Infrastructure (4) GEOG 449 - City and Environment (4) HIST 432 - Problems in Environmental History (4) HSCI 403 - Health and the Built Environment (3) HSCI 483 - Senior Seminar in Environmental Health (3) INDG 401 - Aboriginal Peoples and Public Policy (3) INDG 433 - Indigenous Environmental Justice and Activism (4)

IS 410 - Politics, Institutions and Development (4)
 IS 421 - The Economics of International Organizations and Development (4)
 PLAN 400 - Planning Theory and Policy Analysis (4)
 PLAN 406 - Rural Planning and Development (4)
 PLAN 407 - Indigenous Governance and Resource Relationships (4) or REM 407 -
 Indigenous Governance and Resource Relationships (4)
 PLAN 408 - Environmental Planning for Sustainable Communities (4)
 POL 452W - Energy Policy (4)
 REM 452 - Environmental Education (8) or EDUC 452 - Environmental Education (8)
 REM 454 - Water Security (4)
**SD 412 - Technologies, Cultures and a Sustainable World (3) or ENSC 412 - Technologies,
 Cultures and a Sustainable World (3)**
 SD 491 - Directed Studies in Sustainable Development (0 3)
 SD 494 - Project in Sustainable Development (4)
 SD 499 - Special Topics in Sustainable Development (4)

Name of Program or Name of Faculty**Sustainable Development Certificate (FENV)**

Sustainable Development Program (School of Resource and Environmental Management)

Rationale for change:

Responsibility for the SD Program and for all SD courses has been shifted to REM and this provides an opportunity to rethink and update the SD courses and credentials to better reflect current thinking about sustainability. We have already revised the core SD courses and the Development and Sustainability Minor, so now we are addressing the SD Certificate. The revision integrates across local and global sustainability to create a single pathway through the core requirements, in keeping with newer thinking about sustainability. We have also added one more course to the requirements to provide more consistency with other FENV Certificates (e.g. Urban Studies Certificate). At the same time, we have substantially reduced and consolidated the list of electives to update it (it was created over a decade ago), and to include only courses that focus on environmental change and sustainability. Elective courses have been selected from several of SFU's social science departments and have been reorganized to separate lower and upper division courses. Finally, we have removed wording referring to taking the Certificate as a "stand alone" credential, preferring to default to the SFU rules governing Certificates.

Effective term and year:

Spring 2022

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

Sustainable Development 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**.

Sustainable 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 also to major or minor programs 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.~~

Admission Requirements

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

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

Students wishing to enroll in the Certificate normally must be registered in a degree program at SFU and be in good academic standing. Contact the REM Academic Advisor for more information and for approval to be enrolled in the Certificate.

Program Requirements

~~Students complete five six (56) courses totaling 20-21 units. of which four (4) must be SD courses. Students must maintain a minimum 2.5 cumulative grade point average (CGPA) in all SD courses to obtain the certificate.~~

~~Students complete all of~~

~~SD 281 – Sustainable Communities, Sustainable World (3)~~

~~and 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 (4)~~

~~SD 401 – Sustainable Development Goals Studio (4)~~

~~SD 481 – Sustainable Communities Leadership Lab (4)~~

Complete all of

SD 281 - Sustainable Communities, Sustainable World (3)

SD 381 - Building Sustainable Communities: Concepts and Cases (4)

SD 481 - Sustainable Communities Leadership Lab (4)

~~and one (1) elective course chosen from the following:~~

- ~~• an additional upper level SD course from list above, or~~

- a course from the list of [approved elective courses](#), or
- a course approved by the program director

Complete two of

CMNS 130 - Communication and Social Change (3)
ECON 260 - Environmental Economics (3)
GEOG 104 - Climate Change, Water, and Society (3)
GEOG 261 - Encountering the City (3)
HIST 111 - Histories of Technology (3)
HIST 132 - Global Environmental History (3)
HSCI 160 - Global Perspectives on Health (3)
HSCI 216 - Ecological Determinants of Human Growth, Development and Health (3)
INDG 212 - Indigenous Perceptions of Landscape (3)
INDG 232 - Introduction to Ethnoecology in Indigenous Studies (3)
PLAN 100 - Introduction to Planning (3)
REM 100 - Global Change (3)
REM 200 - Introduction to Resource and Environmental Management in Canada (3)
REM 207 - Indigenous Peoples and Resource Management (3)
SEE 110 - Energy, Environment and Society (3)

Complete one of

PLAN 300 - Methods for Planning Analysis (4)
PLAN 400 - Planning Theory and Policy Analysis (4)
PLAN 406 - Rural Planning and Development (4)
PLAN 407 or REM 407 - Indigenous Governance and Resource Relationships (4)
PLAN 408 - Environmental Planning for Sustainable Communities (4)
REM 350 - Energy Management for a Sustainable Climate and Society (4)
REM 355 - Sustainable Transportation Management (3)
REM 356W – Environmental Policy (3)
REM 357 - Planning for Sustainable Food Systems (3)
REM 454 - Water Security (4)
SD 401 - Sustainable Development Studio (4)
SD 412 - Technologies, Cultures and a Sustainable World (3) or ENSC 412 Technologies, Cultures and a Sustainable World (3)
SD 491 - Directed Studies in Sustainable Development (3 units)
SD 494 - Project in Sustainable Development (4)
SD 499 - Special Topics in Sustainable Development (4)

~~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.~~

Name of Program or Name of Faculty Biomedical Physiology and Kinesiology
Rationale for change: Program changes arise from the BPK educational goals and curriculum mapping project. Biomedical Physiology Major and Honours students require more Application (A) within the core courses for multiple goals in several categories, in particular; <i>Application of Knowledge B7 - Demonstrate command of material that probes current research within one or more of the physiological subdisciplines e.g. cardiovascular physiology, chronic disease, exercise physiology, environmental physiology, neuroscience, neuromechanics.</i> The proposed solution is to require a minimum of one BPK 4th year course as part of the BPK specific elective list for Biomedical Physiology Major and Honours Programs. BPK 409 – Wearable Technology and Human Physiology should be added to the BPK specific list B as it may be of interest to students in these programs as it provides a unique opportunity to apply physiological knowledge within wearable technology.
Effective term and year: Spring 2022
The following program(s) will be affected by these changes: Biomedical Physiology Major Biomedical Physiology 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 ... and four or five of List B (at least one course must be 400-level) BPK 301 - Biomechanics Laboratory (3) BPK 308 – Experiments and Models in Systems Physiology (3) BPK 310 - Exercise/Work Physiology (3) BPK 336 - Histology (3) BPK 340 - Active Health: Behavior and Promotion (3) BPK 401 - Muscle Biomechanics (3) BPK 402 - Mechanical Behavior of Biological Tissues (3) BPK 409 – Wearable Technology and Human Physiology (3)
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BPK 411 - Advanced Topics in Vascular Physiology (3)
 BPK 412 - Molecular Cardiac Physiology (3)
 BPK 415 - Neural Control of Movement (3)
 BPK 417 - Obesity, Adipocyte Function and Weight management (3)
 BPK 420 - Selected Topics in Biomedical Physiology and Kinesiology I (3) *
 BPK 421 - Selected Topics in Biomedical Physiology and Kinesiology II (3) *
 BPK 422 - Selected Topics in Biomedical Physiology and Kinesiology III (3) *
 BPK 423 - Selected Topics in Biomedical Physiology and Kinesiology IV (3) *
 BPK 426 - Functional Human Neuroanatomy (3)
 BPK 431 - Integrative Cancer Biology (3)
 BPK 432 - Physiological Basis of Temperature Regulation (3)
 BPK 444 - Cardiac Disease: Pathophysiology and Assessment (3)
 BPK 446 - Neurological Disorders (3)
 BPK 447 - Neuroplasticity (3)
 BPK 448 - Rehabilitation of Movement Control (3)
 BPK 484 - Altitude and Aerospace Physiology (3)
 BPK 496 - Directed Study Literature (3) *#
 BPK 498 - Directed Study Experiential (3) *#
 and three upper division units from any department including BPK except for BPK
 325, 342, 457, 459, 491, 495 and 499.

#A maximum of six units from these courses may be used towards the List B requirements

* must be selected topics courses in physiology

...

Calendar Entry Change

Name of Program or Name of Faculty: **EASC BSc Program (Geology Stream)**

Rationale for change: This change increases flexibility for students and streamlines program progression. It also increases flexibility for the department, in that specific petrology courses can be offered on the basis of student demand rather than the obligation of yearly offerings regardless of student numbers.

Effective term and year: Spring 2022

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

EASC BSc program (Geology Stream)

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 are encouraged to select upper division elective courses in consultation with an academic advisor, as APEGBC has specific groupings of elective courses for each stream, respectively.

Geology Stream

Students who choose this stream will complete a minimum of 45 units, including

all of

[EASC 301 - Igneous Petrology \(3\)](#)
~~[EASC 302 - Sedimentary Petrology \(3\)](#)~~
[EASC 306 - Field Geology II \(3\)](#)
[EASC 308 - Field Geology III \(3\)](#)
[EASC 309 - Global Tectonics \(3\)](#)
[EASC 310W - Paleontology \(3\)](#)
~~[EASC 311 - Metamorphic Petrology \(3\)](#)~~

and at least 1 of

EASC 302 - Sedimentary Petrology (3)
EASC 311 - Metamorphic Petrology (3)

and at least one of

[EASC 304 - Hydrogeology \(3\)](#)

[EASC 313 - Introduction to Soil and Rock Engineering \(3\)](#)

[EASC 403 - Quaternary Geology \(3\)](#)

and at least ~~21~~ **24** units chosen from

[EASC 300 - Selected Topics in Earth Sciences \(3\)](#)

EASC 302 - Sedimentary Petrology (3)

[EASC 304 - Hydrogeology \(3\)](#)

[EASC 305 - Quantitative Methods for the Earth Sciences \(3\)](#)

[EASC 307 - Applied Geophysics \(3\)](#)

EASC 311 - Metamorphic Petrology (3)

[EASC 312 - Stratigraphy \(3\)](#)

[EASC 313 - Introduction to Soil and Rock Engineering \(3\)](#)

[EASC 314 - Principles of Glaciology \(3\)](#)

[EASC 315W - Geochemistry of Natural Waters \(3\)](#)

[EASC 317 - Global Geophysics \(3\)](#)

[EASC 400 - Selected Topics in Earth Sciences \(3\)](#)

[EASC 401 - Mineral Deposits \(3\)](#)

[EASC 402 - Sedimentology \(3\)](#)

[EASC 403 - Quaternary Geology \(3\)](#)

[EASC 404 - Structural Geology II \(3\)](#)

[EASC 405 - Water, Environment, and Climate Change \(3\)](#)

[EASC 408 - Regional Geology of Western Canada \(3\)](#)

[EASC 410 - Groundwater Contamination and Transport \(3\)](#)

[EASC 411 - Terrain Analysis \(3\)](#)

[EASC 413 - Resource Geotechnics \(3\)](#)

[EASC 415 - Groundwater Modelling \(3\)](#)

[EASC 416 - Field and Lab Techniques in Hydrogeology \(3\)](#)

[EASC 420 - Petroleum Geology \(3\)](#)

[EASC 421 - Volcanology \(3\)](#)

[EASC 491 - Directed Readings \(1\) *](#)

[EASC 492 - Directed Readings \(2\) *](#)

[EASC 493 - Directed Readings \(3\) *](#)

[GEOG 313 - River Geomorphology \(4\)](#)

[GEOG 355 - Geographical Information Science II \(4\)](#)

[SCI 301 - Science Communication: An Introduction \(3\)](#)

provided the courses have not been used in any of the course groupings listed above.

Calendar Entry Change

Name of Program or Name of Faculty: EASC BSc Honours Program (Geology Stream)

Rationale for change: This change increases flexibility for students and streamlines program progression. It also increases flexibility for the department, in that specific petrology courses can be offered on the basis of student demand rather than the obligation of yearly offerings regardless of student numbers.

Effective term and year: Spring 2022

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

EASC BSc Honours program (Geology Stream)

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 will complete 60 units minimum of 300 and 400 division EASC or related courses that are approved by the department. Students are encouraged to select upper division elective courses in consultation with an academic advisor, as APEGBC has specific groupings of elective courses for each stream, respectively.

Geology Stream

Students who choose this stream will complete a minimum of 48 units, including

all of

[EASC 301 - Igneous Petrology \(3\)](#)
[~~EASC 302 - Sedimentary Petrology \(3\)~~](#)
[EASC 306 - Field Geology II \(3\)](#)
[EASC 308 - Field Geology III \(3\)](#)
[EASC 309 - Global Tectonics \(3\)](#)
[EASC 310W - Paleontology \(3\)](#)
[~~EASC 311 - Metamorphic Petrology \(3\)~~](#)
[EASC 499 - Honours Thesis \(6\)](#)

and at least 1 of

EASC 302 - Sedimentary Petrology (3)

EASC 311 - Metamorphic Petrology (3)

and at least one of

[EASC 304 - Hydrogeology \(3\)](#)

[EASC 313 - Introduction to Soil and Rock Engineering \(3\)](#)

[EASC 403 - Quaternary Geology \(3\)](#)

and at least ~~18~~ **21** units chosen from

[EASC 300 - Selected Topics in Earth Sciences \(3\)](#)

EASC 302 - Sedimentary Petrology (3)

[EASC 304 - Hydrogeology \(3\)](#)

[EASC 305 - Quantitative Methods for the Earth Sciences \(3\)](#)

[EASC 307 - Applied Geophysics \(3\)](#)

EASC 311 - Metamorphic Petrology (3)

[EASC 312 - Stratigraphy \(3\)](#)

[EASC 313 - Introduction to Soil and Rock Engineering \(3\)](#)

[EASC 314 - Principles of Glaciology \(3\)](#)

[EASC 315W - Geochemistry of Natural Waters \(3\)](#)

[EASC 317 - Global Geophysics \(3\)](#)

[EASC 400 - Selected Topics in Earth Sciences \(3\)](#)

[EASC 401 - Mineral Deposits \(3\)](#)

[EASC 402 - Sedimentology \(3\)](#)

[EASC 403 - Quaternary Geology \(3\)](#)

[EASC 404 - Structural Geology II \(3\)](#)

[EASC 405 - Water, Environment, and Climate Change \(3\)](#)

[EASC 408 - Regional Geology of Western Canada \(3\)](#)

[EASC 410 - Groundwater Contamination and Transport \(3\)](#)

[EASC 411 - Terrain Analysis \(3\)](#)

[EASC 413 - Resource Geotechnics \(3\)](#)

[EASC 415 - Groundwater Modelling \(3\)](#)

[EASC 416 - Field and Lab Techniques in Hydrogeology \(3\)](#)

[EASC 420 - Petroleum Geology \(3\)](#)

[EASC 421 - Volcanology \(3\)](#)

[EASC 491 - Directed Readings \(1\) *](#)

[EASC 492 - Directed Readings \(2\) *](#)

[EASC 493 - Directed Readings \(3\) *](#)

[GEOG 313 - River Geomorphology \(4\)](#)

[GEOG 355 - Geographical Information Science II \(4\)](#)

[SCI 301 - Science Communication: An Introduction \(3\)](#)

provided the courses have not been used in any of the course groupings listed above.