THE UNIVERSITY OF BRITISH COLUMBIA

Faculty of Science / Department of Earth, Ocean & Atmospheric Sciences

SPEARHEAD RANGE, WHISTLER

WHITE LAKE BASIN, OKANAGAN VALLEY

GEOLOGY MAJOR SPECIALIZATION REQUIREMENTS

Version: AUGUST 2025 (Vancouver, BC)

Date:
Student Name:
Student Number:

Welcome to Geology at the University of British Columbia-Vancouver!

Use this document as a guide to help better plan and navigate your Geology Major degree at UBC Vancouver – the information includes that in the UBC Calendar for "Geological Sciences" and many other useful notes. This document can be downloaded as a PDF from the EOAS webpage on "Geological Sciences".

See the Engineer and Geoscientists British Columbia (EGBC) website for requirements on becoming a Professional Registered Geologist and also download the "UBC Geology Course Equivalent List" for complete required course content. By design, the Geology Major degree at UBC and Geology Course Equivalent List of EGBC track very closely, however, you need to pay specific attention to "Group 1B – Additional Foundation Science Electives" and "Group 2C – Other Geology Electives" to ensure you meet all the EGBC requirements.

Make sure to refer to the UBC Faculty of Science "Credit Exclusion lists" in the calendar before completing this template.

REGISTERING IN GEOLOGY MAJOR (3193)
Minimum credits for degree: 120

To register in Geology Major requires an application to the Faculty of Science (FoS) normally prior to registration in the summer following Year 1 or, for transfer students, before you first register for courses.

Early contact with a Geology Advisor to discuss your intended specialization is recommended. Note that you must meet all graduation requirements within 180 credits; those who do not will be required to withdraw from the Faculty of Science.

PART 1: FIRST-YEAR REQUIREMENTS (30 credits)

COURSES	CREDIT	COURSES TAKEN	TOTAL
SCIE 113 First-Year Seminar in Science	3		/ 3
CHEM[*1] 121 (or 111 or 141) [structural chemistry]	4		/ 4
CHEM[*1] 123 [organic chemistry]	4		/ 4
EOSC[*2] 110 [Solid Earth: Physical Geology]	3		/ 3
EOSC[*2] 111 [Laboratory Exploration of Earth]	1		/ 1
EOSC[*2] 116 [Mesozoic Earth: Historical Geology]	3		/ 3
MATH[*3] 100 / 102 / 104 or equivalents [differential]	3		/ 3
MATH[*4] 101 / 103 / 105 or equivalents [integral]	3		/ 3
PHYS[*5] 117 (or 101 or 106 or 107 or 131)	3		/ 3
PHYS[*5] 118 (or 108)	3		/ 3
Total Credits			/ 30

*1 Students who do not have BC High School Chemistry 12 (or its equivalent) must write the UBC Chemistry Basic Skills Test and may be required to take CHEM_V 100. CHEM_V 110 and 115 may substitute for CHEM_V 111, CHEM_V 120 and 115 may substitute for CHEM_V 121, CHEM_V 130 and 135 may substitute for CHEM_V 123.

*2 Three credits may be deferred until second year. The requirement for these courses may be waived if a student has completed upper-level courses in each of the solid and fluid earth sciences.
*3 MATH_V 180 or 184 or 120 may substitute for any of the specified differential calculus courses listed by decreasing the electives by 1 credit. MATH_V 110 may substitute for any of the specified differential calculus courses listed by decreasing the electives by 3 credits.
*4 MATH_V 121 may substitute for any of the specified integral calculus courses listed by decreasing the electives by 1 credit.
*5 Students without credit for Physics 12 must take PHYS_V 100 prior to any other 100-level PHYS_V courses. PHYS_V 100 will count as an elective. Students may delay taking 3 credits of PHYS_V 100-level to 2nd year.

PROMOTION BEYOND FIRST YEAR

See the UBC Calendar for information on "Promotion Requirements & Degree Progression" in the Faculty of Science. A summary is provided below (note new rules for promotion as of the 2025-26 academic year):

– Promotion to 2nd-year class standing requires successful completion of 24 or more credits, of which at least 15 must be science credits from first-year science courses;
– Promotion to 3rd-year class standing requires successful completion of a total of 48 or more credits, including: at least 30 science credits, of which 15 must be second year or above (200 - 400 level) science credits;
– Promotion to 4th-year class standing requires successful completion of a total of 72 or more credits, including:

1. At least 21 upper-level (300 or 400 level) credits;
2. At least 50 science credits, of which 15 must be upper-level (300 or 400 level) science credits;
3. The Laboratory Science Requirement;
4. The Communication Requirement.

There are also rules for "Sufficient Progress Towards a Degree" in the Faculty of Science where specific progress must be made upon 48, 78, and 108 attempted credits (see "Promotion Requirements & Degree Progression" for details).

PART 2: 200-LEVEL EOSC GEOLOGY COURSES (18 credits)

COURSE NUMBER	COURSE NAME
EOSC 211 or GEOS 270	Computer Methods or GIS (circle one)
EOSC 212	Topics in Earth & Planetary Sciences
EOSC 220	Introductory Mineralogy
EOSC 221	Introductory Petrology
EOSC 222	Geological Time & Stratigraphy
EOSC 223	Field Techniques
Total Credits	/ 18

Note: only one of EOSC 211 or GEOS 270 is required to satisfy this requirement, however, both courses are useful for future geoscientists (EOSC 211 is an introduction to programming with applications to the geosciences, GEOS 270 is an introduction to geographic information science). Many geology students take both of these courses during their degree with the second course then being used as an elective.

Advice: aim to complete your Science Breadth requirements and Communications requirements by the end of Year 2 (see Part 4 below).

PART 3: 300-LEVEL EOSC GEOLOGY COURSES (33 credits)

COURSE NUMBER	COURSE NAME
All of EOSC 320, 321, and 322	Sedimentology / Igneous / Metamorphic
One of EOSC 333 or 350*a	Geochemistry / Geophysics
EOSC 323	Structural Geology
EOSC 328	Field Geology
EOSC 325	Principles of Physical Hydrogeology
EOSC 330	Principles of Geomorphology
EOSC 332	Tectonic Evolution of North America
EOSC (Geology) 400+*b	EOSC 420-425 and EOSC 428-432
EOSC (Geology) 400+*b	EOSC 420-425 and EOSC 428-432
Total Credits	/ 33

*a Students may take EOSC 250, but EOSC 350 is highly recommended (requires one of MATH 200, MATH 253 and third-year standing) – this slot must still be filled with EOSC 300+

*b Note restriction to EOSC 400-level geology courses only (not Directed Studies or Thesis); many of these are alternate-year courses so plan ahead accordingly in terms of pre-requisites and course planning.

PART 4: OTHER ELECTIVES (39 credits)

Note: remember that you require a total of 48 credits at 300+ to graduate.

A. ADDITIONAL COMMUNICATION REQUIREMENT

COURSE NUMBER	COURSE NUMBER + NAME
1. Communication*6: 1xx	
Total Credits	/ 3

*6 WRDS 150, ENGL 110, or ENGL 111 are recommended – see Communication Requirement in the UBC Calendar and note Promotion Requirements and Degree Progression information. Note that Communications courses, including SCIE 113, cannot be used towards the 12-credit Arts Requirement.

B. 12 CREDITS ARTS (Communication credits cannot be used for this requirement)

COURSE NUMBER	COURSE NUMBER + NAME
1. Any 100+ Arts course	
2. Any 100+ Arts course	
3. Any 100+ Arts course	
4. Any 100+ Arts course	
Total Credits	/ 12

C. 3 ADDITIONAL EOSC / ATSC / ENVR (all courses must be for credit in EOAS)

COURSE NUMBER	COURSE NUMBER + NAME
1. Any 300+ EOSC/ATSC/ENVR course	
Total Credits	/ 3

Many geology students fill this credit requirement with EOSC 331 Mineral Deposits or an additional 400-level geology course.

D. FACULTY OF SCIENCE BREADTH REQUIREMENT

Students in a major or honours specialization must successfully complete at least 3 credits from any 6 of the 7 identified categories (Mathematics, Chemistry, Physics, Life Science, Statistics, Computer Science, Earth & Planetary Science). For Geology Major students, this means 2 additional courses selected from Life Science, Statistics, or Computer Science (note EOSC 211 does not count as a Computer Science course for this breadth requirement). Note also that these Science Breath courses can be used to satisfy the Group 1B: Additional Foundation Science requirements from EGBC.

COURSE NUMBER	COURSE NUMBER + NAME
1. Any 100+ (Science only – see above)	
2. Any 100+ (Science only – see above)	
Total Credits	/ 6

See the Science Breadth webpage in the Calendar for more details.

E. 15 ADDITIONAL CREDITS – MAY BE IN ANY FACULTY

COURSE NUMBER	CREDITS
1. Any 100+ course	
2. Any 100+ course	
3. Any 100+ course	
4. Any 100+ course	
5. Any 100+ course	
Total Credits	/ 15

Note: although these can be at 100 level, you still need 48 x 300+ credits total

PART 5: SUMMARY OF FACULTY OF SCIENCE REQUIREMENTS

You must meet the following Faculty of Science requirements. Remember that you must also meet all graduation requirements within 180 credits, so keep track of your credits.

CREDIT CATEGORY	YOUR CREDITS	FoS REQUIREMENTS
Total		120
Total 300+ (any subject)		48*
Total 300+ Science		30
Total Science		72
Total Arts		12
Total Communication		6**
Min. Science Breadth		6
Max. not in Arts/Science		18***

* If this is your second degree, none of the 300+ courses from your first degree count towards this 48 credits. Note that it is at the discretion of the FoS how many (if any) credits will transfer – contact Science Advising for more information if you are in this situation: advising@science.ubc.ca

** Communications courses include SCIE 113 + one additional course (see Communication Requirement in the UBC Calendar)

*** You are not required to have any courses out of Arts or Science, but you may take up to 18 credits.

OTHER IMPORTANT NOTES

DIRECTED STUDIES (EOSC 448)
Topics must be approved by an EOAS department advisor. We would prefer a maximum of 6 credits in your Geology Major taken as 2 x 3-credit courses – please consult your specialization advisors. Note that Directed Studies cannot be used to satisfy the 2 x 400-level Geology courses required (these must be courses with numbers from EOSC 420-425 and EOSC 428-432).

EOSC 449 THESIS
Qualified Geology Major students may take a thesis, however, conditions apply. Eligible Major students must have an Academic Record that is generally equivalent to that required of a student in honours (>68% average each Winter session, for entire Academic Record) and a minimum grade average of 75% is strongly suggested. Note that you cannot register directly for EOSC 449, an academic advisor must officially recommend that you be enrolled.

GRADUATE CLASSES
You may take a maximum of 6 credits of graduate courses (500-level). Permission must be sought from the Faculty of Science and also the Faculty of Graduate & Postdoctoral Studies (contact Science Advising for information after consultation with your advisor).

MINOR
If you are interested in focusing your electives in a specialized field, you may want to consider a Minor in another subject to go along with your Geology Major degree – see "Minor Options" for eligibility and application process. In recent years, geology students have added Minors in: Data Science, Environmental Sciences, Oceanography, Biology, Archaeology, and Commerce.

ENGINEERS & GEOSCIENTISTS BC ELECTIVES
You do not have to complete EGBC electives to graduate. If considering a career in geology, you are advised to choose electives that maximize your compliance with EGBC course requirements. Although we can discuss course selection to meet EGBC requirements, UBC cannot provide any official advice or decisions regarding registration and compliance. Any questions of this nature should be directed to EGBC and are the responsibility of each individual student.

GRADUATION
You must apply for graduation either for the Spring (May) or Fall (November) ceremony. Application for the May graduation ceremony is from mid-December through late February.

GEOLOGICAL SCIENCES HONOURS
Honours degrees at UBC involve intense specialization in a single field, including preparation of a graduating thesis and completion of 132 credits (compared to 120 credits for Majors students). A student wishing to enter the Geological Sciences Honours specialization must meet the following requirements:

- Completion of all courses attempted (e.g. no failed courses)
- Completion of a minimum of 27 credits per winter session starting with Year 1
- A minimum 68% average per academic session

An application to enter the Geological Sciences Honours specialization is normally made at the end of Year 2, although the requirements for the Honours degree must have already been met in Years 1 and 2. To be admitted to Honours, students are required to seek an appointment with the Geological Sciences Honours advisor during Year 2 to plan their degree and review their eligibility (see Advisors below).

YOUR GEOLOGY ADVISORS

We are here to help, so please make an appointment to confirm availability.

For general questions about course and lab registration, contact the EOAS undergraduate coordinator – Ian Ayeras: ESB 2020, 604-822-3146, iayeras@eoas.ubc.ca

For specific questions about your degree and career path, please send an email to set up appointments. Make sure to add 'advising' in the subject field and include your full name and student number on all communications to help us more quickly and efficiently access your academic records prior to meeting with you:

GEOLOGY MAJOR: Dr. James Scoates: scoates@mail.ubc.ca: EOS-South 352

GEOLOGICAL SCIENCES HONOURS: Dr. Ken Hickey: khickey@mail.ubc.ca: ESB 5119

We prefer in-person meetings, but are happy to meet on Zoom (or other video communication apps) if this is not possible.

PRO TIP: meet regularly with a Geology Advisor to ensure that you are on track for completion of your degree at UBC and that you are optimally choosing your courses to meet both promotion and EGBC requirements.

ADDITIONAL RESOURCES

For more information on the vital role of Canada's geoscientists to understanding our country and planet, see "Geoscience and Canada" (scroll down the page). This is an exceptional overview of the importance of geoscientists in society and should be read thoroughly by anyone pursuing a geology degree.

For details concerning requirements for new applicants seeking professional registration in any one of the provinces or territories for the first time, see "Geoscience Knowledge and Experience Requirements for Professional Registration in Canada" (scroll down the page).

For safety guidelines to working in the field, see "Safety Guidelines" on the AME Tools page from the Association for Mineral Exploration (scroll down to end of page).

LAND ACKNOWLEDGEMENT

The UBC Point Grey campus is situated on the traditional, ancestral and unceded territory of the xʷməθkʷəy̓əm (Musqueam) People.

THE UNIVERSITY OF BRITISH COLUMBIA

GEOLOGY AT UBC:
LIVE, STUDY, AND WORK WITH BC's GEOLOGICAL LABORATORY AT YOUR DOORSTEP

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