



SUBJECT	Tuition Graduate Certificate in Applied Geological Engineering, UBC Vancouver
SUBMITTED TO	Finance Committee
MEETING DATE	June 14, 2023
SESSION CLASSIFICATION	Recommended session criteria from Board Meetings Policy: OPEN
REQUEST	APPROVAL REQUESTED IT IS HEREBY RESOLVED that the Finance Committee, in accordance with authority delegated by the Board of Governors, approves tuition for the Graduate Certificate in Applied Geological Engineering of \$1,100.00 per credit for both domestic and international students, effective immediately, subject to increases as approved by the Board of Governors.
LEAD EXECUTIVE	Gage Averill, Provost and Vice-President Academic, UBC Vancouver
SUPPORTED BY	Simon Bates, Vice-Provost and Associate Vice-President Teaching & Learning <i>pro tem</i> Bhushan Gopaluni, Vice-Provost and Associate Vice-President Faculty Planning

EXECUTIVE SUMMARY

The Department of Earth, Ocean and Atmospheric Sciences, in the Faculty Science, is proposing the development of a new Graduate Certificate in Applied Geological Engineering (GCAGE). Students will be required to complete nine credits of course work that will be delivered 100% online over eight months. This course work will occur asynchronously with optional synchronous components, including group townhalls and guest subject matter expert interviews. The GCAGE is designed for early- to mid-career professional engineers and geoscientists with two years+ of experience looking to open up career and technical leadership opportunities, in response to consistent demand by industry. These would be engineers who are currently employed in or interested in pursuing careers in the fields of geological, civil or mining engineering in the public and private sectors.

Following approval of the program by the UBC Vancouver Senate in May 2023, the request for approval of the Graduate Certificate in Applied Geological Engineering was forwarded to the Learning & Research Committee under the Committee's June 2023 agenda. Pending approval from the Board of Governors, the program aims to admit its first cohort of students in September 2023. Enrolment into the program will be capped at a maximum of 25 students per cohort to help facilitate the peer-to-peer networking and interaction that is highly valued by professionals.

In the 2023-2024 academic year, proposed tuition fees are \$1,100.00 per credit for both domestic and international students. Equivalent tuition rates are proposed for domestic and international students recognizing that the program is delivered 100% online. All fees are subject to increases as approved by the Board of Governors. There are no additional fees associated with the program.

The Office of the Vice-President Students conducted a student consultation regarding the tuition proposal (as per Policy LR4). The e-consultation was conducted from November 2, 2022 to December 2, 2022. Submissions were received from the AMS and GSS, who are both supportive of the program as proposed. The GSS noted that the proposed application fees differed between domestic and international students. Proposed application fees have been set to remain aligned with the application fee rates approved for graduate programs.

The certificate specifically addresses the following UBC Strategic Goals:

[Strategy 4: Inclusive Excellence](#): Relevant and applicable aspects of equity, diversity, inclusion and Indigeneity have been integrated into the coursework. The program recognizes that the small parts incorporated are not able to fully redress historical injustices but believe that we must start from “somewhere” and that the parts included can serve as an important introduction for learners who have not previously been exposed to EDI-I concepts.

[Strategy 11: Education Renewal](#): This program furthers existing graduate course curricula offered by the Department and Geological Engineering Program, though allowing for expanded remote learning opportunities. The courses, delivered entirely online asynchronously, provide learners with the opportunity to seek advanced graduate education while still retaining the ability to work professionally. The courses leverage new active learning strategies and project-based learning to integrate course-based work with learner’s own work experiences.

[Strategy 16: Public Relevance](#) & [Strategy 20: Co-ordinated Engagement](#): This program was created through intensive consultations with industry partners who helped inform decisions around course content, duration, mode of delivery and tuition. The program has an industry-based program advisory board and the internal Geological Engineering Curriculum Committee will participate in guiding course content over the coming years to ensure that the course work remains applicable and relevant to geological engineers of today and in the future.

Students who complete the certificate will have the option of laddering the coursework into either the Master of Engineering or the Master of Applied Science in Geological Engineering (both existing programs). To facilitate laddering, criteria for admission to the program is the same as those required by the Faculty of Graduate and Postdoctoral Studies for admission into the master’s programs. Students who choose to ladder will have their master’s tuition reduced as per the Board [approved tuition assessment rule](#) for programs that ladder.

APPENDICES

1. Tuition and Fee Assessment Details
2. Student Tuition Consultation Report

Tuition and Fee Assessment Details

Program Description: Graduate Certificate in Applied Geological Engineering

Anticipated Start Date: September 2023

	Domestic	International
Tuition fees per credit – Note 1	\$1,100.00	\$1,100.00
Application Fees (Graduate) – Note 2	\$114.00	\$168.25
Supplemental Application Fees	\$0	\$0
Non-Refundable Acceptance Deposit	N/A	N/A
Other Faculty and Course Fees	\$0	\$0

Note 1 – Proposed tuition will be subject to annual increases as established by the university.

Note 2 – This is the current fee for the 2024W application cycle and is subject to annual increases.

GRADUATE CERTIFICATE IN APPLIED GEOLOGICAL ENGINEERING

STUDENT TUITION CONSULTATION REPORT

The Vice-President, Students Office, in partnership with the Faculty of Land and Food Systems, conducted a student consultation regarding the proposal for a 100% online 8-month, 9-credit Graduate Certificate in Applied Geological Engineering. This report outlines the consultation process and summarizes student feedback including the student representatives' submission verbatim in Appendix 2.

Student Representative Bodies Invited to the Consultation

- Alma Mater Society (AMS)
- Graduate Student Society (GSS)

Mode of Consultation

The consultation consisted of an e-consultation. Student representative groups were invited to the consultation through email, and asked to distribute the invitation to their constituents as they felt appropriate. Student representative groups were also offered a face-to-face/zoom meeting to discuss the tuition proposal. A meeting was not requested by student representatives.

Basis of Consultation: The consultation was based on a tuition proposal and rationale document created by the Faculty. Please see Appendix 1 for the invitation and tuition rationale document.

Timelines: The e-consultation was conducted over the period of Wednesday November 2, 2022 to Friday December 2, 2022.

Summary of Student Feedback: Submissions were received from the AMS and the GSS. The verbatim submissions are in Appendix 2.

No individual student submissions were received.

Organization	Summary
AMS	<p>Support for proposed program “The AMS is in favour of the proposed Graduate Certificate, and believe it will well-equip students to tackle current challenges in the industry with opportunities for learning technical knowledge in geological engineering practice, instrumentation and monitoring design, and modeling. We also appreciate the online delivery of this certificate, as there is a great desire from the student body for increased online and hybrid learning opportunities.”</p>
GSS	<p>Support for proposed program “Summarily, we would recommend that this proposal be accepted and followed through according to the plan listed.”</p>

APPENDIX 1: INVITATION TO CONSULTATION AND TUITION RATIONALE DOCUMENT

*****This message is sent on behalf of Dr. Samantha Reid, Executive Director of the Office of the Vice President, Students*****

Hello everyone,

There is a proposal by the Geological Engineering unit in the Faculty of Applied Science for a 100% online 8-month, 9-credit Graduate Certificate in Applied Geological Engineering.

In order to inform the program leads and the Board of Governors with regards to the **tuition proposal** for this program, the University is undertaking a consultative process to get your comments as student representatives, and provide an opportunity for students to provide individual comments on the tuition proposal if they wish. **Please note: the scope of this consultation process is limited to the tuition proposal.**

The consultation will consist of:

1. e-consultation

Please find attached a document which outlines the details of the tuition proposal, including:

- an overview of the program,
- the student consultation that has happened to date,
- the tuition and fees rationale for the program, and
- the proposed tuition and fees.

Please share the document and this email as you see appropriate. **Comments and student organization submissions on the tuition proposal can be provided to Irena Deretic – Administrative Coordinator, Office of the Vice President Students (vpsassist@mail.ubc.ca).**

2. Face to Face/Zoom meeting

If requested by student representatives, we can arrange a face-to-face/Zoom meeting with the program leads regarding this tuition proposal. Please advise as soon as possible if you would like us to arrange a meeting.

THE CONSULTATION PROCESS WILL END ON FRIDAY, DECEMBER 2, 2022 AT MIDNIGHT.

Confidentiality

- Comments will be collected by the Vice-President Students Office, and only analysts within that office will know the identity of individual students submitting comments. At no time will anyone outside of the Vice President Students Office know the identity of individual students who submit comments to this consultation. Your comments will only be used for the purposes of the tuition consultation.
- Comments from individual students will be stripped of any identifying information to ensure confidentiality, but otherwise will be provided to the responsible program leads and Board of Governors verbatim.
- Comments received from student organizations will be reported as coming from those organizations, and provided to the responsible faculty and Board of Governors as received. There will also be a summary report of the consultation developed for the Faculty and Board of Governors.

Please let me know if you have any questions about the process.

Thank you,

Samantha

Samantha Reid Ph.D. (she/her)

Executive Director

Office of the Vice President Students

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THE UNIVERSITY OF BRITISH COLUMBIA

GRADUATE CERTIFICATE IN APPLIED GEOLOGICAL ENGINEERING

PROGRAM OVERVIEW

Globally, a range of intersecting drivers, including population growth, climate change, increasing natural disasters, urbanization, insufficient infrastructure, and unsustainable use of resources, are increasing the need for effective geotechnical education and solutions. Engineers and Geoscientists play a critical role in mitigating these problems. These engineers and geoscientists require skillsets in advanced applications of geological engineering to control, manage and communicate geological uncertainty and risk when faced with complex geo-engineering problems, often with high socio-economic and environmental stakes associated to the project.

The Geological Engineering unit in the Faculty of Applied Science is proposing a 100% online 8-month, 9-credit Graduate Certificate in Applied Geological Engineering that will equip geoscientists and engineers from relevant disciplines with the knowledge and skills to confidently address these challenges in applied geotechnics in the civil and mining industries.

This certificate will provide collaboration, communication, and design skills in combination with grounded technical knowledge in geological engineering practice, instrumentation and monitoring design, and modelling. It is a student-centered educational experience with extensive problem-based learning and hand-on, team-based project work so that acquired knowledge and skills can be directly applied to real world problems and projects. Students will be able to complete this certificate online asynchronously over the course of eight months with a time commitment of 8 hours a week. The certificate will be entirely online with some synchronous group work and optional check-ins and townhalls with subject matter experts from industry.

In completion of certificate, learners will be expected to be able to:

1. Design and justify assumptions/level of detail in geotechnical and hydrogeological investigation, monitoring regimes and analyses relative to the project life-cycle stage.
2. Analyze true-life geotechnical and hydrogeological design problems, solutions implemented, and lessons learned. Propose and defend alternative solutions.
3. Manage professional issues such as loss control/professional ethics, defending and justifying management choices.
4. Develop advanced communication skills necessary to precisely communicate geological and hydrogeological uncertainty, management, methods and designs within engineering projects and with associated stakeholders.
5. Research and apply techniques/theory to analyze and diagnose geotechnical and hydrogeology design problems and interpret and predict consequences of models and future actions.
6. Critically assess and justify use of industry standard tools used in geotechnical and hydrogeological design, identifying their strengths/limitations in managing uncertainty and reducing risk.
7. Apply essential geotechnical/hydrogeological design methods, to assess, analyze and manage risks related to geohazards that may impact a project site.

Students who complete the certificate will have the option of laddering the coursework into Masters programs offered by the Geological Engineering Program (Master of Engineering or Master of Applied Science in Geological Engineering). To facilitate laddering, criteria for admission to the certificate program will be the same as those required by the Faculty of Graduate and Postdoctoral Studies for admission into master's programs offered by Geological Engineering. Students who choose to ladder

into an applicable Master's program will have their Master's tuition reduced as per the Board [approved tuition assessment rule](#) for programs that ladder.

STUDENT CONSULTATION DURING THE PROGRAM DEVELOPMENT PROCESS

There is strong interest and support from industry, alumni and students. We conducted a student and alumni survey in November & December 2021 to help guide the development of focused curriculum topics and program structure. The survey went out to 207 students and an undisclosed number of alumni. We received a **total of 83 responses (75.9% alumni, 24.1% current UBC students)** with response rate of **9.7%** for students.

More than half (**72.15%**) of respondents indicated **"strongly agree"** or **"agree"** to the following statement *"This program addresses unmet industry needs"*.

Some top comments:

- The proposed program would address the need for more in-depth training on the subject areas for both working professionals interested in the field, as well as beyond what is taught in undergraduate courses.
- There is high demand for high qualified geotechnical engineers, yet there are not many options in attaining the knowledge that do not require advanced degree/full time commitment.
- In-depth courses can be a bridge for civil engineers to gain further knowledge in geology and geological engineering.

Furthermore **24.05% of respondents** were **"neutral"** while only **3.8% of respondents** said **"disagree"**.

Additionally, **29.23% of respondents** indicated that they would be **"highly likely"** or **"likely"** to take the certificate offering while **40% of respondents** responded **"undecided"**. This again demonstrates interest in the certificate with most respondents being undecided in taking the certificate due to minimal information (including exact costs) due to the early nature of the consultations in the certificate development process. Of particular interest, is that **15.38% of respondents** said that they would **"consider sponsoring staff to take the certificate"**.

TUITION AND FEES RATIONALE

In the 2023/24 academic year, tuition fees per credit for the program are proposed to be:

- **\$1,100.00CAD per credit** for domestic and international students

These fees are subject to increases as approved by the UBC Board of Governors leading up to the program's anticipated launch in September 2023. There are no additional fees associated with the program.

All students must complete three courses for a program total of 9 credits. **Total program tuition is estimated at \$9,900CAD.**

Tuition fees have been assessed as such to cover the costs associated with the development and future administration of the program, with the program and fees structured to allow the program to be self-sustaining long term. This includes hiring net new instructional staff and administrators for the program (one of each) with an additional sessional instructor hire on sabbatical years alongside covering honorariums for professional guest speakers from industry and bi-annual curriculum updates/reviews. Having dedicated teaching staff for the program will help ensure consistency and quality in teaching for learners while frequent curriculum updates and reviews will keep teaching materials at the forefront of the industry. These are both a very important enrollment deciding factors for the professionals at which this certificate is aimed. This certificate is also designed to be taken as a cohort. This is capped at **25 students per cohort** to help facilitate the peer-to-peer networking and interaction which is highly looked for by professionals.

Keeping the same per-credit pricing for both domestic and international students would keep us in line with what expected by industry and learners, as this is the pricing structure other prominent comparator programs use in North America for graduate certificates in this field. The most significant comparator to this program is an online Graduate Certificate in Geomechanics/Rock Mechanics from the University of Arizona (UofA). This 12-credit online program charges students approximately **\$1,200.00USD per academic unit** (UofA's equivalent to a credit). Adjusted for currency exchange rates¹ this comparator program costs approximately **\$1647.46CAD per credit**, placing the tuition pricing for our proposed program **significantly lower** than that of other North American comparator programs to the benefit of our students.

Comparator Programs	Domestic (CAD)	International (CAD)
Proposed - Graduate Certificate in Applied Geological Engineering	\$9,900.00	\$9,900.00
Graduate Certificate in Geomechanics/Rock Mechanics, University of Arizona	\$18,575.00	\$18,575.00
Geotechnical Engineering Graduate Certificate, Auburn University	\$14,196.00	\$14,196.00
Geotechnics Graduate Certificate, Missouri University of Science and Technology	\$17,930.00	\$17,930.00

¹ USD and CAD exchange rates based on September 27, 2022

PROPOSED TUITION AND FEES

Program Description: Graduate Certificate in Applied Geological Engineering

Anticipated Start Date: September 2023

	Domestic	International
Tuition fees per credit – Note 1	\$1,100.00	\$1,100.00
Application Fees (Graduate) – Note 2	\$112.00	\$168.25
Supplemental Application Fees	\$0	\$0
Non-Refundable Acceptance Deposit	N/A	N/A
Other Faculty and Course Fees	\$0	\$0

Note 1 – Proposed tuition will be subject to annual increases as established by the university.

Note 2 – This is the current fee for the 2023W application cycle and is subject to annual increases.

APPENDIX 2: STUDENT SUBMISSIONS & FACULTY RESPONSES

Submission from the AMS.



December 2nd, 2022 UBC
Board of Governors

Re: New Graduate Certificate in Applied Geological Engineering

Dear members of the UBC Board of Governors,

This submission is being made on behalf of the Alma Mater Society (AMS) of UBC Vancouver in response to the request for feedback on the proposal by the Faculty of Applied Science to create a new Graduate Certificate in Applied Geological Engineering.

The proposed 9-credit Graduate Certificate in Applied Geological Engineering will seek to provide geoscientists and engineers from relevant disciplines with knowledge and skills related to applied geotechnics in the civil and mining industries.

The AMS is in favour of the proposed Graduate Certificate, and believe it will well-equip students to tackle current challenges in the industry with opportunities for learning technical knowledge in geological engineering practice, instrumentation and monitoring design, and modeling. We also appreciate the online delivery of this certificate, as there is a great desire from the student body for increased online and hybrid learning opportunities.

The AMS would like to sincerely thank the Faculty of Applied Sciences for their commitment to meet global industry needs and to a student-centered educational experience. We also appreciate the Board's consideration of this submission.

Sincerely,

Dana Turdy
VP Academic and University Affairs Alma
Mater Society

Submission from the GSS.



Vice President Students Tuition Consultations

Presented by:

**The Graduate Student Society
University of British Columbia,
Vancouver**

To:

**The Office of the Vice President
Students, University of British
Columbia**

December 6, 2022

1.0 Tuition Consultation: Graduate Certificate in Applied Geological Engineering

The importance and relevance of a fully online graduate certificate in applied geological engineering has been clearly stated. There is also evidence to show that both current UBC students and alumni would be interested in the knowledge the program has to offer, acknowledging that there is a qualification gap that this program is able to fill. The opportunity to ladder into an applicable master's program(s) with reduced tuition is well-thought out and commendable.

We would say the proposed starting tuition at \$9,900 for both domestic and international students is reasonable. It is lower when compared to other North America universities with similar programs. In addition, the rationale for the proposed tuition was well justified.

The international students' application fee is \$56.25 higher than that of domestic students. Considering that this is a fully online course and intended to be accessible to interested professionals from all over the world, the reason for this difference in application fees is unclear. We would think that the reasoning behind this be included in the tuition rationale.

Summarily, we would recommend that this proposal be accepted and followed through according to the plan listed.