



SUBJECT	TUITION GRADUATE CERTIFICATE IN AQUACULTURE
MEETING DATE	SEPTEMBER 12, 2019

Forwarded on the Recommendation of the President

APPROVED FOR
SUBMISSION

Santa J. Ono, President and Vice-Chancellor

DECISION REQUESTED	<p>IT IS HEREBY REQUESTED that <i>the Committees approve the following tuition and fees for students in the new Graduate Certificate in Aquaculture*, which will commence in September 2020:</i></p> <ul style="list-style-type: none"><i>\$562.50 per credit for domestic students</i><i>\$937.50 per credit for international students</i><i>\$750.00 Field Trip fee, assessed once per student</i><i>\$250.00 Textbook and Reference Material fee, assessed once per student</i> <p><i>Effective upon approval of the program and its tuition is a non-refundable acceptance deposit of \$3,000 for domestic students and \$5,000 for international students, conditionally approved by the President in June 2019.</i></p>
Report Date	August 13, 2019
Presented By	Andrew Szeri, Provost and Vice-President Academic, UBC Vancouver Pam Ratner, Vice-Provost and Associate Vice-President Enrolment & Academic Facilities Simon Bates, Associate Provost Teaching & Learning Rickey Yada, Dean, Faculty of Land & Food Systems

EXECUTIVE SUMMARY

Aquaculture is one of the fastest growing food production sectors in the world. The production of farmed fish has surpassed that of farmed beef and that of wild fish globally, and Canada is the world's fourth largest farmed salmon producer. A weakness in the North American industry is the lack of expertise, and lack of trained people entering the industry.

The four-month, 16-credit Graduate Certificate in Aquaculture program explores principles across the broad scope of fields involved with food production from aquaculture. Students who complete this program will have increased access to several aquaculture-related careers, including aquaculture entrepreneurs, technologists, researchers, and managers, as well as in fish feed production, equipment design and supply, fish health services, fish processing, and aquaculture regulation and certification.

With an anticipated launch date of September 2020, the program will assess tuition rates of \$562.50 per credit for domestic students and \$937.50 per credit for international students. Rates for this program will be subject to general tuition increases as approved by the Board of Governors. Students will also be required to pay a one-time field trip fee of \$750.00 and a one-time textbook and reference material fee of \$250.00. The program will be delivered via in-class lectures, guest lectures, hands-on experience with live fish at the Oceans and Fisheries Canada facilities (West Vancouver), and field trips to existing aquaculture facilities. Trip locations will include a fish hatchery, net-pen farm, land-based farm, aquaponics farm, research institute, feed mill, and processing plant.

A non-refundable acceptance deposit of \$3,000 for domestic students and \$5,000 for international students was conditionally approved by the President, in June 2019, pending approval of the program and its tuition rates. This deposit will be levied when a student accepts an offer of admission and will be applied to the student's tuition balance.

Attachments

1. Tuition and Fee Assessment Details
2. Student Tuition Consultation Report
3. Non-Refundable Acceptance Deposit Memo

STRATEGIC CORE AREAS SUPPORTED

People and Places Research Excellence Transformative Learning Local / Global Engagement

DESCRIPTION & RATIONALE The Graduate Certificate in Aquaculture is a one-term, full-time, 16-credit program designed to meet the growing need for training in aquaculture and related industries. Technologies are continually advancing and new types of culture systems and approaches that increase the sustainability of aquaculture are being implemented in Canada and globally. B.C. is currently a net importer of personnel to meet industry needs for workers who possess both the knowledge of operations and biology, as well as management and leadership skills. There is currently no graduate level training available in B.C. that meets the needs of employers.

Courses will be delivered on campus during Winter Term 1 and subjects include fish health, aquaculture production systems, fish nutrition, ecological sustainability, breeding and genetics, seafood processing, and basic aquaculture business concepts.

The program will be unique in that it will include the entire aquaculture system, through to seafood processing and safety by taking advantage of the expertise and facilities available in the food science unit in the Faculty. This is in keeping with the philosophy of the Faculty of Land and Food Systems to consider the 'food system' in its entirety.

With an anticipated launch date of September 2020, the Faculty is proposing that tuition be set at \$562.50 per credit for domestic students and \$937.50 per credit for international students. With the Board's approval, students also will be required to pay a one-time field trip fee of \$750.00 and a one-time textbook and reference material fee of \$250.00. The program will offer hands-on experience at the Oceans and Fisheries Canada facilities (West Vancouver), and field trips to existing aquaculture facilities. Trip locations will include a fish hatchery, net-pen farm, land-based farm, aquaponics farm, research institute, feed mill, and processing plant.

The intention of the non-refundable acceptance deposit is to encourage applicants to make their acceptance decisions in a timely manner and to follow through on their intentions. Such timely decisions permit the program to make offers to waitlisted students if and when space becomes available. The intent of the fee is not to place undue hardship on applicants. For more information, please refer to the attached memorandum approved by the President (Attachment 3).

BENEFITS	<i>Learning</i>
Learning, Research, Financial, Sustainability & Reputational	The program will be the only post-graduate program in aquaculture in BC. It will incorporate experiential learning opportunities with local industry, government and educational institutions, and develop graduates who contribute to developments in sustainability and expansion of the industry. With the declines in wild fish catches world-wide, sustainable aquaculture systems and seafood processing will be needed to meet the demand for aquatic food products.
	<i>Research</i>
	There are two initiatives that the Faculty plans to undertake in the near future, which this program supports. The first is to develop a professional Master of Aquaculture program. The intention is for students to have the option to ladder the courses taken in the certificate into a Master's program, which would include a 4-month practicum/research project.
	The second initiative is the establishment of a Chair in Aquaculture. The Faculty has funding exclusively for such a faculty appointment. The Chair will provide leadership for the development of research opportunities for students.
	<i>Sustainability</i>
	The Certificate program is expected to be financially sustainable and operate on a cost-recovery basis with support from the Faculty of Land and Food Systems; any shortfall will be addressed by the Faculty. Surplus revenue from the program will be used to update the curriculum and for scholarships for students.
RISKS	<i>Financial</i>
Financial, Operational & Reputational	The Faculty of Land and Food Systems has completed an assessment of the costs associated with the delivery of the program. While every effort has been made to capture the expected costs, financial risk is inherent to the projection of revenues and expenses.
	<i>Revenue</i>
	Revenue projections for the program are based on the expected program enrolment (20 students per cohort), expected tuition increases (2% per annum for domestic students' tuition and 3% for international students' tuition) with no or very few international students expected to enrol in the first five years, as the program develops its reputation. Risks include a lower than expected program enrolment. This risk is assessed to be low; a survey of students enrolled in Biology and related science programs in four-year degree granting institutions in B.C. indicated strong interest in the aquaculture certificate. This survey was sent to Deans at peer institutions including BCIT, SFU, UVic, Kwantlen, University of the Fraser Valley, and Royal Roads. Over 100 students responded to the survey.
	<i>Expenses</i>
	Risks include higher than projected faculty and staff salary increases, and higher than expected transportation/field trip expenses. These risks are assessed to be low. The Faculty of Land and Food Systems will support the program in years when the tuition and fees may not be sufficient to cover expenses.

Operational

The operational risks for this program include lack of sufficient operational support and instructors to deliver the program. These risks will be mitigated by the hiring of a part-time program coordinator who will manage the program operations (program promotion, student recruitment and selection, curriculum coordination, and field trips).

Reputational risk is low given the existing reputation and track record of the Faculty in delivering high quality professional programs. The support of the Dept. of Fisheries and Oceans, West Vancouver Laboratory (Pacific Environment Institute) and a consultant with extensive experience and aquaculture industry contacts will further ensure that the quality and profile of the program meet the expected standards.

COSTS Capital & Lifecycle Operating	Capital and lifecycle costs, including laboratory and teaching costs, will be covered from tuition and fees, and when necessary, by the Faculty of Land and Food Systems from the existing operating budget. The proposed program builds on existing academic and administrative infrastructure, and will utilize faculty expertise complemented by sessional lecturers. The program has relatively few start up costs, which are limited to the development of 7 new courses (completed), the hiring of a part-time coordinator to manage operations, and the cost of sessional lecturers.
FINANCIAL	Proposed tuition fees are \$562.50 per credit for domestic students and \$937.50 per credit for international students, subject to annual increases as approved by the Board.
SCHEDULE	Pending approval from the Board, enrolment of the first cohort of students will be in September 2020. The non-refundable acceptance deposit will be effective for all students of the first cohort.
CONSULTATION Relevant Units, Internal & External Constituencies	<p>The Office of the Vice-President Students, in partnership with the Faculty of Land and Food Systems, conducted a student consultation regarding the tuition proposal (as per Policy 71) for the Graduate Certificate in Aquaculture. The e-consultation was conducted from May 30, 2019 to June 28, 2019. Specific questions were raised by the Graduate Student Society (GSS), which the Faculty of Land and Food Systems addressed with additional information and answers. A submission responding to the tuition proposal was received from the AMS and GSS.</p> <p>The Faculty consulted with colleagues in the Institute for Oceans and Fisheries, Dept. of Zoology, and First Nations House of Learning. The Faculty also consulted with North Island College and Vancouver Island College, as institutions offering aquaculture related programming in B.C. North Island College is very supportive of the certificate, and they have expressed interest in future collaboration in research and teaching. Vancouver Island College will continue to develop their own programs focused at the undergraduate level, and individual instructors have expressed interest in collaboration.</p> <p>External consultations with B.C. employers and the Department of Fisheries and Oceans – Pacific Science Enterprise Centre were also conducted. They support academic, government and other science practitioners in a collaborative environment designed to foster joint research, incorporate traditional Aboriginal knowledge, and leverage the resources of multiple partners. The centre currently serves researchers from the Coastal Ocean Research Institute (an Ocean Wise initiative), and the BC Centre for Aquatic Health Sciences. They have been instrumental in shaping the proposed curriculum and will contribute physical facilities and expertise to the program.</p>

Tuition and Fee Assessment Details
Graduate Certificate in Aquaculture

Proposed tuition for the program is \$9,000 for domestic students (\$562.50 per credit for 16 credits) and \$15,000 for international students (\$937.50 per credit for 16 credits). Additional student fees include \$750.00 for travel expenses (field trip transportation) and \$250.00 for text books and reference material.

	Domestic	International
Tuition fees per credit – Note 1	\$562.50	\$937.50
Application Fees – Note 2	\$104.00	\$168.25
Non-Refundable Acceptance Deposit – Note 3	\$3,000	\$5,000
Other Faculty and Course Fees – Note 4	\$1,000	\$1,000

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

Note 2 – This is the current fee for the 2019W application cycle and is subject to annual increases. The fee for the 2020W application cycle has been approved by the Board at \$106.00 for domestic students and remains at \$168.25 for international students.

Note 3 – The non-refundable acceptance deposit will be credited to the tuition for the program.

Note 4 – Additional student fees include \$750 for travel expenses (field trip transportation) and \$250 for text books and reference materials. This fee is paid to the Faculty of Land and Food Systems.

GRADUATE CERTIFICATE IN AQUACULTURE

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 tuition proposal for the Graduate Certificate in Aquaculture. 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 and a face-to-face meeting. 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 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 of Land and Food Systems. Please see Appendix 1 for the invitation and tuition rationale document.

Timelines: The e-consultation was conducted over the period of Thursday 30th May to Friday 28th June.

Summary of Student Feedback: Submissions were received from the AMS and GSS. The Faculty of Land and Food Systems provided a response to questions posed by the GSS. The verbatim submissions and response are in Appendix 2.

Organization	Summary
AMS	<p>A UNIQUE, ALBEIT COSTLY OPPORTUNITY "While we note concern with the proposed tuition being among the highest in Canada for similar programs, we recognize the comparative affordability alongside international offerings. Additionally, the UBC certificate presents a unique opportunity for students to study aquaculture at a top research institution, while similar program offerings are limited to smaller colleges."</p> <p>VALUE IN CONDENSED PROGRAM "The AMS appreciates the need for a Graduate Certificate in Aquacultures, and the opportunity for our students to become leaders in this growing specialization. Additionally, we see value in the program as an opportunity for condensed, accelerated learning that will appeal to students and professionals eager to quickly re-enter the industry."</p>
GSS	<p>COST OF PROGRAM "We would caution that the interest in the program at the proposed fee level should not necessarily be taken as an indicator of affordability. We would urge the University to monitor the fee levels closely to ensure that students with a genuine desire to take this program are not excluded."</p> <p>AVAILABILITY OF SCHOLARSHIPS "We also believe that scholarships and bursaries have an important role to play in making programs such as this accessible and look forward to an update on what will be available."</p>

No individual student submissions were received.

APPENDIX 1: INVITATION TO CONSULTATION AND TUITION RATIONALE DOCUMENT

Hello Julia and Razi,

As discussed a few weeks ago there is a tuition consultation for Land and Food Systems that I would like to launch over the summer. Please find details below and tuition rationale attached.

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There is a proposal by the Faculty of Land and Food Systems to create a Graduate Certificate in Aquaculture. 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 to date,
- the tuition rationale for the program, and
- the proposed tuition.

Please share the document and this email as you see appropriate. **Comments on the tuition proposal and student organization submissions can be provided confidentially to Natasha Moore - Analyst, Vice President Students Office (natasha.moore@ubc.ca).**

2. Face to Face meeting

If requested by student representatives, we can arrange a face-to-face 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 28TH JUNE, 2018

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

Natasha

NEW PROGRAM TUITION CONSULTATION

Faculty of Land and Food Systems - Graduate Certificate in Aquaculture

PROGRAM OVERVIEW

The Graduate Certificate in Aquaculture is a one semester, 16-credit specialized program for students interested in entering the aquaculture industry. The program explores principles across the broad scope of fields involved with food production from aquaculture. Subjects include fish health, aquaculture production systems, fish nutrition, ecological sustainability, breeding and genetics, seafood processing, and basic aquaculture business concepts.

Aquaculture is one of the fastest growing food production sectors in the world. The production of farmed fish has surpassed that of farmed beef and that of wild fish globally. Unfortunately, Canada has not kept pace with this global growth in the industry, and production levels have seen little growth over the past two decades. Nevertheless, Canada is the world's fourth largest farmed salmon producer. Technologies are continually advancing and new types of culture systems are being implemented in Canada and globally. One weakness in the industry in North America is the lack of expertise, and lack of trained people entering the industry.

The intended audience for this program are graduates from biology or science programs who are interested in pursuing a career in one of the many branches in the rapidly growing aquaculture field. Students who complete this program will have increased access to some of the many aquaculture careers such as aquaculture entrepreneurs, technologists, researchers, and managers, as well as a variety of jobs in fish feed production, equipment design and supply, fish health services, fish processing, and aquaculture regulation and certification.

STUDENT CONSULTATION DURING THE PROGRAM DEVELOPMENT PROCESS

Students at 4-year degree granting institutions in BC were surveyed to gauge interest in the certificate if tuition for Domestic students was \$10K and for International students was \$15K. Feedback in the form of open-ended questions, requesting additional comments and information was obtained. The number of respondents was 108 with 78 indicating that they would be interested in enrolling in the program and 6 indicating that they were interested but would need more information.

TUITION AND FEES RATIONALE

Proposed tuition for the program is \$9,000 for domestic students (\$562.50 per credit) and \$15,000 for international students (\$937.50 per credit). Additional required student fees include \$750 for travel expenses (field trip transportation) and \$250 for text books and reference materials, which will be supplied to students.

Proposed Course Requirements: Courses will be delivered on campus during Winter Term 1 (September – December). Students will complete the certificate on a full-time basis over a period of 4 months, completing 7 required courses:

Course Code (Number of Credits) Course Name

- AQUA 501 (3) Aquaculture Production Systems
- AQUA 502 (2) Fish Nutrition, Feeds and Feeding
- AQUA 503 (3) Fish Health
- AQUA 504 (2) Finfish Genetics and Reproduction in Aquaculture
- AQUA 505 (2) Ecological Sustainability of Aquaculture
- AQUA 506 (2) Business Concepts in Aquaculture
- AQUA 507 (2) Seafood Processing

Total Credits: 16 credits

Key factors influencing the tuition include:

- Class size of approximately 20 students
- Seven field trips to aquaculture and related sites
- Numerous guest lectures from industry and government experts

Tuition Benchmarking

Table 1: Per-credit tuition at other Graduate Certificate Programs and Science-based professional graduate degrees at UBC (based on Board approved 2019/20 rates for new incoming students)

Program	Domestic per-credit rate	International per-credit rate
UBC Graduate Certificates		
Proposed Graduate Certificate in Aquaculture	\$562.50	\$937.50
Graduate Certificate in Adult Learning and Education	\$462.97	\$591.76
Graduate Certificate in Global Mine Waste Management	\$1,670.00	\$1,670.00
Graduate Certificate in Global Surgical Care	\$451.01	\$939.49
Graduate Certificate in High Performance Coaching and Technical Leadership	\$555.64	\$895.13
Graduate Certificate in Higher Education	\$462.97	\$591.76
Graduate Certificate in Indigenous Public Health	\$510.00	\$624.00
Graduate Certificate in Orientation and Mobility	\$364.24	\$736.01
Graduate Certificate in Orthopaedic and Manipulative Physical Therapy	\$534.23	\$544.71
Graduate Certificate in Rehabilitation Sciences	\$426.61	\$434.98

Table 2: Tuition at Aquaculture Programs

Institution	Program Name	Program Length	Program tuition (Domestic)	Program tuition (International)
Canada				
North Island College, BC	Aquaculture Technician	4 months	\$3,519	\$3,519
Vancouver Island University, BC	Diploma in Fisheries and Aquaculture Technology	2 year co-op program	\$10,639	\$38,100
Dalhousie University, NS	Certificate in Certificate in Aquaculture	15 credits	\$4,506	\$8,335
Memorial University, NL	Certificate in Advanced Diploma in Sustainable Aquaculture	1 year including work term	\$4,050	\$8,100
Fleming College, ON	Graduate Certificate in Certificate in Aquaculture Co-op	1 year co-op program	\$6,372	\$10,858
International				
University of Rhode Island USA	Graduate Certificate in Aquaculture and Fisheries	15 credits	US\$9,055	US\$17,265
Kentucky State University, USA	Certificate Degree in Aquaculture/Aquatic Sciences	12 credits	US\$9,955	US\$9,955
University of Bergen, Norway	Aquaculture Biology	120 ECTS	NOK 0	NOK 0
Norwegian University of Life Science, Norway	Masters of Science in Aquaculture	2 years	NOK 0	NOK 0
University of St. Andrews, Scotland	Sustainable aquaculture (PG Certificate)	1 year min 2 year max	£7,000	£7,000
University of Stirling, UK	Sustainable Aquaculture	1 year	£6,500	£19,850

PROPOSED TUITION AND FEES

Proposed tuition for the program is \$9,000 for domestic students (\$562.50 per credit for 16 credits) and \$15,000 for international students (\$937.50 per credit for 16 credits). Additional student fees include \$750 for travel expenses (field trip transportation) and \$250 for text books and reference material

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APPENDIX 2: STUDENT SUBMISSIONS AND FACULTY RESPONSE

There was a submission from the AMS and GSS, and a response from the Faculty.



Submission to the UBC Board of Governors regarding the Tuition for the new Graduate Certificate in Aquacultures

June 28th, 2019

Dear Board of Governors,

This submission is made on behalf of the Alma Mater Society of UBC Vancouver (AMS) in response to the feedback request from the Vice President Students Office on tuition for the creation of a one -semester specialized graduate certificate program in Aquacultures.

The AMS appreciates the need for a Graduate Certificate in Aquacultures, and the opportunity for our students to become leaders in this growing specialization. Additionally, we see value in the program as an opportunity for condensed, accelerated learning that will appeal to students and professionals eager to quickly re-enter the industry.

The proposed tuition of \$9,000 for domestic students and \$15,000 for international students appears to be consistent with other certificate offerings at UBC. While we note concern with the proposed tuition being among the highest in Canada for similar programs, we recognize the comparative affordability alongside international offerings. Additionally, the UBC certificate presents a unique opportunity for students to study aquaculture at a top research institution, while similar program offerings are limited to smaller colleges.

The AMS supports the implementation of this graduate certificate and looks forward to being updated on the bursaries and scholarships for this program to ensure its accessibility to students of all income levels.

The AMS thanks the University for soliciting student input in this process. We look forward to the creation of this graduate certificate and innovative work of the students who enroll in this program.

Sincerely,

A handwritten signature in black ink that appears to read "Christopher Hakim".

Christopher Hakim
President
AMS Student Society of UBC Vancouver
president@ams.ubc.ca

A handwritten signature in black ink that appears to read "Julia Burnham".

Julia Burnham
Vice President Academic and University Affairs
AMS Student Society of UBC Vancouver
vpacademic@ams.ubc.ca

SUBMISSION FROM GSS



Thea Koerner House
225 - 6371 Crescent Rd. Vancouver
604.822.3203
gss.ubc.ca

Submission to the UBC Board of Governors regarding the Tuition for the new Graduate Certificate in Aquacultures

July 11, 2019

Dear Board of Governors,

This submission is sent on behalf of the Graduate Student Society of UBC in response to the feedback request from the Vice President Students Office on tuition for the creation of a one -semester specialized graduate certificate program in Aquacultures.

As a Society we try to provide feedback that reflects dual desires of graduate students:

- That the University is able to meet its goal of providing outstanding and relevant programs for graduate students
- That graduate education at UBC should be affordable and accessible

We recognize that this new Certificate meets a significant need in a rapidly growing economic sector. It is also a program that dovetails with UBC's research strengths and offers students access to some outstanding facilities.

We also appreciate that the program is structured to meet the needs of students in existing employment who wish to enhance their professional skills.

The proposed tuition of \$9,000 for domestic students and \$15,000 for international students is consistent with similar programs domestically and internationally.

However, we would caution that the interest in the program at the proposed fee level should not necessarily be taken as an indicator of affordability. We would urge the University to monitor the fee levels closely to ensure that students with a genuine desire to take this program are not excluded.

We also believe that scholarships and bursaries have an important role to play in making programs such as this accessible and look forward to an update on what will be available.

The GSS would like to thank the University for the opportunity to provide input in this process. We look forward to the meeting the first students on the new Certificate and to seeing them succeed at UBC.

Sincerely,

A handwritten signature in black ink, appearing to read "Razi Bayati".

Razi Bayati

Vice Provost University and Academic Affairs

RESPONSE FROM FACULTY OF LAND AND FOOD SYSTEMS TO GSS INITIAL QUESTIONS

Question: Why only one semester? What's the need? Why do we need another certificate and why can't it be added it to our current programs?

The certificate is scheduled for one term to allow for the integration of material that will occur as the courses are taught at the same time. For example, there is a project on a new salmonid feed that students will complete that will be part of two different courses – for one course the focus will be on the biological/metabolic while for the second, the business engineering aspects will be reported.

The certificate is designed as a graduate certificate and the students enrolled will have completed a relevant BSc (or BEng) degree. Therefore, it will not be available to undergraduates currently in a degree program. Graduate level offerings in aquaculture are missing from the BC educational institutions.

Question: Any data/resource to support your claims of "Aquaculture is one of the fastest growing food production sectors in the world"?

FAO. 2016. *The State of World Fisheries and Aquaculture 2016*. Rome.

FAO. 2017. *The future of food and agriculture – trends and challenges*. Rome.

FAO. 2018. *The State of World Fisheries and Aquaculture 2018 - Meeting the sustainable development goals*. Rome. Licence: CC BY-NC-SA 3.0 IGO. ISBN 978-92-5-130562-1

Question: The tuition seems to be high for a certificate. Do you know the future job opportunities will be to support this price?

Regarding employment in the aquaculture and related industries, the attached document summarizes a survey of some local industries conducted in Feb 2019, indicating that there will be employment opportunities in BC for certificate graduates. Certificate graduates may also find employment in other locations.

Specialization in aquaculture training is not offered at UBC, in the Faculty of Science or elsewhere, and there are no graduate certificates offered in BC. This is a gap, that this program will fill. We plan to work cooperatively with the Faculty of Science, and utilize the expertise that does exist in various units, including the Institute for Oceans and Fisheries and the Dept of Biology and Zoology. In addition, the Faculty of Land and Food Systems will be hiring a chair in aquaculture in the next year.

A survey of interest from students currently enrolled in degree granting institutions in BC was undertaken in the Fall of 2018 which stated that the expected tuition for the program would be \$10K for Domestic and \$15K for international students. There was strong interest in the program with more than 70 responses for the anticipated 20 seats, indicating that they would be interested in the certificate program. The certificate must be self-funding in order to be offered. The tuition was established to ensure that this will be the case.

Question: Are these courses already offered in the university or these are new courses developed for this program?

All 7 courses offered in the certificate are new courses that have been approved by Senate.

Question: Why students should choose this one? Why we should offer it when other universities have same program with lower tuition or stronger certificate at the end? What are the advantages of this certificate that can encourage students to enroll?

Students should be interested in this program as it will take advantage of the world class facilities that are available at the Pacific Science Enterprise Centre, Dept of Fisheries (West Vancouver labs), and the unique expertise in seafood processing available in the Food, Nutrition and Health program. It will prepare students with exposure to local industries for local employment. We expect that the majority of the students will be local (from BC) which will require minimal relocation costs. The Vancouver Island University is not currently offering a graduate certificate. There is a need for additional trained personnel as BC is an importer of trained aquaculture workers.

UBC Aquaculture Certificate Program Industry Survey for Employment of Graduates

February 28th, 2019

BC Salmon Aquaculture Industry

A survey was conducted in February 2019 with the largest finfish aquaculture companies in British Columbia. Most of the companies were members of the BCSFA which represents more than 95% of the finfish aquaculture production in British Columbia and includes the following three largest producers: Marine Harvest Canada, Cermaq Canada, and Grieg Seafood BC.

BC Freshwater and Land Based Aquaculture Industry

The land based sector is relatively small in BC, though there is an increasing interest in rearing salmon in land based systems. The farms include tank production of salmon, trout, charr, sturgeon, tilapia, and shrimp as well as lake production of trout by West Coast Fish Culture, the largest freshwater producer in BC.

Market Demand for Program Graduates

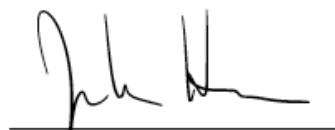
The goal of the UBC Aquaculture Programs is to prepare students for careers in a wide range of fields related to aquaculture. Together with industry experience, graduates can become aquaculture entrepreneurs, technologists, researchers, and managers, as well as being involved with a variety of jobs in fish feed production, equipment design and supply, fish health services, fish processing, and aquaculture regulation and certification. Career opportunities are available in BC, Canada, and internationally both in the developed and developing world.

Local market demand was evaluated via consultations and discussions with the largest aquaculture companies in BC as well as other related organizations. The following table shows the results of the survey conducted with the production industry in BC. Note that additional demand will come from other producers across Canada and internationally, DFO Science, DFO Enhancement, DFO Regulatory, fish health laboratories, fish feed manufacturers, fish processing plants, as well as support industries.

Aquaculture Industry Employment Survey

Company	Industry	Anticipated Hires/yr	Comments
Marine Harvest	Salmon farming	5	5 is the minimum
Cermaq Canada	Salmon farming	10	Many entry level jobs
Grieg Seafood BC	Salmon farming	10	Range up to 20
West Coast Fish Culture	Trout farming	1	1-2
Other land based	salmon, trout, tilapia, sturgeon, char	2	Estimated minimum
Freshwater Fisheries Society of BC	Trout stocking	0	They would hire from the Master Degree program
Total		28	

Best Regards,



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THE UNIVERSITY OF BRITISH COLUMBIA



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MEMORANDUM

TO: Professor Santa J. Ono, President and Vice-Chancellor *SJO*
FROM: Professor Andrew Szeri, Provost and Vice-President, Academic *AS*
DATE: June 4, 2019
RE: Non-refundable Acceptance Deposit for the Graduate Certificate in Aquaculture (pending Board approval)

It is hereby requested that the President approve a non-refundable acceptance deposit of \$3,000 for domestic students and \$5,000 for international students accepting offers of admission to the Graduate Certificate in Aquaculture (pending Board approval), effective in the academic year 2020/21. The non-refundable deposit will be levied when a student accepts an offer of admission and is applied to the student's first tuition instalment.

BACKGROUND AND RATIONALE

The Graduate Certificate in Aquaculture is a new one-semester, 16-credit specialized program, for students interested in entering the aquaculture industry. A proposal with a recommended tuition rate is pending Board approval; a full report will be submitted for the September 2019 Board of Governors meeting. The Faculty of Land and Food Systems proposes to implement a non-refundable acceptance deposit of \$3,000 for domestic students and \$5,000 for international students. The deposit will be applied to the tuition for the 16-credits of the program. Students who accept an offer of admission and then fail to register, or register and then withdraw, without extenuating circumstances will forfeit their deposit. The intent of the acceptance deposit is to encourage applicants to make their acceptance decisions in a timely manner and to follow through on their intentions. Such timely decisions permit the program to make offers to waitlisted students if and when space becomes available. The intent of the fee is not to place undue hardship on applicants.

These deposits require the President's approval, which is shared with the Board, as an information item. To expedite the process and to avoid the two-step Board approval process applied in the past, the President is asked to approve the deposit, conditional on the Board's approval of the program and its tuition rate.

Consultation with the Alma Mater Society (AMS) and Graduate Students Society (GSS) will occur between May 30 and June 28, 2019, and the full details of the proposal for the Graduate Certificate in Aquaculture will be submitted to the Board, for approval, in September 2019.

Schedule of Implementation:

Academic Year 2020/21.