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<b>SUBJECT</b>	Tuition - Graduate Certificate in Clinical Informatics
<b>SUBMITTED TO</b>	Finance Committee
<b>MEETING DATE</b>	March 22, 2023
<b>SESSION CLASSIFICATION</b>	Recommended session criteria from Board Meetings Policy: OPEN
<b>REQUEST</b>	<p>APPROVAL REQUESTED</p> <p>IT IS HEREBY RESOLVED that the Finance Committee, in accordance with authority delegated by the Board of Governors, approves 2023-2024 tuition of \$800.00 per credit for the Graduate Certificate in Clinical Informatics (GCCl) for both domestic and international students, subject to increases as approved by the Board of Governors.</p>
<b>LEAD EXECUTIVE</b>	Gage Averill, Provost and Vice-President Academic, UBC Vancouver
<b>SUPPORTED BY</b>	Simon Bates, Vice-Provost and Associate Vice-President Teaching and Learning <i>pro tem</i> Bhushan Gopaluni, Vice-Provost and Associate Vice-President Faculty Planning <i>pro tem</i>

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**PRIOR SUBMISSIONS**

The subject matter of this submission has not previously been considered by the Finance Committee.

**EXECUTIVE SUMMARY**

The School of Nursing in the Faculty of Applied Science at UBC Vancouver is proposing the development of a new Graduate Certificate in Clinical Informatics (GCCl). Students will be required to complete 9 credits that will be delivered 100% online, over 11 months. The GCCl is designed for all healthcare professionals who have a clinical practice license and who are either working in or interested in health informatics, including clinicians in nursing, social work, pharmacy, dietetics, medicine, PT, OT, and others.

The program was approved by the UBC Vancouver Senate in February 2023. Pending approval from the Board of Governors, the program will admit its first cohort of students in September 2023.

In the 2023-2024 academic year, proposed tuition fees for the GCCl are \$800.00 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. The School hopes to enroll 12 students in year 1, increasing to 30 students by year 7. All fees are subject to increases as approved by the Board of Governors.

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 02, 2022 to December 02, 2022. Submissions were received from the AMS and the GSS, both of whom were 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.

This program aligns with UBC’s strategic goals, and the School of Nursing’s specific aims, to provide exceptional graduate education and prepare professionals for public service roles who take responsibility for their professional conduct and actions and delivering upon our respective and reciprocal commitments to the public in B.C. and beyond.

The certificate specifically addresses the following UBC Strategic Goals:

**Strategy 4: Inclusive Excellence:** We have incorporated relevant aspects of equity, diversity, inclusion and Indigeneity into the courses offered in the GCCI. While we recognise that small parts of courses in a program will not fully redress historical injustices, we believe that ‘you need to start somewhere’. In our consultation with the BC Ministry of Post-Secondary Education and Future Skills they noted that weaving EDI-I across the courses communicates that there is a professional responsibility for all BC healthcare workers to advance reconciliation and act in ways that promote cultural safety and anti-racism for patients and fellow colleagues at all times. These goals are also signaled by the Government of BC’s recent enactment of the Anti-Racism Data Act.

**Strategy 11: Educational Renewal:** The program expands on existing graduate course curricula to provide working professionals the opportunity to continue to work while completing the certificate. Courses will be delivered online with weekly synchronous discussions sessions. The certificate is designed to leverage active learning strategies and project-based learning by encouraging learners to draw from their current work and context as health care professionals to complete assignments.

**Strategy 14: Interdisciplinary Education:** The program will bring in students from a wide variety of clinical backgrounds, in addition to Nursing experts, the guest lecturers will be from broad domains including medicine, occupational therapy, and social work, among others.

**Strategy 16: Public Relevance & Strategy 20: Co-ordinated Engagement:** This program was created through multiple consultations with local health authorities who have informed decisions around the content, duration, mode of delivery, and tuition. We are creating a BC-based program advisory board who will participate in tailoring the course content in coming years so that the course stays relevant for clinical informatics professionals of today and the future.

The field of health informatics (also called biomedical informatics, eHealth, digital health) is at the intersection of multidisciplinary clinical practice, technology (computer science & engineering), patient data, and patient care. In Canada and internationally, there has been a rapid increase in the use of technologies for managing patient care. Although health professionals are the major end-users of health technologies, the development (and frequently, implementation) of health technologies are largely the domain of computing professionals or vendor organizations. Thus, most health professionals are not equipped with the requisite knowledge to assume the growing number of clinical informatics roles embedded within many health organizations. This program was developed at the behest of local healthcare leaders who are implementing electronic health records and who foresee this as an area of need for specially trained clinicians who will bring both an understanding of healthcare provider context and technology to support provision of healthcare.

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## APPENDICES

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

## Tuition and Fee Assessment Details

**Program Description:** Graduate Certificate in Clinical Informatics

**Anticipated Start Date:** September 2023

	Domestic	International
Tuition fees per credit – Note 1	\$800.00	\$800.00
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 CLINICAL INFORMATICS

### STUDENT TUITION CONSULTATION REPORT

The Vice-President, Students Office, in partnership with UBC’s School of Nursing in the Faculty of Applied Science, conducted a student consultation regarding the proposal for a 100% online, 9-credit (3-course), 11-month Graduate Certificate in Clinical Informatics (GCCI). 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
<b>AMS</b>	<p><b>Support for proposed program</b>                      “The AMS is in favour of this proposed certificate program. We believe the Graduate Certificate of Clinical Informatics program supports a student-centred curriculum that will be effective in improving the professional development of health professionals and other students that choose to enrol. Furthermore, the AMS appreciates effort to create a program tailored for the professional development of health professionals that is also accessible to all students.”</p>
<b>GSS</b>	<p><b>Support for proposed program</b>                      “Overall, we think that the graduate certificate in clinical informatics is a good idea and should be implemented according to the proposed plan.”</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 UBC's School of Nursing in the Faculty of Applied Science for a 9-credit (3-course), 11-month Graduate Certificate in Clinical Informatics (GCCl). The program will be delivered fully online with synchronous and asynchronous components, tailored for working healthcare professionals, and will be open to both domestic and international students.

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](mailto: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

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## NEW PROGRAM TUITION CONSULTATION: GRADUATE CERTIFICATE IN CLINICAL INFORMATICS

### PROGRAM OVERVIEW

UBC's School of Nursing in the Faculty of Applied Science is proposing a 9-credit (3-course), 11-month Graduate Certificate in Clinical Informatics (GCCl). The program will be delivered fully online with synchronous and asynchronous components, tailored for working healthcare professionals, and will be open to both domestic and international students.

Clinical informatics, also known as health informatics, describes the study of how technology and data analytics can be applied to improve patient care. In Canada and internationally, there has been a rapid increase in the use of technologies for managing patient care. Health professionals have leveraged technology solutions including electronic health records, clinical decision support systems, and patient monitoring devices to improve patient care. Although health professionals are the major stakeholders in the utilization of technologies, the development (and frequently, implementation) of health technologies are largely the domain of computing professionals or vendor organizations. Thus, most health professionals are not equipped with the requisite knowledge to assume the growing number of informatics roles embedded within many health organizations. This presents challenges with the effective use of clinical informatics solutions to provide optimal patient care. In recognition of this issue, healthcare organisations have consistently increased the number of clinical informatics roles across their organisations across the globe and within Canada. To fill these roles, most health professionals are recruited and trained on the job, thus increasing operational costs to the health authorities and sometimes low motivation for staff to remain in those positions. This certificate program is meant to fill this gap by providing healthcare professionals with the foundational knowledge to appreciate the "technical language" in designing, implementing and utilization of clinical informatics solutions in healthcare settings.

The labour market demand for clinical informatics specialist roles is not only relevant in Canada, but exists beyond Canada. In their recent report<sup>1</sup>, the Organisation for Economic Co-operation and Development indicate that "...there is shortage of individuals with hybrid skill-mix needed to manage the transformation..." from paper to digital healthcare delivery. A 2015 report from The Information and Communications Technology Council<sup>2</sup> in Canada projected an 82% increase between 2015 and 2020 (from ~50K health IT workers in 2015 up to ~80K health IT workers in 2020). These numbers were relevant based on the premise that health IT was the sole responsibility of technology professionals. However, the recognition that clinicians *must be involved* in the development of informatics solutions and tools for clinicians has been growing and is becoming standard and best practice. Notwithstanding the current healthcare professional crisis, there will continue to be a growing need for clinicians to become fluent in technology communication to ensure that informatics solutions for clinicians meet clinician's working needs but also support safe patient care.

It is important to note that while the GCCl will be offered in the School of Nursing, the program is open to all other healthcare professionals who have at least a bachelor's degree including clinicians in nursing, social work, pharmacy, dietetics, medicine, PT, OT, and others. Not only is nursing the largest group of healthcare professionals, nurses are largely responsible for care-coordination across healthcare teams, and are thus aware of the general roles of most healthcare professions. Further, multiple alumni and industry leaders

<sup>1</sup> Organisation for Economic Co-operation and Development. Empowering the health workforce: Strategies to make the most of the digital revolution. July 19, 2021. <https://www.oecd.org/digital/empowering-the-health-workforce-to-make-the-most-of-the-digital-revolution-37ff0eaa-en.htm>

<sup>2</sup> The Information and Communications Technology Council (2015) Digital Health in Canada: Exploratory Analysis of Canada's Domestic Health ICT Sector. <https://www.canada.ca/en/health-canada/corporate/transparency/corporate-management-reporting/report-plans-priorities/2022-2023-report-plans-priorities.html>

who are from non-nursing backgrounds (e.g., Social Work, Pharmacy, Physical Therapy) indicated that they would be willing to consult on an ongoing basis and provide guest lectures to ensure that an interprofessional perspective was achieved.

Graduates of the program will be able to:

- Collaborate with technical teams in healthcare organisations
- Communicate functional and design requirements to technical teams
- Elicit information from clinicians to articulate technical needs which meet clinical goals
- Lead local clinical informatics projects in healthcare organizations
- Navigate implications of design and project decisions
- Apply approaches to advance equity, diversity, inclusion and Indigeneity (EDI-I) in the design and use of clinical informatics solutions.

#### STUDENT CONSULTATION DURING THE PROGRAM DEVELOPMENT PROCESS

In May-June 2022, we conducted a survey of prospective students, specifically current students and alumni in the following departments/schools at UBC: School of Social Work, School of Nursing, Counselling Psychology, Dental Hygiene, Dentistry, Dietetics, Family Practice, Midwifery, Medical Genetics, Physical Therapy, Occupational Science and Occupational Therapy, School of Audiology and Speech Sciences, School of Population and Public Health, Pharmaceutical Sciences. We had a response rate of 5.6% (n= 369). Survey respondents were mainly UBC alumni (69%) with a Master's degree (64%) living in BC (86%).

Overall, respondents agree (85%) the proposed GCCI program addresses an unmet need. We heard:

- There is a **lack of formal education on clinical/health informatics** in BC. What is currently available is **not specialized enough** to fill the need of the changing (patient/society) needs. The proposed program could fill this need and allow professionals to upskill with a shorter program.
- With the increase in usage and adaptation of digital health, there is expectation for nurses and other health professionals to understand the software and technology, yet there is **lack of training available; much is learned on the job without fully understanding the usage.**
- There is need:
  - To **bridge the clinical needs/understanding with the data science/information management teams**
  - For interdisciplinary teams to have better communication
  - For Understanding of **how data/information system can be used to provide better patient care**, support and response time.

Although respondents indicate the proposed program would address an unmet need in the BC healthcare education, the likelihood of applying for the certificate are dispersed. 39% would consider applying for the program. 31% indicated they were undecided. The top three reasons/barriers respondents indicated for being unlikely or undecided on applying to the program were: unsure how the content will benefit my career; lack of employer/organizational support; and unsure how the credential will benefit my career. These concerns are not surprising given the relative current lack of clinical/health informatics programming in the province (aside from the UVic program) and thus lack of knowledge/information about the benefits and opportunities.

Finally, students and alumni were asked to indicate their preference between three types of credentialing and overwhelmingly indicated preference for a credit-granting credential (Credit Graduate Certificate (68.9%), non-credit courses (19.5%), Non-Credit Micro-Credential (7.3%).



### Sample student and alumni survey comments:

- *“Need for formally trained clinical informaticists. Most clinicians in the field receive on the job training only which could be better supported by formal informatics competencies and a foundational curriculum to support advanced learning and skillsets. Very few frontline nurses are *currently prepared to lead in this digital age.*”*
- *“I think this program could certainly serve an unmet education need. I am a genetic counsellor who works full time in research, and have been involved in database design and management, solving strategies for obtaining, handling and storing large genetic and clinical imaging data files and incorporating machine learning algorithms into research design. Most of this information (learning MySQL and command line interface, using AWS and UBC Sockeye, navigating security risk assessment, learning basics of machine learning/AI, etc.) has all been learned on the job with very limited training available and was challenging to navigate. For a few years, my number one recommendation to undergrads considering a healthcare career is to take at least one computer science elective.”*
- *“Bridging clinical practice with technology skills and a general knowledge of system design is so important to fill the gap between what software designers do and what clinicians need. The only thing about SPPH that I've been disappointed by is the fact that there is only one health informatics course out of our school, and I had to apply to take electives from the ischool on data management (that were not focused on health data).”*
- *“As Health Care Organizations are increasingly implementing health information technologies and looking to use data to inform decision making - clinicians taking up roles to support this work require foundational, informatics knowledge.”*

Extensive consultation with industry leaders was also conducted including 1:1 discussions and a survey. The survey of industry stakeholders was conducted between August-September 2022 with an 85% response rate. Responses were received from individuals across Vancouver Coastal Health (9 respondents), Providence Health Care (4 respondents), PHSA (7 respondents), Island Health (2 respondents), Fraser Health (2 respondents), Northern Health (3 respondents) and Interior Health (2 respondents). Some highlights:

- 86% indicated this will **program produce graduates who would meet an unmet need in their organization and/or industry.**
- 89% felt it was likely that completion of this program **would enable people to progress more quickly in their careers and 44% indicated it was likely that graduates could enter an organization at a more senior level.**
- 90% indicated they **would you be supportive of individuals within their organization in applying for this program.**
- 82% of respondents were interested in serving as an Advisory Committee member and 69% as possible guest lecturers in the program. We are currently formalising the constitution of the advisory committee.

### TUITION AND FEES RATIONALE

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

- \$800.00 per credit for domestic students
- \$800.00 per credit for international students

These fees are subject to increases as approved by the Board, leading up to the program's launch in September 2023.

Program enrolments are anticipated to be 15 students in the first year (12 domestic & 3 international), growing to 45 students (30 domestic & 15 international) per year at year 6.

In setting tuition, we reviewed tuition rates for comparable programs which indicated a range of tuition fees across multiple programs. The total fees for the GCCI will be \$7,200 and we propose setting domestic and international fees as equivalent recognizing that the program will be offered online.

University	Program	Per Credit Tuition (Domestic/International)
University of British Columbia - Vancouver	Graduate Certificate in Clinical Informatics	Per credit: \$800.00 (domestic and int'l) – total program \$7,200
British Columbia Institute of Technology	Advanced Certificate in Digital Health ( <i>not graduate level - proposed and not yet launched</i> )	Per credit: \$248.89 (domestic only) – total program \$5,973
Dalhousie	Certificate in Health Informatics	Per credit: \$1,357.42 – total program \$27,148.42
McMaster	Diploma in Health Informatics ( <i>not graduate level</i> )	Per credit: \$290.03 – total program \$6,960
Ontario George Brown College	Graduate Certificate in Health Informatics	Total program: \$7,000/\$17,284 (domestic/int'l)
University of British Columbia - Vancouver	Certificate in Biomedical Visualization and Communication ( <i>non-credit</i> )	Per Credit: \$962.50 – total program \$11,550
University of British Columbia - Vancouver	Graduate Certificate in Primary Health Care	Per credit: \$884.34 (domestic only) – total program \$10,612.08
University of British Columbia - Vancouver	Graduate Certificate in Global Surgical Care	Per credit: \$478.61/\$1,056.78 (domestic/int'l) – total program \$5,743.32/\$12,681.36 (domestic/int'l)
University of Toronto	Master of Health Informatics	Per Credit: \$671.33 /\$2,645.33 (domestic/int'l) – total program \$20,140/\$79,360 (domestic/int'l)
University of Victoria	Professional Certificate in Health Terminology Standards ( <i>non-credit</i> )	Total program \$7,000/\$7,994 (domestic/int'l)
University of Victoria	Dual Masters in Nursing and Health Informatics	Per Credit: (3 yrs vs 5 yrs) \$583.05 to \$732.20 (domestic) & \$758.82 to \$952.94 (int'l) – total program \$34,400/\$43,200 (domestic) to \$64,500/\$81,000 (int'l)

<b>PROPOSED TUITION AND FEES</b>
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**Program Description:** Graduate Certificate in Clinical Informatics

**Anticipated Start Date:** September 2023

	Domestic	International
Tuition fees per credit – Note 1	\$800.00	\$800.00
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 Clinical Informatics**

Dear members of the UBC Board of Governors,

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

Most health professionals are not equipped with the knowledge required to undertake clinical informatic roles in their health organisations, yet the profession greatly benefits from increasing technology as it improves patient care. On-site training is a temporary solution, as it increases operational costs and creates low motivation for the professionals. This program will meet the rising demands for clinical informatics by giving health professionals the foundational knowledge and practices needed for them to use clinical informatics for patient care.

The AMS is in favour of this proposed certificate program. We believe the Graduate Certificate of Clinical Informatics program supports a student-centred curriculum that will be effective in improving the professional development of health professionals and other students that choose to enrol. Furthermore, the AMS appreciates effort to create a program tailored for the professional development of health professionals that is also accessible to all students.

The AMS would like to sincerely thank the Faculty of Applied Science for their commitment to improve the professional development of health professionals and bridge a gap in our healthcare system. We hope to see this continue and look forward to working with UBC to offer educational programs that are tailored to improving the professional development of its students. 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 Clinical Informatics**

This proposal for a graduate certificate in clinical informatics, if implemented, would clearly address an important gap for health professionals. As shown, we agree that the advantages of healthcare professionals learning technological skills is necessary to improve their skills, help them feel more confident in their use of data/data-related technologies and prepare them competitive for specialized roles as clinical informaticists.

The small cohort of 15 students for the first year seems reasonable as it is a size small enough for a pilot cohort and one that would tend to promote peer-to-peer interactions. Finally, we believe that the tuition fee set at \$800 per credit for both international and domestic students is reasonable. This fee is also lower than most other universities in Canada which offer similar course(s).

The difference in application fees between domestic and international students is noted to be \$56 higher. The reason for this is unclear.

Overall, we think that the graduate certificate in clinical informatics is a good idea and should be implemented according to the proposed plan.