Okanagan Senate

THE NINTH REGULAR MEETING OF THE OKANAGAN SENATE
FOR THE 2018/2019 ACADEMIC YEAR

THURSDAY, 16 MAY 2019
3:30 PM | ASC 130

1. Senate Membership – Dr Kate Ross

**Nominating Committee**

In response to the call for nominations issued at the previous meeting, two nominations have been received for the Senate Nominating Committee for two (2) student members of Senate. Ms Kelsey DesRoches and Mr Jassim Naqvi is acclaimed as elected until 31 March 2020 and thereafter until replaced.

**Declarations of Vacancies**

Dr James Johnson, Representative of the Joint Faculties (Rule 12: Absent without leave for three consecutive regular meetings of Senate)

Dr Jason Loeppky, Representative of the Faculty of Arts and Sciences (Resigned)

2. Minutes of the Meeting of 25 April 2019– Dr Santa Ono (approval) (docket pages 4-16)

a. Amendment from the Agenda Committee to strike the Declaration of Vacancy for Dr Wylie from the Minutes (approval) – Dr Peter Arthur

3. Business Arising from the Minutes – Dr Santa Ono

4. Remarks from the Chair and Related Questions – Dr Santa Ono (information)

5. Remarks from the Deputy Vice-Chancellor and Relation Questions – Prof. Deborah Buszard

6. Candidates for Degrees – Dr Santa Ono
The list as approved by the faculties is available for advance inspection at the Senate office, and will also be available at the meeting.

The Chair of Senate calls for the following motion:

*That the candidates for degrees and diplomas, as recommended by the faculties, be granted the degrees for which they were recommended, effective May 2019, and that a committee comprised of the Registrar, the dean of the relevant faculty, and the Chair of Senate be empowered to make any necessary adjustments (approval) (2/3 majority required).*

7. **From the Council of Senates – Dr Ramon Lawrence**
   Annual Report of the Budget Committee (Academic Building and Resources Committee) (information) (docket pages 17-21)

8. **Academic Policy Committee – Dr Jan Cioe**
   Establishment of the Canadian Institute for Inclusion and Citizenship (approval) (docket pages 22-70)

9. **Admissions & Awards Committee – Ms Tamara Ebl**
   a. Suspension of Admissions to the Bachelor of Media Studies (approval) (docket pages 71, 74-76)
   b. Revisions to the English Language Admissions Standard (approval) (docket pages 72-73, 77-78)
   c. New and Revised Awards (approval) (docket pages 89-91)

10. **Agenda Committee – Dr Peter Arthur**
    Draft Senate Code of Conduct and Conflict of Interest Rules (information) (docket pages 92-100)

11. **Appeals on Standing and Discipline Committee – Dr Robert Campbell**
    Annual Report (information) (docket pages 101-104)

12. **Curriculum Committees – Dr Peter Arthur**
    a. Revisions to the Bachelor of Arts (approval) (docket pages 105-180)

13. **Learning & Research Committee – Dr Deborah Roberts**
    a. Candidates for Emeritus Status (approval) (docket pages 295-296)
b. Nomination of Candidates for Honorary Degrees (information)

14. Nominating Committee – Dr Jannik Eikenaar
   a. Senate Membership (approval) (docket page 297)
   b. Vice-Chair of Senate (approval) (docket page 297)
   c. President’s Advisory Committee for the Selection of a Deputy Vice-Chancellor (approval) (docket page 298)
   d. President’s Advisory Committee for the Selection of a Vice-President Human Resources (approval) (docket page 298)
   e. Appointments to Committees of Senates (approval) (docket pages 298-299)

15. Other Business

   The Rules and Procedures of the Okanagan Senate states that meetings will adjourn no later than 5:30 p.m.

   Regrets: Telephone 604.822.5239 or e-mail: facsec@mail.ubc.ca

   UBC Senates and Council of Senate website: http://www.senate.ubc.ca
OKANAGAN SENATE

MINUTES OF 25 APRIL 2019

DRAFT

Attendance


Clerk: C. Eaton

Call to Order

The Chair of Senate, Dr Santa J. Ono called the meeting to order at 3:32 pm.

Senate Membership

New Members

The Registrar welcomed the following new members to Senate:

Mr Abdul Alnaar, Representative of the Convocation, until 31 August 2020 and thereafter until replaced, to fill a vacancy.

Mr Venedict Tamondong, Representative of the Students of the Faculty of Applied Science (Continuing), until 31 March 2020 and thereafter until replaced

Mr Shao Yuan Chong, Representative of the Students of the Faculty of Arts and Sciences (Continuing), until 31 March 2020 and thereafter until replaced

Ms Simran Sandhu, Representative of the Students of the Faculty of Health and Social Development, until 31 March 2020 and thereafter until replaced
Ms Deborah Efretuei, Representative of the Students of the Faculty of Management, until 31 March 2020 and thereafter until replaced

Mr Hogun Kang, Graduate Student Representative, until 31 March 2020 and thereafter until replaced

Ms Laura Mudde, Graduate Student Representative, until 31 March 2020 and thereafter until replaced

Ms Kelsey Desroches, Representative of the Students At-large (Continuing), until 31 March 2020 and thereafter until replaced

Ms Geethma Jayathilake, Representative of the Students At-large, until 31 March 2020 and thereafter until replaced

Mr Jesse Lafontaine, Representative of the Students At-large, until 31 March 2020 and thereafter until replaced

Mr Jassim Naqvi, Representative of the Students At-large (Continuing), until 31 March 2020 and thereafter until replaced

Ms Abbey Shields, Representative of the Students At-large, until 31 March 2020 and thereafter until replaced

Ms Gurjot Sidhu, Representative of the Students At-large, until 31 March 2020 and thereafter until replaced

DECLARATION OF VACANCY

The Registrar informed Senate that Dr Peter Wylie had missed three consecutive regular meetings without leave of the Agenda Committee and therefore under Rule 12 of the Rules and Procedures of Senate his seat would be declared vacant with the adoption of this meeting’s minutes.

Minutes of 28 March 2019

    Jan Cioe
    Dwayne Tannant

That the Minutes of the Meeting of 28 March 2019 be adopted as corrected.

Capitalization of “president” and “university” when referencing UBC.
Replace “Considering” with “consideration” on page 3.
Replace “faculty” with “factor” on page 6.
Several missing hyphens.

Learning and Research Committee

MEMORIAL MINUTE FOR W. WESLEY PUE

W. Wesley Pue is widely recognized as one of Canada’s leading legal historians; a renowned lawyer, academic and the Nemetz Professor of Legal History at the Peter. A. Allard School of Law.

Professor Pue was educated in England at Gresham’s School, Holt and then at Regent’s Park College, University of Oxford, completing a Bachelor of Arts in Geography (1977), followed by a Bachelor of Arts in Jurisprudence (1979). Relocating to Canada shortly thereafter, he completed a Master of Laws at the University of Alberta in 1980. He taught at Osgoode Hall Law School, Oklahoma City University, and Carleton University. At the University of Manitoba, he was Johnson Professor of Legal History and the Director of the Canadian Legal History Project.

Professor Pue joined UBC’s Faculty of Law in 1993, and was the first holder of the Nemetz Chair in Legal History. From 1996 to 1998, he was the director of UBC’s graduate program in Law. He also served as Associate Dean for Graduate Studies and Research (2003-2007), acting Director of the Individual Interdisciplinary Studies Graduate Program, Vice-Provost (Vancouver Campus, 2007-2011), and Provost (Okanagan Campus, 2011-2013).

Called to the Bars of the Northwest Territories and Alberta and an honorary member of the Honourable Society of Inner Temple, Professor Pue held faculty positions or visiting professorships in Canada, the USA, England, and Australia and served as President of the Canadian Law and Society Association.

Professor Pue’s research and publications focused primarily on legal history, law and society, law and colonialism, constitutionalism, policing, and national security. He served as the General Editor for Canada’s “Law and Society” book series, published by UBC Press. His book Law School: The Story of Legal Education in British Columbia is widely recognized as an extraordinary contribution to the recorded history of the law school.

During his years at UBC, Professor Pue made many meaningful and lasting contributions, to his students, his Faculty and the University. He championed the Faculty’s graduate research programs and was a mentor to two generations of legal historians and scholars of legal education.
and the legal profession. He was instrumental in the establishment of the LLM Common Law degree program.

To his family and friends, the Senate and the University of British Columbia offer their condolences and thanks.

Deborah Roberts  
Jannik Eikenaar

That Senate approve the Memorial Minutes for Prof. W. Wesley Pue, that they be entered into the Minutes of Okanagan Senate, and a copy be sent to the family of the deceased and forwarded to the Vancouver Senate.

To the prepared memorial, Senator Roberts added that Dr Pue was a strong supporter of the Okanagan campus, often describing Vancouver as its satellite.

Senator Eikenaar noted that as a new faculty member at the Okanagan campus he found then-Provost Pue to be approachable and someone who understood the value and the impact of undergraduate education.

Remarks from the Chair

The President announced that UBC ranked first in the world for taking urgent action to combat climate change and its impacts and ranked first in Canada for making cities inclusive, safe, resilient, and sustainable, according to Times Higher Education. He opined that UBC's achievements in these rankings is a clear reflection of the great work of our students, faculty, and staff who combine their expertise to ensure UBC is a leader in creating vibrant, sustainable, and connected communities and campuses.

Dr Ono noted that in the previous week the UBC Board of Governors endorsed the Okanagan 2040 Plan for UBC Okanagan. The plan envisions that, in 2040, the Okanagan campus will be a thriving UBC community of over 20,000 people, including 18,000 students and 500 faculty members. UBCO will be recognized for its historic partnership with the Okanagan Nation and be a leader in Canada in the proportion of indigenous faculty and students. A transformative UBC investment of $100m will have enabled a successful $200m+ capital campaign to establish endowments so that by 2040 funding per student and student financial support at UBCO will be close to the level on the Vancouver campus. He congratulated Dr Buszard and her team for their work on this plan.

President Ono advised that he and McGill Principal Suzanne Fortier had announced the creation of the Peterson-Wesbrook Scholars Program to support the reciprocal exchange of students.
between McGill and UBC. The program is named in honour of Sir William Peterson, Principal of McGill University from 1895 to 1919, and Frank Wesbrook, founding President of UBC. The Peterson-Wesbrook Scholars Program will facilitate the exchange of students for scholarly work and will allow students to benefit from the special facilities and courses found at each university. Both UBC and McGill have provided seed funding for the program.

Further, the President said that last week he participated in the first ever UBC Emeritus College Symposium, moderating a panel on scholarship in the age of populism and fake news.

Dr Ono noted that UBC Okanagan has achieved a 90% increase in research funding since 2014/2015, and a 239% increase in MITACs funding. UBCO also has high success rates for Natural Sciences and Engineering Research Council and Social Sciences and Humanities Research Council grants exceeding national averages. He also noted UBC’s recent success in research rankings.

The President announced that the Board of Governors had agreed to the recommendation made by the Senate for the split in the role of Deputy Vice-Chancellor from Academic Vice-President, and the conferral of the academic vice-president role upon the Okanagan Provost position.

The President noted that Mr Ainsley Carry was on campus today as he has now started his term as Vice-President, Students.

Finally, the president advised with sadness that Barbara Means-Thistle our Vice-President Human Resources has elected to move to semi-retirement and leave UBC to return to Nova Scotia. He thanked her for all her work for UBC over the past 18 months. The president also advised that we are approaching the end of Deputy Vice-Chancellor Deborah Buzzard’s second term. He noted that there would be many opportunities over the next year to thank The Principal for her work for UBC

Senator Cioe asked what would be covered by the Peterson/Wesbrook Scholars program.

Dr Ono said students would just pay their home university tuition. There is a differential. The money is meant to support hard to meet costs around travel and housing.

In response to further questions from the floor, The President confirmed that the Peterson/Wesbrook Scholars program would be open to students from both campuses and that the timeline for implementation was still under development.

Senator Cioe said that rankings almost always emphasized research. Do we know where we stand with more difficult assessment of teaching?

Dr Ono answered, yes we do, and overall we do very well overall in teaching rankings. We do best in research, and lag most in reputation.
Remarks from the Deputy Vice-Chancellor

Council Budget Committee

Senator R Lawrence introduced the budget presentation and asked Senate to recognize Ms Valerie Nichol, Senior Manager, Finance Strategies, to present.

Senator Chong asked if any of the international funding was needs-based.

Ms Nichols replied it was for entrance awards.

Senator Cioe asked why the human resources staff budget was going from $1.8m to $2.6m 

Deputy Vice-Chancellor Buszard said that this was largely due to new staff to address sexual violence prevention and response.

Senator Ebl asked if the financial aid pool was increasing.

The Provost, Dr Mukherjee-Reed said yes, it happens automatically as it is a set percentage of tuition.

The Registrar, Dr Ross, added that changes in government policy has increased demand for bursaries.

Senator Tannant said there was essentially zero growth in financial aid for graduate students while graduate student growth was around 30%.

Ms Nichol advised that the budgeted number was only for needs-based funding.

Dean Traister noted that of the $10.4m increase in campus operations, $3.9m was going towards faculties. $6.5m was going towards administrative support services.

Ms Nichol said that a lot of those support services are for students. Another aspect is for IT support.

Dean Traister said that this was not a criticism but merely an observation on the visibility of such expenditures.

Dr Buszard said that it was unfortunately how this data was presented. We present on the administrative but not the faculty details. We could gather data differently. She noted that the excellence fund was almost entirely directed towards faculty, research, and student support.
Senator Alnaar asked for examples of what is being funded through the excellence fund.

Dr Barker said Aspire, matching startup funds, and the eminence fund to support research clusters.

The Provost added learning and teaching funds, cooperative education, and experiential learning funding.

Senator Roberts said that investment in faculty is important but service support is important too.

Senator Naqvi asked why international enrolment was a financial risk.

Dr Buszard said global uncertainty. As an example she cited political issues with the Kingdom of Saudi Arabia and the People’s Republic of China. She advised that as a result we budget to be cautious.

Senator Cioe asked if we were adjusting our international enrolment down.

Dr Buszard said we were holding our percentage increase at 2%.

Senator Chong asked why international tuition was increasing by 4% for new students but 3% for domestic.

Dr Buszard said the province mandated no more than 2% increases for domestic students. In the past we have had much larger increases for international. This year the decision was made to hold the international increases to 4% and 3%.

Senator Cioe said that this was a matter of inflation.

Senator Chong asked if there would be increased funding for international awards for continuing students.

The Registrar said that a percentage of tuition was put towards international student financial assistant. She further added that the Deputy Vice-Chancellor award was available for continuing international students.

Senator Cioe said if we draw in students with good entrance scholarships we had to keep in mind their financial needs throughout their programs.
Joint Report on New Programs

NEW DEGREE PROGRAMS

Peter Arthur
Dwayne Tannat

That Senate approve the Ph.D. in Computer Science program and related new courses brought forward from the Faculty of Arts and Sciences and the Ph.D. in Nursing program and related new courses brought forward by the Faculty of Health and Social Development.

Senator Cioe said that the number of faculty in nursing was small for supporting a PhD program. We need to be cognizant that initially students may have difficulty as a result.

Senator Jakobi said Nursing currently takes out Ph.D. students as interdisciplinary students.. The lack of Ph.D. trained nurses is an international crisis.

Admission and awards

Chair Pro Tem. of the Admissions & Awards Committee, Ms Tamara Ebl, presented

POLICY 0-200: STUDENT AWARDS

Tamara Ebl
Bryce Traister

That Senate approve Senate Policy O-200:
Student Awards, effective 1 September 2019.

Senator Cioe said he had several major issues with this policy. He recognized that this was a codification of what we already do but this gives us an opportunity to consider things we have done historically. He raised a concern with with Section 13 (summer session marks) and noted that many of our policies were established based on historical situations that may not now exist. This rule came from a time when people had to be full time students and likely did not work. This does not work for students with financial or family challenges, or honors students.

Dean Traister asked why we made this policy.

Ms Ebl said this was a codification of current practice. The real push was to reduce the credit requirement from 27 to 24 credits and to give consideration for special circumstances for students. Our concern would be that holding this back would cause difficulty.
Senator Jakobi spoke in concern of the summer credits as well.

Senator S. Lawrence said that it much harder to calculate using summer credits.

Senator Cioe said that Vancouver’s Senate passed a motion at its previous meeting calling for a review of the possibility of using summer marks in award assessment.

Senator Cioe said section 28 did not properly support our best students.

Senator S. Lawrence disagreed, saying that graduate students are badly underfunded and we cannot afford to have people double dipping from an overstretched system. We do not want a winner takes all system; we cannot identify our best students with that kind of precision.

Senator Jakobi said all graduate students need more funding. We have no control over external awards and we have some students who are making over 70K a year on awards.

Senator Tannant said individual awards often had language imbedded to do the same thing. We saw greater utility in spreading funding around.

Senator Cioe said it was a matter of where and how we did it. People are not applying for Natural Sciences and Engineering Research Council of Canada awards because they know they cannot get them.

Senator Ebl said that this was a permissive policy that left the discretion to graduate studies.

By general consent, a motion was added from the floor

USE OF SUMMER GRADES IN AWARDS ADJUDICATION

Jan Cioe
Abdul Alnaar  } That the question of whether and how summer session courses can be included in awards adjudication, in particular with respect to comparability of students, be referred to the Senate Admissions & Awards Committee, and that the Committee be required to submit a report to Senate by the October 2019 Senate meeting.
NEW AWARDS

See Appendix A: Awards Report

Tamara Ebl
Jannik Eikenaar

That Senate accept the new awards as listed and forward them to the Board of Governors for approval; and that a letter of thanks be sent to the donors.

Senator Chong asked if the Blue and Gold Scholarship was available to international students.

The Registrar agreed to report back.

Curriculum Committee

The Chair of the Senate Curriculum Committee, Dr Peter Arthur, presented.

MARCH CURRICULUM PROPOSALS

See Appendix B: Curriculum Report

Peter Arthur
Barbara Marcolin

That Senate approve and recommend to the Board of Governors for approval the new options and courses brought forward from the Faculty of Applied Science, the new courses brought forward from the Faculty of Arts and Sciences, the new course brought forward from the Faculty of Management, the new combined major and new courses brought forward from the Faculty of Creative & Critical Studies and the new courses brought forward from the Faculty of Education.

Nominating Committee

The Chair of the Senate Nominating Committee, Dr Jannik Eikenaar, presented.
COUNCIL OF SENATES

Jannik Eikenaar
Barbara Rutherford  

That Dean Bryce Traister be appointed to Council of Senates Okanagan Representative Committee Four to replace Dean Wisdom Tettey (resigned).

CALL FOR NOMINATIONS FOR PRESIDENT’S ADVISORY COMMITTEES FOR THE SELECTION OF A DEPUTY VICE-CHANCELLOR AND A VICE-PRESIDENT HUMAN RESOURCES.

Dr Eikenaar noted that the Nominating Committee has received notification from the President’s Office of his intent to strike a Search Committee pursuant to Joint Board/Senate Policy 18 (Appointment of Designated Senior Academic Administrators) and Board Policy 34 (Appointment and Extension of Appointment of Administrative Vice-Presidents) for the next Deputy Vice-Chancellor and Vice-President Human Resources. He asked for any nominations to be sent to the Committee’s secretary and advised that the Nominating Committee will then make recommendations for appointments to the Search Committee at the May meeting of Senate.

Adjournment

Seeing no other business, the meeting was adjourned at 5:09 p.m.
Appendix A: Awards Report

NEW AWARDS:

Charles E. Fipke Foundation Earth and Environmental Sciences Award

Awards totalling $40,000 have been made available through an endowment established by the Charles E. Fipke Foundation for undergraduate or graduate students pursuing degrees in Earth and Environmental Sciences with preference given to students interested in geology. Awards will be given to students who demonstrate significant financial need, an exceptional work ethic, as well as academic strength. Subject to maintaining continued scholarship standing, undergraduate recipients may have their award renewed. Awards will be made on the recommendation of the Department of Earth, Environmental and Geographic Sciences in the Irving K. Barber School of Arts and Sciences and with respect to graduate awards, in consultation with the College of Graduate Studies. (First award available for the 2020/21 Winter Session)

UBC Students’ Union Blue and Gold Scholarship

A $1,200 scholarship has been made available through an endowment established by the Student Union of UBC Okanagan for undergraduate students in even-numbered years and graduate students in odd-numbered years at the University of British Columbia, Okanagan campus. The award is adjudicated by Enrolment Services and in consultation with the College of Graduate Studies in odd-numbered years. (First award available for the 2019/20 Winter Session)
Appendix B: Curriculum Report

FACULTY OF APPLIED SCIENCE
Resilient Infrastructure Management Option (RIM)
Biomedical Engineering Option
APSC 193
ENGR 423
ENGR 450
ENGR 420
ENGR 422
ENGR 439
ENGR 469
ENGR 513
ENGR 545
ENGR 547
ENGR 563

FACULTY OF ARTS AND SCIENCES
BIOL 426

FROM THE FACULTY OF ARTS AND SCIENCES AND THE FACULTY OF MANAGEMENT
BIOL 424
MGMT 470

FACULTY OF ARTS AND SCIENCES AND THE FACULTY OF CREATIVE AND CRITICAL STUDIES
SUST 104
SUST 204
THTR 204

FACULTY OF CREATIVE AND CRITICAL STUDIES
Combined Major with French
FREN 101
FREN 102

FACULTY OF EDUCATION
EDUC 300
EDUC 400
16 May 2019

To: Okanagan Senate

From: Senate Academic Building and Resources Committee

Re: Annual Report (information)

Please find attached the 2018-2019 Annual Report of the activities of the Senate Academic Building and Resources Committee.

For the Committee,

Dr. Ramon Lawrence
Chair, Senate Academic Building and Resources Committee
Senate Academic Building and Resources Committee

Report to Senate – May 16, 2019

Committee Background and Terms of Reference

The mandate and responsibilities of the Senate Academic Building and Resources Committee are set out in its terms of reference:

Responsible for recommending the following to Senate:

- An annual report outlining the work of the Committee and the physical and budget resources available for the development and maintenance of the campus.

Delegated authority over the following by Senate:

- Reviewing, raising issues, and monitoring the implementation of the Campus Master Plan;
- Recommending priorities on new academic buildings with consideration for the needs of academic and non-academic buildings, balance between type of teaching spaces, and relationship to physical plant and planning; and
- Reviewing and raising issues regarding the impact of every development, whether building or landscape, on the total teaching and academic resource.

Alongside the responsibilities set out in its terms of reference, the Senate Academic Building and Resources Committee also serves as the Okanagan sub-committee of the Council of Senates Budget Committee and is responsible for fulfilling the mandate of the Council of Senates Budget Committee on the Okanagan campus. The terms of reference of the Council of Senates Budget Committee are as follows:

The Budget Committee shall:

[M]eet with the President and assist in the preparation of the University budget; and make recommendations to the President and to report to the Okanagan and Vancouver Senates at least annually concerning academic planning and priorities as they relate to the preparation of the University budget.

In advising the President on the University budget, the Budget Committee may request information on any of the University's fund accounts.

The complete Council of Senates Budget Committee includes representation from both campuses. The full Budget Committee has not met during the 2018-2019 Academic Year, leaving fulfilment of its terms
of reference to the Senate Academic Building and Resources Committee, and its counterpart on the Vancouver campus.

Activities

During the 2018-19 academic year, the Committee met on six occasions. The agendas for each meeting were set through the collaboration of the Committee Chair, the Deputy Vice-Chancellor and Principal, and the Associate Vice-President, Finance and Operations to ensure that items that are a priority for the committee and for the two vice-presidential offices are brought forward. The Deputy Vice-Chancellor and Principal, Provost and Vice-President Academic, Associate Vice-President, Finance and Operations and the Director, Integrated Planning and Chief Budget Officer also regularly attended committee meetings.

The topics addressed by the Committee during the 2018-19 academic year include the following:

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<td>Finance Portfolio Reorganization</td>
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<td>IT and Classroom Support Update</td>
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<td>A. Mukherjee-Reed</td>
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### Comments

**Budget**

- The Committee actively engaged with senior administration during the budget process and appreciates the level of consultation and collaboration.

- The Okanagan Budget reflects institutional priorities. With the new UBC Strategic Plan in place, administrative units, and to some degree academic units, were asked to frame their requests in terms of which Themes and Core Areas the request supports. This process helps to ensure Okanagan operations align with the institution.

- Throughout October and November, there are a series of budget meetings for the administrative units. In December, there was a strategic planning session with faculties, when each Dean had the opportunity to share their plans and provide a snapshot of financial challenges the faculty may face in the current and upcoming years. The Committee also provided feedback on potential challenges and opportunities with the budget model.

- Major items the Committee discussed and investigated include: international student tuition revenue, faculty tuition allocation, Excellence Fund, Teaching Learning and Enhancement Fund,
on-campus supports and awards for international students, and funding for academic initiatives (ALT).

**Academic Space**

- The Committee receives regular updates on campus planning and building activities. Completed project activity includes the opening of John Hindle Drive, the completion of a pedestrian overpass, sustainability upgrades, parking lot redesigns, increase in transit services, closure of University Way, addition of new bike racks and lockers, completion of the Commons building, and a mural project on University Way. Building activities are discussed with respect to the Campus Master plan.

- Space needs are continuing to being assessed. Short term space planning has included intensification and reallocation of space (e.g. sharing offices and labs). Other projects include moving priority needs into a swing space (e.g. off-campus space, portables). Major academic priority projects include a proposed new academic building, a digital learning factory and a building expansion project.

- Academic space demands were investigated by examining current classroom and academic scheduling processes. There is a need for more standardized scheduling across all faculties. There is also an opportunity to encourage faculties to increase summer course offerings and investigate new forms of blended and online delivery both to improve pedagogical measures as well as better utilize existing academic space.

**Strategic Planning**

- The Committee reviewed and provided feedback for the UBC Okanagan Outlook 2040 report that was presented to the Board of Governors in April 2019. Of specific focus was projected student enrolments and associated budgetary and space impacts. To achieve the vision of UBC Okanagan Outlook 2040 will require more innovative uses of space and creative academic programming, including professional programs and certificates.
6 May 2019

To: Okanagan Senate

From: Senate Academic Policy Committee

Re: Establishment of the Canadian Institute for Inclusion and Citizenship

The Committee has reviewed the attached proposal to establish the Canadian Institute for Inclusion and Citizenship as a research institute on the Okanagan Campus. The proposal builds upon a decade of work across the campuses in the area of inclusion and citizenship. The establishment of the institute will fortify the university’s capacity to engage in research in five streams:

- Policy, Practice and Ethics
- Employment and Transitions
- Inclusive Education
- Health and Well-being of Individuals with Intellectual and Developmental Disabilities and their Families across the Life-Course
- Engaging with Indigenous Communities and Families

The Committee therefore, recommends the following to Senate:

**Motion:** “That Senate approve and recommend to the Board of Governors the establishment of the Canadian Institute for Inclusion and Citizenship as a research institute of the Okanagan Campus.”

Respectfully submitted,

Dr. Jan Cioe, Chair

Senate Academic Policy Committee
A PROPOSAL TO THE UBC OKANAGAN SENATE TO ESTABLISH

THE CANADIAN INSTITUTE FOR
INCLUSION AND CITIZENSHIP

Submitted by:
Dr. Rachelle Hole and Dr. Tim Stainton

May 2019
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**Introduction**

The University of British Columbia Centre for Inclusion and Citizenship (CIC) is Canada’s only university-based research centre with a dedicated focus on social policy and practice issues concerned with the full inclusion and citizenship of people with intellectual and developmental disabilities (I/DD). We are firmly rooted at both the Okanagan and Vancouver campuses and, this year (2019), we are celebrating our 10th anniversary.

The CIC successfully operates as a partnership between the two UBC Schools of Social Work, community living organizations, government, and supporters. We are committed to research, learning, and knowledge exchange to positively impact the lives of people with I/DD and their families locally, nationally, and globally. The UBC Centre for Inclusion and Citizenship is at the forefront of building Canada’s capacity in the field of I/DD research. To date, our research, learning, and knowledge activities have engaged people from every province and territory in Canada, and we have facilitated knowledge exchange with individuals, families, academics, and experts from 44 universities in 18 countries (See Appendix A1: Countries and Universities Engaged).

**Countries Engaged**

![Map showing countries engaged](map.png)

This application to the UBC Okanagan Senate to establish the CIC as an Institute of UBC Okanagan – *The Canadian Institute for Inclusion and Citizenship (CIC)* – will affirm our program of research to date and help to sustain our work into the next decade. Consistent with UBC Okanagan Senate Policy O-5, “Research Institute
shall mean an Institute as per the University Act and other applicable Senate and Board policies.”

**Justification for Becoming a UBC Institute**

The Centre for Inclusion and Citizenship is celebrating its tenth year as a UBC research centre located at both UBC campuses. This application highlights the accomplishments of the CIC over the past ten years and demonstrates the proven growth and sustainability of the CIC as a UBC research centre. It is evident given the progress and advancements (e.g., provincial, national, and international reach, and demonstrated increased trajectory of grant funding and fundraising – e.g., the Transitioning Youth with Disabilities and Employment Partnership Grant), the CIC has evolved beyond the operations of a UBC research centre supported within the domain of a faculty to a multi-faculty, cross-campus entity that meets the requirements to become a UBC Institute.

To date, the majority of the CIC research has focused on two streams: 1) Policy, Practice and Ethics and 2) Employment and Transition. In dialogue with our provincial advisory board, three additional streams of research will enhance the reach and impact of the Institute. These streams are: 1) Inclusive Education, 2) Health and Well-being of Individuals with I/DD and their Families across the Life-Course, and 3) Working with Indigenous Communities and Families and I/DD. In order to build upon the established success of the CIC in our tenure, moving to an Institute at UBC Okanagan will contribute necessary infrastructure and support to secure the establishment of these important additional domains. As part of this Institute application, the first two new streams are established and will be further developed within the next year. With our community partner, the BC Aboriginal Network for Disability Society, and the Aboriginal Advisory Committee for the Transitioning Youth with Disabilities and Employment Project, we will work to develop a stream that focuses on engaging with Indigenous communities and families with a focus on I/DD research over the next three years. As such, moving to become an Institute will fortify our capacity to extend the reach of the CIC through these newly formalized research streams adding to our provincial, national, and international impact.

The leadership and governance structure will include a co-director from both campuses – Dr. Hole and Professor Stainton. Further, each of the research streams will be led by one research lead and one co-lead from each campus. This will ensure that all Institute themes are active and growing hubs of research at both campuses that will advance knowledge and practice in I/DD research provincially, nationally, and internationally.
The ongoing and historical involvement of multiple UBC faculties and the proposed growth to establish five research streams within the Institute demonstrates formal cross-faculty linkages and clear commitments to ongoing cross campus ties. Since its inception, the CIC operated within the UBC Okanagan Faculty of Health and Social Development (FHSD) and the UBC Vancouver Faculty of Arts with co-directors Hole (UBC Okanagan) and Stainton (UBC Vancouver). In addition, Drs. Hole and Stainton collaborated and continue to partner with colleagues on research projects from the following UBC Okanagan faculties – FHSD (Social Work, Nursing, Health and Exercise Sciences), Education, Irving K. Barber School of Arts and Sciences (Community, Culture and Global Studies), the Faculty of Creative and Critical Studies – and the UBC Vancouver Faculties and Departments – Faculty of Arts (Social Work, Theatre and Film, Psychology, the School of Library, Archival and Information Studies), the Faculty of Education (Departments of Curriculum and Pedagogy, Educational and Counselling Psychology and Special Education, and Educational Studies), Faculty of Medicine (Occupational Sciences and Occupational Therapy, Psychiatry, Genetics), the School of Nursing, and the Peter A. Allard School of Law.

UBC’s reputation will enhance the credibility and quality of the Institute’s work. The Canadian Institute for Inclusion and Citizenship will gain increased recognition, both internally within the university and externally, allowing the Institute to build upon the many successes the Centre achieved during its tenure. Our ability to engage and attract top scholars, trainees, and community and government partners will increase extending our ability to build important capacity in this sector. As an Institute, the increased infrastructure and institutional visibility will support the expansion of the scope of the Institute’s work and propel the Institute to become a global leader in I/DD research.

**Our History**

British Columbia has a long history of being recognized internationally for providing leadership and innovation in supporting people with intellectual and developmental disabilities and their families. The strength of the community living movement in BC today has grown from deep roots in family and self advocacy leadership, strong community and government partnerships and, over the decades, champions and leaders committed to creating change, working together.

The UBC Centre for Inclusion and Citizenship was established in 2009 through a partnership of university, government, and community living organizations and supporters seeking to further the inclusion and full citizenship of people with I/DD and
their families locally, nationally, and globally. More specifically, beginning in the mid-2000s, community stakeholders sought out Professor Stainton at UBC to establish the Centre to meet an identified need to conduct evidence-based research in BC to influence and inform policy and practice and to translate that knowledge into best practices. Subsequently, in 2008, based on Dr. Hole’s programme of research and their previous collaborations, Dr. Stainton reached out to Dr. Hole to join him in establishing and co-directing the Centre for Inclusion and Citizenship at both UBC campuses, which formally opened in February 2009.

We work hard to make research in the area of I/DD relevant and accessible to a wide range of individuals in diverse disciplines and populations. A provincial advisory board, whose membership includes individuals with I/DD (self advocates), family members, service providing agencies, provincial advocacy organizations, and government, has been in place since the Centre’s inception. The advisory board offers advice to the CIC, ensures information flows between community and the university, informs research priorities, assists in the design and implementation of projects, facilitates the communication of results, and helps to evaluate application of the results. The provincial advisory board will continue to operate in this advisory capacity to the Canadian Institute for Inclusion and Citizenship.

Given our strong roots in the community living sector, the Institute will continue to be uniquely positioned to engage in collaboration with community and government partners in our work. This will contribute to our ability to secure research grants and contracts as well as our ability to engage in meaningful knowledge translation with knowledge users and brokers. An example of this is the Transitioning Youth with Disabilities and Employment – the TYDE project – a partnership grant co-funded by SHHRC and CIHR at $1,331,650 with $496,125 in cash contributions from BC government and community partners and another $492,549 in-kind commitments over 5 years. The TYDE Project includes three universities, two provincial ministries and one crown corporation, and ten NGOs (1 national, 9 provincial) as partners, as well as twelve academic co-applicants; many of these are longstanding partners and collaborators of the Centre for Inclusion and Citizenship.
Our Mission Statement

The Canadian Institute for Inclusion and Citizenship envisions a society that acts to achieve lives of quality for all citizens. We inspire and inform social change by creating a passion and culture for inclusion. We work with the community, government, and the private sector to secure justice, equality, and well-being of all citizens.

Our Beliefs

We believe in:

- **Inclusion.** We all have a responsibility to create inclusive and welcoming communities.
- **Citizenship.** Being a citizen means enjoying all the rights and responsibilities that most people take for granted.
- **Access.** Everyone needs and has a right to: live in a safe and comfortable place that they can call home; engage in meaningful work for fair pay; enjoy reciprocal relationships; have access to public facilities; and, live a full life in the community.
- **Lifelong Learning.** We are committed to fostering, supporting, and maintaining a culture of lifelong learning to support growth, innovation and excellence.
- **Leadership.** Achieving truly inclusive and welcoming communities for all citizens requires leadership by everyone. We are committed to demonstrating, supporting, and developing leadership.
- **Collaborative Practice.** We believe innovative solutions to the issues faced by people with intellectual disabilities will be found in new relationships and partnerships.
Our Leadership

The CIC currently operates with Co-Directors Drs. Rachelle Hole and Tim Stainton, who are both founding members of the Centre and have extensive experience in the disability sector. Community and government frequently call upon Drs. Hole and Stainton to share their expertise on disability related issues through serving on community and government advisory boards and provincial, national, and international committees. For example, Dr. Stainton was appointed by the Council of Canadian Academies to the National Expert Panel on Medical Assistance in Dying in 2017 and continues to serve in that role, and Dr. Hole serves as a member of the BC Representative for Children and Youth Multidisciplinary Team, since January 2017. Both are currently members of UBC President Ono’s Working Committee on Disability Culture, Art, and Equity. Dr. Stainton’s international academic leadership in the field was affirmed in 2015 when he was appointed a Fellow of the International Association for the Scientific Study of Intellectual and Developmental Disabilities (IASSIDD), the leading international academic body in the field.

In moving to an Institute, our leadership will extend to include a research lead and co-lead for each research stream with representation from both campuses. Dr. Baumbusch and Dr. Olsen will lead the Health and Wellbeing Research Stream, and Dr. Schnellert and Dr. Ragoonaden will lead the Inclusive Education Research Stream. Dr. Hole will assume the role of “acting lead” for the research stream focused on engaging Indigenous Communities and Families around I/DD. This research stream is currently in development (descriptions of research streams to follow).
CVs for CIC Leadership are attached as Appendix B.

**Rachelle Hole, PhD**

Associate Professor, School of Social Work, Faculty of Health and Social Development, UBC Okanagan

Institute Co-Director

Primary Lead: Employment and Transitions Research Stream

Co-Lead: Policy, Practice and Ethics Research Stream

*Acting Lead*: Indigenous Communities and Families

Rachelle is the co-director of the Centre for Inclusion and Citizenship (CIC). In this role, Rachelle has lead or co-lead research projects focused on residential supports (e.g., SSHRC funded Home Sharing Research Project), non-residential supports, employment (e.g., Mapping Inclusive Employment funded by the Ministry of Social Development), sexual health and intellectual disability (e.g., the Sex, Lies and Citizenship Participatory Theatre Project funded by the Vancouver Foundation), and, most recently, transitioning youth and employment (the Transitioning Youth with Disabilities and Employment Partnership Grant co-funded by CIHR and SSHRC).

Rachelle’s research programme is informed by two complementary streams: 1) a substantial focus on the socio-cultural practices that promote social inclusion and equity, and 2) a methodological focus on community-based participatory research methods. Critical disability studies is central to the first stream informing Rachelle’s research in the area of community living and I/DD.

Rachelle is a member of the UBC Institute for Community Engaged Research (ICER), and an associated health researcher of the Collaborative RESearch Team to study psychosocial issues in Bipolar Disorder.
Tim Stainton, PhD

Professor, School of Social Work, Faculty of Arts, UBC Vancouver

Institute Co-Director
Primary Lead: Policy, Practice and Ethics Research Stream Co-Lead: Employment and Transitions Research Stream

Tim is currently Professor at the UBC Vancouver School of Social Work and Co-Director of the Centre for Inclusion and Citizenship. He has held faculty appointments at the University of Wales Swansea where he was Director of Social Work, McGill University, and was tutor in Social Policy at the London School of Economics. In 2008/9, he was the Sir Allan Sewell Visiting Fellow at Griffith University, Australia.

Prior to his academic career he worked in the field of intellectual disability in a number of roles including as Director of Policy and Programmes for the Ontario Association for Community Living and at the Community Living Society in Vancouver as a service broker working on the deinstitutionalization of provincial institutions.

He is author of numerous works on service and supports for people with intellectual disabilities, disability rights, individualized funding, history, ethics, and theory. He is active in the disability rights and community living movements and is a board member of several advocacy organizations. He was a founding member of the International Association for the Scientific Study of Intellectual Disability (IASSID) Special Interest Research group on Ethics.

Tim has lectured and consulted internationally on issues of service delivery, structure, self-determination and individualized funding, and other disability related topics for many years.
Jennifer Lyn Baumbusch, PhD, RN

Associate Professor, School of Nursing, Faculty of Applied Science, UBC Vancouver

Primary Lead: Health and Well-being of Individuals with Intellectual and Developmental Disabilities and their Families across the Life-Course

Jennifer directs a research programme on health care delivery and nursing practice with older adults. Her focus is particularly in long-term residential care, family contributions to care delivery, well-being among individuals with intellectual disabilities and their families, and knowledge translation. She has methodological expertise in critical ethnography and practice-close research. Jennifer is committed to community-based research principles through active engagement of individuals, clinicians, service providers, and organizations throughout the research process.

Jennifer’s teaching encompasses gerontological nursing practice, geriatric health issues, and intellectual disability. She weaves narratives together with theoretical and clinical concepts to help students understand the role of nurses in their clients’ health care experiences and the broader delivery of health care for these vulnerable populations. She creates a learner-centered environment that supports students by providing them with multiple and varied opportunities to develop their skills and also further their substantive knowledge in her areas of expertise, which include nursing care of older adults, qualitative research methods, and knowledge translation.
Leyton Schnellert, PhD

Associate Professor, Department of Curriculum and Pedagogy, Faculty of Education, UBC Vancouver

Primary Lead: Inclusive Education Research Stream

Leyton is an Associate Professor in the Faculty of Education at the University of British Columbia and the Pedagogy and Participation research cluster lead in UBCO’s Institute for Community Engaged Research. His community-based collaborative work contributes a counter-argument to top-down approaches that operate from deficit models, instead drawing from communities’ funds of knowledge to build participatory, collaborative, and culturally responsive practices. His scholarship takes up pedagogy and related research working from epistemological orientations to living and learning that are relational and community-honoring.

Leyton is deeply committed to the study and development of teacher education. He was centrally involved in the renewal of UBCO’s teacher education program, INSPIRE. As the program’s Block Two Leader, he led the development and implementation of Diversities in Education. Leyton currently holds UBC’s Eleanor Rix Professorship in Rural Teacher Education. His research has been published and presented in national and international venues. In addition to peer reviewed articles and books, Leyton has produced several short film illustrating inclusive pedagogies and co-authored six books for educators including Student Diversity, the It’s All About Thinking series, Developing Self-Regulating Learners, and Pulling Together.
Lise Olsen, PhD

Assistant Professor, School of Nursing, Faculty of Health and Social Development, UBC Okanagan

Co-Lead: Health and Well-being of Individuals with Intellectual and Developmental Disabilities and their Families across the Life-Course Research Stream

Lise’s programme of research addresses healthy, safe child development within a family and community context. Her research focuses on active, safe and inclusive play for children, parent perspectives about risk and safety for children, and the role of equity in health promotion for families living with developmental disabilities and autism. Lise holds methodological expertise with qualitative methods (interpretive description, grounded theory), survey research methods, and community-based approaches. Lise uses collaborative approaches with project participants in the design and implementation studies and in the mobilization of new knowledge.

Karen Ragoonaden, PhD

Professor of Teaching, Director, Centre for Mindful Engagement, UBC Okanagan School of Education

Co-Lead: Inclusive Education Research Stream

Karen is a Professor of Teaching in the Okanagan School of Education of the University of British Columbia, Canada. Her pedagogy, research and service reflect a strong commitment to culturally responsive approaches to teaching and learning. Fluently bilingual in English and French, her academic intersections span the breadth of Diversity Education, Indigenous Education and Mindfulness in Education. She is recognized for the innovative stress management and resiliency techniques (smartEducation) curriculum integrating holistic well-being initiatives into professional contexts. Karen brings an intersectional, social justice lens to the Inclusive Education Research Stream of the Institute.
Governance

Governance of the Canadian Institute for Inclusion and Citizenship (CIIC) will meet the requirements of UBCO Senate Policy O-5: Research Centres & Research Institutes.

The Institute will be governed through a Steering Committee co-chaired by the Directors, Hole and Stainton. The Steering Committee will include: 2 senior administrators (the Dean or Designate of the Faculty of Health and Social Development, UBC Okanagan and the Dean or Designate of Faculty of Arts, UBC Vancouver); Co-Directors Hole and Stainton; faculty members and Research Stream Primary Leads (Baumbusch, Schnellert) and Co-Leads (Olsen, Ragoonaden); one member of the Advisory Board (to be appointed by the Co-Directors); and one graduate student (to be appointed by the Co-Directors). The steering committee will provide advice to the Co-Directors about the general direction of the Institute and will meet twice annually.

The Co-Directors, appointed by and reporting to the UBCO Provost, will be tenured Associate Professors or higher rank. Responsibilities of the Co-Directors include day-to-day administration of the Institute including budgetary matters, supervision of Institute staff, oversight of Institute resources and infrastructure; liaison and collaboration with research stream leads, student trainees, partners, and collaborators; facilitating the development of new research streams, projects and knowledge exchange activities; supporting and nurturing student learning and training opportunities; and, communicating Institute activities to the UBC community and partners provincially, nationally, and internationally. The Co-Directors will ensure annual reports of Institute activities are submitted to the Senate.

Primary Leads and Co-Leads of new research streams will be appointed by the Steering Committee upon the recommendation of the Co-Directors. Additional Research Stream Leads will be invited by the Co-Chairs and initiators of new streams will be asked to provide a rationale for the new research stream and submit their CV.
Institute Organizational Chart
<table>
<thead>
<tr>
<th>UBCO Senate Policy O-5</th>
<th>CIC Research Institute Proposed Structure</th>
</tr>
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<tbody>
<tr>
<td><strong>1. a. A Research Institute:</strong></td>
<td></td>
</tr>
<tr>
<td>i. Is established or disestablished by the Board upon recommendation and with the approval of the Senate.</td>
<td>✓</td>
</tr>
<tr>
<td>ii. Is not normally identified with or located within a faculty</td>
<td>✓</td>
</tr>
<tr>
<td>iii. Is an Academic Unit with an intended permanent or ongoing nature.</td>
<td>✓</td>
</tr>
<tr>
<td>iv. Generally involves external funding as well as the UBC Okanagan base operating budget and is normally allocated a budget</td>
<td>✓  See budget section.</td>
</tr>
<tr>
<td>v. Has appropriate administrative personnel appointed, including a director.</td>
<td>✓  Dr. Rachelle Hole (UBCO) and Dr. Tim Stainton (UBCV) will be Co-Directors of the CIC Research Institute.</td>
</tr>
<tr>
<td>vi. Shall be governed through a steering committee which shall include senior administrators as well as faculty members and the Research Institute director. The exact membership of each Research Institute’s steering committee shall be determined by the Provost in consultation with the relevant dean or deans.</td>
<td>✓  Steering Committee membership will include: 2 senior UBC administrators; CIC Research Institute Co-Directors Drs. Hole and Stainton; Research Stream Primary Leads (Baumbusch, Schnellert) and Co-Leads (Olsen, Ragoonaden); 1 representative from the provincial advisory board; 1 graduate student; and, others as appointed by the Provost.</td>
</tr>
<tr>
<td>vii. May have an external advisory board appointed by the Research Institute director in consultation with the Provost.</td>
<td>✓  A provincial advisory board with members appointed by the Co-Directors will operate as outlined in the Advisory Board Terms of Reference. (See Appendix A2 for the CIC Research Institute Provincial Advisory Board Terms of Reference)</td>
</tr>
<tr>
<td>viii. Shall submit annual reports to the Senate on its activities.</td>
<td>✓  Annual reports to dates are posted on  <a href="https://www.cic.arts.ubc.ca">https://www.cic.arts.ubc.ca</a></td>
</tr>
</tbody>
</table>
ix. May have faculty members appointed part-time provided that such members also hold an appointment to a faculty

x. May initiate the development of undergraduate and graduate courses and programs in collaboration with one or more faculties, schools, colleges, or departments (in such cases the latter shall remain formally responsible for the offering of the course or program).

The Provincial Advisory Board

The Canadian Institute for Inclusion and Citizenship will continue to work closely with our Provincial Advisory Board, which has been in place since the Centre’s inception. The Co-Directors, in collaboration with existing board members, will appoint members to the Provincial Advisory Board in accordance with the Terms of Reference (See Appendix A2. CIC Research Institute Provincial Advisory Board Terms of Reference). The membership includes a minimum of two individuals with I/DD (self advocates), family members, service providing agencies, and provincial advocacy organizations. The advisory board will offer advice to the Institute, assist with fund development, ensure information flows between community and the university, inform research priorities, assist in the design and implementation of projects, facilitate the communication of results, and help to evaluate application and uptake of the results. The Board will meet twice annually at a minimum.

Staffing

The Institute will employ a coordinator whose appointment will be shared by both UBCO and UBCV campuses and whose salary is recovered proportionately through various research projects and general operational funding. The Coordinator will report to the Co-Directors. The position is ideally suited to be full-time, but historically this has fluctuated with available funding. Duties will include, but are not limited to, providing support to the Institute faculty’s programmes of research (directors and research leads/co-leads), supporting research projects and knowledge exchange activities, coordinating the development of plain language research summaries and communications, supporting the Advisory Board, organizing knowledge exchange, community engagement and professional development events, providing oversight to
the overarching operational budget, preparing and distributing communication materials including the annual report, updating the Institute website, and managing social media accounts.

Graduate and undergraduate students are regularly employed as research assistants at both UBC campuses as research projects allow. The Co-Directors and Research Leads will apply for student work study positions, and other funding opportunities (e.g., MITACS), to support the development and delivery of knowledge exchange activities with student trainees. Please see additional information about student training below. Individuals with I/DD (self advocates) will continue to be involved as consultants and presenters on research projects, learning, and knowledge exchange initiatives.

Alignment with UBC Strategic Plan

The goals of the Canadian Institute for Inclusion and Citizenship are closely aligned with the UBC Strategic Plan: Shaping UBC’s New Century. In this section, we discuss the ways the Centre for Inclusion and Citizenship, to date, aligned with the commitments of UBC as outlined in the UBC Strategic Plan and how the Institute will further leverage and build upon these alignments through our new research streams.

The UBC Strategic Plan Vision is: “Inspiring people, ideas and actions for a better world.” The Canadian Institute for Inclusion and Citizenship envisions a society that acts to achieve lives of quality for all citizens. Importantly, the work of the Institute will continue to specifically focus on a population of people who historically experienced and, arguably, continue to experience marginalization (e.g., institutionalization, segregation, social exclusion, stigmatization, to name some). As such, through research, learning, and knowledge exchange, the Institute will continue to inform social change by promoting practices and cultures of inclusion. We will do this by keeping central the knowledge-users of this work: self advocates, family members, community (e.g., service providers), policy makers, government, and the private sector. As Centre for Inclusion and Citizenship’s mission states, we do this to “secure justice, equality, and well-being of all citizens” believing that inclusive and diverse communities and societies benefit all people.

Furthermore, the UBC Strategic Plan Purpose commits to pursuing excellence in research, learning and engagement to foster global citizenship and advance a sustainable and just society across British Columbia, Canada, and the world. In a similar way, the Institute will continue the work to advance the inclusion and full citizenship of individuals with I/DD and their families, and to engage in research that informs policy
and practice that advances these goals provincially, nationally, and globally. Moreover, our core beliefs underscore these commitments. We believe in inclusion, citizenship, access, lifelong learning, leadership, and collaboration and partnerships (see page 8).

**UBC Strategic Plan Three Themes:**

The UBC Strategic Plan highlights three themes that are key opportunities for transformational change: inclusion, collaboration, and innovation. The Institute will continue to operationalize these themes across our work.

**Inclusion**

Inclusion is a central priority of the Institute, as evidenced by our name – the Canadian Institute for Inclusion and Citizenship. Historically, the Centre for Inclusion and Citizenship was initiated with the explicit goal to engage in research that informs policy and practice to improve the social inclusion and rights of persons with I/DD and their families, and to inform the work of the individuals, agencies, and government bodies committed to supporting these individuals and families. In response to historical and ongoing social exclusion and barriers to social inclusion, Directors Hole and Stainton undertake research to promote the inclusion of individuals with I/DD in community. For example, we have conducted research in the areas of residential and non-residential supports, transitioning youth, employment, aging and I/DD, to name some. Our commitment to equity and diversity is exemplified in the conceptualization and implementation of our research, learning, and knowledge exchange.

We commit to being inclusive of self advocates (individuals with I/DD) in our research, learning, and knowledge exchange. For example, self advocates participate as members of research project advisory committees and as consultants to various research projects; they assist in the creation of plain language documents (e.g., interview guides, consent forms, plain language versions of research findings); and, whenever possible, they co-present research findings at conferences. The Transitioning Youth with Disabilities and Employment Project (the TYDE Project) is an example of this work where we have four paid self advocate consultants to assist us with the conceptualization and implementation of this project. Moreover, this project is an example of our commitment to attend to issues of diversity. One key priority of the TYDE Project is to ensure we are inclusive of Indigenous youth and families. In addition, embedded in the design is a commitment to attend to other factors of diversity as they relate to transitioning youth and employment such as gender, ethnicity, geographic diversity, socioeconomic status, and more.
Another example of our commitment to equity and diversity is the *Sex, lies and citizenship: A participatory theatre research project*. Funded by the Vancouver Foundation, this project is an action research project aimed to challenge stereotypes regarding individuals with I/DD and their rights to sexual citizenship with a focus on promoting healthy and inclusive understandings of sexuality and gender identity for individuals with I/DD.

Further, our community engagement work includes a commitment to issues of equity and diversity. For example, in 2013-2014, the CIC sponsored a three part speakers series entitled, “Diversity Includes.” The three topics focused on: 1) ethnicity, race and culture, 2) building inclusive communities for LGBTQ people labelled with I/DD; and, 3) aboriginal communities’ perspectives on disability. These workshops were intended to stimulate dialogue regarding issues of equity and diversity within the community living sector.

Finally, as we transition to a UBC Institute, we will continue to attend to issues of diversity. For example, we are committed to developing the Indigenous Research Stream. Furthermore, all of the research leads and co-leads share the Institute’s values of engaging in work that promotes inclusion with the goal of “[securing] justice, equality, and well-being of all citizens.” These commitments to inclusive practices will be leveraged as we transition to become an Institute of UBC Okanagan.

**Collaboration**

Collaboration has been vital to the work of the Centre for Inclusion and Citizenship. In fact, in the UBC Strategic Plan, the CIC is offered as an example of how the university is strengthening connections across the two campuses and across the province to cultivate collaborative efforts (see p. 27 of the UBC Strategic Plan). These collaborations provide opportunities to mentor trainees and junior scholars across campuses. For example, Drs. Hole and Stainton have supervised and mentored 25 graduate students and 52 research assistants.

As described above, the Institute is firmly rooted in community; the CIC was initiated by community stakeholders and continues to have established, strong ties with community partners. The Institute’s Provincial Advisory Board, comprised of key stakeholders, will ensure our community commitments remain central in our work. To date, we have partnered with 93 community, government, academic, and international organizations (see Appendix A3. Current and Past Partners). Our partnerships and collaborations will contribute to the success and reach of Institute. In fact, given the increase in
infrastructure and capacity, the scope and reach of these collaborations will increase as we transition to a UBCO Institute.

**Innovation**

A fundamental area where innovation was central to the CIC, and will continue to be as a UBCO Institute, is in the inclusion of self advocates in all aspects of our work. The continued presence and contributions of self advocates to the work of the Institute will have far reaching benefits. For example, trainees are exposed to inclusive practices that they will take with them in their own careers, and research collaborators not familiar with the community living sector gain valuable insights about inclusive research practices with self advocates. Self advocates have been included as co-chairs at CIC events, co-presenters at conference presentations, members of the CIC Advisory Board, consultants on research projects, and interviewees in media stories.

Furthermore, much of the work of the Centre focused on innovative pathways to inclusion. For example, the “I am voting” initiative promotes participatory citizenship through providing support and education to self advocates about their rights and responsibilities and informed voting in relevant elections. Similarly, through our research, a recent project on the development and use of social capital to promote inclusion demonstrates an innovative model of fostering belonging and community.

Finally, we work to deliver innovative knowledge translation and knowledge mobilization strategies. An example is the Sex, Lies and Citizenship Theatre Project where research findings will be presented to the community through theatre performances in the Spring of 2019. We are committed to low barrier, accessible, plain language outputs as well as traditional academic contributions.

Specifically relevant to UBC Okanagan is the Aspire: Envisioning our future plan. As described throughout this application, the Institute is firmly committed to creating innovative opportunities for learning, knowledge generation, and knowledge mobilization. We are committed to mentorship and capacity building of trainees through all of our activities with the goal of enabling them to be leaders and agents of change in the community living sector and beyond. Trainees will continue to participate in interdisciplinary research, learning opportunities in community, and knowledge exchange that engages partners from academia, community, and government. As we expand the focus of our research and formalize cross-faculty/campus relationships as the Canadian Institute for Inclusion and Citizenship, these commitments promoted through *ASPIRE* will be further strengthened and diversified.
The Canadian Institute for Inclusion and Citizenship Strategic Goals

We are committed to research, learning, and knowledge exchange.

Research

- conduct high quality, impactful research in the area of intellectual and developmental disability informed by the priorities and identified needs of the community living sector (provincially, nationally, and internationally) that attends to issues of diversity
- support existing partnerships and facilitate new partnerships to advance knowledge and practice to improve the lives of children, youth and adults with I/DD and their families
- build research infrastructure and capacity in Canada in the area of I/DD research

Learning

- provide leadership and partnership opportunities for forums, Institutes, conferences, and symposiums aimed at increasing dialogue and knowledge on critical issues to the community living sector (e.g., 2016/17 “Diversity Includes Workshop Series”; 2015 “Claiming Full Citizenship Conference”)
- secure research (and other) funding to provide undergraduate, graduate, and postdoctoral training and research opportunities (e.g., work study positions, research assistantships, practicums, and participation in community learning events and Institutes)

Knowledge Exchange

- engage in innovative knowledge translation and knowledge mobilization activities (KT/KM) that includes self advocates (individuals with I/DD) to ensure that KT/KM is low barrier and accessible (e.g., plain language documents)
Research Streams

The work of the Institute will directly impact people with I/DD, families, students and trainees, service providers, and social policy. We are unique in our ability to involve people with I/DD, families, students, service providers, volunteers, government, and other policy makers in all aspects of our research, knowledge exchange, and learning initiatives. This boosts our high credibility to provide arms-length information and advice on policy and best practices as well as evaluation of sector policies and programmes.

We have networks of established partnerships and have successfully extended our reach to other disciplines including: psychiatry and medical genetics; counselling psychology; law; human geography; community, culture and global studies; education; nursing; library and archival sciences; theatre and film; and, occupational science and occupational therapy.

Most importantly, with a broad range of expertise available to us, we have the ability to develop and enhance research capacity in a sustainable manner. We have committed research affiliates who are prestigious academic researchers willing to contribute as members of our network. They bring their own individual comprehensive research experiences and partnerships within the larger community social services sector, and collectively we will create an extensive hub of knowledge based at UBC.

Four research streams will inform the work of the Institute with the goal to add a fifth research stream focusing on promoting and conducting I/DD research with Indigenous communities and families within the next three years. Of note, while we are committed to formalizing an explicit research stream focused on I/DD research with Indigenous communities and families, we do currently work to be inclusive of Indigenous perspectives in our present research.

The four current themes driving the work of the Institute will be: 1) Policy, Practice and Ethics, 2) Employment and Transitions, 3) Inclusive Education, and 4) the Health and Wellbeing of Individuals with I/DD and Their Families across the Life Course. Research themes three and four are newly formalized as part of this Institute application and will be further developed over the next year. And, as noted, the fifth stream with an Indigenous focus will be established within the next three years. Each stream will operate with a Lead and a Co-Lead ensuring representation from both campuses for each stream.
**Policy, Practice and Ethics**

Dr. Tim Stainton, Primary Lead – School of Social Work, Faculty of Arts, UBC Vancouver
Dr. Rachelle Hole, Co-Lead - School of Social Work, FHSD, UBC Okanagan

This stream will have a broad focus on issues concerned with policy, structures, and direct practice in the field. This will encompass both Provincial (the primary responsible jurisdiction) and National policy and practice in Canada as well as international policy and practice developments. While issues directly affecting people with I/DD and their families will be the core focus, this stream will also extend to health care practices, which may impact people with I/DD as well as global issues such as the implementation of the UN Convention on the Rights of Persons with a Disability. Dr. Stainton is ideally suited to lead this stream having been recognized for many years as one of the leading international experts in this area and having consulted with governments and organization across Canada and internationally.

**Employment and Transitions**

Dr. Rachelle Hole, Lead – School of Social Work, FHSD, UBC Okanagan
Dr. Tim Stainton, Co-Lead – School of Social Work, Faculty of Arts, UBC Vancouver

Employment is a key aspiration for individuals with I/DD and a key priority of the community living sector. Research demonstrates that employment enhances quality of life for most working-age adults and is a key mechanism for enhancing social inclusion. This research stream focuses on improving employment outcomes for individuals with I/DD with an additional focus on transitioning youth. Intervening early is key to improving employment outcomes for individuals with I/DD.

**Inclusive Education**

Dr. Leyton Schnellert, Primary Lead – Faculty of Education, UBC
Dr. Karen Ragoonaden, Co-Lead – Faculty of Education, UBC Okanagan

The Inclusive Education research stream is comprised of university faculty, educators, self advocates, and family members deeply committed to enacting and furthering inclusive education. This research stream is comprised of people with expertise in diverse research methodologies, theoretical approaches, and educational structures, practices, and pedagogies. We seek to mobilize and generate knowledge that supports the inclusion of students with I/DD through intersectional approaches that leverage potentialities across cognitive, sensory, cultural, gender, sexual orientation, and gender identity diversities.
Health and Well-being of Individuals with Intellectual and Developmental Disabilities and their Families across the Life-Course

Dr. Jennifer Baumbusch, Primary Lead - School of Nursing, Faculty of Applied Science, UBC Vancouver
Dr. Lise Olsen, Co-Lead - School of Nursing, Faculty of Health and Social Development, UBC Okanagan

It is well documented that individuals with intellectual and developmental disabilities and their families experience health inequities across the life-course. This research cluster aims to illuminate socio-political and structural factors that contribute to inequities. This research will help to inform ethical and equitable policies and practices that support health and well-being across the life-course.

Engaging with Indigenous Communities and Families

As mentioned a fifth stream with a focus on Indigenous Communities and Families and IDD research will be developed across the next three years. Dr. Hole will be an acting lead during this developmental process in consultation with community partner, the BC Aboriginal Network of Disability Society and with the newly forming TYDE Aboriginal Advisory Committee. The description of goals of this stream will be developed through consultation and dialogue with key stakeholders.

Relevance to Local, National and International Needs

Given our historic and ongoing rootedness and engagement within the community living sector, we have been able to respond to research needs and undertake knowledge exchange and community engagement activities prioritized by community and government over the past 10 years. For example, research on Home Sharing led by Dr. Hole is being used by both government and local social service delivery agencies to develop and inform their internal policies and practices in this area. Dr. Hole has been asked to share findings of that research with the provincial government as well as the BC CEO Network and Inclusion BC who represent hundreds of non-profit service providing organizations. In 2015, Dr. Hole was asked to participate in a consultation meeting regarding this Home Share research given the uptake of Home Sharing in Australia with Bruce Bonyhady (former Chair of the Australian National Disability Insurance Scheme). This research (funded by SSHRC) is the most comprehensive research in this relatively new policy area in the sector internationally. Dr. Stainton is currently undertaking
research with national partners to develop and share cultural narratives about the meaning of disability, frailty, and suffering in the context of an emerging system for Medical Assistance in Dying (MAiD) in Canada.

Other examples of meeting provincial and national needs include evaluating the provincial government’s Equipment and Assistive Technology Initiative (2009), evaluating the Vancouver Foundation’s Giving in Action Program (2014), conceptualizing and implementing the Mapping Inclusive Employment Practices for Individuals with Developmental Disabilities Project (2015), evaluating the federally funded Ready, Willing and Able employment initiative (operating in every province and territory in Canada-2015 - 2018), and developing and implementing the Sex, Lies and Citizenship Participatory Theatre Project (2016 - present).

Given our extensive connections, we have been able to bring national and international experts to BC to share best practice from other jurisdictions and vice-versa. Examples of this include our 2013 Colloquium Series on Inclusion, our 2015 Claiming Full Citizenship International Conference on Self Determination and Individualized Funding (attended by over 500 participants representing 13 countries), and the 2018 BC Leadership Institute on Developmental Disabilities held at UBCO in partnership with the University of Delaware National Leadership Consortium on Developmental Disabilities. As noted in the introduction, to date our reach has extended to 44 universities in 18 countries (See Appendix A1: Countries and Universities Engaged for an overview of national and international academic engagement. See Appendix A4 for the list of 2015 Claiming Full Citizenship International Conference Content Experts and Presentations. See Appendix A5: Knowledge Exchange Events and Collaborators). Most recently in August 2018, the Centre for Inclusion and Citizenship was invited to participate in the University of Western Australia’s McCusker Centre Global Citizenship Exchange program which will offer the opportunity for student exchanges between similar centres, with a focus on global citizenship.

Finally, the Centre for Inclusion and Citizenship is one of only four Partner Organizations of the International Association for the Scientific Study of Intellectual and Developmental Disabilities’ Academy on Education, Training and Research, and we are a founding partner and the Canadian Host for Citizen Network, a global non-profit cooperative movement, formed to create a world where everyone can be an equal citizen. The idea to form Citizen Network was seeded at our International Claiming Full Citizenship Conference.
Collaborators and Partners

Collaboration will be key to the success of the Institute and the CIC has a strong history of partnership and collaboration throughout its history. Given that the CIC was formally only operating with two academic researchers and one staff, collaborators and partners were instrumental to the successes of the CIC and will continue to be a necessary foundation to the ongoing work of the Institute. These collaborations include UBC researchers, students, trainees, and community partners as well as national and international scholars, students, and partner organizations.

Collaborators and partners at a glance:

- 9 years of success
- 52 Student Research Assistants Hired
- 25 Graduate Students Supervised
- 9 UBC Faculty Partnerships
- 40+ Academic Researchers
- 44 Universities Engaged
- 93 Community Partners
- 13 Visiting Scholars and Trainees
- 18 Countries

Research Collaborators:

There has been steady growth and expansion of research collaborators and their associated faculties in the past decade moving from two UBC based research affiliates in 2012 to 25 research affiliates from nine university and colleges and community- based research organizations actively involved in research projects in 2018. Overall, Drs. Hole and Stainton have partnered with over 40 researchers to date. In addition to working across nine different faculties at UBC, research collaborators have been engaged from Douglas College, Coimbra University, Simon Fraser University, Tel Aviv University, University of Calgary, University of Northern BC, and the University of Victoria (see Appendix A6).
Student Trainees and Training

The CIC actively engages UBC students in the work of the Centre. The Centre’s physical presence at UBC both campuses has increased our ability to attract students and resulted in us having access to a large pool of graduate students with training in the latest research methods. We have extensive experience in quantitative, qualitative, and community-based participatory research methods. The CIC also has widespread linkages with other research units with relevant expertise across the world; the Institute will leverage these resources and continue to build them. The addition of the newly established research streams of the Institute will add to the breadth of research foci in I/DD research for future trainees and faculty.

In addition to their important contributions to the work of the CIC, providing mentorship to undergraduate and graduate students in the area of I/DD provides important recruitment and training for future careers in the community living sector in areas such as policy, practice, and research. Through the work of the CIC, numerous undergraduate and graduate student trainees have been supported through training, funding, and mentorship (see Appendix A7 for a full list of student trainees and mentees).

Since 2009, Drs. Hole and Stainton have supervised 25 graduate students working in the area of I/DD often participating across campuses on graduate supervisory committees.

Graduate Student Supervision. Hole and Stainton 2012 - 2018

- UBC Okanagan Masters Students: 11
- UBC Vancouver Masters Students: 4
- UBC Okanagan PhD Students: 6
- UBC Vancouver PhD Students: 3
In addition to graduate supervision, Hole and Stainton have supervised social work practicum students in the CIC, overseen Community Living British Columbia (CLBC) studentships (internships funded by CLBC), and mentored undergraduate and graduate research assistants (some subsidized by the UBC work study/work learn program). Again, these forms of training and mentorship have spanned both campuses.

Of note, the CLBC studentships were a unique success funded by a close partner, CLBC—the Crown Corporation responsible for supports and services for adults with I/DD and their families in BC. With support from Community Living British Columbia, the Centre was able to offer studentships for BSW and MSW level students at UBC interested in working in the field of I/DD. The awards encouraged students to consider a career in the area of community living upon completion of their degrees and support the development of professionals with both commitment to and expertise in fostering the inclusion and citizenship of people with I/DD in British Columbia. The students completed their work experience placements at CLBC and contributed additional hours working with the Centre. Every student who received this award in 2009-2014 accepted employment in the field.

Mentorship and training were foundational to the success of the CIC and will be instrumental in the ongoing work of the Institute. Moving to an Institute will allow us to expand our capacity (e.g., increased visibility, increased research streams and faculty, and increased infrastructure) to attract and support more top graduate and postdoctoral research trainees.
Self Advocate Consultants

The Centre for Inclusion and Citizenship makes every effort to include self advocates in all areas of research from project conception and design, to developing plain language research summaries, and in participating in knowledge translation/knowledge mobilization activities (e.g., conference co-presenters). The following individuals who identify as having a developmental disability have contributed to CIC initiatives in paid positions whenever possible and in volunteer roles as appropriate (e.g., as members of the Advisory Board).

- Erin Boe, TYDE Project Consultant, 2015 - present
- José Figueroa, TYDE Project Consultant, 2015 - present
- Gordon Fletcher, Advisory Board Member, 2008 - 2012
- Dale Froese, Mapping Inclusive Employment Project Consultant, 2013 - 2015; Film Festival Host, 2015 –present; Presenter, Leadership Institute, 2018
- Leanne Froese, Mapping Inclusive Employment Project Consultant 2013-2015; Film Festival Host, 2015 –present; Presenter, Leadership Institute, 2018
- Shelley DeCoste, Presenter, Leadership Institute, 2018
- Mangeet Ghangass, Presenter, Ideas Workshop Series, 2013
- Barb Goode, Plain language Consultant, 2012 - present
- David Johnston, TYDE Project Consultant, 2015 - present
- Jerry Laidlaw, Advisory Board, 2012 – present
- Jordan Lige, Film Festival Host, 2015 -2016
- Richard McDonald, Presenter, Ideas Workshop Series, 2013
- Michael McLellan, Advisory Board Member, 2015 - present
- Aaron Peitras, Sex, Lies and Citizenship Project Consultant, 2017 - present
- Shameera Rosal, TYDE Project Consultant, 2015 - present
- Bryce Sheffelberger, I Am Voting Initiative Spokesperson, 2017
- SF Walker, TYDE Project Consultant, 2015 - present
Current and Past Partners

The Centre for Inclusion and Citizenship engages local, provincial, national, and international organizations as partners in research and community engagement activities. Many have also funded projects or have contributed financially to support our core operations from 2008 - present. These partners will continue to be integral to the work of the Institute and with our growth as an Institute, our engagement with partners provincially, nationally, and internationally will grow as our capacity and reach increases.

See Appendix A3 for a detailed list of our current and past partners.
CIC Operational, Research and Project Funding as of September 2018

Total = $4,062,511

Originally established with a $100,000 start-up grant from Community Living BC (provincial government Crown Corporation), Drs. Hole and Stainton have been successful in increasing funding on an annual basis and has seen steady growth in Tri-Council Funding (TC), Research Contracts (RC), and Community Contributions (CC) over the past decade. To date (September 2018), the Centre for Inclusion and Citizenship has secured $4,062,511 in funding, leveraging the original $100,000 start-up contribution 40 times. It is important to note that both Dr. Hole and Dr. Stainton are also involved in research projects not categorized as falling within focus of the CIC.
The following table details the UBC Centre for Inclusion and Citizenship funding to date.

**LEGEND**
Activities have been colour-coded to relate to CIC research streams, community engagement and learning opportunities, and general fundraising.

- Policy and Practice
- Transitions and Employment
- Inclusive Education
- Health and Well-being of Individuals with Intellectual and Developmental Disabilities and their Families across the Life-Course
- Community Engagement and Learning Opportunities
- General Support for CIC core operations

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<td>Ideas Workshops Series</td>
<td>Office of the BC Representative for Children and Youth</td>
<td>$2,000</td>
<td>2013</td>
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<tr>
<td>UBC CIC/School of Social Work Studentships</td>
<td>Community Living British Columbia</td>
<td>$6,000</td>
<td>2013</td>
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<tr>
<td>CIC Operational Grant</td>
<td>BC Ministry of Social Development</td>
<td>$175,000</td>
<td>2013 - 2014</td>
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<td>UBC CIC/School of Social Work Studentships</td>
<td>Community Living British Columbia</td>
<td>$18,000</td>
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<tr>
<td>Supported Employment for Adults with Intellectual Disabilities: Social and Economic outcomes: A Literature Review</td>
<td>Community Living British Columbia</td>
<td>$3,000</td>
<td>2012</td>
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<td>CIC Operating Funds Grant</td>
<td>Community Living British Columbia</td>
<td>$20,000</td>
<td>2012</td>
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<tr>
<td>Transitioning to Adulthood: Challenges Facing BC’s Youth</td>
<td>PPBC Environmental and Occupational Health Research Network</td>
<td>$10,000</td>
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<td>Canadian Inclusive Lives Learning Initiative Participant Sponsorships</td>
<td>Community Living British Columbia</td>
<td>$18,000</td>
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<td></td>
<td>Delta Community Living Society</td>
<td>$1,800</td>
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<td></td>
<td>Family Support Institute</td>
<td>$1,800</td>
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<td></td>
<td>Inclusion BC ( Formerly BCACL)</td>
<td>$3,600</td>
<td>2012</td>
</tr>
<tr>
<td></td>
<td>posAbilities</td>
<td>$3,600</td>
<td>2012</td>
</tr>
<tr>
<td></td>
<td>Spectrum Society for Community Living</td>
<td>$3,600</td>
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<tr>
<td>Canadian Inclusive Lives Learning Initiative (CILLI) Pilot Evaluation and Redesign</td>
<td>BC Ministry of Social Development</td>
<td>$20,000</td>
<td>2012</td>
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<td></td>
<td>SSRHC Standard Research Grant</td>
<td>$35,000</td>
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<tr>
<td>Consultation and Discussion of Eligibility and Assessments in Disability Services</td>
<td>BC Ministry of Social Development</td>
<td>$1,581</td>
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<tr>
<td>Home Sharing: Evaluating the outcomes for people who have moved from group homes to home share</td>
<td>Community Living British Columbia</td>
<td>$25,000</td>
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<td>Ideas workshops Speakers Series Sponsorship (Engaging Community)</td>
<td>Community Living British Columbia</td>
<td>$5,000</td>
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<td>Ideas workshops Speakers</td>
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<td>2012</td>
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<tr>
<td>Series Sponsorship (Engaging Community)</td>
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<tr>
<td>---------------------------------------</td>
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<td>Examining the Organization of Healthcare for Aging Adults with Intellectual Disabilities in British Columbia</td>
<td>Vancouver Foundation</td>
<td>$39,030</td>
<td>2011-2012</td>
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<td>Canadian Inclusive Lives Learning Initiative Accommodation Support</td>
<td>Human Resources and Social Development Canada</td>
<td>$12,165</td>
<td>2011-2012</td>
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<tr>
<td>A Comparison of Cost and Service Utilization Across Individualized and Traditional Funding Options</td>
<td>CIC / Stainton</td>
<td>Not funded</td>
<td>2011 - 2012</td>
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<tr>
<td>UBC School of Social Work</td>
<td>CIC Operating Funds / Stainton</td>
<td>$20,000</td>
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<td>“In From the Margins” Supported Decision Making International Research Round Table</td>
<td>Peter Wall Institute for Advanced Studies, UBC</td>
<td>$20,000</td>
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<td>Supported Decision Making – International Dialogue</td>
<td>Open Society Institute Foundation</td>
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<td>Canadian Inclusive Lives Learning Initiative Curriculum Development</td>
<td>Community Living British Columbia</td>
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<td>Support for Peter Wall Grant Application Development</td>
<td>Disability Health Research Network</td>
<td>$1,500</td>
<td>2009 - 2011</td>
</tr>
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<td></td>
<td>UBC School of Social Work</td>
<td>$500</td>
<td></td>
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<tr>
<td></td>
<td>UBC Vancouver Law School</td>
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<td>Proposal Development Support: Disabilities Studies Graduate Program</td>
<td>Disability Health Research Network</td>
<td>$20,000</td>
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<td>CIC Start Up Grant</td>
<td>Community Living British Columbia/BCACL</td>
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<td>Community Living Research Project (Stainton and Hole)</td>
<td>BC Ministry of Children and Family Development</td>
<td>$325,000</td>
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<td><strong>TOTAL RESEARCH AND PROJECT FUNDING</strong></td>
<td><strong>$4,062,511</strong></td>
<td><strong>2008 – 2018 (Sept)</strong></td>
<td></td>
</tr>
</tbody>
</table>
Publications, Knowledge Exchange, and Application of Results

To date, research conducted by the CIC is published in well-respected peer review journals including:

- Australian Social Work
- Canadian Social Work
- Critical Practice in Social Work Revised Edition
- Disability and Rehabilitation: Assistive Technology
- Disability and Society
- International Journal of Disability, Community and Rehabilitation
- Journal of Applied Research in Intellectual Disability
- Journal of Intellectual Disability Research
- Journal of Policy and Practice in Intellectual Disability
- Journal of Social Philosophy
- Research and Practice in Intellectual and Developmental Disability

In addition, research findings have been presented by the Co-Directors, student trainees, and self advocates at numerous provincial, national and international conferences including the International Association for the Scientific Study of Intellectual and Developmental Disabilities Conference and also shared through various knowledge mobilization strategies.

Research Outputs

Co-Directors Stainton and Hole over the last ten years (2008 - 2018) – Note: these research outputs only represent work directly related to I/DD research. Both Hole and Stainton have research outputs in other domains as detailed in their attached CVs.

<table>
<thead>
<tr>
<th>Research Outputs</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refereed Articles</td>
<td>22</td>
</tr>
<tr>
<td>Non-Refereed Articles</td>
<td>8</td>
</tr>
<tr>
<td>Abstracts</td>
<td>7</td>
</tr>
<tr>
<td>Non-refereed Articles</td>
<td>8</td>
</tr>
<tr>
<td>Government Reports, Briefs, Working Papers</td>
<td>25</td>
</tr>
<tr>
<td>Books</td>
<td>1</td>
</tr>
<tr>
<td>Book Chapters</td>
<td>13</td>
</tr>
<tr>
<td>Scientific Conference Presentations</td>
<td>39</td>
</tr>
<tr>
<td>Invited Talks &amp; Community Workshops</td>
<td>80</td>
</tr>
</tbody>
</table>
Workshop and Conference Organization

In the past ten years, the Centre for Inclusion and Citizenship facilitated the exchange of information and knowledge by bringing a great number of national and international experts to present to wide audiences of academics, community and government partners in BC. For example, in 2015 the CIC hosted the Claiming Full Citizenship International Conference on Self Determination and Individualized Funding in Vancouver. The conference was attended by over 500 participants representing 13 countries.

An additional example is the Centre’s Speaker Series. In 2012/2013 and 2013/2014, the CIC delivered a series of workshops as part of our commitment to offer educational experiences and professional development opportunities to promote dialogue around contemporary issues facing the community living sector. Five workshops were held in 2012/2013 (attended by 325 participants). These were: Understanding our Past, Creating Community, How to Engage Neighbours, and Defining our Future. In 2013/2014, the speaker series was titled, “Diversity Includes”. Three workshops were held:

- “Ethnicity, Race & Culture: Towards an Inclusive Community Living Movement.” In partnership with MOSAIC and Kwantlen Polytechnic University. Opening Keynote: Sherman Chan
- “Also Here, Also Queer: Building Inclusive Communities for Lesbian, Gay, Bisexual, Transgendered and Queer People Labelled with Intellectual Disabilities.” In partnership with sprOUT, a Griffin Centre Project, Toronto Ontario. Keynote: Dr. Stephanie Bryson
- “Aboriginal Communities’ Perspectives on Disability: Exploring the Dialogue with the Community Living Sector.” In partnership with Okanagan Nation Alliance Wellness Committee. Opening Keynote: Grand Chief Stewart Phillip

For a fulsome description of knowledge exchange events and collaborators, please see Appendix A5.

Space and Existing Resources

UBC Okanagan:

Presently, the Centre for Inclusion and Citizenship shares space with the Institute for Community Engaged Research at UBC Okanagan. There is one office space for Dr. Rachelle Hole, three work stations, and a board room. Both Dr. Hole’s office and the board room are not accessible to individuals who use wheelchairs or other mobility
devices. In addition, with the award of the recent TYDE partnership grant, additional work station space will be needed for staff and research assistants (RAs) of the TYDE project in addition to existing and future RAs from other projects. Other potential uses of the space based on past practices is supervising UBC Okanagan School or Social Work practicum students and providing space for a School of Social Work sessional instructor. If the application to become an Institute is approved, we will be requesting a new space for the Institute at UBC Okanagan to increase the profile of the Institute (to have its own identity), to address increased capacity and infrastructure needs, and to ensure that the space is accessible to those with disabilities.

UBC Vancouver:
The CIC Coordinator is presently housed in an office at the Jack Bell School of Social Work in Vancouver. Work space for student trainees and work study students is limited and has been provided on an as needed basis. Meeting rooms in the Jack Bell Building are used to host public learning and knowledge exchange events as well as meetings of the Provincial Advisory Board. Financial administrative support is provided by the School of Social Work. At this time we do not anticipate requiring any additional space at UBC Vancouver.

Budget Projections, Justification & Financial Sustainability

Budget Projections (annual core operational costs)

The core operational costs of the Canadian Institute for Inclusion and Citizenship are primarily related to the learning and knowledge exchange activities and to the overarching administrative duties required to maintain our provincial, national and international presence. The current Centre Coordinator is employed at the Educational Programming, Level C category. The budget reflects minimal costs averaged from the past 10 years. As increased resources become available, the amount of activities undertaken will increase.

Additional Institute activities will be funded through research grants and contracts. The Co-Directors, Research Leads and Co-Leads will apply for student trainees work/learn positions to support the development and delivery of knowledge exchange activities. Student trainees will be regularly employed as research assistants at the graduate and undergraduate level as research projects allow. Self advocates will also be employed as consultants on various projects and are not included in budget below as these salaries (or honorariums) will be attached to project budgets.
The current Centre for Inclusion and Citizenship Provincial Advisory Board will also continue fundraising activities to encourage financial contributions from the non-profit sector in BC to support the Institute’s core operations.

We have experienced small annual growth in this activity which we expect to continue. We will also continue to work with the UBC Development Offices to secure gifts. The Co-Directors will also apply to various foundations, government initiatives and programs such as Mitacs Accelerate to support community/industry partnership projects. The Centre currently has one Mitacs application confirmed and a second Mitacs application is in development.

<table>
<thead>
<tr>
<th>REVENUE</th>
<th>UBCO Institute Funding</th>
<th>$50,000</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Community Contributions/Fundraising</td>
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<td></td>
<td>TOTAL REVENUE</td>
<td>$65,000</td>
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</table>

<table>
<thead>
<tr>
<th>EXPENSES</th>
<th>Coordinator position salary at 0.5</th>
<th>$53,760</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advisory Board Meetings</td>
<td>Travel for members to 1 meeting per year + lunch</td>
<td>$1,100</td>
</tr>
<tr>
<td>Travel &amp; Accommodation</td>
<td>To knowledge exchange events, presentations, CIC leadership meetings</td>
<td>$1,500</td>
</tr>
<tr>
<td>Memberships</td>
<td>IASSIDD</td>
<td>$1,000</td>
</tr>
<tr>
<td>Exhibitor costs at 3 conferences per year</td>
<td>E.g., Inclusion BC, Health &amp; Well-Being, Canadian Assoc. for Supported Employment ($1250 each)</td>
<td>$3,750</td>
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<tr>
<td>Phone/Long Distance/Conference Line</td>
<td></td>
<td>$340</td>
</tr>
<tr>
<td>Printing</td>
<td>Annual report, presentation materials</td>
<td>$1,800</td>
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<tr>
<td>Postage/Office Supplies</td>
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<td>$250</td>
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<tr>
<td>Misc.</td>
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<td>$1,500</td>
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<tr>
<td>TOTAL ANNUAL EXPENSES</td>
<td></td>
<td>$65,000</td>
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</table>
Budget Justification

Staffing:
An Institute Coordinator (M&P Educational Programming Level C) will be hired at 0.8 FTE at $5,734/month + (25% benefits = 1,434) = $86,016. The coordinator is essential for ongoing partner engagement and sustaining the work of the Institute.

Duties will include, but are not limited to, providing support to the Institute’s programmes of research across all current and future research streams; supporting research projects and knowledge exchange activities (including plain language summaries and knowledge exchange); supporting the advisory board; facilitating community engagement and professional development events; providing oversight of the overarching operational budget; preparing and distributing communication materials (e.g., annual report); and coordinating promotional and public communication related to the Institute (e.g., social media).

The Institute budget accounts for 0.5 FTE of the coordinator’s salary. The remainder of the position will be funded through successful grants and contracts obtained by the Institute directors and research leads and co-leads will account for the remainder of the coordinator’s salary. In addition, annual fund-raising will contribute to the coordinator’s salary as necessary.

Provincial Advisory Board Meeting Expenses:
While the majority our board meetings are done remotely (e.g., conference call), an annual in person meeting is important to convene members for visioning and long term planning. Most of our board members are located in the Lower Mainland, but a few individuals do need to travel. This budget line covers the costs for both travel and lunch for one annual in-person meeting.

Other Travel and Accommodation:
Given the cross campus nature of the Institute, a budget line is included to cover expenses related to Institute travel that falls outside of the domain of research related travel. For example, travel is required for Institute community engagement events such as the annual International Day of Persons with Disabilities Film Festival hosted at UBC Okanagan (the Coordinator’s attendance).

IASSIDD Membership:
The International Association for the Scientific Study of Intellectual and Developmental Disability (IASSIDD) is the largest scientific body dedicated to I/DD research. The annual membership provides Drs. Hole and Stainton the ability to attend and present at IASSID conferences and participate in other membership benefits of this international association.
Our institutional membership contributes to the Institute’s Global presence.

**Exhibitor Costs:**
Currently, the Centre is committed to three annual exhibitor costs annually ($1250 each): the Inclusion BC Annual Conference, the Health & Well-Being Conference, and the Canadian Association for Supported Employment Annual Conference. Presence at these conferences as an exhibitor will continue to increase the visibility of the Institute and allow for both networking, KT, and fundraising activities.

**Phone/Long Distance/Conference Line:**
The cost of the Institute phone is $20/month. The conference line is frequently used for Institute meetings (e.g., advisory board meetings, project related meetings, etc.) and costs vary according to frequency of use. Based on prior years’ costs for phone, long distance, and conference line, we budgeted $340 annually.

**Printing/Postage/Office Supplies:**
Printing includes a small number of printed annual reports. In addition, printing includes presentation materials, letters, etc. Based on printing expenses from previous years, we budgeted $1,800. Similarly, our projected expenses for postage and office supplies reflect average annual expenses from the past five years of the Centre for Inclusion and Citizenship.

**Misc.:**
$1,500 is budgeted for unanticipated contingencies.

**Financial Sustainability**

As outlined in this report, the funding for the Centre for Inclusion and Citizenship grew from an initial $100,000 startup infrastructure grant to having raised over $4 million dollars in grants, contracts, and donations in the nine-year tenure. The securing of research grants and contracts will contribute to the ongoing sustainability of the Institute. The Institute leadership will continue to pursue research grants and contracts to grow the revenue for the Institute. Directors, Research Leads, and Co-leads will build into contracts a budget line to help sustain the work of the Institute (e.g., a budget line for a portion of the coordinator’s time, relevant community engagement activities, and knowledge mobilization activities). The Institute Coordinator will assist with research connection activities and knowledge mobilization work; as such, a budget line will be included in research grants and contracts to account for the remainder of the Coordinator’s salary that falls outside of the
current budget. Moreover, our annual fundraising raises between $12,000 and $15,000 and we anticipate these contributions to grow with the progress of the Institute. Our Advisory Board actively fundraises for the Centre and will continue to do so for the Institute. Finally, we will work with the development offices at both campuses to continue to explore external donations and financial support for the Institute.

Activities Plan 2019 – 2023

<table>
<thead>
<tr>
<th>Strategic Goals</th>
<th>Activities</th>
</tr>
</thead>
</table>
| **Learning**    | • Accept current invitation from the University of Western Australia to explore participating in the McCusker Centre Global Citizenship Student Exchange Program  
• Organize and host international conference for TYDE CIHR/SSHRC project in 2023  
• Apply for MITACS and work study funding to support undergraduate and graduate student trainees  
• Recruit and support 1 – 2 postdoctoral fellows within the next three years  
• Host the Inclusion BC Annual Film Festival celebrating the UN International Day of Persons with Disabilities  
• Bring in international speakers to deliver public keynote talks at the TYDE annual general meeting (2019 – 2023)  
• Build research capacity among self advocate consultants  
• Secure funding to deliver an annual speakers series on issues of relevance to the sector |
| • Provide leadership and partnership opportunities for forums, Institutes, conferences, and symposiums aimed at increasing dialogue and knowledge on critical issues to the community living sector  
• Secure research (and other) funding to provide undergraduate, graduate, and postdoctoral training and research opportunities (e.g., work study positions, research assistantships, practicums, and participation in community learning events and Institutes) |
Knowledge Exchange

- Engage in innovative knowledge translation and knowledge mobilization activities (KT/KM) that include self advocates (individuals with intellectual disabilities) to ensure that KT/KM is low barrier and accessible (e.g., plain language documents)

- Develop skills and expertise in innovative KT/KM mediums
  - White board animation to aid in dissemination of research findings
  - Webinars

- Present research findings at IASSIDD and other international conferences (e.g., in Glasgow, August 2019)

- Publish research findings in peer reviewed journals ensuring open access
  - Create plain language KT summaries

- Present research findings at annual Inclusion BC conference every June

- Present Sex, Lies and Citizenship Participatory Theatre at Anvil Centre in New Westminster, May 2019

- Increase user accessibility features of Institute’s website
  Engage with identified Provincial Ministry representatives regarding knowledge mobilization opportunities

Conclusion

The UBC Centre for Inclusion and Citizenship has a demonstrated history of sustainable research, learning, and knowledge exchange activities provincially, nationally, and internationally. In fact, the CIC has been a national leader in Canada in I/DD research—the only university-based research centre in Canada with a focus on I/DD research. We have strong, established partnerships and collaborations with academic and community researchers, community organizations, and government that contribute to the success of our research and knowledge exchange. We successfully leveraged an initial $100,000 start-up contribution to over $4,000,000 in research grants, contracts, and infrastructure contributions over our nine year existence. We also demonstrate
extensive investment in mentorship and training for students providing a rich cross-campus environment that encourages interdisciplinary research and community engagement.

Our transition to an Institute will build upon this strong foundation and contribute to the sustainability and growth of the Canadian Institute for Inclusion and Citizenship’s reach and impact. The increased capacity and infrastructure will allow us to successfully develop and extend our research in three additional streams: 1) Inclusive Education, 2) Health and Well-being of Individuals with I/DD and their Families across the Life-Course, and 3) Working with Indigenous Communities and Families and I/DD. The increased visibility of becoming a UBC Institute, both internally and externally, will allow us to build upon our international reputation to attract top scholars, trainees, and community and government partners. Finally, the expansion to an Institute will bring additional faculty, resources, and expertise to propel the Institute to be a national and global leader in I/DD research contributing knowledge to inform policy and practice that promotes the full inclusion and citizenship of individuals with I/DD.
Letters of Support
Please refer to Appendix A8 for letters of support from:

- BC Aboriginal Network on Disability Society
- BC People First
- Canadian Association for Community Living
- Family Support Institute of BC
- Inclusion BC
- Office of the Representative for Children and Youth BC

Appendices

A1 Countries and Universities Engaged
A2 CIC Provincial Advisory Board Terms of Reference
A3 Current and Past Partners
A4 Claiming Full Citizenship Conference Content Experts and Presentations
A5 Knowledge Exchange Events and Collaborators
A6 Research Collaborators
A7 Student Trainees and Mentees
A8 Letters of Support
B CVs for CIC Leadership

Contact Information

Dr. Rachelle Hole
Centre for Inclusion and Citizenship
School of Social Work
UBC Okanagan Campus
ARTS 368 - 1147 Research Road
Kelowna, BC Canada V1V 1V7
Rachelle.hole@ubc.ca
250-807-8741

Dr. Tim Stainton
Centre for Inclusion and Citizenship
School of Social Work
UBC Vancouver Campus
2080 West Mall
Vancouver, BC V6T 1Z2
Tim.stainton@ubc.ca
604-822-9674
16 May 2019

To: Okanagan Senate

From: Admissions and Awards Committee

Re: Admissions Proposals recommended for approval by the Okanagan Senate

a) Admissions proposal: Bachelor of Media Studies

The Committee has reviewed and recommends to Senate for approval to suspend admissions to the Bachelor of Media Studies program.

The rationale for the proposal is outlined in the attached proposal form.

The following is recommended to Senate:

**Motion:** That Senate approve to suspend admissions to the Bachelor of Media Studies program.

b) Admissions proposal: English Language Admissions Standard

The Committee has reviewed and recommends to Senate for approval the revised admissions requirements for the English Language Admissions Standard.

The rationale for the proposal is outlined in the attached proposal form.

The following is recommended to Senate:
Motion: That Senate approve to revise the admissions requirements for the English Language Admissions Standard.

Respectfully submitted,

Tamara Ebl
Vice-Chair, Admissions and Awards Committee
Admissions Proposal Form
Okanagan Campus

<table>
<thead>
<tr>
<th>Faculty/School: IKBSAS/FCCS</th>
<th>Date: March 21, 2019</th>
</tr>
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<tbody>
<tr>
<td>Dept./Unit:</td>
<td>Contact Person: Dr. Barbara Rutherford / Dr. Bryce Traister</td>
</tr>
<tr>
<td>Faculty/School Approval Date: March 25 (FCCS), April 5 (IKBSAS)</td>
<td>Phone: 250.807.9527 / 250 807-9357</td>
</tr>
<tr>
<td>Effective Session: 2019W</td>
<td>Email: <a href="mailto:Barbara.rutherford@ubc.ca">Barbara.rutherford@ubc.ca</a> /bryce.traister@ubc.ca</td>
</tr>
</tbody>
</table>

**Type of Action:**
Revise Calendar pages.

**Rationale:** A BMS degree revision is required due to the application and enrolment data revealing that the program is not attracting or retaining students. Temporarily suspending the program in its current form will give the pause needed to engage in a program review and propose revisions to the current BMS within the next 12-18 months.

**Draft Academic Calendar URL:**
http://www.calendar.ubc.ca/okanagan/proo f/edit/index.cfm?tree=18,283,1092,1367

**Present Academic Calendar Entry:**
Homepage (draft) Faculties, Schools, and Colleges Faculty of Creative and Critical Studies Bachelor of Media Studies Program Program Overview

**Admission to the Bachelor of Media Studies (B.M.S.) program has been suspended. Students wishing to enrol in this program must contact the B.M.S program advisor.**

[17487] The Bachelor of Media Studies (B.M.S.) degree is a four-year, direct-entry, multi-disciplinary cohort program blending practice, theory, and research methodology in the participating disciplines. Students take designated “core” courses from within seven subject areas: Computer Science; Creative Writing; Digital Humanities; English; History; Media Studies; and Visual Arts. Students will be part of collaborative teams working on innovative, socially and economically relevant projects, developing a portfolio of skills and experiences to meet today’s employment and entrepreneurial needs.
projects, developing a portfolio of skills and experiences to meet today’s employment and entrepreneurial needs.

The core curriculum consists of 84 mandatory credits ensuring broad competencies to offer practical and relevant experiential learning opportunities for media research and creation; the remaining 36 electives will be chosen among acceptable electives in consultation with a program advisor to enable some specialization for the workplace or for further study. In consultation with the program advisor, each student will develop a Learning Plan to guide them in choosing electives and preparing for co-curricular opportunities in the field.

Admission Requirements

Admission to the Bachelor of Media Studies (B.M.S.) program has been suspended. Students wishing to enrol in this program must contact the B.M.S program advisor.

Application for admission to the Bachelor of Media Studies program must be made through Enrolment Services.
Admission to the Bachelor of Media Studies (B.M.S.) program has been suspended. Students wishing to enrol in this program must contact the B.M.S program advisor.

[17489] In addition to the general policies and regulations set out in Policies and Regulations the following academic regulations listed apply to undergraduate students in this program.

All students in the Bachelor of Media Studies must complete the following degree requirements:

[17514] All students in the Bachelor of Media Studies must complete the following degree requirements:

[17515]

- A minimum of 120 credits.
- A minimum of 48 of these credits must be completed at the upper level through courses numbered 300 and above.
- Once accepted into the B.M.S. program, students are expected to complete all of their coursework at the UBC Okanagan Campus, with the exception of credit completed.
• A minimum of 120 credits.
• A minimum of 48 of these credits must be completed at the upper level through courses numbered 300 and above.
• Once accepted into the B.M.S. program, students are expected to complete all of their coursework at the UBC Okanagan Campus, with the exception of credit completed through a UBC Go Global student exchange experience or through the cross-campus exchange program.
Admissions Proposal Form
Okanagan Campus

Faculty/School: Enrolment Services  Date: April 23, 2019
Dept./Unit: Undergraduate Admissions  Contact Person: Mr. Sam Saini
Faculty/School Approval Date: N/A  Phone: 250.807.3615
Effective Session: 2020W  Email: sam.saini@ubc.ca

Type of Action: Revise the English language competence requirement for undergraduate degree applicants.

Rationale: The English Language Admission Standard (ELAS) is one of UBC’s most important admission requirements for all students applying to an undergraduate degree program. Presently, ELAS is applied as a singular standard that all undergraduate programs at the University share, with some exceptions. Those exceptions include admission to programs such Vantage College (Vancouver), the English Foundation Program (Okanagan), and the Conditional Admission Program (Vancouver), where lower test scores are acceptable for admission.

More extensive changes to ELAS are currently being considered but one change in particular is required more urgently due changes in the BC high school curriculum. Specifically, the BC English 12 provincial exam is being eliminated. With the BC provincial exam no longer in place, UBC will have lost an important standardized assessment used to make admission decisions for an applicant pool that has a growing number of international students. BC English 12 course grades have become increasingly dubious, with many students admitted with high course grades in the spring, only to have their offers rescinded in the summer due to very poor provincial exam results. In other words, the BC English Provincial Exam was a tool that safeguarded against grade volatility, and as of the 2020W admission cycle, it will be gone.

In response to the elimination of the BC English 12 provincial exam, we propose that the “years of attendance” element of ELAS be adjusted to four years for all undergraduate applicants. A large portion of our applicant pool have spent their entire education in English language schools and do not need to demonstrate further proficiency in English. This element of our policy is also the most common way applicants meet ELAS. The recommendation to increase the years of attendance required for admission is based upon studies that suggests that fluency in English generally occurs in a four to seven timeframe for most students.

The current possibility of satisfying ELAS with three years of study in Canadian curriculum schools was implemented based upon operational needs, not on how learners acquire language. Additionally, with the English 12 provincial exam no longer available to contextualize English teaching in BC, UBC must ensure that students, particularly international students, who meet the ELAS through years of study are adequately prepared.
When this change was first considered, secondary school counsellors along with our initial review committee felt that moving to five years of attendance in an English language system would be more appropriate to meet ELAS (and would be more in line with what is suggested in the academic literature regarding language acquisition). However, concerns surrounding enrolment and international recruitment were voiced should UBC move from three years to five years in a short time frame. For these reasons, four years of attendance to meet the English requirement was deemed a reasonable compromise.

This change will pose no real impact for domestic students who have been educated in English speaking countries and schools for most of their education, but will require more international students to present tests scores for the purposes of satisfying English requirements. Again, this is a critical development when considering that international students in BC will no longer be required to write the provincial exam in English 12. The addition of one more year of study is needed to assess English requirements without any standardized assessment.

Other changes being proposed include updates to outdated information such as the removal of references to English language proficiency tests that are no longer available.

Proposed Academic Calendar Entry:

Homepage (draft) Admissions English Language Admission Standard English Language Competence

English Language Competence

[15515] As English is the language of instruction at the UBC Okanagan campus, all applicants, regardless of citizenship status or country of origin, will be required to demonstrate competence in the English language prior to admission. Competence is expected in all four of the following skills: listening, reading, speaking, and writing.

Draft Academic Calendar URL:
http://www.calendar.ubc.ca/okanagan/proof/edit/index.cfm?tree=2,19,1039,0

Present Academic Calendar Entry:

Homepage (draft) Admissions English Language Admission Standard English Language Competence

English Language Competence

[15515] As English is the language of instruction at the UBC Okanagan campus, all applicants, regardless of citizenship status or country of origin, will be required to demonstrate competence in the English language prior to admission. Competence is expected in all four of the following skills: listening, reading, speaking, and writing.
Applicants may demonstrate English language competence by one of the following:

- Completion of four or more consecutive years of full-time education in English in a country where English is the principal language, as determined by UBC. Such education must include BC Grade 12 English or equivalent and can be in a combination of secondary and post-secondary education.

- Completion of four or more consecutive years of full-time education in English at a recognized international secondary school that uses English as the language of instruction but operates in a country where the primary language is not English, as determined by UBC. Such education must include BC Grade 12 English or equivalent and can be in a combination of secondary and post-secondary education.

- A minimum final English (non-ESL) grade in one of the following:

| BC English 12 provincial exam (or equivalent) | 70% |
| BC English Literature 12 provincial exam (or equivalent) | 70% |
### In an approved school or country where English is the principal language. Grade scale may be adjusted for different grading practices.

- successful completion of the equivalent of four years of full-time instruction in a school/institution in Canada in which the major language of instruction is other than English, but where the level of English proficiency required is equivalent to that in English-language schools or institutions in Canada. Such education must include the equivalent to BC Grade 12 English and can be a combination of secondary and post-secondary education (this will include applicants from CEGEPs who have completed English as a first language);
- graduation from a recognized degree program at an accredited university at which English is the primary language of instruction and in a country where English is the principal language, as determined by UBC;
- successful completion of 6 credits of post-secondary first-year English studies for which UBC grants transfer credit;
| successful completion of the UBC Okanagan campus [English Foundation Program]; | successful completion of the UBC Okanagan campus [English Foundation Program]; |
| successful completion of the UBC Vantage College program; | successful completion of the UBC Vantage College program; |
| the competence standard indicated on one of the tests or programs of English language proficiency as listed in the table [English Language Proficiency Tests and Programs] that evaluates skills in listening, reading, speaking, and writing. | the competence standard indicated on one of the tests or programs of English language proficiency as listed in the table [English Language Proficiency Tests and Programs] that evaluates skills in listening, reading, speaking, and writing. |
English Language Proficiency Tests and Programs

Unless otherwise stated, the scores below represent the minimum required on each part of the examination. Minimum scores must be achieved in a single sitting of the test (i.e., scores across multiple instances of a test may not be used to satisfy minimum component requirements). Tests taken more than two years prior to application for admission will not be considered.

<table>
<thead>
<tr>
<th>Test or Program</th>
<th>Minimum Competence Level Required for Undergraduate Admission</th>
<th>Minimum Competence Level Required for English Foundation Program</th>
<th>Minimum Competence Level Required for English Foundation Program</th>
<th>Minimum Competence Level Required for UBC Vantage College</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAEL</td>
<td>Canadian Academic English Language assessment (Computer edition and Paper-based)</td>
<td>overall 70</td>
<td>overall 50</td>
<td>overall 60</td>
</tr>
<tr>
<td></td>
<td>With the speaking sub-test</td>
<td>60</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>CEL</td>
<td>UBC Certificate in English Language</td>
<td>600</td>
<td>400</td>
<td>500</td>
</tr>
<tr>
<td>CPE</td>
<td>Certificate of</td>
<td>C</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Test</td>
<td>Description</td>
<td>IELTS</td>
<td>TOEFL</td>
<td>MELAB</td>
</tr>
<tr>
<td>------</td>
<td>------------------------------------------------------------------------------</td>
<td>-------</td>
<td>------------------------</td>
<td>-----------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Proficiency in English&lt;sup&gt;1&lt;/sup&gt;</td>
<td>6.5, with no part less than 6.0</td>
<td>5.5, with a minimum 5.0 in Speaking and Listening, and minimum 5.5 in Reading and Writing</td>
<td>72</td>
</tr>
<tr>
<td>IELTS</td>
<td>International English Language Testing System (Academic)</td>
<td>5.0, with no part less than 4.5</td>
<td>N/A</td>
<td>85, with a final score of 3 in the speaking test</td>
</tr>
<tr>
<td></td>
<td>MELAB Michigan English Language Assessment Battery</td>
<td>6.0, with no part less than 5.0</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>With the MELAB Oral Interview</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>OC EAP Okanagan College English for Academic Purposes</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>PTE Pearson Test of English (Academic)</td>
<td>Overall Score: 34</td>
<td>Overall Score: 50</td>
<td>Overall Score: 48</td>
</tr>
<tr>
<td></td>
<td>Reading: 60</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Listening: 60</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Writing: 60</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Speaking: 60</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>TOEFL Test of English as a Foreign Language</td>
<td>550</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Either the paper-based test</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>With the TWE (Test of Written English)</td>
<td>4.0</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Proposed Academic Calendar Entry:

Homepage (draft) Admissions English Language Admission Standard English Language Proficiency Tests and Programs

English Language Proficiency Tests and Programs

[16023] Unless otherwise stated, the scores below represent the minimum required on each part of the examination. Minimum scores must be achieved in a single sitting of the test (i.e., scores across multiple instances of a test may not be used to satisfy minimum component requirements). Tests taken more than two years prior to application for admission will not be considered.
<table>
<thead>
<tr>
<th></th>
<th>ISO Code</th>
<th>Description</th>
<th>6.5</th>
<th>5.0, with no part less than 4.5</th>
<th>6.0, with no part less than 5.0</th>
<th>5.5, with a minimum 5.0 in Speaking and Listening, and minimum 5.5 in Reading and Writing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambridge English Qualifications¹</td>
<td>B2 First C1 Advanced C2 Proficiency</td>
<td>180</td>
<td>160</td>
<td>170</td>
<td>160</td>
<td></td>
</tr>
<tr>
<td>CEL</td>
<td>UBC Certificate in English Language²</td>
<td>600</td>
<td>400</td>
<td>500</td>
<td>400</td>
<td></td>
</tr>
<tr>
<td>IELTS</td>
<td>International English Language Testing System (Academic)</td>
<td>6.5, with no part less than 6.0</td>
<td>5.0, with no part less than 4.5</td>
<td>6.0, with no part less than 5.0</td>
<td>5.5, with a minimum 5.0 in Speaking and Listening, and minimum 5.5 in Reading and Writing</td>
<td></td>
</tr>
<tr>
<td>OC EAP</td>
<td>Okanagan College English for Academic Purposes</td>
<td>Level 4³</td>
<td>Level 3⁴</td>
<td>Level 3⁵</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>PTE</td>
<td>Pearson Test of English (Academic)</td>
<td>Overall Score: 65</td>
<td>Overall Score: 34</td>
<td>Overall Score: 50</td>
<td>Overall Score: 48</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Reading: 60</td>
<td>N/A</td>
<td>N/A</td>
<td>Reading: 43</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Listening: 60</td>
<td>N/A</td>
<td>N/A</td>
<td>Listening: 43</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Writing: 60</td>
<td>N/A</td>
<td>N/A</td>
<td>Writing: 43</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Speaking: 60</td>
<td>N/A</td>
<td>N/A</td>
<td>Speaking: 43</td>
</tr>
<tr>
<td>TOEFL</td>
<td>Test of English as a Foreign Language⁶</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet-based test</td>
<td>Overall Score: 90</td>
<td>Overall Score: 70</td>
<td>Overall Score: 80</td>
<td>Overall Score: 70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------</td>
<td>-------------------</td>
<td>-------------------</td>
<td>-------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading: 22</td>
<td>N/A</td>
<td>N/A</td>
<td>Reading: 16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Listening: 22</td>
<td>N/A</td>
<td>N/A</td>
<td>Listening: 16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Writing: 21</td>
<td>N/A</td>
<td>N/A</td>
<td>Writing: 16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaking: 21</td>
<td>N/A</td>
<td>N/A</td>
<td>Speaking: 16</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Administered by [Cambridge Assessment English](http://www.cae.ubc.ca).
2 From UBC's English Language Institute. See [http://eli.ubc.ca](http://eli.ubc.ca) for further details.
3 Level 4 requires completion of Okanagan College EAPD 040, EAPW 040, and EAPR 040. UBC requires a grade of 70% or higher in each course to satisfy the English Language Admission Standard.
4 An average between 50% and 69% on all Level 3 courses is required.
5 A minimum average of 70% on all Level 3 courses is required.
6 The TOEFL revised Paper delivered test is eligible for consideration and will be reviewed on an individual basis.
<table>
<thead>
<tr>
<th>Proposed Academic Calendar Entry:</th>
<th>Present Academic Calendar Entry:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homepage (draft) Admissions English Language Admission Standard</td>
<td>Homepage (draft) Admissions English Language Admission Standard</td>
</tr>
<tr>
<td>Waiver of the English Language Admission Standard</td>
<td>Waiver of the English Language Admission Standard</td>
</tr>
</tbody>
</table>

[15518] Applicants who do not meet UBC's English Language Admission Standard but who believe they have the proficiency of a native English speaker may request to have the requirement waived. A student should consider arranging to meet the requirement through regular means in the event that the student's request for a waiver of the requirement cannot be granted. To request a waiver, students should send to Admissions:

[15519]
- a brief letter or email explaining why they believe the requirement should be waived;
- a letter of recommendation from the student's high school English teacher, guidance counsellor, principal, or headmaster, that attests that the student's level of English proficiency is close to or equal to that of a native speaker. The letter should provide information as to how the writer may be contacted (including an email address if possible);
- an official transcript of grades, including the student's interim senior year or Grade 12 marks and

Draft Academic Calendar URL: [http://www.calendar.ubc.ca/okanagan/proof/edit/index.cfm?tree=2,19,1041,0](http://www.calendar.ubc.ca/okanagan/proof/edit/index.cfm?tree=2,19,1041,0)
| predicted IB or AP grades (if not already sent); and | an official transcript of grades, including the student's interim senior year or Grade 12 marks and predicted IB or AP grades (if not already sent); and |
| any additional evidence that may reflect the student's English competence such as achievement test scores (e.g., Scholastic Aptitude Test [SAT] scores). | any additional evidence that may reflect the student's English competence such as achievement test scores (e.g., Scholastic Aptitude Test [SAT] scores). |
16 May 2019

From: Senate Admissions and Awards Committee

To: Okanagan Senate

Re: New and Revised Awards recommended for approval by the Okanagan Senate

a) New award: Najjaran Family Bursary in Engineering
b) New award: Nadira Sadiq Memorial Bursary in Engineering
c) New award: Mina Hoorfar Bursary in Engineering
d) New award: Liz and Lindsay Gordon Centennial Indigenous Scholars Award
e) Revised award: Ronald Soligo Entrance Award

The Admissions and Awards Committee is pleased to recommend the following to Senate:

Motion: That Senate accept the new and revised awards as listed and forward them to the Board of Governors for approval; and that a letter of thanks be sent to the donors.

NEW AWARDS:

a) Proposed Award Title: Najjaran Family Bursary in Engineering

A $2,000 bursary has been made available through an endowment established by Homayoun Najjaran for a fourth-year undergraduate student in the Manufacturing Engineering program in the School of Engineering in the Faculty of Applied Science at the University of British Columbia, Okanagan campus. Preference is given to the student with the highest GPA over years one through three. The bursary is adjudicated by Enrolment Services. (First award available for the 2021/22 Winter Session)

b) Proposed Award Title: Nadira Sadiq Memorial Bursary in Engineering
A $2,000 bursary has been made available through an endowment established by the Sadiq family, in memory of Nadira Sadiq, for a female undergraduate student in the School of Engineering in the Faculty of Applied Science at the University of British Columbia, Okanagan campus. Nadira Sadiq (1944-2018) was a homemaker and raised four children. She never went to university, but always wanted her children to be highly educated. This bursary, in her honour, will give students in the School of Engineering valuable assistance in their own pursuit of higher education. The bursary is adjudicated by Enrolment Services. (First award available for the 2019/20 Winter Session)

c) Proposed Award Title: Mina Hoorfar Bursary in Engineering

A $2,000 bursary has been made available through an endowment established by Mina Hoorfar for a female undergraduate student in the School of Engineering in the Faculty of Applied Science at the University of British Columbia, Okanagan campus. The bursary is adjudicated by Enrolment Services. (First award available for the 2021/22 Winter Session)

d) Proposed Award Title: Liz and Lindsay Gordon Centennial Indigenous Scholars Award

A $10,000 renewable entrance award has been made available through an endowment established by Lindsay and Elizabeth Gordon, along with matching funds from The University of British Columbia, to First Nations, Inuit, or Metis undergraduate students of Canada entering the University of British Columbia, Okanagan campus directly from secondary school or transferring from another post-secondary institution to an undergraduate program of study. Recipients are academically qualified with preference to students who would not be able to attend UBC without financial assistance. In addition to academic merit, consideration is given to qualities such as leadership skills, community service and recognized extra-curricular achievement. Subject to continued academic standing, the awards will be renewed for a further three years of study or until the first undergraduate degree is obtained (whichever is the shorter period). The awards are made on the recommendation of the adjudication committee. (First award available 2020/21 Winter Session)

REVISED AWARDS:

e) Award Title: Ronald Soligo Entrance Award

Existing description:

A $2,000 academic entrance award is offered annually has been made available through an endowment established by alumnus Ronald Soligo (B.A. 1958) for a student entering
an undergraduate program at UBC Okanagan with preference given to students who completed their secondary school from J Lloyd Crowe Secondary School. Preference is given to those who would not be able to attend UBC without significant financial assistance. In the event there are not any eligible candidates in a given year the award will go to a student from School District 20 and, in the case that there are not any eligible candidates from School District 20, then the award will go to a student from School District 8. The award is made on the recommendation of the adjudication committee.

Amended Description:

A $2,000 academic entrance award has been made available through an endowment established by alumnus Ronald Soligo (B.A. 1958) for a student entering an undergraduate program at UBC Okanagan with preference given to students who completed their secondary school from J Lloyd Crowe Secondary School. Preference is given to those who would not be able to attend UBC without significant financial assistance. In the event there are not any eligible candidates in a given year the award will go to a student from School District 20 and, in the case that there are not any eligible candidates from School District 20, then the award will go to a student from School District 8. The award is made on the recommendation of the adjudication committee.

Respectfully submitted,

Tamara Ebl
Vice-Chair, Admissions and Awards Committee
3 May 2019

To: Okanagan Senate  
From: Agenda Committee  
Re: Draft: Code of Conduct and Conflict of Interest Rules for the Okanagan and Vancouver Senates  
(discussion)

The Committee presents draft Code of Conduct and Conflict of Interest Rules for the Okanagan and Vancouver Senate for discussion and feedback. The circulated document at the direction of the Vancouver Senate Agenda Committee, and forwarded to the Okanagan Agenda Committee to allow for coordinated review processes at both campuses. The proposed rules are written for applicability to both Senates.

Currently, senators disclose potential or actual conflicts of interest on an ad hoc basis, which are managed with support from the Senate Secretariat. The proposed rules and code of conduct present a comprehensive framework for the disclosure and management of conflicts of interest, and articulate duties and expectations of members of the Senate.

Several Canadian post-secondary institutions have established conflict of interest rules and either an accompanying or stand-alone code of conduct. The structure of these rules vary and are generally organized as follows:

- general statements on the role and expectations of Senators to act in good faith and in the best interest of the institution;
- reference to conflict of interest and disclosure thereof in institution-wide policy on Conflict of Interest applicable to faculty and staff;
- section relating to conflict of interest and disclosure thereof embedded in the procedural document applicable to the academic governing body; and
- formalized by-laws or rules specific to the conflict of interest and/or code of conduct for members of an academic senate.

Section 35.2(4) of the University Act sets out a requirement for the senate of special purpose, teaching university to make bylaws for the conduct of business of the senate, including bylaws specifying the duties of members of the senate in conflict of interest situations. While this requirement is not applicable to UBC, it is good governance practice to have a Senate(s) code of conduct and clearly articulated rules and procedures relating to the disclosure and resolution of conflicts of interest for members of the Senates.

The proposed rules are circulated herein for comment and feedback, with consultation ongoing over the summer months, following which the Nominating Committee will consider the rules (as amended following consultation) for approval and recommendation to Senate. Adoption of the attached will require a formal change to the Rules and Procedures of the Okanagan Senate to include reference to- and applicability of- the rules.

Comments and feedback can be forwarded to: amandeep.breen@ubc.ca.
DRAFT: CODE OF CONDUCT AND CONFLICT OF INTEREST RULES FOR THE OKANAGAN AND VANCOUVER SENATES

1. Introduction and Purpose

The academic governance of the University is vested with the Senates and the Council of Senates.

The powers and duties of the Senates are set out in the University Act.

This Code of Conduct (Code) defines the standards of conduct expected of Senators, including with respect to conflict of interest.

2. Application

The Code applies to all members of the following:

- Okanagan Senate
- Vancouver Senate

3. Definitions

For the purpose this Code, the following definitions are used throughout:

Chair shall mean the President as the Chair of the Okanagan Senate and Vancouver Senate, or a chair of a Committee of the Okanagan or Vancouver Senate, as context requires

Code shall mean this Code of Conduct, as amended, supplemented, revised or restated from time to time

Okanagan Senate shall mean the Okanagan Senate of the University

Private Duty shall mean any duty that a Senator owes to someone other than the University.

Private Interest shall mean any interest substantial enough that decisions of Senate could result in a personal gain for the Senator

Secretary shall mean the Registrar, as outlined in the University Act.

Vancouver Senate shall mean the Vancouver Senate of the University
University shall mean the University of British Columbia

University Act shall mean the law titled as such in the Province of British Columbia with the citation Revised Statutes of British Columbia 1996, chapter 468 and its successor legislation

4. Duties and Expectations of Senators

4.1 Duties

**Duties to the University:** Senators must act honestly and in good faith with a view to serving the best interests of the University. Senators are required to:

- be honest in their dealing with the University and others on behalf of the University;
- disclose to the Senate any personal interests that they hold that may conflict with the interests of the University in accordance with the requirements set out in this Code;
- exercise independent judgement and not act as a delegate or representatives of any other group or organization internal or external to the University;
- maintain the confidentiality of any information submitted to the Senators in confidence, and in accordance with the requirements set out in this Code and any applicable policies; and
- refrain from any actions, direct or indirect, that may compromise the effective implementation of decisions of the Senate. However, this should not be taken to include any statement a Senator may make on their opinion of a Senate decision or discussion.

**Duty of Knowledge:** Senators must make a reasonable effort to be familiar with and be generally knowledgeable about:

- the University’s mandate, goals, objectives, and operations;
- the community, business and political environments within which the University operates;
- the relevant legislation applicable to the University and Senators; and
- the current governance policies and practices of the University.

**Duty to Disclose:** Senators are encouraged to disclose information within their knowledge that is of significance to a decision before Senate.
4.2 Expectations

In fulfilling their responsibilities and duties, Senators are expected to:

- Regularly attend meetings of the Senates and Senate Committees
- act in a manner consistent with the general spirit and intent of the Code;
- devote the necessary time and attention required to prepare for meetings of
  the Senates and Senate committees;
- participate fully and frankly in the deliberations and discussions of the
  Senates and Senate committees;
- act in a manner which is courteous to others, including treating others with respect
  and dignity, with the understanding that agreement is not required or expected in a
  deliberative forum;
- avoid any situations that impair or have the potential to impair the Senator’s
  independence or impartiality in performing the duties of a Senator;
- acknowledge that the Chair of the Senates is the only official spokesperson of the
  Senates and act consistent with the Senate’s protocols on Senate communications
  and public comment;
- act in a manner consistent with the trust and confidence placed in the Senates.

5. Confidential Information

In the course of their duties, Senators will have access to confidential information relating

Senators must maintain the confidentiality of all such confidential and non-public

Proceedings in Senate Committees and in-camera sessions of the Senates are confidential.

6. Conflict of Interest

6.1 Definition

A conflict of interest may arise where the Private Interest of a Senator conflicts,

including their duty to act
in the best interests of the University.

Conflicts are generally divided into the following categories.

- An **actual conflict of interest** refers to a situation where a Senator exercises a power or performs a duty or responsibility, and in so doing, there is a conflict with the Senator’s Private Duty;

- A **potential conflict of interest** refers to a situation where a Private Duty of a Senator could influence the exercise of the Senator’s power or performance of his or her duties or responsibilities; and

- An **apparent conflict of interest** refers to a situation where informed people might reasonably hold the apprehension that a conflict of interest exists on the part of a Senator in relation to a Private Duty.

### 6.2 Examples of Conflict of Interest

Some conflicts are quite clear, whereas others are less obvious. Examples of conflict of interests include:

a. Where a Senator may have or have had personal and/or professional dealings with one or more parties or units involved in the Senate’s or Senate Committee’s deliberations that may influence or impair his or her judgement in the administration of duties and activities as a member of Senate;

b. any association or activity, that is, or may reasonably be seen to be, incompatible with the Senator’s duties, or cast doubt on the integrity or impartiality of the Senates or the University.

### 7. Dealing with Conflict of Interest

The Nominating Committee Chair, and the Nominating Committee are primarily responsible to interpret and apply the Code’s provisions on conflict of interest on behalf of the Senates, as set out in this Code.

#### 7.1 Duty to Avoid or Manage

Senators are responsible to recognize conflict of interest and to avoid or manage conflicts of interest in a manner that is consistent with the Senator’s duty to act in the best interest of the University and in accordance with requirements set out in this Code.
7.2 Conflict of Disclosure Statement

Every Senator must complete a Conflict of Disclosure Statement (Disclosure Statement) upon his or her initial appointment and update the Disclosure Statement at any time he or she becomes aware of new or additional relevant information, or as required by changed circumstances.

Disclosure Statements are filed with the Secretary to Senate, who will retain the records at the Office of the Senate and provide copies to the Chair of the Nominating Committee.

Where a Senator has disclosed a conflict in the Disclosure Statement, the disclosure and plans to manage the actual, potential or apparent conflict will be reviewed and approved by the Nominating Committee and reported to the Senate at the next Senate meeting.

7.3 Ongoing Disclosure

In addition to filing a Disclosure Statement at the time of appointment to Senate, all Senators have an ongoing duty to disclose an actual, potential or apparent conflict of interest as soon as the issue arises and before the Senate or Senate Committees deal with the matter at issue.

Senators should make their disclosure to the Secretary to Senate and the Nominating Committee Chair.

In the event the Chair of the Nominating Committee has a possible conflict, he or she should make his or her disclosure to the Vice-Chair of the Nominating Committee.

In the event the Chair of Senate had a possible conflict, he or she should make his or her disclosure to the Nominating Committee Chair.

7.4 Raising Conflict of Interest Issues

It is the responsibility of Senators who are aware of an actual, potential or apparent conflict of interest on the part of a fellow Senator to raise the matter for clarification, first individually with the Senator in question and, if unresolved, in writing to the Secretary and Nominating Committee Chair.

If a Senator is aware of an actual, potential or apparent conflict of interest on the part of the Chair, he or she should raise the matter for clarification, first individually with the Chair and, if unresolved, in writing to the Secretary and Nominating Committee Chair.

Repeatedly raising questions of possible conflicts of interest that are without merit is considered to be contrary to the spirit and intent of the Code.
7.5 Resolving Conflicts of Interest Issues

Where a possible conflict is identified to the Secretary and Nominating Committee Chair, the following steps will be taken.

a. In straight-forward cases, the Nominating Committee Chair will review the circumstances and provide the Senator potentially in a conflict of interest with advice on whether a conflict exists and, if so, the steps required to manage the conflict. In all such cases, the Nominating Committee Chair will inform the Nominating Committee of the issue raised and how it was resolved.

b. In cases where it is not clear whether there is a conflict or how it should be handled, the matter will be referred to the Nominating Committee who will review the circumstances and determine by majority vote if a conflict exists and, if so, the steps required to manage the conflict. If the Senator potentially in a conflict of interest is a member of the Nominating Committee, he or she shall be absent from the discussion and shall not vote on the issue.

c. The Nominating Committee will advise the Senate in camera of each case under subsection (b) and how the has been addressed.

Throughout the process, the Nominating Committee Chair and/or the Nominating Committee may seek advice from the Office of the University Counsel.

Senators must comply with any direction provided by the Nominating Committee Chair or the Nominating Committee to undertake a specified action to manage a conflict of interest.

7.6 Conflicts Related to Senate and Senate Committee Agenda Items

Every Senator must declare any conflict of interest in respect of any Senate or Senate committee agenda item as soon as becoming aware of it, whether or not such conflict of interest has previously been disclosed in the Senator’s Disclosure Statement.

The Secretary will monitor the subject matter of the Senate or Senate committee agendas for possible conflicts of interest for individual Senators. If the Secretary has reason to believe that an agenda item could result in a conflict of interest for a Senator, the Secretary will alert the Senator, and make reasonable efforts to discuss the issue with the Senator before circulating information to that Senator and so that Senator can make a declaration accordingly.

Where a Senator has a conflict of interest in respect of an agenda item, the Senator:

a. shall abstain from any discussions or vote concerning such matter that
may occur during a Senate or Senate Committee meeting;
b. shall be counted in the quorum for a meeting at which the Senator attends,
notwithstanding that the Senator is absented while any matter is considered
in respect of which a conflict of interest exists for that Senator.

If a Senator declares a conflict of interest, a summary of the disclosure will be
recorded in the minutes of the meeting, as well as any restrictions on the Senator’s
participation.

Where a conflict of interest is discovered after consideration of a matter, the conflict
must be brought to the attention of the Nominating Committee through the
Secretary, and appropriately recorded at the first opportunity. If the Nominating
Committee determines that the Senator’s involvement has, or could be perceived
to have, influenced the decision, the Senate or Senate committee must re-examine
the matter and may rescind, vary or confirm its decision.

7.7 Confidentiality

Except where disclosure of such information is authorized or required by law or this
Code, any information disclosed by any person pursuant to this Code will be
held in confidence and will only be available to those persons who need to have
access to the information in order to carry out their roles under this Code, for the
purposes of this Code.

8. Failure to Comply

Where the Nominating Committee determines that a Senator has failed to comply with the
Code, the Committee shall consider the extent to which the Code has been breached and the
need for redress and decide on an appropriate course of action, which may include:

- issuing an oral or written reprimand to the Senator;
- requesting the Senator to take appropriate corrective action;
- requesting that the Senate pass a motion of reprimand or censure;

9. Reporting Responsibility

9.1 Nominating Committee

The Nominating Committee has specific responsibilities set out in this Code, which
include the interpretation and application of provisions regarding conflicts of
interest and to receive information provided by the Secretary or Nominating
Committee Chair in respect of conflicts of interest. The Nominating Committee is
responsible to report to the Senate regularly on the handling of conflict of
interest issues, as well to provide an annual report as set out below in section 9.3,
Annual Reporting.
9.2 Secretary to Senate

The Secretary is responsible for providing each Senator, upon appointment or election, with:

- a copy of the Code;
- copies of any written materials with commentary or explanations of provisions of the Code;
- a Disclosure Statement form.

The Secretary is responsible for maintaining a record of Disclosure Statements; such records will normally be retained for a period of three (3) years following the end of a Senator’s term.

9.3 Annual Reporting

The Agenda Committee is responsible for reviewing this Code from time to time and recommending to Senate any changes, as necessary.

The Nominating Committee must provide to Senate an annual anonymized summary of conflict of interest disclosures and the actions taken in response.
16 May 2019

To: Okanagan Senate

From: Appeals of Standing and Discipline Committee

Re: Annual Report 2018-2019 (information)

Committee Terms of Reference:

Delegated Authority over the following by Senate:

A. Appeals of decisions of the President on student discipline;
B. Appeals of final decisions of Faculties on academic standing; and
C. Appeals of final decisions of Faculties on promotion/advancement.

The Okanagan Senate Appeals of Standing and Discipline Committee is a standing committee of the Okanagan Senate established under section 37(1)(v) of the University Act R.S.B.C. 1996, c.468 (the “Act”) as the “standing committee of final appeal for students in matters of academic discipline.” The Committee also serves as the mechanism for student appeals of faculty decisions under section 40(g) of the Act.

As per Part 5, Section 37(a) of the Rules and Procedures of the Okanagan Senate, and following general practice for a standing committee exercising delegated authority of a larger assembly, the Committee makes an annual report to Senate including the number of appeals heard, their disposition, and the general nature of the appeals.

The following provides a brief outline of disciplinary and academic standing appeal processes along with a summary of appeals considered by the Committee during the period 1 May 2018 to 30 April 2019.

A. **Student Discipline**

Under section 61(1) of the Act, the “president has power to suspend a student and to deal summarily with any matter of student discipline.” Under section 61(2) of the Act, the President “must promptly report the action to the standing committee established under section 37(1)(v) with a statement of his or her reasons.” Under section 61(3) of the Act, the “action of the president is final and subject in all cases to an appeal to the senate.”

Student discipline is governed by the Policies and Regulations section of the UBC Okanagan Academic Calendar (see UBC Okanagan Academic Calendar Policies and Regulations, Student Discipline [http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3.54.0.0](http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3.54.0.0)) and in the case of allegations of non-academic misconduct involving sexual

1. Academic Misconduct

During the Period 1 May 2018 to 30 April 2019, the Senate Committee heard no appeals involving students disciplined for academic misconduct by the President upon the recommendation of the President’s Advisory Committee on Student Discipline.

2. Non-academic Misconduct

During the period 1 May 2018 to 30 April 2019, the Committee heard one appeal involving a student disciplined by the President upon the recommendation of the President’s UBC Okanagan Non-Academic Misconduct Committee.

The student was disciplined for non-academic misconduct for taking without authorization, misusing, destroying, defacing, or damaging University property or property that was not the student’s own and by entering onto a premises to which the student did not have legitimate access. The discipline imposed by the President was suspension from the University for a period of 4 months.

The student appealed on the following four grounds:

- 11.4(3) That there was a breach or unfair application of the University's procedure prior to the President's Committee hearing that was raised before the President's Committee but not adequately remedied through the President's Committee; and

- 11.4(4) That the procedure of the President’s Committee was unfair or operated unfairly, in that there was bias or a lack of independence in the President’s Committee, or the President’s Committee’s procedures were unfairly applied or breached, or that the President gave insufficient reasons for his or her decision.

Where the appeal is under section 11.4(3) or section 11.4(4), the appropriate standard of review is whether a reasonable person, knowledgeable about the facts, would perceive the process at or before the President's Committee to be unfair. If the Senate Committee finds this to be the case, it will refer the matter back to the President's Committee for a re-hearing, or with the consent of the student and the Initiator, reverse or vary the President's decision or substitute its own decision. The Senate Committee found that a reasonable person, knowledgeable about the facts, would perceive the process to have been fair.

- 11.4(5) That the President erred in the President’s assessment of the evidence in the President’s Committee’s report, including any factual inferences made by the President, or the credibility of the student or other witnesses.

Where the appeal is under paragraph 11.4 (5), the appropriate standard of review is reasonableness. The Senate Committee may reverse or vary the President’s decision or substitute its own decision only if the President’s assessment of the
evidence in the President’s Committee’s report, including any factual inferences made by the President or the credibility of the student or other witnesses, is unreasonable. The Senate Committee found that the President’s assessment of the evidence in the President’s Committee’s report was reasonable.

- 11.4(6) That the discipline imposed by the President was excessive.

Where the appeal is under paragraph 11.4 (6), the appropriate standard of review is reasonableness. The Senate Committee may reverse or vary the President’s decision or substitute its own decision only if the exercise of the President’s discretion with respect to the academic discipline imposed is unreasonable. The Senate Committee found that the discipline imposed by the President was reasonable.

**Appeal Dismissed.**

**3. Sexual Assault and Other Sexual Misconduct**

During the period 1 May 2018 to 30 April 2019, the Committee heard one appeal involving a student disciplined by the President for sexual assault or other sexual misconduct. The discipline imposed by the President was a suspension for a period of 12 months, a notation of academic misconduct entered on the student’s transcript, a prohibition on accessing the UBC Okanagan Campus for the duration of the suspension, and a prohibition on contact and communication with the complainant.

The student appealed on several grounds, including:

- 11.4(4) That the procedure of the President’s Committee was unfair or operated unfairly, in that there was bias or a lack of independence in the President’s Committee, or the President’s Committee’s procedures were unfairly applied or breached, or that the President gave insufficient reasons for his or her decision.

Where the appeal is under section 11.4(3) or section 11.4(4), the appropriate standard of review is whether a reasonable person, knowledgeable about the facts, would perceive the process at or before the President's Committee to be unfair. If the Senate Committee finds this to be the case, it will refer the matter back to the President's Committee for a re-hearing, or with the consent of the student and the Initiator, reverse or vary the President's decision or substitute its own decision.

The Senate Committee allowed the appeal on this basis. As the discipline at issue in this case was imposed following the Policy 131 investigative process and did not involve a hearing before the President’s Committee, the Senate Committee considered the fairness of the Investigative process. The Senate Committee concluded that the appellant was not provided with a sufficient opportunity to provide his own version of events in the course of the investigation. The matter was referred back to the Director of Investigations.
B. Academic Standing

The Okanagan Senate has delegated to the Appeals of Standing and Discipline Committee the authority to hear and dispose of student appeals from decisions of faculties in matters of academic standing. The Committee shall allow an appeal where the decision of the Faculty was arrived at through improper or unfair procedures, and that as a result, a wrong decision may have been arrived at. However, the Committee has no jurisdiction where the sole question raised in an appeal turns on the exercise of academic judgment by a faculty member. The Okanagan Senate has conferred on the Committee the power to make final decisions pursuant to section 37(1)(b) of the Act (see UBC Okanagan Academic Calendar, Policies and Regulations, Senate Appeals on Academic Standing, section 2: [http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,53,106,0](http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,53,106,0)).

Students may also appeal to the Committee for contravention of procedure with respect to a Review of Assigned Standing in a Course (see UBC Okanagan Academic Calendar, Policies and Regulations, Review of Assigned Standing in a Course: [http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,294,0,0](http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,294,0,0)).

An appeal allowed by the Committee shall be by:

- reversal of the decision of the Faculty, and the granting of such academic standing to the appellant as the Committee thinks fit in the circumstances; or
- quashing of the decision of the Faculty, and the sending of the matter back to the Faculty to be dealt with in accordance with proper procedures.

1. Academic Standing

During the period 1 May 2018 to 30 April 2019, the Committee heard no appeals on academic standing.

Respectfully submitted,

Dr. Robert Campbell, Chair
Appeals of Standing and Discipline Committee

Members of the Committee:

- Dr. Robert Campbell (Chair)
- Dr. Shahria Alam
- Mr. Myron Campbell
- Dr. Diana Carter
- Dr. Jennifer Gustar
- Ms. Rachelle Snider (student)
- Mr. Jackson Traplin (student)
- Mr. Jassim Naqvi (student)
16 May 2019

To: Okanagan Senate

From: Curriculum Committee

Re: Revised Bachelor of Arts Structure (approval)

The Senate Curriculum Committee has reviewed the first of two anticipated proposals pertaining to a comprehensive revision of the BA program submitted jointly by the Faculty of Arts and Sciences and the Faculty of Creative and Critical Studies. The Committee is pleased to present this structure to Senate for approval in principle.

The proposal enclosed sets out the structure of the revised program. The anticipated second proposal will provide additional detail regarding program requirements, including populating lists of courses that are currently empty.

Because the enclosed proposal does not set out a complete program, the Committee is proposing that Senate consider approving it in principle only, with final approval to follow with the second anticipated proposal. Approval in principle will provide the Faculties with some measure of certainty that Senate approves of the basic structure of the revised program, while also setting an expectation that the final version of the program will adhere to this structure.

The following is recommended to Senate:

Motion: That the structure of the revised Bachelor of Arts program be approved in principle, with final approval of the complete revised program and any associated courses and publication in the academic calendar to be conditional upon subsequent approval by the Senate Curriculum Committee and Senate.

a. From the Faculty of Arts and Sciences and the Faculty of Creative and Critical Studies
   i. Bachelor of Arts, Program Overview
   ii. Bachelor of Arts, Program Requirements
   iii. Bachelor of Arts, Degree Requirements
For the Committee,

Dr. Peter Arthur
Chair, Curriculum Committee
REVISED BACHELOR OF ARTS PROPOSAL
UBC OKANAGAN

Bernard Momer
Associate Dean, Teaching Learning and Curriculum, IKBSAS

Marianne Legault
Associate Dean of Undergraduate Studies, FCCS

September 2018*

*Editorial revisions, February 2019
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UBC’s purpose: Pursuing excellence in research, learning and engagement to foster global citizenship and advance a sustainable and just society across British Columbia, Canada and the world.

UBC Strategic Plan, p. 11

Executive Summary

Program redesign and educational renewal are at the heart of the transformative learning objective of Shaping UBC’s Next Century, the University’s new Strategic Plan. Although the process of redesigning the Bachelor of Arts preceded the adoption of the plan, it is nevertheless in that spirit that we undertook that process. Over the last two or three decades, student expectations of a university education and the needs of employers have shifted significantly, not to mention the advances in technology that have revolutionised education delivery. The challenge in higher education is how to prepare and sustain students for a lifetime of uncertainty, change, challenge, and emergent or self-created opportunities. In other words, we need to ensure that we future proof our students.

Universities must not only cultivate students’ intellectual ability and practical skills but also their imaginations and practical creativity. Yet, the current structure of the Bachelor of Arts at UBC Okanagan, deemed to have been at home in some universities 50 years ago (Averill et al., 2016), has not significantly changed in practically 30 years.

This document outlines the recommendations put forward by the steering committee tasked with redesigning the Bachelor of Arts (B.A.) degree. The subsequent new degree structure is the result of numerous committee meetings over an 18-month period and two extensive rounds of consultation in both the I.K. Barber School of Arts and Sciences and the Faculty of Creative and Critical Studies. The proposed structure was carefully crafted to take into consideration the purpose of a university degree, the needs of our students, the demands from employers, UBC’s Strategic Plan, and the evolution of post-secondary education over the last decade.

The recurring theme that emerged from the 2016 B.A. degree external review and the internal consultation process is the need for flexibility. The requirements for the degree should facilitate student mobility within UBC and across institutions; allow programs to develop new delivery options; and, offer pathways for students to complete their education that are unencumbered by onerous and overly complicated degree requirements. Other themes that emerged revolved around the following questions: What do students need from a liberal arts education? How do we provide students with the knowledge and skills that will help them become productive and engaged citizens and prepare them for employment and graduate school?

The proposed new B.A. structure is built on a set of foundational, distribution, and program requirements. The Foundational Requirement provides students with the foundational skills and knowledge to complete their degree successfully, along with the foundational skills and knowledge expected of any student graduating with a university degree in Canada today. The Distribution Requirement provides students with course material that exposes them to theoretical perspectives, forms of thought, and modes of enquiry that are different than their area of specialisation, while the Program Requirement offers the material needed for students to complete a major or minor.
The following table provides a summary of the proposed degree structure.

<table>
<thead>
<tr>
<th>FOUNDATIONAL REQUIREMENT</th>
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<tbody>
<tr>
<td>Communication</td>
<td></td>
</tr>
<tr>
<td>• 3 credits of ENGL 112, 114 or 15x</td>
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</tr>
<tr>
<td>• 3 credits of ENGL 203 or equivalent</td>
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<tr>
<td>• 6 credits of language acquisition or language/linguistic appreciation requirement</td>
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<tr>
<td>o Any credit course satisfying the Communication learning outcomes</td>
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<tr>
<td>o Students may satisfy the language acquisition or language/linguistic appreciation requirement by successfully completing both Nsyilxcen I and II (NSYL 110 and NSYL 111) (Okanagan Language), offered through the Nicola Valley Institute of Technology at the En’owkin Centre or the UBC Okanagan campus or by completing the equivalent of 6 credits of any other Indigenous language through an accredited educational institution. Indigenous students can also use additional English courses to satisfy this requirement</td>
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<tr>
<td>o Students whose first language is not English may use additional English courses (other than the English courses required above) to satisfy the language acquisition or language/linguistic appreciation requirement upon presentation of an official transcript indicating completion of secondary school in their first language</td>
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<tr>
<td>o American Sign Language: all four levels of the American Sign Language Basic Certificate offered through an accredited institution will be deemed to have satisfied the language acquisition or language/linguistic appreciation requirement. Note: these courses cannot be used as credit towards the B.A. degree</td>
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<tr>
<td>Critical Thinking</td>
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<tr>
<td>• 3 credits of Critical Thinking designated courses</td>
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<tr>
<td>Indigenous Content</td>
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<td>• 3 credits of Indigenous Content designated courses</td>
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<tr>
<td>Scientific Literacy or Numeracy</td>
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<tr>
<td>• 3 credits of Scientific Literacy or Numeracy designated courses</td>
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<tr>
<th>DISTRIBUTION REQUIREMENT</th>
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<tr>
<td>Creativity</td>
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<td>• 3 credits of Creativity designated courses</td>
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<td>Digital Literacy</td>
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<td>• 3 credits of Digital Literacy designated courses</td>
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<tr>
<td>Power, Diversity, and Cultures</td>
<td></td>
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<tr>
<td>• 3 credit of Power, Diversity, and Cultures designated courses</td>
<td></td>
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<tr>
<td>Sustainability</td>
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<tr>
<td>• 3 credits of Sustainability designated courses</td>
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<tr>
<th>PROGRAM REQUIREMENT</th>
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<tr>
<td>Requirements to fulfill majors and minors</td>
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<tr>
<th>ELECTIVE REQUIREMENT</th>
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<tr>
<td>Courses in any discipline to complete the 120 credits needed to obtain a B.A.</td>
<td></td>
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</table>
A rapidly diversifying economy, social context and job market demand a different kind of education: one with a greater focus on competencies and transferable skills, such as critical thinking, collaboration and communication, and one that promotes and supports continuous learning.

UBC Strategic Plan, p. 55

Introduction

Program redesign and educational renewal are at the heart of the transformative learning objective of *Shaping UBC’s Next Century*, the University’s new Strategic Plan. Although the process of redesigning the Bachelor of Arts began before the formal adoption of the plan, it is nevertheless in that spirit that we undertook that process. Over the last two or three decades student expectations of a university education and the needs of employers have shifted significantly, not to mention the advances in technology that have revolutionised education delivery. The challenge in higher education is how to prepare and sustain students for a lifetime of uncertainty, change, challenge, and emergent or self-created opportunity. In other words, we need to ensure that we future proof our students. Universities must not only cultivate students’ intellectual ability and practical skills but also their imaginations and practical creativity. Yet, the current structure of the Bachelor of Arts (B.A.) degree at UBC Okanagan, deemed to have been at home in some universities fifty years ago (Averill et al, 2016), has not significantly changed in practically 30 years.

The report submitted by the external review team in November 2016 indicates that the current B.A. structure is too rigid, outdated, and discordant with UBCO’s aspirations to be a model for innovative curriculum programming. The B.A. structure does not provide the attributes and skills that graduates are expected to have acquired to become citizens and lifelong learners, including preparing some students for graduate school. The current science requirements are not well articulated, and the English requirements are considered incoherent and do not serve the needs of our students (Averill et al, 2016). The current structure is not flexible enough to allow the development of courses that do not fit within the traditional three-credit course model. Other rules, such as the one preventing students from completing more than 12 credits outside of their home faculty, not only limit the breadth of subjects that students can be exposed to but also act as a disincentive for other faculties to create minors or courses that could be attractive to Arts students. Appendix I provides a summary of the issues identified by the external review team and outlines how the new B.A. structure addresses those issues.

In response to the external review, the Provost Office tasked the I.K. Barber School of Arts and Sciences and the Faculty of Creative and Critical Studies to strike a steering committee that would consider the recommendations of the reviewers. In early 2017, the steering committee (Redesign Committee), co-chaired by the Associate Deans responsible for curriculum development in each Faculty, was struck and populated with members from the existing Undergraduate Program and Planning Coordinating Committee (UPPCC) of both Faculties (see Appendix II for membership). The Redesign Committee considered the recommendations of the external reviewers, the results of an environmental scan of the degree requirements at other
universities in North America, and the feedback collected from all departments and programs in both Faculties during two rounds of consultation.

The first round of consultation focused on collecting feedback on the current B.A. requirements. It also included broader discussion on issues such as student mobility and individual program structure. The second round of consultation focussed on the preliminary proposed degree structure and the learning outcomes of the various requirements. Finally, to capture broader student feedback, the Redesign Committee enlisted the help of Okanagan Planning and Institutional Research (OPAIR) to gather data on current and past B.A. students and their experience with our current B.A. degree. Additionally, data from the Undergraduate Experience Survey and the Baccalaureate Graduates Survey, the latter administered to students two years after graduation, provided information on the usefulness of some of the B.A. requirements in students’ professional and academic lives.

This document outlines the recommendations of the Redesign Committee. The first section explores the purpose of a university degree to determine the needs of the various stakeholders, namely academia, students, and employers. After considering these needs, the second section explains the principles that guided the creation of the new structure and focuses on the building blocks of curriculum design—attributes, skills, and knowledge—that are essential for understanding how curriculum is developed and are also required by the various levels that approve new curriculum. The third section provides a detailed structure of the proposed new degree based on balancing the foundational, distribution, and program requirements that are associated with a liberal arts degree. The final section describes how learning outcomes provide a mechanism by which that balance can be achieved.
Activities at UBC will focus on enhanced support for program redesign around competencies; the development of problem-solving experiences; technology-enabled learning; and continued growth in work-integrated and professional education.

Designing the New Degree

When faced with choosing a direction that would guide the creation of our redesigned B.A., the Redesign Committee considered many factors. The redesigned degree should meet UBC’s goals; be sensitive to UBCO’s culture, goals, and available resources; and, balance the need for specialisation while at the same time recognising the integrative, interdisciplinary, and transdisciplinary epistemological approaches that are necessary to cultivate autonomous citizens and lifelong learners. The Redesign Committee was tasked with the delicate balancing act of creating a degree that would respond to our students’ demands for a flexible degree structure, while preparing them for a rapidly changing post-industrial, knowledge-based world. A mandate to train students who can understand and navigate current and future global challenges must include transdisciplinary solutions that integrate the knowledge from a wide range of disciplines (Godemann, 2008).

This section briefly examines the purpose of higher education, provides a description of the provincial degree-level standards, and then delves into the data collected from various student surveys and focus groups. An examination of the degree expectations of various stakeholders is also considered, along with an environmental scan of degree requirements at other North American universities.

Expectations from Higher Education

The purpose of a university degree is multifaceted and the object of ongoing debate in the face of changing social, economic, and political climates over recent decades. Academia suggests that a university degree should guide students to become fully rounded individuals; to become intellectually sophisticated and caring people; and, to serve a democratic-centered civic engagement based on addressing real world problems. Employers, on the other hand, want students who are well-prepared for the demands of a modern labour market, repeatedly pointing to the complex nature of the 21st century work environment and advising that they highly value graduates with the skills provided by a broad general education (Chan, Brown, & Ludlow, 2014). A degree should also inspire students by offering them an innovative curriculum based on a combination of experiential learning opportunities and an exciting curriculum that captures their imaginations.

Table 1 lists the primary expectations of a university degree from three points of view (academia, students, and employers). The first column lists the top competencies students are expected to have by the time they graduate, as defined by a group of North American university professors and administrators, while the second column lists the top reasons given by students as to why they attend university. The last two columns list the competencies employers seek when hiring university graduates, as outlined in the National Association of Colleges and

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1 This is particularly important, as the Okanagan Campus will be reviewed by the provincial government in 2021.
Employers (NACE) and the World Economic Forum’s (WEF) forecasts of the top ten competencies required from university graduates over the next decade.

**Table 1: Expectations from a University Degree**

<table>
<thead>
<tr>
<th>Academia²</th>
<th>Students¹</th>
<th>Employers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication competence</td>
<td>Personal growth</td>
<td>Leadership</td>
</tr>
<tr>
<td>Multi-cultural understanding</td>
<td>Employment</td>
<td>Written communication skills</td>
</tr>
<tr>
<td>Skills in problem identification and problem solving</td>
<td>Graduate school</td>
<td>Problem-solving skills</td>
</tr>
<tr>
<td>Confidence to act in ways that make a difference</td>
<td>&quot;University experience&quot;</td>
<td>Communication skills (verbal)</td>
</tr>
<tr>
<td>Ability to think critically</td>
<td>Gain independence</td>
<td>Strong work ethic</td>
</tr>
<tr>
<td>Ability to transcend critically</td>
<td>Parents force them</td>
<td>Initiative</td>
</tr>
<tr>
<td>Serve a democratic-centered civic engagement</td>
<td>Function in society</td>
<td>Analytical/quantitative skills</td>
</tr>
<tr>
<td>Addressing real-world problems</td>
<td>Don’t want to work after HS</td>
<td>Flexibility/adaptability</td>
</tr>
<tr>
<td>Development of fully rounded intellectual and caring person</td>
<td>Sense of purpose</td>
<td>Technical skills</td>
</tr>
<tr>
<td>Develop emotional autonomy and intelligence</td>
<td>Better income</td>
<td>Interpersonal skills (relates well to others)</td>
</tr>
<tr>
<td>Develop mature interpersonal relations (tolerance)</td>
<td></td>
<td>Computer skills</td>
</tr>
<tr>
<td>Approach world problems as ‘world citizen’</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The competencies identified by the academy and employers correlate with the ones students identified in the Baccalaureate Graduating Survey (BGS) survey for B.A. students (see Student Feedback section below for further information on this survey). A majority of the BGS survey respondents who graduated between 2010 and 2014 indicated that the ability to write clearly and concisely was very useful. Interestingly, this percentage increased steadily every year since 2010. Sixty-three percent of respondents who graduated in 2010 indicated that this skill was “very important”, whereas in 2014, that number increased to 66.4%. Figures pertaining to the ability to communicate verbally averaged 75.6%, with respondents indicating that this skill was “very important”.

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The BGS survey also indicated that 82.3% of respondents felt that the ability to work effectively with others was considered “very important”. The ability to think critically was on average “very useful” for 66.4% of respondents, while the ability to solve problems or resolve issues was “very useful” for 77.3% of respondents.

Government Degree-Level Standards
Demands of employers and students are not the only factors to consider when redesigning a degree. In 2007, the Federal government published its *Ministerial Statement on Quality Assurance of Degree Education in Canada* in an effort to ensure that degree requirements and institutions meet appropriate standards at the bachelor, master, and doctoral level. The Ministry of Higher Education of British Columbia followed suit and adopted the same standards to guide the quality assurance process of higher education in the province.

The degree-level standards are intended, amongst other things, to provide clear learning-outcome standards to instructional and program designers and a broad framework for quality assurance purposes. The standards stipulate the demonstrable transferable learning skills and level of mastery of a body of specialized knowledge in six dimensions:

1. Depth and Breadth of Knowledge
2. Knowledge of Methodologies
3. Application of Knowledge
4. Communication Skills
5. Awareness of Limits of Knowledge
6. Professional Capacity/Autonomy

Each dimension is defined in detail in Appendix III.

Environmental Scan
An environmental scan of B.A. degree requirements from 20 universities across Canada, the United States, and Australia was conducted in the fall of 2017 (see Appendix IV for a complete list of institutions considered). Data was extracted from university websites, a B.A. environmental scan conducted on the Vancouver campus, and specific institutional research offices (where information was unavailable online).

The universities were selected according to the following criteria: 1) top four-ranked Canadian universities, 2) universities of direct comparison to UBC’s Okanagan campus, and 3) aspirational universities that have exemplary B.A. requirements. The list also includes universities that have recently revised their B.A. requirements, including the University of Toronto and the University of Alberta.

Universities across the United States use a variety of frameworks that outline ‘General Education’ requirements and specify ‘distribution’ as well ‘breadth’ requirements. Canadian universities are increasingly adopting general education and breadth requirements in their program delivery approach; however, the requirements are not always clearly stated. Some universities have multiple faculties and departments offering a Bachelor of Arts degree. In these cases, the credit and course selection requirements are dependent on the faculty itself. Nevertheless, students are expected to satisfy university degree requirements in every case.
Overall, universities in North America define distribution as a requirement needed to complete a number of credits outside of a student’s core or major discipline. The nature of the requirement and the number of required credits varies across institutions, but two general categories of requirements can be identified: 1) skill or competency-based requirements, and 2) disciplinary or inquiry-based requirements.

The rationale for adopting core- and breadth-related approaches to accompany majors or specialisations is consistent across universities. The intention is to expose students to a range of disciplines, concepts, ideas, and perspectives from outside their disciplines. This enables students to better assess their own strengths and limitations and to subsequently broaden their skills, knowledge, and abilities, which is crucial in a rapidly changing world.

It would be too complex, for the purposes of this document, to describe at length all the requirements of the 20 institutions examined. The various approaches to counting credits, courses, full-courses, and other ways of defining credits complicate the matter. In general, most universities have a core requirement of science/math, English/writing, and a distribution requirement in any discipline other than a student’s major. Some institutions have a distribution requirement similar to our current humanities and social science requirements (List A and B) while others, such as the University of Toronto, the University of Waterloo, and Stanford University, have more prescribed requirements as outlined in Table 2.

Table 2: Examples of degree requirements at other institutions

<table>
<thead>
<tr>
<th>University of Toronto</th>
<th>University of Waterloo</th>
<th>Stanford University</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three credits in four of the following five requirements:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Creative and Cultural Representations</td>
<td>All of:</td>
<td>All of:</td>
</tr>
<tr>
<td>- Thought, Belief, and Behaviour</td>
<td>- Fine Arts/Communication (3 credits)</td>
<td>- Aesthetic and Interpretive Inquiry (2 courses)</td>
</tr>
<tr>
<td>- Society and Its Institutions</td>
<td>- Humanities (6 credits)</td>
<td>- Applied Quantitative Reasoning (1 course)</td>
</tr>
<tr>
<td>- Living Things and Their Environment</td>
<td>- Language and Culture (6 credits)</td>
<td>- Creative Expression (2 courses)</td>
</tr>
<tr>
<td>- The Physical and Mathematical Universes</td>
<td>- Social Sciences (12 credits)</td>
<td>- Engaging Diversity (1 course)</td>
</tr>
<tr>
<td></td>
<td>- Transdisciplinary Studies (3 credits)</td>
<td>- Ethical Reasoning (1 course)</td>
</tr>
<tr>
<td></td>
<td>o Management, INDG, GWST, etc.)</td>
<td>- Formal Reasoning (1 course)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Social Inquiry (2 courses)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Scientific Method and Analysis (2 courses)</td>
</tr>
</tbody>
</table>
Student Feedback

Student input pertaining to UBCO’s current English, science, and language requirements was collected by OPAIR over November and December 2017 through focus groups and a survey designed especially for the purpose of planning for the B.A. redesign. The Redesign Committee also considered the results from the Undergraduate Experience Survey (UES), the National Survey of Student Engagement (NSSE), and the Baccalaureate Graduate Survey (BGS).

Data pertaining to the language requirement indicated that 68% of B.A. students had completed a grade 12 language which exempted them from the UBC language requirement, while 48.1% of students had completed the requirement at UBCO. The data does not indicate, however, if those who completed a grade 12 level language did so specifically to avoid completing the language requirement once registered at UBCO. Of the students who completed the language requirement, only 30.9% considered it “not at all useful”, 43.8% considered it “slightly useful”, while 25.3% considered it “very useful”. The latter group consisted mostly of students studying international relations, anthropology, or other disciplines in which a second language may be useful in their chosen careers. Some members of the focus group also indicated that the language requirement was a good tool to sensitise students to a different culture and to introduce diversity in the curriculum. In the words of one participant:

> [It is] valuable to understand other cultures. Language and culture are so ingrained with one another so it’s important in the context where a lot of us are egocentric in our perspectives. It is a success to graduate with the ability of understanding a different culture.

Another participant indicated that:

> A language may not contribute to a specific major, but it does help build a wholesome learning experience.

While these opinions were shared by a few students, many participants indicated that the language taken to fulfill the requirement did not provide them with enough depth to actually learn the language; rather, it limited their options to take other courses, and the requirement was costly:

> It was interesting to learn a second language, but ultimately what I learned won’t help me actually speak the language.

> While I think learning a language is important, it’s relevance to my degree was basically nonexistent. Since I am paying for my courses, and only have a limited number of credits to use, I was disappointed I could not choose ones more relevant to my major.

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5 The survey collected both qualitative and quantitative data; 162 students in their last year of study at UBCO participated.
6 The UES is administered annually in the spring to all enrolled part- and full-time undergraduate students at UBCO.
7 UBCO is one of 1,400 North American universities participating in the National Survey of Student Engagement (NSSE). The survey, measuring five key benchmarks, is administered to all first- and fourth-year undergraduate degree students. Only results pertaining to UBCO B.A. students were considered by the Committee.
8 Every year, baccalaureate graduates from BC’s public post-secondary institutions are asked to participate in a province-wide survey. The survey interviews former students both two and five years after graduation. Only results pertaining to the 556 UBCO B.A. students who took part in the survey were considered by the Committee.
The data pertaining to the science requirement shows similar results as to the usefulness and ease or difficulty of completing the requirement. The majority of respondents understood why their degree included a science requirement; however, only 32.1% of respondents indicated that the science requirement was “useful” to their degree while 40.9% thought it was “slightly useful” and 27% that it was “not useful at all”. Several respondents indicated that their discontent with the science requirement stemmed from the topics they had to study or that the requirement was simply another “hoop to jump through.”

I will not be able to apply what I learned, as I will not be selecting a career relevant to science and I cannot apply what I learned to daily life.

Forcing us to take any science class simply to prove we can be "well rounded" is an extra strain to student’s mental health and GPA, when students already proved their competency in basic science in order to graduate high school.

Similarly, to the language requirement, some respondents indicated that although not completely unnecessary, the time investment and money spent on the science requirement was more than they should be subjected to:

I will not be using any science laboratory in my degree program. Having to complete the requirement is a waste of time and money, in my opinion, considering I won’t be using it.

Comments like these indicate that perhaps students misunderstand the purpose of the science requirement in understanding the world we live in or its usefulness in providing the tools needed to form a factually-based opinion. Yet, this purpose is not lost on all students, as evidenced by the following:

It is becoming increasingly important for people not only to be scientifically literate, but to think scientifically. It is important to understand the scientific method and how it allows individuals to arrive at truths.

Participants expressed little discontent with the English requirement. Only 5.7% of respondents indicated that this requirement was “not at all useful” with a strong majority (74.7%) stating that it was “very useful”. When considering whether the skills they had acquired were useful to complete their program of study, an overwhelming 93.7% responded positively. As indicated in the Expectations from Higher Education section (p. 9), a majority of graduates who joined the workforce two to four years after graduation denoted the importance of having a solid foundation in English and communication (BGS survey).
Learning Outcomes and Competencies

Strategy 12 of the UBC Strategic Plan states that undergraduate curriculum should be designed in terms of learning outcomes and competencies. Learning outcomes are statements that describe the knowledge or skills students should acquire by the end of a particular assignment, class, course, or program. Generally, learning outcomes focus on the context and potential applications of knowledge and skills; help students connect learning in various contexts; and, help guide assessment and evaluation.

Good learning outcomes emphasize the application and integration of knowledge. Instead of focusing on coverage of material, learning outcomes articulate how students will be able to employ the material, both in the context of the class and more broadly.

Learning outcomes are therefore valuable to learners, instructors, and administrators. Learning outcomes are more than several sentences appended to existing lesson plans or curricula (Battersby, 1999); instead, the development of learning outcomes shapes learning and assessment activities and can enhance student engagement.

Because of the benefit to many post-secondary education stakeholders, the development of learning outcomes has become a higher priority for instructors and institutions over the last decade. Establishing a focus on integrated, generalizable, and transferable skills complements contemporary demands on graduates and builds a foundation for lifelong learning. As government and public attention on the products of higher education increase, learning outcomes help to define the goals and essential aspects of higher education within the institution, to students, and to the general public.

Additionally, learning outcomes help instructors and learners focus on the potential applications of the knowledge and skills gained in a course. When developing a program, the creation of learning outcomes can be approached from two perspectives: 1) from a program or curriculum perspective; and, 2) from the perspective of a student’s personal or professional future. In the first instance, curriculum development is concerned with stringing together a number of learning outcomes that will provide students with the knowledge and skills that are deemed necessary within a course and organise that curriculum in a logical sequence, not only from the student’s point of view, but also from an organisational and resource stance. The following questions arise when considering this first perspective:

- If the course is part of the major or specialization, what knowledge or skills should students have coming into the course? What knowledge or skills must they have by its conclusion in order to proceed through their program?
- How can this course contribute to the student’s broad learning and the student’s understanding of other subjects or disciplines?
- What are the priorities of the department or faculty within which the course takes place? How does the particular focus of the course contribute to those broader goals?

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9 The section on learning outcomes is adapted from the Developing Learning Outcomes: A Guide for University of Toronto Faculty (2014) found on the Centre for Teaching Support & Innovation web page.
• Does the course play a particular role within the student’s program (introductory, elective, summative)? How is the course shaped by this role?

In the second instance, the focus is on the knowledge and skills students should acquire to successfully navigate life and be productive citizens. From this perspective, the following questions should be considered:

• What knowledge or skills gained in this course will serve students throughout their lives? How will the class shape the student’s general understanding of the world?
• Which careers commonly stem from education in this field? What are the skills or knowledge essential to these careers? What kinds of work are produced in those careers?
• How can this course enrich a student’s personal or professional life? How can the student employ the knowledge and skills gained in the class to make his or her own life, or the lives of others, better?
• Where will the student encounter the subject matter of the course elsewhere in his or her life? In what situations might the knowledge or skills gained in the course be useful to the student?

At a broader scale than learning outcomes, competency-based education is a model that is increasing in popularity amongst post-secondary institutions and accreditation agencies, as it links theory to practice, ensuring graduates are well prepared for lifelong learning (Book, 2014). Although definitions vary, most agree that competencies refer to a “combination of knowledge, attitude, values, skills and behaviours” (Gervais 2016, n.p.). Competencies are different than learning outcomes. First, they are considered at a higher categorical level, requiring learning to be processed in a way that enables students to apply their learning in a variety of situations. Second, there are different levels of competence that students might be required to demonstrate (i.e., first-year assessment of a critical thinking competency would be different than third-year assessment of the same competency) (Klein-Collins, 2012).

There are generally two models for adopting competency-based education: 1) course-based assessment, where competencies are defined at the program-level into topics that can be formulated into courses; and, 2) direct assessment, where students demonstrate their mastery of a competency at their own pace through a series of modules or online courses.

Although the proposed new B.A. structure does not fully embrace a competency-based education model, the foundational and distribution requirements, which are defined by learning outcomes, provide a framework whereby students can participate in learning experiences that will build competencies, such as communication, critical thinking, and digital literacy.
UBC will move further towards using learning outcomes as a primary organizing principle of program structure and completion. This approach will better engage student curiosity and initiative: it allows for a more individualized approach, supporting learning with clearer feedback to help students focus on competencies they have yet to master.

UBC Strategic Plan, 57.

Redesigned Bachelor of Arts Structure

This section describes the proposed structure of the redesigned B.A. degree. It begins by introducing the degree-level learning outcomes that guided the creation of the foundational and distribution requirements, while subsequent sections describe the new degree requirements.

Degree Learning Outcomes

The cornerstone of the new degree is the set of learning outcomes that broadly define the objective of our proposed B.A. degree. These learning outcomes fall into six broad competencies:

Critical Inquiry and Creative Thinking

UBCO B.A. holders will develop habits of constructive skepticism, differentiation, and intellectual adaptability. They will be able to identify underlying assumptions, agendas, purposes, audiences, points of view, paradigms, evidence, implications, and logical strategies and thereby arrive at evidence-based conclusions about knowledge reliability. They will also have had exposure to, in both the Barber School of Arts and Sciences and the Faculty of Creative and Critical Studies, creative methodologies for the purposes of research, problem-solving, and communication. This will enable graduates to learn about the role of creativity, innovation, invention, and risk in the production of new knowledge and its possible applications.

Community: Local and Global

UBCO B.A. graduates will understand and value the interconnectedness of the local and global communities. With this understanding of the crucial potential of place and locality to define and expand fields of action, B.A. holders will be prepared to foster public understanding of important societal issues and, just as importantly, be equipped with the skills needed to stimulate action for change in local, regional, national, and global settings.

Communication

UBCO B.A. graduates will communicate effectively with others using the language and reasoning appropriate to the communicative context. All B.A. students will have the opportunity to develop their skills in writing, digital communication, and oral expression in both official national languages of Canada along with other languages.
Interdisciplinarity
UBCO B.A. students will apply academic knowledge and the skills acquired through cross-disciplinary learning to explore complex problems from a variety of disciplinary perspectives. This multidisciplinary education enables graduates not just to recognize the limits of disciplinary knowledge but better understand those places where different knowledge systems overlap, connect, and collaborate. Graduates will understand how their academic learning can find expression in multiple work, career, and community settings.

Indigeneity
Through learning about the history and the ongoing impact of colonization on the Aboriginal peoples of the Okanagan, British Columbia, Canada, and the world, UBCO B.A. graduates will have the capacity to participate meaningfully in ongoing Truth and Reconciliation practices in their lives and work.

Intercultural
Understanding, valuing, and appreciating cultural diversity is an important perspective that UBCO B.A. students will develop through learning opportunities in language acquisition, critical thinking, history, artistic expression, social, and political analysis beyond exclusively Anglophone settings.

Proposed Degree Structure
The philosophy at the root of the proposed degree structure is to ensure a balance between the traditional tenets of a liberal arts degree (loosely based on the trivium and quadrivium to prepare our graduates to become citizens) and the practical skills and knowledge that graduates need to compete effectively when seeking employment.

The proposed new B.A. structure is built on a set of foundational, distribution, and program requirements (see Figure 1). The foundational requirements were selected to reflect a set of competencies that are in line with our institutional values and provide students with foundational knowledge, such as learning how to think critically; communicate effectively in written, oral, and visual contexts; and, appreciate and value scientific inquiry. These requirements provide students with the foundational skills and knowledge to complete their degree successfully, along with the foundational skills and knowledge expected from any student graduating with a university degree in Canada today. The distribution requirements provide students with course material that exposes them to new theoretical perspectives, forms of thought, and modes of enquiry that are different than their area of specialization, while the program requirements offers the material needed for students to complete a major or minor.
Figure 1: Proposed B.A. Degree Structure

The proposed B.A. degree structure allows more flexibility to respond to future demands than the current B.A.—whether those demands are from students, employers, or academics—by allowing for changes to individual requirements or learning outcomes. For example, if the sustainability requirement no longer responds to societal or institutional demands, it is fairly simple to update the learning outcomes or change the requirement altogether with minimal impact on the rest of the degree. Similarly, requirements can be tailored to more readily increase experiential learning opportunities, or a program can create a series of three one-credit courses to fulfill one or more of the distribution or foundational requirements.

Foundational and Distribution Learning Outcomes

In the proposed B.A. degree structure, courses that receive a specific designation (i.e., critical thinking designated courses or sustainability designated courses), will be determined by a set of learning outcomes instead of by distinct categories such as Social Sciences, Humanities, or Sciences. This provides more flexibility for programs to develop courses, tailor existing offerings to strategically control enrolment, or develop new interdisciplinary courses. From a student’s perspective, our current Lists A and B (distribution requirements) require students to take 36 credits in Social Science and Humanities. The new distribution requirement only requires students to take 12 credits in four different areas. Not only does this give students more flexibility to complete a minor or a double major, it also ensures that students are well rounded. Within the current structure, students could theoretically complete the distribution
requirements taking courses in only two disciplines outside of their major, which, in the opinion of the Redesign Committee, is not broad enough to prepare students to participate fully in today’s society. In the new structure, courses fulfilling the distribution requirements can be in any discipline, as long as a reasonable percentage of the learning outcomes for the specific requirement are met (see Determination of Courses Meeting Learning Outcomes section, p. 32). Students will not be allowed to double-count the same course to satisfy a foundational and a distribution requirement.

The proposed foundational and distribution requirements structure, defined by learning outcomes, also simplifies advising and provides an objective mechanism to classify courses while avoiding the confusion arising from courses in some programs that fall somewhat arbitrarily into either Social Sciences or the Humanities.

**Foundational Requirement**

Foundational courses are deemed to provide the foundational skills and knowledge that every student requires to successfully reach higher levels across the curriculum. These courses will prepare students to hone their written and oral communication; will serve as building blocks to achieve the intercultural knowledge and competence goal of the University; and, will provide students with the foundation and skills for lifelong learning. Note that foundational courses can satisfy both degree and program requirements.

Descriptions of the four Foundational Requirement areas, along with their rationales, goals, and learning outcomes, are provided below in alphabetical order.

**Communication**

The Communication requirement is structured to provide students with a better understanding of the world and to facilitate their appreciation of language and culture, which, in turn, can facilitate cross-cultural awareness, reflection, and communication. This area is distributed into two groups: communication in English and language acquisition or language/linguistic appreciation.

The development of proficiency in writing and other communication skills is fundamental to an undergraduate education. A reputable B.A. degree should provide students with an opportunity to acquire and develop these foundational skills, which are not only valuable in an academic context but will also assist students in a career context. After all, an important mandate of the university is to help form educated citizens who can express themselves effectively in a wide range of situations.

Courses that focus on writing, including first-year English Literature courses, will enrich students’ communication capabilities, providing them with the means to acquire foundational communication skills and improve their ability to communicate effectively in written and oral contexts both within a discipline and in broader contexts. Second-year communication (writing) courses will provide opportunities for the development of discipline specific courses, which allows students to participate in writing courses that are tailored to their field of study.

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10 This section is based in part on the report of the Working Group’s Recommendations on BA Requirements.
Courses in communication will also promote cross-cultural understanding by engaging students in the study of other languages or in the study of linguistics. Language provides the perspective with which people interpret and analyze the world, create cultural expressions, and construct their identities. The study of languages beyond one’s mother tongue can help to develop competence in structured thought and logic, problem solving, and critical thinking. Additionally, language studies promote students’ sense of global citizenship by increasing their intercultural understanding and competence.

Goal: Provide students with the foundational knowledge to concisely and effectively communicate in both written and oral contexts and foster their understanding of the mechanisms behind how we communicate.

After fulfilling the Communication requirement, students should be able to:

- Describe the interconnected relationship between language and knowledge;
- Explain their role in the interpretation and production of knowledge through pragmatic and sociolinguistic components;
- Analyze writing by identifying the ideas it conveys, as well as its tone and context;
- Employ a university-level writing process involving planning, multiple drafting, conferring (including giving and responding to constructive oral and written commentary), revising, and editing with a focus on grammatically correct and audience appropriate style;
- Identify and use varied styles purposefully through manipulating sentence rhythms, sentence variety structure, vocabulary, and figurative language;
- Use and assess aspects of language and communication beyond the written word, including sound, symbols, icons, and visual patterns;
- Apply their foundational knowledge to study languages other than English, including the study of language itself (linguistics) and the cultures that accompany language; and,
- Recognize the value of, and practice and promote, cross-cultural communication.

Critical Thinking

This generation of digitally inclined B.A. students are faced with information overload and manipulation through social media. Therefore, the need for graduates to have a well-developed competence in critical thinking is greater than it has ever been, although the importance of acquiring critical thinking skills has never been in dispute (Lai, 2011; Halpern, 2014). One would be hard-pressed to find a faculty member who disagrees; for example, DeAngelo et al. (2009) report that a typical faculty member sees critical thinking as the most important goal of undergraduate education, with over 99% describing it as “very important” or “essential”.

The redesign of the B.A. presents an excellent opportunity for UBCO to implement what has been learned from empirical studies on how best to improve critical thinking outcomes in university students. The current expert consensus is: 1) university graduates and the general population tend to be deficient in critical thinking (Kennedy et al., 1991; Halpern, 1998, 2014; van Gelder, 2005; Tiruneh et al., 2014); 2) critical thinking skills and dispositions can be taught

11 The authors would like to thank Dr. Dan Ryder for contributing this section.
(Abrami et al., 2008, 2015); and, 3) these skills are best acquired through extended training involving explicit instruction in both domain-general and subject-specific critical thinking skills.

It is generally accepted that critical thinking involves having both the skills and the disposition to use those skills (Lai, 2011; Tiruneh et al., 2014; Halpern, 2014; Abrami et al., 2015), and that critical thinking is distinct from general cognitive ability (Macpherson & Stanovich, 2007; Stanovich & West, 2008). Critical thinking skills include: a) analyzing arguments, claims, or evidence; b) making inferences using inductive or deductive reasoning; c) judging or evaluating; and, d) making decisions or solving problems. A key component or supporting condition for these skills is metacognition, which is the ability to reflect on one’s own thinking. Finally, critical thinking skills are of no use unless the skilled person is willing to put the effort in to use those skills when they are called for; this is the dispositional component of the critical thinking competence. For example, critical thinking is essential to understand the social nature of knowledge and to discover an expert consensus; to figure out whether a news item is real or fake; and, to evaluate source quality more generally. It requires not only being able to make rational judgements and decisions, including moral decisions, but to want to do so.

Substantial studies of acquiring competence in critical thinking are a relatively recent phenomenon, with the result that our understanding has advanced by leaps and bounds on how this competence can be acquired. The following is a summary of the main findings, with reference to the most recent comprehensive reviews and meta-analyses of the literature on critical thinking instruction in a university context.

Traditionally, instructors have expected students to acquire critical thinking skills through a process known as immersion (Ennis 1989). In this process, the instructor uses critical thinking skills in the classroom, while the skills are presupposed in students as they analyze course material. However, the principles and practices of critical thinking are never made explicit. It is now clear that this method simply does not work, as learning of critical thinking skills and dispositions is poor, and transfer outside the classroom is even worse (Abrami et al., 2008; Arum & Roksa, 2011; Tiruneh et al., 2014). To ensure effective acquisition of critical thinking skills and dispositions, explicit instruction is required. That is, the outcome of improved critical thinking must be made clear to students, and the skills and principles involved must be explicitly taught (Herrnstein et al., 1986; Marin & Halpern, 2011; Butler & Halpern, 2011).

The question arises whether instruction in subject-specific critical thinking skills (e.g., how to infer causes in biological systems) allows students to acquire the more general critical thinking competency targeted in the B.A. outcomes (e.g., how to infer causes more generally). The current consensus on this point is that it does not. To acquire general critical thinking competence, students must be instructed in general critical thinking principles, not only in subject-specific ones (Halpern, 2001; van Gelder, 2005; Renaud & Murray, 2008; Angeli & Valanides, 2009; Tiruneh et al., 2014, 2016). In particular, general principles must be taught for transfer where the same principles are shown to apply in a variety of contexts drawn from multiple disciplines (i.e., the news, everyday life, common ethical dilemmas) (Glaser, 1984; Kennedy et al., 1991; Halpern, 1999, 2001, 2014; Appleton-Knapp et al., 2005; van Gelder, 2005; Lai, 2011).
Goal: Provide students with general critical thinking skills and enhance students’ disposition to use these skills appropriately, thereby enabling and encouraging them to think critically across disciplinary boundaries and beyond the curriculum.

After fulfilling the Critical Thinking requirement, students should be able to:

- Interpret, analyze, and evaluate evidence, arguments, and claims;
- Produce clear arguments and make inferences using deductive and inductive reasoning;
- Engage in rational decision-making and problem-solving;
- Demonstrate an understanding of cognitive biases, tendencies towards sociocentric thinking, and the importance of metacognition;
- Evaluate source quality to determine an expert consensus; and,
- Seek all relevant evidence, demonstrate an openness to others’ ideas, and suspend judgement when appropriate.

Indigenous Content

The foundational rationale to include the Indigenous Content requirement in the redesigned B.A. is that Canada, through the Truth and Reconciliation Commission of Canada (TRC), is committed to reconcile the effects of past acts of cultural genocide. Through its institutions, Canada is accountable for providing a way forward, for building a process to allow society to unlearn its untruths and to educate Canadian and international students toward reconciliation.

Strategy 17 of UBC’s Strategic Plan calls for the support of the objectives and actions of the 2018 Indigenous Strategic Plan. One of the actions within the renewed Indigenous Strategic Plan is to “[s]trengthen and expand Indigenous focused curricula in existing programs, and the development of additional initiatives to open new curricular areas” (UBC, 2018a, p. 8).

Currently, on the Vancouver campus, mandatory Indigenous curricula exists in three areas. The Faculty of Education offers a course to all undergraduate students in teacher education; the Allard School of Law requires all of its students complete a section on Indigenous constitutional law; and, the Faculty of Medicine provides required modules to all undergraduate students (UBC, 2018a, p. 37).

Two strategies to indigenize the curriculum emerged during the B.A. Redesign consultation process. The first considered including a mandatory Indigenous course, and the second considered including Indigenous content in each program, either in existing or new courses. The first strategy is, at face value, the simplest to implement. A mandatory course, such as INDG 100, would potentially fulfill the immediate need to provide students with an understanding of the historical context and would develop the foundational competencies needed for our graduates to be engaged as informed citizens in the on-going reparation, remedy, and restitution process. However, this strategy may be perceived by some students as just another requirement to fulfill along the way. Once completed, the knowledge gained through the course would not necessarily be revisited or contextualized in the remaining three years of study, assuming students take the requirement during their first year of study. This also limits the university’s flexibility to adapt the curriculum to future requirements or other educational changes, such as the evolution of Indigenous curriculum at the high school level.
The second strategy would see the inclusion of Indigenous content in various programs. For example, a local ecology course based on Indigenous knowledge and taught in collaboration with local elders or a political science course on Indigenous governance could fulfill some of the indigenization goals. The downside to this approach is two-fold. The resources needed to hire qualified experts in various fields to deliver the required content could take years to secure, time during which there would be an unequal delivery of Indigenous course content. Additionally, it is important to consider the relative shortage of knowledgeable experts in emerging fields of knowledge, which poses a major constraint on widespread curricular development (UBC, 2018a, p. 7).

While both strategies that emerged from the consultations were considered, the inherent constraints prevented the Redesign Committee from recommending either one. Instead, an Indigenous Content requirement is proposed, which fulfills UBC’s commitments to indigenize the curriculum while providing enough flexibility in the short- and long-term to adapt the Indigenous content to temporal needs and resources as they become available. The redesign of the B.A. provides a crucial occasion for enacting an Indigenous Content requirement as a concrete act of social integration, inclusion, and collaboration across the disciplines (Armstrong et al, 2018). The commitment to transform society is an opportunity for UBCO to be a front-runner in offering a more relevant and enriching 21st century B.A. degree.

**Goal:** Provide students with the knowledge and skills needed to decolonize historical and contemporary bias and stereotyping, and provide students with a sound basis for inquiry into alternative ways of knowing toward indigenizing knowledge advancement.

After fulfilling the Indigenous Content requirement, students should be able to:

- Identify the social, cultural, and demographic diversity of Indigenous peoples in Canada, the Americas, and globally;
- Describe the relationship between the land and Indigenous people’s physical, psychological, and spiritual health;
- Illustrate an understanding about Indigenous language and its relationship to Indigenous Ecological Knowledge;
- Summarize the rights of Indigenous Peoples as expressed in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and the reasons it is a UN Declaration.
- Explain the effects of Canada’s policies with regard to Canada’s Indigenous Peoples resulting in past and recent Royal Commissions and the need for Reconciliation;
- Discuss and reflect on the meaning of “Indigenous”;
- Reflect on contemporary urban Aboriginal issues and health concerns;
- Distinguish contemporary Indigenous arts expression; and,
- Apply the use of Indigenous systems-based inquiry tools.
Scientific Literacy and Numeracy

During the consultation process, there was general agreement that a science requirement should be maintained in the redesigned B.A., but there was much discussion on the number of science credits to be mandated. Based on this discussion, the Redesign Committee recommends that the current science requirement of six credits of first-year science in laboratory science, mathematics, computer science, statistics, or approved geography courses be reduced to three credits of science literacy or numeracy. This reduction is not meant to minimise the value of scientific knowledge or numeracy, fully recognizing their importance in these times where skepticism in accepting scientific understanding of such things as climate change is prevalent. Rather, the reduction is meant to address our mandate to adopt more flexible degree requirements. Additionally, to address the failure of many students to appreciate the value of the current six-credit science requirement (evidenced through the BGS Survey), the Redesign Committee proposes that the critical thinking requirement will complement the science and numeracy requirement to foster the skills we expect from our graduates.

The need to include numeracy in the curriculum is recognized in Plato’s *The Republic*, where the *quadrivium*—four of the seven liberal arts considered central to the education of free citizens—consists of arithmetic, geometry, music, and astronomy. All of these subjects are rooted in numeracy. The need for numeracy is even greater today in our data-driven world. To become successful in the workplace, to be engaged citizens, and to make thoughtful and well-supported decisions in any domain of life requires numeracy and scientific literacy. Whether making sense of climate change information or considering the impact of the price of gas and food on the family budget, people’s lives are awash in numerical and scientific data. Our graduates will be expected to “navigate a sea of numbers on a daily basis” in their careers and daily lives (Grawe, 2012, p. 30). University graduates should be able to make sense of the information that they are bombarded with and use their knowledge of science and numeracy to construct critical responses.

According to the California Critical Thinking Skills Test - Numeracy (2018), numeracy refers to the ability to make judgments based on quantitative information in a variety of contexts. People with strong numeracy can describe how quantitative information is gathered, manipulated, and represented textually, verbally, and visually in graphs, charts, tables and diagrams (n.p.).

Under the proposed B.A. structure, students will have to complete at least three credits in either scientific literacy or numeracy.

**Scientific Literacy Goal:** Ensure students have a basic knowledge and understanding of the scientific concepts and processes required for personal decision-making, critical thinking, and participation in civic and cultural affairs.

After fulfilling the Scientific Literacy requirement, student should be able to:

- Explain science as a form of knowledge that shapes our material, intellectual, and cultural environments;
- Demonstrate a critical understanding of the scientific method and its applications;
• Gather and evaluate information and compare the merits of alternate hypotheses;
• Critically assess and interpret scientific data and literature;
• Work collaboratively and independently to analyze and organize scientific information; and,
• Structure a scientific argument effectively, and report scientific knowledge and findings in written, visual, and verbal forms.

**Numeracy Goal:** Ensure students have the tools needed for quantitative reasoning that will prepare them for their professional and personal lives.

After fulfilling the Numeracy requirement, students should be able to:

• Use evidence to draw conclusions about numerical data and assess the limitations of the evidence;
• Describe and evaluate assumptions for estimation, data analysis, and modeling.
• Critique and evaluate quantitative arguments that utilize mathematical, statistical, and quantitative information;
• Interpret mathematical models such as formulas, graphs, tables, and schematics, and draw inferences from them;
• Communicate mathematical information in symbolic, visual, numerical, and verbal forms; and
• Apply mathematical language and notation to explain the reasoning underlying their conclusions when solving problems using mathematical or statistical techniques.

**Distribution Requirement**

Distribution requirement courses fulfill the need for UBCO to graduate students who are well-rounded and informed citizens. These courses expose students to different ways of thinking and experiences in areas outside of their specialisation. Distribution courses are not limited to first-year courses; however, they should be accessible to students who have not acquired the specialized knowledge typically possessed by students majoring in a discipline. Some upper level courses may be accessible to students who have completed a certain number of university credits in a related discipline.

In addition to the specific learning outcomes identified in the distribution areas, any course satisfying the distribution requirement should substantially fulfill at least one of the following conditions:

1. Demonstrates the ways in which the discipline understands, obtains, and categorizes its knowledge, along with defining the problems addressed by the discipline and the methods by which it solves or answers those problems;
2. Surveys the historical development of the discipline and the shape of its current practices; or,
3. Surveys the central ideas, theories, and debates central to the discipline.

More broadly, courses having a distribution requirement designation will approach the course material in ways that expose students to new theoretical perspectives, forms of thought, and modes of enquiry, along with offering students the opportunity to actively examine and assess their values, beliefs, and commitments.
To satisfy the Distribution Requirement, a student must complete three credits in each of four areas: Creative Thinking; Digital Literacy; Sustainability; and, Power, Diversity, and Cultures. Courses taken to satisfy this requirement must be in two different disciplines. However, courses that satisfy program requirements can also satisfy distribution requirements.12

Descriptions of the four Distribution Requirement areas, along with their rationales, goals, and learning outcomes, are provided below in alphabetical order.

**Creativity**

Popular culture would have one believe that creativity, or thinking creatively, is an individual trait, semi-mystical in nature and therefore not readily subject to teaching or robust research scrutiny. Research, however, challenges these propositions as myths, asserting that creativity is not the result of a single eureka moment. Rather, it is an achievement resulting from high volumes of work, persistence, and trial and error, which can be fostered through formal and informal learning (Hartley, 2004; Cunningham, 2005; Haring-Smith, 2006; Griffin, 2014; Lucas & Nordgren, 2015). Creative thinking is an iterative rather than a linear process, with the elaboration of ideas leading one to go back to the insight stage, then onto elaboration again. This process is not only limited to the arts but also to problem-solving in general, paralleling the unbalanced personal and professional world our graduates will navigate. Creativity draws from culture, collaboration, and diversity. It is about exchanging ideas and building on the achievements of others, not about the individual.

Learning to think creatively requires many different skills, such as having the ability to see objects and ideas in new ways; developing an understanding of, and comfort with, complexity; suspending judgement; using wide categories to organize information in order to better see relationships; having the ability to break out of well used algorithms or scripts; and, using creativity aids for generating new ideas (McWilliams, 2007). Therefore, it is suggested that teaching creativity requires a pedagogical approach based on “the interplay of learning and de-learning” (Bauman, 2004, p. 24).

Creativity is not only essential for the innovation process, but it is also an observable and valuable component of the social and economic enterprise that becomes a force of great value when it is applied to causes that benefit humankind and the world at large (MacLaren, 2012).

**Goal:** Develop students’ capacity to combine or synthesize existing ideas, images, or expertise in original ways and to experience thinking, reacting, and working in an imaginative way, characterized by a high-degree of innovation, divergent thinking, and risk-taking.

After fulfilling the Creativity requirement, students should be able to:

- Explore the production and analysis of creative work as an integral part of any innovative process, including their academic journey;
- Use curiosity and imagination to experience new dimensions of knowledge and think about the world in transformative ways;
- Encounter different perspectives on creativity and innovation, and discuss those analytical implications;

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12 Similar to a current Sociology major satisfying part of the List A requirement with Sociology courses.
• Analyze activities and theoretical processes behind the development of creativity;
• Apply their imagination and creative methodologies to formulate ideas, hypotheses, and question assumptions and practices; and,
• Consider alternate, divergent, or contradictory perspectives or ideas in an exploratory way.

Digital Literacy
Digital literacy is a much broader concept than computer literacy and one that encompasses technological capacities, intellectual competencies, and ethical/behavioural comportments (Hoechsmann & DeWaard, 2015). Several definitions of digital literacy exist; however, most definitions are built on three principles: the skills and knowledge to use a variety of digital media software applications and hardware devices; the ability to critically understand digital media tools and content; and the knowledge and capacity to create and communicate with digital technology (Media Awareness Network, 2010, p. 4). It derives that digital literacy includes the broader capacity to participate in a society that uses digital communication technology in various spheres (education, work, leisure, etc.) and that the competencies gained through this requirement will enable viable work futures, participatory and engaging citizenship, and ethical and fulfilling social relationships, amongst other things (Hoechsmann & DeWaard, 2015).

Goal: Provide students with digital literacy skills to prepare them to evaluate the social impact of technology; participate in academic, professional, and research practices that depend on digital technology; and, find, interpret, evaluate, and share information.

After fulfilling the Digital Literacy requirement, students should be able to:
• Read critically, understand, and analyze meaning presented by various digital technologies;
• Contribute to the production of meaning generated by digital media;
• Actively engage with others in the co-creation and refinement of knowledge using digital media;
• Demonstrate an understanding of the socio-cultural contexts and impacts of digital technologies, including their relationships to privacy, authority, and violence; and,
• Apply and practice principles of ethical digital citizenship.

Power, Diversity, and Cultures
The notions of equality, universal respect and justice, which are the basis of the Universal Declaration of Human Rights, must be understood by our graduates if we are to fulfill UBC’s commitment of “advancing the inclusion of all those who have been excluded historically based on gender, race, religion, sexuality, age, physical ability or economic circumstances” (UBC 2018b, p. 20). The Power, Diversity, and Cultures requirement will ensure that our graduates can reflect upon their experiences and background to rethink what is considered normal or acceptable about the lives they live, as well as providing an opportunity for them to question their unexamined assumptions about society.
**Goal:** Develop students’ understanding of the ways that different social categories, such as gender, race, ethnicity, sexuality, age, ability, and religion, are related to the social positioning of people in local and global contexts, including experiences, privilege, adaptation, and marginalization.

After fulfilling the Power, Diversity, and Cultures requirement, students should be able to:

- Describe the socio-historical construction of social difference;
- Explain how social categories intersect with one another to create differential experiences;
- Recognize the complexity of the social world, including the internal diversity of historically excluded groups;
- Identify different types of discrimination and their effects;
- Demonstrate empathy, self-reflection, and the critical thinking skills needed to engage in meaningful dialogue across social differences; and,
- Identify methods historically used to achieve social equality.

**Sustainability**

Education for sustainable development has been supported and promoted over the last decades by global frameworks such as the United Nations’ Decade of Education for Sustainable Development (2005–2014) and the Global Action Programme on Education for Sustainable Development (post-2014), both led by the United Nations Educational, Scientific and Cultural Organization (UNESCO) (Buckler & Creech, 2014; UNESCO, 2017). Sustainability has also been identified as a strategic direction for our campus in Aspire as part of our research and community engagement commitments.

This requirement is meant to raise students’ awareness of the complexities of sustainability and empower them to make informed decisions and take responsible actions for environmental integrity, economic viability, and a just society for present and future generations while respecting social and cultural diversity. Sustainability education is holistic and transformational, addressing pedagogy, learning content, and outcomes.

The Sustainability requirement provides students with an opportunity to work collaboratively; to appreciate multiple perspectives; to be reflective; to think critically and creatively; and, to act constructively (Jones et al., 2010).

**Goal:** Develop students’ capacity to understand and appreciate the complexity behind concepts and processes linked to sustainability, such as human-environment interactions, sustainable lifestyles, holistic thinking, social equity, and culture, and encourage them to think critically about current assumptions, biases, and beliefs that pertain to sustainability.

After fulfilling the Sustainability requirement, students should be able to:

- Understand the social, cultural, and scientific aspects of environmental issues;
- Gain an understanding of how sustainability challenges are analysed and addressed by arts, humanities, sciences, and social sciences disciplines;
- Gain an understanding of complex systems and how they are embedded within different domains and scales;
• Apply different problem-solving frameworks to complex sustainability problems and develop viable, inclusive, and equitable options that promote sustainable development;
• Assess the consequences of human actions on the environment to manage future risks and changes; and,
• Reflect on the norms and values that underlie human-environment interactions and negotiate sustainability goals and targets in a context of conflicts of interests and uncertain knowledge.

Current vs. Proposed B.A. Degree Requirements
Table 3 compares the current B.A. degree requirements to the proposed B.A. degree requirements. Under the current structure, students must complete 36 credits in List A and B, 6 credits of science-designated courses, 6 credits of English, and between 0 and 12 credits of language courses, depending on the language level achieved in high school. This adds up to between 48 and 60 credits of mandated requirements. The proposed requirements reduce that number of mandated credits to 33 (21 credits of foundational requirements and 12 credits of distribution requirements). This reduction allows more flexibility, especially for students who wish to complete a double major or combined major. Under the proposed requirements, when carefully planned, a student can complete an Arts double-major within 120 credits, therefore, not exceeding a four-year timeline. Certain combinations of majors in different fields may still require more than 120 credits due to the number of specific prerequisites in one of the selected disciplines (e.g., double major in Economics and Math).

Table 3: Current B.A. Degree Requirements vs. Proposed B.A. Degree Requirements

<table>
<thead>
<tr>
<th>Current Requirements</th>
<th>Proposed Requirements</th>
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<tbody>
<tr>
<td>To complete the first and second years of the B.A. program, a student must complete 60 credits in Arts or Science courses.</td>
<td>Removed. Creates confusion, as progression requirements state that third year status is achieved after 48 credits.</td>
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</tbody>
</table>
| Students must complete two first-year English courses (6 credits) selected from: ENGL 112 or 114, 113, 150, 151, 153. Students who fail to meet the English requirement before completing 60 Arts-eligible credits will not be permitted to register in courses other than first-year English until this requirement is satisfied. | **FOUNDATIONAL REQUIREMENT**
12 credits of Communication designated courses
• 3 credits of ENGL 112, 114 or 15x
• 3 credits of ENGL 203 or equivalent
• 6 credits of language acquisition or language/linguistic appreciation requirement
  o Any credit course satisfying the Communication learning outcomes.
  o Students may satisfy the language acquisition or language/linguistic appreciation requirement by successfully completing both Nsyilxcen I and II (NSYL 110 and NSYL 111) (Okanagan Language), offered through the Nicola Valley Institute of Technology at the En’owkin Centre or the UBC Okanagan campus or by completing the equivalent of 6 credits |
<table>
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<tr>
<th>Current Requirements</th>
<th>Proposed Requirements</th>
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<tr>
<td>of any other Indigenous language through an accredited educational institution. Indigenous students can also use additional English courses to satisfy the language acquisition or language/linguistic appreciation requirement.</td>
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<tr>
<td>o Students whose first language is not English may use additional English courses (other than the English requirements above) to satisfy the language acquisition or language/linguistic appreciation requirement upon presentation of an official transcript indicating completion of secondary school in their first language.</td>
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<tr>
<td>o American Sign Language: all four levels of the American Sign Language Basic Certificate offered through an accredited institution will be deemed to have satisfied the language acquisition or language/linguistic appreciation requirement. Note: these courses cannot be used as credit towards the B.A. degree.</td>
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<tr>
<td>3 credits in each of the following:</td>
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<tr>
<td>• Critical Thinking designated courses</td>
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<td>• Indigenous Content designated courses</td>
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<tr>
<td>• Scientific Literacy or Numeracy designated courses</td>
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Students must complete at least 6 first-year Science credits in Laboratory Science, Mathematics, Computer Science, Statistics, or approved Geography courses from the following list:

- ASTR 110, 111, 120, 121;
- BIOL 116, 117, 125, 122, 131, 133;
- CHEM 111, 113, 121, 123;
- COSC 101, 111, 121, 122, 123;
- EESC 111, 121;
- GEOG 108, 109;
- MATH 100, 101, 111, 116, 142;
- PHYS 102, 111, 112, 122, 140;
- STAT 121, 124.

Replaced by the Scientific Literacy or Numeracy requirement.
<table>
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<tr>
<th>Current Requirements</th>
<th>Proposed Requirements</th>
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<tr>
<td>• Grade 12 language</td>
<td>Replaced by the Communication requirement.</td>
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<td>• Grade 11 language + 6 credits of language</td>
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<td>• 9-12 credits of Language</td>
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<td>• students whose first language is not English may satisfy the requirement upon</td>
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<td>presentation of official transcripts indicating completion of secondary school in their</td>
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<td>first language;</td>
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<td>• classical language option: students who successfully complete GREK 111 and 121,</td>
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<td>plus LATN 300, will be deemed to have satisfied the language requirement;</td>
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<tr>
<td>• American Sign Language: all four levels of the American Sign Language Basic Certificate offered through an accredited institution will be deemed to have satisfied the language requirement. <strong>Note:</strong> these courses cannot be used as credit towards the B.A. program.</td>
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<tr>
<td>• Okanagan language option: students who successfully complete both nsíylx̣en I and II (NSYL 110 and NSYL 111) (Okanagan Language), offered through the Nicola Valley Institute of Technology at the En'owkin Centre or the UBC Okanagan campus, will be deemed to have satisfied the language requirement.</td>
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<tr>
<td>• Students must complete at least 18 credits from List A: Social Sciences, and 18</td>
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<td>credits from List B: Humanities. The completed courses must include at least two</td>
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<tr>
<td>disciplines from each list. <strong>Note:</strong> credits earned to satisfy the English</td>
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<tr>
<td>requirement will not count towards the Distribution Requirement.</td>
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<tr>
<td><strong>DISTRIBUTION REQUIREMENT</strong></td>
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<td>3 credits in each of the following:</td>
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<td>• Creativity designated courses</td>
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<td>• Digital Literacy designated courses</td>
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<tr>
<td>• Sustainability designated courses</td>
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<tr>
<td>• Power, Diversity, and Cultures designated courses</td>
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<tr>
<td><strong>PROGRAM REQUIREMENT</strong></td>
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<tr>
<td>Courses required to fulfill B.A. major or minor program requirements.</td>
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<tr>
<td><strong>ELECTIVE REQUIREMENT</strong></td>
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<tr>
<td>Students can fulfill this requirement by successfully completing any course at UBC. A minimum of 12 credits of elective courses must be at the 300/400 level.</td>
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</table>
Determination of Courses that Meet Foundational or Distribution Requirements

To determine if a course fulfills a foundational or distribution requirement, each course will need to be evaluated by the department in which the course is taught according to an established rubric (refer to the example in Table 5 below). The goal is to offer students a variety of courses that fulfill these requirements but not have every course offered meet the threshold. Normally, when evaluating program equivalency, the Ministry of Advanced Education considers any programs with an 80% overlap of their learning outcomes as equivalent. UBC uses the same ratio when articulating courses with other institutions. The Redesign Committee recommends that the same rule be applied when evaluating the eligibility of courses for foundational and distribution requirements.

Below is an example of a rubric that could be used to evaluate eligible courses for the Critical Thinking area within the Foundational Requirement.

Table 5: Example Rubric to Determine Eligibility of the Foundational Requirement Critical Thinking Area

<table>
<thead>
<tr>
<th>Critical Thinking (CT)</th>
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<tbody>
<tr>
<td><strong>Goal:</strong> Provide students with general critical thinking skills and enhance students’ disposition to use these skills appropriately, thereby both enabling and encouraging them to think critically across disciplinary boundaries and beyond the curriculum.</td>
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<tr>
<td><strong>Definition:</strong> Critical thinking is that mode of thinking—about any subject, content, or problem—in which the thinker improves the quality of his or her thinking by skillfully taking charge of the structures inherent in thinking and imposing intellectual standards upon them (Paul, Fisher, &amp; Nosich, 1993).</td>
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<tr>
<td><strong>Ways to Demonstrate Learning:</strong> Critical thinking can be demonstrated in assignments that require students to complete analysis of text, data, or issues. Assignments that cut across presentation modes might be especially useful in some fields. If insight into the process components of critical thinking is important, assignments focused on student reflection might be especially illuminating.</td>
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<tr>
<th>CT Learning Outcomes</th>
<th>Introduce</th>
<th>Develop</th>
<th>Proficient</th>
<th>Advanced</th>
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<tbody>
<tr>
<td>Interpret, analyse, and evaluate evidence, arguments, and claims.</td>
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<tr>
<td>Produce clear arguments and make inferences using deductive and inductive reasoning.</td>
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<tr>
<td>Engage in rational decision-making and problem-solving.</td>
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<tr>
<td>Demonstrate an understanding of cognitive biases, tendencies towards sociocentric thinking, and the importance of metacognition.</td>
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<tr>
<td>Evaluate source quality to determine an expert consensus.</td>
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<tr>
<td>Seek all relevant evidence, demonstrate an openness to others’ ideas, and suspend judgement when appropriate.</td>
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13 Draft rubric is adapted from the Association of American Colleges and Universities’ (AACU) draft Value rubrics.
Next Steps and Implementation of Proposed B.A.

The implementation of a new degree structure is a complex endeavour involving many stakeholders and moving parts. To optimize this process, the Redesign Committee suggests carrying out the approval of the new B.A. degree in two phases. The first phase involves approval, through the complete approval process, of the structure of the new B.A. as outlined in the calendar front matter (see proposal form in Appendix V). A second phase will begin immediately upon the approval of the first phase by both Faculties respective Faculty Councils but before approval of Senate (in order to save time). Phase II includes approving the final language of the learning outcomes; identifying courses that meet the Foundational and/or Distribution Requirement learning outcomes; and, establishing a plan for the implementation of the new B.A. degree.

The following implementation timeline is proposed:

- **Fall 2018**
  - Approval of new degree structure by Faculty Councils
  - Strike B.A. Standing Committee (see below)

- **Winter 2019**
  - Approval of new degree structure by Senate (January 2019)
  - Identify current courses meeting learning outcomes
  - Approve learning outcomes and remaining calendar changes and language
  - Approval of phase II by Senate (April/May 2019)

- **Summer 2019**
  - Work with Recruitment Office, Academic Advising, Communications

- **Fall 2019**
  - Soft launch of the new degree\(^\text{14}\)
  - Work with Registrar to implement changes in various systems

- **Fall 2020**
  - Official launch of the new degree with first cohort starting under new degree structure

To ensure a smooth transition to the new degree, the B.A. Redesign Committee recommends that a B.A. Standing Committee composed of members of IKBSAS and FCCS be struck to oversee the implementation of, and transition to, the new degree structure.\(^\text{15}\) The Standing Committee’s mandate should oversee the classification of courses into the various foundational and distribution requirements and provide shared governance for the degree. The Redesign Committee recommends that this body stand for a minimum of three years during which it would support and monitor implementation of the new B.A. and address any issues that may arise. The Standing Committee would be co-chaired by the Associate Deans responsible for curriculum in both faculties. As the B.A. is housed in two separate Faculties, the Redesign

\(^\text{14}\) We could potentially allow students who begin their degree in the fall of 2019 to opt into the new degree requirements retroactively in 2020.

\(^\text{15}\) With the completion of this report, the Redesign Committee has essentially completed its mandate and a new committee needs to be struck to oversee the implementation of the new degree.
Committee recommends that the Standing Committee remain active beyond the initial three-year mandate to ensure proper oversight of the degree.

The Redesign Committee would also like to recommend a review of the new bachelor’s degree be conducted in 2025 to ensure that the objectives set out by the initial external review conducted in 2016 were met and that the new degree continues to meet the needs of our students and programs.
Work Cited


## Summary of Issues Addressed by the Proposed B.A. Degree Structure

<table>
<thead>
<tr>
<th>Issues Raised by External Report</th>
<th>How New Structure Addresses Them</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.A. Governance of FCCS and IKBSAS</td>
<td>This was not within the mandate of the B.A. Redesign Committee.</td>
</tr>
<tr>
<td>Increase interdisciplinary programming as per Aspire</td>
<td>The introduction of mandatory distribution areas defined by learning outcomes will promote interdisciplinarity by encouraging the creation of new courses that align with the specific learning outcomes.</td>
</tr>
<tr>
<td>Education less content driven and more skills and knowledge driven</td>
<td>Introducing competency areas defined by learning outcomes ensures a curriculum with more flexibility to expose student to a variety of skills and ways of knowing. This can only be addressed with changes to the degree (move towards competency model instead of individual programs). Learning areas instead of specific courses to satisfy a requirement allows for the creation of alternative delivery model such as one-credit courses.</td>
</tr>
<tr>
<td>Language requirement should be reduced and better articulated</td>
<td>Number of credits reduced to six. Much broader scope than actual requirements, as students can opt for linguistics. Now folded into the communication requirements, which are related to skills and knowledge that allow students to think more globally and improve their intercultural fluency. Fits within the communication competency.</td>
</tr>
<tr>
<td>Inclusion of research skills at the first-year level</td>
<td>Program dependant</td>
</tr>
<tr>
<td>Science requirement not well articulated. Lab science courses should not be mandatory. One course addressing quantitative reasoning and another on scientific reasoning or science for Arts students.</td>
<td>Addressed by reducing the science requirement to three credits of any science course that matches the requirement’s learning outcomes and three credits of science or numeracy-designated courses.</td>
</tr>
<tr>
<td>Incoherent English requirements. Remove the 70% needed to take English courses</td>
<td>Has already been addressed by the creation of ENGL 009.</td>
</tr>
<tr>
<td>Increase need for communication skills – oral, written and digital.</td>
<td>Addressed by splitting the English requirement over two years, the second-year course being oriented towards communication. Also introducing a digital literacy competency within the distribution requirements.</td>
</tr>
<tr>
<td>Issues Raised by External Report</td>
<td>How New Structure Addresses Them</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>B.A. requirements should be clear and not hinder student progress.</td>
<td>Elimination of list A and B and introduction of knowledge and skills areas simplify requirements, dividing them into foundational and distribution areas.</td>
</tr>
<tr>
<td>Remove the 12 credits outside of faculty maximum limitation.</td>
<td>Removed</td>
</tr>
<tr>
<td>Abolish the 50% rule of using credits earned towards another major.</td>
<td>Removed</td>
</tr>
<tr>
<td>Create a degree that is innovative to reflect the Aspire plan.</td>
<td>The creation of a new Indigenous Content foundational requirement and distribution requirements such as Creativity, Power, Diversity, and Cultures and Digital Literacy speak to the innovative aspect of the new B.A.</td>
</tr>
<tr>
<td>Refocus degree away from content and towards the attributes and skills graduates need as workers and citizens.</td>
<td>The learning outcomes in both foundational and distribution requirements address this need specifically.</td>
</tr>
</tbody>
</table>
Appendix II
Steering Committee (Redesign Committee) Membership

Co-chairs:
Marianne Legault, Association Dean Undergraduate Studies FCCS
Bernard Momer, Associate Dean, Teaching Learning and Curriculum, IKBSAS

Members:
Ramine Adl, French
Jan Cioe, Psychology
Nathan Greyghost, Student
Paul Milton, English
Ben Nilson, History
Noriko Ozawa, Economics
Ilya Parkins, Gender and Women Studies
Dana Penney, Student
Bryce Traister, FCCS Dean

Working Group I
Co-chairs:
Jan Cioe (Psychology)
Paul Milton (English)

Members:
Martin Blum (Critical Studies)
Trudy Kavanagh (Geography)
Terina Mailer (Academic Advising)

Working Group II
Co-chairs:
Ben Nilson (History)
Bryce Traister (FCCS)

Provost’s Office support:
Nicky Dhaliwal

Working Group III
Co-chairs:
Ramine Adl (French)
Noriko Ozawa (Economics)

Members:
Christine Squire (Academic Advising)
Ilya Parkins (Gender and Woman Studies).
Appendix III
British Columbia Degree Level Standards for a Bachelor’s Degree

Depth and Breadth of Knowledge
a) Knowledge and critical understanding in a field of study that builds upon their secondary education and includes the key assumptions, methodologies, and applications of the discipline and/or field of practice;
b) Basic understanding of the range of fields within the discipline/field of practice and of how the discipline may intersect with fields in related disciplines;
c) The ability to gather, review, evaluate, and interpret information, including new information relevant to the discipline, and to compare the merits of alternate hypotheses or creative options relevant to one or more of the major fields in a discipline;
d) The capacity to engage in independent research or practice in a supervised context;
e) Critical thinking and analytical skills inside and outside the discipline;
f) The ability to apply learning from one of more areas outside discipline.

Knowledge and Methodology
a) An understanding of methods of enquiry or creative activity, or both, in their primary area of study that enables the student to:
   i. evaluate the appropriateness of different approaches to solving problems using well established ideas and techniques;
   ii. devise and sustain arguments or solve problems using these methods;
   iii. describe and comment upon particular aspects of current research or equivalent advanced scholarship in the discipline and on their relevance to the evolution of the discipline.

b) The ability to review, present, and critically evaluate qualitative and quantitative information to:
   i. develop lines of argument;
   ii. make sound judgments in accordance with the major theories, concepts, and methods of the subject(s) of study;
   iii. apply underlying concepts, principles, and techniques of analysis, both within and outside the discipline;
   iv. where appropriate, use this knowledge in the creative process.

Application of Knowledge
   a) The ability to use a range of established techniques to:
      i. initiate and undertake critical evaluation of arguments, assumptions, abstract concepts, and information;
      ii. propose solutions;
      iii. frame appropriate questions for the purpose of solving a problem;
      iv. solve a problem or create a new work.
   b) The ability to make critical use of scholarly reviews and primary sources.

Communication Skills
   The ability to communicate information, arguments, and analyses accurately and reliably, orally and in writing, to specialist and non-specialist audiences, using structured and coherent arguments, and, where appropriate, informed by key concepts and techniques of the discipline.

Awareness of Limit of Knowledge
   An understanding of the limits to their own knowledge and ability; an appreciation of the uncertainty and ambiguity of and limits to knowledge, and an appreciation of how this might influence analyses and interpretations.

Professional Capacity/Autonomy
   Qualities and transferable skills necessary for further study, employment, community involvement, and other activities requiring (i) the exercise of initiative, personal responsibility and accountability in both personal and group contexts, (ii) working effectively with others, and (iii) behaviour consistent with academic integrity.
Appendix IV

Universities Selected for the Environmental Scan\textsuperscript{17}

1. Duke University
2. Harvard University
3. John Hopkins University
4. McGill University
5. MIT
6. Princeton University
7. Queen’s University
8. Simon Fraser University
9. Stanford University
10. University of Alberta
11. University of British Columbia, Vancouver Campus
12. University of Calgary
13. University of Chicago
14. University of Guelph
15. University of Melbourne
16. University of Pennsylvania
17. University of Toronto
18. University of Victoria
19. University of Waterloo
20. Yale University

\textsuperscript{17} A copy of the Environmental Scan is available on the B.A. Redesign website.
**Appendix V**

*Curriculum Proposal Form for Proposed B.A. Degree Structure*

<table>
<thead>
<tr>
<th>Category:</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Faculty/School:</strong></td>
<td>IKBSAS &amp; FCCS</td>
</tr>
<tr>
<td><strong>Dept./Unit:</strong></td>
<td>Dean’s Offices</td>
</tr>
<tr>
<td><strong>Faculty/School Approval Date:</strong></td>
<td>YYYYMMDD</td>
</tr>
<tr>
<td><strong>Effective Session:</strong></td>
<td>2020W</td>
</tr>
<tr>
<td><strong>Date:</strong></td>
<td>20180912</td>
</tr>
<tr>
<td><strong>Contact Person:</strong></td>
<td>Bernard Momer (IKBSAS), Marianne Legault (FCCS)</td>
</tr>
<tr>
<td><strong>Phone:</strong></td>
<td>250.807.9406 (BM), 250.807.9381 (ML)</td>
</tr>
<tr>
<td><strong>Email:</strong></td>
<td><a href="mailto:bernard.momer@ubc.ca">bernard.momer@ubc.ca</a>, <a href="mailto:marianne.legault@ubc.ca">marianne.legault@ubc.ca</a></td>
</tr>
</tbody>
</table>

**Type of Action:**
Approve the new structure of the Bachelor of Arts degree.

**Rationale:**
This is the first phase of the approval process for the new structure of the Bachelor of Arts degree. In this initial phase, we seek approval for the structure of the degree as presented in this curriculum form. Courses for each requirement, learning outcomes, and appropriate updates to each major will also proceed through the normal curriculum approval process in a second phase (Winter term).

Please refer to *Revised Bachelor of Arts Proposal, UBC Okanagan* proposal paper for further details.

**Proposed Academic Calendar Entry:**

**Degree Requirements**

[12398] To earn a Bachelor of Arts degree, students must complete a minimum of 120 credits of which at least 48 credits must be at the 300/400 level. Of those 48 credits, at least 30 credits must be completed at UBC. Note that all baccalaureate courses delivered by the Faculty of Creative and Critical Studies are deemed for this purpose to be Arts courses.

**Present Academic Calendar Entry:**

**Degree Requirements**

[12398] A minimum of 120 credits in university courses must be completed. For use as electives, at most 12 of the 120 credits may be from non-Arts and non-Science baccalaureate courses. Note: all baccalaureate courses delivered by the Faculty of Creative and Critical Studies are deemed for this purpose to be Arts courses and need not be counted as outside electives. Students must also complete at least 48 credits at the 300/400 level, of which at least 30 credits must be completed at UBC.

**Draft Academic Calendar URL:**

URL
http://www.calendar.ubc.ca/okanagan/proof/edit/index.cfm?tree=18,282,857,1084
Students in the Bachelor of Arts degree program must complete the following requirements:

1. Foundational Requirement (21 credits):
   - See below for the list of approved foundational requirement courses.
   - Communication (12 credits)
   - Critical Thinking (3 credits)
   - Indigenous Content (3 credits)
   - Scientific Literacy or Numeracy (3 credits)
   Note that foundational courses can satisfy both degree and program requirements but cannot satisfy both foundational and distribution requirements.

2. Distribution Requirement (12 credits):
   - See below for the list of approved distribution requirement courses.
   - Creativity (3 credits)
   - Digital Literacy (3 credits)
   - Power, Diversity, and Cultures (3 credits)
   - Sustainability (3 credits)
   Courses taken to satisfy this requirement must be in at least two different disciplines. Courses that satisfy program requirements can also satisfy distribution requirements.

3. Program Requirement (min. 48 credits):
   - Courses required to complete a B.A major.
   - See major program pages for the list of required courses.
   - Note that foundational courses can satisfy both foundational and distribution requirements.
In addition, a student may choose to complete a minor, double major, combined major, or honours program. See Program Requirements for details.

4. Elective Requirement (credit count varies):
   - Remaining credits to complete the B.A. degree requirements are dependent on the Program Requirement.
   - Students can fulfill the Elective Requirement by successfully completing any credit course at UBC.
   - A minimum of 12 credits of elective courses must be at the 300/400 level.

A minimum graduating grade average (GGA) of 60% is required to be eligible for graduation with the B.A. degree.

Foundational Requirement
The Foundational Requirement provides the foundational skills and knowledge that every student will require to successively reach higher-levels across the curriculum. Together, the four areas within this requirement serve to build the competencies that graduates require to become lifelong learners and engaged citizens.

Communication
The development of proficiency in writing and other communication skills is fundamental to an undergraduate education. The Communication requirement provides students with an opportunity...
to acquire and develop these skills, which are not only valuable in an academic context but will also assist students in their career paths. The study of languages beyond one’s mother tongue help to develop competence in structured thought and logic, problem solving, and critical thinking as well as promote a sense of global citizenship by increasing intercultural understanding and competence.

Students must complete 12 credits chosen from:

- 3 credits of ENGL 112, 114 or 15x
- 3 credits of ENGL 203 or equivalent
- 6 credits of language acquisition or language/linguistic appreciation requirement
  - Any credit course satisfying the Communication learning outcomes
  - Students may satisfy the language acquisition or language/linguistic appreciation requirement by successfully completing both NSYL 110 and NSYL 111 (Okanagan Language), offered through the Nicola Valley Institute of Technology at the En’owkin Centre or the UBC Okanagan campus or by completing the equivalent of 6 credits of any other Indigenous language through an accredited educational institution.
  - Indigenous students can also use additional English courses to satisfy the language acquisition or

[12402] Students must complete at least 6 first-year Science credits in Laboratory Science, Mathematics, Computer Science, Statistics, or approved Geography courses from the following list:

- ASTR 110, 111, 120, 121;
- BIOL 116, 117, 125, 122, 131, 133;
- CHEM 111, 113, 121, 123;
- COSC 101, 111, 121, 122, 123;
- EESC 111, 121;
- GEOG 108, 109;
- MATH 100, 101, 111, 116, 142;
- PHYS 102, 111, 112, 121, 122, 140;
- STAT 121, 124.

[13108] GEOG 128 and 129 do not provide Science credit.

[12404] Language other than English Requirement

[12405] This requirement may be satisfied by any of the following options:

- successful completion of an approved Grade 12 course in a language other than English before studies begin at the UBC Okanagan campus. Note: once the student has begun studies at the UBC Okanagan campus, this requirement can no longer be satisfied with senior secondary courses;

- successful completion of one of the following or its equivalent. Note: these courses have prerequisites;

<table>
<thead>
<tr>
<th>Subject</th>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>French</td>
<td>FREN 104</td>
</tr>
<tr>
<td>German</td>
<td>GERM 210</td>
</tr>
</tbody>
</table>
Students whose first language is not English may use additional English courses (other than the English courses required above) to satisfy the language acquisition or language/linguistic appreciation requirement upon presentation of an official transcript indicating completion of secondary school in their first language.

American Sign Language: all four levels of the American Sign Language Basic Certificate offered through an accredited institution will be deemed to have satisfied the language acquisition or language/linguistic appreciation requirement. Note: these courses cannot be used as credit towards the B.A. degree.

Critical Thinking

Critical thinking is at the root of a democratic society and scientific reasoning. This requirement provides students with the skills they need to separate facts from opinions, to examine issues from all sides, and to think independently. Critical thinking is essential to make connections across...
Disciplines and understand content on a deeper level. It therefore enhances overall academic performance.

Students must complete 3 credits chosen from:

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Course number</th>
</tr>
</thead>
</table>

All courses proposed for each area will proceed through the Senate approval process at a later date.

Indigenous Content

In its commitment to think beyond the inherited thought processes replicating colonial assumptions of past practices and honour the knowledge, political, and social systems of Indigenous communities, UBC Okanagan requires that students develop a competence in understanding Indigenous ways of knowing.

Students must complete 3 credits chosen from:

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Course number</th>
</tr>
</thead>
</table>

All courses proposed for each area will proceed through the Senate approval process at a later date.

Scientific Literacy or Numeracy

Along with the Critical Thinking requirement, the Scientific Literacy or Numeracy requirement ensures graduates develop a habit of mind that enables them to think critically and independently while providing them with the mathematical or scientific concepts needed to navigate their workplace and life in general.

Students must complete 3 credits chosen from:

| Subject Code | Course number |

Language requirement. Note: these courses cannot be used as credit towards the B.A. program.

- Okanagan language option: students who successfully complete both nísíylxcen' I and II (NSYL 110 and NSYL 111) (Okanagan Language), offered through the Nicola Valley Institute of Technology at the En'owkin Centre or the UBC Okanagan campus, will be deemed to have satisfied the language requirement.

- Technological limitations prevent UBC from appropriately reflecting some languages in the Academic Calendar. We are working to address this for the future.

Distribution Requirements

Students must complete at least 18 credits from List A: Social Sciences, and 18 credits from List B: Humanities. The completed courses must include at least two disciplines from each list. Note: credits earned to satisfy the English requirement will not count towards the Distribution Requirement.

List A: Social Sciences

- Anthropology
- Economics
- Gender and Women's Studies
- Geography
- Indigenous Studies
- Political Science
- Psychology
- Sociology

List B: Humanities

- Art History and Visual Culture
- Creative and Critical Studies
- Creative Writing
All courses proposed for each area will proceed through the Senate approval process at a later date.

**Distribution Requirement**

Distribution requirement courses fulfill the need to graduate students who are well-rounded, informed, and engaged citizens. This requirement exposes students to different ways of thinking and experiences in areas outside their specialisation.

Courses in this requirement are accessible to students who have not acquired the specialized knowledge typically possessed by students majoring in a discipline.

In addition to the specific learning outcomes identified in the distribution areas, any course satisfying the Distribution Requirement should substantially fulfill at least one of the following conditions:

1. Demonstrates the ways in which the discipline understands, obtains, and categorizes its knowledge, along with defining the problems addressed by the discipline and the methods by which it solves or answers those problems;

2. Surveys the historical development of the discipline and the shape of its current practices; or,

3. Surveys the central ideas, theories, and debates central to the discipline.

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Course number</th>
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</tr>
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<tbody>
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<td>English</td>
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<td>Film</td>
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<td>French</td>
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<td>Gender and Women's Studies</td>
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<td></td>
<td>Philosophy</td>
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<td>Spanish</td>
</tr>
<tr>
<td>Spanish</td>
<td></td>
<td>Theatre</td>
</tr>
<tr>
<td>Theatre</td>
<td></td>
<td>Visual Arts</td>
</tr>
</tbody>
</table>

\textsuperscript{1} GWST 100, 110, 216, 223, 323, 333, 334.
\textsuperscript{2} Except GEOG 108, 109, 200, 205, 207, 222, 271, 301, 307, 310, 341, 344, 356, 377, 380, 381, 414, 422, 436, 437, 466, GEOG 491, 498 may be eligible dependent on the topic. Confirm approval with a program advisor.
\textsuperscript{3} INDG 100, 201, 202, 203, 302, 304, 305, 306, 307, 308.
\textsuperscript{4} Except for ENGL 442, 301.
\textsuperscript{5} GWST 110, 215, 223, 333, 335, 336.
\textsuperscript{6} INDG 100, 201, 202, 203, 301, 303, 401, 402, 481.
Creativity

Learning to think creatively requires many different skills, such as the ability to see objects and ideas in new ways. This requirement aims to develop students' capacity to combine or synthesize existing ideas, images, or expertise in original ways and to experience thinking, reacting, and working in an imaginative way, characterized by a high-degree of innovation, divergent thinking, and risk-taking.

Creativity is not only essential for the innovation process, but it is also an observable and valuable component of the social and economic enterprise that becomes a force of great value when it is applied to causes that benefit humankind and the world at large.

Students must complete 3 credits chosen from:

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Course number</th>
</tr>
</thead>
<tbody>
<tr>
<td>All courses proposed for each area will proceed through the Senate approval process at a later date</td>
<td></td>
</tr>
</tbody>
</table>

Digital Literacy

Digital literacy includes the broader capacity to participate in, and reflect upon, the use of digital communication technology in various spheres (education, work, leisure, etc.). The fulfillment of this requirement will enable students to build meaningful knowledge through the interaction with digital resources and understand human, as well as, cultural and societal issues related to the use of technology.
Students must complete 3 credits chosen from:

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Course number</th>
</tr>
</thead>
<tbody>
<tr>
<td>All courses proposed for each area will proceed through the Senate approval process at a later date</td>
<td></td>
</tr>
</tbody>
</table>

**Power, Diversity, and Cultures**

The notions of equality, universal respect, and justice are the basis of the Universal Declaration of Human Rights. To fulfill UBC’s commitment of advancing the inclusion of all those who have been excluded historically based on gender, race, religion, sexuality, age, physical ability, or economic circumstances, these notions are at the root of this requirement. The Power, Diversity, and Cultures requirement will ensure that students can reflect upon their experiences to rethink what is normal or acceptable about the lives they live, as well as providing an opportunity for them to question their unexamined assumptions about society.

Students must complete 3 credits chosen from:

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Course number</th>
</tr>
</thead>
<tbody>
<tr>
<td>All courses proposed for each area will proceed through the Senate approval process at a later date</td>
<td></td>
</tr>
</tbody>
</table>

**Sustainability**

This requirement will provide students with the knowledge needed to explore the complexities of sustainability and empower them to make informed decisions and take responsible actions for
environmental integrity, economic viability, and a just society for present and future generations while respecting social and cultural diversity.

Sustainability education is holistic and transformational.

Students must complete 3 credits chosen from:

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Course number</th>
</tr>
</thead>
<tbody>
<tr>
<td>All courses proposed for each area will proceed through the Senate approval process at a later date</td>
<td></td>
</tr>
</tbody>
</table>

[12412] Progression Requirements

<table>
<thead>
<tr>
<th>Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year</td>
<td>0–23 credits</td>
</tr>
<tr>
<td>Second Year</td>
<td>24–47 credits</td>
</tr>
<tr>
<td>Third Year</td>
<td>48–77 credits</td>
</tr>
<tr>
<td>Fourth Year</td>
<td>78 or more credits</td>
</tr>
</tbody>
</table>

[12412] Progression Requirements

<table>
<thead>
<tr>
<th>Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year</td>
<td>0–23 credits</td>
</tr>
<tr>
<td>Second Year</td>
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</tr>
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<td>Third Year</td>
<td>48–77 credits</td>
</tr>
<tr>
<td>Fourth Year</td>
<td>78 or more credits</td>
</tr>
</tbody>
</table>
Curriculum Proposal Form  
New/Change to Course/Program – Okanagan campus

<table>
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<th>Category: 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Faculty/School:</strong> IKBSAS &amp; FCCS</td>
</tr>
<tr>
<td><strong>Dept./Unit:</strong> Dean’s Offices</td>
</tr>
<tr>
<td><strong>Faculty/School Approval Date:</strong> 20181204 (FCCS); 20190208 (IKBSAS)</td>
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<tr>
<td><strong>Effective Session:</strong> 2021W</td>
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<tr>
<td><strong>Date:</strong> 20181001</td>
</tr>
<tr>
<td><strong>Contact Person:</strong> Bernard Momer (IKBSAS), Marianne Legault (FCCS)</td>
</tr>
<tr>
<td><strong>Phone:</strong> 250.807.9406 (BM), 250.807.9381 (ML)</td>
</tr>
<tr>
<td><strong>Email:</strong> <a href="mailto:bernard.momer@ubc.ca">bernard.momer@ubc.ca</a>, <a href="mailto:marianne.legault@ubc.ca">marianne.legault@ubc.ca</a></td>
</tr>
</tbody>
</table>

**Type of Action:**
Update calendar language.

**Rationale:**
The proposed changes to clarify and adjust the calendar language are associated with the redesign of the B.A. degree.

Please refer to the revised B.A. Degree Curriculum proposal and to Revised Bachelor of Arts Proposal, UBC Okanagan [https://reimaginingourba.ok.ubc.ca/](https://reimaginingourba.ok.ubc.ca/) for further details on the structure of the redesigned B.A. degree.

Current requirements will remain in the Academic Calendar and be located in a section entitled: **Bachelor of Arts Program for students who entered the program prior to 2021**

If the proposed changes are approved, a new section in the Academic Calendar will be created for incoming students entitled: **Bachelor of Arts Program for students entering the program in 2021 or later**
Proposed Academic Calendar Entry:

Program Overview

[12390] Bachelor of Arts

[12391] The Faculty of Arts and Sciences offers a four-year degree program leading to the Bachelor of Arts (B.A.). Students can choose from several majors to complete the degree or can choose to complete a General Studies degree. Disciplines within the Bachelor of Arts program are varied and allow for a large selection of courses.

[12393] The B.A. degree program can be completed as a:

- General Studies Bachelor of Arts;
- Bachelor of Arts with a major;
- Bachelor of Arts with a double major;
- Bachelor of Arts with a major and a minor;
- Bachelor of Arts Honours (see individual program pages).

[12395] B.A. Major Program

[12456] Majors offered by the Irving K. Barber School of Arts and Sciences include programs in: Anthropology; Computer Science; Economics; Gender and Women’s Studies; Geography; History; Indigenous Studies; International Relations; Mathematics; Philosophy; Philosophy, Politics, and Economics (PPE); Political Science; Psychology; and Sociology.

[12488] Majors offered by the Faculty of Creative and Critical Studies include programs in: Art History and Visual Culture, Creative Writing, Cultural Studies, English, French and Spanish.

[12457] B.A. General Studies

Present Academic Calendar Entry:

Program Overview

[12390] Bachelor of Arts

[12391] The Faculty of Arts and Sciences offers a four-year degree program leading to the Bachelor of Arts (B.A.). Students can complete the program with one of more than 15 majors or with a General Studies degree. Disciplines within the Bachelor of Arts program are varied and allow for a large selection of courses.

[12393] The B.A. degree program can be completed as a:

- General Bachelor of Arts;
- Bachelor of Arts with a major;
- Bachelor of Arts with a double major;
- Bachelor of Arts with a major and a minor;
- Bachelor of Arts Honours (currently offered for Computer Science, Economics, English, History, and Psychology majors).

[12395] B.A. Major Program

[12456] Majors offered at the UBC Okanagan campus include: Anthropology; Computer Science; Economics; Gender and Women’s Studies; Geography; History; Indigenous Studies; International Relations; Latin American Studies; Mathematics; Philosophy; Philosophy, Politics, and Economics (PPE); Political Science; Psychology; and Sociology.

[12488] See the Faculty of Creative and Critical Studies for B.A. programs in: Art History and Visual Culture, Creative Writing, Cultural Studies, English, French and Spanish.

[12457] B.A. General Studies

Draft Academic Calendar URL:
URL
http://www.calendar.ubc.ca/okanagan/prof/edit/index.cfm?tree=18,282,857,1081
This program is designed for students who wish to pursue a general liberal studies program with requirements drawn from the humanities, social sciences, sciences, or creative and performing arts.
### Curriculum Proposal Form
#### New/Change to Course/Program – Okanagan campus

<table>
<thead>
<tr>
<th>Category</th>
<th>1</th>
</tr>
</thead>
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<tr>
<td><strong>Faculty/School:</strong></td>
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<tr>
<td><strong>Dept./Unit:</strong></td>
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<td><a href="mailto:bernard.momer@ubc.ca">bernard.momer@ubc.ca</a>, <a href="mailto:marianne.legault@ubc.ca">marianne.legault@ubc.ca</a></td>
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**Type of Action:**
Update calendar language.

**Rationale:**
The proposed changes to clarify and adjust the calendar language are associated with the redesign of the B.A. degree.

Please refer to the revised B.A. Degree Curriculum proposal and to Revised Bachelor of Arts Proposal, UBC Okanagan (https://reimaginingourba.ok.ubc.ca/) for further details on the structure of the redesigned B.A. degree.

Current requirements will remain in the Academic Calendar and be located in a section entitled: **Bachelor of Arts Program for students who entered the program prior to 2021**

If the proposed changes are approved, a new section in the Academic Calendar will be created for incoming students entitled: **Bachelor of Arts Program for students entering the program in 2021 or later**
### Proposed Academic Calendar Entry:

#### Program Requirements

**[12413] Registration**

[12414] Students are responsible for meeting all *degree and program* requirements. Program advisors are available to assist with the appropriate course selection to meet graduation requirements. Students are *strongly* encouraged to have their progress reviewed by a program advisor *by the end of their first year of study to review their program of study and course selection*.

[16159] Students enrolled in the following programs: double major, major/minor, double honours or honours/minor are permitted to double count a limited number of credits between the two fields of study (see Double Counting of Credits in Honours, Majors, and Minors).

**[15716] Honours**

[15715] The B.A. with Honours provides an intensive program of study in an established discipline or program. Students who complete this program will learn to work independently with a high standard of competency in their chosen fields. Honours programs require students to acquire sophisticated analytic and communication skills. May require completion of an honours thesis. Requires a minimum grade average as specified by the program.

**[12415] Major**

[12416] *To earn a major, students must complete at least 48 credits in a defined set of disciplinary or interdisciplinary courses with the following restrictions:*
• 30 credits must be completed at the 300/400 level;
• 18 credits of the 300/400 level courses taken to satisfy a major must be completed at UBC.

In addition to the requirements listed above, at least 12 credits of electives at the 300/400 level must be in disciplines different from the student's major. A student may earn a double major by completing all program requirements for each major.

[12417] Major with an Arts Minor

[12418] To earn a minor in conjunction with a major, students must complete at least 30 credits in a defined set of disciplinary or interdisciplinary courses with the following restrictions:

• 18 credits must be completed at the 300/400 level;
• Credits used to complete a minor must be in a discipline, sub-discipline, or program different from the student's major.

Please see the specific minor requirements listed under the various disciplines.

[15673] Major with a Fine Arts Minor

[15674] B.A. students may earn a Minor in Visual Arts. Note: due to the number of credits required, adding this program to a degree of study may result in it requiring more than four years to complete.

[12419] Major with a Science Minor

[12420] B.A. students can complete minors in the following Science disciplines: Biology, Chemistry, Computer Science, Data Science\(^1\), Earth and Environmental Sciences, Mathematics, Mathematics and Statistics, Physics, and Statistics. To complete a Science minor, students must complete no fewer than 30 credits in a Science discipline. At least 12 of these credits must be numbered 300 or above.

[17928] The requirements for the BA minor in Data Science are the same as for the BSc minor in Data Science, which may require

---

level. The student must also complete at least 18 credits at the 300/400 level outside of a single discipline, and must complete at least 18 of the 30 credits in their major at the 300/400 level at UBC. A student may earn a double major by completing all program requirements for each major.

[12417] Major with an Arts Minor

[12418] In conjunction with a major, a student can earn a minor, consisting of at least 30 defined credits with at least 18 credits at the 300/400 level. These 30 credits must be in a discipline or program different from the student's major. The student must also complete all requirements for the major. Please see the specific minor requirements listed under the various disciplines.

[15673] Major with a Fine Arts Minor

[15674] B.A. students may earn a Minor in Visual Arts. Note: due to the number of credits required, adding this program to a degree of study may result in it requiring more than four years to complete.

[12419] Major with a Science Minor

[12420] B.A. students can complete minors in the following Science disciplines: Biology, Chemistry, Computer Science, Data Science\(^1\), Earth and Environmental Sciences, Mathematics, Mathematics and Statistics, Physics, and Statistics. To complete a Science minor, students must include no fewer than 30 credits in a Science discipline. At least 12 of these credits must be numbered 300 or above.

[17928] The requirements for the BA minor in Data Science are the same as for the BSc minor in Data Science, which may require

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\(^1\) The requirements for the BA minor in Data Science are the same as for the BSc minor in Data Science, which may require
students to complete more than the minimum 12 credits of courses numbered 300 or above.

[14375] Double Major in Arts
[14376] A student may earn a double major by completing all program requirements for each major. Completing a double major in the Arts will likely require more than 120 credits.
Note: the two majors must be from different disciplines. It is not possible to double major in two sub-areas of one discipline.

[14377] Double Major in Arts and Sciences
[14378] To earn a double major, students must satisfy all program requirements for a major in a B.Sc. degree discipline, in addition to the program requirements for the major in the B.A. degree. Note: the two majors must be from two different disciplines. Completing a double major in Arts and Sciences will likely require more than 120 credits.

[15936] Combined Major in Arts
[15937] A student may earn a combined major by completing the requirements specified by the programs offering that combined major option. Combined major students must also complete at least 48 credits at the 300/400 level.

General Studies in Arts
A student may earn a General Studies B.A. by completing the general requirements for the B.A. and the requirements from the following three groupings:

Grouping I
- Concentration: A minimum of 30 credits, with at least 18 credits at the 300 and 400 levels from a single discipline within one of the four categories mentioned above.
- Non-concentration: A minimum of 18 credits, with at least 12 credits at the 300 and 400 levels from other disciplines within the same category as the concentration.

students to complete more than the minimum 12 credits of courses numbered 300 or above.

[14375] Double Major in Arts
[14376] A student may earn a double major by completing all program requirements for each major. Completing a double major in the Arts will likely require more than 120 credits.
Note: the two majors must be from different disciplines. It is not possible to double major in two sub-areas of one discipline.

[14377] Double Major in Arts and Sciences
[14378] A student may earn a double major by completing all program requirements for the B.A. degree with a major plus completing the requirements for a major offered in Sciences. Note: the two majors must be from two different disciplines. Completing a double major in Arts and Sciences will likely require more than 120 credits.

[15936] Combined Major in Arts
[15937] A student may earn a combined major by completing the requirements specified by the programs offering that combined major option. Combined major students must also complete at least 48 credits at the 300/400 level.

[16157] Double Counting of Credits in Honours, Majors, and Minors
[16446] Students enrolled in the following programs: double major, major/minor, double honours or honours/minor are permitted to double count a limited number of credits between the two fields of study. No more than 6 upper-level credits that count toward the program-specified requirements for the first major or honours may be double counted to fulfill requirements for the second honours, major, or minor. Thus, in order to graduate, double major students must have at least 54 program-specified upper-level credit requirements, and major/honours and minor students must have at least 48 upper-level credits; this number of credits cannot be arrived at by double counting. Students should be aware that by double counting...
Grouping II

- A minimum of 18 credits, with at least 12 credits at the 300 and 400 levels from a category different from the category chosen for Grouping I.

Grouping III

- A minimum of 6 credits at the 300 and 400 levels in disciplines outside of the concentration.

Double Counting of Credits

Students enrolled in the following programs: double major, major/minor, double honours or honours/minor are permitted to double count a limited number of credits between the two fields of study. No more than 6 upper-level credits that count toward the program-specified requirements for the first major or honours may be double counted to fulfill requirements for the second honours, major, or minor. Thus, in order to graduate, double major students must have at least 54 program-specified upper-level credit requirements, and major/honours and minor students must have at least 48 upper-level credits in total. Students should be aware that by double counting they could substantially weaken the intellectual content of one of their fields of study. A course cannot satisfy both core and breadth B.A. requirements.
## Curriculum Proposal Form
New/Change to Course/Program – Okanagan campus

<table>
<thead>
<tr>
<th>Category</th>
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<tbody>
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<td>Faculty/School:</td>
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<td>Dept./Unit:</td>
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<td>Date:</td>
<td>20190329</td>
</tr>
<tr>
<td>Contact Person:</td>
<td>Nina Langton</td>
</tr>
<tr>
<td>Phone:</td>
<td>250.807.9395</td>
</tr>
<tr>
<td>Email:</td>
<td><a href="mailto:nina.langton@ubc.ca">nina.langton@ubc.ca</a></td>
</tr>
</tbody>
</table>

### Type of Action:
Revision to Program Requirements Description

### Rationale:

Update of Program Requirements page to align with IKBSAS.

Current requirements will remain in the Academic Calendar and be located in a section entitled:

**Bachelor of Arts Program for students who entered the program prior to 2021**

If the proposed changes are approved, a new section in the Academic Calendar will be created for incoming students entitled:

**Bachelor of Arts Program for students entering the program in 2021 or later**

### Proposed Academic Calendar Entry:

**Program Requirements**

**Program requirements for B.A. programs are described here.**

### Present Academic Calendar Entry:

**Program Requirements**

**[15933] Registration**

**[12614] Students are responsible for meeting all program requirements. Within the Faculty of Creative and Critical Studies, program advisors in Art History and Visual Culture, Creative Writing, Cultural Studies, English, French, and Spanish are available to assist with the appropriate course selection to meet graduation requirements. Students can also meet with academic advisors in the Advising and**
Involvement Centre (UNC 207). Before completing their final 30 credits, students are encouraged to have their progress reviewed by a program advisor or an Academic Advisor to ensure that they meet all graduation requirements.
Curriculum Proposal Form
New/Change to Course/Program – Okanagan campus

Category: 1
Faculty/School: IKBSAS & FCCS
Dept./Unit: Dean’s Offices
Faculty/School Approval Date: 20181204 (FCCS); 20190208 (IKBSAS)
Effective Session: 2021 W
Date: 20180912
Contact Person: Bernard Momer (IKBSAS), Marianne Legault (FCCS)
Phone: 250.807.9406 (BM), 250.807.9381 (ML)
Email: bernard.momer@ubc.ca, marianne.legault@ubc.ca

Type of Action:
Approve the new structure of the Bachelor of Arts degree.

Rationale:
This is the first phase of the approval process for the new structure of the Bachelor of Arts degree. In this initial phase, we seek approval for the structure of the degree as presented in this curriculum form. Courses for each requirement, learning outcomes, and appropriate updates to each major will also proceed through the normal curriculum approval process in a second phase (Winter term).

Please refer to Revised Bachelor of Arts Proposal, UBC Okanagan proposal paper for further details.

Current degree requirements will remain in the Academic Calendar and be located in a section entitled:
Bachelor of Arts Program for students who entered the program prior to 2021

If the proposed changes are approved, a new section in the Academic Calendar will be created for incoming students entitled:
Bachelor of Arts Program for students entering the program in 2021 or later

Proposed Academic Calendar Entry:

Degree Requirements

To earn a Bachelor of Arts degree, students must complete a minimum of 120 credits of which at least 48 credits must be at the 300/400 level. Of those 48 credits, at least 30 credits must be completed at UBC. Note that all baccalaureate

Draft Academic Calendar URL:

URL
http://www.calendar.ubc.ca/okanagan/proof/edit/index.cfm?tree=18,282,857,1084

Present Academic Calendar Entry:

Degree Requirements

A minimum of 120 credits in university courses must be completed. For use as electives, at most 12 of the 120 credits may be from non-Arts and non-Science baccalaureate courses. Note: all baccalaureate courses delivered by the Faculty of Creative and Critical Studies are deemed for this purpose to be Arts courses and need not
Students in the Bachelor of Arts degree program must complete the following requirements:

1. Foundational Requirement (21 credits):

   See below for the list of approved foundational requirement courses.
   - Communication (12 credits)
   - Critical Thinking (3 credits)
   - Indigenous Content (3 credits)
   - Scientific Literacy or Numeracy (3 credits)

   Note that courses used to satisfy the foundational courses requirement may also be used to satisfy a program requirement, but a course may not be used to satisfy both the foundational requirement and the distribution requirement.

2. Distribution Requirement (12 credits):

   See below for the list of approved distribution requirement courses.
   - Creativity (3 credits)
   - Digital Literacy (3 credits)
   - Power, Diversity, and Cultures (3 credits)
   - Sustainability (3 credits)

   Courses taken to satisfy this requirement must be in at least two different disciplines. Courses that satisfy program requirements can also satisfy distribution requirements.

3. Program Requirement (min. 48 credits):

   Students must also complete at least 48 credits at the 300/400 level, of which at least 30 credits must be completed at UBC.
### Elective Requirement (credit count varies):

- Remaining credits to complete the B.A. degree requirements are dependent on the Program Requirement.
- Students can fulfill the Elective Requirement by successfully completing any credit course at UBC that has not been used to satisfy a foundational, distribution or program requirement.
- A minimum of 12 credits of elective courses must be at the 300/400 level.

**Foundational Requirement**

The Foundational Requirement provides the foundational skills and knowledge that every student will require to successively reach higher-levels across the curriculum. Together, the four areas within this requirement serve to build the competencies that graduates require to become lifelong learners and engaged citizens.

**A minimum graduating grade average (GGA) of 60% is required to be eligible for graduation with the B.A. degree.**
Communication

The development of proficiency in writing and other communication skills is fundamental to an undergraduate education. The Communication requirement provides students with an opportunity to acquire and develop these skills, which are not only valuable in an academic context but will also assist students in their career paths. The study of languages beyond one’s mother tongue help to develop competence in structured thought and logic, problem solving, and critical thinking as well as promote a sense of global citizenship by increasing intercultural understanding and competence.

Students must complete 12 credits chosen from:

- 3 credits of ENGL 112, 113, 114 or 150-154
- 3 credits of ENGL 203 or equivalent
- 6 credits of language acquisition or language/linguistic appreciation requirement
  - Any credit course satisfying the Communication learning outcomes
  - Some students may satisfy the language acquisition or language/linguistic appreciation requirement by successfully completing both Nsylxcen I and II (NSYL 110 and NSYL 111) (Okanagan Language), offered through the Nicola Valley Institute of Technology at the En’owkin Centre or the UBC Okanagan campus or by completing the equivalent of 6 credits of any other

Science

Students must complete at least 6 first-year Science credits in Laboratory Science, Mathematics, Computer Science, Statistics, or approved

Geography courses from the following list:

- ASTR 110, 111, 120, 121;
- BIOL 116, 117, 125, 122, 131, 133;
- CHEM 111, 113, 121, 123;
- COSC 101, 111, 121, 122, 123;
- EESC 111, 121;
- GEOG 108, 109;
- MATH 100, 101, 111, 116, 142;
- PHYS 102, 111, 121, 122, 124;
- STAT 121, 124.

Language other than English Requirement

This requirement may be satisfied by any of the following options:

- Successful completion of an approved Grade 12 course in a language other than English before studies begin at the UBC Okanagan campus. Note: once the student has begun studies at the UBC Okanagan campus, this requirement can no longer be satisfied with senior secondary courses;
- Successful completion of one of the following or its equivalent. Note: these courses have prerequisites;

<table>
<thead>
<tr>
<th>Subject</th>
<th>Course</th>
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<tbody>
<tr>
<td>French</td>
<td>FREN 104</td>
</tr>
<tr>
<td>German</td>
<td>GERM 210</td>
</tr>
</tbody>
</table>
Indigenous language through an accredited educational institution.

- Students who are fluent in and can demonstrate competency in another language may use additional English courses to satisfy the language acquisition or language/linguistic appreciation requirement upon approval from the English Program Advisor.

- Students whose first language is not English may use additional English courses (other than the English courses required above) to satisfy the language acquisition or language/linguistic appreciation requirement upon presentation of an official transcript indicating completion of secondary school in their first language.

- American Sign Language: all four levels of the American Sign Language Basic Certificate offered through an accredited institution will be deemed to have satisfied the language acquisition or language/linguistic appreciation requirement. Note: these courses cannot be used as credit towards the B.A. degree.

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Course number</th>
</tr>
</thead>
</table>
| Critical Thinking | "The list of eligible courses will be added through the Senate approval process at a later date."

Japanese | JPST 204
Spanish | SPAN 202, SPAN 204, or SPAN 252

- demonstrated competency through examination in any language other than English. Demonstrated competency is defined as the ability to pass a final oral and written examination typical of a fourth-term university course where the first term is beginner-level. Students must make their own arrangements for such an examination by a qualified instructor (e.g., a university professor who teaches the language at an accredited university). The suitability of such an instructor must be approved by the program advisor for Modern Languages before the examination is taken. Students are responsible for any fees incurred;

[15572]

- students whose first language is not English may satisfy the requirement upon presentation of official transcripts indicating completion of secondary school in their first language;

[15573]

- classical language option: students who successfully complete GREEK 111 and 121, plus LATN 300, will be deemed to have satisfied the language requirement;

[15574]

- American Sign Language: all four levels of the American Sign Language Basic Certificate offered through an accredited

[15575]
Critical thinking is at the root of a democratic society and scientific reasoning. This requirement provides students with the skills they need to separate facts from opinions, to examine issues from all sides, and to think independently. Critical thinking is essential to make connections across disciplines and understand content on a deeper level. It therefore enhances overall academic performance.

Students must complete 3 credits chosen from:

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Course number</th>
</tr>
</thead>
<tbody>
<tr>
<td>The list of eligible courses will be added through the Senate approval process at a later date</td>
<td></td>
</tr>
</tbody>
</table>

Indigenous Content

In its commitment to think beyond the inherited thought processes replicating colonial assumptions of past practices and honour the knowledge, political, and social systems of Indigenous communities, UBC Okanagan requires that students develop a competence in understanding Indigenous ways of knowing.

Students must complete 3 credits chosen from:

<table>
<thead>
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<th>Subject Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>The list of eligible courses will be added through the Senate approval process at a later date</td>
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</tbody>
</table>

Scientific Literacy or Numeracy

Along with the Critical Thinking requirement, the Scientific Literacy or Numeracy requirement

<table>
<thead>
<tr>
<th>List A: Social Sciences</th>
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<tbody>
<tr>
<td>Anthropology</td>
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<td>Economics</td>
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<tr>
<td>Gender and Women’s Studies</td>
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<tr>
<td>Geography</td>
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<tr>
<td>Indigenous Studies</td>
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<td>Political Science</td>
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<td>Psychology</td>
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<td>Sociology</td>
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<thead>
<tr>
<th>List B: Humanities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art History and Visual Culture</td>
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</table>

institution will be deemed to have satisfied the language requirement. Note: these courses cannot be used as credit towards the B.A. program.

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Okanagan language option: students who successfully complete both nsíylx̱cnen’I and II (NSYL 110 and NSYL 111) (Okanagan Language), offered through the Nicola Valley Institute of Technology at the En’owkin Centre or the UBC Okanagan campus, will be deemed to have satisfied the language requirement.

Technological limitations prevent UBC from appropriately reflecting some languages in the Academic Calendar. We are working to address this for the future.

Distribution Requirements

Students must complete at least 18 credits from List A: Social Sciences, and 18 credits from List B: Humanities. The completed courses must include at least two disciplines from each list. Note: credits earned to satisfy the English requirement will not count towards the Distribution Requirement.

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ensures graduates develop a habit of mind that enables them to think critically and independently while providing them with the mathematical or scientific concepts needed to navigate their workplace and life in general.

Students must complete 3 credits chosen from:

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Course number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creative and-Critical Studies</td>
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<tr>
<td>Creative-Writing</td>
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<tr>
<td>Cultural-Studies</td>
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<td>English¹</td>
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<td>Film</td>
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<tr>
<td>French</td>
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<tr>
<td>Gender and Women's Studies²</td>
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<td>German</td>
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<tr>
<td>Theatre</td>
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<tr>
<td>Visual Arts</td>
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</table>

¹GWST 100, 110, 216, 223, 323, 333, 334.
³GWST 100, 110, 215, 223, 333, 335, 336.
⁴INDG 100, 201, 202, 203, 301, 303, 401, 402, 481.
⁵INDG 100, 201, 202, 203, 301, 303, 401, 402, 481.

The list of eligible courses will be added through the Senate approval process at a later date.

Distribution Requirement

Distribution requirement courses fulfill the need to graduate students who are well-rounded, informed, and engaged citizens. This requirement exposes students to different ways of thinking and experiences in areas outside their specialization.

Courses in this requirement are accessible to students who have not acquired the specialized knowledge typically possessed by students majoring in a discipline.

In addition to the specific learning outcomes identified in the distribution areas, any course satisfying the Distribution Requirement should substantially fulfill at least one of the following conditions:

1. Demonstrates the ways in which the discipline understands, obtains, and categorizes its knowledge, along with defining the problems addressed by the discipline and the methods by which it solves or answers those problems;
2. Surveys the historical development of the discipline and the shape of its current practices; or,
3. Surveys the central ideas, theories, and debates central to the discipline.

Creativity
Learning to think creatively requires many different skills, such as the ability to see objects and ideas in new ways. This requirement aims to develop students’ capacity to combine or synthesize existing ideas, images, or expertise in original ways and to experience thinking, reacting, and working in an imaginative way, characterized by a high-degree of innovation, divergent thinking, and risk-taking. Creativity is not only essential for the innovation process, but it is also an observable and valuable component of the social and economic enterprise that becomes a force of great value when it is applied to causes that benefit humankind and the world at large.

Students must complete 3 credits chosen from:

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Course number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The list of eligible courses will be added through the Senate approval process at a later date.

Digital Literacy
Digital literacy includes the broader capacity to participate in, and reflect upon, the use of digital communication technology in various spheres (education, work, leisure, etc.). The fulfillment of this requirement will enable students to build
meaningful knowledge through the interaction with
digital resources and understand human, as well
as, cultural and societal issues related to the use of
technology.

Students must complete 3 credits chosen from:

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Course number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The list of eligible courses will be added through the Senate approval process at a later date

Power, Diversity, and Cultures

The notions of equality, universal respect, and justice are the basis of the Universal Declaration of Human Rights. To fulfill UBC’s commitment of advancing the inclusion of all those who have been excluded historically based on gender, race, religion, sexuality, age, physical ability, or economic circumstances, these notions are at the root of this requirement. The Power, Diversity, and Cultures requirement will ensure that students can reflect upon their experiences to rethink what is normal or acceptable about the lives they live, as well as providing an opportunity for them to question their unexamined assumptions about society.

Students must complete 3 credits chosen from:

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Course number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The list of eligible courses will be added through the Senate approval process at a later date

Sustainability

This requirement will provide students with the knowledge needed to explore the complexities of sustainability and empower them to make informed

[12412] Progression Requirements

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year</td>
<td>0–23 credits</td>
</tr>
<tr>
<td>Second Year</td>
<td>24–47 credits</td>
</tr>
</tbody>
</table>
decisions and take responsible actions for
environmental integrity, economic viability, and a
just society for present and future generations
while respecting social and cultural diversity.

Sustainability education is holistic and
transformational.

Students must complete 3 credits chosen from:

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Course number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The list of eligible courses will be added through the Senate approval process at a later date

[12412] Progression Requirements

<table>
<thead>
<tr>
<th>Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year</td>
<td>0–23 credits</td>
</tr>
<tr>
<td>Second Year</td>
<td>24–47 credits</td>
</tr>
<tr>
<td>Third Year</td>
<td>48–77 credits</td>
</tr>
<tr>
<td>Fourth Year</td>
<td>78 or more credits</td>
</tr>
</tbody>
</table>
16 May 2019

To: Okanagan Senate

From: Curriculum Committee

Re: Curriculum Proposals (approval)

The Curriculum Committee has reviewed the material forwarded to it by the Faculties and encloses those proposals it deems ready for approval.

Therefore, the following is recommended to Senate:

**Motion:** That Senate approve and recommend to the Board of Governors for approval the new course brought forward from the Faculty of Applied Science, the revised Bachelor of Science requirements, new minor in Geospatial Information Science, new GISC course code and new courses brought forward from the Faculty of Arts and Science and the new courses brought forward from the Faculty of Creative & Critical Studies.

a. From the Faculty of Applied Science
   
   i. ENGR 464 (3) Distributed Ledger Technologies with Engineering Applications

b. From the Faculty of Arts and Sciences
   
   i. Bachelor of Science
   
   ii. Minor in Geospatial Information Science
   
   iii. GISC course code
   
   iv. GISC 380 (3) Fundamentals of Geographic Information Science I
   
   v. GISC 381 (3) Fundamentals of Geographic Information Science II
   
   vi. GISC 480 (3) Practical Applications in GIS
   
   vii. ANTH 427 (3) (In)Visible Histories: Heritage and the Politics of Memory
   
   viii. EESC 104 (3) Four Billion Years and Counting
   
   ix. EESC 106 (3) The Catastrophic Earth
x. ECON 338 / PHIL 361 (3) Introduction to the Austrian School of Economics
xi. HIST 106 (3) Global Environmental History
xii. HIST 395 (3) Environmental History of North America
xiii. GEOG 201/SUST 201 (3) Introduction to Research in Sustainability and Geography

c. From the Faculty of Creative and Critical Studies
   i. ENGL 156 (3) Environmental Literature
   ii. WRLD 382 (3) Cross-cultural Travel Narratives

For the Committee,

Dr. Peter Arthur
Chair, Curriculum Committee
## Curriculum Proposal Form
### New/Change to Course/Program – Okanagan campus

<table>
<thead>
<tr>
<th>Category: 1</th>
<th>Date: 20190125</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Faculty/School:</strong> Applied Science/School of Engineering</td>
<td><strong>Contact Person:</strong> Dr. Yang Cao</td>
</tr>
<tr>
<td><strong>Dept./Unit:</strong> The School of Engineering</td>
<td><strong>Phone:</strong> 250.807.9643</td>
</tr>
<tr>
<td><strong>Faculty/School Approval Date:</strong> 2019.03.06</td>
<td><strong>Email:</strong> <a href="mailto:yang.cao@ubc.ca">yang.cao@ubc.ca</a></td>
</tr>
<tr>
<td><strong>Effective Session:</strong> 2019W</td>
<td></td>
</tr>
<tr>
<td><strong>Type of Action:</strong> New Course</td>
<td></td>
</tr>
</tbody>
</table>

**Rationale:** This new course will be added as technical elective at the School of Engineering, Faculty of Applied Science. This course will explore the main ideas, technologies, and engineering applications (e.g., advanced manufacturing and clean energy) surrounding distributed ledgers. The course will support the research and education needs of several new initiatives such as Mechatronics Engineering option and Digital Learning Factory. The course will also support our Blockchain & Cryptocurrency Student Club (with Indigenous students).

**Draft Academic Calendar URL:**
http://www.calendar.ubc.ca/okanagan/proof/edit/courses.cfm?go=code&code=ENGR

**Proposed Academic Calendar Entry:**

ENGR 464 (3) Distributed Ledger Technologies with Engineering Applications
Distributed ledgers, peer-to-peer communication networks, proof of work, proof of stake, consensus algorithms, legal and regulatory issues, applications in advanced manufacturing, power systems and clean energy. [3-0-0]

Prerequisite: All of ENGR 359 and ENGR 360, OR all of STA 303 and COSC 211.

**Present Academic Calendar Entry:**
REVISED REQUIREMENTS
PROPOSAL FOR THE BACHELOR OF SCIENCE
UBC OKANAGAN

Bernard Momer
Associate Dean, Teaching Learning and Curriculum, IKBSAS
January 2019
Introduction

Program redesign and educational renewal are at the heart of the transformative learning objective of *Shaping UBC’s Next Century*, the University’s new Strategic Plan. Although the review of the Bachelor of Science began before the final adoption of the plan, it is nevertheless in that spirit that we undertook that process. Over the last two or three decades, student expectations of a university education and the needs of employers have shifted significantly, not to mention the advances in technology that have revolutionised education delivery. The challenge in higher education is how to prepare and sustain students for a lifetime of uncertainty, change, challenge and emergent or self-created opportunities. In other words, we need to ensure that we future proof our students. Universities must not only cultivate students’ intellectual ability and practical skills but also their imaginations and practical creativity.

The B.Sc. degree currently offered at University of British Columbia, Okanagan Campus (UBCO) is a carryover from Okanagan University College (OUC). The degree requirements have not been updated since the transition from OUC in 2005. With a new Strategic Plan at both the Faculty and University level, it was determined that the B.A. and B.Sc. degree requirements should be reviewed. The Dean of the Irving K. Barber School of Arts and Sciences (IKBSAS) struck a committee to examine the current structure of the B.Sc. in 2017. The Committee was tasked to consider whether:

a. the B.Sc. first year requirements are too restrictive;

b. the current structure provides the knowledge students need to find employment or continue on to graduate school;

c. the B.Sc. fulfills societal needs;

d. Indigenous content can be included in the B.Sc.;

e. the degree offers enough flexibility to be completed within a four-year timeframe.

The Committee was populated with two representatives from academic departments offering two or more B.Sc. Major Programs, one representative from departments offering one B.Sc. Major Program, and one representative from the Indigenous Studies program (see Appendix I).

This document begins by briefly examining the various components that need considering when designing a university degree, followed by providing an overview of the environmental scan conducted by the Provost Office, and finally by outlining the proposed recommendations to update the B.Sc. degree requirements.
Designing the New Degree

Higher Education Expectations

The purpose of a university degree is multifaceted and the object of ongoing debate in the face of changing social, economic, and political climates over recent decades. Academia suggests that a university degree should guide students to become fully rounded individuals; to become intellectually sophisticated and caring people; and, to serve a democratic-centered civic engagement based on addressing real world problems. Employers, on the other hand, want graduates who are well prepared for the demands of a modern labour market, repeatedly pointing to the complex nature of the 21st century work environment and advising that they highly value graduates with the skills provided by a broad general education. A degree should also inspire students by offering them an innovative curriculum based on a combination of experiential learning opportunities and an exciting curriculum that captures their imagination.

The following table lists the primary expectations of a university degree from three points of view (academia, students, and employers). The first column lists the top competencies students are expected to have by the time they graduate, as defined by a group of North American university professors and administrators, while the second column lists the top reasons given by students as to why they attend university. The last two columns list the competencies employers seek when hiring university graduates, as outlined in the National Association of Colleges and Employers (NACE) and the World Economic Forum’s (WEF) forecasts of the top ten competencies required from university graduates over the next decade.

<table>
<thead>
<tr>
<th>Table 1: Expectations of a University Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Academia</strong></td>
</tr>
<tr>
<td>Communication competence</td>
</tr>
<tr>
<td>Multi-cultural understanding</td>
</tr>
<tr>
<td>Skills in problem identification and problem solving</td>
</tr>
<tr>
<td>Confidence to act in ways that make a difference</td>
</tr>
<tr>
<td>Ability to think critically</td>
</tr>
<tr>
<td>Ability to transcend local loyalties</td>
</tr>
<tr>
<td>Serve a democratic-centered civic engagement</td>
</tr>
</tbody>
</table>

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### Table 1: Expectations of a University Degree

<table>
<thead>
<tr>
<th>Academia¹</th>
<th>Students¹</th>
<th>Employers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addressing real-world problems</td>
<td>Don't want to work after HS</td>
<td>Flexibility/adaptability</td>
</tr>
<tr>
<td>Development of fully rounded intellectual and caring person</td>
<td>Sense of purpose</td>
<td>Technical skills</td>
</tr>
<tr>
<td>Develop emotional autonomy and intelligence</td>
<td>Better income</td>
<td>Interpersonal skills (relates well to others)</td>
</tr>
<tr>
<td>Develop mature interpersonal relations (tolerance)</td>
<td></td>
<td>Computer skills</td>
</tr>
<tr>
<td>Approach world problems as 'world citizen'</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Government Degree Level Standards

The demands of employers and students are not the only factors to consider when designing or revising a degree. In 2007, the Federal government published its *Ministerial Statement on Quality Assurance of Degree Education in Canada* in an effort to ensure that programs and institutions meet appropriate standards at the bachelor, master, and doctoral level. The Ministry of Higher Education of British Columbia followed suit and adopted the same standards to guide the quality assurance process of higher education in the province.

The degree-level standards are intended, amongst other things, to provide clear learning-outcome standards to instructional and program designers and a broad framework for quality assurance purposes. The standards stipulate the demonstrable transferable learning skills and level of mastery of a body of specialized knowledge in six dimensions:

1. Depth and Breadth of Knowledge
2. Knowledge of Methodologies
3. Application of Knowledge
4. Communication Skills
5. Awareness of Limits of Knowledge
6. Professional Capacity/Autonomy

Each dimension is defined in detail in Appendix II.

### Environmental Scan Overview

An environmental scan of 15 North American universities that offer a Bachelor of Science degree was conducted in the fall of 2017 (see Appendix III). The scan offers a reference for degree requirements across institutions, providing information on credit requirements, breadth requirements (if specified), as well as enrolment and credentials awarded. Data was extracted from publicly available university websites.

The institutions were selected according to the following criteria: 1) top four ranked Canadian universities, 2) universities of direct comparison to UBC’s Okanagan campus, and 3) aspirational universities that have exemplary B.Sc. programs.
Typically, a B.Sc. degree is offered to students registered within a Faculty of Science or a Faculty of Arts & Science. However, a B.Sc. degree program can also be offered to students registered in other Faculties (e.g., the University of Victoria’s Faculty of Humanities offers a B.Sc. in Linguistics). Alternatively, a major program that typically falls within the scope of a B.Sc. degree can also lead to a Bachelor of Arts degree or a Bachelor of Science Engineering degree (e.g., Natural Science major options are available as a B.A. or B.S.E. at Princeton).

Most Bachelor of Science programs across North America have a range of prescribed and optional courses (or electives) to choose from to fulfill degree requirements. These are generally classified as science and non-science (Humanities or Social Science) “distribution” requirements. The science requirements generally include mathematics, physics, chemistry, and a selection of courses classified under Life Sciences (earth sciences or biological sciences). A few universities include a computational science requirement (e.g., UBC Vancouver requires a 100-level math course and six computational credits).

A few Canadian universities (e.g., SFU and U of T) have adopted prescriptive breadth requirements for all students enrolled in a bachelor’s degree whereby a defined number of credits must be completed in the Humanities, Social Sciences, or similar categories. Others, like the University of Waterloo, define breadth requirements as credits from outside a student’s area of specialization, either in arts or science disciplines. The University of Victoria is in a category of its own where individual programs require various number of credits in a category simply labelled as electives without definition.

Overall, universities in North America define breadth as a requirement needed to complete a number of credits outside of a student’s core or major discipline. The nature of the requirement and the number of required credits varies across institutions. However, two general categories of requirements can be identified: skill or competency-based requirements and disciplinary or inquiry-based requirements.

The rationale for adopting core and breadth-related approaches to accompany majors or specializations is consistent across universities. The intention is to expose students to a range of disciplines, concepts, ideas and perspectives from outside of their disciplines. This enables students to better assess their own strengths and limitations and to subsequently broaden their competencies, which is crucial in a rapidly changing world.

It would be too complex for the purpose of this document to describe at length all of the requirements of the 15 institutions examined. The various approaches to counting credits, half courses, full courses and other ways of defining credits complicate the matter. In general, most universities have a core requirement of science/mathematics, English/writing, and a breadth requirement in any discipline other than a student’s major. The latter varies amongst institutions with some being similar to the List A and B in our current Bachelor of Arts, while others such as the University of Toronto and Cornell have more prescribed requirements (see Appendix III).
Proposed New Degree Requirements

Learning Outcomes
Because of the benefit to many post-secondary education stakeholders, the development of learning outcomes has become a higher priority for institutions over the last decade. Establishing a focus on integrated, generalizable, and transferable skills help develop a curriculum that complements contemporary demands on graduates and builds a foundation for lifelong learning. As government and public attention on the products of higher education increases, learning outcomes help to define the goals and essential aspects of higher education within the institution, to students, and to the general public. The following learning outcomes were created for the revised B.Sc. degree:

Upon completion of a Bachelor of Science program, students will be able to:

• understand the scientific method and its applications;
• gather and evaluate information and compare the merits of alternate hypotheses;
• critically assess and interpret scientific data and literature;
• work collaboratively and independently to analyze and organize scientific information;
• structure a scientific argument effectively and communicate scientific knowledge and findings in written, visual and verbal forms;
• plan, design, conduct and manage scientific research; and,
• demonstrate professionalism and apply ethical practice.

These high level degree outcomes should form the foundation for the development of program specific outcomes.

Degree Requirements
The environmental scan and the British Columbia Baccalaureate Graduate Survey\(^4\) respectively show that our current B.Sc. science course requirements are comparable to the requirements of top North American universities and that student satisfaction with educational quality is similar to students who completed their degrees at UBCV, SFU or UVic. The survey also indicated that the percentage of our students who pursued graduate studies was equal or higher than at UBCV, SFU and UVic. The committee concluded that the degree did not need a complete overhaul, but instead, that certain requirements needed to be relaxed in order to address issues such as the heavy mandatory course load in first year or the limited mobility of our students between faculties. It is therefore recommended that first year requirements be loosened to allow greater flexibility for students and programs. The new requirements should allow students to complete courses that are somewhat more focussed towards their

\(^4\) The British Columbia Baccalaureate Graduate Survey surveys students two years after graduation. See [http://outcomes.bcstats.gov.bc.ca/Annual_Surveys.aspx](http://outcomes.bcstats.gov.bc.ca/Annual_Surveys.aspx). Unfortunately, the data gathered from various institutions does not necessarily span the same disciplines so a comparison between all programs is not possible for the same year. The data used for this analysis compared data collected in 2016 and 2017 for Biology, Math, Earth and Environmental Sciences and Chemistry.
educational goals while programs be allowed to tailor their individual requirements without being overburdened with stringent B.Sc. degree requirements.

The table below summarises the new degree requirements, compares them to the current ones, and indicates, if any, the impacts of the changes at the program level.

<table>
<thead>
<tr>
<th>Table 2: Current vs. Proposed B.SC. Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current Requirements</strong></td>
</tr>
<tr>
<td>1. To complete years one and two of the B.Sc. program, a student must complete 60 credits in Arts or Science courses.</td>
</tr>
<tr>
<td>2. At least 78 of the 120 credits must be Science course credits.</td>
</tr>
<tr>
<td>3. At least 18 of the 120 credits must be Arts course credits, including 6 credits of first-year English and at least 12 other credits in Arts.</td>
</tr>
<tr>
<td>4. At least 42 of the 120 credits must be upper-level courses (numbered 300 or higher), of which at least 36 credits must be in Science.</td>
</tr>
<tr>
<td>5. At least 36 of the 120 credits must be Science credits from upper-level courses (numbered 300 or higher) and at least an additional 6 upper-level course credits which may be from Arts or Science.</td>
</tr>
<tr>
<td>6. At most 12 of the 120 credits may be from courses that carry credit toward a baccalaureate degree in faculties other than Arts or Science.</td>
</tr>
<tr>
<td>7. At least 30 of the 42 upper-level credits must be completed at UBC.</td>
</tr>
<tr>
<td>8. Students must complete two first-year English courses (6 credits) selected from: ENGL 112 or 114, 113, 150, 151, 153</td>
</tr>
</tbody>
</table>
Table 2: Current vs. Proposed B.SC. Requirements

<table>
<thead>
<tr>
<th>Current Requirements</th>
<th>New Requirements</th>
<th>Impact on Majors</th>
</tr>
</thead>
</table>
| 9. 18 first-year science credit:  
| - Six credits of MATH 100, 101.  
| - Six credits of either CHEM 121/123 or CHEM 111/113;  
| - Three credits of either PHYS 102, 121 or 122;  
| - Three credits of either PHYS 111 or 112. | Nine first year science credits including:  
| - MATH 100 and three credits of program approved DATA, COSC, MATH or STATS courses.  
| - At least three credits of experimental science in any CHEM, BIO or PHYS courses with labs. | None |
| 10. Students must also complete 18-24 second-year Science credits. | Removed | None |
| 11. Students must complete 12-24 credits of Arts or Science electives. | At least 12 credits of non-science designated courses. Students are strongly encouraged to take an Indigenous content course to partially fulfill this requirement. Students entering the B.Sc. in 2022 will have to successfully complete an Indigenous content course. | Minor changes to list of electives in calendar |
| 12. Six elective Science credits must be selected from the list below: (list omitted). | Removed | None |

The proposed changes to the B.Sc. degree requirements fall in two categories. The first addresses changes that clean up ambiguous or awkward language while the second addresses substantive changes.

The number of credits to complete years one and two (requirement 1 in table above) were removed. Although a degree requirement can be more stringent than a university wide requirement, the Committee could not rationalise why students needed to successfully complete 60 credits in their first two years of study. According to UBC’s progression requirements, students are considered to be in third year after successfully completing 48 credits. Imposing 60 credits on B.Sc. students is not only confusing, but it also creates problems for academic advising and registration in certain summer courses requiring third year standing. Some students will be unaware that they are eligible to register in a third-year course if they accumulate the necessary prerequisites but lack the 60 credits of first- and second-year courses. Under the relaxed proposed requirement, students can potentially take less than 60 credits in their first two years, giving them more flexibility to select specialized courses in years three and four.
The Arts elective requirement (requirements 3 and 12) was revised and relabelled non-science courses. The number of credits required remains the same, but the term non-science courses broadens the disciplinary boundaries of eligible courses that satisfy this requirement. To fulfill UBC’s commitment to indigenise the curriculum, the Committee recommends the inclusion of an Indigenous content course that could be taught either as an arts or science course. However, concerns were raised by several committee members that the development of a variety of courses that could meet an Indigenous curriculum content have not been developed yet on our campus. As such, requiring every new student to take an Indigenous content course is perhaps premature. Several questions remain to be answered as to what an Indigenous content course should look like for science students. Therefore, the Committee strongly recommends that students complete an Indigenous course as part of their degree and that this requirement become mandatory starting in 2022. This will leave enough time to develop and plan for the delivery of high quality Indigenous curriculum content. For example, one could imagine an Okanagan ecology course based on Indigenous knowledge.

The requirement limiting the number of credits a student can take outside of IKBSAS (requirement 6) was removed. This requirement is squarely in opposition to Strategy 14 of the UBC Strategic Plan which calls for an increase in interdisciplinary education opportunities. Limiting the number of credits a student can take outside of IKBSAS to 12 prevents students from completing a minor in another faculty. This language would also potentially impede a student who may want to complete courses leading to the completion of a diploma or certificate.\(^5\)

The mathematics requirement (#10) remains at six credit, however, only MATH 100 is mandatory for all students. Programs will be able to select the other numeracy course from mathematics, data science, computer science or statistics, allowing them to select the course most suited to the objectives and needs of the program. For a similar reason, the first-year science requirement is reduced to three credits. An examination of the prerequisites of upper level courses in various programs indicated that the current prerequisites for these courses would ensure students take sufficient and appropriate lower level courses. The proposed requirement will not therefore significantly reduce the number of credits students have to complete at the lower level. The reduction will, however, allow programs to tailor which courses are most important for their students.

The prescription of credits at the second year level is removed in the proposed model (requirement 11). This requirement was redundant, as the number of credits required in second year courses is determined by the number of prerequisites in upper-level courses. The Committee could not provide a clear rationale as to why this requirement should be kept. If a student has accumulated all the credits needed to satisfy upper level course prerequisites, there is little reason to mandate the completion of less advanced courses than needed. The 78 credits of science courses ensure that B.Sc. students complete 65% of their courses in the sciences.

Requirement 13 was deemed redundant given the mandatory 78 credits science credits (requirement 2). Most programs already have suggested elective courses and most science

\(^5\) UBCO Senate recently approved the creation of certificate and diploma programs.
students are likely to take science courses as their electives. The elimination of this requirement also provides a bit more flexibility for students in their course selection, especially if they are interested in taking courses in Applied Sciences for example.

Conclusion
While wholesale changes to the current B.Sc. were deemed unnecessary, shifting the degree requirements to bring the B.Sc. into alignment with the Faculty and University strategic plans, with post-secondary stakeholder expectations, and with the dynamic world our students live in makes sense.

Regardless of a student’s chosen major, by removing the credit limit of courses taken outside of IKBSAS, the proposed degree requirements will increase student mobility between Faculties allowing them to complete minors or certificates/diplomas in other Faculties more easily. The proposed requirements will allow more flexibility for programs without compromising the quality of our degree. At the program level, other than minor editorial changes to the calendar as indicated in Table 2, the revisions to the degree requirements have little impact. They allow, however, individual programs the leeway to take advantage of the new degree requirements to streamline their program requirements.
Appendix I

Steering Committee Membership

Chair:
Bernard Momer, Associate Dean, Teaching Learning and Curriculum, IKBSAS

Members:
Jan Cioe, Psychology
Michael Deyholos, Biology
Gino DiLabio, Chemistry
Warren Hare, Mathematics
Laura Hooker, Biology
Edward Hornibrook, Earth, Environment and Geographical Sciences
Ramon Lawrence, Computer Science
Craig Nichols, Earth, Environment and Geographical Sciences
Julien Picault, Economics
Greg Younging, Indigenous Studies
Appendix II

British Columbia Degree Level Standards for a Bachelor’s Degree

Depth and Breadth of Knowledge
a) Knowledge and critical understanding in a field of study that builds upon their secondary education and includes the key assumptions, methodologies, and applications of the discipline and/or field of practice
b) Basic understanding of the range of fields within the discipline/field of practice and of how the discipline may intersect with fields in related disciplines
c) The ability to gather, review, evaluate, and interpret information, including new information relevant to the discipline, and to compare the merits of alternate hypotheses or creative options relevant to one or more of the major fields in a discipline
d) The capacity to engage in independent research or practice in a supervised context
e) Critical thinking and analytical skills inside and outside the discipline
f) The ability to apply learning from one of more areas outside discipline

Knowledge and Methodology
a) An understanding of methods of enquiry or creative activity, or both, in their primary area of study that enables the student to
   i. evaluate the appropriateness of different approaches to solving problems using well established ideas and techniques,
   ii. devise and sustain arguments or solve problems using these methods, and
   iii. describe and comment upon particular aspects of current research or equivalent advanced scholarship in the discipline and on their relevance to the evolution of the discipline
b) The ability to review, present, and critically evaluate qualitative and quantitative information to
   i. develop lines of argument;
   ii. make sound judgments in accordance with the major theories, concepts, and methods of the subject(s) of study;
   iii. apply underlying concepts, principles, and techniques of analysis, both within and outside the discipline; and
   iv. where appropriate, use this knowledge in the creative process
Application of Knowledge
   a) The ability to use a range of established techniques to
      i. initiate and undertake critical evaluation of arguments, assumptions,
         abstract concepts, and information
      ii. propose solutions;
      iii. frame appropriate questions for the purpose of solving a problem;
      iv. solve a problem or create a new work
   b) The ability to make critical use of scholarly reviews and primary sources.

Communication Skills
   The ability to communicate information, arguments, and analyses accurately and
   reliably, orally and in writing, to specialist and non-specialist audiences, using
   structured and coherent arguments, and, where appropriate, informed by key
   concepts and techniques of the discipline.

Awareness of Limit of Knowledge
   An understanding of the limits to their own knowledge and ability; an appreciation
   of the uncertainty and ambiguity of and limits to knowledge, and an appreciation
   of how this might influence analyses and interpretations.

Professional Capacity/Autonomy
   Qualities and transferable skills necessary for further study, employment,
   community involvement, and other activities requiring (i) the exercise of initiative,
   personal responsibility and accountability in both personal and group contexts, (ii)
   working effectively with others, and (iii) behaviour consistent with academic
   integrity.
# Appendix III

## Summary of B.Sc. Breadth Requirements at Selected Institutions

<table>
<thead>
<tr>
<th>Institution</th>
<th>Breadth Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Canada Top 4</strong></td>
<td></td>
</tr>
</tbody>
</table>
| U of T (Faculty of Arts and Sciences) | 12 credits from four of:  
- Creative and Cultural Representation  
- Thought, Belief and Behaviour  
- Society and its Institutions  
- Living things and their Environment  
- Physical and Mathematical Universes |
| McGill (Faculty of Science) | - Minor (18-24 credits) in Science  
- Minor or major concentration in Arts (18-36 credits) |
| UBC V (Faculty of Science) | - 12 credits of Arts not including English  
- 9 credits outside specialisation in Arts or Science |
| U of A (Faculty of Science) | - 18 credits of Arts  
- 12 credits from another Faculty |
| **Direct Comparators** | |
| UVIC (Faculty of Science) | None |
| U of Calgary (Faculty of Science) | 18 credits outside Faculty of Science (9 must be from Arts) |
| SFU (Faculty of Science) | - 6 credits Social Sciences  
- 6 credits Humanities  
- 6 credits Science  
- 6 credits outside major |
| Waterloo (Faculty of Science) | - 18 credits of electives outside Science in first year |
| **Aspirational Comparators** | |
| Caltech | - 12 credits of Humanities  
- 12 credits Social Sciences  
- 12 credits Humanities and Social Sciences |
| UC Berkeley (College of Letters and Science) | - 6 credits American Culture Breadth  
- Humanities and Social Sciences |
| UCLA (College of Letters and Sciences) | - 9 credits Foundations of Arts and Humanities  
- 9 credits Society and Culture  
- 6 credits Life Science  
- 6 credits Physical Sciences |

---

6 Faculty of Arts offers B.Sc. degree in Anthropology, Archeology, Earth Sciences, Geography and Psychology.
<table>
<thead>
<tr>
<th>Institution</th>
<th>Breadth Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Chicago</td>
<td>- 18 credits Humanities, Civilisation Studies and the Arts</td>
</tr>
<tr>
<td></td>
<td>- 18 credits Natural and Mathematical Sciences</td>
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<tr>
<td></td>
<td>- 9 credits Social Science</td>
</tr>
<tr>
<td>Cornell (College of Arts and Sciences) - Current</td>
<td>15 credits from four of:</td>
</tr>
<tr>
<td></td>
<td>- Cultural Analysis</td>
</tr>
<tr>
<td></td>
<td>- Historical Analysis</td>
</tr>
<tr>
<td></td>
<td>- Knowledge and Cognition</td>
</tr>
<tr>
<td></td>
<td>- Literature and the Arts</td>
</tr>
<tr>
<td></td>
<td>- Social and Behavioural Analysis</td>
</tr>
<tr>
<td>Cornell (College of Arts and Sciences) – proposed for 2021</td>
<td>- 6 credits Social Behaviour Inquiry</td>
</tr>
<tr>
<td></td>
<td>- 6 credits Humanistic Inquiry</td>
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<tr>
<td></td>
<td>- 3 credits Interdisciplinary Inquiry</td>
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<tr>
<td>Princeton</td>
<td>- 3-12 credits Foreign Language</td>
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<tr>
<td></td>
<td>- 3 credits Epistemology and Cognition</td>
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<tr>
<td></td>
<td>- 3 credits Ethical Thought</td>
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<tr>
<td></td>
<td>- 3 credits Historical Analysis</td>
</tr>
<tr>
<td></td>
<td>- 6 credits Literature and the Arts</td>
</tr>
<tr>
<td></td>
<td>- 6 credits Social Analysis</td>
</tr>
<tr>
<td>Harvard (Faculty of Arts and Sciences)</td>
<td>- 3 credits Aesthetics and Culture</td>
</tr>
<tr>
<td></td>
<td>- 3 credits Histories, Societies &amp; Individuals</td>
</tr>
<tr>
<td></td>
<td>- 3 credits Science and Technology in Society</td>
</tr>
<tr>
<td></td>
<td>- 3 credits of Ethics &amp; Civics</td>
</tr>
<tr>
<td></td>
<td>- 9 credits from each of three areas within Faculty</td>
</tr>
</tbody>
</table>
Curriculum Proposal Form
New/Change to Course/Program – Okanagan campus

Category: 1
Faculty/School: IKBSAS
Dept./Unit: 
Faculty/School Approval Date: 20190405
Effective Session: 2020W
Type of Action: Revisions to BSc Degree

Date: 2018/10/03
Contact Person: Bernard Momer
Phone: 250.807.9406
Email: bsascurriculum.ubco@ubc.ca

Rationale:
The proposed changes stem from a review of the B.Sc. degree.

Current degree requirements will remain in the Academic Calendar and be located in a section entitled: Bachelor of Science Program for students who entered the program prior to 2020

If the proposed changes are approved, a new section in the Academic Calendar will be created for incoming students entitled: Bachelor of Science Program for students entering the program in 2020 or later

Proposed Academic Calendar Entry:
Degree Requirements

[12188] To receive a B.Sc. degree, a student must earn at least 120 baccalaureate program course credits subject to the following:

[12189]

• at least 78 of the 120 credits must be Science course credits;

Draft Academic Calendar URL:
http://www.calendar.ubc.ca/okanagan/proof/edit/index.cfm?tree=18,282,858,1065

Present Academic Calendar Entry:
Degree Requirements

[12188] To receive a B.Sc. degree, a student must earn at least 120 baccalaureate program course credits subject to the following:

[12189]

• at least 78 of the 120 credits must be Science course credits;

• at least 18 of the 120 credits must be Arts course credits, including 6 credits of first-year
• at least 42 of the 120 credits must be upper-level courses (numbered 300 or higher), of which at least 36 credits must be in Science;

• At least 30 of the 42 upper-level credits must be completed at UBC.

[12190] A minimum graduating grade average (GGA) of 60% is required to be eligible for graduation with the B.Sc. degree.

[14731] Designation of Science Courses

Courses with the prefixes ASTR, BIOC, BIOL, CHEM, COSC, DATA, EESC, MATH, PHYS, and STAT are considered Science courses, unless otherwise noted in the course description. In addition, for students registered in the B.Sc. program in Economics or Psychology, courses taken to complete the requirements for the major are considered Science courses. Otherwise, courses in Economics (ECON) and Psychology (PSYO) count as non-science electives.

The following Geography courses are also designated as Science courses: GEOG 108, 109, 200, 205, 207, 213, 222, 271, 272, 301, 304, 307, 310, 314, 317, 341, 356, 367, 377, 380, 381, 413, 414, 416, 422, 436, 437 and 466. GEOG 491

English and at least 12 other credits in Arts courses that are recognized for credit toward the B.A. degree;

• at least 42 of the 120 credits must be upper-level courses (numbered 300 or higher), of which at least 36 credits must be in Science;

• at most 12 of the 120 credits may be from courses that carry credit toward a baccalaureate degree in faculties other than Arts or Science (except those Science courses which are specifically exempted from credit towards the B.Sc. degree (e.g., STAT 121);

• at least 36 of the 120 credits must be Science credits from upper-level courses (numbered 300 or higher) and at least an additional 6 upper-level course credits which may be from Arts or Science; and

• at least 30 of the 42 upper-level credits must be completed at UBC.

[12190] A minimum graduating grade average (GGA) of 60% is required to be eligible for graduation with the B.Sc. degree.

[14731] Designation of Science Courses

Courses with the prefixes ASTR, BIOC, BIOL, CHEM, COSC, DATA, EESC, MATH, PHYS, and STAT are considered Science courses, unless otherwise noted in the course description. In addition, for students registered in the B.Sc. program in Economics or Psychology, courses taken to complete the requirements for the major are considered Science courses. Otherwise, courses in Economics (ECON) and Psychology (PSYO) count as Arts credit only. The following Geography courses are also designated as Science courses: GEOG 108, 109, 200, 205, 207, 213, 222, 271, 272, 301, 307, 310, 317, 341, 356, 377, 380, 381, 413, 414, 416, 422, 436, 437 and 466. GEOG 491 and 498 may be taken as Science courses depending on the designated topic.
and 498 may be taken as Science courses depending on the designated topic.

[12192] Credit Requirements

[12194] English

[12468] Six credits of English or Communications courses must be completed before promotion to fourth-year standing. Students who have not earned the 6 credits of required English or Communications coursework by the time they enter fourth year will not be permitted to enrol in any courses other than courses that satisfy the English or Communications requirement.

[12195] Science

[12196] Students must complete 9 first-year Science credits, including:

[12469]

• MATH 100
• 3 credits of program-approved COSC, DATA, STAT, or additional MATH courses;
• At least 3 credits of experimental science in any BIOL, CHEM, EESC, or PHYS courses with labs.

[12197] Electives

[12202] Students must complete:

[12192] First and Second Years Credit Requirements

[12193] To complete years one and two of the B.Sc. program, a student must complete 60 credits in Arts or Science courses. These credits must be selected from the following:

[12194] English

[12468] Students must complete two first-year English courses (6 credits) selected from: ENGL 112 or 114, 113, 450, 451, 453. Students who have not earned the 6 credits of first-year English referred to above by the time they have completed 60 credits of coursework toward a B.Sc. degree will not be permitted to enrol in any courses other than first-year English until the English requirement is met.

[12195] Science

[12196] Students must complete 18 first-year Science credits, including:

[12469]

• 6 credits of MATH 100–104;
• 6 credits of either CHEM 121/123 or CHEM 111/113;
• 3 credits of either PHYS 102, 121 or 122;
• 3 credits of either PHYS 111 or 112.

[12200] Students must also complete 18-24 second-year Science credits. These credits must be chosen to meet the specific year two course requirements of the chosen B.Sc. major. See the requirements of the relevant major program.

[12197] Electives in Arts or Science
- **At least 12 credits of non-science designated courses.**
  See [individual major program](#) details or General Science degree program requirements.

1. Students are strongly encouraged to take 3 credits of an Indigenous content course to partially fulfill this requirement. Students entering the B.Sc. in 2022 and later will have to successfully complete an Indigenous content course.

1. Students must complete **42-24 credits of Arts or Science electives.** See [major degree details](#) or General Science degree program requirements.

[12470] 6 elective Science credits must be selected from the list below:

- ASTR 110, 120;
- ASTR 111, 121;
- BIOL 116, 125;
- COSC 111, 121;
- COSC 122, 123;
- EESC 111, 121;

### Progression Requirements

<table>
<thead>
<tr>
<th>Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year</td>
<td>0–23</td>
</tr>
<tr>
<td>Second Year</td>
<td>24–47</td>
</tr>
<tr>
<td>Third Year</td>
<td>48–77</td>
</tr>
<tr>
<td>Fourth Year</td>
<td>78 or more</td>
</tr>
</tbody>
</table>

[12191] Progression Requirements

<table>
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<td>Fourth Year</td>
<td>78 or more</td>
</tr>
</tbody>
</table>
Executive Summary

MINOR in Geospatial Information Science (GIS)

Faculty of Arts & Sciences

University of British Columbia, Okanagan Campus

Overview

Geospatial information refers to knowledge about spatial location that provides insight into why things are inter-related and inter-dependent. Familiarity with the concepts and tools of Geospatial Information Science (GIS) is essential for understanding the complex interactions among natural and anthropogenic processes on Earth, especially when data sets from multiple sources are combined and represented in spatially-explicit fashion, usually within a geographical information system (gis). The practical utility of GIS and spatial analytical methods is to aid decision-making in areas such as: resource extraction; mining/forestry operations; environmental and watershed management; biodiversity and species at risk assessments; health provision and epidemiological analysis; risk assessment and insurance underwriting; disaster relief planning and emergency response; pesticide and fertilizer application scheduling; farm operations; real-estate projections; transportation planning and traffic management; industrial asset management; supply-chain and delivery planning; retail marketing; and a host of consumer-related applications directed at shopping behaviour and leisure activities, among many others.

The Department of Earth, Environmental, and Geographic Sciences (EEGS) currently offers three courses in GIS. The first two, Fundamentals of Geographic Information Science I (EESC 380) and Fundamentals of Geographic Information Science II (EESC 381), have been taught on a regular basis and are cross-listed with GEOG 380 and GEOG 381. The third course, Special Topics in Applied GIS, has been offered twice as a Special Topics course and is now being regularized (see attached curriculum forms to create GISC 480). There has been increasing competition for seats in these classes because students recognize the utility of GIS for enhancing their academic experience as well as their prospects for a rewarding and profitable career upon graduation. Technical skills related to geospatial analysis and computer-based mapping and synthesis are in high demand by employers in various environmental fields such as consulting; engineering; city and regional planning; mining; forestry; health and welfare; and, a range of provincial and federal government agencies. As indicated by the list of potential fields of

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1 'GIS' is commonly understood to refer to 'Geographic Information Science' or the science of geographic information, which includes the advancement of the theoretical and conceptual underpinnings of spatial relations (i.e., the scientific knowledge) and the development of software and hardware (i.e., the geographic information systems, or 'gis'). For the purposes of the Minor program, GIS is used to mean 'Geospatial Information Science' as an indication of the more comprehensive and interdisciplinary scope of the program.

2 These three courses were conceived as part of the expanding B.Sc. Major in Earth and Environmental Sciences (EESC) and the B.A. Major in Geography (GEOG), which explains the current cross-listing between EESC and GEOG. As part of this curriculum proposal they will be relabelled with a new GISC subject code.
application, geospatial analysis skills are of value to students in many disciplines represented in the Barber School as well as in Engineering, Management, and Health.

The initiative to create a Minor in Geospatial Information Science that is accessible to a broad spectrum of students is the first step toward formalizing a recognizable GIS presence across the UBC Okanagan Campus that may ultimately lead to a Major program. A complementary certificate/diploma could be used to recruit new students to UBC Okanagan and serve our regional communities by training practicing professionals and providing graduating students with job-ready skills.

The GIS Minor is an interdisciplinary science minor available for B.A. and B.Sc. students that draws from existing courses in EESC, GEOG, COSC, DATA, APSC, and ENGR, although other relevant courses (existing and new) can be added in the future, as appropriate. Because of its interdisciplinary nature, the management of the proposed GIS Minor will be administered by a steering committee comprising several Departments, but will be chaired by a faculty member in EEGS who will manage undergraduate advising, waivers, and curriculum consultations/proposals related to the Minor.

The interdisciplinary nature of the program is recognized by the creation of new Subject Code/Name in the UBC Okanagan Calendar: Geospatial Information Science (GISC). Two existing courses dealing with GIS content (EESC/GEOG 380 and EESC/GEOG 381) will be relabelled as GISC 380 and GISC 381, and a third core course (GISC 480) will be added. As courses are developed with geospatial content, they too will be considered for listing under the GISC Subject Code/Name by the program committee overseeing the GIS Minor.

**Credentials**

The **Minor in Geospatial Information Science** will introduce B.A. and B.Sc. students to Geospatial Information Science theory, concepts, techniques, and applications through completion of a set of three core courses supplemented by a minimum of seven elective courses tailored to the specific interests of the student. Upon successful completion of the new program, the notation “Minor in Geospatial Information Science” will be added to the student’s transcript.

**Location**

The University of British Columbia, Okanagan Campus.

**Faculty offering the program**

The Faculty of Arts & Sciences will offer, administer, and deliver the program.

**Program start date**

The program will be offered in the 2019W academic year and thereafter, contingent on Senate and Ministry approval.

**Program completion time**

The GIS Minor requires no fewer than 30 credits (out of the 120 credits usually required for a Bachelor degree) with at least 18 upper level credits (regardless of the student’s Major in any other UBC Okanagan Bachelor degree program). The normal duration of a B.A. or B.Sc. degree is four years,
although including a Minor credential sometimes leads students to take an extra semester of course work because of conflicts in course scheduling. We have tried to include courses in the Minor that reduce the number of prerequisite courses that are not eligible to be counted for the Minor while also eliminating double-counting of courses (through use of exclusions) that are included in the student’s Major program.

**Objectives**

At most global universities, geospatial information and its representation play an important role in the research endeavors of faculty and students in disciplines such as Geography, Geology, Environmental Sciences, Oceanography, Atmospheric Sciences, Ecology, Forestry, Engineering, Geomatics, Remote Sensing, Computer Science, Health Sciences, through to Urban Planning, Landscape Architecture, Social Work, Risk and Disaster Management, and even Religious Studies. In addition, a large number of data providers such as Google, Facebook, and MapQuest are continuing to design (and profit from) personal applications and services on hand-held devices (e.g., smart phones, automobile GPSs) that allow unprecedented access to instant information on where you are or have been, relative to where you wish to go, to assist in specific objectives such as shopping opportunities, navigation constraints, or social interactions. Although large corporations have realized the competitive advantages of managing their own data, there is strong public pressure for ‘open data’, which refers to data or information that is free or available at minimum cost with few restrictions on use and in formats that are interoperable. Governments often provide such data because there is growing recognition that the economic welfare of the nation is maximized because common access drives competition as well as collaboration and innovation. Gradually, the role of government is transitioning from the basic requirement to collect and warehouse data to the initial processing, analysis, and transformation of those data into information that is geo-referenced and provides value added for different sectors (e.g., academic, government, NGOs, corporations). The flood of data provides opportunities for those adequately prepared to use it.

Spatial perspectives can be particularly revealing when discerning the relationships among objects and processes in three-dimensional space, especially when animated through time (or across other system attributes), often yielding insights not apparent using traditional representations based on aspatial methods (e.g., multiple regression, analysis of variance, factor analysis). Indeed, all data that can be mapped so as to demonstrate the spatial interactions beneath complex problems that involve multiple levels of correlation and causation, are ideally suited for analysis using the concepts and tools of geographic information systems.

The leaders of tomorrow will need to harness the growing power of geospatial information to make informed decisions in whatever positions they occupy, be it researcher, professional, or manager. While they may not be experts in geospatial information science, these individuals should be able to appreciate how such data can be analysed, manipulated, and represented so as to make underlying trends apparent and to assess the inherent uncertainties associated with geospatial information analysis.
The primary objective of the GIS Minor is to provide fundamental skills in GIS, including essential theoretical constructs and use of commonly-used software tools in practical applications, thereby preparing students for the workforce of tomorrow.

**Contribution to UBC’s mandate and strategic plan**

The GIS Minor will enhance the educational experience and quality of learning outcomes of students enrolled in the program by providing practical, hands-on skills and project-based learning that are of value in the work force and in graduate studies. The [UBC Strategic Plan](#) specifically mentions Program Redesign (Strategy 12) and Practical Learning (Strategy 13) with an emphasis on learning competencies and ‘learning by doing’.

The [Barber School Strategic Plan](#) targets increased digital literacy and numeracy across the Faculty’s programs. GIS skills have been identified by multiple industry, government, and research partners as fostering such critical competencies across multiple disciplines. The GIS Minor enhances these skills for any major within the program, giving students the tools to examine, analyse, and plot spatial data in their discipline along with understanding the requirements and content of others. The nature of GIS teaching in the Minor is to focus on real-world datasets and problems.

The GIS Minor will also address a number of priorities from [Shaping UBC’s Next Century](#), particularly Strategy 6, Collaborative Clusters, and Strategy 14, Interdisciplinary Education. The program is interdisciplinary by design and will bring together undergraduate students from multiple disciplines and Faculties. Students will be working side by side, exchanging ideas and perspectives, thereby allowing them to gain exposure to other fields and their associated opportunities and challenges. Ideally, there will be a natural integration of concepts and approaches, which is how real-world problem solving happens in industry and business.

**Program learning outcomes**

After completing the GIS Minor, students will be able to:

- define the scope of a problem that can be addressed using geospatial information science and spatial data;
- understand vector and raster models for spatial data, what spatial entities can be represented using different data models, and how these data can be stored (e.g., geodatabases) and manipulated;
- perform basic and advanced computational analysis of spatial data using industry standard software (ArcGIS), rapidly developing open-source software platforms (QGIS, GRASS, etc.), as well as customized coding (Python, R, etc.);
- critically evaluate the strengths and limitations of geospatial methodologies and GIS software;
- locate and integrate a wide variety of spatial data products available from government, academic, and other sources, including primary data collection methods involving remote sensing, global positioning systems, and digitization and mapping;
- understand data and metadata standards, as well as uncertainty associated with spatial data;
interpret and synthesize spatial data using cartographic, web-mapping and geo-visualization approaches;
create reproducible results that exhibit spatial and temporal trends, and facilitate interdisciplinary decision making required from spatial problems.

The GIS Minor complements the student’s disciplinary Major with sound scientific techniques and practical problem solving skills that allow them to go beyond simple data collection and graphing by enabling sophisticated trend detection and data interpretation within a spatially explicit framework. These are necessary tools in an age of global interconnectedness that will require future leaders and decision-makers to leverage the immense potential in the increasingly continuous streams of data that are now commonly available on our desk-top computers.

Linkages between learning outcomes and curriculum design
The GIS Minor is anchored by the three common core courses that all students must take, which serves two primary purposes: (1) to introduce students to the theories, concepts, and methods of geospatial information analysis (GISC 380 and GISC 381); and, (2) to provide hands-on experience with using the tools and applying them to specific problems that have practical and scientific merit (GISC 480). These core courses provide the solid working foundation that students will need to have in the specific area of geospatial information science to understand and appreciate its full potential. Depending on the student’s disciplinary major (e.g., Geography, Earth and Environmental Sciences, Computer Science), elective courses provide related concepts and skills that are germane to their specific interests and academic objectives. This combination of discipline-specific content and specialist knowledge in GIS will enable students to identify, define, and explore a problem of significance that may be of purely academic or of broader practical relevance using state-of-the-art software platforms. Moreover, students must present their research findings in both written and oral formats, thereby enhancing their skills at data interpretation, representation, and communication.

Areas of employment
At the national level, there are about 2,450 private sector Geomatics firms that, collectively, contributed approximately $2.3 billion to the Canadian economy, whereas the use of geospatial information in both the public and private sectors is estimated to contribute about $20.7 billion to the GDP of Canada, accounting for roughly 19,000 jobs (2013 data–see attached 2015 report from Natural Resources Canada). In British Columbia, the use of geospatial information contributes approximately $2.5 billion to the provincial GDP (2013 dollars), with the primary areas of use occurring in mining and oil/gas extraction; transportation and warehousing; utilities; construction; agriculture; forestry; and, fisheries. In addition, there are GIS-related employment opportunities in the retail sector; manufacturing; finance/insurance; real estate; health care and social assistance; arts and entertainment; public administration and government services; as well as, consulting and technical services.

In the Okanagan, the use of GIS is widespread in local governments (e.g., City of Kelowna, Regional Districts), environmental consulting companies (e.g., Urban Systems, Associated Environmental, Golder Associates, Ecocscape, etc.), water purveyors (e.g., South-East Kelowna Irrigation District, Black Mountain), NGOs (e.g., Okanagan Collaborative Conservation Program, South Okanagan Similkameen
Conservation Program), the wine industry (e.g., Mission Hill, Jackson-Triggs), the construction industry, and provincial agencies (e.g., Interior Health Authority). Public-participation GIS and ‘volunteered geographic information’ (VGI) are systems and data that are freely available on the web so as to allow special interest groups to communicate and display information in a manner that provides easy access and enables the inclusion of individual citizens. In the Okanagan, such systems have been developed for the organic farming community. Similarly, the Okanagan Nation Alliance uses GIS technologies to understand and assist with fisheries and cultural resource management. Some potential job opportunities currently available are listed below. Refer to Appendix 3 for current job postings.

1. GIS Coordinator (AB)
2. Engineering Technologist – GIS (BC)
3. GIS Technician (BC)
4. GIS Systems Technician (AB)
5. Junior GIS Technician (AB)
6. Analyst – Demographics & Land Economics (ON)
7. Asset Data Analyst – GIS (BC)
8. GIS Specialist (AB)
9. Forestry Field Technician (MB)
10. Land Use Planning/GIS Technician (ON)
11. Legal Land Surveyor (AB)
12. GIS Mapping Technician (BC)
13. GIS Mapping Technologist (AB)
14. GIS Designer (AB)
15. Forestry Data Specialist (BC)
16. Data Administrator/GIS Technician (NT)

The GIS Minor prepares students to be competitive for a wide range of potential employment opportunities in the areas described above that require a basic knowledge and command of GIS software and its proper application. The Minor is not designed for the purpose of training geospatial information scientists, as would be the case at universities that have specialist Major programs in GIS and Geomatics.

**Delivery methods**

All courses listed in the GIS Minor have been offered regularly at the UBC Okanagan Campus in the form of lectures, laboratory assignments, team-based research projects, and community-based experiences with flexible delivery methods. Students will identify the elective course combinations that best match their learning objectives and academic interests, while satisfying the requirements of the program. It is anticipated that, over time, departments may offer courses that are explicitly tailored to their disciplinary needs and strengths. For example, a course in Engineering that focuses on the use of drones and unmanned vehicles to acquire aerial (or bathymetric) imagery and the subsequent processing of the imagery (e.g., LiDAR) using advanced software to stitch, georeference, and derive Digital Elevation Models for use in geotechnical hazard assessment could be cross-listed as a GISC course. Similarly, a course in Biology that examines landscape connectivity and patchiness for conservation ecology might also be cross-listed as GISC depending on the technical content.

**Program strengths**

The GIS Minor lists the courses that are foundational for developing the required skill set for being productive in geospatial information sciences. Graduates will be exposed to cutting-edge geospatial technologies, software, methodologies, and workflows that will allow them to efficiently store, manipulate, analyze, and visualize spatial data and results. The field of geospatial information sciences is inherently interdisciplinary, and as such, graduates will develop the applied skills necessary to work with
spatial datasets and answer contemporary research questions in various fields including geography, ecology, biology, social sciences, health sciences, engineering, and business management. More broadly, the Minor will provide a solid scientific foundation required for graduates to excel in the growing geospatial information science technology sector.

Related programs
The invention of the first geographical information system (GIS) in the 1960s is commonly credited to a Canadian, Dr. Roger Tomlinson, and Canada boasts a strong tradition of university education in geospatial analysis and representation, usually in departments of Geography or Geomatics. Today, GIS-related courses are offered in most major universities (including UBC Vancouver) across a range of disciplines including Geology, Environmental Sciences, Agronomy, Forestry, Civil Engineering, Biology, Landscape Architecture, and Health. Approximately 94 universities and colleges in Canada offer such programs. According to Canadian-Universities.net, GIS courses or programs are offered at the following BC institutions: UBC Vancouver, Simon Fraser University, University of Victoria, University of Northern British Columbia, Vancouver Island University, University of the Fraser Valley, Trinity Western University, Kwantlen Polytechnic University, Thompson Rivers University, Selkirk College, BC Institute of Technology, Okanagan College, and UBC Okanagan. In some cases, these institutions offer Bachelor degrees that focus specifically on GIS (e.g., B.GIS.; B.A. or B.Sc. with GIS Major) as well as advanced courses at the graduate level (e.g., SFU, UVic, UBC Vancouver), and often these are complemented by certificate or diploma programs (offered through Continuing Studies with online courses) targeted at working professionals. Neither UBC Okanagan nor UBC Vancouver offer a GIS Major or Minor program.

Selkirk College, UBC Okanagan’s closest regional competitor, offers a four-year Bachelor of GIS as well as a one-year Advanced Diploma in GIS. In contrast, Okanagan College offers only an Advanced GIS Certificate through its Continuing Education department, which is a 22-week course that meets five days per week and is only offered at the Salmon Arm campus. Thus, a student or practicing professional in the Okanagan wishing to learn GIS has no local option except to undertake the full-time Certificate program in Salmon Arm for a period of five months.

Resources required
All the courses needed to fulfill the requirements of the GIS Minor program are already offered, with GISC 480 being the regularized version of a Special Topics offering that was taught twice in the past. While some courses may be full or otherwise not available in a given year, there is enough flexibility in the requirements to allow students to complete the Minor within the timeline of their Bachelor degree.

The Department budget currently accommodates the costs associated with offering the three core courses on a regular basis, and it is assumed that all other electives for the GIS Minor will be taught regularly or on a rotating basis. If there is a rise in enrollments in the three core courses due to high student demand, there will be need for additional budget to support Teaching Assistants. This will also translate into added pressure on the computer teaching labs and the IT Services required to support them.
Ideally (and in the future), a dedicated GIS lab would be allocated for students taking GIS courses and undertaking research that uses GIS. The technical specifications for new computers and monitors can be forwarded upon request. There may be an opportunity for involvement by the Development Office to explore the possibilities of a named laboratory in GIS via an endowment or major grant.

Currently, the GIS licensing across the Okanagan Campus is handled via the Faculty of Forestry in Vancouver. Some clarification of process, and potentially an Okanagan specific contact point, may be required to process student requests for software access on this campus more efficiently.

**Institutional contact**
Dr. Ed Hornibrook, Professor and Head, Earth, Environmental and Geographic Sciences  
I. K. Barber School of Arts & Sciences, UBC Okanagan  
SCI 398, 1177 Research Road, UBC Okanagan BC V1V 1V7  
ed.hornibrook@ubc.ca  250.807.8059

**Appendices**
Appendix 1: Structure of the GIS Minor  
Appendix 2: Canadian Geomatics Environmental Scan and Value Study  
Appendix 3: Current Job Postings
Structure of the Minor in Geospatial Information Science

The new GIS Minor is intended to provide undergraduate students in a Bachelor program with a formal introduction to Geospatial Information Science. The program is anchored by a set of common core courses that all students must take, including GISC 380 and GISC 381, which cover the basic concepts, principles, and tools for gathering, storing, processing, analyzing, viewing, and portraying geospatial data, followed by GISC 480, which provides hands-on, team-based experience, using the tools and applying them to specific problems that have practical and scientific merit. Depending on the student’s disciplinary major (e.g., Geography, Earth and Environmental Science, Computer Science), elective courses provide related concepts and skills that are germane to their specific interests and academic objectives, thereby providing the interdisciplinary richness that students will encounter in the working world. Thus, the GIS Minor complements the student’s disciplinary Major with sound scientific techniques and practical problem solving skills that allow them to go beyond simple data collection and graphing by enabling sophisticated trend detection and data interpretation within a spatially explicit framework.

Below is a list of courses included in the GIS Minor along with the prerequisites. These are drawn from existing courses, although future courses in GIS, geospatial analysis, and remote sensing are in the planning stages, contingent on available resources and student demand.

**Note that this is an interdisciplinary science minor.** Although the core courses and most elective courses are traditionally considered as science courses, there are a few elective courses from Arts and Engineering, which for the purposes of the GIS Minor only, will be counted as science credits. This follows precedents established for counting a single course as either a science or arts credit, depending on whether the student is taking a B.A. or B.Sc. degree in Psychology and Economics, for example, as well as in disciplines such as Geography and Computer Science, for which there are courses that are identified as science versus arts. Courses included in the list of electives for the GIS Minor are selected foremost on their potential relevance to Geographic Information Science rather than their normative classification as science, arts, engineering, or otherwise.

<table>
<thead>
<tr>
<th>Course</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Core Courses</strong> (9 credits – required of all students)</td>
<td></td>
</tr>
<tr>
<td>GISC 380 (3) Fundamentals of Geographic Information Science I [3rd-yr standing]</td>
<td></td>
</tr>
<tr>
<td>GISC 381 (3) Fundamentals of Geographic Information Science II [GISC 380]</td>
<td></td>
</tr>
<tr>
<td>GISC 480 (3) Practical Applications in GIS [GISC 381]</td>
<td></td>
</tr>
<tr>
<td><strong>Elective Courses</strong> (21 credits; no more than 6 at the 100-level; at least 9 at the 300- or 400-level to reach 18)</td>
<td></td>
</tr>
<tr>
<td><strong>First-Year Courses</strong> (Note: restriction that first-year courses cannot be counted toward the GIS Minor by students majoring in that course code—this is to foster academic breadth)</td>
<td></td>
</tr>
<tr>
<td>APSC 169 (3)* Fundamentals of Sustainable Engineering Design (not available to ENGR majors)</td>
<td></td>
</tr>
<tr>
<td>COSC 101 (3) Digital Citizenship (not available to COSC/DATA majors)</td>
<td></td>
</tr>
<tr>
<td>COSC 111 (3) Computer Programming I (not available to COSC/DATA majors)</td>
<td></td>
</tr>
<tr>
<td>COSC 121 (3) Computer Programming II (not available to COSC/DATA majors)</td>
<td></td>
</tr>
<tr>
<td>Course</td>
<td>Prerequisites</td>
</tr>
<tr>
<td>-------------------------------------------------------------</td>
<td>------------------------------------------------------------</td>
</tr>
<tr>
<td>DATA 101 (3) Making Predictions with Data</td>
<td>(not available to COSC/DATA majors)</td>
</tr>
<tr>
<td>EESC 111 (3) Earth Science</td>
<td>(not available to EESC majors)</td>
</tr>
<tr>
<td>GEOG 108 (3) Earth Systems: Weather, Climate, and Life</td>
<td>(not available for GEOG majors)</td>
</tr>
<tr>
<td>GEOG 109 (3) Earth Systems: Landscape Dynamics</td>
<td>(not available to GEOG majors)</td>
</tr>
<tr>
<td>GEOG 129 (3)* Human Geography: Resources, Development, and Society</td>
<td>(not available to GEOG majors)</td>
</tr>
</tbody>
</table>

**Other Elective Courses**

( Ava ilable to all students regardless of major)

<table>
<thead>
<tr>
<th>Course</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>COSC 222 (3) Data Structures</td>
<td>(COSC 121)</td>
</tr>
<tr>
<td>COSC 304 (3) Introduction to Databases</td>
<td>(COSC 111 or APSC 177)</td>
</tr>
<tr>
<td>COSC 341 (3) Human Computer Interaction</td>
<td>(COSC 111 or DATA 301)</td>
</tr>
<tr>
<td>COSC 360 (3) Web Programming</td>
<td>(COSC 121 and COSC 304)</td>
</tr>
<tr>
<td>COSC 404 (3) Database System Implementation</td>
<td>(COSC 304)</td>
</tr>
<tr>
<td>COSC 435 (3) Computer-Based Image Analysis</td>
<td>(COSC 222)</td>
</tr>
<tr>
<td>COSC 448 (3) Directed Studies in Computer Science</td>
<td>(3rd-yr standing and permission)</td>
</tr>
<tr>
<td>DATA 301 (3) – Introduction to Data Analytics</td>
<td>(3rd-yr standing or COSC 111)</td>
</tr>
<tr>
<td>EESC 413 (3) – Analytical Methods in Hydrology</td>
<td>(One of GEOG 271, ENGR 360, BIOL 202, STAT 230; and one of EESC 205, GEOG 205, ENGR 341, ENGR 342; and 3rd-yr standing)</td>
</tr>
<tr>
<td>EESC 437 (3) – Terrain Analysis (equivalent to GEOG 437)</td>
<td>(One of EESC 111, EESC 222, EESC 342, GEOG 222, GEOG 317; and 3rd-yr standing)</td>
</tr>
<tr>
<td>EESC 444 (3) – Dynamic Modelling of Human-Environment Systems</td>
<td>(One of MATH 100, MATH 101; and one of APSC 254, BIOL 202, GEOG 271, PSY 271, STAT 121, STAT 230; and 3rd-yr standing)</td>
</tr>
<tr>
<td>EESC 448 (3-6) – Directed Studies in Earth and Environmental Sciences</td>
<td>(3rd-yr standing and permission)</td>
</tr>
<tr>
<td>ENGR 332 (3)* – Surveying and GIS Analysis</td>
<td>(APSC 169 and APSC 254)</td>
</tr>
<tr>
<td>GEOG 271 (3)** – Geographic Data Analysis</td>
<td>(GEOG 108/109 OR GEOG 128/129)</td>
</tr>
<tr>
<td>GEOG 272 (3) – Cartography and Remote Sensing</td>
<td>(GEOG 109 OR GEOG 128 OR EESC 111)</td>
</tr>
<tr>
<td>GEOG 427 (3)* – NeoGeography</td>
<td>(GEOG 128/129 and 3rd-yr standing)</td>
</tr>
<tr>
<td>GEOG 437 (3) - Terrain Analysis (equivalent to EESC 437)</td>
<td>(One of EESC 111, EESC 222, EESC 342, GEOG 222, GEOG 317; and 3rd-yr standing)</td>
</tr>
<tr>
<td>GEOG 498 (3-9) – Directed Studies in Geography</td>
<td>(3rd-yr standing and permission)</td>
</tr>
</tbody>
</table>

* Counted as a science credit for the purposes of the GIS Minor only

** Any equivalent course dealing with introductory statistical methods can be substituted (e.g., APSC 254, BIOL 202, PSY 270, SOCI 271, STAT 230)
Below are four examples of student profiles that satisfy the minor requirements from different disciplinary majors.

<table>
<thead>
<tr>
<th>Student</th>
<th>Major/Field</th>
<th>Course Details</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Geography Major (B.A.)</td>
<td>GISC 380, GISC 381, GISC 480 (9 credits of core GIS courses) One of GEOG 271 or GEOG 272, GEOG 437, GEOG 427 (9 credits in GEOG; less than max of 12) COSC 111, COSC 341, DATA 301, EESC 444 (12 credits of additional electives)</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>COSC Major (B.Sc.)</td>
<td>GISC 380, GISC 381, GISC 480 (9 credits of core GIS courses) EESC 111, GEOG 272, EESC 437 (max of 12 elective credits in COSC/DATA) COSC 304, COSC 404, COSC 435, DATA 301 (9 credits of additional electives)</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>EESC Major</td>
<td>GISC 380, GISC 381, GISC 480 (9 credits of core GIS courses) EESC 413, EESC 437, EESC 444, EESC 448 (max of 12 elective credits in EESC) APSC 169, ENGR 332, DATA 301 (9 credits of additional electives)</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>EESC Major</td>
<td>GISC 380, GISC 381, GISC 480 (9 credits of core GIS courses) EESC 413, EESC 444 (6 elective credits in EESC) COSC 111, COSC 304, COSC 360, COSC 404, DATA 301 (15 credits of non-major electives)</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: The regulation on minors is that no more than 6 upper-level credits can be double-counted (i.e., for the major and the minor).

---

1 Students cannot count both GEOG 271 and GEOG 272 toward the minor because one of them is required for the major.
Example profile of an EESC Major taking the GIS Minor (and completing in 4 years)

<table>
<thead>
<tr>
<th>Requirements for EESC Major</th>
<th>Credits</th>
<th>Example Student</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years 1 + 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two of EESC 101, 111, 121</td>
<td>6</td>
<td>EESC 111</td>
<td>counted toward the major</td>
</tr>
<tr>
<td>BIOL 116, 125</td>
<td>6</td>
<td>EESC 121</td>
<td>counted toward the minor (30 credits)</td>
</tr>
<tr>
<td>CHEM 111 or CHEM 121; and</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 113 or CHEM 123</td>
<td>6</td>
<td>CHEM 121</td>
<td>double counted for major and minor (limit of 6 credits)</td>
</tr>
<tr>
<td>MATH 100, 101</td>
<td>3</td>
<td>MATH 101</td>
<td></td>
</tr>
<tr>
<td>PHYS 111 or 112</td>
<td>3</td>
<td>PHIS 121</td>
<td></td>
</tr>
<tr>
<td>PHYS 102, 121 or 122</td>
<td>3</td>
<td>ENGL 112</td>
<td></td>
</tr>
<tr>
<td>BIOL 116, 125</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 116 or 112</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 116 or 112</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAT 220 or equivalent course (e.g. BIOL 202; GEOG 271; PSYO 271; SOCI 271)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At least three 200-level EESC courses</td>
<td>9</td>
<td>GEOG 271</td>
<td>Minor credits</td>
</tr>
<tr>
<td>Electives</td>
<td>12</td>
<td>EESC 205</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>EESC 212</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>EESC 222</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years 3 + 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any eight EESC 300- and 400-level courses</td>
<td>24</td>
<td>EESC 325</td>
<td></td>
</tr>
<tr>
<td>Upper-level Science electives</td>
<td>12</td>
<td>ESC 326</td>
<td></td>
</tr>
<tr>
<td>Arts electives</td>
<td>12</td>
<td>ARTS XXX</td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td>12</td>
<td>COSC 111</td>
<td></td>
</tr>
<tr>
<td>TOTAL CREDITS</td>
<td>120</td>
<td>TOTAL</td>
<td>30</td>
</tr>
</tbody>
</table>
CANADIAN GEOSPATIAL DATA INFRASTRUCTURE
INFORMATION PRODUCT 41e

Canadian Geomatics Environmental Scan and Value Study

GeoConnections

2015

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Summary report

Canadian geomatics environmental scan and value study

Prepared for:
Natural Resources Canada

March 22, 2015
Foreword:
Natural Resources Canada

This report synthesizes the findings from two significant bodies of work that together represent the most comprehensive assessment of geomatics in Canada to date. The first volume, the Canadian geomatics environmental scan, is an independent assessment of the sector, the key players and its operating context; the second, the value study, is a detailed analysis of the economic and non-economic benefits associated with the use of geomatics and Earth observation technologies and services.

Drivers for undertaking such a broad and far-reaching examination of the geomatics sector include several trends and events facing modern societies in general and Canada in particular:

• information as a new form of global currency that can be shared instantaneously to create value;
• the importance of energy and commodities in international markets, and the growing importance of resource literacy and stewardship;
• technological change and innovation linking satellites to handheld devices;
• growing threats to human health and security; and
• impacts of change on the planet — how we understand them and plan for the future.

The ubiquity of geospatial data and information on the Internet or through cloud-based applications accessible on geo-enabled hand-held devices — from specialized business devices to smart phones — is staggering. It is creating opportunities for private and public sectors alike to enhance decisional capability, advance productivity, and manage operations more effectively. But geomatics — although transitioning to general use — is not a panacea.

Fresh approaches, geospatial governance, and government arrangements are required for Canadians to adapt and to capitalize on the economic, environmental, and social potential of the geospatial technologies that our nation helped to globalize. This will require collaboration among the three main actors featured in the report — geospatial
information/geomatics firms, academia, and governments — and a wide variety of new actors.

The value of geospatial information comes from its use, and those organizations that adopt its use and innovate with applications will be the winners. Adoption in Canada has been uneven, which gives rise to opportunities and suggests that rather than being a mature technology, geomatics remains in its early phases of overall contribution. The coming decade will prove to be every bit as exciting as those early days when Canada showed leadership in the field.

The world of geomatics and geospatial information has radically transformed the millennia-old concept of ‘the map’. With today’s massive volumes of high quality data — available to us in tabular, raster, optical, radar and multi-spectral format — we can see the potential to foster innovative science and technology along multiple vectors of inquiry and in so doing, find new opportunities and derive solutions for societal, economic and environmental challenges.

And so, our need to understand where we should invest has never been greater; how and why we choose to invest in this capability will require deliberation and prudent selection.

Hickling Arthurs Low and its international team of experts conducted the analyses presented in this volume on behalf of Natural Resources Canada. Their effort involved an exhaustive review of literature, analysis of relevant Statistics Canada databases, and the creation of original material through 14 case studies and macroeconomic impact analysis using a computational general equilibrium (CGE) model. One hundred and thirty-seven (137) consultations with industry leaders, educators and government officials supplemented their quantitative analyses.

On behalf of Natural Resources Canada, I would like to thank all of the people who generously contributed their efforts and insights to this work.

Prashant Shukle

Director General, Canada Centre for Mapping and Earth Observation, Earth Sciences, Natural Resources Canada
Executive summary

Canada has been at the leading edge of innovation and use of geospatial technologies. With the need to govern so much geography and resource potential juxtaposed against a relatively small population, the question of where was and continues as a preoccupation in the national discourse. As we have shaped geospatial technologies, they have shaped us. Over the last decade, the manner in which we create, manage, and especially use location-based information has changed both rapidly and radically. New technologies, business models, the rise of citizen data providers, and social media have all changed how we create and share all forms of geospatial information – even ‘maps’.

There are some 2,450 firms making up the geomatics industry that contributed $2.3 billion to Canada’s Gross Domestic Product (GDP) in 2013. Companies in the sector are mostly small — nearly 75% having fewer than 50 employees — and employ people disproportionally in two regions: Quebec and the Prairies. In response to the last wave of developments, especially with the advent of Global Positioning Systems (GPS) and Earth observation satellites, there was rapid development of geomatics firms, with over half of existing firms commencing operations between 1970 and 1990. The rate at which new companies entered the sector peaked in the 1980s, but has been in significant decline since 2000.

Table 1. Changes in GDP as a result of geospatial information use and FTE jobs

<table>
<thead>
<tr>
<th>Region</th>
<th>GDP $ million</th>
<th>% change</th>
<th>Consumption</th>
<th>Investment</th>
<th>Net trade</th>
<th># FTE jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Private consumption</td>
<td>Gov't</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atlantic</td>
<td>$995</td>
<td>0.94%</td>
<td>$317</td>
<td>$306</td>
<td>$189</td>
<td>$182</td>
</tr>
<tr>
<td>Quebec</td>
<td>$2,792</td>
<td>0.77%</td>
<td>$1,179</td>
<td>$668</td>
<td>$550</td>
<td>$395</td>
</tr>
<tr>
<td>Ontario</td>
<td>$5,295</td>
<td>0.76%</td>
<td>$2,396</td>
<td>$1,198</td>
<td>$1,089</td>
<td>$612</td>
</tr>
<tr>
<td>Prairies</td>
<td>$8,985</td>
<td>2.03%</td>
<td>$5,553</td>
<td>$1,051</td>
<td>$2,913</td>
<td>$1,468</td>
</tr>
<tr>
<td>BC</td>
<td>$2,457</td>
<td>1.02%</td>
<td>$1,187</td>
<td>$347</td>
<td>$641</td>
<td>$282</td>
</tr>
<tr>
<td>The North</td>
<td>$174</td>
<td>2.38%</td>
<td>$17</td>
<td>$124</td>
<td>$148</td>
<td>-$115</td>
</tr>
<tr>
<td>Canada</td>
<td>$20,700</td>
<td>1.10%</td>
<td>$8,648</td>
<td>$3,695</td>
<td>$5,530</td>
<td>$2,824</td>
</tr>
</tbody>
</table>
Canadian academic institutions have worked effectively to support the skills needs of the market and to produce the new knowledge and technology diffusion required to keep the sector vibrant. The Canadian Geomatics Environment Scan Findings Report (Hickling Arthurs Low, 2015a) includes profiles of 94 of Canada’s universities and colleges offering programs in some aspects of geospatial information studies. There are five universities in Canada that offer geomatics engineering degrees: the University of New Brunswick, the University of Calgary, York University, Ryerson University, and Laval University.

The most important findings of the study are the benefits that geospatial information provides to users. In economic terms, geospatial technologies contribute some $21 billion of value to Canada’s Gross Domestic Product (1.1%), and generate approximately 19,000 jobs in Canada’s economy (Table 1).

The range of social and environmental benefits are even more impressive, although difficult to measure in economic terms, encompassing improved resource stewardship, better response to disease outbreaks, speedier deployment of first responders in emergency situations, and coordinated and timely management of physical infrastructure.

Open geospatial data is also making a difference, and this study estimates that $695 million is added to Canada’s GDP as a result of its use. The full potential of open data will be realized through combining foundational geomatics data with other government data holdings such as health, public safety, and climate information.

Significant forces are shaping geomatics in Canada. Here, the fundamental finding is that market demand is shifting emphasis from production of base information to value-added products and services, and in particular, to consumer application-based geospatial information. A wave of disruptive change has enabled non-specialists to take on tasks that were formerly reserved for geomatics specialists, expanding the professional reach of geospatial technologies into engineering and information technology. This is blurring traditional boundaries. The rapidly evolving ‘applications solution’ market is global and very competitive.

The major actors are adapting: the geomatics sector is consolidating and integrating with other disciplines, firms are remixing offerings to include more value-added services, and academic institutions are adjusting their curricula to broaden the number of disciplines gaining exposure to geomatics and the innovation potential of geospatial data and technologies.

In governments, this cycle of disruptive change, combined with the convergence with other data-driven
technologies, is opening new possibilities for complex decision-making and analysis across jurisdictions, while reducing historical requirements for specialized stand-alone domain investments. It is also challenging governments to stay apace with the demands for up-to-date foundation geospatial-information products that drive industry innovation.
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1. Introduction

Canada’s history, economy, and indeed its very identity, have been defined by its geography. Positioned adjacent to the most important market in the world, the United States— and with ready access to both Europe and Asia— our natural endowments have shaped our economy, culture, and identity as a nation. Geography defines the uniqueness of Canadians in every region of the country.

This report is meant to remind Canadians of that reality and to provide a new perspective on the value of geospatial information in Canada, including

• the state of the geomatics sector in Canada,

• global trends involving geospatial information and Canada’s position relative to those trends,

• the significance and value of the geomatics sector and of geospatial information to the Canadian economy,

• current and emerging roles of government, industry and academia in supporting and using geospatial information.

The report presents the key findings of a ground-breaking study of the production and use of geospatial information in Canada, which was conducted in two parts: the Canadian geomatics environmental scan and the value study.

What has emerged is a picture of a market in a state of transformation and a sector that is rapidly evolving to capture the many opportunities that the significant market changes are presenting.

With the need to govern so much geography and resource potential juxtaposed against a relatively small population, Canada has been at the leading edge of innovation and use of geospatial technologies. Building from the need to map the country’s vast territories, Canadian governments and industry worked together to create
world-class capabilities in many of the geomatics disciplines, such as surveying, Earth observation, and geographic information systems (GIS).

This study has found that today, the Canadian geomatics industry consists of about 2,450 firms that contribute approximately $2.3 billion to GDP. In addition, the geospatial information that they provide is estimated to result in productivity improvements of $20.7 billion to the rest of the Canadian economy, providing a 1.1% improvement to economic performance.

More important than the economic value of geospatial information are its significant benefits beyond those that can be measured in economic terms, including environmental, health and safety, knowledge, and social benefits.

The market for geospatial information is changing. The greatest growth is occurring in consumer applications for location-based services. Unfortunately, Canada’s early dominance in traditional geomatics disciplines has not been translated into strengths in these new areas. Concerted collaborative efforts by Canadian governments and industry will be required to rectify the situation.

The following chapters provide an overview of the geomatics industry and the value of geospatial information in the economy. Also provided are profiles of Canadian geospatial information users as examples of how geospatial information contributes to Canadian prosperity.
2. The Canadian geomatics landscape

2.1 Historical context

The geomatics sector in Canada has a long and proud history, tracing its roots back to the earliest exploration of the country and the development of its natural resources and infrastructure. Famous explorers such as Champlain, Franklin, Fraser, Mackenzie, and Thompson surveyed and mapped the lands that they explored, and mariners like Cook charted Canada’s offshore regions.

These pioneer surveyors were followed by pioneers of a different kind and a later era — veteran pilots of the first and second World Wars who, beginning in the late 1920s, conducted aerial survey missions to support the intensive topographic mapping of the country.

The early days

Government surveying and mapping organizations played a leadership role in the early development of the sector. The Geological Survey of Canada, the Earth sciences arm of Natural Resources Canada, was formed in 1842 (and still operates today); the predecessor to the Canadian Hydrographic Service of Fisheries and Oceans Canada was formed in 1867.

Through procurement contracts, public funding was used to survey lands to open up the West ahead of the Canadian Pacific Railway, and to accelerate topographic mapping of the country and hydrographic charting of the national waters, promoting development of private sector capability.

Digital developments

The modern digital geospatial information period can be traced to the development in 1962 of the first geographic information system (GIS) by Canadian Dr. Roger Tomlinson, the “father of GIS. This was followed by the commercialization of GIS by Esri in the United States in 1969. In the 1980s, availability of Global Positioning Systems (GPS) for civilian use further accelerated the development of a strong consumer and business market for geospatial information.

In 1972, NASA launched the first Earth observation (EO) satellite, Earth Resources Technology Satellite (ERTS), later renamed Landsat. As satellite imagery and a host of other advances transformed the sector, Canada pushed quickly to establish its position as a global leader in EO. The Canada Centre for Remote Sensing was established in...
1971. Its responsibilities involved gathering, processing, analyzing, and storing EO data on the Canadian landmass, as well as developing applications and related systems for this new source of data. Canada launched its first EO satellite, RADARSAT-1, in 1995.

With rapid advances in geo-technologies combined with widespread adoption of computing devices during the period from the 1960s to the 1980s, the sector moved from paper to electronic products. The technologies had another important impact: they contributed to a blurring of the lines between the different disciplines and helped to spur the search for a new sector name. The term 'geomatics' was introduced in the mid-1980s by the Quebec geo-community, and, in 1987, the Geomatics Industry Association of Canada became the first organization to adopt the name.

Internet and mobile computing

In the early 2000s, another transformational shift started to occur. Private organizations like MapQuest, Google, and TomTom popularized electronic maps that were easy to access and use. With the advent of smartphones equipped with GPS, a significant consumer market opened, making maps available on these devices at any time.

At the same time, miniaturization and the falling price of hardware spawned significant innovation in developing geospatial hardware and software applications. Professionals and consumers were now entering a domain once dominated by geomatics specialists.

This new environment had a profound impact on the involvement of government in the provision of geospatial information. With the widening demand for data came new expectations and pressures by users for data openness, currency, and authoritativeness. Some of these geospatial information needs could be better met by industry and the users themselves, thus creating further market opportunities for the private sector.

2.2 The geospatial information value chain

Previous studies (Hickling Arthurs Low, 2001; Statistics Canada, 2007) have segmented the geomatics industry according to the traditional disciplines of surveying, mapping, remote sensing, positioning, and GIS. Due to the blurring of these divisions, and since many businesses no longer categorize
themselves according to these disciplines, an industry segmentation was adopted for this study based on a modern geospatial information value chain (Figure 1).

Figure 1. Relation between contemporary GI value chain and conventional geomatics business segments

In Figure 1, the geospatial data contributions of the conventional industry segments are mapped to a contemporary geospatial information value chain. It is recognized that many parts of the traditional sector contribute to other value chains (e.g. in the land and resource development industries).

In each of the four components of the chain, depicted by the arrows along the top, value is added to the previous stage. The fifth component — geospatial information technologies — straddles the other components, providing the essential tools for the production of products and services at each of the other stages. The stages are as follows.

Geospatial information capture and processing: data collection using surveying, global navigation satellite systems (GNSS), and airborne and satellite imaging technologies, and the processing of such data for entry into data-analysis and -presentation technologies.

Geospatial information analysis and presentation: data analysis using GIS, computer-assisted drafting (CAD), photogrammetric, cartographic, and
image-analysis technologies to produce standardized or customized reports, plans, maps, or charts, and the presentation of such outputs as electronic or hard-copy geospatial products and services.

Value-added information production: integration of geospatial information with other types of information in the value chains of other sectors (e.g. geological, resource, infrastructure, demographic, socio-economic, climate, etc.) to develop value-added products and services to help inform and enhance decision-making and improve operational performance.

Location-based services: a growing range of Internet- and mobile device-based services that employ geospatial information to help users locate destinations and businesses; identify assets by location; track shipments; navigate aircraft, ships and vehicles; and receive consumer information, as examples.

Geospatial information technologies: production and distribution of software and equipment used for geospatial information capture, processing, analysis, presentation, and value-added information production.

### 2.3 The location market

A series of disruptive forces in the early to mid-2000s combined to transform a relatively specialized geomatics market into a more generalized ‘location’ market, open to a new community of users with little or no specific geomatics training. Key among these forces were the miniaturization of GPS receivers and their embedding in mobile computing and in-vehicle navigation devices, and the arrival of online mapping services such as MapQuest, Google Maps, and Microsoft Bing — often referred to as ‘mass market geomatics’ players.

In addition, the emergence of simple, user-friendly open-source applications helped a broader user community to discover and benefit from the use of location information. As the use of business analytics has grown, the use of location analytics has gained more visibility, and understanding of the strategic value of location information to help transform businesses and improve productivity has increased.

The location market can be thought of in terms of three segments:

- **Location-centric:** where products or services would not be possible without geographical location or position (e.g. property transfer and election operations);
- **Location-enabled:** where geographical location or position is an important part of the delivery of products and services (e.g. asset
management, insurance risk assessment, banking and government tracking of financial irregularities); and

**location-incidental**: where geographical location or position is not required for the delivery of products or services, but would be beneficial (e.g. pizza delivery and mobile phone sales).

The boundaries between these location market segments are shifting, and applications that are perceived as location-incidental at the time of writing may soon be widely accepted as location-enabled.

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**Case study: Canfor**

According to Jordan Kirk, Canfor’s Woodlands Information Management Coordinator, “Canfor has standardized every geospatial information product and process to work with every operation and automate a lot of tasks, producing major productivity improvements.”

By 2013, this standardization process had reduced the cost of GI use by nearly 60% for estimated annual savings in the range of $3.75M.

Canfor began using geospatial information in a GIS environment in 1996, and today some 200 users in their Woodland Operations Division employ geospatial tools on a daily basis. Foresters use GI as a reference and for inputting data at the block level for managing silviculture activities and writing site plans, among other applications.

Sample of Canfor’s Logging Plan Template
(Source: Canadian Forest Products Ltd.)
3. The rise of location

3.1 A sector in transition

Recent advances in technologies to generate and access geospatial data have fostered an explosion in the awareness and use of geospatial information.

In addition to the traditional core geomatics firms, the geomatics industry includes mass-market geomatics players predominantly from the ICT (Information and Communications Technology) sector, and others predominantly from the engineering and environment sectors.

This infusion of new players has made it much more difficult to define clear boundaries for the geomatics sector. A 2001 study (Hickling Arthurs Low, 2001) noted that many firms that conducted activities within the geomatics value chain did not consider themselves part of the sector. In fact, only about 8% of ‘geomatics’ firms in Industry Canada’s Canadian Company Capabilities database at that time actually mentioned the word geomatics in their descriptions. As the Canadian geomatics environmental scan and value study has found, 13 years later, that number has increased to 21%, but there are still many firms providing geospatial information products and services that do not associate themselves with the field of geomatics. As a consequence, the sector does not have a clearly defined and understood identity.

A joint initiative of industry, government, and academia, the Canadian Geomatics Community Round Table (CGCRT; http://cgort.ca), is working to address the situation and chart a stronger future for the sector.
3.2 The geomatics industry is adapting to market change

Accelerating technological development is spurring market transformation, and rapid innovation is replacing the predictable change that once characterized the sector. The focus of user demand is shifting from data products and software applications that can be deployed on users’ GIS systems, to the provision of integrated location data and software applications, including those found on mobile devices. There is increasing interest in hosted solutions (data, software, and infrastructure as services in the Cloud), and embedded applications (e.g. linking geography with customer-demand information, business intelligence, inventory, etc.). These changes are driving the adoption of new business models and changes in staff skill sets across the traditional geomatics community and the engineering and IT groups that are increasingly incorporating geospatial technologies in their work.

Geomatics organizations are serving these new market demands by changing their offerings and business practices in a number of ways. Some providers are developing the capacity to deliver their own solutions, and others are becoming specialized parts of solutions value chains along with other partners (e.g. contribution of LiDAR data to forestry management solutions). Greater emphasis is being placed on understanding the business environment and processes of target client groups to enable development of fit-for-purpose geospatial information solutions.
Providers are adapting their business models from project-related income streams to service-related models suited to medium- to long-term business relationships with clients. This requires new software- and data-management skills combined with foundational geomatics work. Examples include developing apps (applications) for mobile work environments, provisioning and managing Cloud-based services, integrating geospatial information with business information, and providing training and ongoing support for hosted solutions.

The initial focus of location-based services on the business-to-consumer (B2C) market is now shifting to business-to-business (B2B), creating growth opportunities for providers that can develop simple mobile apps targeted at organizations hungry for productivity improvements.

New developments in 3D mobile motion-sensing devices (e.g. Google’s Project Tango) signal the potential for a new era of data capture and augmented-reality applications in the workplace. For example, utility workers, firefighters, and police officers will be able to navigate through unfamiliar buildings and capture new location-tagged data.

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Case study: Golder Associates

According to Robert Murdoch, Golder’s GIS & IM Development Group Manager, “The use of geospatial information and technologies increases our productivity by approximately twenty to thirty percent. We are able to offer more enhanced services to our clients, and do it a lot more efficiently than before.”

Established in 1960, Golder Associates is a global, employee-owned organization. From over 180 offices worldwide, more than 8,000 employees help their clients find sustainable solutions for extraction of finite resources, energy and water supply and management, waste management, urbanization, and climate change.

In most cases, Golder’s clients assume or expect that they will be able to provide GIS as a service for their projects. Mr. Murdoch notes that, “Through the use of GIS, Golder is competitive in the market and can offer a wide breadth and depth of services to our clients.”

3D model of the Sea to Sky highway design in British Columbia (Source: Golder Associates)
Another transformative change is the shift from purchasing data under license to accessing open data (available with few or no restrictions on its use). Much of the open data is provided by government, but alternatives are emerging and gaining user acceptance. For example, concerns about available data being outdated, especially in more populated areas, has led to the emergence of online data sources fueled by ‘volunteered geographic information’ or VGI contributions. The widespread adoption of mobile devices with integrated technologies (e.g. voice, data, GPS, video, etc.) is enabling citizens to become ‘human sensors’ by collecting and contributing data to the digital commons, and the popularity of contributing to better location data via VGI is growing. Internet giants like Google and navigation data providers like TomTom are exploiting this interest to obtain crowd-sourced updates to their data products.

As more data is opened to use and quality continues to improve through crowd verification, the decreased costs of market entry and data use are spurring increased competition, both within and from outside the sector. For example, major ICT and engineering companies have become dominant players in the geospatial market through acquisitions of geomatics firms and development of strong internal geospatial teams.

Growing recognition of the value of data analytics and the potential for exploiting ‘big data’ to drive business innovation is particularly relevant in the geospatial market. Many big data sources include a spatial reference, which serves as an essential means to integrate diverse data sets.

**Big data**

While no consensus appears to have been reached yet on a rigorous definition of big data, there is a common understanding that big data includes three characteristics, as stated in the definition proposed by Gartner: “Big Data are high-volume, high-velocity, and/or high-variety information assets that require new forms of processing to enable enhanced decision-making, insight discovery and process optimization” (Laney, 2012).

However, there are concerns that existing GIS and spatial database technologies are not efficient or robust enough to handle the volumes of data involved in big data analyses, and that there will be an insufficient supply of ‘data scientists’ with the deep analytical skills to exploit the full potential of big data. Research chairs have already been established in at least three Canadian universities to begin to address these deficiencies.

The changing nature of demand in the geospatial-information market is
prompting a general migration of providers up the value chain. Companies whose primary focus has been on the supply of geospatial data products are focusing more on value-added information products and services. Some companies are adapting by focusing in market niches where they have clear differentiation based on specialized products and services. Since global markets for embedded geospatial applications are expected to provide more growth potential than local-use applications, some Canadian providers see a more promising future in plugging into global value chains to provide integrated geo-enabled information solutions.

Finally, the consumer geospatial market is expanding at an even faster pace than the business geospatial market. While this market is dominated by the online mapping-service providers and the telecom giants, development of geo-enabled mobile apps is much more diversified. Competing in this market will require Canadian geomatics companies to adapt to significantly different business and pricing models.

3.3 Academia is adapting

Canada has a comprehensive geomatics education and training system that is well respected internationally. In addition to the traditional sources of university education in geography and geomatics science and engineering departments, GI-related courses are now routinely offered by most Canadian universities through departments in related disciplines (e.g. forestry, geology, agronomy, environmental sciences, civil engineering, and even health).

Community colleges also offer GI training through specialized geomatics and GIS programs (both diplomas and certificates), and through general technology programs such as engineering and environmental studies. This study identified 94 universities and colleges providing geomatics programs.

There are five universities in Canada that offer geomatics engineering/science degrees. Laval University and the University of Calgary are the biggest in Canada, each with approximately 300 students enrolled in their graduate and undergraduate programs. Enrollment appears to be generally at a level sufficient to meet Canada’s needs.

The challenge of funding academic geomatics work that has arisen in the past decade reflects the broader issue of classifying the geomatics sector. As it is a uniquely interdisciplinary field of research, it does not necessarily fit with either the social sciences and humanities or the natural sciences and engineering granting programs with respect to funding. It is sometimes difficult to position proposals so that they meet the
criteria in either of the funding programs. A recent trend has been for universities to work directly with industry to develop market solutions.

There are currently no established geomatics industry clusters in Canada. In a number of other countries, initiatives exist to promote the development of such clusters.
4. The value of geospatial information to Canada

4.1 The components of economic value

Geospatial information contributes to economic growth, natural-resource stewardship and environmental quality, and social progress. Figure 2 shows the value flow of those benefits; descriptions of the primary GI providers, users and benefits follow.

Figure 1. Geospatial information benefit flows

Geospatial information providers
- Canadian governments
- Canadian geomatics industry
- Others

Direct benefits
- Revenue
- Digital commons (base, thematic and value-added data)
- Employment

Geospatial information users
- Canadian geomatics industry
- Canadian business
- Academia
- Canadian governments
- Individual Canadians

Productivity benefits
- Operational efficiencies
- Resource discoveries, health and safety, competitive advantage
- Asset management, regulatory approvals
- Emergency response, land management and claims, national defence, tax and risk assessment
- Travel planning...

Non-economic benefits
- Sovereignty, democracy, ecosystem benefits, social literacy and cohesion, property rights, national identity and heritage, knowledge economy, evidence-based decision-making...

Geospatial information providers
Canadian governments — including the federal, provincial, territorial, and municipal levels. Governments are active and important providers because a significant amount of geospatial information is created as a result of their activities. While many of the activities involved in the production of geospatial data may be procured from industry sources, governments are in a good
position to ensure that base data coverage is provided in a complete, cohesive, and current manner.
Governments also provide a significant amount of thematic data as the result of mandated responsibilities for activities such as taxation, census taking, management of resources, weather, and, forest monitoring.

Canadian geomatics industry — plays a crucial role as a provider of value-added data that builds on base data and other data sources. The Canadian geomatics industry also plays an important role in providing resources and expertise needed by governments responsible for the provision of base and thematic data.

Others — Geospatial information is a ubiquitous component of our modern economy. The exchange of geospatial information is a growing component of the exchange of information in general in our information society. As a result, the growing list of users of geospatial information—including ICT firms, research and scientific organizations, and vertically integrated resource-extraction firms—are potentially also providers of thematic data.

Direct benefits

The Canadian geomatics sector directly contributes to the economic prosperity of Canada by providing high-quality jobs and generating revenue from goods and services.
An important quality of geospatial information is that once it has been created, it can be employed in many ways beyond its original intended use. Therefore, the broad collection of Canada's geospatial data can be thought of as a digital commons, which when made accessible through common standards can reduce duplication of effort and improve interoperability.

Geospatial information users

Canadian geomatics industry — acquires and processes data and creates geospatial data products for resale to other users. In doing so, it improves the products and services available to Canadian businesses and increases their productivity and competitiveness.

Through these improved products and services, the industry also improves the quality of life for Canadians, helps maintain the environment, provides health and safety benefits, and helps maintain the sovereignty of Canada.

Canadian businesses — use geospatial information in many aspects of decision-making in diverse applications such as resource development, land development, transportation, and environmental management. The application of geospatial information has also transformed the way business is conducted. Ultimately, in the majority of business applications, geospatial information provides benefits by improving productivity and competitiveness.

Academia — uses geospatial information for its functions of teaching and research. Through teaching, academia provides skilled professionals with knowledge of geospatial skills and techniques, either as the core of its expertise or as a useful adjunct to core skills in other areas of specialization. Through research, academia contributes to many aspects of our understanding of both our physical and social worlds. This understanding allows Canadian leaders and citizens to make more informed decisions regarding the environment, the economy, the nation, health and safety, and society.

Working closely with enterprises to incorporate the latest advances and acting as an accelerator for new geospatial companies, academia also plays an important role in the diffusion of geospatial technologies.

Canadian governments — federal, provincial, and local governments rely on geospatial information to support a wide range of functions. Quality geospatial information is vital to ensuring high-quality decision-making. The geospatial information required for decision-making includes that of the natural world (e.g. topography, water resources, soils, geology, vegetation, population, climate, etc.); physical features that humankind has added (e.g. transport systems, utilities and services, communication systems, structures, buildings, etc.); administrative constructs required for key functions of managing a modern state (e.g. land ownership, jurisdictional,
administrative and electoral boundaries and tax collection, etc.); and geographical names.

Individual Canadians—Ultimately, all uses of geospatial information by the previous sectors benefit individual Canadians. In addition, individual Canadians are also users themselves of geospatial information, for example in the use of satellite positioning systems and electronic maps for navigation. This use has exploded as location-based services have become ubiquitous.

Productivity and non-economic benefits

There are two classes of benefits arising from the use of geospatial information:

1. the increased productivity of Canadian industries that use geospatial information; and
2. other benefits that are either non-economic or difficult to quantify in economic terms, such as contributions to environmental health, the health and safety of Canadians, national sovereignty, and better decision-making by governments, industry, and individuals.

4.2 Profile of the Canadian geomatics industry

This study has identified 2,450 private sector firms providing geomatics products and services in Canada, which in 2013 contributed $2.3 billion to Canada’s GDP, or 0.15% of the economy. The number of firms today is 15% higher than found by a 2001 study (Hickling Arthurs Low, 2001). Over the intervening years, two conflicting trends have influenced that growth:

1. Geomatics as a field has grown and many new applications for geospatial information have been developed, generating growth.
2. The industry has consolidated, especially in the area of land administration (land surveying, land-use planning, and engineering), reducing the number of firms.

Figure 3 shows the regional distribution of geomatics employment, with the highest concentration in the Prairies (41%) driven by the resource industries there.

Figure 3. Regional employment distribution

As with most sectors in the Canadian economy, the majority of firms in the
The geomatics sector are small, with only 17% having more than 100 employees and 74% having fewer than 50, as shown in Figure 4.

Figure 4. Firm-size distribution

The geomatics sector is overwhelmingly service oriented, with 82% of companies focused on the geospatial information services in the GI value chain.

Almost 60% of the industry has surveying and mapping as their primary activity. Of course, firms can participate in more than one activity across the value chain.

The vitality of an industry is indicated by the rate at which companies enter and exit the market. Figure 5 shows the eras in which existing geomatics firms were created. It is evident that the prime years were the 1980s and 1990s. Remote sensing peaked earlier than GPS.

Figure 5. Year of establishment of Canadian geomatics firms

### 4.3 The economic benefits of geospatial information use

While it is widely acknowledged that geospatial information provides benefits, estimates of the magnitude of those benefits to the Canadian economy have been lacking. Australia has been a leader in developing the tools to bring greater economic precision to the value of the usage of geospatial information across industries, and in the economy as a whole most specifically, through the use of computable general equilibrium (CGE) modelling. The Australian methodology has been further applied in New Zealand and more recently in the United Kingdom.
In this study, the economic benefits from the use of geospatial information were determined using the computable general equilibrium (CGE) model, detailing both the Canadian and global economies. The following assumptions were made:

1. The benefits to be measured are those resulting from the use of modern geospatial technologies.
2. The impact of that use is an increase in the productivity of the users.
3. The increase in productivity is measured as an increase in gross domestic product (GDP).

Inputs to the model were based on a literature review, consultations with the geomatics industry, and case studies of geospatial information users.

Estimates were made of the geospatial information adoption rate and productivity improvement for each sector of the Canadian economy. The economic impact of geospatial information on an industry is the product of the productivity improvement estimate times the adoption estimate.

The results of the modelling indicated that the historical uptake of geospatial information across Canada is estimated to have added approximately $20.7 billion (or 1.1%) to Canadian real GDP, and $19.0 billion to Canadian real income in 2013.

Table 2 shows the changes in a range of macroeconomic sub-components that produce the estimated changes in real GDP and real income by region as a result of geospatial information use.

The productivity improvements have resulted in more effective use of the country’s scarce labour and capital and have provided a stimulus to the Canadian economy compared to what would have otherwise been possible.

Approximately 67% of the increase in real GDP is directly associated with the estimated productivity improvements, and 17% is associated with increased net real tax revenues due to increased economic activity. The remaining 16% of the increase in real GDP is due to increased real returns from factors that result from the higher accumulated capital stocks and allocative efficiency.
benefits associated with the reallocation of factors around the economy.

A sensitivity analysis performed on the results showed that the 90% confidence interval for the impact of geospatial information on GDP is between $18.9 billion and $22.5 billion.

Table 2. Decomposition of changes in real GDP and real income by region as a result of geospatial information use

<table>
<thead>
<tr>
<th></th>
<th>Atlantic 2013 $m</th>
<th>Quebec 2013 $m</th>
<th>Ontario 2013 $m</th>
<th>Prairies 2013 $m</th>
<th>British Columbia 2013 $m</th>
<th>The North 2013 $m</th>
<th>Canada 2013 $m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private consumption</td>
<td>317</td>
<td>1,179</td>
<td>2,396</td>
<td>3,553</td>
<td>1,187</td>
<td>17</td>
<td>8,648</td>
</tr>
<tr>
<td>Government consumption</td>
<td>306</td>
<td>668</td>
<td>1,198</td>
<td>1,051</td>
<td>347</td>
<td>124</td>
<td>3,695</td>
</tr>
<tr>
<td>Investment</td>
<td>189</td>
<td>550</td>
<td>1,089</td>
<td>2,913</td>
<td>641</td>
<td>148</td>
<td>5,530</td>
</tr>
<tr>
<td>Net trade *</td>
<td>182</td>
<td>395</td>
<td>612</td>
<td>1,468</td>
<td>282</td>
<td>-115</td>
<td>2,824</td>
</tr>
<tr>
<td>Exports *</td>
<td>592</td>
<td>1,547</td>
<td>2,263</td>
<td>5,803</td>
<td>1,422</td>
<td>183</td>
<td>7,571</td>
</tr>
<tr>
<td>Contribution of imports *</td>
<td>-409</td>
<td>-1,153</td>
<td>-1,651</td>
<td>-4,335</td>
<td>-1,140</td>
<td>-298</td>
<td>-4,747</td>
</tr>
<tr>
<td>Real GDP</td>
<td>995</td>
<td>2,792</td>
<td>5,295</td>
<td>8,985</td>
<td>2,457</td>
<td>174</td>
<td>20,698</td>
</tr>
<tr>
<td>Terms of trade</td>
<td>-159</td>
<td>44</td>
<td>-60</td>
<td>-1,122</td>
<td>-293</td>
<td>-51</td>
<td>-1,642</td>
</tr>
<tr>
<td>Net foreign income transfers</td>
<td>-4</td>
<td>10</td>
<td>-1</td>
<td>-4</td>
<td>-25</td>
<td>-15</td>
<td>-38</td>
</tr>
<tr>
<td>Real Income</td>
<td>832</td>
<td>2,846</td>
<td>5,234</td>
<td>7,858</td>
<td>2,139</td>
<td>108</td>
<td>19,018</td>
</tr>
</tbody>
</table>

* Trade data for each provincial region includes trade with other Canadian regions. Trade for Canada only includes foreign trade, hence total Canadian exports and imports do not equal the sum of the provincial regions.

Note: GDP can be calculated either from the expenditure side or from the income side. This table presents the decomposition from the expenditure side. From the income side, the change in real GDP would be the sum of the change in real value added, the change in real tax revenues, and the change in productivity.

Although the (small) decline in terms of trade offsets some of the growth in real GDP, total economic welfare of Canadians is still significantly greater as a result of the improved productivity stemming from geospatial information. In particular, Canadian real income was higher by $19.0 billion, or 1.03%, as a result of geospatial information.

Table 3 identifies the differences in impacts of geospatial information across different sectors. The greatest impacts are in the resource, transportation, utilities and agriculture sectors, which involve large geographic areas. Regions where these sectors are most prevalent see the greatest consequence. Conversely, the impact in manufacturing, which occurs primarily in small areas indoors, is relatively small.
Importantly, although geospatial information directly raised productivity in only a subset of the industries modelled, it is estimated that it would also have indirectly benefited almost all other Canadian industries, as the effect of higher productivity in the directly affected industries is passed on to other industries in the form of lower prices for inputs.

### Table 3. Estimated percentage change in industry output as a result of geospatial information

<table>
<thead>
<tr>
<th>Industry</th>
<th>Atlantic</th>
<th>Quebec</th>
<th>Ontario</th>
<th>Prairies</th>
<th>British Columbia</th>
<th>The North</th>
<th>Canada</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, forestry, fishing and hunting</td>
<td>2.50</td>
<td>1.04</td>
<td>1.33</td>
<td>0.96</td>
<td>1.38</td>
<td>4.47</td>
<td>1.22</td>
</tr>
<tr>
<td>Mining, quarrying, and oil and gas extraction</td>
<td>3.32</td>
<td>4.44</td>
<td>4.67</td>
<td>4.55</td>
<td>5.12</td>
<td>4.32</td>
<td>4.54</td>
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<tr>
<td>Utilities</td>
<td>1.60</td>
<td>1.73</td>
<td>1.68</td>
<td>1.19</td>
<td>1.51</td>
<td>2.09</td>
<td>1.58</td>
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<tr>
<td>Construction</td>
<td>1.34</td>
<td>0.94</td>
<td>0.82</td>
<td>1.90</td>
<td>1.17</td>
<td>1.50</td>
<td>1.23</td>
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<tr>
<td>Manufacturing</td>
<td>0.16</td>
<td>0.57</td>
<td>0.30</td>
<td>-0.18</td>
<td>0.86</td>
<td>1.75</td>
<td>0.33</td>
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<tr>
<td>Wholesale trade</td>
<td>0.88</td>
<td>0.85</td>
<td>0.81</td>
<td>1.14</td>
<td>0.93</td>
<td>4.03</td>
<td>0.90</td>
</tr>
<tr>
<td>Retail trade</td>
<td>0.51</td>
<td>0.46</td>
<td>0.43</td>
<td>1.11</td>
<td>0.55</td>
<td>1.68</td>
<td>0.60</td>
</tr>
<tr>
<td>Transportation and warehousing</td>
<td>1.57</td>
<td>1.65</td>
<td>1.59</td>
<td>1.45</td>
<td>2.16</td>
<td>0.26</td>
<td>1.64</td>
</tr>
<tr>
<td>Information and cultural industries</td>
<td>0.47</td>
<td>0.32</td>
<td>0.43</td>
<td>1.01</td>
<td>0.45</td>
<td>1.14</td>
<td>0.51</td>
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<td>Finance and insurance</td>
<td>0.74</td>
<td>0.66</td>
<td>0.80</td>
<td>0.97</td>
<td>0.59</td>
<td>2.52</td>
<td>0.78</td>
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<tr>
<td>Real estate and rental and leasing</td>
<td>0.55</td>
<td>0.45</td>
<td>0.49</td>
<td>1.47</td>
<td>0.63</td>
<td>1.65</td>
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<td>Professional, scientific, and technical services</td>
<td>0.72</td>
<td>0.34</td>
<td>0.28</td>
<td>0.94</td>
<td>0.57</td>
<td>1.54</td>
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<tr>
<td>Management of companies and enterprises</td>
<td>1.06</td>
<td>0.82</td>
<td>0.84</td>
<td>1.75</td>
<td>0.93</td>
<td>2.52</td>
<td>1.08</td>
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<td>Administrative and support, waste management, and remediation services</td>
<td>0.87</td>
<td>0.71</td>
<td>1.00</td>
<td>1.13</td>
<td>0.89</td>
<td>3.11</td>
<td>0.95</td>
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<td>Educational services</td>
<td>0.28</td>
<td>0.35</td>
<td>0.35</td>
<td>0.66</td>
<td>0.35</td>
<td>0.98</td>
<td>0.40</td>
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<td>Health care and social assistance</td>
<td>0.60</td>
<td>0.57</td>
<td>0.55</td>
<td>1.17</td>
<td>0.57</td>
<td>1.48</td>
<td>0.70</td>
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<td>Arts, entertainment and recreation</td>
<td>0.40</td>
<td>0.39</td>
<td>0.37</td>
<td>0.72</td>
<td>0.42</td>
<td>0.77</td>
<td>0.45</td>
</tr>
<tr>
<td>Accommodation and food services</td>
<td>0.56</td>
<td>0.59</td>
<td>0.64</td>
<td>1.46</td>
<td>0.74</td>
<td>1.59</td>
<td>0.83</td>
</tr>
<tr>
<td>Other services (except public administration)</td>
<td>0.38</td>
<td>0.28</td>
<td>0.36</td>
<td>0.92</td>
<td>0.44</td>
<td>1.86</td>
<td>0.48</td>
</tr>
<tr>
<td>Public administration</td>
<td>1.59</td>
<td>1.36</td>
<td>1.43</td>
<td>2.03</td>
<td>1.15</td>
<td>1.89</td>
<td>1.51</td>
</tr>
</tbody>
</table>

### 4.4 Non-economic value of geospatial information use

Geospatial information provides benefits beyond those that can be measured in economic terms. In fact, there are strong arguments that such benefits may be significantly more important than the economic ones. They include, for example,
Environmental benefits — improved environmental protection, better compliance with regulatory requirements, better management of resources, and reduced impacts of natural disasters.

Health — saved lives, improved allocation of resources to manage disease outbreaks and emergency situations, better patient care, and lower health risks, as well as better management of health risks.

Social — more effective communication among governments, business, and citizens; increased confidence in services; improved community engagement; and higher customer satisfaction.

Knowledge — improved presentation and understanding of complex information, increased information consistency, better focus on areas of risk, improved ability to plan, better analyses, improved data integration, increased data confidence, better evidence-based decision-making, and improved citizen literacy.

The Value Study Findings Report (Hickling Arthurs Low, 2015b) provides extensive examples of a wide range of non-quantifiable benefits from the use of geospatial information.

### 4.5 The value of open geospatial data

Governments throughout the developed world have realized that making their large data holdings available and accessible can spur innovation in both the economic and social spheres. Canada is no exception.

The concept of ‘open data’ includes the themes of

- removing restrictions on use and dissemination,
- standardizing formats to foster interoperability and accessibility,
- disseminating works at minimal or no cost, and
- improving public use and access in the public interest.

Opening government data is increasingly recognized as an important public-policy objective to engage a broader range of actors in solving problems of interest to the government. Open geospatial data, and the opening up of the data infrastructure that supports the underlying data, were early successes of open government information initiatives in Canada. These initiatives are now increasingly being shaped and influenced by overarching open-government-data policies and the feedback from a new community of open-data users.

The rationale for the open data movement is that economic welfare is maximized if data is made available at
marginal cost or for free. There are further arguments for the role of governments in not only providing, but also setting, standards for open data. Government involvement is 'in the public interest' because of the need to

- protect life and property,
- promote democracy,
- protect the rights of individuals,
- support minority groups,
- ensure the confidentiality of some forms of data collected, and
- encourage the innovative potential of scientific knowledge.

Beyond these are internal benefits to government operations of sharing data sets and infrastructure among the three levels of government and among various government ministries. The guiding principle for these inter- and intra-governmental collaborations is 'build once, use many times' to make the best use of tax dollars.

While open data is free at the point of use, it is not costless to produce and maintain. Governments must continue to provide the resources necessary to support the custodians of these data — primarily government agencies that collect and maintain foundation geospatial data — to ensure that the data continues to possess the key characteristics of currency, accuracy, cohesiveness, availability, and usability.

There are quantifiable economic benefits from open geospatial information that come primarily through

**Case study: Altus Group**

The Altus Group provides a comprehensive offering that encompasses all phases and aspects of real estate for individuals, businesses, governments and municipalities.

Robert Dorion, President of Knowledge Management at Altus, is a strong advocate of the use of tools like MLS®/HPI for urban development and other governance/public policy/infrastructure support systems. He claims, "Using better tools for planning and financing the development of a community based on accurate historical data and defendable future models can greatly enhance the design of cities and municipal areas thereby enhancing their livability as well as their financial sustainability."

![Altus GIS Tool for market monitoring](Source: Altus)

- **Increased use** — all of the benefits of geospatial information are magnified by increased use.
- **Standardization** — open data standards improve data interoperability and reuse.
Network externalities — sharing data leads to efficiencies and common understandings. Novel applications — those in areas not directly connected to geospatial data creation may see uses not previously imagined.

This study estimates that the historical uptake of open geospatial data across Canada has added at least $695 million (or 0.04%) to Canadian real GDP and $636 million to Canadian real income in 2013.

As the volume, use, and demand for geospatial information proliferates, society requires commonly understood reference foundations with which to link and combine information. A significant benefit provided by a spatial data infrastructure (SDI) lies with its role in ensuring compatibility within a network of data sets. The SDI reduces transaction costs by searching and verifying that the different data sets are actually compatible. It also reduces costs by eliminating or significantly reducing the costs of transforming the various data sets, especially when these data sets are collected by different organizations at different times for different uses and users.

A common reference system and datum are necessary to align or ‘fuse’ these data sets into a network. The potential cost savings from compatibility are likely to increase as users add ever more data layers to improve their spatial analysis.
5. Geomatics outlook in Canada

Geomatics has been an active subject of technological development for 50 years, and the coming decade will see an acceleration of change. As a result of a new wave of innovation, geospatial technologies have become cheaper, more user friendly, and more broadly available. The evidence compiled for this study suggests that there is a bright future for those geomatics organizations that recognize and seize opportunities presented by modern geospatial tools and the growing geospatial market, and that are prepared to make the transition necessary to integrate and use this technology.

5.1 Private sector prospects

The most significant potential for growth in the geospatial market lies in consumer applications. However, there is also considerable room for growth and diversification in professional and business applications of geospatial information.

For geomatics businesses — traditional and emerging — professional and business markets for geospatial information products, services, and technologies provide opportunities. In sectors where the deployment of geospatial tools and services is more widespread (e.g. oil and gas, mining, forestry, and infrastructure), the opportunities lie in more sophisticated use of location as a means of reducing costs, improving worker productivity, and increasing the quality of management planning and decision-making outputs.

Examples of applications that are at an early stage of the adoption life cycle across these sectors and that represent considerable growth potential include:

- mobile field-data collection and real-time database updating,
- route optimization and robotics for transportation of resource raw materials,
- positioning of underground utilities with unknown locations using ground-penetrating radar,
- inventory tracking in milling and retail operations,
- embedded geospatial information within business-information tools for management decision-making,
- geo-positioning data and remote communications for more effective management of field assets (e.g. oil company field installations, hydro
poles, fire hydrants and vehicles), and

Use of geospatial tools and data for resource and environmental literacy.

The prospects of geospatial market growth in sectors that are less exposed to the use of geospatial tools and services (e.g. agriculture, finance and insurance, ground transportation, and property assessment) are also promising. In these sectors, examples of application areas that represent important opportunities for further development and future growth include

- spatial epidemiological analysis (e.g. tracking disease outbreaks and deciding where to locate resources, calculating catchment areas and patient travel times, and forecasting populations at risk);
- pesticide-application planning (e.g. for mosquitoes carrying West Nile virus) to minimize negative environmental impacts;
- geo-enabled insurance underwriting risk assessment;
- geo-enabled farm planning and operations management;
- geo-enabled desktop evaluation of property; and
- long-term, full-life-cycle cost of real estate ownership analysis.

Entering the consumer geospatial-applications market requires a significantly different business model focused on generating high-volume, low-margin revenue streams. Although the evidence from this study indicates that established Canadian geomatics companies have limited interest in this market, start-up activity suggests that a new generation of geospatial market entrants see this market as their primary focus.

The export market, while representing tremendous potential, is competitive and dominated by global suppliers. For Canadian geospatial providers, the potential for success will depend upon their ability to

- enter and integrate effectively within global value chains — geospatial information and others,
- supply clearly recognizable and differentiated products and services within niche markets,
- form effective public-private partnerships in developing markets, and
- develop innovative geo-enabled business solutions in the domestic market that can be applied abroad.

5.2 Public sector prospects

The level of maturity in adoption of geospatial products, services, and technologies within different spheres of government activity mirrors the private
sector to a large extent. While some specific organizations are at the edge of innovating and using the technologies, governments are generally seen to have adopted geospatial technologies more slowly. Large masses of government data are not geotagged, and so cannot be layered on geospatial foundation data.

Government programs in natural resources management, water and oceans management, land administration, environment, defence, public safety, agriculture, statistics, elections, and aboriginal affairs and northern development exhibit advanced applications of geospatial information. However, even in these organizations, there is room for expanded use of geospatial information in new application areas such as

- automated updating of forest-inventory databases with near real-time digital updates from forestry companies,
- monitoring the impacts of climate change in coastal zones (e.g. sea-level rise, increased erosion and flooding),
- monitoring the impacts of resource extraction on groundwater quantity and quality,
- building rapid and effective response capability to disasters and emergencies with real-time updating and interactive management features,
- expediting northern-development project evaluation and approval

Case study: City of Ottawa

The City of Ottawa is among Canada’s leaders in GI use at the municipal level. When municipal amalgamation occurred in 2001, Ottawa integrated all the GI of the amalgamated municipalities and developed a solid common base as a foundation for multiple GIS applications.

Kelly Martin, the City’s Manager of Asset Management, says, “Geospatial information helps reduce asset management costs and citizen inconvenience. It is used to maintain records of asset inventories, topographical information, planning data and planned works so that decisions on future replacement of asphalt and pipes can be done more effectively. Also, since the locations of underground facilities like pipes, water valves, underground utilities etc. are in the GIS database, when works are proposed there is informed collaboration and better planning and issue mitigation opportunities both within the City and with external agencies.”
processes with geo-enabled decision support systems,
supporting aboriginal self-government and land-reform initiatives,
pipeline and infrastructure monitoring, and
change detection at a centimetre level, at any point on Earth.

Growth potential also exists in programs that do not have such a long history of geospatial information use (e.g. health, social services, employment, education and training). Early adopters in these sectors have recognized the power of geo-enabled tools to more effectively engage with their clients and facilitate access to their services with public-facing Web applications. Other emerging applications include healthcare service planning such as disease-outbreak investigations and health services location allocation analytics.

The widespread availability of simple-use, open-source applications, open data and geo-enabled mobile devices provides opportunities for new users in government at both operational and management levels to benefit from regular geospatial information use. The federal government’s renewed science, technology and innovation strategy released in December 2014 contains a number of research priorities in which geospatial information can play a substantive role (Government of Canada, 2014). Significant growth is expected in the emerging demand for mobile applications to support the work of field personnel.

Government plays a crucial role in the geospatial market by providing the underlying spatial data infrastructure (SDI) that facilitates easy access to and integration of geospatial data resources. The ongoing development and maintenance of not only the physical and logical infrastructure but also the essential regulatory, policy, and standards resources that underpin SDI will help industry to develop and expand location business.

At the local level (i.e. municipalities and aboriginal communities), geospatial applications are embedded in many kinds of program delivery. Where use is more advanced (e.g. infrastructure, development planning, and real property management), demand is growing for simple geospatial analysis and visualization capabilities well beyond the traditional ‘power user’ base of engineering and urban-planning professionals. In particular, there is significant growth potential in self-governing aboriginal communities that manage their lands, resources, and infrastructure.

An increased focus on innovation within government will produce results both in productivity improvements and in increased potential for commercialization. One area in which government can make a significant contribution is in maximizing the value of its own ‘big data’, by strategically
investing in high-value data and in technology to open their data for public consumption.

Finally, geospatial information has enormous potential to improve services to taxpayers. Important progress on this front has been made across the three levels of government in Canada, with a steadily expanding number of services that facilitate access to and visualization of all kinds of information available to the public.

For the citizen, effective combination of geospatial with other information translates into understanding what regulations or policies impact them, knowing where local services are, avoiding traffic congestion, and being able to manage daily activities better by having access to better and more easily comprehended information. Expansion of geo-enabled citizen-facing web applications provides the means of further improving government’s interface with its constituents and citizen involvement in governance.

New science, technology and innovation (STI) strategy announced

The federal government’s updated science, technology and innovation (STI) strategy identifies new areas in which support of innovation will be focused. GI products, services, and technologies can play a substantial role in many of the research priorities that are considered to be of strategic importance to Canada (e.g. water health, energy and security; climate-change research and technology; disaster mitigation; responsible development and monitoring of the environment; pipeline safety; advanced data management and analysis; and advanced manufacturing automation, including robotics).
6. Conclusion

This report shows that geospatial technologies in their many forms are essential to Canada’s economy and its citizens’ well-being. Geospatial information drives business and government decisions that result in the more effective stewardship of our natural resources, ensures the efficient and safe movement of goods and travellers, and helps manage risks that affect property and human lives.

In the future, geospatial-information use will be an even greater factor in our daily lives and drive a next generation of productivity improvements in the private and public sectors.

Canada had an advantage from the 1950s to the early 2000s with a responsive geomatics industry that worked effectively with government and academia. Technological advances were propelled by large government investments that were focused on using new technologies to strengthen Canada’s sovereignty, push the boundaries of scientific knowledge, and generate efficiencies in its operations.

Over the last decade, that situation has changed; a broader field of international players now compete aggressively with Canadian companies.

While government remains a significant source of infrastructure investment, it spends less, and this has had effects on industry, including reductions in research and development spending. The industry is adapting, but will need to continue to transition from government to business and consumer markets.

Equally important is the shift occurring on the market/demand side, with consumers playing a new and significant role. Consumers and businesses have differing needs for the currency, accessibility, and authoritativeness of their data, and as a result a new class of geospatial information is becoming available that relies less on government sources.

Governments will continue to have a vital role in the development of standards and in enabling the governance structures and new institutional arrangements necessary to support the provision of open geospatial information from their own holdings and other sources.

The future view can be optimistic if Canadian actors continue to work together to adapt to this changing environment.
References


REFERENCES

Hickling Arthurs Low, 2015a. Canadian Geomatics Environmental Scan Findings Report, prepared for Natural Resources Canada.


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Stantec

Junior GIS Technician - Calgary, Alberta

Grounded in safety, quality, and ethics, our experts lead their fields and guide our work with rigor, a creative spirit, and vision for growth. We draw from more than 20 technical specialties around the globe and are committed to fostering an inclusive community of diverse talents, backgrounds, and expertise. We’re a place to apply your passion and collaborate with top environmental talents on work that’s critical to our clients and the communities they support. Join a team that has the environment down to a science.

Your Opportunity

As a GIS Technician with Stantec you will provide technical support which includes mapping applications, spatial analysis, and map production; as well as provide support for assigned projects.

Your Key Responsibilities

- Participation in team and independent based work.
- Participating in geospatial field data collection efforts.
- Uses geospatial data to complete tasks using knowledge of Geographical Information Systems.
- Inputs data into relevant software programs. Data conversion between AutoCAD and GIS.
- Assists team in creating moderately complex aerial and mapping exhibits.
- Perform data editing, digitizing, scanning and conversion.
- Develop maps and other cartographic products.
- Adhering to established Quality Assurance/Quality Control Processes.
- Work outside the typical office environment (e.g. GPS data collection) as needed.

Your Capabilities and Credentials

- Ability to thrive in a fast-paced, collaborative environment.
- Effective written and verbal communication skills.
- Knowledge of GIS Platforms, AutoCAD and ESRI software suite including ArcGIS is required.
- Ability to maintain and establish effective working relationships.
- Ability to prioritize, organize, and perform multiple work assignments simultaneously.
- Ability to perform work accurately in a detail oriented environment.
- Ability to occasionally travel to support field data collection with a variety of GPS units.
- Work in diverse work and team environments.
- Working knowledge of New Century Software including creation of alignment sheets is preferred.
- Experience with Python or FME is an asset.
- Experience with mobile data and web applications is preferred.

**Education and Experience**

Technical degree/diploma/certificate or equivalent in related field; or equivalent combination of education and experience.

Minimum of 2-3 years of experience.

Position will primarily work in an office setting; may require some field work.

*This description is not a comprehensive listing of activities, duties or responsibilities that may be required of the employee and other duties, responsibilities and activities may be assigned or may be changed at any time with or without notice.*

Stantec is a place where the best and brightest come to build on each other’s talents, do exciting work, and make an impact on the world around us. Join us and redefine your personal best.

**Job:** GIS Technician

**Primary Location:** Canada-Alberta-Calgary

**Organization:** BC-1235 Environmental Services-CA Calgary AB

**Employee Status:** Regular

**Job Level:** Individual Contributor

**Travel:** No

**Schedule:** Full-time

**Job Posting:** Jan 16, 2019, 9:48:09 AM

**Req ID:** 1900004Y
Analyst (Demographics & Land Economics)  
Watson & Associate Economists Ltd. - Mississauga, ON

Watson & Associates Economists Ltd., one of Canada’s leading economics consulting firms, located in Mississauga, Ontario, is seeking to fill the full-time position of Analyst, in the highly specialized field of demographics and land economics. Our firm is primarily Ontario-based, serving over 35 school boards, 200 municipal clients, senior levels of government and private landowners.

The preferred candidate will ideally have a minimum of one to two years of relevant work experience in the field of demographics, real estate market analysis, land use planning, GIS analysis and land economics at the municipal/provincial government level or through private sector employment.

As an Analyst with the firm, you will assist Consultants and Project Managers on a number of diverse assignments related to long-term population, housing and employment forecasting, housing market analysis, land use planning, growth management, employment land strategies, municipal land needs and economic impact analysis.

The dynamics of this firm’s working environment require that the candidate be a highly motivated, self-starting team player, with the ability to manage multiple priorities in a fast-paced, professional office environment. The position requires advanced computer spreadsheet and database skills (Excel, Microsoft Access, Geographical Information Systems (GIS), preferably ArcGIS 10). Strong written and oral communication skills, problem-solving, presentation and quantitative analysis skills are also necessary. A university degree in economics, urban planning or geography is preferred. Remuneration will be commensurate with experience, knowledge and abilities.

If interested, please send your resumes by January 31, 2019.

Job Type: Full-time

Education:

- Bachelor's Degree (Required)

Location:

- Mississauga, ON (Required)

Language:

english (Required)

https://ca.indeed.com/jobs?q=GIS&l=Canada&vjk=b21d5b206f9895fd
Global Raymac Surveys Inc. - Calgary, AB - **GIS/Mapping Technologist**

Global Raymac Surveys is seeking an experienced GIS/Mapping Technologist to join our rapidly growing Main Branch Office in Calgary. The successful candidate will be responsible for creation, update & checking of a wide variety of large and small format maps using GIS tools and databases in support of Pipeline and Integrity survey projects in Alberta. The individual will join a growing and dynamic team oriented atmosphere that will provide a fulfilling work environment.

**Qualifications**

- Grade 12 diploma or equivalent
- Geomatics Engineering Technology Diploma or similar GIS-related education or experience
- Minimum 2 years’ experience working on Oil and Gas related projects in AB
- Good knowledge of mapping requirements and AB Oil and Gas related regulations and associated datasets
- Proficient with Alberta’s Land Survey system
  - 2-4+ years GIS mapping experience and proficiency with ArcMap and ESRI tools
  - Strong data editing and analysis skills with ArcMap and ESRI tools
  - Good working knowledge of relational databases, SQL and database best practices
  - Experience working with variety of data formats, i.e. vector, imagery, DEM and LiDAR and best practices for their use and application in an ArcGIS environment
  - Good general desktop computer skills (email, spreadsheets, word processing)
  - Proficient with Land Survey terminology for field work
  - Proven ability to support processes, and follow standardized template designs
  - Operational knowledge & hands on understanding of AutoCAD mapping fundamentals
  - Experience using pipeline alignment sheet software

The compensation package for this position will be commensurate with the level of responsibility of the position as well as the candidate’s qualifications.

If this opportunity is of interest to you, please apply in confidence to the email address provided and quote opportunity code **C-GISMAP-001**.

Please note only candidates selected for an interview will be contacted.

Global Raymac is a creative, multi-disciplined company with a respectful culture that inspires our employees while engaging in sustainable practices and delivering exceptional value to our partners.

Global Surveys was founded in 1986 and Raymac Surveys in 1978, with both companies firmly establishing themselves in the fabric of Alberta’s Land Surveying community. After serving the Energy and Municipal sectors across the province for more than 25 years, the companies joined forces in 2010 to form Global Raymac Surveys and we haven’t looked back since!

**Job Type:** Full-time

**Experience:**

- Oil and Gas mapping: 2 years (Required)
- GIS mapping: 2 years (Required)

**Education:**

- AEC / DEP or Skilled Trade Certificate (Required)

**Location:**

Calgary, AB (Required)

[https://ca.indeed.com/jobs?q=GIS&l=Western%20Canada&start=10&vjk=5172bc92dc7de9b5](https://ca.indeed.com/jobs?q=GIS&l=Western%20Canada&start=10&vjk=5172bc92dc7de9b5)
Environmental Technician, Conuma Coal Resources

Location: North-East British Columbia

Language of Work: English

Start Date: When filled

Schedule / Terms of Employment: This is a full time (40 hours/week), permanent position

Primary Purpose

The Environmental Technician’s primary role is to ensure Conuma Coal’s high environmental management standards are upheld, continually developed, and accurately reported to the company’s regulators and stakeholders.

Company Information

Conuma is a leading Canadian producer and exporter of metallurgical coal for the global steel industry. In 2016, Conuma acquired Walter Energy's Canadian assets, which consisted of three metallurgical coal mines in northeast British Columbia. These mines now make up the company’s Canadian operations. The company is well-positioned to meet the world’s growing demand for metallurgical coal products. With ready access to both the Atlantic and Pacific oceans, Conuma is able to serve customers in South America, Europe and Asia.

Duties and Responsibilities

- Design methodologies for environmental sampling and analysis to meet permit requirements.
- Collect and prepare air, water, and soil samples for shipment as per environmental permits.
- Interpret results of chemical, physical, and biological tests and document results.
- Trace chemical, physical, and biological pathways of environmental pollutants.
- Review and process applications for environmental permits or certification.
- Participate in and lead field investigations and inspections.
- Explain and interpret regulations and procedures to non-environmental staff.
- Propose actions for corrections necessary to comply with federal and provincial regulations.
- Interpret requirements for vegetation management including invasive species.
- Interpret requirements for wildlife management.
- Preparation of environmental documents, such as Management Plans, Procedures, Guidelines and Schedules.
- Prepare reports for supervisors and annual Ministry of Environment submissions.
- Develop and improve the Environmental Management System ensuring compliance with internal and external audit requirements.
  - Undertake GIS work.
- Participate in mine and reclamation planning.
- Develop and implement updated training packages including training consultants and new hires on environmental stewardship.
- Manage various consultants and contractors, including quotes and requisitions.
Qualifications and Experience

- A diploma from a technical college, or bachelor's degree in a field such as environmental science.
- 3-5 years environmental experience in Resources or Mining (preferably Coal).
- Experience analysing environmental sample data and reporting results to regulatory bodies and stakeholders.

Skills and Abilities

- Demonstrated safety and environmental leadership, in adherence to Conuma Coal’s company values.
- Ability to meet strict deadlines, preestablished targets and work under pressure.
- Knowledge of relevant provincial and federal legislation.
- A proven ability to develop and implement solutions to complex environmental issues and facilitate continuous improvement in performance.

Work Location / Travel

Conuma’s properties are located in Northeast BC, amongst some of the most beautiful surroundings in North America. At the Tumbler Ridge UNESCO Global Geopark, employees can enjoy almost limitless hiking amongst some of Canada’s biggest waterfalls, ride through ATV and snowmobile trails, explore 97 million-year-old dinosaur footprints, ski cross-country trails, play ice-hockey, swim indoors and out, cycle and enjoy the sense of community only a small town provides. An hour and a quarter away, Chetwynd is famous for its chainsaw wood carvings, First Nations Bands and offers a range of kayaking, snowmobiling and rock climbing opportunities. Local amenities include medical centres, retail and grocery stores, bars and restaurants with events held through the year. Regarded as a wonderful place to raise a family, with vastly reduced costs of living, Northeast British Columbia is the outdoor paradise our employees are proud to call home.

- Employee bus transport is available from Tumbler Ridge / Chetwynd / Mackenzie
- Please be aware no camp facilities are available. (Conuma Coal believes in supporting our local communities by promoting them as a place for our employees to call home, not just a work place).

Wage and Benefits

Conuma Coal provides competitive wages and benefits. Benefits include paid vacation, RRSP matching and extended healthcare.

Conuma Coal Resources is an equal opportunity employer

Job Type: Full-time

Experience:

- environmental: 3 years (Preferred)

Language:

English (Required)

GIS Coordinator

Tsawwassen First Nation

Tsawwassen First Nation (TFN) is a proud Coast Salish nation with our land base situated in Tsawwassen, B.C. In 2009, the Tsawwassen First Nation Final Agreement came into effect – this treaty was the first modern urban treaty in BC and the first treaty to be successfully negotiated through the BC Treaty Commission process. The Treaty provides us municipal, provincial and federal types of jurisdiction over a land base of 724 hectares.

Tsawwassen First Nation also became a full member of Metro Vancouver, the first First Nation to do so. We are now going through a period of revival and renewal as we plan our future and seek opportunities to sustain our growth physically, economically and culturally, for present and future generations.

**TFN is seeking a qualified GIS Coordinator to join our team.** Reporting to the Programs & Capital Projects Engineer, this position will assist all departments within TFN.

**Position Summary**

The GIS Coordinator will assist with the transfer of large amounts of asset, infrastructure, cadastral, addressing, permitting and regulatory data into a TFN GIS system.

The GIS Coordinator will develop and implement data quality control measures in collaboration with other staff and consultants. This position will work closely with TFN records management procedures and will help ensure that TFN’s GIS is structured to adapt with changing departmental needs, and that it integrates with existing programs (such as a maintenance management program for TFN infrastructure assets). The GIS Coordinator will identify opportunities to further expand the use of GIS at TFN, such as creating a field staff maintenance schedule interface or integrating with future financial programs.

This position will also involve analyzing data, maintaining data, creating maps, and using spreadsheets, and using graphics to present information.

**Specific Responsibilities**

- Responsible for GIS data creation, conversion, maintenance and accuracy, as well as ensuring data is accessible by other TFN staff as needed.
- Create maps and graphical materials for presentations and departmental uses.
- Spatial analysis, geo-processing tasks and data synthesis as needed.
- Maintenance of TFN’s:
  - Address data (including liaison with relevant agencies such as Canada Post and emergency services)
  - Infrastructure data to support maintenance and financial asset management programs
  - Subdivision, legal base, and cadastral datasets

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- Create custom scripts and/or tools.
- Help develop a GIS based permit and license approval tracking system.
- Interpret plans, drawings, surveys, engineering record drawings, and other regulatory documents.
- Assist with drafting reports to Executive Council.
- Assist with permit and license applications and reviews.
- Contribute to strategic development of GIS records management procedures, and implementation of these procedures (GIS standards and QA/QC procedures).
- Coordinate content updates for TFN Lands and Municipal Services Department related website pages with appropriate staff / departments.
- Assist with ‘Needs Assessments’ pertaining to software resources.
• Other duties as required.
• May be required to assume other responsibilities during emergencies in the municipal environment.

Qualifications

• **GIS diploma / degree** is preferred with 3-5 years relevant experience; or an equivalent combination of education and experience.
• **Proficient with ArcGIS Pro, ArcGIS for Server Enterprise, ArcGIS Enterprise Geodatabase, and FME Data Integration Platform.**
• Data entry experience.
• Familiar with asset management and planning approaches in municipal environment.
• **Proficient with ESRI GIS technology and Microsoft Office Suite (Outlook, Word, and Excel).**
• Valid Class 5 BC Driver’s License and the use of a reliable personal vehicle.

Preferences

• Ability to communicate effectively, exercising considerable courtesy, tact and diplomacy verbally and in writing to the community, other stakeholders and municipal employees.
• Experience with AutoCAD, FME, and graphic software such as Sketchup or Adobe Creative suite would be considered assets.
• Knowledge of relevant laws and procedures related to the design of streets and utilities, capital work projects, including MMCD.
• Ability to work independently with minimal supervision.
• Experience in working with the community and dealing with complaints and requests for services from the community.

Working Conditions

Work requires moderate physical exertion such as bending, lifting, carrying, pushing, and climbing. Work may be indoors or outdoors, including working in inclement weather. May be exposed to noise generated by power tools and passing vehicles.

Wages: Competitive pay commensurate with qualifications with excellent benefits

We wish to thank all interested applicants; however, only short-listed candidates will be contacted for interview.

Pursuant to the Tsawwassen First Nation Government Employees Act, first priority in hiring among qualified applicants will be given to Tsawwassen Members, second priority to spouses (as defined in s. 3 (1) of the BC Family Law Act) of Tsawwassen Members, and third priority to members of other First Nations. If you fall within one of these categories and you wish to have this voluntary information considered as part of your application, please indicate the applicable category in your cover letter.

Job Type: Full-time

Experience:

**GIS: 1 year (Preferred)**

[https://ca.indeed.com/jobs?q=GIS&l=Western%20Canada&start=10&vjk=97de4261e8ffdb79]
Exploration Geologist
HEG & Associates Exploration Services Inc. - Kelowna, BC
Fly-In/Fly-Out

**Start Date:** May 2019

**Experience:** 1 - 3 years of Exploration Geology. Must have remote field experience.

**Schedule / Terms of Employment:** Seasonal field work for 2019 (May-Oct). Fly in / fly out remote work within the province of BC. Seasonal contracts can develop into full time positions.

**About:** HEG & Associates provides a variety of services from reconnaissance development of properties to advanced stage exploration. We pride ourselves on being a highly trained, well prepared and safety-oriented geological team equipped for the challenging nature of mineral exploration. HEG & Associates understands that no two projects are the same, each program is designed uniquely in accordance to customer’s needs and property serviceability.

**Job Requirements:**

B.Sc. Geology or Earth Sciences.

OFA level 1 first aid or equivalent.

1-3 years of exploration geology work including Core Logging, Geo-Technical Procedures, QAQC Protocols, Geochemical Sampling, and Data Management.

GIS computing is an asset.

OFA level 3 first aid or equivalent is an asset.

Experience and safe practice around helicopters is an asset.

**Job Description:**

Our Exploration Geologists will be using their skill-set to process diamond drill core and/or RC chips in a geological and geo-technical context. Ensuring ethical and quality controlled processing and development of geological data is of the utmost importance.

Exploration Geologists may also be asked to preform geochemical sampling or assist in geophysical surveys.

Further, Exploration Geologists will play an integral role managing in-field contractors to maintain a fluid and efficient operation.

**Please send in a copy of your Cover Letter and Resume.**

All eligible candidates will be reviewed and contacted for a scheduled interview.

HEG & Associates will be attending the AME Roundup 2019, January 28-31. If you are attending the conference please stop by and meet some of our team at BOOTH 424.

**Job Type:** Fly-In/Fly-Out

**Experience:**

- Exploration Geology: 1 year (Preferred)

[https://ca.indeed.com/jobs?q=GIS&l=Kelowna%2C%20BC&vjk=e2c97b241b71fffd2](https://ca.indeed.com/jobs?q=GIS&l=Kelowna%2C%20BC&vjk=e2c97b241b71fffd2)
Civil Design Technologist
Monaghan Engineering & Consulting Ltd. - Vernon, BC

Monaghan Engineering & Consulting Ltd. (MEACL) is a thriving consulting engineering firm in Vernon, BC, the heart of the North Okanagan. We’re looking for a civil design technician/technologist, ideally with construction and/or inspection experience (**GIS would be an asset**) to join our established team. The ideal candidate will have the skills and enthusiasm to hit the ground running on new and existing projects.

**Responsibilities:**

- Compile topographical and site information data;
- Carry out CAD drafting and computer-aided design tasks for municipal engineering projects;
- Evaluate design options using Civil 3D;
- Perform detailed design calculations and analysis for project infrastructure;
- Prepare detailed cost estimates based on recent project costs and municipal fees;
- Review and document construction inspection activities on MEACL design projects;
- **Manage field data, test results, drawing markups, and geotechnical testing reports, consistent with our OQM certification procedures;**
- Liaise with clients, contractors, and approval agencies to move projects forward;
- Visit project sites as required.

**Qualifications:**

- AScT designation or diploma in civil engineering technology from an ASTT accredited school.
- Minimum 1-2 years’ experience in municipal/development consulting services industry.
- Practical design and construction experience in municipal engineering, including roads, drainage, water distribution, sewer, and utilities design.
- Construction and/or inspection experience.
- Strong working knowledge of Microsoft Office, AutoCAD, and Civil 3D.
- Familiarity with MMCD standards as used in the BC consulting environment would be beneficial.
- Valid driver’s license and vehicle.

**Other Skills and Attributes:**

- Excellent written and verbal communication skills.
- Strong organizational skills.
- **Team player** who is interested in long term growth and contributing to the success of the company.
- Ability to work overtime as required.

**About Us:**

MEACL offers a welcoming and well-balanced work environment. We’re small enough to enjoy a strong sense of teamwork without being weighed down by corporate bureaucracy. We’re also big enough, and have the experience and reputation, to take on larger municipal and land development projects, and fortunately, busy enough to not have time to create a website. Of the current staff, 3 have worked with the principal for over 12 years each.

**What You Can Expect:**

- A variety of interesting projects with both long-term and newer clients
- A great team of approachable people with over 100 years of combined experience
- A busy but cooperative climate where success is the common goal
• A short walk from the office to coffee shops, restaurants, and other amenities in Vernon’s
downtown core
• Year-round enjoyment of everything the Okanagan Valley has available including skiing (Silver
Star Mountain is 25 mins from the office), boating, fishing, golfing, fine dining and easy access to
Kelowna airport
• If you live in Vernon proper, and you are not at work within 15 minutes, you obviously took a
wrong turn
• Not to be at work between Christmas and New Years

What We Offer:

• A competitive compensation package including medical benefits
• A generous bonus program
• Flexible hours, depending on workload and deadlines
• Your own office with a real door
• Opportunities to relax and have fun: Christmas and summer parties, birthday lunches, outings for
sporting events, and casual get-togethers after work

Interested, qualified candidates are invited to submit a resume. Salary expectations are also welcome.

Only those candidates considered for the position will be contacted.

MEACL is an equal opportunity employer.

Job Type: Full-time

https://ca.indeed.com/jobs?q=GIS&l=Kelowna%2C%20BC&start=10&vjk=03be300440a2787b
Software Developer (C++)
MicroSurvey - Kelowna, BC

MicroSurvey Software Inc. develops and markets a family of specialized software for Land Surveyors, Civil Engineers, Mapping Professionals, Police Officers and Accident Reconstruction Specialists. We are located in West Kelowna, British Columbia and are part of Hexagon. Learn more at www.microsurvey.com.

We are looking for an experienced C++ Software Developer to join our team and advance their career! Our ideal candidate has 3+ years experience developing software in a corporate environment, intermediate to advanced C++ development and other requisite skills, and a passion for building professional applications with a very large code base and many complex, interconnected components. We want someone with enough knowledge and experience to quickly become a productive and valued part of our team, with a commitment to continuous learning and the ability to learn and master new technologies. The position is based out of our West Kelowna office.

Responsibilities

- You will develop software solutions in a team environment, in accordance with requirements and design
- You will write design specifications, in accordance with requirements and best-practices
- You will support existing products through defect investigation, resolution, and testing
- You will develop and maintain unit test cases to validate your code
- You will work as part of a diverse team to take new product ideas from concept to delivery
- You will commit to continuous learning in a fast-paced and quickly-evolving business
- You will provide technical expertise to the technical support team on critical customer issues

Required Qualifications & Aptitudes

- **You have a** bachelor's degree in Computer Science, Software Engineering, or equivalent
- You have 3-8 years software development experience in a corporate environment
- You take great pride in building robust software, and have excellent debugging and testing skills
- You have a solid understanding of data structures and algorithms
- You have a strong background in object-oriented programming (OOP) in any language
- You have intermediate/advanced knowledge and experience with C++
- You have intermediate/advanced knowledge and experience with Git, TFS, or other source control system
- You have any experience with at least one scripting language for automating trivial or routine tasks
- You enjoy the unique challenges of both writing new code and debugging problems in existing code
- You enjoy learning new technologies and will commit to continuous learning and education
- You enjoy solving logic problems or puzzles and can think your way through complex scenarios
- You enjoy solving mathematical problems and are not intimidated by geometry and trigonometry
- You have a strong interest in continually refining and improving your software development abilities
- You are results-driven and have a strong ability to work independently with minimal supervision
- **You can work collaboratively with diverse people in cross-functional teams**
Qualifications Considered an Asset

- You have knowledge and experience with Microsoft Visual Studio
- You have knowledge and experience programming with libraries such as MFC or STL
- You have knowledge and experience with Lisp and/or AutoLisp
- You have knowledge and experience with database design and queries
- You have knowledge and experience working with agile methodologies like Scrum
- You have familiarity with AutoCAD or similar programs
  - You have familiarity with geomatics, geodesy, surveying, mapping, GIS, construction, or forensics fields
  - You have familiarity with surveying equipment including GNSS receivers, total stations, or laser scanners

Apply

MicroSurvey is always on the lookout for qualified people who are looking for a unique and satisfying work environment. If you are interested in joining our company, please email careers@microsurvey.com with your cover letter and resume. Please add “Software Developer (C++)” to the email subject line.

https://ca.indeed.com/jobs?q=GIS&l=Kelowna%2C%20BC&start=10&vjk=7d9bcfa61c87de6f
### Curriculum Proposal Form

**New/Change to Course/Program – Okanagan Campus**

**Category:** 1

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<td>Faculty/School Approval Date:</td>
<td>20190405</td>
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<tr>
<td>Effective Session:</td>
<td>2018 W1</td>
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<tr>
<td>Date:</td>
<td>20181230</td>
</tr>
<tr>
<td>Contact Person:</td>
<td>Dr. Bernard Bauer</td>
</tr>
<tr>
<td>Phone:</td>
<td>250.807.9595</td>
</tr>
<tr>
<td>Email:</td>
<td><a href="mailto:bernard.bauer@ubc.ca">bernard.bauer@ubc.ca</a></td>
</tr>
</tbody>
</table>

**Type of Action:**
New Program (Minor in Geospatial Information Science)

To be considered in conjunction with the proposal to create a new subject code (GISC)

**Rationale:**

The growth and application of Geospatial Information Science (GIS) in academia, business, industry, and government has been exponential since the 1980s, and there is promise of continuing rapid expansion and utility. Geographic information systems (gis), which consist of the hardware (i.e., computers, monitors, storage modules) and software (e.g., Arc-GIS, QGIS, GRASS), are the technological workhorses that enable the gathering, manipulating, and viewing of geospatial data, but the concepts and theories lying beneath gis and their proper use are the domain of geospatial information science (GIS).

GIS has found widespread applicability in many academic disciplines, including Geography, Earth & Environmental Sciences, Conservation Biology, Ecology, Hydrology, Watershed Science, Forestry, Engineering, Management, Economics, Political Science, History, Sociology, Epidemiology, Social Work, Health Sciences, and more broadly in the areas of disaster prevention, fire management, risk assessment, floodplain mapping, transportation planning, real estate evaluation, crime prevention, electoral reform, and regional development planning. In the 21st century, it is critical that future global citizens graduating from UBC have an awareness and familiarity with modern tools and concepts that will allow them to understand and critically evaluate spatial relationships as drivers of change and as constraints on process dynamics involving human-nature interactions.

The GIS Minor begins to redress a void in our curricular offerings at UBC Okanagan by providing a formal training program so that students will no longer need to stumble through self-education in gis as the need arises, often with pitfalls and negative consequences. The credential is also attractive to potential employers of UBC graduates. There has been consistent feedback from employers in Earth Sciences and Environmental Sciences that GIS and DATA skills are in high demand, along with writing and communication.

The attached Executive Summary provides additional information on the justification for the GIS Minor.
The core courses of the GIS Minor are intended to be taken by students from wide range of disciplines and backgrounds. This proposal includes the creation of a new Subject Code within the Calendar, GISC (Geospatial Information Science), and this is reflected in the listings below for GISC 380, 381 and 480.

Proposed Academic Calendar Entry:

**Minor in Geospatial Information Science**

The Minor in Geospatial Information Science provides a formal introduction to foundational concepts, principles, and tools for gathering, storing, processing, analyzing, viewing, and portraying geospatial data. Practical applications and problem solving are stressed.

The minor is open to all majors in a Bachelor of Arts or Bachelor of Science program. The choice of electives enables students to specialize in an area of academic interest that complements their disciplinary major.

Students may earn a Minor in Geospatial Information Science by completing 30 credits, with at least 18 at the 300 or 400 level, as follows:

- 9 credits of core courses: GISC 380, GISC 381, and GISC 480;
- 21 credits of elective courses, with no more than 6 credits at the 100-level\(^1\) and with no more than 12 elective credits from a single discipline\(^2\) that is the same as the major, from the following list:
  - APSC 169\(^3\); COSC 101, 111, 121, 222, 304, 341, 360, 404, 435, 448\(^4\); DATA 301; EESC 111, 413, 437, 444, 448\(^4\); ENGR 332\(^3\); GEOG 109, 129\(^3\), 271\(^5\), 272, 427\(^3\), 437, 498\(^4\)

Draft Academic Calendar URL: n/a

Present Academic Calendar Entry: n/a
First-year electives can only be counted toward the GIS Minor by students not majoring in the discipline of the subject code (e.g., an EESC major may not count EESC 111 for the GIS Minor, but a COSC or GEOG major may do so).

For the purposes of the GIS Minor, a discipline is identified by the subject code (e.g., GEOG, EESC) with COSC and DATA combined as one discipline and ASPC and ENGR combined as another discipline.

For the purposes of the GIS Minor only, these courses will be counted as science credits.

Directed studies courses (3 credits only) can be counted toward the GIS Minor only if pre-approved by the program coordinator based on sufficient GIS content and learning potential.

Any equivalent course dealing with introductory statistical methods can be substituted (e.g., APSC 254, BIOL 202, PSYO 270, SOCI 271, STAT 230).

Double Counting of Credits restrictions apply. See Program Requirements.

Queries related to the GIS Minor should be addressed to the program coordinator.
# Curriculum Proposal Form

**New/Change to Course/Program – Okanagan campus**

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**Type of Action:**
New Subject Code/Subject Name

**Rationale:**
A new Subject Code/Subject Name is proposed for the Calendar: **Geospatial Information Science (GISC).**

The new course code is proposed in support of a proposal for a new Minor Program in Geospatial Information Science, and it will be used initially to designate the three core courses in that minor. Currently these core (science) courses, offered by the EEGS Department, are cross-listed as EESC and GEOG, but students from a wide range of disciplines register in them because of the valuable technical skills being taught. The intent is that the core GISC courses (and subsequent GISC courses to be added in the future) not be viewed as disciplinary specific to EESC or GEOG.

The core GISC courses will continue to count as science credits, under the direction of the EEGS Department. In the future, new course offerings under the GISC code will be evaluated according to scientific content, and will be classified as science, as appropriate, on a case-by-case basis by the program committee. This is consistent with the Minor being an interdisciplinary science program. New courses will also be assessed as to whether they will be 'core' or 'elective' and therefore required or not, respectively.
### Proposed Academic Calendar Entry:

**Courses by Subject Code**

This chapter provides an archive of courses offered by the UBC Okanagan campus. For current course sections and schedules, please visit the online Course Schedule.

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<td>ASTR</td>
<td>Astronomy</td>
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<td>BIOC</td>
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**Course Descriptions**

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### Draft Academic Calendar URL:


### Present Academic Calendar Entry:

**Homepage (draft) Course Descriptions Courses by Subject Name**

**Course Descriptions**

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**Course Descriptions**

Faculty of Arts and Sciences

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**New/Change to Course/Program – Okanagan campus**

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**Effective Session:** 2019 W1  
**Date:** 20181230  
**Contact Person:** Dr. Bernard Bauer  
**Phone:** 250.807.9595  
**Email:** b.bauer@ubc.ca |

**Type of Action:**  
Create new course

**Rationale:**  
EESC 380/GEOG 380 were proposed in 2016/2017 and approved by Senate in 2017.

This proposal creates a new course, in support of the proposed new Minor Program in Geospatial Information Science (GIS), by changing the course codes of EESC 380/GEOG 380 to a GISC (Geospatial Information Sciences) course code.

The EESC 380 and GEOG 380 course codes will be kept in credit exclusion statements and in other requirements until those students taking the EESC or GEOG versions have graduated.

**Proposed Academic Calendar Entry:**

GISC 380 (3) Fundamentals of Geographic Information Science I  
Spatial data representation; raster and vector models; spatial database structure; coordinate reference frames and projections; spatial statistics; metadata and data standards; associated technologies and data sources.  
Laboratory exercises require ArcGIS.  
Credit will be granted for only one of GISC 380, GEOG 370, GEOG 380, or EESC 380. [3-3-0]  
**Prerequisite:** Third-year standing.

**Draft Academic Calendar URL:**  
n/a

**Present Academic Calendar Entry:**  
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Curriculum Proposal Form
New/Change to Course/Program – Okanagan campus

Category: 1

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<td>Email:</td>
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Type of Action:
Create new course

Rationale:
EESC 381/GEOG 381 were proposed in 2016/2017 and approved by Senate in 2017.

This proposal creates a new course, in support of the proposed new Minor Program in Geospatial Information Science (GIS), by changing the course codes of EESC 381/GEOG 381 to a GISC (Geospatial Information Sciences) course code.

The EESC 381/GEOG 381 course codes will be kept in credit exclusion statements and in other requirements until those students taking the EESC or GEOG versions have graduated.

Proposed Academic Calendar Entry:
GISC 381 (3) Fundamentals of Geographic Information Science II
GIS, remote sensing, GPS; geostatistics, spatial analysis, and neighbourhood analysis; visualization, 3D rendering, and animation; principles of geocoding; online mapping and open-source GIS; applied project and workflow management. Laboratory exercises require ArcGIS. Credit will be granted for only one of GISC 381, GEOG 381, or EESC 381. [3-3-0]
Prerequisite: One of GISC 380, EESC 380, GEOG 380.

Draft Academic Calendar URL:
n/a

Present Academic Calendar Entry:
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Curriculum Proposal Form
New/Change to Course/Program – Okanagan campus

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</table>

| Date: | 20181230 |
| **Contact Person:** | Dr. Bernard Bauer |
| **Phone:** | 250.807.9595 |
| **Email:** | bernard.bauer@ubc.ca |

**Type of Action:**
New course

**Rationale:**
A new Minor in Geospatial Information Science is being created with three core courses. Two of these course are currently offered under the course codes GEOG/EESC 380 and GEOG/EESC 381; a proposal is going forward to change the course codes to GISC 380 and GISC 381. The proposed new course will be the third core course, and its purpose is to provide hands-on problem solving experience using real-world, applied projects. The course has been taught twice under the EESC 418 Special Topics rubric by a GIS Specialist who is an adjunct professor in the Department of Earth, Environmental, and Geographic Sciences. Feedback from students has been uniformly positive, and it is time to ‘regularize’ this course.

The course will be listed under the GISC Subject Code, the creation of which is part of the GIS Minor package.

**Proposed Academic Calendar Entry:**

| GISC 480 (3) Practical Applications in GIS |
| Application of GIS principles and tools in a problem solving context. Case studies are used as the basis for student projects, emphasising data sourcing, data analysis, decision-support, and project management skills. Laboratory and term projects require ArcGIS. [3-3-0] |
| **Prerequisite:** One of GISC 381, EESC 381, GEOG 381. |

**Draft Academic Calendar URL:**
n/a

**Present Academic Calendar Entry:**
n/a
# Curriculum Proposal Form

**New/Change to Course/Program – Okanagan campus**

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<td><strong>Date:</strong></td>
<td>2019/02/15</td>
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<tr>
<td><strong>Contact Person:</strong></td>
<td>Dr. David Geary</td>
</tr>
<tr>
<td><strong>Phone:</strong></td>
<td>250.807.8165</td>
</tr>
<tr>
<td><strong>Email:</strong></td>
<td><a href="mailto:david.geary@ubc.ca">david.geary@ubc.ca</a></td>
</tr>
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</table>

| **Type of Action:** | New Course |

## Rationale:

This new course examines the relationship between history, social memory, and the cultural politics of heritage in the modern and contemporary era. There is a growing field of international scholarship around the different kinds of heritage, including natural, cultural, and mixed (as well as tangible and intangible forms) that raise important questions and challenges around appropriation, ownership, decolonization, authority, and the politics of identity in local, national, and global contexts. This course will add to our 400-level offerings in the program and can be taught by two existing faculty. The course also allows students to pursue advanced research in targeted areas at the upper levels and will likely be of interest to students in other departments and programs such as Indigenous Studies, History, and Cultural Studies.

## Proposed Academic Calendar Entry:

**ANTH 427 (3) (In)Visible Histories: Heritage and the Politics of Memory**

Critical look at the politics of heritage (both tangible and intangible) and how it shapes the construction and deconstruction of social memory. How the ownership of the past is shaped by colonial practices, state formation and international conventions. [3-0-0]

**Prerequisite:** One of ANTH 100, ANTH 103 and third-year standing.

## Draft Academic Calendar URL:

n/a

| Present Academic Calendar Entry: | n/a |
Curriculum Proposal Form
New/Change to Course/Program – Okanagan campus

Category: 1

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<th>Date: 12 February 2019</th>
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<tbody>
<tr>
<td>Dept./Unit: Department of Earth, Environmental and Geographic Sciences</td>
<td>Contact Person: Dr. Nichol</td>
</tr>
<tr>
<td>Faculty/School Approval Date: 20190319</td>
<td>Phone: 250.807.8087</td>
</tr>
<tr>
<td>Effective Session: 2019W</td>
<td>Email: <a href="mailto:craig.nichol@ubc.ca">craig.nichol@ubc.ca</a></td>
</tr>
</tbody>
</table>

Type of Action:
New Course

Rationale:
This course offers students a solid foundation in the scientific method, geosciences, the historical geology of Canada, and the science behind the distribution of natural resources.

The intention is that students taking the course will gain an appreciation of the foundations of the scientific endeavour, the fundamentals of Earth Science, and the richness of Canada's physical landscape and natural resources. Students will investigate how scientific thinking and the scientific method are applied in the geosciences to determining geological history, the evolution of life, and understanding natural resources. They will gain an appreciation for Deep Time, and hence a greater appreciation for the nature and time scale of current changes on Earth. This will help students to become better informed citizens for scientific decision making involving our natural environment and resources.

The course is appropriate for those who may choose to only take one course in geoscience to increase their ability to think critically about geoscience-related issues facing our society.

The course will not be a program requirement of the EESC and FWSC majors, which will retain “Two of EESC 101 Environmental Science, EESC 111 Earth Science and EESC 121 Earth History” as the foundational requirements of the discipline. The course will be available as an elective.
**Proposed Academic Calendar Entry:**

EESC 104 (3) *Four Billion Years and Counting*

The geological history of what is now Canada from the formation of Earth to the present day. Practical applications of geology to Canadian society and the economy. [3-0-0]

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UBC’s Okanagan campus – Curriculum Proposal Form

Version: August, 2015
## Curriculum Proposal Form

**New/Change to Course/Program – Okanagan campus**

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<td><strong>Date:</strong> 12 February 2019</td>
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<tr>
<td><strong>Contact Person:</strong> Dr. Craig Nichol</td>
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<td><strong>Phone:</strong> 250.807.8087</td>
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<td><strong>Email:</strong> <a href="mailto:craig.nichol@ubc.ca">craig.nichol@ubc.ca</a></td>
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### Rationale:

This course will offer students a solid scientific foundation in the earth and environmental sciences with an emphasis on natural disasters. It provides a comprehensive review of the major risks to society imposed by the physical world. Students taking the course will gain the foundations for life-long geoliteracy. They will learn the essentials of how the functioning of Earth, the atmosphere and oceans can affect us, including the relevant human interactions. This will help students to become better informed global citizens for scientific decision making involving our natural environment.

The course covers a range of topics from the geosphere, atmosphere and hydrosphere. For each topic, the fundamental science pertaining to that topic is taught, followed by the specific science related to the phenomenon in question. Each topic will examine how the scientific method has been used to help understand the fundamental processes and phenomena under discussion. EESC 106 is appropriate for those who may choose to only take one course in geoscience to increase their ability to think critically about geoscience-related issues facing our society or how the geosciences might impact their future life and career. The course content is applicable to students from across the globe and uses examples from all over Earth but with some emphasis on Canadian examples.

The course will not be a program requirement of EESC and FWSC majors, which will retain “Two of EESC 101 Environmental Science, EESC 111 Earth Science and EESC 121 Earth History” as the foundational requirements of the discipline. The course will be available as an elective.

An essentially identical course is currently offered on the Vancouver campus as EOSC 116 The Catastrophic Earth: Natural Disasters. This is a 3-credit lecture-only science course open to students in any degree. The content, structure, purpose, textbook and outcomes of the course that is being proposed are very similar to those of EOSC 116.
<table>
<thead>
<tr>
<th>Proposed Academic Calendar Entry:</th>
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<tr>
<td><strong>EESC 106 (3) The Catastrophic Earth</strong>&lt;br&gt;The causes, physical characteristics, and consequences of natural disasters such as earthquakes, volcanic eruptions, severe weather, landslides, tsunamis, floods, meteor impact, and mass extinctions. [3-0-0]</td>
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## Curriculum Proposal Form

### New/Change to Course/Program – Okanagan campus

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<td><strong>Date:</strong> 2019/01/17</td>
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<tr>
<td><strong>Contact Person:</strong> Dr. Giovanni Grandi</td>
</tr>
<tr>
<td><strong>Phone:</strong> 250.807.8605</td>
</tr>
<tr>
<td><strong>Email:</strong> <a href="mailto:giovanni.grandi@ubc.ca">giovanni.grandi@ubc.ca</a></td>
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<td><strong>Type of Action:</strong> New Course</td>
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### Rationale:
This course fills a gap in the economics and philosophy curricula by introducing students to the foundations, views, and methods of a school of economics only briefly discussed in the 200-level course on the history of economic thought. The course is of interest to both economics and philosophy students, since a study of the Austrian School of Economics is an excellent occasion for introducing students to debates on the philosophical foundations and the methodology of social sciences.

This course has been offered since 2017W and cross-listed as ECON and PHIL special topics courses. Growing interest of students, as reflected in the growth in enrolment, suggests that this course be included in the regular course offerings.

### Proposed Academic Calendar Entry:

**ECON 338 (3) Introduction to the Austrian School of Economics**  
Introductory analysis of the Austrian School of Economics—known for its systematic defence of private property rights, sound money, free enterprise, and free markets. Credit will be granted for only one of ECON 338 or PHIL 361. [3-0-0]  
**Prerequisites:** Either all of ECON 101, ECON 102 or 3 credits of PHIL. Third-year standing.  
**Equivalency:** PHIL 361.

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**Proposed Academic Calendar Entry:**

PHIL 361 (3) Introduction to the Austrian School of Economics
Introductory analysis of the Austrian School of Economics—known for its systematic defence of private property rights, sound money, free enterprise, and free markets. Credit will be granted for only one of PHIL 361 or ECON 338. [3-0-0]

**Prerequisites:** Either 3 credits of PHIL or all of ECON 101, ECON 102. Third-year standing.

**Equivalency:** ECON 338.

**Draft Academic Calendar URL:**

n/a

**Present Academic Calendar Entry:**

n/a
Curriculum Proposal Form
New/Change to Course/Program – Okanagan campus

Category: New Course

Faculty/School: IKBSAS
Dept./Unit: HS
Faculty/School Approval Date: 2019/03/19
Effective Session: 2019W

Date: 02/01/2019
Contact: J. Vernet for T. Paulson
Phone: (250) 807-9326
Email: julien.vernet@ubc.ca

Type of Action: New Course

Rationale:
This course has been designed to help students gain a sense of interrelated developments in climate, agriculture, and cities and will also support the proposed new Bachelor of Sustainability Program. Through readings, writing, research and discussion, students will learn how environmental historians shed new light on how major issues such as climate change impact local, national and global environments. Case studies will include historical responses to climate change in Europe and North America, the transformation of Indigenous foodways, and the impact of urban development.

Proposed Academic Calendar Entry:

HIST 106 (3) Global Environmental History
The impact of humans on the environment, and the ways in which the physical environment has shaped human history: climate, agriculture, energy use, and urbanization. [3-0-0]

Draft Academic Calendar URL: n/a
Present Academic Calendar Entry: n/a
### Curriculum Proposal Form

**New/Change to Course/Program – Okanagan campus**

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<tr>
<td>Contact:</td>
<td>J. Vernet for T. Paulson</td>
</tr>
<tr>
<td>Phone:</td>
<td>(250) 807-9326</td>
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<tr>
<td>Email:</td>
<td><a href="mailto:julien.vernet@ubc.ca">julien.vernet@ubc.ca</a></td>
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**Rationale:**

This course has been developed to help students gain a sense of some of the key events in the environmental history of North America and will also support the proposed Bachelor of Sustainability Program. Students will learn how environmental historians have changed our understanding of the past and specifically of the key concepts and ideas they developed to do so. These insights will give students the tools to understand and assess what is at stake in the debates over “the environment” today.

**Proposed Academic Calendar Entry:**

**HIST 395 (3) Environmental History of North America**

*An thematic overview of the social, economic, and political consequences of environmental change in Canada and the United States, focusing primarily on the nineteenth and twentieth centuries. [2-0-1]*

**Prerequisite: 3 credits of HIST and third-year standing.**

**Draft Academic Calendar URL:**

n/a

**Present Academic Calendar Entry:**

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**Curriculum Proposal Form**  
**New/Change to Course/Program – Okanagan campus**

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**Rationale:**

This course provides an overview of geographical approaches to research in socio-ecological sustainability. It provides exposure to the variety of methods and strategies for research design, presentation and critical analysis in geography that is only briefly introduced in lower-division GEOG courses. The course draws on the wide range of expertise in the GEOG program through weekly guest lectures. It is important to add this overview to students in GEOG’s second year offerings to develop research design and presentation skills and ensure greater student success in upper-division GEOG courses. Cross-listed with SUST 201, the course will also support the proposed new Bachelor of Sustainability (B.Sust.) program to introduce students to the variety of methods available to conduct and present research, and the key requirements of sound research design. This program fits with UBC’s growing focus on experiential learning and multidisciplinary approaches to knowledge.

Once the B. Sust. program is implemented, this course will become part of the core program. As a core course for the B.Sust. program, the course design aligns with several of the UBC Strategic Plan’s strategies (Strategy 2, Strategy 3, Strategy 12, and Strategy 14). Additionally, the course design aligns with UBC Okanagan’s Aspire goals for “Transformative Students Learning,” “Community Engagement,” and “Place.”

**Proposed Academic Calendar Entry:**

GEOG 201 (3) Introduction to Research in Sustainability and Geography

Introduces skills required to conduct, critically assess, and present research in geography and sustainability. Develops research skills from problem definition through to design and execution of research projects, including how to identify and categorize scholarly articles; identify research questions; and, collect, analyze, and present data and research findings. Credit will be

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<tr>
<td>SUST 201 (3) Introduction to Research in Sustainability and Geography Introduces skills required to conduct, critically assess, and present research in geography and sustainability. Develops research skills from problem definition through to design and execution of research projects, including how to identify and categorize scholarly articles; identify research questions; and, collect, analyze, and present data and research findings. Credit will be granted for only one of SUST 201, GEOG 201, or GEOG 371. [2-0-1] Prerequisite: none.</td>
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## Curriculum Proposal Form

### New/Change to Course/Program – Okanagan Campus

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### Type of Action: New course

### Rationale:

ENGL 156 is a new course that will be required for the Environmental Humanities concentration of the proposed Bachelor’s degree in Sustainability, and a recommended elective for other concentrations in that proposed degree. This course further expands the ENGL 15X offerings in literature and narrative.

### Proposed Academic Calendar Entry:

**ENGL 156 (3) Environmental Literature**

- Introduction to literature and criticism on the environment.
- Develops skills in interpretation of texts. At least 35% of class time involves practice-based instruction in essay writing and research.

**Prerequisite:** One of a) 70% in English 12 or English 12 First Peoples; b) a 5 on the LPI; c) a passing grade in ENGL 009; or d) an acceptable equivalent. For a list of equivalency options consult the Current Students website at [http://students.ok.ubc.ca/enrolment-services/course-registration/first-year-english.html](http://students.ok.ubc.ca/enrolment-services/course-registration/first-year-english.html).

### Draft Academic Calendar URL:

N/a

### Present Academic Calendar Entry:

N/a
## Curriculum Proposal Form

**New/Change to Course/Program – Okanagan campus**

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<tr>
<td>Date:</td>
<td>2019/02/26</td>
</tr>
<tr>
<td>Contact Person:</td>
<td>Dr. Alwyn Spies</td>
</tr>
<tr>
<td>Phone:</td>
<td>250.807.8126</td>
</tr>
<tr>
<td>Email:</td>
<td><a href="mailto:alwyn.spies@ubc.ca">alwyn.spies@ubc.ca</a></td>
</tr>
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</table>

### Type of Action:

New Course – WRLD 382

This is a proposed new course for the World Literatures area, meant to bridge the gap between language classes and literature classes via experiential learning & intercultural communication skills training. It is being planned, in consultation with GoGlobal, the International Students Office (Intercultural Development Certificate), and the Student Experience Office (Community Service Learning), as a course that can be taught fully online and/or face-to-face. It will available to all UBC students, including incoming/outgoing GoGlobal students, international students based here, and “non-travelling” domestic students. Students not on GoGlobal programs while they take the course will do their experiential work locally, with cross-cultural organizations or groups. “Travelling” and “non-travelling” on-campus students will be paired up to do their projects so that this course can also explore (and bridge) the cultural divide between international and domestic students.

Parts of the experiential component will require REB approvals, and UBC Legal is being consulted regarding liability, safety/risk, and insurance issues for the international (i.e., outside of Canada) experiential aspect. Whenever possible, students will be sent to pre-vetted community organizations. The course development has been funded by a Teaching and Learning development grant from the Provost’s office, with matching funds from the FCCS Dean’s Office. Many faculty members in LWL are involved in the creation of the online discussions/lectures, and the online course materials will be made available for any interested/qualified LWL faculty to teach with.

### Proposed Academic Calendar Entry:

**WRLD 382 (3) Cross-cultural Travel Narratives**

*Experiential learning course combining introduction to intercultural communication theory and the literary study of cross-cultural migration narratives.*

*Prerequisite: Third year standing.*

### Draft Academic Calendar URL:

URL

not required for individual courses

### Present Academic Calendar Entry:

N/A
3 May 2019

To: Senate

From: Learning and Research Committee

RE: Candidates for Emeritus Status (approval)

The Learning and Research Committee recommends approval of the following motion:

**Motion:** That the attached list of individuals for emeritus status be approved and that, pursuant to section 9(2) of the University Act, that they be added to the Roll of Convocation.

Respectfully submitted,

Dr. Deborah Roberts, Chair
Senate Learning and Research Committee
### Candidates for Emeritus Status: May 2019

<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Faculty</th>
<th>Emeritus Title</th>
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<tbody>
<tr>
<td>Janet</td>
<td>MacArthur</td>
<td>Creative and Critical Studies</td>
<td>Associate Professor Emeritus of English</td>
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<td>Peter</td>
<td>Urmetzer</td>
<td>Arts and Sciences</td>
<td>Associate Professor Emeritus of Sociology</td>
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<td>Murray</td>
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<td>Arts and Sciences</td>
<td>Associate Professor Emeritus of Physics</td>
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<tr>
<td>Linda</td>
<td>Alla</td>
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<td>Associate Professor Emeritus of Physics</td>
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<tr>
<td>Carolyn</td>
<td>MacHardy</td>
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<tr>
<td>Linda</td>
<td>Hatt</td>
<td>Arts and Sciences</td>
<td>Associate Professor Emeritus of Psychology</td>
</tr>
<tr>
<td>Mary E.</td>
<td>Forrest</td>
<td>Arts and Sciences</td>
<td>Associate Professor Emeritus of Biology</td>
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To: Senate  
From: Senate Nominating Committee

Date:  6 May 2019

A) Senate Membership

With the change in offices between Dr Buszard and Dr Mukherjee-Reed, the latter has now assumed the seat held on the Senate by the former as Academic Vice-President. To restore the status quo ante with regards to Senate, the Committee would recommend that voting membership on Senate be granted to the Deputy Vice-Chancellor, and that the now-redundant voting membership held by the former “Provost (UBC Okanagan)” position be withdrawn. Therefore the Committee recommends:

That, pursuant to Section 35.1(3)(j) of the University Act, the position of “Deputy Vice-Chancellor and Principal (UBC Okanagan)” be added to the membership of Senate as an ex officio, voting member; and

That the position of “Provost (UBC Okanagan)” be removed from the membership of Senate.

The Nominating Committee is aware that there are many other policy and regulatory instance of these titles needing adjustment and understands that the Secretary to Senate is working with the University Counsel and Deputy Vice-Chancellor to address any consequential changes in other documents.

B) Vice-Chair of Senate

Dr Buszsard’s term as Vice-Chair of Senate ends on 31 May 2019. The University Act prohibits a person from serving more than two consecutive terms as Vice-Chair of Senate. The Okanagan Senate has indicated a desire, as codified in its Rules and Procedures, for the Deputy Vice-Chancellor to serve as Vice-Chair as often as possible. As a result, in the summer months, the practice of the Senate has been to elect another senator as Vice-Chair. Traditionally, that has been the longest-serving committee chair, with ties broken alphabetically by surname. On that basis, the Nominating Committee would recommend:

That Dr Peter Arthur be elected as Vice-Chair of Senate until 31 August 2019 and thereafter until replaced.
C) President’s Advisory Committee for the Selection of a Deputy Vice-Chancellor (Policy 18)

Pursuant to section 2.1 of the procedures to Policy 18, the Senate must appoint four (4) persons to the search committee for the next Deputy Vice-Chancellor, with the proviso that at least one senator must be a faculty member, and at least one must be a faculty member or student on senate. The Nominating Committee would thank the many members of Senate who expressed an interest in these positions. The Committee considered experience, disciplinary balance, and the structure of the committee in making its recommendations. The Committee is pleased to recommend:

That Ms Tamara Ebl, Dr Barbara Rutherford, Dr Jennifer Jakobi, and Ms Heather Berringer be appointed to the President’s Advisory Committee for the Selection of a Deputy Vice-Chancellor for the Okanagan campus.

D) President’s Advisory Committee for the Selection of a Vice-President, Human Resources (Policy 34)

Pursuant to Section 1.1 of the Procedures to Policy 34, the Senate must appoint 1 Faculty Members to the search committee for the next Vice-President Human Resources. That Faculty Member is not required to be a member of Senate. The Committee considered experience and the structure of the committee in making its recommendation. The Committee is pleased to recommend:

That Dr Gino DiLabio (Professor and Head, Chemistry), be appointed to the President’s Advisory Committee for the Selection of a Vice-President Human Resources.

E) Appointments to Committees of Senate and the Council of Senates

The Senate Nominating Committee is responsible for recommending the membership of all other committees of Senate. Traditionally, the Committee has deferred to the students for recommendations for their committee appointments. The students have met and agreed internally upon their recommendations, and thus the Nominating Committee is pleased to recommend:

That Mr Jesse Lafontaine and Ms Laura Mudde be appointed to the Council Budget Committee Committee until 31 March 2020 and thereafter until replaced, to replace Ms Brittany MacBean and Mr Jassim Naqvi;

That Mr Jesse Lafontaine, Ms Gurjot Sidhu, and Ms Abbey Shields be appointed to the Academic Policy Committee until 31 March 2020 and
thereafter until replaced, to replace Ms Lois Fraser, Mr Venedict Tamondong, and Ms Megan Harper;

That Mr Jassim Naqvi be appointed to the Admissions & Awards Committee until 31 March 2020 and thereafter until replaced, to replace Mr Uchenna Anyaoha;

That the term of Mr Shao Yuan Chong on the Admissions & Awards Committee be extended until 31 March 2020 and thereafter until replaced;

That Mr Venedict Tamondong and Ms Deborah Efretuei be appointed to the Agenda Committee until 31 March 2020 and thereafter until replaced, to replace Ms Lois Fraser and Mr Yeuting Chen;

That Mr Hogun Kang, and Ms Gabrielle Pintard-Newry be appointed to the Appeals on Standing & Discipline Committee until 31 March 2020 and thereafter until replaced, to replace Ms Rachelle Snider and Mr Jackson Traplin, with the proviso that those members who are currently considering an appeal remain as members until such time as that appeal is resolved;

That the term of Mr Jassim Naqvi on the Appeals on Standing & Discipline Committee be extended until 31 March 2020 and thereafter until replaced;

That Ms Simran Sandhu and Ms Geethma Jayathilake be appointed to the Curriculum Committee until 31 March 2020 and thereafter until replaced, to replace Mr Venedict Tamondong and Mr Andrew Pipke; and

That Ms Gabrielle Pintard-Newry and Ms Geethma Jayathilake be appointed to the Learning & Research Committee until 31 March 2020 and thereafter until replaced, to replace Ms Barb Dawson and Mr Andrew Pipke.

The Nominating Committee would note that with these appointments, there are still vacancies on the Learning & Research Committee (1 graduate student from Senate), the Council Elections Committee (1 student from Senate), and the Council of Senates itself (3 students from Senate). The Committee hopes that the students will make recommendations for those seats in September.

The Committee would further note for the attention of all senators that there is a vacancy for a faculty member or dean on the Learning & Research Committee, and for a convocation member on the Appeals of Standing and Discipline Committee. The Committee would welcome suggestions.