



**a place of mind**  
THE UNIVERSITY OF BRITISH COLUMBIA

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## Okanagan Senate

### THE SEVENTH REGULAR MEETING OF THE OKANAGAN SENATE FOR THE 2015/2016 ACADEMIC YEAR

**THURSDAY 31 MARCH 2016**

**3:30 P.M.**

**ASC 130**

- 1. Minutes of the Meeting of 25 February 2016 – Dr Martha Piper**  
(approval) (docket pages 3-10)
- 2. Business Arising from the Minutes – Dr Martha Piper** (information)
- 3. Remarks from the Chair and Related Questions – Dr Martha Piper** (information)
- 4. Presentation of Certificates of Appreciation for Student Representatives for 2015-2016 completing their terms on Senate – Dr Martha Piper** (information)
- 5. Remarks from the Chancellor – J. Lindsay Gordon**  
  
Update on Presidential Search
- 6. Remarks from the Deputy Vice-Chancellor and Related Questions – Prof. Deborah Buszard** (information)
- 7. Academic Building & Resources Committee – Dr Daniel Keyes**  
  
2016-2017 Draft Budget Presentation – Prof. Deborah Buszard with Associate Vice-President Robert Einarson (information) (docket pages 11-25)
- 8. Admission & Awards Committee – Dr Marianne Legault**  
  
New and Revised Awards (approval) (docket pages 26-28)
- 9. Joint Report of the Admission & Awards and Curriculum Committees – Dr Marianne Legault**  
  
Bachelor of Education Renewed Program and Suspension of Admission to the Secondary Teacher Education Program (approval) (docket pages 29-71)
- 10. Curriculum Committee – Dr Peter Arthur**  
  
Curriculum Proposal from the faculties of Applied Science and Arts & Sciences (approval) (docket pages 72-105)

## **11. Report from the Registrar – Dr Kate Ross**

Winter Session Standard Academic Meeting Pattern 2016W (information) (docket pages 106-107)

## **12. 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](mailto:facsec@mail.ubc.ca)

*UBC Senates and Council of Senate website: <http://www.senate.ubc.ca>*



# OKANAGAN SENATE

## MINUTES OF 25 FEBRUARY 2016

**DRAFT**

### Attendance

**Present:** Dr M. Piper (Chair), Dr D. Buszard (Vice-Chair) Dr K. Ross (Secretary), Mr B. Ali, Ms L. Allan, Dr P. Arthur, Dr L. Berg, Ms H. Berringer, Dean Pro Tem. G. Binsted, Dr R. Campbell, Dr J. Castricano, Ms C. Comben, Dr J. Corbett, Dean Pro Tem. R. Eggleston, Dr M. Evans, Ms A. Fleming, Ms E. Gallaccio, Chancellor L. Gordon, Dean M. Grant, Dr J. Jakobi, Dr J. Johnson, Dr D. Keyes, Dr D. Koslowsky, Dr C. Labun, Dr R. Lawrence, Dr S. Lawrence, Dr M. Legault, Ms N. Legg, Dr Y. Lucet, Dr V. Magnat, Dr C. Mathieson, Dr J. McEwan, S. McNeil, Ms L. Oleksewich, Mr D. Oyelese, Dean M. Parlange, Dr R. Sadiq, Ms S. Sneg, Dr J. Stites Mor, Dean R. Sudgen, Mr L. Tan, Ms N. Tasnim, Dr D. Walker, Mr L. Watt, Dr G. Wetterstrand, Mr T. Zhang.

**Regrets:** Dr P. Barker, Mr D. Bual, Dr D. Carter, Mr I. Cull, Ms L. Farrugia, Dr R. Lalonde, Ms L. Marshall, Dr S. O'Leary, Dr E. Taylor, Dean W. Tettey, Ms J. Vinek, Dr P. Wylie

**Recording Secretary:** Mr C. Eaton

### Call to Order

The Chair of Senate, Dr Martha C. Piper called the sixth regular meeting of the Okanagan Senate for the 2015/2016 academic year to order at 3:33 pm.

### Minutes of the Previous Meeting

Peter Arthur                                 }  
Marianne Legault                             }     *That the Minutes of the Meeting of 28 January 2016 be adopted as corrected:*

*Correction: Senator Comben was present.*

**Approved**

### Business Arising from the Minutes

#### RIVER TIMOTHY SIDLEY MEMORIAL AWARD

*See Appendix A: Sidley Award*

The Registrar informed Senate that she had been in contact with the family of Mr Sidley, and that they had alerted Senate to the award approved at the last meeting not fully meeting the

family's desire to ensure it will benefit students who had similar experiences to him while at UBC. At their request, she was requesting that the award terms be amended to better meet donor intent.

Deborah Buszard  
Marianne Legault

} *That Senate accept the revised award as listed and forward it to the Board of Governors for approval, and that a letter be sent to the donor thanking them for alerting the University to the issue.*

**Approved**

### Remarks from the Chair

The President advised that a report by an employment lawyer retained by UBC, Paula Butler, was received by the Board regarding recent incidents of sexual assault at UBC. The Executive Summary of the report is available online; however, the President wished to outline her conclusions for Senate.

For background, Dr Piper noted that Ms Butler was retained by the University in December as an independent expert to conduct a review. Her findings are based on extensive interviews and documents provided by interviewees. She interviewed over 20 individuals and had 5 major findings as follows:

- 1) That there has been no breach of UBC's policies, including Policy 3 nor the non-academic misconduct policies
- 2) There was a lack of clarity around the policies and processes relating to sexual assault. She attributed this lack of clarity to several factors, including the multitude of units involved, unclear processes for both those affected and some staff, and a lack of familiarity and knowledge of Policy 3 by several staff and students.
- 3) Miscommunication between units
- 4) Some of the lack of clarity and unnecessary delays were the results of human error. In one case it took 10 months to move a concern forward without reason, and in another an administrator failed to investigate a case when they could have done so.
- 5) Those involved in complaints all acted in good faith.

In addition, the report identified several areas of concern: our scope clause resulted in one complaint being viewed as outside of the University's purview. Secondly, if a former student has already graduated when a complaint is made we may not have jurisdiction. Thirdly, some students felt silenced while UBC was investigated due to faculty and staff having concerns about defamation. Finally, that the CBC's assertion that it took over 18 months to deal with a complaint was misleading: in that situation, a complainant raised a concern in January 2014 but did not file a formal complaint until December 2014 and that complaint did not go forward to PACSD as it was not viewed as sufficient grounds for discipline.

Overall, the President summarized the review as pointing to a system with flaws and the need for clear direction and a coordinated approach.

To address this matter, the University is establishing both a committee – to be led by Associate Vice-President Equity and Inclusion Sara-Jane Finlay and legal counsel Kimberley Beck, and a University panel lead by Law Professor Jeannete Bennedit. The draft policy will be developed by the committee and brought forward to Senate in May for discussion prior to the Board considering it in June.

Senator Sneg asked how the sexual assault committee would be formed and if students would be involved.

The President replied that it would be under Ms Findlay and Ms Beck and confirmed that there would be student representation.

In response to a question from Senator Oleskewich, the President advised that it does take time to investigate some complaints and sometimes people graduate in the interim period. The larger scope question was when activities occurred off campus.

### **Remarks from the Chancellor**

Chancellor Gordon advised that earlier in the month, the position profile was issued to the community along with a community update. The Chancellor suggested that the document was an especially good guide for both candidates and the public in understanding the complexity of UBC and thanked the Committee for its work. Chancellor Gordon reiterated his view that the best possible course of action was to proceed expeditiously to find a new President, and the committee was still on schedule to be able to make an announcement by June 30<sup>th</sup>, opining that this was still a realistic timeline. While it would be a challenge to have a new President in place by 1 September, the Committee was of the view that it would make sense to wait some months for the right person if needed. A common theme from the Committee's extensive consultations to date has been that the next President has to possess strong emotional intelligence, listening skills, transparency, and the ability to heal and build consensus across the University environment.

The Chancellor further advised that the Committee last met with our consultants on February 10<sup>th</sup> and at that meeting candidates who were identified by the community or who put their names forward were reviewed. We are now contacting potential candidates with a view to have a long list of 12 to 15 names by 8 March. It is early, but we have already seen an encouraging level of interest from quality candidates. By Mid-April the Committee hopes to have a short list of 4 to 6 persons.

Senator Oleskewich noted how strong the Interim President was on leaving June 30<sup>th</sup> and asked what the plan would be for an interregnum.

The Chancellor replied that we may need another Interim President; but if a person is identified ideally they could get involved when able. He suggested that it would be premature to consider who that may be at this time.

### Remarks from the Deputy Vice-Chancellor

Principal Buszard advised that, although not based on conduct or offices at the Okanagan, the Okanagan campus was taking the Butler report seriously and the Campus Executive was meeting on Monday to review current practices to ensure that they are as seamless as possible.

Finally, Professor Buszard noted that she represented UBC in BC's delegation to Ottawa with 60 or 70 business leaders along with the University of Victoria. She described it as "eye opening" to see the diversity of BC industries and how they wanted to interact with the Federal Government.

Senator Comben asked if there were any business leaders in Ottawa from the Okanagan?

Professor Buszard replied that representation tended to be done by industry associations rather than regions.

### Candidates for Degrees

<p>Miriam Grant Gordon Binsted</p>	}	<p><i>That the candidates for degrees and diplomas, as recommended by the faculties and College be granted the degrees for which they were recommended, effective February 2016, and that a committee comprised of the Registrar, the relevant deans, and the Chair of the Senate be empowered to make any necessary adjustments.</i></p>
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**Approved**

### Admissions & Awards Committee

The Chair of the Committee, Dr Marianne Legault presented.

#### **New Policy J-54: Admission for British Columbia Youth in Care**

*See Appendix B: Policy J-54.*

<p>Marianne Legault Shira Sneg</p>	}	<p><i>That Senate approve Policy J-54 Admission for British Columbia Youth in Care, to be effective upon the subsequent approval by the Vancouver Senate and effective for admission into the 2016 Winter Session and thereafter.</i></p>
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Senator Legault explained that the purpose of this policy was to give faculties the flexibility to admit former youth in care who meet the University's requirements but not necessarily our competitive averages or program-level requirements.

**Approved**

#### 2016-2017 ENROLMENT TARGETS

<p>Marianne Legault Catherine Comben</p>	}	<p><i>That Senate approve the 2016/2017 enrolment targets, as per section 27(2)(r) of the University Act, as outlined in the attached report.</i></p>
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Senator Legault noted that her committee had reviewed the proposal and recommends it to Senate for approval.

The Provost, Dr Cynthia Mathieson, and with permission of Senate, the Deputy Registrar, Mr Alfred Vogt, spoke to the report.

Senator Johnson noted that we were increasing graduate enrolment by 40 and asked if there were programs in mind for increased enrolment.

Senator Evans noted that Graduate Studies was already a workload issue and asked if this should be an area of concern.

Dean Grant replied that at this time our graduate applications are up by 33% and so yes, workload would be a concern. The key was which programs they were interested in. Growth in professional programs was different than growth in research based programs.

The Provost advised that a real issue for the graduate programs is program quality. As we evolve, we will need to consider what our true capacity for disciplinary graduate programs is and how many students we can properly support.

Senator Oleskewich asked if we would have to rescind offers if we went above our limits.

The Deputy Registrar replied that we would not rescind offers on that basis.

Senator Sneg noted that there was a drop in the B.Ed.E and asked for the reason why.

Dean Binsted noted that due to the confusion in the fall, we are expecting fewer students, but if there is more interest we can reconsider.

**Approved**

**REVISED AWARDS**

Marianne Legault }  
Catherine Comben } *That Senate accept the 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.*

**Approved****Curriculum Committee**

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

**JANUARY CURRICULUM PROPOSALS**

*See Appendix C: Curriculum Report*

Peter Arthur }  
Yves Lucet } *That Senate approve the new courses, revised programs and discontinued course brought forward from the Faculty of Arts and Sciences, the new courses and new course code brought forward from the Faculty of Creative and Critical Studies and the new course from the Faculty of Health and Social Development.*

**Approved****Nominating Committee**

The Chair of the Senate Nominating Committee, Dr Daniel Keyes, presented.

Daniel Keyes }  
Yves Lucet } *That Dr Jessica Stites Mor and Dr Jennifer Jakobi be appointed to the Senate Academic Policy Committee until 31 August 2017 and thereafter until replaced, to replace Ms Janette Vinek and Dr Daniel Salhani.*

**Approved**



Daniel Keyes  
Yves Lucet

}

*That Ms Shira Sneg be appointed to the Learning & Research Committee and Ms Lindsay Furugia be appointed to the Senate Academic Policy Committee until 31 March 2016 and thereafter until replaced.*

**Approved**

## **Report from the Provost**

### **ANNUAL REPORT ON THE LIBRARY**

The Provost introduced the Chief Librarian, Ms Heather Berringer.

Ms Berringer noted this report was 18 months long so as to align future reports with the calendar year.

The Librarian noted that by some measures the Okanagan campus Library was the busiest library at UBC. 33000 questions were addressed by the Okanagan library's staff, which represented 25% of library demand with only 11% of UBC students being at the Okanagan.

The Librarian noted the growth of the special collections and archives collection at the Okanagan campus now with over 2000 volumes, many transferred from Vancouver as they better met UBC Okanagan's mandate.

In terms of student support, the Librarian noted that the Academic Integrity Matters (AIM) program was launched to better support teaching and learning and help students become scholarly writers. Further, the Librarian noted that around 3.5% of UBCO students are registered with the DRC. In partnership with them and two anonymous donors, the Library has set up an assistive technology lab and a silent study environment.

UBC has opened an Innovation Library within the Okanagan Regional Library's Kelowna branch. This partnership is unique as far as we know, but it is engaging directly with community members to supplement their tradition public library with academic library abilities.

For next year, the library is working on revising instruction models, co-curricular programing, and a campus program map. In support of research, we are working to articulate a more formal research support strategy and framework. This would include data management, research metrics, and better/easier use of the institutional repository.

The Librarian noted that the currency exchange rate was a crisis for the Library. For every cent dropped, the library lost \$100000 in buying power across the UBC system. Many electronic collections are subscribed to in collections and those prices have increased dramatically. Journal prices are also increasing at a rate higher than inflations. This is a problem not just for libraries but also for all universities, and we need a collaborative strategy to deal with this issue.

Finally, the Librarian reminded Senate of its strong support from the students; noting that in 2014, the students held a referendum to contribute up to \$10 million to the library/learning centre.

Senator Evans asked if we had any success in finding external funding for the library expansion.

The President replied that this was our top funding priority for the Okanagan campus.

Senator Johnson asked how busy our library was compared to UBC Vancouver.

The Librarian replied that we were busier than any of the pure library spaces in Vancouver.

### **Adjournment**

There being no further business, the meeting was adjourned at 4:45 pm.



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March 18, 2016

**To: Okanagan Senate**

**From: Academic Building and Resources Committee**

**Re: Okanagan 2016/2017 Draft Budget Presentation**

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The Senate Academic Building and Resources Committee, which has coincidental membership in and also functions as the Council of Senates Budget Committee Okanagan Sub-Committee, is pleased to provide the 2016/17 Draft Budget to the Senate for information. Dr. Deborah Buszard, Deputy Vice-Chancellor, and Rob Einarson, Associate Vice-President Administration and Finance, will present the 2016/2017 Draft Budget which is subject to final approval by the University's Board of Governors.

The Committee has met monthly since September 2015 to offer advice on the development of 2016/2017 Budget for the Okanagan campus and to be kept abreast of its development. Issues around increases to International Student Tuition in the current budget model against declining funding from the province for the University sector have been considered by the Committee and have helped shape the current Draft Budget, which the Committee endorses.

The UBCO campus is entering into the second year of the new budget model, which incorporates certain drivers into the formula for allocating resources to individual Faculties. The implementation of the new model recognized that time would be needed for Faculties to adjust their activities to reflect their new financial resources. The Committee has some concerns about how the model operates and will continue to monitor the funding formula and the potential for future adaptations. The Committee also will continue to monitor the viability of certain facilities and projects on campus.

The Committee received a presentation delivered by the director of IMANT (Investment Management Trust), Jai Parihar detailing management of endowments. The materials presented are available to senators by request, with further information available at IMANT's website <http://www.ubcimant.ca/>.

The Committee hopes that the Senate will have an open discussion following the Draft Budget presentation. In addition, if there are any specific questions about the details of the budget materials circulated, we encourage Senators to send these questions directly to Rob Einarson ([rob.einarson@ubc.ca](mailto:rob.einarson@ubc.ca)) in advance of the meeting.

Respectfully submitted,

Dr. Daniel Keyes  
Chair, Senate Academic Building and Resources Committee and Council of Senates Budget Committee Okanagan Sub-Committee



# 2016/17 OKANAGAN CAMPUS BUDGET OUTLOOK

Okanagan Senate  
MARCH 31, 2016





# BUDGET FRAMEWORK AND STRATEGIES

- New Faculty tuition allocation budget model positive impacts:
  - Transition to a driver based model as opposed to a incremental model
  - Allows for longer term planning and strategic focus
  - Increased transparency and localized decision making
  - Introduction of a Faculty Budget retreat that allowed for more integrated strategic planning amongst Faculties
  - Looking to expand format next year to include specific administrative units
- Build on foundational investments made since 13/14 to further enhance academic, research and innovation capacity and student support.
- Leveraging partnerships where possible (i.e. Fortis, CFI)
- For the last 3 years administrative units have been asked to absorb wage increases. Continue to review Okanagan administrative portfolios seeking efficiencies and service improvements.
- Further integrate operations between campuses to identify further harmonization of service provision and to build on available synergies.
- Growing need to address risk and pressure areas (i.e. SFA, Deferred Maintenance, inflationary pressures)



# 2016/17 UBC BUDGET CONTEXT

## Okanagan Campus



- Campus is planning a balanced budget
- After 3 years of government cuts, no cuts expected in 2016/17
- Cumulative effect of the government cuts over the last 3 years has been \$3.1m (not adjusted for inflation)
- Government is funding general wage increases for settled bargaining groups (M&P and BCGEU)
- Planning on domestic enrolments to increase 2% over prior year
- Year one of a three year plan to increase international tuition (15%-15%-5%) for incoming students (Board Approved in December 2015).
- For budget purposes, conservatively planned 0% international FTE growth
- Maintaining a campus recurring contingency of \$2.1m
- No cuts anticipated, but limited resources for additional investments
- 2016/17 will see the establishment of a Strategic Initiatives Fund
- Strategic investments to be made for building research excellence and support for learning (align with Aspire and UBC priorities)

## Vancouver Campus

- Looking for ways to build a central contingency. Currently nil.
- Additional investments into Faculties to assist with structural deficits



## HISTORICAL CONTEXT

(\$m)	Fiscal Allocations		Change		
	12/13 Actuals	16/17 Budget	Fiscal (\$m)	% of Total	Growth (%)
Faculties	55.2	66.4	11.2	60.6%	20.3%
Provost and Vice Principal	10.5	11.0	0.5	2.7%	4.8%
Vice Principal Research	1.1	2.8	1.7	9.2%	154.5%
Deputy Vice-Chancellor	2.7	2.7	-	-	-
AVP Finance and Operations	16.8	19.1	2.3	12.4%	13.7%
AVP Students	4.8	5.9	1.1	5.9%	22.9%
Development and Alumni Engagement	1.4	1.6	0.2	1.1%	14.3%
Human Resources	1.2	1.4	0.2	1.1%	16.7%
Contributions to UBCV	2.2	3.0	0.8	4.3%	36.3%
Student Financial Aid	7.1	7.6	0.5	2.7%	7.0%
<b>Total Funding Allocations</b>	<b>103.0</b>	<b>121.5</b>	<b>18.5</b>	<b>100.0%</b>	<b>18.0%</b>



## OPERATING REVENUES (\$M)

<i>Core revenues</i>	<b>2015-16f</b>	<b>2016-17b</b>
<b>Government grant</b>	66.2	66.4
<b>Domestic tuition</b>	34.7	36.2
<b>International tuition</b>	19.1	21.0
<b>Research overhead</b>	0.9	0.9
<b>Ancillary dividends</b>	0.8	1.0
<b>Other income</b>	0.1	0.1
<b>Total:</b>	<b>121.8</b>	<b>125.6</b>

Annual revenue increase of \$3.8m:

- Government grant \$0.2m
  - Funding for general wage increases (M&P, BCGEU)
- Domestic tuition \$1.5m
  - 2% rate increase, 2% FTE increase
- International tuition \$1.9m
  - 0% FTE growth, 15% rate increase
- Ancillary dividends \$0.2m
  - Parking and Food Services





## OPERATING EXPENSES (\$M)

	2015-16f	2016-17b
Faculty Allocation	64.6	67.0
Student Services, Aid <sup>1</sup>	14.0	14.4
Facilities <sup>2</sup>	14.5	14.8
Learning Infrastructure <sup>3</sup>	15.8	16.7
Administration <sup>4</sup>	7.4	6.9
Research support	2.4	2.6
Alumni, Development	1.7	1.7
Community, Industry <sup>5</sup>	1.4	1.5
<b>Total:</b>	<b>121.8</b>	<b>125.6</b>

Annual expense increase of \$3.8m mainly due to:

- \$2.4m direct Faculty investment
- \$1.3m for Student Supports and Learning Infrastructure
- \$0.2m for Research support
- \$0.3m increase in Facilities support
- \$0.1 increased support for SFA

1. Student Services, Aid consists of Aid: \$7.3m in FY16 and \$7.6m in FY17, and Student Services: \$6.9m in FY16 and \$6.9m in FY17.
2. Facilities includes Campus Operations and Risk Management, Campus Planning and Development, and Debt Servicing
3. Learning Infrastructure includes IT, Library, CTL, and other investments in teaching.
4. Administration includes Deputy Vice-Chancellor's Office, Finance, Human Resources and other administrative services.
5. Community, Industry consists of University Relations, Centennial/Decennial projects



## 2016/17 BUDGET – CENTRAL REVENUE

<b>(\$m)</b>	<b>15/16 (Recurring)</b>	<b>16/17 (Recurring)</b>	<b>Change (Recurring)</b>
Provincial Grant	66.2	66.4	0.2
Domestic Tuition	34.7	36.2	1.5
International Tuition	19.1	21.0	1.9
Research Revenue	0.9	0.9	0.0
Other Income	0.1	0.1	0.0
Ancillary Dividends	0.8	1.0	0.2
<b>Total Revenue</b>	<b>121.8</b>	<b>125.6</b>	<b>3.8</b>



## 2016/17 BUDGET – FACULTY ALLOCATIONS\*

<b>(\$m)</b>	<b>15/16 (Recurring)</b>	<b>16/17 (Recurring)</b>	<b>Change (Recurring)</b>
Arts and Sciences	25.8	26.9	1.1
Applied Science	8.6	9.5	0.9
Creative and Critical Studies	9.2	9.4	0.2
Education	3.3	3.2	(0.1)
Health and Social Development	10.8	11.0	0.2
Management	4.4	4.5	0.1
<b>Total Faculty Allocations</b>	<b>62.1</b>	<b>64.5</b>	<b>2.4</b>

\* Based on Faculty expectations of student enrolments for 16/17. Subject to change depending on actual registrations.



## 2016/17 BUDGET – PROPOSED NON-FACULTY ALLOCATIONS

(\$m)	One-time	Recurring
International SFA	-	0.1
Learning and Academic Initiatives	0.4	0.5
Research	0.5	0.2
Campus Innovation	1.0	0.5
Student Supports	0.1	0.5
Community Engagement	0.1	-
<b>Total Allocations</b>	<b>2.1</b>	<b>1.8</b>



## CAMPUS 5 YEAR OUTLOOK (INCREMENTAL GROWTH OVER 15/16)

(\$m)	16/17	17/18	18/19	19/20	20/21	Total
International student tuition	1.9	2.8	2.6	1.7	1.7	10.7
Domestic tuition	1.5	1.4	1.1	0.7	0.7	5.4
Government grant*	-	-	-	-	-	-
Other income	0.2	0.2	0.2	0.2	0.2	1.0
<b>Incremental revenue</b>	<b>3.6</b>	<b>4.4</b>	<b>3.9</b>	<b>2.6</b>	<b>2.6</b>	<b>17.4</b>
Strategic Initiative Fund	(1.0)	(1.4)	(0.7)	(0.5)	(0.5)	(4.1)
Faculty allocations	(1.3)	(1.4)	(1.5)	(0.9)	(0.9)	(6.0)
Facilities and sustainability	(0.4)	(2.3)	(3.0)	(0.5)	(0.1)	(6.6)
Student Financial Aid	(0.1)	(0.2)	(0.2)	(0.1)	(0.1)	(0.7)
<b>Incremental allocations</b>	<b>(2.8)</b>	<b>(5.3)</b>	<b>(6.0)</b>	<b>(2.0)</b>	<b>(1.6)</b>	<b>(17.4)</b>
Remaining for strategic allocation	0.8	(0.9)	(1.5)	0.6	1.0	-

\*Note: It is expected the government grant will increase to fund GWI for groups that settled within PSEC mandate. Over a 5 year period it is expected that would be a total of \$1.4m and would flow directly to units to fund GWI increases.



## 5 YEAR FISCAL FUNDING COMPARISON (\$000'S)

(\$000's)	Fiscal Funding Allocations					% Change	
	12/13	13/14	14/15	15/16	16/17 <sup>2</sup>	FY16 - FY17	FY13 - FY17
<b>Faculties<sup>1</sup></b>	<b>55,151</b>	<b>62,314</b>	<b>62,908</b>	<b>64,419</b>	<b>66,396</b>	<b>3%</b>	<b>20%</b>
Arts and Sciences	22,497	25,427	25,637	25,989	26,873	3%	19%
Applied Science	6,539	7,487	7,521	8,681	9,606	11%	47%
Creative and Critical Studies	8,880	9,599	9,389	9,171	9,362	2%	5%
Education	3,915	4,166	4,214	3,410	3,261	(4%)	(17%)
Graduate Studies	411	506	664	799	811	2%	97%
Health and Social Development	8,951	10,292	10,877	10,772	10,970	2%	23%
Management	3,574	3,971	4,113	4,605	4,521	(2%)	26%
Salary and benefit provision	384	868	492	492	492	0%	28%
Faculty Strategic Initiative Fund	-	-	-	500	500		-
<b>Provost &amp; Vice Principal</b>	<b>10,305</b>	<b>9,020</b>	<b>9,908</b>	<b>9,919</b>	<b>10,897</b>	<b>10%</b>	<b>6%</b>
Provost Office	2,668	918	1,389	1,125	1,916	70%	(28%)
Centre for Teaching and Learning	672	796	814	803	769	(4%)	15%
Okanagan PAIR	186	243	293	278	438	57%	135%
Library	3,094	3,440	3,520	3,576	3,590	0%	16%
International Student Initiative (ISI)	727	832	808	780	839	8%	15%
Enrolment Services	2,958	2,791	3,084	3,207	3,195	(0%)	8%
TLEF support	-	-	-	150	150		-
<b>Vice Principal Research</b>	<b>1,097</b>	<b>963</b>	<b>1,785</b>	<b>2,517</b>	<b>2,815</b>	<b>12%</b>	<b>157%</b>
Vice Principal and Research Office	245	149	284	827	1,039	26%	324%
Office of Research Services	348	507	569	509	613	20%	76%
University Industry Liasion Office	200	185	158	232	232	(0%)	16%

1. Faculty allocations for 15/16 subject to final enrolments under tuition allocation model.
2. 16/17 allocations subject to Board Approval.



## 5 YEAR FISCAL FUNDING COMPARISON (\$000'S)

(\$000's)	Fiscal Funding Allocations					% Change	
	12/13	13/14	14/15	15/16	16/17	FY16 - FY17	FY13 - FY17
Institute for Healthy Living and Chronic Disease Prevention	62	64	64	70	73	5%	17%
Braes Institute (SARAHS)	-	-	50	51	51	0%	-
Okanagan Sustainability Institute	156	(29)	56	1	-	(100%)	(100%)
Animal Care	85	88	150	206	227	10%	168%
STAR	-	-	454	517	524	1%	-
Institute for Socio Economic Development							
ISED	-	-	-	50	-	(100%)	-
Community Engagement ICER	-	-	-	54	56	5%	-
Strategic Initiatives Fund	-	-	-	-	-	-	-
<b>Deputy Vice-Chancellor</b>	<b>2,749</b>	<b>2,431</b>	<b>2,428</b>	<b>2,603</b>	<b>2,672</b>	<b>3%</b>	<b>(3%)</b>
Deputy Vice Chancellor's Office	1,698	1,331	1,279	1,287	1,294	1%	(24%)
Learning Services	-	-	-	-	-	-	-
University Relations	753	1,101	1,149	1,286	1,378	7%	83%
Ceremonies	299	-	-	-	-	-	(100%)
Centennial Fund	-	-	-	30	-	(100%)	-
<b>AVP Finance and Operations</b>	<b>16,777</b>	<b>17,528</b>	<b>17,742</b>	<b>17,996</b>	<b>19,122</b>	<b>6%</b>	<b>14%</b>
AVP Finance and Operations Office	1,023	559	558	407	408	0%	(60%)
Facilities	4,686	5,004	5,041	5,156	5,622	9%	20%
Finance	1,076	1,428	1,720	1,728	1,738	1%	61%
Supply Management	-	-	-	-	-	-	-
Campus Operations and Risk Management	475	432	566	570	542	(5%)	14%
Campus Mail	145	177	194	200	181	(9%)	25%
Security	1,483	1,489	1,404	1,414	1,445	2%	(3%)
Campus Planning and Development	-	-	360	393	885	125%	-
Sustainability	421	400	355	506	357	(29%)	(15%)
Utilities	2,539	2,879	2,514	2,514	2,514	-	(1%)
IT, Media and Classroom Services	4,930	5,159	5,030	5,107	5,430	6%	10%



## 5 YEAR FISCAL FUNDING COMPARISON (\$000'S)

(\$000's)	Fiscal Funding Allocations					% Change	
	12/13	13/14	14/15	15/16	16/17	FY16 - FY17	FY13 - FY17
<b>AVP Students</b>	<b>4,806</b>	<b>6,067</b>	<b>6,025</b>	<b>5,811</b>	<b>5,849</b>	<b>1%</b>	<b>22%</b>
AVP Students Office	284	287	287	289	290	0%	2%
Athletics and Recreation	1,313	1,537	1,611	1,514	1,509	(0%)	15%
Community Service Learning	117	162	174	173	173	0%	48%
General Operating - AVP Students	380	591	270	119	342	187%	(10%)
Aboriginal Program and Services	334	371	389	409	497	21%	49%
Disability Resource Centre	220	415	400	616	430	(30%)	95%
Campus Life	419	526	613	522	469	(10%)	12%
Career and Co-op Services	133	46	73	60	67	10%	(50%)
Student Services	269	290	-	-	-	-	(100%)
Student Development	141	247	217	129	118	(8%)	(16%)
Learning Centre	143	214	218	167	161	(4%)	13%
Health and Wellness	397	630	793	803	775	(3%)	95%
Academic Advising	333	389	536	526	529	1%	59%
International Student Services	254	288	380	403	407	1%	60%
Go Global	68	74	64	82	83	1%	22%
<b>VP Academic</b>	<b>162</b>	<b>170</b>	<b>98</b>	<b>94</b>	<b>130</b>	<b>38%</b>	<b>(20%)</b>
Equity Office	162	170	98	94	130	38%	(20%)
<b>Development and Alumni Engagement</b>	<b>1,438</b>	<b>1,544</b>	<b>1,568</b>	<b>1,641</b>	<b>1,636</b>	<b>(0%)</b>	<b>14%</b>
Alumni	123	222	253	270	281	4%	128%
Development	1,315	1,322	1,315	1,372	1,355	(1%)	3%



# 5 YEAR FISCAL FUNDING COMPARISON (\$000'S)



(\$000's)	Fiscal Funding Allocations					% Change	
	12/13	13/14	14/15	15/16	16/17	FY16 - FY17	FY13 - FY17
<b>Human Resources</b>	<b>1,164</b>	<b>1,045</b>	<b>1,135</b>	<b>1,167</b>	<b>1,427</b>	<b>22%</b>	<b>23%</b>
Human Resources	1,164	1,045	1,135	1,167	1,427	22%	23%
<b>Student Financial Aid</b>	<b>7,119</b>	<b>7,181</b>	<b>7,202</b>	<b>7,319</b>	<b>7,590</b>	<b>4%</b>	<b>7%</b>
Student Financial Aid - Graduate	1,590	2,110	2,037	2,048	1,985	(3%)	25%
Student Financial Aid Undergraduate - Domestic	3,491	3,441	3,499	3,369	3,491	4%	
Student Financial Aid Undergraduate - International	644	971	1,066	1,302	1,514	16%	135%
Go Global	200	200	200	200	200		
Work Study/Work Learn	1,194	460	400	400	400		(66%)
<b>Campus-wide expenses</b>	<b>9,814</b>	<b>12,116</b>	<b>10,576</b>	<b>7,519</b>	<b>6,322</b>	<b>(16%)</b>	<b>(36%)</b>
Benefits	562	386	355	355	355	(0%)	(37%)
Contingency	36	763	1,874	1,377	(111)	(108%)	(406%)
Capital contingency	300	6,500	2,500	-	-	-	(100%)
Contributions to UBCV <sup>1</sup>	2,635	2,699	3,151	3,006	3,019	0%	15%
Debt servicing	2,704	3,424	2,613	2,701	3,051	13%	13%
Salary increase provision	1,699	(887)	(25)	0	0		(100%)
Other	4	117	5	25	25		608%
Int'l/Co-op allocation provision	1,874	(887)	103	55	(16)	(128%)	(97%)
<b>Total Funding Allocations</b>	<b>110,582</b>	<b>120,379</b>	<b>121,374</b>	<b>121,006</b>	<b>124,857</b>	<b>3%</b>	<b>13%</b>

1. Contributions to UBCV exclude impact of exchange fees of \$417k (beginning 13/14) and application fees (beginning 14/15).



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18 March, 2016

**To: Okanagan Senate**

**From: Admissions and Awards Committee**

**Re: New and Revised Awards (approval)**

- a) New award: Bette Mushta Award for Mature Students in Nursing
- b) New award: Global Citizenship Award in Nursing
- c) New award: Youth Futures Education Fund Bursary for Youth in Care
- d) New award: Coordinated International Experience Award
- e) New award: Dr. Spiro Yannacopoulos International Engineering Student Memorial Award
- f) Revised award: St Andrew's Anglican Parish (Kelowna) Bursary

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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: **Bette Mushta Award for Mature Students in Nursing**

A \$6,000 award is offered to a student in the School of Nursing in the Faculty of Health and Social Development at the University of British Columbia, Okanagan campus. The award is established in loving memory of Bette Mushta who returned to university as a student in her late 30s. The recipient will be a student in any year of study pursuing a Bachelor of Science in Nursing degree. Preference is given to a student who has been away from post-secondary education for a minimum of 10 years and who demonstrates an assessed financial need. The award is made on the recommendation of the School. (First Award Available in the 2015 Winter Session).

**b) Proposed Award Title: Global Citizenship Award in Nursing**

A \$1,000 award is offered by the School of Nursing faculty members to a fourth year student completing a Bachelor of Science in Nursing in the School of Nursing in the Faculty of Health and Social Development at the University of British Columbia, Okanagan campus. Preference is given to students who successfully complete a global health practicum either internationally, nationally or in B.C. where communities face health equity challenges. Candidates will be selected based on academic performance, excellence in professional nursing practice, and a reflective written submission. The award is made on the recommendation of the School. (First Award Available in the 2015 Winter Session)

**c) Proposed Award Title: Youth Futures Education Fund Bursary for Youth In Care**

Bursaries totaling \$18,000 are offered by the Youth Futures Education Fund held at Vancouver Foundation to provide assistance to students who are currently receiving UBC's Youth Aging Out of Care Tuition Waiver. This includes assistance with living costs, costs associated with educational programs, and/or assistance to meet financial emergencies. Bursaries are awarded, based on need, on the recommendation of Enrolment Services. (First Award Available in the 2015 Winter Session)

**d) Proposed Award Title: Coordinated International Experience Award**

Awards valued up to \$1,000 each have been made available by the Faculty of Applied Science for students who have been accepted into the Coordinated International Exchange (CIE) program. The awards are available to third or fourth-year students in the Bachelor of Applied Science program to support their travel expenses. The awards are made on the recommendation of the Faculty of Applied Science.

**Rationale:** This award is automatically provided to Applied Science students on both campuses who go on the Coordinated International Exchange (CIE) program and put forward for Senate approval by Enrolment Services.

**e) Proposed Award Title: Dr. Spiro Yannacopoulos International Engineering Student Memorial Award**

Awards of \$5,000 each are offered to continuing international undergraduate students in the School of Engineering in the Faculty of Applied Science at the University of British Columbia, Okanagan campus. This award is offered in the memory of Dr. Spiro Yannacopoulos and his 10 years of service to the School on Engineering on UBC's Okanagan campus. International students selected for these awards must have completed 30 credits towards their bachelor degree or be entering the second year of their program. Students must demonstrate strong academic achievement and engagement in their faculty, as well as the potential to make a scholarly contribution within their chosen field

of study. The scholarships are made on the recommendation of the School of Engineering within the Faculty of Applied Science.

**Rationale:** The International Student Initiative (ISI) currently awards selected international students on UBC's Okanagan campus within all Faculties with the International Student Faculty Award. In honour and memory of Dr. Spiro Yannacopoulos, the ISI is recommending the creation of a new award, Dr. Spiro Yannacopoulos International Engineering Student Memorial Award. The award would replicate the International Student Faculty Award with the exception that recipients *must* be students in the Faculty of Applied Science (Okanagan campus). Applied Science students would no longer be eligible for the International Student Faculty Award.

Revised Award:

(Previously-approved awards with changes in terms or funding source):

f) Award Title: **St Andrew's Anglican Parish (Kelowna) Bursary**

Existing description (2006):

A \$500 bursary is Bursaries totalling \$500 are offered by the St. Andrew's Anglican Church to an Aboriginal student entering second, third or fourth year ~~2nd, 3rd or 4th year~~ of full-time study at ~~t~~The University of British Columbia, Okanagan campus after completion of at least one previous year of full-time study at the University. The bursary is offered to an ~~an -student~~Aboriginal student ~~with-in~~ good academic standing who is in need of financial assistance, with preference for a student from the Okanagan region.

**Amended Description:**

A \$500 bursary is offered by the St. Andrew's Anglican Church to an Aboriginal student entering second, third or fourth year of full-time study at the University of British Columbia, Okanagan campus after completion of at least one year of full-time study at the University. The bursary is offered to an Aboriginal student in good academic standing who is in need of financial assistance, with preference for a student from the Okanagan region.

**Rationale:** The donor prefers a new focus on Aboriginal students.

Respectfully submitted,

Dr. Marianne Legault  
Chair, Admissions and Awards Committee



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18 March, 2016

**To:** Okanagan Senate

**From:** Admissions & Awards Committee and Curriculum Committee

**Re:** Joint Report Admissions and Curriculum Proposal (approval)  
- Bachelor of Education (B.Ed.) renewed program (Admissions and Curriculum)  
- Suspension of Admission to the Secondary Teacher Education Program (Admissions)

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The Admissions & Awards Committee and Curriculum Committee have reviewed the material forwarded to it by the Faculty of Education and encloses those proposals it deems ready for approval.

Therefore, the following is recommended to Senate:

**Motion:** *That Senate approve the admission and degree requirements for the renewed Bachelor of Education (B.Ed.) program and associated new courses brought forward from the Faculty of Education*

*And*

**Motion:** *That Senate approve the suspension of admission to the Secondary Teacher Education Program (STEP) for the 2017 Summer Session and thereafter.*

- a. New B.Ed. Calendar pages, sections:
  - i. Admissions Requirements
  - ii. Degree Requirements
  
- b. Curriculum Renewal: New Courses
  - i. EDUC 403 (6) Becoming a Scholar-Practitioner
  - ii. EDUC 431 (6) Developing a Pedagogical Stance
  - iii. EDUC 436 (5) Developing Curricular Vision for a Democratic Society: Educational Purposes, Policies, and Practices, Part I
  - iv. EDUC 437 (5) Developing Curricular Vision for a Democratic Society: Educational Purposes, Policies, and Practices, Part II

- v. EDUC 438 (4) Educating for the Whole Person
- vi. EDUC 440 (3) Field Experience: Literacies and Numeracies in Action
- vii. EDUC 441 (5) Field Experience: Formative Practicum
- viii. EDUC 442 (5) Community Field Experience
- ix. EDUC 444 (15) Field Experience: Final Practicum / Internship

For the Committees,

Dr. Marianne Legault  
Chair, Admissions and Awards Committee



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# EXECUTIVE SUMMARY

Renewed BEd Program Proposal

Faculty of Education

UBC's Okanagan campus

March 14, 2016

## 1. Overview

The Faculty of Education at UBC Okanagan was required to critically review and thoughtfully renew our Bachelor of Education (BEd) program. Through that process, we addressed changes in the BC curriculum and feedback from the field, literature, research and feedback from our graduates. As a result, we are not changing what we offer; rather we are changing how we offer it.

Key points of the renewed program include:

- Our degree remains the same – students will receive a BEd upon completion of the program;
- Our program retains its two pathways, and the existing Elementary Teacher Education Program (ETEP) and the Secondary Teacher Education Program (STEP) are redesigned to reflect current realities and employment factors. They are now being referred to as Teaching Children and Teaching Adolescents;
- Closer alignment with the directions of the revised provincial curriculum and the research on 21<sup>st</sup> Century learning. Additionally, the current reality is that the majority of novice teachers are being hired into more generalist roles, rather than into working as senior secondary subject specialists; and
- Our program retains its focus on developing pedagogical excellence.

### 1.1. Document Purpose

The purpose of this document is to present a detailed description of the renewed Bachelor of Education (BEd) curriculum offered by the Faculty of Education at UBC's Okanagan campus. This proposal includes an overview of the curricular revisions; structural revisions; a summary of the consultation process which informed these revisions; program and course change forms; syllabi; and supporting appendices. All proposed revisions are undertaken in alignment with the [UBC Strategic Plan](#). The Faculty of Education respectfully requests that the Okanagan Senate consider this renewed BEd curriculum proposal for approval to enable the renewed program to commence in August, 2017.

### 1.2. Background and Context

The decision to renew our Bachelor of Education program is driven by opportunity for change and innovation in relation to recent developments at UBC's Okanagan campus alongside attention towards student learning, research excellence, and community engagement. Our renewed program reflects substantial work by our Faculty's Design Committees, and it is informed by research and ongoing consultation with our school district partners and organizational bodies.



### **1.3. Consultation Process**

The consultation process began in August of 2014 with the formation of faculty design committees. Through charrettes, consults and conversations with our faculty, regional partners, school districts, the Dean of the Faculty of Education at UBC's Vancouver campus, the Teacher Regulation Branch, Teacher Qualification Service and the Ministry of Education, we have designed a research-informed program that builds on our current faculty and program strengths.

## **2. Credential**

Bachelor of Education

## **3. Location**

UBC's Okanagan campus

## **4. Faculty Offering Program**

The program will be offered in the Faculty of Education at UBC's Okanagan campus

## **5. Program Start Date**

The program will be offered in the 2017 academic year, beginning in late August 2017.

## **6. Program Completion Time**

The expected time for completion of the program is 16 months, over five continuous terms, totaling 60 credits.

## **7. Summary of the Renewed Program**

In keeping with UBC's encouragement to continually refine and update curricular offerings to reflect contemporary needs and contexts, this renewed program includes several key features and goals.

### **7.1. Renewed Program Features and Goals**

Through participation in this program, teacher candidates will:

- Engage in multiple, sustained field opportunities, including two practicum experiences and an alternative field experience envisioned to encourage teacher candidates to explore place-based learning, and build on undergraduate expertise;

- Engage in research as a habit of learning and teaching;
- Cultivate deep curricular knowledge crossing disciplinary boundaries and fostering an integrated approach to teaching and learning that incorporates the First Peoples' principles of learning;
- Understand assessment as an ongoing accompaniment of learning; and
- Be supported in ongoing professional growth as Scholar-Practitioners<sup>1</sup> while participating as part of a Professional Learning Network<sup>2</sup>.

In renewing our structure and curriculum, we will be able to:

- Prepare graduates for career growth in varied educational settings by providing a generalist base with the opportunity for specialization and continued professional learning within and beyond the duration of the program;
- Address the diversities in classrooms today and the changing roles of educators within the profession;
- Attend to budget constraints through program delivery and program development with a focus on achieving excellence and efficiencies; and
- Attend to BC's redesigned K-12 curriculum.

## **7.2. Contribution to UBC's Mandate and Strategic Plan**

UBC's Strategic Plan, *Place and Promise*, identifies three aspects of making UBC one of the world's best universities: preparing students to become exceptional global citizens, promoting the values of a civil and sustainable society, and conducting outstanding research to serve people. The renewed program understands these aspects to be key interrelated features within the program design and emphasizes the associated theoretical underpinnings alongside the practical implementations. Therefore, prospective educators study and practice to embrace responsibilities for learning contexts that incite future global citizens, who value inclusivity, justice, and local and global mindfulness. Future educators study and practice varied pedagogical approaches that support these values within content-rich, inquiry-based, learning experiences. Future educators are positioned to study their own (and others') developing educative practices, embedding research as a habit of all good teaching. As a whole, the renewed program is research-based with future educators encouraged to cultivate a scholar-practitioner identity as they situate their educative practices in the discourses and traditions of the field. Thus, the renewed program purposefully connects to the overarching UBC vision and fosters learning opportunities for students to practice living the vision of Place and Promise.

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<sup>1</sup> See Appendix I – Scholar Practitioner

<sup>2</sup> See Appendix II - Professional Learning Network

### **7.3. Learning Outcomes**

A set of learning outcomes that students and faculty can identify and articulate is key. Recursive experiences with these outcomes, grounded in opportunities to practice skills and modes of analysis, support deeper learning, and the development of expertise. These experiences must be afforded for prospective educators, helping them to invest in ongoing theory/practice opportunities and begin to make sense of their growing professional knowledge within the lived realities of varied educative settings. The following learning outcomes are embedded in our renewed program, encouraging teacher candidates to:

- Demonstrate teaching and learning as complex relational undertakings that exist within larger social, cultural, philosophical, historical, and political contexts framing educative settings;
- Understand teaching and learning as (inter/intra) personal and embodied, derived from diverse narratives of experience;
- Evidence capacities to see and concomitantly act to further learning efforts with prudence, judgment, deliberation and interaction, communicating effectively with parents, guardians, families, and communities;
- See the questions and challenges of teaching in diverse educational contexts with diverse students as the ongoing task of assessment in education;
- Exercising sound pedagogy, including planning, instruction, assessment, evaluation, and reporting, through discerning ways that promote meaningful learning;
- Demonstrate many ways to teach and to learn, with time and space taken for experimentation alongside critical reflection;
- Articulate the relationships between education and democratic citizenship, situating themselves and their students locally and globally;
- Develop supports and networks for teacher candidates and mentor teachers to invest in long term learning opportunities through sustained professional communities of practice;
- Conduct practitioner-based inquiries, helping to approach educative practice as thoughtful decision-makers - more mindfully, more sensitively, more innovatively, more flexibly, and more intentionally; and
- Value research-informed practices through ongoing critical and creative thinking.

### **7.4. Linkages Between Outcomes and Curriculum Design**

Our BEd program is a 60 credit post baccalaureate undergraduate degree offered over five continuous terms.<sup>3</sup> The course structure requires an integrated, cooperative, competency-based learning flow that does not lend itself to the traditionally

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<sup>3</sup> See Appendix III – BEd Program Curriculum Map

segregated course structure of many undergraduate programs, and is structured with regular breaks to allow teacher candidate renewal. The proposed program has been re-structured to promote greater integration and synthesis of course content, methodology, and faculty expertise. Field experience and practicum assignments are embedded throughout the program with classroom responsibilities increasing as knowledge and experience is gained. The BEd degree is offered within a generalist program where teacher candidates learn through exposure to a variety of pedagogies and through extended practicum and field experiences. Applicants may select, dependent upon their acceptable academic preparation, either the 'Teaching Children' or 'Teaching Adolescent' pathway within the program. Pathway selection will allow grouping within curricular blocks and support differentiated experiential learning. Teacher candidates will also be able to personalize their programs and potentially specialize further through their choice of elective courses during the Summer Institute and through their selection of an alternate field experience (EDUC 442).

### **7.5. Potential Employment**

In addition to the job opportunities as educators in K-12 schools, graduates from the BEd program may find employment in other educative settings such as community programs and youth oriented groups. Additional educative roles exist within a variety of opportunities, including but not limited to human resource development, as well as consultancy, ICT, technical, business, cultural, and parks and natural resource settings.

### **7.6. Pedagogies**

Our program pedagogies are grounded in the primacy of experience, the value of diversities - learning with and through others, and the formation of professional networks. These networks model inquiry as a core habit of teaching, sharing professional knowledge and providing the learning conditions to gain insights and enhance expertise at all stages of professional growth. Pedagogical approaches orient toward experiential learning, supporting and growing capacities to learn in and from practice. Each approach intends to build and strengthen the visions, strategies, methods, dispositions, and understandings that develop and embody the needed teaching practices for furthering learners/learning within the particulars of given educative situations.

*Case Methods:* Accounts of teaching and learning that pose dilemmas, provide descriptions of contexts, and share evidence of learning outcomes that become texts for discussion of issues, analyses, and strategizing.

*Autobiography:* Narratives of personal experience emphasizing the student's school and/or life experiences to access and consider key formative experiences as children or young adults.

*School-Field-Based and Community-Based Inquiry:* Learning Tasks positioning prospective educators to think pedagogically, reasoning through dilemmas, investigating problems, towards analyzing and furthering students' learning.

*Practicums:* Extensive field experiences focused on inquiry, reflective planning, teaching, and assessment practices.

*Workshops:* Short term, intensive, and focused experiential learning events.

*Seminars:* Small group forums that allow for interaction, deliberation, and debate across the program of studies.

*Large Group Forums:* Overarching topics and key ideas presented in large student groupings.

*Practitioner Inquiry:* Identifying a problem of practice and designing an inquiry to grapple with this problem and suggest ways to address it.

We also envision the development of ePortfolios for teacher candidates to archive and curate a digital record of their teaching practice, documenting growth, reflection and professional competency.

### **7.7. Program Strengths**

Learning to teach in this BEd program is interdependent with extended field and practicum experiences sharing a common vision of teaching in both school and community sites. Strong relationships across the teacher education program and these sites offer sustained supervision and feedback, mentorship expertise, co-planning and decision-making, and ongoing inquiry opportunities and research connections. Housed within the Faculty of Education are the *Innovative Learning Centre* (ILC: <http://innovativelearningcentre.ca/>) and the *Centre for Mindful Engagement* (CME: <http://cme.ok.ubc.ca/>). Both Centres offer long-term connections to resources and research intended to support and grow educators' efforts. The learning network that emerges is intended to enable a broader institutional context for teaching and learning with professional knowledge understood to be formative in nature and, thus, an ongoing pursuit throughout an educator's career. (See Appendix II - Professional Learning Network)

### **7.8. Overview of the Level of Support and Recognition from Other Post Secondary Institutions Including Plans for Admissions and Transfer**

Graduates from other institutions with a recognized undergraduate degree will be considered for admission to the renewed BEd program. By requiring all applicants to our renewed program to have an undergraduate degree should positively impact

other faculties and programs across our campus.

We are currently working with our regulatory body, the Teacher Regulation Branch to receive program approval.

### **7.9. Related Programs at UBC or Other BC Post Secondary Institutions**

UBC Okanagan has had a Faculty of Education since 2005. There are a total of nine Bachelor of Education programs offered by post-secondary institutions in British Columbia. The characteristics of our renewed program will further distinguish us within the province.

## **8. Contact Information**

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Director Innovative Learning Centre  
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## Appendix I - Scholar-Practitioner

The scholar-practitioner is an educator identity:

- Embracing the journey of professional growth;
- Intertwining content and pedagogical knowledge, drawing on the resources of the scholarly community;
- Linking research, teaching, and service; and,
- Placing practitioner knowledge as primary to strengthening the field of education locally and globally.

A community of scholar-practitioners characterizes the Faculty of Education at UBC's Okanagan campus, invested in creating and sustaining the needed conditions and supports to act as catalysts for continual community growth across all students and faculty at all stages of professional learning. Thus, an inquiry stance is assumed. Students alongside faculty seek genuine concerted action within teaching/learning situations, attention to the ethics of process, regard for the development of self-understandings in relation to other(s), and cognizance of contextually sensitive practices. Shared commitments across all of our programs toward cultivating such educators include:

- Exploring teaching/learning/leading as complex activities that exist within the larger social, cultural, historical, philosophical, ethical, and political contexts framing all educative contexts;
- Navigating teaching/learning/leading as (inter/intra) personal, embodied, derived from narratives of experience, and attending to multiplicities of all kinds;
- Preparing prospective and practicing educators to see and concomitantly act to further students' learning with prudence, judgment, deliberation and interaction, fostering everyone's engagement accordingly;
- Approaching the questions and challenges of teaching/learning/leading as the ongoing task of education within and across educational sites of all kinds;
- Offering possibilities for observation and enactment in a deep sense - learning to exercise sound pedagogy and wise leadership through experiencing the responsibilities for theorizing one's practices and practicing one's theories, discerning ways that promote meaningful learning;
- Confronting and experiencing the formative nature of knowledge as fundamental to being human, purposefully negotiating understandings within one's own practices;
- Conducting inquiries, helping to approach educative practices more wisely, more creatively, and more flexibly, enhancing professional integrity; and
- Seeking to understand the nature and importance of a professional identity and continually attempting to develop a justified and well-articulated professional identity.

## **Appendix II - Professional Learning Network**

### **Conceptual Framework for a Professional Learning Network (PLN)**

The PLN will build on the existing working relationships in the field to grow a network of school and community educators that share a common vision embracing the formative nature of professional knowledge.

Participating PLN educators will form smaller operative hubs interconnecting sites including:

- Pre-K to 12 schools and classrooms;
- Community education settings; and
- Higher education institutions-including UBC Okanagan Faculty of Education Graduate Programs (<http://education.ok.ubc.ca/programs/grad.html>), Summer Institute in Education (<http://education.ok.ubc.ca/programs/sie.html>), Innovative Learning Centre (ILC: <http://innovativelearningcentre.ca/>), and Centre for Mindful Engagement (CME: <http://cme.ok.ubc.ca/>).

These proximal hubs will bring prospective and practicing educators invested accordingly into a conjoint relationship, engaging them in explorations that challenge and extend the reach of their current understandings regarding their pedagogical and content knowledge. Creating the needed conditions and supports for such inquiry-guided professional learning experiences across multiple disciplines, interests, and contexts forms the tasks of the network. Practitioner inquiries and research opportunities within and across sites would be the norm.

The operative features of each PLN hub will support current and prospective educators as they develop practitioner knowledge both in and through community cultivating both curricular vision and adaptive expertise by:

- Articulating philosophical and pragmatic understandings about content, students, places and contexts in relation to pedagogy;
- Fostering dispositions and habits incorporating and adapting practitioner knowledge;
- Seeking practices that support the contextual needs of learners; and
- Locating and creating resources that align with an evolving vision of curriculum and adaptive expertise.

### **Participation in Inaugural PLN**

Educators interested in joining the inaugural phase of the PLN will make a minimum three-year commitment as follows:

- Year One (begins August 2016): Planning stages



- Year Two (August 2017): Initiation year
- Year Three (August 2018): Refining Year #1

To begin working toward the PLN core goals, our work in the inaugural phase will focus on:

- Developing shared understandings of the nature and intents of all practica and field experiences;
- Developing mentorship practices, co-teaching, resources, and supports in association with UBCO teacher educators;
- Orienting professional learning as an ongoing collaborative pursuit for educators that respects the concrete realities of their practices, fosters educator agency and voice concerning their professional identity, and rethinks practitioner knowledge and the ways we cultivate and advocate for theory/practice intersections; and
- Supporting the development of all involved as scholar-practitioners.

### Appendix III – BEd Program Curriculum Map

Winter Term 1 (Yr. 1)			Winter Term 2			Summer Term 1		Summer Term 2		Winter Term 1 (Yr. 2)							
September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December		
EDUC 403 (6) Becoming a Scholar-Practitioner (8 weeks)	Break (2 days)	EDUC 431 (6) Developing a Pedagogical Stance (8 weeks)	Break (2 weeks)	EDUC 436 (5) Developing Curricular Vision for a Democratic Society: Educational Purposes, Policies and Practices Part 1 (4 weeks)	Break (3 days)	EDUC 441 (5) Field Experience: Formative Practicum (5 weeks)	Break (2 days)	EDUC 437 (5) Developing Curricular Vision for a Democratic Society: Educational Purposes, Policies and Practices Part 2 (5 weeks)	Break (1 week)	EDUC 442 (5) Community Field Experience (4 weeks)	Break (1 week)	EDUC 438 (4) Educating for the Whole Person (3 weeks)	Break (2 weeks)	Summer Institute in Education (6): Complete elective courses that focus on personalized professional learning goals Scholar-Practitioner Inquiry Conference (6 weeks)	Break (1 week)	EDUC 444 (15) Field Experience: Final Practicum/Internship (Including practicum prep and field experience debrief) (15 weeks)	End of Program
EDUC 440 (3) – School Visits/Field Experience: Literacies and Numeracies in Action (10 weeks)																	

## Appendix IV – Existing and Renewed Program Comparison

### *Comparison of Existing and Renewed Program (Teachers Act - Bylaw 2.1b, p. 13)*

Areas of Study	Existing Program	Renewed Program
Human development and learning	<ul style="list-style-type: none"> <li>• ETEP –EDUC 405- Developing Learner (2)</li> <li>• STEP – The Adolescent in the Classroom (3)</li> </ul>	<ul style="list-style-type: none"> <li>• EDUC 431 (6): Developing a Pedagogical Stance</li> </ul>
Educational foundations (history, philosophy, sociology)	<ul style="list-style-type: none"> <li>• ETEP –EDUC 405- Foundations of Education (2), Social &amp; Cultural Issues in Education (2)</li> <li>• STEP –EDUC 405- Concept Studies Module 1- Culture of Education (8)</li> </ul>	<ul style="list-style-type: none"> <li>• EDUC 403 (6): Becoming a scholar practitioner</li> </ul>
Curriculum and instruction in the applicable teaching area	<ul style="list-style-type: none"> <li>• ETEP –EDUC 410- Instructional Design: Planning, Measurement and Evaluation (2); EDUC 415 – Curriculum Theory and Development (2); EDUC 407 (8) Instructional Strategies (Drama, Info Tech, FSL/ESL, Physical Education; EDUC 411 (6) Designing Learning Experiences (Music, Math, Science); EDUC 415 (2): Numeracy; EDUC 417 (8): Art, Language Arts, HACE, Social Studies</li> <li>• STEP – Curriculum &amp; Instruction courses: EDUC 453: Information Communication Technology EDUC 495 (3): English EDUC 496 (3): Social Studies EDUC 480 (3): Mathematics EDUC 482 (3): Science EDUC 493 (3): Middle School-Philosophy, Structure, Methods EDUC 494 (3): Middle School-Integrated Methods EDUC 486 (3): Technology Education II</li> </ul>	<ul style="list-style-type: none"> <li>• EDUC 431 (6): Developing a Pedagogical Stance</li> <li>• EDUC 436 (5): Developing Curricular Vision for a Democratic Society, Part I</li> <li>• EDUC 437 (5): Developing Curricular Vision for a Democratic Society, Part II</li> <li>• EDUC 442 (5): Community Field Experience</li> <li>• EDUC 438 (4): Educating for the Whole Person</li> <li>• Cultivating expertise via the Summer Institute (Educational electives)</li> </ul>
Diagnosing and providing for the educational needs of individual students, evaluation and testing	<ul style="list-style-type: none"> <li>• ETEP –EDUC 410 (2): Instructional Design: Planning, Measurement &amp; Evaluation; EDUC 417 (3): Learning Difficulties</li> </ul>	<ul style="list-style-type: none"> <li>• EDUC 431 (6): Developing a Pedagogical Stance</li> <li>• EDUC 436 (5): Developing Curricular Vision for a Democratic Society, Part I</li> </ul>

	<ul style="list-style-type: none"> <li>• STEP –EDUC 432 (3): Assessment for Learning in Secondary Schools; EDUC 456 (3): Special Needs in Secondary Education; EDUC 459 (3): ESL in Secondary Education; EDUC 426 (3): Practicum Classroom Instruction</li> </ul>	<ul style="list-style-type: none"> <li>• EDUC 437 (5): Developing Curricular Vision for a Democratic Society, Part II</li> <li>• EDUC 438 (4): Educating for the Whole Person</li> <li>• Cultivating expertise via the Summer Institute (Educational electives)</li> </ul>
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***Comparison Of Existing and Renewed Program (Teachers Act Policy 5, p. 31-33)***

Areas of Study	Existing Program	Renewed Program
Practicum	<ul style="list-style-type: none"> <li>• ETEP –EDUC 420 (2): Context Studies I; EDUC 421 (5): Context Studies II; EDUC 424 (2): Context Studies III; EDUC 425 (10): Context Studies IV</li> <li>• STEP –EDUC 427 (3): Learning Communities Seminar; EDUC 428 (15): Learning Communities Practicum</li> </ul>	<ul style="list-style-type: none"> <li>• EDUC 440 (3): 1 week immersive experience</li> <li>• EDUC 440 (3): 2 week field work</li> <li>• EDUC 441 (5): Field Experience: Formative Practicum</li> <li>• EDUC 442 (5): Community Field Experience - 4 week alternative education placement/community field experience (international, rural or small school or community sites)</li> <li>• EDUC 444 (15): Field Experience: Final Practicum/Internship</li> </ul>
Teaching students with special needs	<ul style="list-style-type: none"> <li>• ETEP –EDUC 417 (3): Learning Difficulties</li> <li>• STEP – EDUC 456 (3): Special Needs in Secondary Schools; EDUC 459 (3): ESL in Secondary Education</li> </ul>	<ul style="list-style-type: none"> <li>• EDUC 431 (6) Developing a Pedagogical Stance</li> </ul>
Studies in First Nations pedagogy and issues related to historical and current contexts	<ul style="list-style-type: none"> <li>• ETEP –INDG 405 (3): Indigenous Education: History and Revitalization</li> <li>• STEP –INDG 405 (3): Indigenous Education: History and Revitalization</li> </ul>	<ul style="list-style-type: none"> <li>• EDUC 403 (6): Becoming a Scholar-Practitioner</li> <li>• EDUC 436 (5): Developing Curricular Vision for a Democratic Society, Part I</li> </ul>
Educational and pedagogical content providing basis & depth to meet Teaching Standards	<ul style="list-style-type: none"> <li>• ETEP –EDUC 420 (2): Context Studies I; EDUC 421 (5): Context Studies II; EDUC 424 (2): Context Studies III; EDUC 425 (10): Context Studies IV</li> <li>• STEP –EDUC 427 (3): Learning Communities Seminar; EDUC 426 (3): Practicum Classroom Instruction; EDUC 428 (15):</li> </ul>	<ul style="list-style-type: none"> <li>• EDUC 431 (6): Developing a pedagogical stance</li> <li>• EDUC 436 (5): Developing Curricular Vision for a Democratic Society, Part I</li> <li>• EDUC 437 (5): Developing Curricular Vision for a Democratic Society, Part II</li> <li>• EDUC 438 (4): Educating for</li> </ul>

	Learning Communities Practicum	the Whole Person <ul style="list-style-type: none"> <li>• Cultivating expertise via the Summer Institute (Educational electives)</li> </ul>
Pedagogical knowledge informed by current research	<ul style="list-style-type: none"> <li>• EDUC 430 (4): Guided Reflective Inquiry Project</li> </ul>	<ul style="list-style-type: none"> <li>• EDUC 431 (6): Developing a pedagogical stance</li> <li>• EDUC 436 (5): Developing Curricular Vision for a Democratic Society, Part I</li> </ul>
ESL	<ul style="list-style-type: none"> <li>• ETEP: EDUC 407 – Literacy and Language in Education (2), FSL/ESL (2)</li> <li>• STEP: EDUC 459 (3): ESL in Secondary Education</li> </ul>	<ul style="list-style-type: none"> <li>• EDUC 436 (5): Developing Curricular Vision for a Democratic Society, Part I</li> </ul>
Gender Equity	<ul style="list-style-type: none"> <li>• ETEP: EDUC 405: Social &amp; Cultural Issues in Education (3), Education Policy &amp; Administration (2)</li> <li>• STEP: EDUC 405: The culture of education (8), EDUC 450 (3): Policy &amp; Organization: School, Community and Society</li> </ul>	<ul style="list-style-type: none"> <li>• EDUC 431 (6): Developing a pedagogical stance</li> </ul>
Multiculturalism and racism	<ul style="list-style-type: none"> <li>• ETEP: EDUC 405: Social &amp; Cultural Issues in Education (3), Education Policy &amp; Administration (2); EDUC 407 – Literacy and Language in Education (2), FSL/ESL (2)</li> <li>• STEP: EDUC 405: The culture of education (8); EDUC 450 (3): Policy &amp; Organization: School, Community and Society; EDUC 459 (3): ESL in Secondary Education</li> </ul>	<ul style="list-style-type: none"> <li>• EDUC 431 (6): Developing a pedagogical stance</li> </ul>
Sexual orientation, homophobia & heterosexism	<ul style="list-style-type: none"> <li>• ETEP: EDUC 405: Social &amp; Cultural Issues in Education (3), Education Policy &amp; Administration (2)</li> <li>• STEP: EDUC 405: The culture of education (8); EDUC 450 (3): Policy &amp; Organization: School, Community and Society</li> </ul>	<ul style="list-style-type: none"> <li>• EDUC 431 (6): Developing a pedagogical stance</li> </ul>
Poverty and social deprivation	<ul style="list-style-type: none"> <li>• ETEP: EDUC 405: Social &amp; Cultural Issues in Education (3), Education Policy &amp; Administration (2)</li> <li>• STEP: EDUC 405: The culture of education (8); EDUC 450 (3): Policy &amp; Organization: School, Community and</li> </ul>	<ul style="list-style-type: none"> <li>• EDUC 431 (6): Developing a pedagogical stance</li> </ul>

	Society	
Religion and religious intolerance	<ul style="list-style-type: none"> <li>• ETEP: EDUC 405: Social &amp; Cultural Issues in Education (3), Education Policy &amp; Administration (2); EDUC 407 – Literacy and Language in Education (2), FSL/ESL (2)</li> <li>• STEP: EDUC 405: The culture of education (8); EDUC 450 (3): Policy &amp; Organization: School, Community and Society; EDUC 459 (3): ESL in Secondary Education</li> </ul>	<ul style="list-style-type: none"> <li>• EDUC 431 (6): Developing a pedagogical stance</li> </ul>
Immigrant experience	<ul style="list-style-type: none"> <li>• ETEP: EDUC 405: Social &amp; Cultural Issues in Education (3), Education Policy &amp; Administration (2); EDUC 407 – Literacy and Language in Education (2), FSL/ESL (2)</li> <li>• STEP: EDUC 405: The culture of education (8); EDUC 450 (3): Policy &amp; Organization: School, Community and Society; EDUC 459 (3): ESL in Secondary Education</li> </ul>	<ul style="list-style-type: none"> <li>• EDUC 431 (6): Developing a pedagogical stance</li> </ul>
Violence and bullying	<ul style="list-style-type: none"> <li>• ETEP: EDUC 405: Social &amp; Cultural Issues in Education (3), Education Policy &amp; Administration (2)</li> <li>• STEP: EDUC 405: The culture of education (8); EDUC 450 (3): Policy &amp; Organization: School, Community and Society</li> </ul>	<ul style="list-style-type: none"> <li>• EDUC 431 (6): Developing a pedagogical stance</li> </ul>
Administrative, legal and political framework	<ul style="list-style-type: none"> <li>• ETEP: EDUC 405: Social &amp; Cultural Issues in Education (3), Education Policy &amp; Administration (2)</li> <li>• STEP: EDUC 405: The culture of education (8); EDUC 450 (3): Policy &amp; Organization: School, Community and Society</li> </ul>	<ul style="list-style-type: none"> <li>• EDUC 436 (5): Developing Curricular Vision for a Democratic Society, Part I</li> </ul>
Ethics, standards and practice of teaching as a profession	<ul style="list-style-type: none"> <li>• ETEP: EDUC 405: Social &amp; Cultural Issues in Education (3), Education Policy &amp; Administration (2); EDUC 420 (2): Context Studies I; EDUC 421 (5): Context Studies II; EDUC 424 (2): Context Studies III; EDUC 425 (10): Context Studies IV</li> </ul>	<ul style="list-style-type: none"> <li>• EDUC 436 (5): Developing Curricular Vision for a Democratic Society, Part I</li> </ul>

	<ul style="list-style-type: none"> <li>• STEP: EDUC 405: The culture of education (8); EDUC 450 (3): Policy &amp; Organization: School, Community and Society; EDUC 427 (3): Learning Communities Seminar; EDUC 426 (3): Practicum Classroom Instruction; EDUC 428 (15): Learning Communities Practicum</li> </ul>	
<p>Integration of theory &amp; practice (practicum, educational studies, pedagogical knowledge &amp; skills)</p>	<ul style="list-style-type: none"> <li>• ETEP –EDUC 420 (2): Context Studies I; EDUC 421 (5): Context Studies II; EDUC 424 (2): Context Studies III; EDUC 425 (10): Context Studies IV</li> <li>• STEP –EDUC 427 (3): Learning Communities Seminar; EDUC 428 (15): Learning Communities Practicum</li> </ul>	<ul style="list-style-type: none"> <li>• EDUC 440 (3): Field Experience: Literacies and Numeracies in Action - 1 week immersive experience</li> <li>• EDUC 440 (3) - Field Experience: Literacies and Numeracies in Action - 2 week field work</li> <li>• EDUC 441 (5): Field Experience: Formative Practicum</li> <li>• EDUC 442 (5): Community Field Experience - 4 week alternative education placement/community field experience (international, rural or small school or community sites)</li> <li>• EDUC 444 (15): Field Experience: Final Practicum/Internship</li> </ul>
<p>Reflective practice</p>	<ul style="list-style-type: none"> <li>• EDUC 430 (4): Guided Reflective Inquiry Project</li> </ul>	<p>Teacher candidates will be required to maintain a reflective journal throughout the program and draw from it periodically as source ongoing documentation of learning</p>



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## Admissions Proposal Form Okanagan Campus

<p><b>Faculty/School:</b> Faculty of Education  <b>Dept./Unit:</b> N/A  <b>Faculty/School Approval Date:</b> January 20, 2016  <b>Effective Session:</b> 2017W. To be included in the Academic Calendar upon approval for the purpose of informing prospective students.</p>	<p><b>Date:</b> February 2, 2016  <b>Contact Person:</b> Dr. Susan Crichton  <b>Phone:</b> 250.807.3139  <b>Email:</b> susan.crichton@ubc.ca</p>
<p><b>Type of Action:</b> Revise Admissions requirements – Program level</p>	
<p><b>Rationale:</b> These new admission requirements are being created to support and enable the renewed Bachelor of Education program. The generalist program will offer two streams: Teaching Children and Teaching Adolescents. As prescribed by the TRB, different admission criteria are being proposed for the two streams of the renewed program.</p>	
<p>Homepage- <a href="#">Faculties, Schools, and Colleges - Faculty of Education - Undergraduate Programs</a></p> <p><a href="http://www.calendar.ubc.ca/okanagan/proof/edit/index.cfm?tree=18,284,1074,0">http://www.calendar.ubc.ca/okanagan/proof/edit/index.cfm?tree=18,284,1074,0</a></p> <p>Undergraduate Programs</p> <p>Contents</p> <p>Pre-Admission</p> <p>Bachelor of Education Programs Application Procedures</p> <p><b><u>Bachelor of Education Admission Requirements for Students Entering the Program in 2017/18 or Later</u></b></p> <p>Bachelor of Education Degree Requirements for Students Entering the Program in 2017/18 or Later</p> <p>Bachelor of Education Admission Requirements:</p>	<p><b>Draft Academic Calendar URL:</b> N/A</p> <p><b>Present Academic Calendar Entry:</b></p> <p>Undergraduate Programs</p> <p>Contents</p> <p>Pre-Admission</p> <p>Bachelor of Education Programs Application Procedures</p> <p>Bachelor of Education Admission Requirements: Elementary Teacher Education Program (ETEP)</p> <p>Bachelor of Education Admission Requirements: Secondary Teacher Education Program (STEP)</p>





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<p>Elementary Teacher Education Program (ETEP)</p> <p>Bachelor of Education Admission Requirements: Secondary Teacher Education Program (STEP)</p> <p>Bachelor of Education Degree Requirements: Elementary Teacher Education Program (ETEP)</p> <p>Bachelor of Education Degree Requirements: Secondary Teacher Education Program (STEP)</p> <p>Developmental Standard Teaching Certificate in Okanagan Language and Culture</p> <p>Registration</p> <p>Academic Regulations</p> <p>Teacher Certification</p> <p><b>Proposed Academic Calendar Entry:</b></p> <p><b><u>Bachelor of Education Admission Requirements for Students Entering the Program in 2017/18 or Later</u></b></p> <p><b><u>NOTE: For admission to the revised Bachelor of Education program in September 2017 only, the Faculty of Education will consider applicants who satisfy the admission criteria of the Elementary Teacher Education Program (ETEP) or the Secondary</u></b></p>	<p>Bachelor of Education Degree Requirements: Elementary Teacher Education Program (ETEP)</p> <p>Bachelor of Education Degree Requirements: Secondary Teacher Education Program (STEP)</p> <p>Developmental Standard Teaching Certificate in Okanagan Language and Culture</p> <p>Registration</p> <p>Academic Regulations</p> <p>Teacher Certification</p>
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### **Teacher Education Program (STEP).**

**The B.Ed. degree is a generalist program where teacher candidates learn through exposure to a variety of pedagogies and through extended practicum and field experiences. Students can apply to one or both streams of the program: Teaching Children and Teaching Adolescents. Once enrolled, teacher candidates will be able to specialize their studies through elective courses during the Summer Institute and through their selection of an alternate field experience.**

### **Admission Requirements: Teaching Children**

**To be eligible for admission to the Bachelor of Education program, students must have completed a four-year (minimum 120-credit) bachelor's degree or equivalent at an accredited post-secondary institution.**

**The following admission criteria must also be met:**

- **Admission average: a minimum average of 65% in the last 30 credits of transferable post-secondary coursework passed, failed, and/or repeated;**
- **English requirement: 6 credits of English literature and composition with a minimum average of 65%. A minimum of 3 of the 6 English credits must be English literature. The 6 credits of English literature and composition may be satisfied with coursework at the 100, 200, 300, and/or 400 level. Courses in**



**creative writing, technical or business writing, or communication are not acceptable;**

- **Canadian Studies: 3 credits that have significant Canadian content. Note: the Teacher Regulation Branch defines Canadian content requirements as the following: "The focus of a Canadian studies course must be on understanding the Canadian experience. The Canadian content must be central to the conceptual thesis of the course rather than existing only in exemplar supporting concepts of another academic discipline";**
- **Lab science: 3 credits in a laboratory science. Note: lab science courses are normally selected from the following:**
  - **Astronomy**
  - **Biology**
  - **Chemistry**
  - **Earth and Environmental Science**
  - **Physical Geography**
  - **Physics**

**A 3-credit lab science is typically scheduled for three hours of lecture and two or three hours of labs per week.**

- **Mathematics: 3 credits of Mathematics. Note: business math, finance math, or statistics courses are not acceptable.**
- **15 credits of 300- and/or 400-level coursework in one or a combination of the following**



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**subjects taught in BC public schools:**

- **Anthropology**
- **Biology**
- **Chemistry**
- **Computer Science**
- **Dance**
- **Economics**
- **English**
- **Environmental Science**
- **French**
- **Geography**
- **Health Studies**
- **History**
- **Human Kinetics**
- **Indigenous Studies**
- **Mathematics**
- **Music**
- **Physics**
- **Political Science**
- **Sociology**
- **Theatre**
- **Visual Art**

**Students wishing to have coursework considered in a discipline not listed should consult with an Education Academic Advisor.**

**All required coursework must be completed by April 30, prior to commencement in the program.**

**Admission to the Faculty of Education is competitive and the Bachelor of Education has limited enrolment. Satisfying the minimum admission requirements does not guarantee admission.**

**The Faculty of Education uses Broad-based Admission to select candidates for admission. Applicants are evaluated on a range of criteria indicative of their**



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**preparedness for study in the Bachelor of Education program.**

**Admission Requirements: Teaching Adolescents**

**To be eligible for admission to the Bachelor of Education program, students must have completed a four-year (minimum 120-credit) bachelor's degree or equivalent at an accredited post-secondary institution.**

**The following admission criteria must also be met:**

- **Admission average: a minimum average of 65% in the last 30 credits of transferable post-secondary coursework passed, failed, and/or repeated;**
- **English requirement: 6 credits of English literature and composition with a minimum average of 65%. A minimum of 3 of the 6 English credits must be English literature. The 6 credits of English literature and composition may be satisfied with coursework at the 100, 200, 300, and/or 400 level. Courses in creative writing, technical or business writing, or communication are not acceptable;**
- **Canadian Studies: 3 credits that have significant Canadian content. Note: the Teacher Regulation Branch defines Canadian content requirements as the following: "The focus of a Canadian studies course must be on understanding the Canadian experience. The Canadian**



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**content must be central to the conceptual thesis of the course rather than existing only in exemplar supporting concepts of another academic discipline";**

- **Lab science: 3 credits in a laboratory science. Note: lab science courses are normally selected from the following:**
  - **Astronomy**
  - **Biology**
  - **Chemistry**
  - **Earth and Environmental Science**
  - **Physical Geography**
  - **Physics**

**A 3-credit lab science is typically scheduled for three hours of lecture and two or three hours of labs per week.**

- **Mathematics: 3 credits of Mathematics. Note: business math, finance math, or statistics courses are not acceptable.**
- **24 credits of academic coursework in any one of the following teachable subjects taught in BC public schools:**
  - **Biology**
  - **Chemistry**
  - **English**
  - **Environmental Science**
  - **French<sup>1</sup>**
  - **General Science<sup>2</sup>**
  - **Geography**
  - **History**
  - **Mathematics**
  - **Music<sup>3</sup>**
  - **Physical Education**



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- Physics
- Social Studies<sup>4</sup>
- Theatre<sup>3</sup>
- Visual Art<sup>3</sup>

Students wishing to have coursework considered in a discipline not listed should consult with an Education Academic Advisor.

<sup>1</sup>If the teachable subject is French, students must also successfully complete the oral and written French Language Competency Test to the level specified for French as a second language. Please see the French Language Competency Test [insert hyperlink] for more information.

<sup>2</sup>If the teachable subject is General Science, the 24 credits of academic coursework can be a combination of Biology, Chemistry, and/or Physics courses. Other science courses may be included in the 24 credits upon approval.

<sup>3</sup>If the teachable subject is Music, Theatre, or Visual Art at least 6 of the required 24 credits must be studies in theory (i.e., non-studio).

<sup>4</sup>If the teachable subject is Social Studies (Anthropology, Economics, Geography, History, Political Science, or Sociology) the 24 required credits must include the following:

- 3 credits of Canadian Studies (already required for the Teaching Adolescents stream),
- 3 credits of Geography,
- 3 credits of History, and
- 15 credits of academic coursework in one or a combination of the following disciplines:

- Anthropology



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- Economics
- Geography
- History
- Political Science
- Sociology

Coursework relating to the disciplines above in the areas of Canadian Studies, Cultural Studies, Asian Studies, Gender and Women's Studies, Indigenous Studies, Religious Studies (of a non-doctrinal nature), Classical Studies, Urban Studies, or Environmental Sciences may be considered provided an examination of the course syllabi reveals such a relationship.

To enhance employment opportunities, it is strongly recommended that applicants to the Teaching Adolescents stream have academic preparation in two teachable subjects.

All required coursework must be completed by April 30, prior to commencement in the program.

Admission to the Faculty of Education is competitive and the Bachelor of Education program has limited enrolment. Satisfying the minimum admission requirements does not guarantee admission. Applicants' teachable subject(s) will also be considered when determining admissibility.

The Faculty of Education uses Broad-Based Admission to select candidates for admission. Applicants are evaluated on a range of criteria indicative of their preparedness for study in the Bachelor of Education program.





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## Curriculum Proposal Form New/Change to Course/Program – Okanagan campus

<b>Category: 1</b>	
<b>Faculty/School:</b> Faculty of Education <b>Dept./Unit:</b> <b>Faculty/School Approval Date:</b> 20151118 <b>Effective Session:</b> 2017W	<b>Date:</b> 20151207 <b>Contact Person:</b> Dr. Susan Crichton <b>Phone:</b> 250.807.8638 <b>Email:</b> <a href="mailto:susan.crichton@ubc.ca">susan.crichton@ubc.ca</a>
<b>Type of Action:</b> Calendar Entry for the Renewed B.Ed. degree requirements	
<b>Rationale:</b> To outline the renewed Bachelor of Education program's degree requirements with an intended start date 2017-2018 academic year.	
<b>Proposed Academic Calendar Entry:</b>  Homepage- <a href="#">Faculties, Schools, and Colleges - Faculty of Education - Undergraduate Programs</a>  <a href="http://www.calendar.ubc.ca/okanagan/proof/edit/index.cfm?tree=18,284,1074,0">http://www.calendar.ubc.ca/okanagan/proof/edit/index.cfm?tree=18,284,1074,0</a>  <b>Undergraduate Programs</b>  <b>Contents</b>  Pre-Admission  Bachelor of Education Programs Application Procedures  Bachelor of Education Admission Requirements for Students Entering the Program in 2017/18 or Later  <u><b>Bachelor of Education Degree Requirements for Students Entering the Program in 2017/18 or Later</b></u>  Bachelor of Education Admission Requirements:	<b>Draft Academic Calendar URL:</b>  N/A  <b>Present Academic Calendar Entry:</b>  <b>Undergraduate Programs</b>  <b>Contents</b>  Pre-Admission  Bachelor of Education Programs Application Procedures



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<p>Elementary Teacher Education Program (ETEP)</p> <p>Bachelor of Education Admission Requirements: Secondary Teacher Education Program (STEP)</p> <p>Bachelor of Education Degree Requirements: Elementary Teacher Education Program (ETEP)</p> <p>Bachelor of Education Degree Requirements: Secondary Teacher Education Program (STEP)</p> <p>Developmental Standard Teaching Certificate in Okanagan Language and Culture</p> <p>Registration</p> <p>Academic Regulations</p> <p>Teacher Certification</p> <p><b>Proposed Academic Calendar Entry:</b></p> <p>Homepage - <a href="#">Faculties, Schools, and Colleges</a> - <a href="#">Faculty of Education</a> - <a href="#">Undergraduate Programs</a></p> <p><b><u><a href="#">Bachelor of Education Degree Requirements for Students Entering the Program in 2017/18 or Later</a></u></b></p> <p><b><u><a href="#">NOTE: This program will be offered beginning September 2017 Board of Governors and BC Teachers' Council approval.</a></u></b></p>	<p>Bachelor of Education Admission Requirements: Elementary Teacher Education Program (ETEP)</p> <p>Bachelor of Education Admission Requirements: Secondary Teacher Education Program (STEP)</p> <p>Bachelor of Education Degree Requirements: Elementary Teacher Education Program (ETEP)</p> <p>Bachelor of Education Degree Requirements: Secondary Teacher Education Program (STEP)</p> <p>Developmental Standard Teaching Certificate in Okanagan Language and Culture</p> <p>Registration</p> <p>Academic Regulations</p> <p>Teacher Certification</p>
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### Timeframe to Complete

A student enrolled in the Bachelor of Education must complete the final practicum within four years of beginning the program. If a student is unable to complete the final practicum within this timeframe, the student will be required to complete a professional learning plan, developed in consultation with the School Experience Coordinator, to demonstrate readiness for commencing practicum. This professional learning plan may include additional and/or repeated coursework.

### Generalist Program

The B.Ed. degree is a generalist program where students learn through exposure to a variety of pedagogies and through extended practicum and field experiences. While the majority of the required courses are the same for both program streams ('Teaching Children' and 'Teaching Adolescents'), students will often be grouped within these courses and during experiential components according to the level they aspire to teach. Students will also be able to personalize their programs and potentially specialize further through their choice of elective courses during the Summer Institute and through their selection of an alternate field experience (EDUC 442).

Given the generalist nature of the B.Ed. program, no specialization or stream will be indicated on the transcript or parchment.



### Program Overview

The B.Ed. program requires students to complete 60 credits:

- 54 credits of core courses including practica (“Field Experiences”)
- 6 credits of Faculty of Education’s Summer Institute electives.

The program spans 16 months beginning mid-August of Year 1 running continuously for 16 months with completion in late December the following year. Most of the courses and practica are run sequentially one after the other.

For the specific course structure and schedule, see <B.Ed. Course Structure and Schedule for Students Entering the Program in 2017/18 or Later> (link to <http://education.ok.ubc.ca/programs/undergrad.html>)

### First Year

The first year starts mid-August with a required Orientation and ends mid-August the following year.

### Winter Term 1 (Year 1)

#### Orientation

EDUC 403 (6) Becoming a Scholar practitioner

EDUC 440 (3) Field Experience: Literacies and Numeracies in Action

EDUC 431 (6) Developing a Pedagogical Stance



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**Winter Term 2**

**EDUC 436 (5) Developing Curricular Vision for a Democratic Society: Educational Purposes, Policies and Practices Part 1**

**EDUC 441 (5) Field Experience: Formative Practicum**

**EDUC 437 (5) Developing Curricular Vision for a Democratic Society: Educational Purposes, Policies and Practices Part 2**

**Summer Term 1**

**EDUC 442 (5) Community Field Experience**

**EDUC 438 (4) Educating for the Whole Person**

**Summer Term 2**

**Summer Institute in Education (6): Complete elective courses that focus on personalized professional learning goals.**

**Scholar-Practitioner Inquiry Conference**

**Second Year**

**The second year starts mid-August directly after completion of Year 1. The second year ends with the program completion in late December of the same calendar year.**

**Winter Term 1 (Year 2)**

**Practicum Prep**



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<p><b><u>EDUC 444 (15) Field Experience: Final Practicum/Internship</u></b></p> <p><b><u>EDUC 444 Debrief*</u></b></p> <p><b><u>*There will be a 1 week field experience debrief following EDUC 444</u></b></p> <p><b><u>Completion of the Teacher Education Program meets the requirements for the UBC Okanagan campus B.Ed. degree and the requirements of the Ministry of Education Teacher Regulation Branch for a Professional Teaching Certificate.</u></b></p>	
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## Curriculum Proposal Form New/Change to Course/Program – Okanagan campus

<b>Category: 1</b>	
<b>Faculty/School:</b> Faculty of Education <b>Dept./Unit:</b> <b>Faculty/School Approval Date:</b> 20151118 <b>Effective Session:</b> 2017W	<b>Date:</b> 20151113 <b>Contact Person:</b> Dr. Susan Crichton <b>Phone:</b> 250.807.1818 <b>Email:</b> susan.crichton@ubc.ca
<b>Type of Action: New Course</b>	
<b>Rationale:</b> This new course is being created in support of and to enable the renewed Bachelor of Education curriculum. This is the first course of the renewed BEd program and provides a foundation for teacher candidates to orient themselves to long-term professional growth and development as a teacher. This course supports the criteria for Certificate of Qualifications – Professional Preparation as identified in Bylaw 2, section 2.1, subsection 2.1.01 part b under the Teacher Regulation Branch.	
<b>Proposed Academic Calendar Entry:</b>  <u><b>EDUC 403 (6) Becoming a Scholar-Practitioner</b></u>  <u><b>The cultivation of knowledge and understanding regarding the interdisciplinary foundations of educational principles, policies and practices, all of which are examined through large group contexts, seminars and field experiences.</b></u> <u><b>Pass/Fail.</b></u>  <u><b>Restricted to students in the Bachelor of Education Program</b></u>	<b>Draft Academic Calendar URL:</b> N/A  <b>Present Academic Calendar Entry:</b> None



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## Curriculum Proposal Form New/Change to Course/Program – Okanagan campus

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<b>Type of Action:</b> New Course	
<b>Rationale:</b> This new course is being created in support of and to enable the renewed BEd curriculum. Content covers areas in which teacher candidates develop their practice and understanding related to diversity, literacies, numeracy and learning theories. These are areas required by the Teacher Regulation Board under Policy 5 – Certifying Graduates of BC Teacher Education Programs with regards to recognizing the diverse and inclusive nature of society and students with special needs (Policy 5, part A, iii, 4).	
<b>Proposed Academic Calendar Entry:</b>  <u><b>EDUC 431 (6) Developing a Pedagogical Stance</b></u>  <u><b>Foundational pedagogical knowledge and practice explored through seminars, colloquia and site-based learning where teacher candidates develop their practice and understandings related to diversity, literacies, numeracy and learning theories.</b></u> <u><b>Pass/Fail</b></u>  <u><b>Prerequisite: EDUC 403</b></u>	<b>Draft Academic Calendar URL:</b> N/A  <b>Present Academic Calendar Entry:</b> N/A





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<b>Category: 1</b>	
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<b>Type of Action:</b> New Course	
<b>Rationale:</b> This new course is being created in support of and to enable the renewed BEd curriculum. The content meets requirements of the Teacher Regulation Branch's Policy (Certifying Graduates of BC Teacher Education Programs; P5.C.04) by providing base knowledge about the ethical and administrative framework in which teachers work.	
<b>Proposed Academic Calendar Entry:</b>  <u><b>EDUC 436 (5) Developing Curricular Vision for a Democratic Society: Educational Purposes, Policies, and Practices, Part I</b></u>  <u><b>Examines the nature of curriculum focusing on the humanities and languages. Opportunities and challenges of developing curriculum for schooling are considered within contemporary political, legal, moral, administrative, and policy contexts.</b></u> <u><b>Pass/Fail.</b></u>  <u><b>Prerequisite: EDUC 431, EDUC 440</b></u>	<b>Draft Academic Calendar URL:</b> N/A  <b>Present Academic Calendar Entry:</b> None



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## Curriculum Proposal Form New/Change to Course/Program – Okanagan campus

<b>Category: 1</b>	
<b>Faculty/School:</b> Faculty of Education <b>Dept./Unit:</b> <b>Faculty/School Approval Date:</b> 20151118 <b>Effective Session:</b> 2017W	<b>Date:</b> 20151113 <b>Contact Person:</b> Dr. Susan Crichton <b>Phone:</b> 250.807.1818 <b>Email:</b> susan.crichton@ubc.ca
<b>Type of Action:</b> New Course	
<b>Rationale:</b> This new course is being created in support of and to enable the renewed BEd curriculum. This course invites teacher candidates to consider ways of embodying interdisciplinary learning in the disciplines of Science, Technology, Engineering, Arts and Mathematics.	
<b>Proposed Academic Calendar Entry:</b>  <u><b>EDUC 437 (5) Developing Curricular Vision for a Democratic Society: Educational Purposes, Policies, and Practices Part 2</b></u>  <u><b>Invites students to consider ways of embodying interdisciplinary learning in an advanced democracy focusing on the disciplines of Science, Technology, Engineering, Arts, and Mathematics. The roles of inquiry, critical reflection, creativity and innovation in teaching and learning will be foregrounded. Pass/Fail</b></u>  <u><b>Prerequisite: EDUC 436, EDUC 441</b></u>	<b>Draft Academic Calendar URL:</b> N/A  <b>Present Academic Calendar Entry:</b> N/A



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## Curriculum Proposal Form New/Change to Course/Program – Okanagan campus

<b>Category: 1</b>	
<b>Faculty/School:</b> Faculty of Education <b>Dept./Unit:</b> <b>Faculty/School Approval Date:</b> 20151118 <b>Effective Session:</b> 2017W	<b>Date:</b> 20151113 <b>Contact Person:</b> Dr. Susan Crichton <b>Phone:</b> 250.807.1818 <b>Email:</b> susan.crichton@ubc.ca
<b>Type of Action:</b> New Course	
<b>Rationale:</b> This new course is being created in support of and to enable the renewed BEd curriculum. This course provides an overview of teaching and learning theory and practice relating to a holistic approach to well-being.	
<b>Proposed Academic Calendar Entry:</b>  <u><b>EDUC 438 (4) Educating for the Whole Person</b></u>  <u><b>Teaching and learning theory and practice relating to a holistic approach to well-being. Examining and interpreting the research on philosophical, psychological, physiological and political aspects of wellbeing. Pass/Fail</b></u>  <u><b>Prerequisite: EDUC 442</b></u>	<b>Draft Academic Calendar URL:</b> N/A  <b>Present Academic Calendar Entry:</b> N/A



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## Curriculum Proposal Form New/Change to Course/Program – Okanagan campus

<b>Category: 1</b>	
<b>Faculty/School:</b> Faculty of Education <b>Dept./Unit:</b> <b>Faculty/School Approval Date:</b> 20151118 <b>Effective Session:</b> 2017W	<b>Date:</b> 20151113 <b>Contact Person:</b> Dr. Susan Crichton <b>Phone:</b> 250.807.1818 <b>Email:</b> susan.crichton@ubc.ca
<b>Type of Action:</b> New Course	
<b>Rationale:</b> This new course is being created in support of and to enable the renewed BEd curriculum. This practicum allows teacher candidates to continue to build upon their pedagogical knowledge and practice through school based inquiry with a focus on literacy and numeracy.	
<b>Proposed Academic Calendar Entry:</b>  <u><b>EDUC 440 (3) Field Experience: Literacies and Numeracies in Action</b></u>  <u><b>Foundational pedagogical knowledge and practice will be explored through school-based inquiry. With a focus on literacies and numeracies in action, teacher candidates will work with mentor teachers in weekly school visits and then complete a minor practicum. Mentor teachers will take the lead in planning and curriculum enactment while the teacher candidate observes, works with individuals or small groups, and conducts teaching responsibilities as deemed fitting. Pass/Fail</b></u>  <u><b>Restricted to students in the Bachelor of Education Program</b></u>  <u><b>Co-requisite: EDUC 403, EDUC 431</b></u>	<b>Draft Academic Calendar URL:</b> N/A  <b>Present Academic Calendar Entry:</b> N/A



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## Curriculum Proposal Form New/Change to Course/Program – Okanagan campus

<b>Category: 1</b>	
<b>Faculty/School:</b> Faculty of Education <b>Dept./Unit:</b> <b>Faculty/School Approval Date:</b> 20151118 <b>Effective Session:</b> 2017W	<b>Date:</b> 20151113 <b>Contact Person:</b> Dr. Susan Crichton <b>Phone:</b> 250.807.1818 <b>Email:</b> susan.crichton@ubc.ca
<b>Type of Action:</b> New Course	
<b>Rationale:</b> This new course is being created in support of and to enable the renewed BEd curriculum. This practicum will pay special attention to diversity, language and culture and indigenous ways of knowing which adheres to the Teacher Regulation Branch Policy 5 (P5.C.03) on First Nations, Inuit and Metis pedagogy, students with special needs and English Language learners.	
<b>Proposed Academic Calendar Entry:</b>  <u><b>EDUC 441 (5) Field Experience: Formative Practicum</b></u>  <u><b>Working collaboratively in a school context, mentor teachers and teacher candidates co-plan, co-teach and co-assess. Insight into the significance of personal practical knowledge by engaging in dialogue, observation, and reflection concerning why the mentor teacher orients practices in particular ways, using specific strategies, resources, and lesson sequences. Pass/Fail</b></u>  <u><b>Prerequisite: EDUC 440, EDUC 431</b></u>  <u><b>Co-requisite: EDUC 436</b></u>	<b>Draft Academic Calendar URL:</b> N/A  <b>Present Academic Calendar Entry:</b> N/A



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## Curriculum Proposal Form New/Change to Course/Program – Okanagan campus

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<b>Faculty/School:</b> Faculty of Education <b>Dept./Unit:</b> <b>Faculty/School Approval Date:</b> 20151118 <b>Effective Session:</b> 2017W	<b>Date:</b> 20151113 <b>Contact Person:</b> Dr. Susan Crichton <b>Phone:</b> 250.807.1818 <b>Email:</b> susan.crichton@ubc.ca
<b>Type of Action:</b> New Course	
<b>Rationale:</b> This new course is being created in support of and to enable the renewed BEd curriculum. This community experience provides teacher candidates access for additional theoretical understandings and pedagogical perspectives while building experiences and knowledge for their final practicum.	
<b>Proposed Academic Calendar Entry:</b>  <u><b>EDUC 442 (5) Community Field Experience</b></u>  <u><b>Alternate field experience to broaden the teacher candidate's concept of educational spaces and opportunities. Pass/Fail</b></u>  <u><b>Prerequisite: EDUC 437</b></u>	<b>Draft Academic Calendar URL:</b> N/A  <b>Present Academic Calendar Entry:</b> N/A



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## Curriculum Proposal Form New/Change to Course/Program – Okanagan campus

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<b>Faculty/School:</b> Faculty of Education <b>Dept./Unit:</b> <b>Faculty/School Approval Date:</b> 20151118 <b>Effective Session:</b> 2017W	<b>Date:</b> 20151113 <b>Contact Person:</b> Dr. Susan Crichton <b>Phone:</b> 250.807.1818 <b>Email:</b> susan.crichton@ubc.ca
<b>Type of Action:</b> New Course	
<b>Rationale:</b> This new course is being created in support of and to enable the renewed BEd curriculum. EDUC 444 provides teacher candidates a 15 week major practicum which satisfies the Teacher Regulation Branch Policy 5 (P5.C.03). During this time, teacher candidates will demonstrate professional competencies as outlined by the <i>Standards for the Education, Competence &amp; Professional Conduct of Educators in British Columbia</i> .	
<b>Proposed Academic Calendar Entry:</b>  <u><b>EDUC 444 (15) Field Experience: Final Practicum/Internship</b></u>  <u><b>Extended immersion in a school community, co-planning/co-teaching/co-assessing with mentors and other colleagues and, with demonstrated competency, assume the lead in planning and curricular enactment with the support of mentor teachers. Pass/Fail</b></u>  <u><b>Prerequisite: EDUC 438, 6 credits of electives or equivalent approved by the Faculty of Education.</b></u>	<b>Draft Academic Calendar URL:</b> N/A  <b>Present Academic Calendar Entry:</b> N/A



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**Office of the Senate**  
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18 March, 2016

**To:** Okanagan Senate  
**From:** Curriculum Committee  
**Re:** Curriculum Proposals (approval)

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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 the new course brought forward from the Faculty of Applied Science and the new programs, new courses, revised courses and discontinued courses brought forward from the Faculty of Arts and Sciences.*

- a. From the Faculty of Applied Science
  - i. ENGR 526 (3) Multi-Sensor Data Fusion: System Architecture and Applications
  
- b. From the Faculty of Arts & Sciences
  - i. BSc Major in Data Science (new program)
  - ii. BSc Honours in Data Science (new program)
  - iii. COSC 301 (3) Introduction to Data Analytics (new course)
  - iv. DATA 301 (3) Introduction to Data Analytics (revised course)
  - v. DATA 501 (3) Data Analytics (revised course)
  - vi. COSC 421 (3) Network Science (new course)
  - vii. DATA 421 (3) Network Science (revised course)
  - viii. DATA 521 (3) Network Science (revised course)
  - ix. DATA 311 (3) Machine Learning (new course)
  - x. DATA 405 (3) Modeling and Simulation (new course)
  - xi. COSC 405 (3) Modeling and Simulation (revised course)



- xii. DATA 407 (3) Sampling and Design (new course)
- xiii. DATA 410 (3) Regression and Generalized Linear Models (new course)
- xiv. STAT 538 (3) Advanced Statistical Modelling (revised course)
- xv. DATA 419 (3-9) d Topics in Data Science (new course)
- xvi. DATA 448 (3/6) d Directed Studies in Data Science (new course)
- xvii. DATA 449 (6) Honours Thesis (new course)
- xviii. DATA 505 (3) Modeling and Simulation (new course)
- xix. COSC 505 (3) Modeling and Simulation (revised course)
- xx. STAT 240 (3) Statistical Reasoning (discontinuation)
- xxi. STAT 309 (3) Introduction to Statistical Inference (discontinuation)
- xxii. STAT 310 (3) Regression Analysis (discontinuation)
- xxiii. STAT 311 (3) Modern Statistical Methods (discontinuation)
- xxiv. STAT 336 (3) Statistical Quality Control (discontinuation)
- xxv. STAT 405 (3) Design and Analysis of Experiments (discontinuation)
- xxvi. STAT 407 (3) Sample Surveys (discontinuation)
- xxvii. STAT 410 (3) Introduction to Generalized Linear Models (discontinuation)
- xxviii. STAT 401(3) Probability and Statistical Inference (new course)

For the Committee,

Dr. Peter Arthur  
Chair, Curriculum Committee



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## Curriculum Proposal Form New/Change to Course/Program – Okanagan Campus

<b>Category: 1</b>	
<b>Faculty/School:</b> Applied Science/School of Engineering <b>Dept./Unit:</b> The School of Engineering <b>Faculty/School Approval Date:</b> Dec. 7 <sup>th</sup> , 2015 <b>Effective Session:</b> 2016W	<b>Date:</b> October 28, 2015 <b>Contact Person:</b> Dr. Yang Cao <b>Phone:</b> 250.807.9643 <b>Email:</b> yang.cao@ubc.ca
<b>Type of Action:</b> New course	
<b>Rationale:</b> This new course is added to support the M.Eng., M.A.Sc., and Ph.D. programs at the School of Engineering, Faculty of Applied Science. This course targets cross-disciplinary training and education. The course will support the research needs on intelligent sensing, computational intelligence, and information processing.	
<b>Proposed Academic Calendar Entry:</b>  <u><b>ENGR 526 (3) Multi-Sensor Data Fusion: System Architecture and Applications</b></u> <u>Sensor systems, data fusion algorithm and system architecture, Bayesian inference and decision theory, Dempster-Shafer theory, artificial neural networks and voting logic fusion, fusion with fuzzy logic, fusion of multiple classifiers, image fusion and performance assessment.</u>	<b>Draft Academic Calendar URL:</b>  <a href="http://www.calendar.ubc.ca/okanagan/proof/edit/courses.cfm?go=name&amp;code=ENGR">http://www.calendar.ubc.ca/okanagan/proof/edit/courses.cfm?go=name&amp;code=ENGR</a>  <b>Present Academic Calendar Entry:</b>  N/A

# Executive Summary for a New Degree Program Proposal

## B.Sc. Major and Honours in Data Science

Faculty of Arts and Sciences

University of British Columbia – Okanagan (UBCO)

### Overview

The University of British Columbia is a comprehensive research-intensive university, consistently ranked among the 40 best universities in the world. It creates an exceptional learning environment that fosters global citizenship, advances a civil and sustainable society, and supports outstanding research to serve the people of British Columbia, Canada and the world. Since 1915, UBC's West Coast spirit has embraced innovation and challenged the status quo. Its entrepreneurial perspective encourages students, staff and faculty to challenge convention, lead discovery and explore new ways of learning.

The Faculty of Arts and Sciences (the I. K. Barber School of Arts & Sciences) was established in 2005. It is organized into 8 units with 150 faculty members who offer 14 majors in the BA and 16 majors in the B.Sc. in addition to 4 interdisciplinary majors. In 2014, the Faculty offered courses to more than 3700 full-time equivalent students. The Department of Computer Science on UBC's Okanagan campus is part of Unit 5, which contains Computer Science, Mathematics, Physics, and Statistics.

### Credentials

**B.Sc. Major in Data Science. Honours in Data Science.**

**Location:** The Okanagan campus of UBC.

### Faculty offering program

The program will be offered in the Faculty of Arts and Sciences by the Department of Computer Science and Statistics in collaboration with the Department of Mathematics. (All 3 disciplines belong to the same administrative unit.)

### Anticipated program start date

The program will be offered starting in September 2017.

### Anticipated completion time:

Both the B.Sc. major and the Honours programs will take 4 years to complete.

### Summary of the proposed program

Faculty members in Computer Science, Mathematics, Physics, and Statistics have been offering B.Sc. degrees in Computer Science, Mathematics, Mathematical Sciences, Physics, and Statistics along with Honours degrees, minors, BA degrees, and graduate programs. Unit 5 now proposes to transform the current B.Sc. major in Statistics into a B.Sc. major in Data Science, and the Honours in Statistics into an Honours in Data Science. The current Minor in Statistics will be discontinued (a minor in Data Science was recently introduced). This profound refocus of the Statistics faculty members creates an exciting opportunity to innovate.

In the 20<sup>th</sup> century, Mathematics was the parent of both Computer Science and Statistics. The 21<sup>st</sup> century brought challenges in the analysis of data that requires both computational and statistical skills. Complex problems can often be

solved by making sense of huge amounts of data. This has led to the emergence of Data Science as the discipline that focuses on gathering, cleaning, transforming, interpreting, and visualizing data.

The program targets students with an interest in Computer Science, Mathematics, or Statistics who wish to become data scientists. It acknowledges the shift in recent years from a declining number of traditional statistics positions to a growing number of data scientist positions. The proposed Data Science degree will attract students who wish to gather, analyze, and interpret our ever growing collection of data.

### **i. Aims, goals and/or objectives of the proposed program**

The objective of the B.Sc. in Data Science is to train students in Statistics (to formulate relevant questions and determine the answer based on data) and Computer Science (to manipulate and visualize data efficiently). The emphasis is on deep understanding of the limitation of a model, formulating the right questions, and building the right visualization (i.e. critical thinking skills that will last for an entire career). The Honours in Data Science provides additional practical training on a specific data set for the most successful and interested students.

The proposed B.Sc./Honours in Data Science aims at training students who wish to either work in industry or continue their studies toward a graduate program. Its specific goals are as follows.

- ✓ **Provide practical skills:** The B.Sc./Honours in Data Science will be granted to students with a solid foundation in Statistics and Computer Science with practical data manipulation skills.
- ✓ **Fulfill high demand:** Jobs traditionally offered to statistics graduates now require significant expertise in Computer Science. A Data Science degree reflects that reality and provides in-demand skills.
- ✓ **Leverage faculty expertise:** The B.Sc./Honours in Data Science form part of a refocus of our faculty members on Data Science. A Minor was first introduced, followed by a Data Science cluster in the proposed MSc in Computer Science. The B.Sc./Honours provide the relevant Data Science education at the undergraduate level. The range of degree provided reflects the commitment of Computer Science and Statistics to the growing field of Data Science.
- ✓ **Make an economic impact:** Computer Science graduates have a strong record of working in local and large international companies. It is expected that graduates of the Data Science degree will find similar success on the job market.

### **ii. Anticipated contribution to the mandate and strategic plan of the institution**

The program will strengthen UBC's commitment to an exceptional learning environment. Faculty members have a strong commitment to technology transfer with a proven track record of multiple industry sponsored grants that provide excellent opportunity for Honours students funding and through consulting courses. The program will enhance UBC's support for innovation in the Interior.

The program also reinforces UBC's student learning commitment by updating our B.Sc. Major in Statistics into a modern major in Data Science that provides in-demand skills. The proposed Data Science Major and Honours programs are an innovative blend of Computer Science and Statistics that require new courses in fast growing fields (e.g. machine learning).

### **iii. Program learning outcomes**

Building from the first-year breadth foundation in the B.Sc., the Data Science Major/Honours provides a good foundation in Mathematics and solid bases in Computer Science and Statistics. Graduates will be able to

- demonstrate a solid foundation in core computer science: artificial intelligence, databases, data structure, parallel computing, programming, modeling and simulation;
- demonstrate a solid foundation in core statistics: regression, error analysis, statistical learning, and model validation;
- demonstrate a good foundation in mathematics: numerical analysis, linear algebra;

- write efficient computer code using the latest computer architectures;
- apply the scientific method: formulate a question, build a model, gather/clean/transform data, obtain an answer, and visualize the result;
- evaluate the ethical, privacy, and security issues involved in working with data.

In addition, Honours graduates will be able to

- present and defend their results publicly;
- present their results in writing following standard scientific writing practices;
- exhibit a specific case-study for which Data Science provided the answer.

These students will be well-prepared to enter the industry or further their studies at the graduate level.

**iv. Linkages between the learning outcomes and the curriculum design, including an indication whether a work experience/work place term is required for degree completion; and if so, a description of the purpose and role of the work experience within the program**

No work experience/work place term is required for degree completion. However, students will have access to a coop program and the Honours degree may involve an individual industry project similar to current team-based projects developed in the COSC 499 Capstone project and the COSC 341 Human-Computer Interaction courses, or the individual projects in the STAT 400 Consulting course.

The solid foundation in core computer science is provided through 8 mandatory computer science courses ranging from introductory programming to parallel computing and artificial intelligence, which are complemented with Data Science courses in machine learning and visualization. The Statistics part builds on elementary statistics to advanced model building and validation, while Data Science complements on supervised and unsupervised learning. Hence, the program will deliver a solid education in disciplines core to Data Science that emphasize life-long skills in critical thinking, hypothesis testing, and communication.

**v. Potential areas/sectors of employment for graduates and/or opportunities for further study**

Students graduating from the program will have the opportunity to pursue graduate studies, take a government-funded position, or enter the industry. Popular position titles they can fill include Data Scientist, Data Analyst, Business Intelligence Analyst/Administrator, Data Architect, and Quantitative Research Analyst.

There is currently a high demand for data scientists,<sup>1</sup> and the job was titled the sexiest job of the 21<sup>st</sup> century<sup>2</sup>. The current shortage of data scientist is problematic for some sectors of the economy and it is expected to continue<sup>3</sup>. We are gathering ever-increasing amounts of data (global volume of industry data doubles every year and 90% of all data in existence was created in the last 2 years) so we need to train people to make sense of it. In particular, Dataviz (short for Data Visualization) is quickly becoming a required skill in an increasing number of companies. Analyzing, interpreting, and applying the findings from large data sets has created value across all sectors of the industry<sup>4</sup>. Businesses want deeper insight leading to better business decisions since “the use of big data has become a key basis of competition and growth for individual firms”<sup>4</sup>.

In addition to demand, the data-related jobs are attractive. The best jobs of 2015 list (<http://www.careercast.com/jobs-rated/best-jobs-2015>) includes #6 Data Scientist (\$124K/yr) ahead of #8 Software Engineer (\$83K/yr) and #10 Computer System Analyst (\$81K/yr).

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<sup>1</sup> <http://fortune.com/2015/05/21/data-science-white-hot/>

<sup>2</sup> <https://hbr.org/2012/10/data-scientist-the-sexiest-job-of-the-21st-century/>

<sup>3</sup> <http://fortune.com/2015/01/22/salesforce-ceo-marc-benioff-on-where-big-tech-is-headed/>

<sup>4</sup> [http://www.mckinsey.com/insights/business\\_technology/big\\_data\\_the\\_next\\_frontier\\_for\\_innovation](http://www.mckinsey.com/insights/business_technology/big_data_the_next_frontier_for_innovation)

The B.Sc. Major in Data Science will contribute to the recognition of B.C. as a world leader in International Education by offering a program unique in Canada. It will attract international students and help fulfill the BC Jobs Plan commitment to increase the number of international students studying in B.C.<sup>5</sup> It also aligns with the BC Jobs Plan objective of expanding the number of job-ready graduates who will contribute to our emerging high-technology centres<sup>5</sup>. Ultimately, it will contribute to B.C. economic growth by creating educated people with the skills to unlock productivity potential in all sectors of the economy.

The Closing Canada's Big Data Talent Gap report<sup>6</sup> estimates "Canada's Big Data Talent Gap of 10,500 to 19,000 professionals with deep data and analytical skills (e.g. to fill Data Scientist positions) while the gap for professionals with solid data and analytical literacy to make better decision is estimated at 150,000". It predicts a growing lack of talented professionals with data skills and calls for an expansion of academic curriculum at all levels, including undergraduate. The present program aims to answer such a demand by providing the first B.Sc. Major in Data Science in Canada.

#### **vi. Delivery methods**

The program will be delivered using a variety of methods. From traditional lectures complemented with laboratory assignments to flipped classroom flexible delivery models such as team-based learning. Experience-based learning is encouraged, especially in the Honours thesis and Consulting course, but not mandatory in the present program.

#### **vii. Program strengths**

The multidisciplinary character of the administrative Unit 5 makes it easy to deliver the program with each discipline having a stake in its success. This is a low risk program since expertise is readily available and only needs to be redeployed. The proposed Data Science Major and Honours programs are a complete new curriculum development that go well beyond traditional combined majors in Computer Science and Statistics.

#### **viii. An overview of the level of support and recognition from other post-secondary institutions, (including plans for admissions and transfer within the British Columbia post-secondary education system) and relevant regulatory or professional bodies, where applicable**

The B.Sc. major and Honours programs in Data Science will be accepted as a pre-requisite for MSc programs in Computer Science, Data Science, Statistics, or related fields in North America. All the courses in the program are university-level courses for which standard articulation agreements are in place.

#### **ix. Related programs in the institution or other British Columbia post-secondary institutions. Indicate rationale for duplication, if any.**

There is no B.Sc. Major in Data Science in BC or Canada. Data Science programs have been developed recently at the graduate level (e.g. SFU professional master in big data). At the undergraduate level, majors have traditionally been in Statistics or Computer Science. The closest degree would be UBC's combined Major Computer Science and Statistics but it is effectively closer to a double major and is not focused on Data Science. Other institutions offering degrees in Data Science in Canada<sup>7</sup> are University of the Fraser Valley (Data Analysis post-degree certificate), Queen's (Master of Management Analytics), Simon Fraser University (professional Master's Program in Big Data), University of Alberta (embedded certificate in Data Science and Master in Statistical Machine Learning), Saint Mary's University (M.Sc. in Computing & Data Analytics), and York University (Master of Business Analytics). In the world, only 34 institutions are listed<sup>7</sup> as offering B.Sc. degrees in Data Science.

There is a growing number of data science courses offered online through Coursera from US-based institutions (Duke University, Wesleyan University, University of Washington, University of Colorado, Johns Hopkins University) that reflect

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<sup>5</sup> [http://engage.gov.bc.ca/bcjobsplan/files/2014/09/BCJP\\_3Year\\_Progress\\_Report.pdf](http://engage.gov.bc.ca/bcjobsplan/files/2014/09/BCJP_3Year_Progress_Report.pdf) page 19

<sup>6</sup> Closing Canada's Big Data Talent Gap, Canada's Big Data Consortium, Oct 2015, <http://www.ryerson.ca/provost/partnerships/talentgap/WhitePaper.html>

<sup>7</sup> <http://datascience.community/colleges> consulted on September 14, 2015

the rapidly growing interest in Data Science. Internationally, the US offers 25 Bachelor degrees related to Data Science while the UK offers 4. All of these are geographically very far from UBC Okanagan.

**The name, title, phone number and email address of the institutional contact person in case more information is required.**

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I. K. Barber School of Arts & Sciences Unit #5, UBC Okanagan  
ASC 350, 3187 University Way, UBC Okanagan, Kelowna BC V1V 1V7  
[yves.lucet@ubc.ca](mailto:yves.lucet@ubc.ca) 250.807.9505

**Appendix: Resources required**

The following is a brief description of the resources that will be required for the program.

- i. Budget (including proposed tuition fee): The tuition fees are as set for the B.Sc. program.
- ii. Space: No new space is needed. Computer lab space will use seats previously allocated to the Major in Statistics.
- iii. Library: Current library subscriptions are sufficient to support the program.
- iv. Other: Faculty Resources

Computer Science currently has 7 faculty members including four tenured professors, one tenure-track instructor, and two term instructors; Statistics has 4 faculty members: 1 tenure-track and 3 tenured professors. With a judicious redeployment of the Statistics faculty members and the available space in existing computer science courses, a minimum number of new Data Science courses are required to run the program along with existing computer science program offerings.

## Introduction to B.Sc. Major and Honours in Data Science

The B.Sc. Major in Data Science serves students interested in a mix of Computer Science and Statistics with a solid foundation in Mathematics. The structure is as follows.

First Year	Credits
CHEM 111, 113; or CHEM 121, 123	6
MATH 100, 101	6
Two of ENGL 112 or 114, 113, 150, 151, 153	6
PHYS 111 or 112; and PHYS 102 or 122	6
COSC 111, 121	6
Total Credits	30
Second Year	Credits
MATH 200, 221 <sup>1</sup>	6
STAT 230	3
COSC 221, 222	6
Arts electives	6
Electives	9
Total Credits	30
Third and Fourth Years	Credits
COSC 304, 322, 360, 407	12
DATA 301, 311, 410	9
PHIL 331	3
STAT 303	3
Three of COSC 303, DATA 405, MATH 307, STAT 401, 403	9
One of DATA 421, 407, PHYS 420	3
Two of BIOL 308, 414, 444, 460, 468, ECON 327, 328, 427, EESC 342, 413, GEOG 370, 371, 377, PHYS 331, 332, PSYO 372, 443	6
Upper-level Science electives	9
Upper-level Arts electives	3
Upper-level electives	3
Total Credits	60
Minimum credits for degree	120

<sup>1</sup> Math 221 may be taken in the second term of the first year.

The best students in the program will be advised to do an Honours in Data Science to gain practical experience working on real data sets. The Honours in Data Science is structured as follow.



## B.Sc. Data Science Honours Program

The course requirements are the same as in the Major in Data Science program, except the student must maintain a high grade level (at least 75% grade average in all courses taken to date applicable to the Data Science Major) and the student must complete DATA 449 Honours Thesis (6 credits).

### Faculty members supporting the program

The following faculty members will support the program.

Name	Rank	Cluster	Recent Funding	Research Expertise
<b>Yong Gao</b>	Associate Professor	Computer science, Optimization,	DG	Artificial Intelligence, Network Science, Algorithms
<b>Warren Hare</b>	Associate Professor	Optimization	DG, CRD, Engage, Accelerate	Optimization, nonconvex analysis
<b>Ramon Lawrence</b>	Associate Professor	Computer science	DG	Databases, algorithms, innovative teaching systems
<b>Yves Lucet</b>	Professor	Optimization, Computer science	DG, CRD, Engage, Accelerate	Optimization, convex analysis, algorithms, computer science education
<b>Jason Loepky</b>	Associate Professor	Data Science	DG, CRD, Engage	Design and analysis of experiments for physical processes and computer-based simulations
<b>John Braun</b>	Professor	Data Science	DG, CANSSI	Computational Statistics, statistical education
<b>Paramjit Gill</b>	Associate Professor	Data Science		Spatial statistics; sports statistics; statistical stylometry; and social networks models
<b>Bowen Hui</b>	Instructor	Computer Science	SSHRC	Computer Science education, intelligent interfaces, probabilistic reasoning, computational linguistics
<b>Jeffrey Andrews</b>	Assistant Professor	Data Science		Mixture modeling

Abbreviations: DG (NSERC Discovery Grant), CRD (NSERC Collaborative Research and Development grant), Engage (NSERC Engage grant), Accelerate (MITACS Accelerate grant), CANSSI (Canadian Statistical Sciences Institute).

### Admission Requirements

- Major in Data Science: Admission into the B.Sc.
- Honours in Data Science: 4<sup>th</sup> year standing, at least 75% grade average in all courses taken to date applicable to the Data Science Major

### Completion Requirements

- Major in Data Science: To complete the program, the student must successfully pass 120 credits.
- Honours in Data Science:
  - Completion of the course requirements for the Data Science Major;
  - Completion of DATA 449 Honours Thesis with a minimum grade of 75%. A written thesis is required, with a public presentation of the thesis in the form of a poster session or a seminar; and
  - A minimum 75% graduating grade average (GGA).

## Program Capacity: 25 students/year

### Courses associated with the program

A reorganization of the courses offered by Statistics is summarized below.

#### *New courses:*

- DATA 311 Machine learning is an update of STAT 311 and an improvement over STAT 240
- DATA 405 Modelling and Simulation is a renaming of COSC 405; similarly COSC 505 was renamed DATA 505
- DATA 407 Sampling and Design is a fusion of STAT 405 and STAT 407; it is cross-listed as STAT 507
- DATA 410 Regression and Generalized Linear Models is a fusion of STAT 310 and STAT 410
- STAT 401 Probability and Statistical Inference is an enhanced version of STAT 309
- DATA 419 Topics in Data Science (a new course)
- DATA 448 Directed Studies in Data Science (a new course)
- DATA 449 Honours thesis (a new course)

#### *Existing courses supporting the program:*

- DATA 301 Introduction to Data Analytics
- PHYS 420 Data and Image Processing
- STAT 403 Stochastic Processes

#### *Content Migration*

Previous Course to be discontinued	Content Migrated to
STAT 240 Statistical Reasoning	DATA 311 Machine Learning
STAT 309 Introduction to Statistical Inference	STAT 401 Probability and Statistical Inference
STAT 310 Regression Analysis	DATA 410 Regression and Generalized Linear Models
STAT 311 Modern Statistical Methods	DATA 311 Machine Learning
STAT 336 Statistical Quality Control	Removed
STAT 405 Design and Analysis of Experiments	DATA 407 Sampling and Design
STAT 407 Sample Surveys	DATA 407 Sampling and Design
STAT 410 Introduction to Generalized Linear Models	DATA 410 Regression and Generalized Linear Models

New course	Content Migrated from
COSC 301 Introduction to Data Analytics	DATA 301 Introduction to Data Analytics (equivalence)
COSC 421 Network Science	DATA 421 (equivalence)
DATA 311 Machine Learning	STAT 311 Modern Statistical Methods; also updated version of STAT 240 Statistical Reasoning
DATA 405 Modeling and Simulation	COSC 405 Modeling and Simulation
DATA 505 Modeling and Simulation	COSC 505 Modeling and Simulation
DATA 407 Sampling and Design	STAT 405 Design and Analysis of Experiments; and STAT 407 Sample Surveys
DATA 410 Regression and Generalized Linear Models	STAT 310 Regression Analysis; and STAT 410 Introduction to Generalized Linear Models
DATA 419 Special Topics in Data Science	New
DATA 448 Directed Studies in Data Science	New
DATA 449 Honours Thesis	New
STAT 401 Probability and Statistical Inference	STAT 309 Introduction to Statistical Inference

Courses not affected by the change are STAT 121, 124, 230, 303, 406, 448, 449, 538, 547, 560.

### ***STAT vs. DATA or COSC vs. DATA***

The criteria to have a course use the DATA subject code is the course should contain some amount of both statistics and computing; it should be teachable by somebody with a background in either Computer Science or Statistics.

### **Transition**

The Major in Statistics will be suspended from new declaration starting January 2016; it will be discontinued by August 2017. As of September 14, 2015, there are 11 active students who have declared a Major in Statistics and 0 students declared an Honours in Statistics. These students will be provided with a personalized program advising to allow them to finish their degree and they will have the benefit of a grandfather clause. They will be allowed to complete their Major with the subject matter and content at the time of their declaration.

### **Differences with existing programs**

The major differences between the Data Science Major and existing degrees are as follow.

Major or Honours	Focus	Mandatory core courses
Computer Science	Breadth of computer science skills especially software engineering, algorithms, human computer interaction; culminate with mandatory capstone project	<ul style="list-style-type: none"> <li>• COSC 304 Databases</li> <li>• COSC 310 Software Engineering,</li> <li>• COSC 320 Algorithms</li> <li>• COSC 341 Human-Computer Interaction</li> <li>• COSC 499 Capstone</li> </ul>
Data Science	Computing and statistical skills with data manipulation, modeling and visualization	<ul style="list-style-type: none"> <li>• COSC 304 Databases</li> <li>• COSC 322 Artificial Intelligence</li> <li>• COSC 360 Web Programming</li> <li>• COSC 407 Parallel Computing</li> <li>• DATA 301 Introduction to Data Analytics</li> <li>• DATA 311 Machine Learning</li> <li>• DATA 410 Regression and generalized linear models</li> <li>• STAT 303 Introduction to Probability</li> </ul>
Mathematical Sciences	Combined degree between MATH and COSC with some STAT, emphasis on proofs and algorithms/software engineering	<ul style="list-style-type: none"> <li>• MATH 220 Proofs</li> <li>• COSC 310, 320</li> <li>• MATH 307, 311 or 327, 319 or 340</li> <li>• STAT courses (x3)</li> </ul>
Mathematics	Breadth of mathematical skills with emphasis on proofs and foundations	<ul style="list-style-type: none"> <li>• MATH 220 Proofs</li> <li>• MATH 225 Differential Equations</li> <li>• MATH 311 Abstract Algebra or MATH 327 Analysis</li> <li>• MATH 319 Partial Differential Equations or MATH 340 Linear Programming</li> </ul>
Statistics	Breadth of statistical skills with some emphasis on proofs	<ul style="list-style-type: none"> <li>• MATH 220 Proofs</li> <li>• STAT courses (x8)</li> </ul>



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## Curriculum Proposal Form New/Change to Course/Program – Okanagan campus

<b>Category: 1</b>																																	
<b>Faculty/School:</b> Arts & Sciences <b>Dept./Unit:</b> Unit 5 <b>Faculty/School Approval Date:</b> February 3, 2016 <b>Effective Session:</b> 2017W	<b>Date:</b> 20150926 <b>Contact Person:</b> Dr. Yves Lucet <b>Phone:</b> 250.807.9505 <b>Email:</b> yves.lucet@ubc.ca																																
<b>Type of Action: New Program</b>																																	
<b>Rationale:</b> New B.Sc. Major and Honours in Data Science. See executive summary.																																	
<p><b>Proposed Academic Calendar Entry:</b></p> <p><i>Data Science (B.Sc.)</i></p> <p><i>B.Sc. Major in Data Science</i></p> <p><i>Note: The UBC Okanagan campus also offers a <a href="#">B.Sc. Minor in Data Science</a>.</i></p> <p><i>This program provides students with a thorough training in Data Science, which focuses on taking decisions supported by data. It is grounded in Statistics (to formulate relevant questions and determine the answer based on data) and Computer Science (to manipulate and visualize data efficiently).</i></p> <p><i>Data Science graduates have an impact on society by supporting evidence-based decisions grounded in our ever-growing collection of data. They are in very high demand and are called Statistician, Quantitative Analyst, Decision Support Engineering Analyst, or Data Scientist.</i></p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 20px;"> <thead> <tr style="background-color: #4F7942; color: white;"> <th style="text-align: left;">First Year</th> <th style="text-align: right;">Credits</th> </tr> </thead> <tbody> <tr> <td>CHEM 111, 113; or CHEM 121, 123</td> <td style="text-align: right;">6</td> </tr> <tr> <td>MATH 100, 101</td> <td style="text-align: right;">6</td> </tr> <tr> <td>Two of ENGL 112 or 114, 113, 150, 151, 153</td> <td style="text-align: right;">6</td> </tr> <tr> <td>PHYS 111 or 112; and PHYS 102 or 122</td> <td style="text-align: right;">6</td> </tr> <tr> <td>COSC 111, 121</td> <td style="text-align: right;">6</td> </tr> <tr> <td>Total Credits</td> <td style="text-align: right;">30</td> </tr> <tr style="background-color: #4F7942; color: white;"> <th style="text-align: left;">Second Year</th> <th></th> </tr> <tr> <td>MATH 200, 221<sup>1</sup></td> <td style="text-align: right;">6</td> </tr> <tr> <td>STAT 230</td> <td style="text-align: right;">3</td> </tr> <tr> <td>COSC 221, 222</td> <td style="text-align: right;">6</td> </tr> <tr> <td>Arts electives</td> <td style="text-align: right;">6</td> </tr> <tr> <td>Electives</td> <td style="text-align: right;">9</td> </tr> <tr> <td>Total Credits</td> <td style="text-align: right;">30</td> </tr> <tr style="background-color: #4F7942; color: white;"> <th style="text-align: left;">Third and Fourth Years</th> <th></th> </tr> <tr> <td>COSC 304, 322, 360, 407</td> <td style="text-align: right;">12</td> </tr> </tbody> </table>	First Year	Credits	CHEM 111, 113; or CHEM 121, 123	6	MATH 100, 101	6	Two of ENGL 112 or 114, 113, 150, 151, 153	6	PHYS 111 or 112; and PHYS 102 or 122	6	COSC 111, 121	6	Total Credits	30	Second Year		MATH 200, 221 <sup>1</sup>	6	STAT 230	3	COSC 221, 222	6	Arts electives	6	Electives	9	Total Credits	30	Third and Fourth Years		COSC 304, 322, 360, 407	12	<b>Draft Academic Calendar URL: NA Present Academic Calendar Entry: NA</b>
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DATA 301, 311, 410	9	
PHIL 331	3	
STAT 303	3	
Three of COSC 303, DATA 405, MATH 307, STAT 401, 403	9	
One of DATA 421, 407, PHYS 420	3	
Two of BIOL 308, 414, 444, 460, 468, ECON 327, 328, 427, EESC 342, 413, GEOG 370, 371, 377, PHYS 331, 332, PSYO 372, 443	6	
Upper-level Science electives	9	
Upper-level Arts electives	3	
Upper-level electives	3	
Total Credits	60	
Minimum credits for degree	120	
<sup>1</sup> Math 221 may be taken in the second term of the first year.		



## Curriculum Proposal Form New/Change to Course/Program – Okanagan campus

<b>Category: 1</b>	
<b>Faculty/School:</b> Arts & Sciences <b>Dept./Unit:</b> Unit 5 <b>Faculty/School Approval Date:</b> February 3, 2016 <b>Effective Session:</b> 2017W	<b>Date:</b> 20150926 <b>Contact Person:</b> Dr. Yves Lucet <b>Phone:</b> 250.807.9505 <b>Email:</b> yves.lucet@ubc.ca
<b>Type of Action: New Program</b>	
<b>Rationale:</b> New B.Sc. Honours in Data Science. See executive summary.	
<p><b><i>Proposed Academic Calendar Entry:</i></b></p> <p><i>Data Science (B.Sc.)</i>  <b>B.Sc. Data Science Honours Program</b></p> <p>Through coursework and research, the Honours in Data Science is an intensive program of study. Students who complete this program will have the ability to work independently and with a high level of competency. The course requirements are the same as in the Major in Data Science program, except the student must maintain a high grade level (a minimum of 75%) and the student must complete DATA 449 Honours Thesis (6 credits).</p> <p><b>Admission Requirements</b></p> <ul style="list-style-type: none"> <li>• Fourth-year standing in the Data Science Major;</li> <li>• This program requires a research project with an undergraduate honours thesis. The thesis proposal and a research supervisor must be approved by the unit head; and</li> <li>• Minimum grade average of 75% in all courses taken to date applicable to the Data Science Major.</li> </ul> <p>In exceptional cases, such as transferees from another institution, a student may be admitted to the Honours program notwithstanding the criteria listed above.</p> <p><b>Graduation Requirements</b></p> <ul style="list-style-type: none"> <li>• Completion of the course requirements for the Data Science Major;</li> <li>• Completion of DATA 449 Honours Thesis with a minimum grade of 75%. A written thesis is required, with a public presentation of the thesis in the form of a poster session or a seminar; and</li> <li>• A minimum 75% graduating grade average (GGA).</li> </ul>	<p><b>Draft Academic Calendar URL:</b> NA</p> <p><b>Present Academic Calendar Entry:</b> NA</p>



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## Curriculum Proposal Form New Course – Okanagan Campus

<b>Category: 1</b>	
<b>Faculty/School:</b> Arts & Sciences <b>Dept./Unit:</b> Unit 5 – Computer Science <b>Faculty/School Approval Date:</b> February 3, 2016 <b>Effective Session:</b> 2017W	<b>Date:</b> October 13, 2015 <b>Contact Person:</b> Dr. Ramon Lawrence <b>Phone:</b> 250.807.9390 <b>Email:</b> ramon.lawrence@ubc.ca
<b>Type of Action:</b> New Course (COSC 301) Revise credit exclusion, add equivalency (DATA 301) Revise credit exclusion (DATA 501)	
<b>Rationale:</b> DATA 301 contains enough Computer Science content to be cross-listed as a computer science course.	
<b>Proposed Academic Calendar Entry:</b>  <u><b>COSC 301 (3) Introduction to Data Analytics</b></u> <u><b>Techniques for computation, analysis, and visualization of data using software. Manipulation of small and large data sets. Automation using scripting. Real-world applications from life sciences, physical sciences, economics, engineering, or psychology. No prior computing background is required. Credit will be granted for only one of COSC 301, DATA 301 or DATA 501. [3-2-0]</b></u> <u><b>Prerequisite: Third-year standing.</b></u> <u><b>Equivalency: DATA 301</b></u>	<b>Draft Academic Calendar URL:</b> N/A  <b>Present Academic Calendar Entry:</b> N/A



<p><b>DATA 301 (3) Introduction to Data Analytics</b> Techniques for computation, analysis, and visualization of data using software. Manipulation of small and large data sets. Automation using scripting. Real-world applications from life sciences, physical sciences, economics, engineering, or psychology. No prior computing background is required. <b><u>Credit will be granted for only one of COSC 301, DATA 301 or DATA 501.</u></b> [3-2-0] <i>Prerequisite:</i> Third-year standing. <b><u>Equivalency: COSC 301</u></b></p> <p><b>DATA 501 (3) Data Analytics</b> Techniques for computation, analysis, and visualization of data using software. Manipulation of small and large data sets. Automation using scripting. Real-world applications from life sciences, physical sciences, engineering, or psychology. <b><u>Credit will be granted for only one of COSC 301, DATA 301 or DATA 501.</u></b></p>	<p><b>Draft Academic Calendar URL:</b> <a href="http://www.calendar.ubc.ca/okanagan/proof/edit/courses.cfm?go=name&amp;code=DATA">http://www.calendar.ubc.ca/okanagan/proof/edit/courses.cfm?go=name&amp;code=DATA</a></p> <p><b>Present Academic Calendar Entry:</b> <a href="http://www.calendar.ubc.ca/okanagan/courses.cfm?go=code&amp;code=DATA">http://www.calendar.ubc.ca/okanagan/courses.cfm?go=code&amp;code=DATA</a></p> <p><b>DATA 301 (3) Introduction to Data Analytics</b> Techniques for computation, analysis, and visualization of data using software. Manipulation of small and large data sets. Automation using scripting. Real-world applications from life sciences, physical sciences, economics, engineering, or psychology. No prior computing background is required. <b><del>Credit will not be granted for both DATA 301 and DATA 501.</del></b> [3-2-0] <i>Prerequisite:</i> Third-year standing.</p> <p><b>Draft Academic Calendar URL:</b> The present calendar entry is from the M.Sc. in Computer Science proposal, which is not yet appearing in the draft Academic Calendar but was approved at November 2015 Senate Curriculum Committee meeting.</p> <p><b>Present Academic Calendar Entry:</b> N/A</p> <p><b>DATA 501 (3) Data Analytics</b> Techniques for computation, analysis, and visualization of data using software. Manipulation of small and large data sets. Automation using scripting. Real-world applications from life sciences, physical sciences, engineering, or psychology. <b><del>Credit will not be granted for both DATA 301 and DATA 501.</del></b></p>
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## Curriculum Proposal Form New/Change to Course/Program – Okanagan Campus

<b>Category: 1</b>	
<b>Faculty/School:</b> Arts & Sciences <b>Dept./Unit:</b> Computer Science/Unit 5 <b>Faculty/School Approval Date:</b> February 3, 2016 <b>Effective Session:</b> 2017W	<b>Date:</b> October 13, 2015 <b>Contact Person:</b> Dr. Yong Gao <b>Phone:</b> 250.807.9503 <b>Email:</b> yong.gao@ubc.ca
<b>Type of Action:</b> Add new course (COSC 421) Revise credit exclusion and add equivalency (DATA 421) Revise credit exclusion (DATA 521)	
<b>Rationale:</b> DATA 421 contains enough Computer Science content to be cross-listed as a computer science course.	
<b>Proposed Academic Calendar Entry:</b>  <u><b>COSC 421 (3) Network Science          Graphs and complex networks in scientific          research. Probabilistic and statistical          models. Structures, patterns, and behaviors          in networks. Algorithmic and statistical          methods (online/mobile), social networks,          and social media platforms. Social influence,          information diffusion, and viral marketing.          Sentiment analysis and opinion mining.          Data privacy. Search engines and          recommendation systems. Credit will be          granted for only one of COSC 421, DATA          421 or DATA 521. [3-2-0]          Prerequisite: Third-year standing.          Equivalency: DATA 421</b></u>	<b>Draft Academic Calendar URL:</b> N/A  <b>Present Academic Calendar Entry:</b> N/A          <b>Draft Academic Calendar URL:</b> N/A The present calendar entries are from the M.Sc. in Computer Science proposal, which is not yet appearing in the draft Academic Calendar but was approved at November 2015 Senate Curriculum Committee meeting.



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**DATA 421 (3) Network Science**

Graphs and complex networks in scientific research. Probabilistic and statistical models. Structures, patterns, and behaviors in networks. Algorithmic and statistical methods. (online/mobile) social networks and social media platforms. Social influence, information diffusion, and viral marketing. Sentiment analysis and opinion mining. Data privacy. Search engines and recommendation systems. **Credit will be granted for only one of COSC 421, DATA 421 or DATA 521. [3-2-0]**

*Prerequisite:* Third-year standing.

**Equivalency: COSC 421**

**DATA 521 (3) Network Science**

Graphs and complex networks in scientific research. Probabilistic and statistical models. Structures, patterns, and behaviors in networks. Algorithmic and statistical methods. (online/mobile) social networks and social media platforms. Social influence, information diffusion, and viral marketing. Sentiment analysis and opinion mining. Data privacy. Search engines and recommendation systems. **Credit will be granted for only one of COSC 421, DATA 421 or DATA 521.**

**Present Academic Calendar Entry:**  
N/A

**DATA 421 (3) Network Science**

Graphs and complex networks in scientific research. Probabilistic and statistical models. Structures, patterns, and behaviors in networks. Algorithmic and statistical methods. (online/mobile) social networks and social media platforms. Social influence, information diffusion, and viral marketing. Sentiment analysis and opinion mining. Data privacy. Search engines and recommendation systems. **~~Credit will not be granted for both DATA 421 and DATA 521.~~**

*Prerequisite:* Third-year standing.

**DATA 521 (3) Network Science**

Graphs and complex networks in scientific research. Probabilistic and statistical models. Structures, patterns, and behaviors in networks. Algorithmic and statistical methods. (online/mobile) social networks and social media platforms. Social influence, information diffusion, and viral marketing. Sentiment analysis and opinion mining. Data privacy. Search engines and recommendation systems. **~~Credit will not be granted for both DATA 421 and DATA 521.~~**



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## Curriculum Proposal Form New/Change to Course/Program – Okanagan campus

<b>Category: 1</b>	
<b>Faculty/School:</b> Arts & Sciences <b>Dept./Unit:</b> Unit 5 <b>Faculty/School Approval Date:</b> February 3, 2016 <b>Effective Session:</b> 2017W	<b>Date:</b> 20150910 <b>Contact Person:</b> Dr. Yves Lucet <b>Phone:</b> 250.807.9505 <b>Email:</b> yves.lucet@ubc.ca
<b>Type of Action: New course</b>	
<p><b>Rationale:</b> New course to support the new BSc major in Data Science. Machine learning is important for any Data Science program. DATA 311 contains updated content from STAT 311. It is also a more modern version of STAT 240. As a result both STAT 240 and STAT 311 are removed.</p> <p>The content of STAT 240, STAT 311, and DATA 311 is different enough to warrant credits for any combination so no exclusion statement like “Credit will not be granted for...” is necessary.</p>	
<b>Proposed Academic Calendar Entry:</b>  <u><b>DATA 311 (3) Machine Learning Regression, classification, resampling, model selection and validation, fundamental properties of matrices, dimension reduction, tree-based methods, unsupervised learning. [3-2-0]</b></u> <u><b>Prerequisite: both of (one of STAT 230 or 75% in either APSC 254, BIOL 202, or PSYO 373) and (one of COSC 111 or APSC 177).</b></u>	<b>Draft Academic Calendar URL:</b> N/A  <b>Present Academic Calendar Entry:</b> N/A



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## Curriculum Proposal Form New/Change to Course/Program – Okanagan Campus

<b>Category: 1</b>	
<b>Faculty/School:</b> Arts & Sciences <b>Dept./Unit:</b> Computer Science/Unit 5 <b>Faculty/School Approval Date:</b> February 3, 2016 <b>Effective Session:</b> 2017W	<b>Date:</b> September 10, 2015 <b>Contact Person:</b> Dr. Yves Lucet <b>Phone:</b> 250.807.9505 <b>Email:</b> yves.lucet@ubc.ca
<b>Type of Action:</b> Add new course (DATA 405) Add credit exclusion and equivalency (COSC 405)	
<b>Rationale:</b> The criteria to have a course use the DATA subject code is the course should contain some amount of both statistics and computing; it should be teachable by somebody with a background in either COSC or STAT.  Credit restriction added for previous version (COSC 405) and grad version (DATA 505, COSC 505).	
<b>Proposed Academic Calendar Entry:</b>  <u><b>DATA 405 (3) Modeling and Simulation          Numeric dynamic systems models and          emphasis on discrete stochastic systems.          State description of models, common          model components, entities. Common          simulation language. Simulation using          algebraic languages. Simulation          methodology: data collection, model          design, output analysis, optimization,          validation. Elements of queuing theory,          relationship to simulation. Applications          to computer systems models. Credit will          be granted for only one of COSC 405,          DATA 405, COSC 505, or DATA 505. [3-          2-0]</b></u> <u><b>Equivalency: COSC 405</b></u>	<b>Draft Academic Calendar URL:</b> N/A  <b>Present Academic Calendar Entry:</b> N/A



<p><b>Proposed Academic Calendar Entry:</b></p> <p><b>COSC 405 (3) Modeling and Simulation</b>          Numeric dynamic systems models and emphasis on discrete stochastic systems. State description of models, common model components, entities. Common simulation language. Simulation using algebraic languages. Simulation methodology: data collection, model design, output analysis, optimization, validation. Elements of queuing theory, relationship to simulation. Applications to computer systems models.  <u><b>Credit will be granted for only one of COSC 405, DATA 405, COSC 505, or DATA 505.</b></u> [3-2-0]  <i>Prerequisite:</i> A score of 60% or higher in COSC 221 and a score of 60% or higher in COSC 222.  <u><b>Equivalency: DATA 405.</b></u></p>	<p><b>Draft Academic Calendar URL:</b>  <a href="http://www.calendar.ubc.ca/okanagan/profile/edit/courses.cfm?go=name&amp;code=COSC">http://www.calendar.ubc.ca/okanagan/profile/edit/courses.cfm?go=name&amp;code=COSC</a></p> <p><b>Present Academic Calendar Entry:</b>  <a href="http://www.calendar.ubc.ca/okanagan/courses.cfm?go=code&amp;code=COSC">http://www.calendar.ubc.ca/okanagan/courses.cfm?go=code&amp;code=COSC</a></p> <p><b>COSC 405 (3) Modelling and Simulation</b>          Numeric dynamic systems models and emphasis on discrete stochastic systems. State description of models, common model components, entities. Common simulation language. Simulation using algebraic languages. Simulation methodology: data collection, model design, output analysis, optimization, validation. Elements of queuing theory, relationship to simulation. Applications to computer systems models. [3-2-0]</p> <p><i>Prerequisite:</i> A score of 60% or higher in COSC 221 and a score of 60% or higher in COSC 222.</p>
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## Curriculum Proposal Form New/Change to Course/Program – Okanagan Campus

<b>Category: 1</b>	
<b>Faculty/School:</b> Arts & Sciences <b>Dept./Unit:</b> Computer Science/Unit 5 <b>Faculty/School Approval Date:</b> February 3, 2016 <b>Effective Session:</b> 2017W	<b>Date:</b> September 20, 2015 <b>Contact Person:</b> Dr. Yves Lucet <b>Phone:</b> 250.807.9505 <b>Email:</b> yves.lucet@ubc.ca
<b>Type of Action: New Course</b>	
<b>Rationale:</b> <ul style="list-style-type: none"> <li>• DATA 407 Sampling and Design is a merger of STAT 405 Design and Analysis of Experiments and STAT 407 Sample Surveys.</li> <li>• The content between STAT 405, STAT 407 and DATA 407 is different enough to warrant credits for any combination so no exclusion clause was added.</li> <li>• The pre-requisite was enlarged after consultation with PSYO</li> </ul>	
<b>Proposed Academic Calendar Entry:</b>  <u><b>DATA 407 (3) Sampling and Design Planning and practice of data collection. Pros and cons of both observational and experimental data. Survey samples: random sampling; bias and variance; unequal probability sampling; systematic, multistage, and stratified sampling; ratio and regression estimators. Experimental design: simple one-way comparisons; designs with randomization restrictions including blocking, split-plots, nested and repeated measures designs. Credit will be granted for only one of DATA 407 or STAT 507. [3-1-0] Prerequisite: One of STAT 230, PSYO 372, BIOL 202, or ECON 327.</b></u>	<b>Draft Academic Calendar URL:</b> N/A  <b>Present Academic Calendar Entry:</b> N/A



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## Curriculum Proposal Form New/Change to Course/Program – Okanagan campus

<b>Category: 1</b>	
<b>Faculty/School:</b> Arts & Sciences <b>Dept./Unit:</b> Unit 5 <b>Faculty/School Approval Date:</b> February 3, 2016 <b>Effective Session:</b> 2017W	<b>Date:</b> 20150910 <b>Contact Person:</b> Dr. Yves Lucet <b>Phone:</b> 250.807.9505 <b>Email:</b> yves.lucet@ubc.ca
<b>Type of Action:</b> New Course (DATA 410) Change to vectors and add credit exclusion (STAT 538)	
<b>Rationale:</b> New course to support the new BSc major in Data Science. DATA 410 contains content from STAT 310 and STAT 410. As a result both STAT 310 and STAT 410 are removed. DATA 410 shares enough content with STAT 538 to warrant a credit restriction.  The content of STAT 310, STAT 410, and DATA 410 is different enough to warrant credits for any combination so no “Credit will not be granted...” statement is necessary.	
<b>Proposed Academic Calendar Entry:</b>  <u><b>DATA 410 (3) Regression and Generalized Linear Models</b></u> <u><b>Regression, linear models, generalized linear models, additive models, generalized additive models, mixed models. Theory and numerical performance. Credit will be granted for only one of DATA 410 or STAT 538. [3-2-0]</b></u> <u><b>Prerequisite: DATA 311.</b></u>	<b>Draft Academic Calendar URL:</b> N/A  <b>Present Academic Calendar Entry:</b> N/A    <b>Draft Academic Calendar URL:</b> <a href="http://www.calendar.ubc.ca/okanagan/proof/edit/courses.cfm?go=name&amp;code=STAT">http://www.calendar.ubc.ca/okanagan/proof/edit/courses.cfm?go=name&amp;code=STAT</a>  <b>Present Academic Calendar Entry:</b> <a href="http://www.calendar.ubc.ca/okanagan/courses.cfm?go=code&amp;code=STAT">http://www.calendar.ubc.ca/okanagan/courses.cfm?go=code&amp;code=STAT</a>



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**STAT 538 (3) Advanced Statistical Modelling**

Least-squares, generalized least-squares and likelihood estimation. Theory and application of parametric and non-parametric regression models such as splines, penalized splines, and generalized additive models. Assessment and treatment of data issues including missingness and measurement error. **Credit will be granted for only one of DATA 410 or STAT 538.** [3-2-0]

**STAT 538 (3) Advanced Statistical Modelling**

Least-squares, generalized least-squares and likelihood estimation. Theory and application of parametric and non-parametric regression models such as splines, penalized splines, and generalized additive models. Assessment and treatment of data issues including missingness and measurement error. [3-0-0]





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## Curriculum Proposal Form New/Change to Course/Program – Okanagan campus

<b>Category: 1</b>	
<b>Faculty/School:</b> Arts & Sciences <b>Dept./Unit:</b> Unit 5 <b>Faculty/School Approval Date:</b> February 3, 2016 <b>Effective Session:</b> 2017W	<b>Date:</b> 20150910 <b>Contact Person:</b> Dr. Yves Lucet <b>Phone:</b> 250.807.9505 <b>Email:</b> yves.lucet@ubc.ca
<b>Type of Action: New course</b>	
<b>Rationale:</b> To support the new major in Data Science, a topics course in Data Science course is necessary. Topics courses are used for exceptional offerings of courses (e.g. when a visitor provides expertise on a specialized topic). Topics are not intended to be regular offerings but may be used as incubators before proposing a regular course.	
<b>Proposed Academic Calendar Entry:</b>  <u><b>DATA 419 (3-9) d Topics in Data Science Advanced or specialized topics in data science. Consult the unit for the specific topic to be offered in any given year. This course may be taken more than once for credit with different topics. [3-2-0]</b></u> <u><b>Prerequisite: Fourth-year standing.</b></u>	<b>Draft Academic Calendar URL:</b> N/A  <b>Present Academic Calendar Entry:</b> N/A



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## Curriculum Proposal Form New/Change to Course/Program – Okanagan campus

<b>Category: 1</b>	
<b>Faculty/School:</b> Arts & Sciences <b>Dept./Unit:</b> Unit 5 <b>Faculty/School Approval Date:</b> February 3, 2016 <b>Effective Session:</b> 2017W	<b>Date:</b> 20150910 <b>Contact Person:</b> Dr. Yves Lucet <b>Phone:</b> 250.807.9505 <b>Email:</b> yves.lucet@ubc.ca
<b>Type of Action: New course</b>	
<b>Rationale:</b> To support the new major in Data Science, a Directed Studies in Data Science course is necessary. As with any Directed Studies, the course is targeted to a very small number of students under special circumstances (e.g. transfer, missing a short number of credits to graduate, targeted topics for a handful of students, etc.)	
<b>Proposed Academic Calendar Entry:</b>  <u><b>DATA 448 (3/6) d Directed Studies in Data Science</b></u> <u><b>Investigation of a specific topic as agreed upon by the student and the faculty supervisor. Completion of a project and an oral presentation are required.</b></u> <u><b>Prerequisite: Third-year standing in the Data Science major or Honours, and permission of the unit head.</b></u>	<b>Draft Academic Calendar URL:</b> N/A  <b>Present Academic Calendar Entry:</b> N/A



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## Curriculum Proposal Form New/Change to Course/Program – Okanagan campus

<b>Category: 1</b>	
<b>Faculty/School:</b> Arts & Sciences <b>Dept./Unit:</b> Unit 5 <b>Faculty/School Approval Date:</b> February 3, 2016 <b>Effective Session:</b> 2017W	<b>Date:</b> 20150910 <b>Contact Person:</b> Dr. Yves Lucet <b>Phone:</b> 250.807.9505 <b>Email:</b> yves.lucet@ubc.ca
<b>Type of Action:</b> New Course	
<b>Rationale:</b> Honours course to support the new Honours program in Data Science. (The exact formulation matches COSC 449.)	
<b>Proposed Academic Calendar Entry:</b>  <u><b>DATA 449 (6) Honours Thesis</b></u> <u><b>Students will undertake a research project as agreed upon by the student, supervising faculty member, and unit head. A written thesis and a public presentation (poster or seminar) are required. Restricted to students in the B.Sc. Data Science Honours Program.</b></u>  <u><b>Prerequisite: Fourth-year standing and permission of the unit head.</b></u>	<b>Draft Academic Calendar URL:</b> N/A  <b>Present Academic Calendar Entry:</b> N/A



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## Curriculum Proposal Form New/Change to Course/Program – Okanagan Campus

<b>Category: 1</b>	
<b>Faculty/School:</b> Arts & Sciences <b>Dept./Unit:</b> Computer Science/Unit 5 <b>Faculty/School Approval Date:</b> February 3, 2016 <b>Effective Session:</b> 2017W	<b>Date:</b> September 10, 2015 <b>Contact Person:</b> Dr. Yves Lucet <b>Phone:</b> 250.807.9505 <b>Email:</b> yves.lucet@ubc.ca
<b>Type of Action:</b> New course (DATA 505) Add credit exclusion statement (COSC 505)	
<b>Rationale:</b> The criteria to have a course use the DATA denomination is the course should contain some amount of both statistics and computing; it should be teachable by somebody with a background in either COSC or STAT.  Credit restriction added for previous version (COSC 405) and grad version (DATA 505, COSC 505).	
<b>Proposed Academic Calendar Entry:</b> <u><b>DATA 505 (3) Modeling and Simulation Simulation methodology: data collection, model design, output analysis, optimization, validation. Credit will be granted for only one of COSC 405, DATA 405, COSC 505, or DATA 505.</b></u>	<b>Draft Academic Calendar URL:</b> N/A  <b>Present Academic Calendar Entry:</b>   <b>Draft Academic Calendar URL:</b> N/A The present calendar entry is from the M.Sc. in Computer Science proposal, which is not yet appearing in the draft Academic Calendar but was approved at November 2015 Senate Curriculum Committee meeting.
<b>COSC 505 (3) Modeling and Simulation Simulation methodology: data collection, model design, output analysis, optimization, validation. <u>Credit will be granted for only</u></b>	<b>COSC 505 (3) Modeling and Simulation Simulation methodology: data collection, model design, output analysis, optimization, validation. <del>Credit will not</del></b>



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<p><b><u>one of COSC 405, DATA 405, COSC 505, or DATA 505.</u></b></p>	<p><b><del>be granted for both COSC 405 and COSC 505.</del></b></p>
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## Curriculum Proposal Form New/Change to Course/Program – Okanagan campus

<b>Category: 1</b>	
<b>Faculty/School: IKBSAS</b> <b>Dept./Unit: Unit 5</b> <b>Faculty/School Approval Date: February 3, 2016</b> <b>Effective Session: 2017W</b>	<b>Date: 20150910</b> <b>Contact Person: Dr. Yves Lucet</b> <b>Phone: 250.807.9505</b> <b>Email: yves.lucet@ubc.ca</b>
<b>Type of Action: Delete Courses</b>	
<b>Rationale:</b> <p>STAT 309: STAT 401 (new course) contains updated content from STAT 309. As a result STAT 309 is removed.</p> <p>STAT 240, 311: DATA 311 contains updated content from STAT 311. It is also a more modern version of STAT 240. As a result both STAT 240 and STAT 311 are removed.</p> <p>STAT 336: has not been taught in years with no plan to teach it again.</p> <p>STAT 405 and 407: DATA 407 Sampling and Design is a merger of STAT 405 Design and Analysis of Experiments and STAT 407 Sample Surveys. As a result both STAT 405 and STAT 407 are removed.</p> <p>STAT 310 and 410: DATA 410 contains content from STAT 310 and STAT 410. As a result both STAT 310 and STAT 410 are removed.</p>	



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<p><b>Proposed Academic Calendar Entry:</b> N/A</p>	<p><b>Draft Academic Calendar URL:</b> <a href="http://www.calendar.ubc.ca/okanagan/proof/edit/courses.cfm?go=name&amp;code=STAT">http://www.calendar.ubc.ca/okanagan/proof/edit/courses.cfm?go=name&amp;code=STAT</a></p> <p><b>Present Academic Calendar Entry:</b> <a href="http://www.calendar.ubc.ca/okanagan/courses.cfm?go=code&amp;code=STAT">http://www.calendar.ubc.ca/okanagan/courses.cfm?go=code&amp;code=STAT</a></p> <p><b><del>STAT 240 (3) Statistical Reasoning</del></b> <b><del>Simple and multiple linear regression, calibration, nonlinear regression, analysis of variance, factorial experiments, nonparametric methods, and basic quality control charts. [3-1-0]</del></b> <b><del>Prerequisite: STAT 230.</del></b></p> <p><b><del>STAT 309 (3) Introduction to Statistical Inference</del></b> <b><del>Review of probability theory. Sampling distributions. Large sample theory and methods of estimation and hypothesis testing, including maximum likelihood estimation, likelihood ratio testing, and confidence interval construction. [3-0-0]</del></b> <b><del>Prerequisite: All of STAT 230, STAT 303.</del></b></p> <p><b><del>STAT 310 (3) Regression Analysis</del></b> <b><del>Theory and application of regression analysis, including residual analysis, diagnostics, transformations, model selection and checking, weighted least squares, and nonlinear models. Additional topics may include inverse, robust, ridge, and logistic regression. [3-1-0]</del></b> <b><del>Prerequisite: All of STAT 230, MATH 221.</del></b></p> <p><b><del>STAT 311 (3) Modern Statistical Methods</del></b> <b><del>Bootstrap, jackknife, permutation tests, additive models, scatterplot smoothers, projection-pursuit regression, neural networks, tree-based methods, nonparametric methods, unsupervised</del></b></p>
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	<p><del>methods. [3-0-0] <i>Prerequisite:</i> STAT 230.</del></p> <p><del>STAT 336 (3) Statistical Quality Control Basic concepts and terminology, modern approach to quality, control charts, process capability analysis, measurement process control and calibration, and experimental design. [3- 1-0] <i>Prerequisite:</i> STAT 230.</del></p> <p><del>STAT 405 (3) Design and Analysis of Experiments Theory and application of the analysis of variance for standard experimental designs. Single factor designs, fixed and random effects, block designs, hierarchical designs, multiple comparisons, Cochran's theorem, factorial design, mixed models, general rules of the analysis of balanced designs, and analyses of covariance. [3-1-0] <i>Prerequisite:</i> All of STAT 230, MATH 221.</del></p> <p><del>STAT 407 (3) Sample Surveys Planning and practice of sample surveys. Random sampling; bias and variance; unequal probability sampling; systematic, multistage, and stratified sampling; ratio and regression estimators; post-stratification; establishing a frame; pretesting; pilot studies; nonresponse; and additional topics. [3-0-0] <i>Prerequisite:</i> All of STAT 230, STAT 303.</del></p> <p><del>STAT 410 (3) Introduction to Generalized Linear Models Logistic regression, probit regression, binomial regression, Poisson regression, overdispersion, quasi-likelihood, and the exponential family. [3-1-0] <i>Prerequisite:</i> STAT 310.</del></p>
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## Curriculum Proposal Form New/Change to Course/Program – Okanagan campus

<b>Category: 1</b>	
<b>Faculty/School:</b> Arts & Sciences <b>Dept./Unit:</b> Unit 5 <b>Faculty/School Approval Date:</b> February 3, 2016 <b>Effective Session:</b> 2017W	<b>Date:</b> 20150910 <b>Contact Person:</b> Dr. Yves Lucet <b>Phone:</b> 250.807.9505 <b>Email:</b> yves.lucet@ubc.ca
<b>Type of Action: New course</b>	
<p><b>Rationale:</b> New course to support the new BSc major in Data Science. Probabilities and statistics are important for any Data Science program. STAT 401 contains updated content from STAT 309. As a result STAT 309 is removed. The new course is designated as 4<sup>th</sup>-year course as some advanced material (Bayesian inference and Bootstrap) has been added.</p> <p>The content of the old STAT 309 and the new STAT 401 is different enough to warrant credits for any combination.</p>	
<b>Proposed Academic Calendar Entry:</b>  <u><b>STAT 401 (3) Probability and Statistical Inference</b></u> <u><b>Formal introduction to the theory of statistical modeling with a focus on distributions of data, likelihood based inference for learning unknown parameters, construction of confidence intervals and development of tests. Bayesian methods will be used to contrast standard statistical procedures.</b></u> <u><b>[3-1-0]</b></u> <u><b>Prerequisite: STAT 230 and STAT 303</b></u>	<b>Draft Academic Calendar URL:</b> N/A  <b>Present Academic Calendar Entry:</b> N/A



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18 March 2016

To: Senate

From: Dr Kate Ross, Associate Vice-President & Registrar

Re: Winter Session Standard Academic Meeting Pattern 2016W (information)

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The Winter Session Standard Academic Meeting Pattern will be adjusted in 2016 Winter to suit current Faculty needs of more flexibility in the class schedule.

Ten years ago, the 'University time' on Wednesday afternoons (2:00-3:30) was created to allow for 'social time' to build a sense of campus community. This time period could be used for meetings, for example, but not for classes. Over the years, the original intention has eroded.

Informal consultations have taken place with the Learning & Research Committee, many Associate Deans, and various members of the senior administration. The feedback has been uniformly in favour of the Meeting Pattern update.

Moving forward, the Wednesday afternoon 2:00-3:30 time slot of allotted 'University time' will be eliminated to allow scheduling flexibility, in addition to the introduction of the option for a 50 minute or 80 minute period Monday-Wednesday-Friday afternoons.

# Winter Session

## Standard Academic Meeting Pattern (2016W)

Changes from previous years;

- 1) Elimination of 'University Time' - 2:00 to 3:30 on Wednesdays
- 2) Introduction of option for 50 minute or 80 minute periods MWF afternoons

Monday		Tuesday	Wednesday		Thursday	Friday	
	8:00	8:00		8:00	8:00		8:00
8:30			8:30			8:30	
9:20	9:20	9:20	9:20	9:20	9:20	9:20	9:20
9:30		9:30	9:30		9:30	9:30	
10:20			10:20			10:20	
10:30		10:50	10:30		10:50	10:30	
11:20		11:00	11:20		11:00	11:20	
11:30			11:30			11:30	
12:20		12:20	12:20		12:20	12:20	
12:30	12:30	12:30	12:30	12:30	12:30	12:30	12:30
1:20			1:20			1:20	
1:30	1:50	1:50	1:30	1:50	1:50	1:30	2:00
2:20	2:00	2:00	2:20	2:00	2:00	2:20	2:00
2:30			2:30			3:00	
3:20	3:20	3:20	3:20	3:20	3:20	3:30	3:20
3:30	3:30	3:30	3:30	3:30	3:30	3:30	3:30
4:20			4:20			4:20	
4:30	4:50	4:50	4:30	4:50	4:50	4:30	4:50
5:20	5:00	5:00	5:20	5:00	5:00	5:20	5:00
5:30			5:30			5:30	
6:20	6:20	6:20	6:20	6:20	6:20	6:20	6:20
6:30	6:30	6:30	6:30	6:30	6:30	6:30	6:30
7:20			7:20			7:20	
7:30	7:50	7:50	7:30	7:50	7:50	7:30	7:50
8:20	8:00	8:00	8:20	8:00	8:00	8:20	8:00
8:30			8:30			8:30	
9:20	9:20	9:20	9:20	9:20	9:20	9:20	9:20

\*Note that Enrolments Services does not require bookings to adhere to the meeting pattern after 4:30 PM. The continuation of the meeting pattern is included in the diagram above in order to bring attention to the normal Institutional Operational hours of 8:00 AM - 10:00 PM.