



Winter 2020 – EDUC 370 (3) – Detailed Syllabus  
**Numeracy Across the Curriculum (SY)**

## OVERVIEW

Course Times:	Tuesdays, 8:30 am to 10:20 pm Thursdays, 1:30 am to 3:20 pm
First Class:	Tuesday, January 7, 2020
Last Class:	Thursday, April 9, 2020
Reading Break:	February 18 to 21, 2020 (Family Day: February 17 <sup>th</sup> )
EDUC 391 Practicum:	February 24 to March 13, 2020
Celebration of Learning:	Thursday, April 9, 2020
Course Location:	Room 10-4044

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Instructor:	Dr. Christine Ho Younghusband
Email:	<a href="mailto:younghusb@unbc.ca">younghusb@unbc.ca</a>
Office Phone:	250-960-6313
Office Location:	Room 10-4048
Office Hours:	Mondays and Wednesdays from 1-3pm

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## DESCRIPTION

### **Calendar Description:**

An exploration of the role of numeracy in society and across disciplines. This course includes strategies for fostering quantitative literacy across Senior Years subject areas.

### **Course Details:**

This course will consider what it means to be numerate and examine how numeracy is embedded in society and across the curriculum. BC's New Curriculum, the Professional Standards for BC Teachers (2019), and BC provincial assessments will be central to this course as we develop our understandings of numeracy in education as experienced by another jurisdiction. Learners will develop their numeracy skills by interpreting data, auditing curriculum, and developing a learning activity in their subject specialty area.

## Course-Level Educational Goals

By the end of the course, students should be able to:

- Define and differentiate the difference between numeracy and mathematics
  - Identify how numeracy can be and should be developed across the curriculum
  - Implement an audit to assess numeracy opportunities in BC's New Curriculum
  - Create and design a learning activity that incorporates quantitative fluency
  - Articulate the importance for all teachers to develop numerate citizens
  - Analyze how numeracy is assessed in BC and interpret local data
  - Develop quantitative approaches and numeracy in different curricular areas
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### Required reading:

M. Goos, V. Geiger, S. Dole, H. Forgasz, A. Bennison. (2019). *Numeracy Across the Curriculum: Research-Based Strategies for Enhancing Teaching and Learning*. Crows Nest, NSW: Allen & Unwin.

### Other resources:

BC's New Curriculum: <https://curriculum.gov.bc.ca/>

The professional standards for BC teachers (2019) from the BC Teachers Council:  
<https://www.bcteacherregulation.ca/Standards/StandardsDevelopment.aspx>

BC Provincial Assessments: <https://curriculum.gov.bc.ca/provincial-assessment>

BC Numeracy Assessment Sample:  
[https://www2.gov.bc.ca/assets/gov/education/administration/kindergarten-to-grade-12/assessment/grad\\_numeracy\\_sample\\_assessment.pdf](https://www2.gov.bc.ca/assets/gov/education/administration/kindergarten-to-grade-12/assessment/grad_numeracy_sample_assessment.pdf)

Programme for International Student Assessment: <https://www.oecd.org/pisa/>

Trends in International Mathematics and Science Study:  
<https://www.iea.nl/studies/iea/timss>

BC Numeracy Network: <https://sites.google.com/view/bc-numeracy-network/home/what-is-balanced-numeracy>

BC Foundations and Pre-Calculus Math 10 Provincial Exam Practice:  
[http://www.sd43.bc.ca/Resources/ParentResources/math/10/Pages/ProvincialExamPractice.aspx#/="](http://www.sd43.bc.ca/Resources/ParentResources/math/10/Pages/ProvincialExamPractice.aspx#/=)

Math 12 Provincial Exams: <https://ivanessen.wordpress.com/2015/04/14/math-12-old-provincial-exam-bank/>

## GRADING

The final grade is based on holistic grading process. Listed below are assignments and learning activities, which require equal time and effort. Completion of assignments and participation in all learning activities are expected. The primary focus is on learning.

- Numeracy Journal and Class Discussions
- Curriculum Audit and Numeracy Development
- Provincial and International Numeracy Assessments
- Numeracy Learning Activity and Lesson Plan

\*NOTE: There is no final exam for this course.

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### LEARNING ACTIVITIES:

#### **Numeracy Journal (Hard Copy) and Class Discussions (Google Doc)**

Class discussions and numeracy journal reflections will be based on the required reading, in class learning activities, and “two aha’s and a question” (i.e. like 2 stars and a wish). Learners will maintain a notebook to provide written reflections to develop their thinking about numeracy, respond to key questions, or act as an exit slip at the end of each class.

#### **Curriculum Audit and Numeracy Development**

Learners will analyze BC’s New Curriculum to identify learning opportunities for numeracy in different subject areas and grade levels. Learners will investigate the relevance of numeracy throughout the curriculum and find learning resources that would support and enhance the learning experience of students within their subject specialty.

#### **Provincial and International Numeracy Assessments**

Learners will assess and evaluate provincial and international numeracy assessments. What is the information used for? What is the data telling us? Why are students assessed? Learners will investigate different numeracy assessments and interpret data acquired.

#### **Numeracy Learning Activity and Lesson Plan**

Learners will develop a lesson plan that incorporates quantitative approaches and fluency to develop numeracy skills within their subject specialty, in addition to a subject area that is out-of-field. Learners will facilitate and present the final draft of one lesson plan as a means to demonstrate their learning but also share ideas. Peer feedback will be provided.

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### LATE ASSIGNMENTS:

Late assignments will not be accepted. It is expected that students are up to date on all learning activities in this course, participating at all times, and attending full-time.

Students are assessed and evaluated within the bookends of this course (see above for start and end dates). Contact the instructor at [younghusb@unbc.ca](mailto:younghusb@unbc.ca) if you are unable to participate or attend class, or meet expectations as outlined in each learning activity.

## Grade Distribution for Bachelor of Education Program at UNBC

Grade	Description
A+	Exceptional, outstanding and excellent performance. Normally achieved by a minority of students. These grades indicate a student who is self-initiating, exceeds expectations, goes beyond stated criteria and has an insightful grasp of the subject matter.
A	
A-	
B+	Very good, good and solid performance. Normally achieved by the largest number of students. These grades indicate a student who meets expectations or stated criteria and shows a good grasp of the subject matter or an excellent grasp in one area balanced with a satisfactory grasp in another area.
B	
B-	
C+	Satisfactory performance. This grade indicates a student who minimally meets expectations or stated criteria and has a satisfactory grasp and knowledge of the subject matter.
F	Unsatisfactory performance. This grade indicates a student has failed to minimally meet expectations or stated criteria and demonstrates only a superficial grasp of the subject matter.

*\*All students must receive a "pass" (C+ or better) to obtain credit for this course.*

### **ACCOMODATIONS:**

Students with diverse learning styles and needs are welcome in this course. If you have a disability or health condition that may require accommodations, please feel free to approach me and/or the UNBC Access Resource Centre (ARC) as soon as possible. ARC staff are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations to assist you in achieving your academic goals. ARC is located in the Teaching & Learning Building in Room 10-1048. More information regarding registration can be found at [www.unbc.ca/access-resource-centre](http://www.unbc.ca/access-resource-centre). They can also be reached by telephone at 250-960-5682 or email at [arc@unbc.ca](mailto:arc@unbc.ca).

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### **CHEATING OR PLAGIARISM:**

According to the UNBC Undergraduate Regulations and Policies:

<https://www.unbc.ca/calendar/undergraduate/regulations>

Go to website for full description of Academic Regulation 45 (Academic Offenses).

“Any conduct that violates the standards of the University as set out in the Undergraduate University Calendar, particularly those related to academic honesty, is a serious offense.”

“Minimum sanctions for an academic offense include reprimands and reduction of grades; the maximum sanction is dismissal from the student’s academic program or suspension from the University (see Academic Regulation 46 (Academic Sanctions)).” Academic “offenses include, but are not limited to the following: plagiarism, cheating, submitting false records, withholding records, misrepresentation of one’s own identity, falsification of results, submission of false information, aiding or abetting any of the academic offences” previously mentioned.

## RUBRICS

### GRADING SCALE FOR WRITING:

<p><b>Exceptional or Excellence Performance:</b> Strong evidence of original thinking; excellent organization; demonstrated high capacity to analyze and synthesize information; outstanding grasp of subject matter with ability to provide sound critical evaluation; evidence of care and precise reading of required and other texts; ability to relate theory to practice; fluent and appropriate use of relevant concepts; careful and courteous consideration of ideas or others; clear, grammatically and stylistically sound writing; correct spelling.</p>	A+
	A
	A-
<p><b>Very Good Performance:</b> Clear use of relevant literature and background reading, appropriate use of relevant concepts; good organization; sound critical evaluation, clearly made links with wider issues; courtesy in dealing with other's ideas and opinions; good quality writing (i.e. clarity of expression largely good, basically sound grammatically, correct spelling)</p>	B+
<p><b>Good Performance:</b> Reasonably accurate grasp of key concepts and issues relevant and appropriate analysis relevant and appropriate analysis and discussion; adequate organization, readings sensibly incorporated into arguments; accurate and sensible evaluative discussion; courtesy in dealing with others' opinions and ideas; reasonably clear expression of ideas, free of spelling errors</p>	B B-
<p><b>Satisfactory Performances to Minimal Standards:</b> Little evidence of required reading or of understanding of required reading; limited grasp of concepts being discussed; divergence from main point to peripherally or superficially related items; largely dealing with anecdotal or concrete examples rather than principles and theories; largely descriptive writing with little analysis, though show some grasp of the main issues; poorly organized; problems with clarity of expression, grammar</p>	C+
	C
	C-
<p><b>Marginal Performance</b></p>	D
	F
<p><b>Fail (Unsatisfactory Performance)</b></p>	

### RUBRIC FOR JOURNAL REFLECTIONS USING EXEMPLARS:

<b>EMERGENT</b>	"I like this class. We talked in groups. I like the people in this group. We watched a video. The video was interesting. After the video, my group talked about grades and how grades are used as punishment. Then we wrote on the board on what is curriculum."
<b>DEVELOPING</b>	"I did not know what to expect from this course. I have to take this course for my education minor. I heard that it might be an easy mark. I liked the video that we watched and how schools are killing creativity. I think this is true. Schools are more about getting grades than learning. That's how it was for me. There are very few courses I enjoyed."
<b>PROFICIENT</b>	"It is my first day back to school and I end my day with Educ360. Initially, I was not sure what this course is about. I appreciate that I am able to move around in class, talk to peers, and contribute in some way to the course. So far, this course is nothing like my other classes. We work in groups or learning communities, do self-reflections, and watch videos. The video stated what I had always believed. Sometimes I think that I am in school just

	to make the grade instead of enjoying learning. It seems that how we are graded or judged affects how we learn and what we learn. I shared my own learning experiences in class today. Not great ones. Schools can be so much better and curriculum can fix this."
<b>EXTENDING</b>	"The first class has got me thinking. Teaching and learning in the 21st Century is different from the industrial model of learning where schools are trying to grade students on quality of work how do we really know if the students learned anything? According to Yong Zhao who speaks about 21st Century Learning and personalized learning, that we can't be doing the same things as we always have. Machines can easily replace people in the workplace. He also speaks of entrepreneurialism as part of learning. Should schools be more in tuned to what students can do versus know? I would love to have been more creative in school but I was too worried about grades and what the teacher wanted. What would it mean to personalize my learning? How will I know if I'm succeeding if I don't get an A? There should be standards but we honour students' strengths and interests as well."

## COURSE FRAMEWORK

<b>Week</b>	<b>Dates</b>	<b>Tuesdays (8:30 am)</b>	<b>Thursdays (1:30 pm)</b>
1	Jan. 7 & 9	Course Syllabus What is numeracy?	Chapter 1 – Understanding Numeracy
2	Jan. 14 & 16	Chapter 2 - Numeracy Across the Curriculum	Chapter 3 – Numeracy in the 21 <sup>st</sup> Century
3	Jan. 21 & 23	BC's New Curriculum – Numeracy Analysis	Chapter 4 - Numeracy Demands
4	Jan. 28 & 30	Indigenous Day Reflection (mini assignment)	Chapter 5 - Numeracy Opportunities
5	Feb. 4 & 6	Chapter 6 – Numeracy Across the Curriculum	Chapter 7 – Whole school approaches to numeracy
6	Feb. 11 & 13	Chapter 8 - Assessing Numeracy Learning	Provincial and International Assessments – Data Analysis
7	Feb. 18 & 20	READING BREAK	READING BREAK (WestCAST 2020)
8	Feb. 25 & 27	<b>EDUC 391 Practicum</b>	<b>EDUC 391 Practicum</b>
9	March 3 & 5	<b>EDUC 391 Practicum</b>	<b>EDUC 391 Practicum</b>
10	March 10 & 12	<b>EDUC 391 Practicum</b>	<b>EDUC 391 Practicum</b>
11	March 17 & 19	Practicum Reflection and Numeracy	Chapter 9 - Challenges in Enhancing Numeracy
12	March 24 & 25	Lesson Planning for Numeracy Activity	Lesson Planning for Numeracy Activity
13	Mar.31 & Apr.2	Facilitating/Presenting Peer-Feedback	Facilitating/Presenting Peer-Feedback
14	April 7 & 9	<b>Last class of EDUC 370</b>	<b>Celebration of Learning</b>

*PLEASE NOTE: Learning activities and assigned readings are subject to change.*