

**EDUC 460. 23: Specialization Science  
Summer, 2020**

<b>Section</b>	<b>Instructor</b>	<b>Time</b>	<b>Location</b>	<b>Email</b>
	Gabriela Alonso-Yanez	10:00 – 11:30	Zoom	galonsoy@ucalgary.ca

**Zoom Meeting Dates: July 8, 22 and August 6 from 10:00-11:30**

**Office Zoom Hours:** Available after class or by appointment

**PLEASE, ALWAYS ADD EDUC 460 IN THE SUBJECT LINE OF YOUR E-MAIL SO I CAN PRIORITIZE YOUR COMMUNICATION**

Last Day to Add/Drop/Swap: Due to the non-standard dates associated with this program, please check your Student Centre for the important dates pertaining to your section.

Pre-requisite: Due to the multiple pathways in the Bachelor of Education, please consult Undergraduate Programs in Education for questions related to pre-requisite courses.

**COURSE DESCRIPTION:**

The intent of the Specialization I Seminar is to introduce students to the concepts, theories, and lesson design planning related to teaching within the specializations of Science. Theory as connected to an understanding of practical classroom experiences will particularly inform the course curriculum and will be explored through course readings, analysis of teaching/learning artifacts, and through the design of discipline-based learning and assessment plans. Topics in teaching and learning will include teaching inclusively and addressing the needs of diverse learners, effective integration of technology, and discipline-based inquiry. Assignments offer opportunities for students to develop an understanding of short-term instructional designs and to begin to examine curriculum shifts in the province.

**EXTENDED COURSE DESCRIPTION:**

A key goal of the course is to treat or represent science as historical in an attempt to understand how it operates in the present and how is taught in schools today. The course also focuses on teaching inclusively and addressing the needs of diverse learners, effective integration of technology, and discipline-based inquiry. Research reports that online learning can provide excellent student learning compared to traditional classroom-based instruction. In today's world, teachers are required to embrace virtual learning beyond the pandemic. In this context, the course offers an opportunity to learn and design virtual learning environments that are critical in today's science teaching.

**LEARNER OUTCOMES:**

Students will:

- 1) **DEVELOP A FOUNDATIONAL UNDERSTANDING OF THE NATURE OF SCIENCE, AS RELATED TO TEACHING AND LEARNING, INCLUDING SPECIALIZED LANGUAGE, CONCEPTS, AND TERMINOLOGY;**
- 2) **UNDERSTAND TEACHER AS DESIGNER OF LEARNING AND ASSESSMENT PLANS, AND USE OF THE RESOURCES AVAILABLE FOR DESIGNING LEARNING AND ASSESSMENT.**
- 3) **EXPLORE AND APPLY INTRODUCTORY THEORY RELATED TO THE TEACHING OF THE DISCIPLINE OF SCIENCE WITH AN EMPHASIS ON: DESIGNING DISCIPLINE-BASED TASKS AND ASSESSMENT PROCESSES**

**AND CREATING AN ADAPTIVE CLASSROOM LEARNING ENVIRONMENT TO BETTER MEET THE NEEDS OF TODAY'S DIVERSE LEARNERS.**

- 4) SUCCESSFULLY DESIGN SHORT-TERM LEARNING AND ASSESSMENT PLANS TO DEEPEN UNDERSTANDING OF KEY IDEAS/CONCEPTS WITHIN THE DISCIPLINE.**

**COURSE DESIGN AND DELIVERY: THIS COURSE WILL BE DELIVERED ONLINE THROUGH ZOOM AND D2L.**

## **THE EXPECTATION OF EXCELLENCE IN PROFESSIONAL WORK**

PLEASE REVIEW THE SCHEDULE OF WEEKLY ACTIVITIES AND ASSIGNMENT DESCRIPTIONS CAREFULLY. IT DESCRIBES THE PROGRAM AND PROVIDES DETAILED SCHEDULES AND IMPORTANT DATES. IT CONTAINS INFORMATION ON EXPECTATIONS FOR STUDENT WORK AND PROFESSIONAL CONDUCT. IN ADDITION, PROCEDURES ARE DESCRIBED REGARDING CONCERN ABOUT STUDENT PERFORMANCE IN THE PROGRAM. PLEASE PAY ESPECIALLY CAREFUL ATTENTION TO DETAILS AND DESCRIPTIONS IN THE FOLLOWING TOPIC AREAS:

- *THE IMPORTANCE OF ATTENDANCE AND PARTICIPATION IN EVERY CLASS*

AS THIS IS A PROFESSIONAL PROGRAM, EXPERIENCES ARE DESIGNED WITH THE EXPECTATION THAT ALL MEMBERS WILL BE FULLY INVOLVED IN ALL CLASSES AND IN ALL COURSEWORK EXPERIENCES. AS YOU ARE A MEMBER OF A LEARNING COMMUNITY YOUR CONTRIBUTION IS VITAL AND HIGHLY VALUED, JUST AS IT WILL BE WHEN YOU TAKE ON THE PROFESSIONAL RESPONSIBILITIES OF BEING A TEACHER. WE EXPECT THAT YOU WILL NOT BE ABSENT FROM CLASS WITH THE EXCEPTION OF DOCUMENTED INSTANCES OF PERSONAL OR FAMILY ILLNESS OR FOR RELIGIOUS REQUIREMENTS. WITH RESPECT TO GROUP WORK AND PROJECTS, IF THERE ARE DIFFICULTIES COLLABORATING, PLEASE CONTACT THE INSTRUCTOR.

- *ENGAGEMENT IN COLLABORATIVE KNOWLEDGE-BUILDING AND INQUIRY*

ANOTHER REASON FOR THE IMPORTANCE OF ATTENDANCE AND ACTIVE PARTICIPATION IN EVERY CLASS IS THAT THE COURSE INVOLVES WORKING WITH FELLOW STUDENTS TO MAKE IDEAS AND THINKING VISIBLE IN ORDER TO BUILD COLLECTIVE KNOWLEDGE. FOR EXAMPLE, EACH WEEK YOU WILL WORK WITH A SMALL GROUP TO ENGAGE FELLOW STUDENTS IN DISCUSSIONS ON WORK BEING CONSIDERED IN CLASS. YOU WILL ALSO HELP OTHER GROUPS BY PROVIDING IDEAS FOR SCHOLARLY INQUIRY AND FEEDBACK AS YOU ANALYZE AND DESIGN LEARNING PLANS TOGETHER.

IN ORDER TO BE SUCCESSFUL IN THIS CLASS, YOU ARE REQUIRED TO ENGAGE WITH ALL OF THE READINGS, PARTICIPATE FULLY IN KNOWLEDGE-BUILDING ENDEAVORS THROUGH CLASS DISCUSSIONS AND COLLABORATIVE ACTIVITIES, AND COMPLETE ALL ASSIGNMENTS.

## **EXPECTATIONS FOR WRITING**

ALL WRITTEN ASSIGNMENTS (INCLUDING, TO A LESSER EXTENT, WRITTEN EXAM RESPONSES) WILL BE ASSESSED AT LEAST PARTLY ON WRITING SKILLS. WRITING SKILLS INCLUDE NOT ONLY SURFACE CORRECTNESS (GRAMMAR, PUNCTUATION, SENTENCE STRUCTURE, ETC.) BUT ALSO GENERAL CLARITY AND ORGANIZATION. SOURCES USED IN RESEARCH PAPERS MUST BE PROPERLY DOCUMENTED. IF YOU NEED HELP WITH YOUR WRITING, YOU MAY USE THE WRITING SUPPORT SERVICES IN THE LEARNING COMMONS. FOR FURTHER INFORMATION, PLEASE REFER TO THE OFFICIAL ONLINE UNIVERSITY OF CALGARY CALENDAR, ACADEMIC REGULATIONS, E. COURSE INFORMATION, E.2: WRITING ACROSS THE CURRICULUM: [HTTP://WWW.UCALGARY.CA/PUBS/CALENDAR/CURRENT/E-2.HTML](http://www.ucalgary.ca/pubs/calendar/current/e-2.html)

### LATE SUBMISSIONS

ALL LATE SUBMISSIONS OF ASSIGNMENTS MUST BE DISCUSSED WITH THE INSTRUCTOR **PRIOR TO THE DUE DATE**. STUDENTS MAY BE REQUIRED TO PROVIDE WRITTEN DOCUMENTATION OF EXTENUATING CIRCUMSTANCES (E.G. STATUTORY DECLARATION, DOCTOR'S NOTE, NOTE FROM THE UNIVERSITY OF CALGARY WELLNESS CENTRE, OBITUARY NOTICE). A DEFERRAL OF UP TO 30 DAYS MAY BE GRANTED AT THE DISCRETION OF THE ASSOCIATE DEAN OF UNDERGRADUATE PROGRAMS WITH ACCOMPANYING WRITTEN EVIDENCE.

### ISSUES WITH GROUP TASKS

WITH RESPECT TO GROUP WORK, IF YOUR GROUP IS HAVING DIFFICULTY COLLABORATING EFFECTIVELY, PLEASE CONTACT THE INSTRUCTOR IMMEDIATELY. IF A GROUP IS UNABLE TO COLLABORATE EFFECTIVELY OR DISCUSS COURSE MATERIALS ONLINE IN A TIMELY MANNER, THE INSTRUCTOR MAY RE-ASSIGN MEMBERS TO DIFFERENT GROUPS OR ASSIGN INDIVIDUAL WORK FOR COMPLETION.

### READINGS AND RESOURCES

THE READINGS AND RESOURCES BELOW ARE RECOMMENDED FOR CONTINUED PROFESSIONAL LEARNING AND DEVELOPMENT WELL BEYOND THIS COURSE AND INTO YOUR FIRST YEARS OF TEACHING. ***PLEASE REFER TO THE ASSIGNMENT DESCRIPTIONS AND DETAILED WEEKLY PLAN FOR A COMPLETE LIST OF REQUIRED READINGS.***

ALBERTA EDUCATION. (2011). *ENGLISH AS A SECOND LANGUAGE PROFICIENCY BENCHMARKS*. RETRIEVED FROM: [HTTP://WWW.LEARNALBERTA.CA/CONTENT/ESLAPB/](http://www.learnalberta.ca/content/eslapb/)

ALBERTA EDUCATION. (2013). *MINISTERIAL ORDER ON STUDENT LEARNING (#001/2013)*. RETRIEVED FROM: [HTTPS://EDUCATION.ALBERTA.CA/MEDIA/1626588/MINISTERIAL-ORDER-ON-STUDENT-LEARNING.PDF](https://education.alberta.ca/media/1626588/ministerial-order-on-student-learning.pdf)

ALBERTA LEARNING. (2000). *PROGRAMS OF STUDY. SCIENCE* AVAILABLE ONLINE AT: [HTTP://EDUCATION.ALBERTA.CA/TEACHERS/PROGRAM/INTERLANG.ASPX](http://education.alberta.ca/teachers/program/interlang.aspx)

ALBERTA LEARNING. (2010). *MAKING A DIFFERENCE: MEETING DIVERSE LEARNING NEEDS WITH DIFFERENTIATED INSTRUCTION*. RETRIEVED FROM: [HTTPS://EDUCATION.ALBERTA.CA/MEDIA/384968/MAKINGADIFFERENCE\\_2010.PDF](https://education.alberta.ca/media/384968/makingadifference_2010.pdf)

APA 7 (AMERICAN PSYCHOLOGICAL ASSOCIATION) STYLE  
MANUAL: [HTTPS://OWL.ENGLISH.PURDUE.EDU/OWL/RESOURCE/560/01/](https://owl.english.purdue.edu/owl/resource/560/01/)

FRIESEN, S. (2009). *WHAT DID YOU DO IN SCHOOL TODAY? TEACHING EFFECTIVENESS: A FRAMEWORK AND RUBRIC*. TORONTO: CANADIAN EDUCATION ASSOCIATION. RETRIEVED FROM: [HTTPS://WWW.EDCAN.CA/ARTICLES/WHAT-DID-YOU-DO-IN-SCHOOL-TODAY-TEACHING-EFFECTIVENESS-A-FRAMEWORK-AND-RUBRIC/](https://www.edcan.ca/articles/what-did-you-do-in-school-today-teaching-effectiveness-a-framework-and-rubric/)

## ASSIGNMENTS

***THE COURSE IS STRUCTURED AROUND THE COMPLETION OF THREE INDIVIDUAL ASSIGNMENTS. BELOW, YOU WILL FIND THE ASSIGNMENT OVERVIEW AND THE ASSIGNMENT DETAILED DESCRIPTIONS.***

ASSIGNMENT	FORMAT (INDIVIDUAL/PARTNER/GROUP)	WEIGHTING	DUE DATE
<b>1. EMERGENT UNDERSTANDING OF SCIENCE – REFLECTION ENTRY</b>	INDIVIDUAL	30%	<b>JULY 15</b>
<b>2. “LEARNING TASK CRITIQUE”</b>	INDIVIDUAL	30%	<b>JULY 29</b>
<b>3. “CREATION OF SHORT-TERM LEARNING AND ASSESSMENT PLAN”</b>	INDIVIDUAL	40%	<b>AUGUST 12</b>

### **ASSIGNMENT ONE: EMERGENT UNDERSTANDING OF SCIENCE – REFLECTION ENTRY (30%)**

**SUBMISSION DEADLINE IS JULY 15 @ 11:59 PM.**

#### **ASSIGNMENT DESCRIPTION:**

FOR THIS ASSIGNMENT YOU WILL RESPOND TO ONE OF THE QUESTIONS BELOW AS WAY OF REFLECTING THOUGHTFULLY ON THE CONTEXTS AND CHALLENGES WITHIN SCIENCE EDUCATION TODAY. YOUR RESPONSE MAY TAKE A NUMBER OF FORMS. IT COULD BE A CONVENTIONAL ACADEMIC ESSAY, AN IMAGINED SOCRATIC DIALOGUE BETWEEN A TEACHER AND STUDENT, AN ILLUSTRATED STORY, AN ANIMATION, A SHORT VIDEO OR A PODCAST.

LENGTH: 3 PAGES DOUBLED SPACED OR 3 MINUTE VIDEO ENTRY REFLECTION (I.E. USING SMARTPHONE OR YOUR COMPUTER).

1) LISTEN TO THE PODCAST: *WHAT IS ABOLITION SCIENCE?* BY ATASI DAS AND LATOYA STRONG. DOCTORAL STUDENTS, URBAN SCIENCE EDUCATION. THE GRADUATE CENTER, CITY UNIVERSITY OF NEW YORK.

[HTTPS://WWW.ABOLITIONSCIENCE.ORG/HOME/2018/8/24/WELCOME-TO-ABOLITION-SCIENCE-RADIO](https://www.abolitionscience.org/home/2018/8/24/welcome-to-abolition-science-radio)

REFLECT UPON THE VARIED SOCIAL, HISTORICAL AND POLITICAL FACTORS THAT SHAPE HOW THE SCIENTIFIC PROCESS WORKS AND HOW SCIENCE IS A HUMAN ENDEAVOUR.

2) READ: LEMKE, J. L. (2001). ARTICULATING COMMUNITIES: SOCIOCULTURAL PERSPECTIVES ON SCIENCE EDUCATION. *JOURNAL OF RESEARCH IN SCIENCE TEACHING*, 38(3), 296-316.

*MAKE SURE YOU ANSWER THE READING LOG IN D2L WEEK 1*

3) CHOOSE ONE OF THE FOLLOWING QUESTIONS:

WHAT IS SCIENCE AND WHAT IS SCIENCE EDUCATION?

WHY STUDY SCIENCE?

WHAT IS THE PURPOSE OF SCIENCE EDUCATION IN TODAY’S WORLD?

RESPOND TO THE QUESTION THAT YOU SELECTED. YOUR RESPONSE MUST BE PERSUASIVE – THAT IS, YOU MUST FASHION A PERSONAL STAND ON THE QUESTION(S), AND THEN SET OUT TO PROVE YOUR INTERPRETATION USING *RELEVANT AND VARIED EVIDENCE.*

ALL RESPONSES MUST REFER TO THE TWO SOURCES DISCUSSED IN THE FIRST WEEK (PODCAST AND LEMKE'S PIECE).

YOU MAY ALSO WANT TO DRAW UPON:

- CONNECTIONS WITH OTHER COURSES
- READINGS FROM PREVIOUS COURSES
- OBSERVATIONS MADE DURING YOUR FIELD EXPERIENCE

### CRITERIA FOR ASSESSMENT

LEVEL OF PERFORMANCE	CRITERIA
<b>PROFESSIONAL (A)</b>	<p>- THE SELECTED QUESTION IS THOUGHTFULLY ADDRESSED SHOWING A DEEP UNDERSTANDING OF DIFFERENT PERSPECTIVES ON THE NATURE OF SCIENCE AND THE PEDAGOGICAL IMPLICATIONS OF TEACHING SCIENCE IN TODAY'S CLASSROOM.</p> <p>- ARGUMENTS ARE CLEARLY STATED AND WELL SUPPORTED IN A COGENT FASHION. EVIDENCE FROM BOTH PERSONAL EXPERIENCE AND LITERATURE IS PRESENTED CRITICALLY. THERE ARE MORE THAN 2 REFERENCES TO THE COURSE TEXTS AND MEDIA SOURCES OUTLINED FOR LT1 AND ADDITIONAL REFERENCE TO OTHER SOURCES.</p> <p>- LANGUAGE (WRITTEN OR OTHERWISE) IS SOPHISTICATED, CLEAR AND ACCURATE WITH NO GRAMMAR, PUNCTUATION OR SPELLING MISTAKES. SOUND IS CLEAR AND IMAGES PROVIDE A MORE ENGAGING FLOW OF CONTENT.</p> <p>- APA STYLE FOR REFERENCES IS STRICTLY FOLLOWED</p>
<b>GOOD WORK (B+ TO A-)</b>	<p>-THE SELECTED QUESTION IS ANSWERED SHOWING A GOOD UNDERSTANDING OF DIFFERENT PERSPECTIVES ON THE NATURE OF SCIENCE AND THE PEDAGOGICAL IMPLICATIONS OF TEACHING SCIENCE IN TODAY'S CLASSROOM</p> <p>- ARGUMENTS ARE WELL ELABORATED BASED ON SOME EVIDENCE FROM PERSONAL EXPERIENCES AND THE LITERATURE. WORK REFERENCE AT LEAST 2 SOURCES FROM THE TEXTS AND MEDIA SOURCES OUTLINED FOR LT1 AND ONE ADDITIONAL REFERENCE TO OTHER SOURCES.</p> <p>- LANGUAGE IS CLEAR AND ACCURATE, WITH CORRECT GRAMMAR, PUNCTUATION AND SPELLING. APA STYLE IS FOLLOWED. WORK HAS AN OVERALL GOOD PRESENTATION. SOUND IS GOOD AND IMAGES ARE ENGAGING.</p> <p>- APA STYLE FOR REFERENCES IS STRICTLY FOLLOWED.</p>
<b>MINIMAL REQUIREMENTS (B- TO B)</b>	<p>-AN ANSWER TO THE QUESTION/S IS PROVIDED. THERE IS SOME EVIDENCE OF UNDERSTANDING THE NATURE OF SCIENCE AND THE PEDAGOGICAL IMPLICATIONS OF TEACHING SCIENCE IN TODAY'S CLASSROOM.</p> <p>-ARGUMENTS ARE IDENTIFIED WITH SOME REFERENCE TO EVIDENCE FROM BOTH PERSONAL AND EXPERIENCE AND THE LITERATURE. THE WORK INCLUDES AT LEAST 2 REFERENCES FROM THE TEXTS AND MEDIA SOURCES OUTLINED FOR LT1.</p> <p>-LANGUAGE IS COMPREHENSIBLE, PROBABLY WITH SOME TYPOS OR MISSPELLINGS.</p> <p>- SOME FEATURES OF APA REFERENCE FORMAT ARE NOT FOLLOWED.</p> <p>- SOUND IS GOOD AND IMAGES ARE ENGAGING BUT NOT CONNECTED WITH THE</p>

<b>NON- ACCEPTABLE</b>	<p><b>CONTENT. OVERALL PRESENTATION IS NOT APPEALING OR ENGAGING</b></p> <ul style="list-style-type: none"> <li>- <b>NO QUESTION IS EXPLICITLY INDICATED OR ADDRESSED. THERE IS EVIDENCE OF MISUNDERSTANDINGS OF THE NATURE OF SCIENCE AND THE PEDAGOGICAL IMPLICATIONS OF TEACHING SCIENCE IN TODAY’S CLASSROOM</b></li> <li>- <b>ARGUMENTS ARE NOT SUPPORTED. NO REFERENCES FROM THE TEXTS AND MEDIA SOURCES OUTLINED FOR LT1. MOST ARGUMENTS ARE BASED ON OPINIONS.</b></li> <li>- <b>WRITING IS NOT COHERENT AND INCLUDES VARIOUS ISSUES OF GRAMMAR, PUNCTUATION, OR MISSPELLING.</b></li> <li>- <b>APA IS NOT FOLLOWED. WORK EXCEEDS TIME LIMIT IN A WAY THAT COMPROMISES THE OVERALL PRESENTATION OF THE ASSIGNMENT CONTENT AND ARGUMENTATION. OVERALL PRESENTATION IS NOT APPEALING OR ENGAGING</b></li> </ul>
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**ASSIGNMENT TWO: ANALYSIS OF A LEARNING DESIGN AND ASSESSMENT PLAN (30%)**

**SUBMISSION DEADLINE IS JULY 29 , 2020 @ 11:59 PM.**

**ASSIGNMENT DESCRIPTION:**

FOR THIS ASSIGNMENT, INDIVIDUALLY OR IN PAIRS, STUDENTS WILL ANALYZE A LESSON PLAN. THE PURPOSE OF THIS ASSIGNMENT IS TO: FOSTER PROFESSIONAL LEARNING CONVERSATIONS AND BUILD KNOWLEDGE ABOUT THE FEATURES OF WELL-DESIGNED DISCIPLINE-BASED LEARNING AND ASSESSMENT PLANS. STUDENTS WILL PROVIDE A FOUR PAGE CRITICAL REVIEW OF THE LEARNING DESIGN AND ASSESSMENT PLAN, BY ADDRESSING RUSZNYAK AND WALTON’S LESSON DESIGN GUIDELINES.

LENGTH: 4 PAGES DOUBLED SPACED

1) READ: RUSZNYAK, L., & WALTON, E. (2011). LESSON PLANNING GUIDELINES FOR STUDENT TEACHERS: A SCAFFOLD FOR THE DEVELOPMENT OF PEDAGOGICAL CONTENT KNOWLEDGE. *EDUCATION AS CHANGE*, 15(2), 271-285.

- CAREFULLY REVIEW THE SECTIONS FOR LESSON DESIGN.
- *MAKE SURE YOU ANSWER THE READING LOG IN D2L WEEK 1*

2) CHOOSE ONLY ONE OF THE LESSONS PLANS (BELOW) FROM THE DOCUMENT: CAUSAL PATTERNS IN ECOSYSTEMS LESSONS TO INFUSE INTO ECOSYSTEMS UNITS TO ENABLE DEEPER UNDERSTANDING. SECOND EDITION

[HTTPS://PZ.HARVARD.EDU/SITES/DEFAULT/FILES/REVISED\\_ECOSYSTEM.PDF](https://pz.harvard.edu/sites/default/files/REVISED_ECOSYSTEM.PDF)

LESSONS PLANS:

- A) LESSON PLAN: EXPLORING THE WEB OF LIFE (P.17)
- B) LESSON PLAN: LEARNING ABOUT DECAY (P. 63)

3) REVIEW AND CRITIQUE THE LESSON THAT YOU SELECTED FOLLOWING RUSZNYAK AND WALTON’S GUIDELINES. SUMMARY OF GUIDELINES IS AVAILABLE IN D2L.

**CRITERIA FOR ASSESSMENT:**

<b>RUBRIC - ASSIGNMENT 2 CRITERIA</b>	<b>A (YOU ARE AIMING FOR THIS LEVEL OF PERFORMANCE)</b>	<b>A-/ B+</b>	<b>B / B-</b>	<b>C+ / LOWER</b>
<b>CRITIQUE OF LESSON DESIGN (50%)</b>	<b>ALL ELEMENTS OF THE LESSON DESIGN GUIDELINES ARE CRITIQUED IN A THOROUGH, DETAILED AND WELL- SUPPORTED ASSESSMENT.</b>	<b>SOME ELEMENTS OF A LESSON DESIGN ARE ADDRESSED IN A THOROUGH, DETAILED AND WELL-SUPPORTED ASSESSMENT. OTHERS REQUIRE STRENGTHENING.</b>	<b>SOME ELEMENTS OF A LESSON DESIGN ARE ADDRESSED, HOWEVER THE ASSESSMENT IS VAGUE AND EXAMPLES ARE INAPPROPRIATE, UNSPECIFIC OR FEW.</b>	<b>SOME OF THE ELEMENTS OF A LESSON DESIGN ARE MISSING OR ADDRESSED IN A CURSORY MANNER.</b>
<b>GROUNDING WITH THEORY AND PROGRAM OF STUDIES (30%)</b>	<b>GROUNDING WITH THEORIES MAKES CONNECTIONS TO THE LITERATURE, IDENTIFIES PEDAGOGICAL APPROACHES AND POTENTIAL CONNECTIONS TO THE PROGRAM OF STUDIES, IS HIGHLY EFFECTIVE, AND WELL-EXPLAINED.</b>	<b>GROUNDING WITH THEORIES MAKES SOME CONNECTIONS TO THE LITERATURE, SOMETIMES INCLUDING THE PROGRAM OF STUDIES, IS USUALLY EFFECTIVE, AND WELL-EXPLAINED. SOME CONNECTIONS REQUIRE STRENGTHENING.</b>	<b>GROUNDING WITH THEORIES MAKES FEW CONNECTIONS TO THE LITERATURE OR PROGRAM OF STUDIES, IS SOMETIMES INAPPROPRIATE, AND UNDER-EXPLAINED.</b>	<b>CONNECTIONS TO THEORY AND/OR PROGRAM OF STUDIES ARE MISSING, INCOMPLETE, OR MADE IN A CURSORY MANNER.</b>
<b>PRESENTATIO N OF IDEAS (20%)</b>	<b>PAPER IS 4 PAGES. WRITING STYLE IS ACADEMIC. IN-TEXT CITATIONS AND REFERENCE LIST USES CORRECT APA 7<sup>TH</sup> EDITION STYLE. PAPER DEMONSTRATES SUPERIOR ATTENTION TO FORM.</b>	<b>PAPER IS 4 PAGES WRITING STYLE IS PRIMARILY ACADEMIC. MOST IN-TEXT CITATIONS AND REFERENCE LIST USE CORRECT APA 7<sup>TH</sup> EDITION STYLE. PAPER DEMONSTRATES ATTENTION TO FORM.</b>	<b>PAPER IS 4 PAGES WRITING STYLE IS SOMETIMES ACADEMIC, SOMETIMES INFORMAL. SOME IN-TEXT CITATIONS AND REFERENCE LIST USE CORRECT APA 7<sup>TH</sup> EDITION STYLE. PAPER REQUIRES SOME ATTENTION TO FORM.</b>	<b>PAPER EXCEEDS 4 PAGES OR IS LESS THAN 4. WRITING STYLE IS INFORMAL. IN-TEXT CITATIONS AND REFERENCE LIST ARE MISSING OR NOT IN APA STYLE. PAPER REQUIRES EXTENSIVE EDITING IN ORDER TO ATTEND TO FORM.</b>

**ASSIGNMENT 3: CREATION OF SHORT-TERM LEARNING PLAN IN GOOGLE CLASSROOM (40%)  
DEADLINE OF SUBMISSION IS AUGUST 12 @ 11:59 PM**

ONE LESSON PLAN THAT INCLUDES 2 OR 3 ACTIVITIES FOR ELEMENTARY STUDENTS.

FOR THIS ASSIGNMENT, STUDENTS WILL WORK COLLABORATIVELY TO DESIGN A SHORT-TERM LEARNING AND ASSESSMENT PLAN. YOUR PLAN SHOULD FOLLOW A CLEAR AND COMPREHENSIVE TEMPLATE THAT CONSIDERS RUSZNYAK AND WALTON'S GUIDELINES.

THE FOLLOWING ELEMENTS FOR SUBMISSION FOR ASSIGNMENT THREE ARE REQUIRED:

1. A THOROUGH LESSON PLAN ILLUSTRATING CLEARLY YOUR RATIONALE FOR THE LESSON. FOLLOW RUSZNYAK AND WALTON'S GUIDELINES FOR DESIGNING CURRICULUM.
2. RATIONALE SHOULD DESCRIBE SUITABLE ALIGNMENT WITH SCIENCE ALBERTA POS
3. CONSIDER DIVERSE LEARNERS (ESL) BENCHMARKS.

**LEARNING TASK 3 RUBRIC**

	A (YOU ARE AIMING FOR THIS LEVEL OF PERFORMANCE)	A- / B+	B / B-	C+ / LOWER
<b>DESIGN (40%) CURRICULAR OUTCOMES</b>  -LINKS TO PROGRAM OF STUDIES (POS)  -SELECTED ESL BENCHMARKS (LEVEL 3) WITH RATIONALE	<b>APPROPRIATE LINKS TO POS FOR CHOSEN LEVEL; CLEAR UNDERSTANDING OF CURRICULAR OUTCOMES AS EXPRESSED IN POS</b>  <b>APPROPRIATE SELECTED ESL BENCHMARK OBJECTIVES FOR LEVEL 3 STUDENTS WITH SPECIFIC RATIONALE.</b>	<b>SOME LINKS TO POS FOR CHOSEN LEVEL ARE CLEAR AND APPROPRIATE; SOME POS CURRICULAR OUTCOMES ARE REPRESENTED IN LESSON PLAN</b>  <b>APPROPRIATE SELECTED ESL BENCHMARK OBJECTIVES FOR LEVEL 3 STUDENTS WITH GENERAL RATIONALE.</b>	<b>LINKS TO POS FOR CHOSEN LEVEL NOT CLEAR OR APPROPRIATE; CURRICULAR OUTCOMES PRESENT BUT NOT CLEARLY ARTICULATED; LITTLE EFFORT TO INTEGRATE</b>  <b>SELECTED ESL BENCHMARK OBJECTIVES FOR LEVEL 3 STUDENTS NOT CLEARLY ARTICULATED OR RATIONALE NOT ARTICULATED.</b>	<b>FEW IF ANY LINKS PROVIDED BETWEEN POS AND LESSON ELEMENTS; CURRICULAR OUTCOMES NOT PRESENT</b>  <b>INAPPROPRIATE OR MISSING SELECTED ESL BENCHMARK OBJECTIVES FOR LEVEL 3 STUDENTS.</b>
<b>INSTRUCTIONAL DELIVERY</b>  -PLAN DEMONSTRATE DISCIPLINARY KNOWLEDGE, ENGAGEMENT,	<b>PLAN WELL INFORMED BY DISCIPLINARY KNOWLEDGE; LESSON HIGHLY ENGAGING; LESSON IS CLEARLY STUDENT-</b>	<b>GOOD EVIDENCE OF CARRYOVER OF DISCIPLINARY KNOWLEDGE TO LESSON PLAN; LESSON IS SOMEWHAT ENGAGING MOSTLY</b>	<b>SOME EVIDENCE THAT DISCIPLINARY KNOWLEDGE INFORMED CREATION OF LESSON PLAN; LESSON IS</b>	<b>LITTLE EVIDENCE THAT DISCIPLINARY KNOWLEDGE INFORMED CREATION OF PLAN; LESSON IS TEACHER-</b>



<p><b>STUDENT-CENTEREDNESS, ORGANIZATION, INTEGRATION ACROSS LESSON SECTIONS</b></p>	<p><b>CENTERED; LESSON CLEAR AND WELL-ORDERED; EASY TO ENVISION HOW LESSON WILL UNFOLD; ALL IMPORTANT ELEMENTS INCLUDED; HIGH DEGREE OF INTEGRATION AMONG LESSON SECTIONS AND EXCELLENT LINKS</b></p>	<p><b>STUDENT-CENTERED; GOOD ATTEMPT TO INTEGRATE PARTS OF THE LESSON; LESSON PLAN MOSTLY CLEAR AND LOGICAL FLOW; MOST IMPORTANT ELEMENTS INCLUDED</b></p>	<p><b>SOMWHAT STUDENT-CENTERED BUT NEEDS TO BE STRENGTHENED; LESSON PLAN FLOW IS NEITHER CLEAR NOR LOGICAL AND IS HARD TO FOLLOW; SEVERAL IMPORTANT ELEMENTS OF GOOD LESSON PLAN ARE MISSING</b></p>	<p><b>CENTRED; LESSON PLAN IS MISSING IMPORTANT ELEMENTS AND DOES NOT FLOW WELL (HARD FOR READER TO IMAGINE HOW THE LESSON WOULD UNFOLD)</b></p>
<p><b>DEEP UNDERSTANDING</b></p> <p><b>-LEARNING OPPORTUNITIES FOR DEEP UNDERSTANDING OF CURRICULUM OBJECTIVES</b></p>	<p><b>LESSON DESIGN IS HIGHLY EFFECTIVE FOR ENCOURAGING DEEP UNDERSTANDING OF CONTENT OBJECTIVES BY STUDENTS</b></p>	<p><b>LESSON DESIGN PROVIDES GOOD OPPORTUNITIES TO ENCOURAGE DEEP UNDERSTANDING BY STUDENTS</b></p>	<p><b>LESSON DESIGN SHOWS AWARENESS OF IMPORTANCE OF ENCOURAGING DEEP UNDERSTANDING BY STUDENTS BUT NOT EFFECTIVE IN ACHIEVING THAT UNDERSTANDING</b></p>	<p><b>ABSENCE OF EVIDENCE OF ATTEMPT TO ENCOURAGE DEEP UNDERSTANDING BY STUDENTS</b></p>
<p><b>ASSESSMENT (20%)</b></p> <p><b>-INTEGRATED FORMATIVE ASSESSMENTS</b></p> <p><b>-STATEMENT OF HOW ASSESSMENT WILL IMPROVE PRACTICE</b></p>	<p><b>APPROPRIATE ASSESSMENTS ARE CLEARLY INTEGRATED INTO LESSON; CLEARLY COMMUNICATES TO STUDENTS HOW INDIVIDUAL TASKS FIT IN. USES A VARIETY OF EFFECTIVE FORMATIVE ASSESSMENTS TO INFORM INSTRUCTIONAL DECISIONS AND TO IMPROVE PRACTICE; STRONG STATEMENT OF HOW ASSESSMENT WILL IMPROVE PRACTICE</b></p>	<p><b>GOOD EFFORT TO INTEGRATE APPROPRIATE AND EFFECTIVE ASSESSMENTS; SHOWS SOME VARIETY IN CHOICES FOR FORMATIVE ASSESSMENT – MOST ARE EFFECTIVE; CLEAR STATEMENT OF HOW ASSESSMENTS WILL IMPROVE PRACTICE</b></p>	<p><b>SOME ATTEMPT MADE TO INCLUDE APPROPRIATE ASSESSMENT OPPORTUNITIES; SHOWS LACK OF UNDERSTANDING OF WHAT CONSTITUTES EFFECTIVE ASSESSMENT; NO COMMUNICATION TO STUDENTS OF HOW TO SITUATE THEIR WORK. FORMATIVE ASSESSMENT OPTIONS ARE LIMITED AND NOT PARTICULARLY EFFECTIVE; DOES NOT ADDRESS HOW ASSESSMENT WILL LEAD TO</b></p>	<p><b>ASSESSMENT LACKING; NO UNDERSTANDING SHOWN OF IMPORTANCE OF APPROPRIATE AND EFFECTIVE ASSESSMENT; CLEAR LACK OF DIRECTION FOR STUDENTS. UNCLEAR VISION OF HOW TO INCLUDE ASSESSMENT; DISCUSSION OF IMPORTANCE OF ASSESSMENT OR HOW IT CAN BE USED TO IMPROVE PRACTICE NEEDS TO BE STRENGTHENED/REVISED</b></p>

			<b>IMPROVED PRACTICE</b>	
<b>RATIONALE (40%)</b>  -DEPTH OF ANALYSIS   -WRITING QUALITY	<b>RATIONALE DISPLAY A SOPHISTICATED AND ELEGANT UNDERSTANDING AND ANALYSIS OF THE ROLE OF PLANNING IN LESSON DESIGN.</b>  <b>THE RATIONALE FOR THE LESSON PLAN IS CLEARLY WRITTEN AND STANDS AS A SUPERIOR EXAMPLE FREE OF ERRORS.</b>	<b>RATIONALE DISPLAY A COMPETENT UNDERSTANDING, IF NOT ANALYSIS, OF THE ROLE OF PLANNING IN LESSON DESIGN.</b>  <b>THE RATIONALE FOR THE LESSON PLAN IS RELATIVELY CLEARLY WRITTEN AND CONTAINS FEW ERRORS.</b>	<b>RATIONALE DISPLAY SOME UNDERSTANDING OF THE ROLE OF PLANNING IN LESSON DESIGN, BUT LACK ANALYSIS.</b>  <b>THE RATIONALE FOR THE LESSON PLAN IS SOMEWHAT UNCLEARLY WRITTEN AND CONTAINS ERRORS THAT IMPEDE UNDERSTANDING.</b>	<b>RATIONALE DISPLAY LITTLE UNDERSTANDING OF THE ROLE OF PLANNING IN LESSON DESIGN AND LACK ANALYSIS.</b>  <b>THE RATIONALE FOR THE LESSON PLAN IS UNCLEARLY WRITTEN AND CONTAINS MANY ERRORS THAT IMPEDE UNDERSTANDING.</b>

**SCHEDULE OF WEEKLY ACTIVITIES AND REQUIRED READINGS**

<b>DATES</b>	<b>TOPICS/THEMES</b>	<b>READINGS AND ASSIGNMENTS</b>
<b>WEEK 1 &amp; 2</b> <b>JULY 8-17</b>  <i>Zoom 1</i> <b>JULY 8</b> <b>10:00 -11:30</b>	<b>WELCOME &amp; INTRODUCTION EMERGENT CONCEPTUAL UNDERSTANDING OF THE DISCIPLINE: “LEARNING SCIENCE, LEARNING ABOUT SCIENCE AND DOING SCIENCE”</b>   <b>ASSIGNMENT 1 DUE JULY 15 @ 11:59</b>	<b>LEMKE, J. L. (2001). ARTICULATING COMMUNITIES: SOCIOCULTURAL PERSPECTIVES ON SCIENCE EDUCATION. <i>JOURNAL OF RESEARCH IN SCIENCE TEACHING</i>, 38(3), 296-316.</b> <a href="https://ucalgary-primo.hosted.exlibrisgroup.com/permalink/f/1vibdgm/tn_wjaid-tea1007&gt;3.0.co;2-r">HTTPS://UCALGARY-PRIMO.HOSTED.EXLIBRISGROUP.COM/PERMALINK/F/1VIBDGM/TN_WJaid-TEA1007&gt;3.0.CO;2-R</a>  <b>*READING LOG IN D2L</b>  <b>STRONG, L., &amp; DAS, A. (2018). ABOLITION SCIENCE. PODCAST – WHAT IS ABOLITION SCIENCE?</b> <a href="https://www.abolitionscience.org/home/2018/8/24/welcome-to-abolition-science-radio">HTTPS://WWW.ABOLITIONSCIENCE.ORG/HOME/2018/8/24/WELCOME-TO-ABOLITION-SCIENCE-RADIO</a>
<b>WEEK 3 &amp; 4</b> <b>JULY 20 - 31</b>  <i>Zoom 2</i> <b>JULY 22</b>	<b>ANALYSIS OF A LESSON DESIGN AND ASSESSMENT PLAN</b>  <b>1) BIG IDEAS IN SCIENCE TEACHING</b> <b>2) AN EXAMPLE OF BIG IDEAS</b>	<b>1) BIG IDEAS IN SCIENCE – (PAGES 21 AND 22)</b> <a href="https://www.ase.org.uk/bigideas">HTTPS://WWW.ASE.ORG.UK/BIGIDEAS</a>  <b>2) CAUSAL PATTERNS IN ECOSYSTEMS – WATCH THE VIDEOS AND REVIEW THE SECTIONS:</b>

<p><b>10:00 -11:30</b></p>	<p><b>IN SCIENCE TEACHING: LESSONS IN CAUSAL PATTERNS IN SCIENCE- PROJECT ZERO HARVARD EDUCATION</b></p> <p><b>ASSIGNMENT 2 DUE JULY 29 @ 11:59</b></p>	<ul style="list-style-type: none"> <li>• <b>BIG IDEAS</b></li> <li>• <b>THE DETAILS</b></li> <li>• <b>CAUSALITY &amp; MISCONCEPTIONS</b></li> </ul> <p><a href="https://www.cfa.harvard.edu/smg/website/ucp/causal/causal_defined.html">HTTPS://WWW.CFA.HARVARD.EDU/SMG/WEBSITE/UCP/CAUSAL/CAUSAL_DEFINED.HTML</a></p> <p><b>RUSZNYAK, L., &amp; WALTON, E. (2011). LESSON PLANNING GUIDELINES FOR STUDENT TEACHERS: A SCAFFOLD FOR THE DEVELOPMENT OF PEDAGOGICAL CONTENT KNOWLEDGE. <i>EDUCATION AS CHANGE</i>, 15(2), 271-285.</b></p> <p><a href="http://ezproxy.lib.ucalgary.ca/login?url=http://search.ebscohost.com/login.aspx?direct=true&amp;db=ejh&amp;an=69870467&amp;site=ehost-live">HTTP://EZPROXY.LIB.UCALGARY.CA/LOGIN?URL=HTTP://SEARCH.EBSCOHOST.COM/LOGIN.ASPX?DIRECT=TRUE&amp;DB=EHH&amp;AN=69870467&amp;SITE=EHOST-LIVE</a></p> <p><b>PROJECT ZERO LESSONS AND ACTIVITIES</b></p> <p><a href="http://www.pz.harvard.edu/resources/causal-patterns-in-ecosystems-lessons-to-infuse-into-ecosystems-units">HTTP://WWW.PZ.HARVARD.EDU/RESOURCES/CAUSAL-PATTERNS-IN-ECOSYSTEMS-LESSONS-TO-INFUSE-INTO-ECOSYSTEMS-UNITS</a></p> <p><b>AGARKAR, S., &amp; BROCK, R. (2017). LEARNING THEORIES IN SCIENCE EDUCATION. IN <i>SCIENCE EDUCATION</i> (PP. 91-103). BRILL SENSE.</b></p> <p><b>*READING LOG IN D2L</b></p> <p><b>SCIENCE EDUCATION – ALBERTA EDUCATION</b></p> <p><a href="https://education.alberta.ca/science-k-6/program-of-studies/?searchmode=3">HTTPS://EDUCATION.ALBERTA.CA/SCIENCE-K-6/PROGRAM-OF-STUDIES/?SEARCHMODE=3</a></p>
<p><b>WEEK 5 &amp; 6 AUGUST 3-13</b></p> <p><b>Zoom 3 AUGUST 6 10:00 -11:30</b></p>	<p><b>DESIGN OF A SHORT-TERM LEARNING AND ASSESSMENT PLAN IN GOOGLE CLASSROOM</b></p> <p><b>INVITED SPEAKERS:</b></p> <p><b>MS. TASHA ROA-YAREMKOWYCZ UNIVERSITY SCHOOL – PRESENTATION: “RE-DESIGNING ELEMENTARY CURRICULUM FOR ONLINE ENVIRONMENTS DURING COVID-19”</b></p> <p><b>KATHY WISE- DOUCETTE</b></p>	<p><b>EDUCATION - WEBSITES AND TECHNOLOGY TOOLS FOR TEACHING – DOUCETTE LIBRARY</b></p> <p><a href="https://library.ucalgary.ca/c.php?g=255521&amp;p=3915621">HTTPS://LIBRARY.UCALGARY.CA/C.PHP?G=255521&amp;P=3915621</a></p> <p><b>VAN ROSENDAL, ALISON (2020). YAK. ONLINE RESOURCE FOR TEACHING AMIDST COVID-19.</b></p> <p><a href="https://www.yaklearning.com/">HTTPS://WWW.YAKLEARNING.COM/</a></p> <p><b>ESL BENCHMARKS ALBERTA EDUCATION</b></p> <p><a href="http://www.learnalberta.ca/content/eslab/">HTTP://WWW.LEARNALBERTA.CA/CONTENT/ESLAB/</a></p>

	<b>LIBRARY. PRESENTATION: “TECHNICAL INSIGHTS AND TIPS FOR DESIGNING VIA GOOGLE CLASSROOM”.</b>	
	<b>ASSIGNMENT 3 DUE AUGUST 12 @ 11:59</b>	

## GRADING

Grade	GPA Value	%	Description per U of C Calendar
A+	4.0	95-100	Outstanding
A	4.0	90-94	Excellent – Superior performance showing comprehensive understanding of the subject matter
A-	3.7	85-89	
B+	3.3	80-84	
B	3.0	75-79	Good - clearly above average performance with knowledge of subject matter generally complete
B-	2.7	70-74	
C+	2.3	65-69	
C	2.0	60-64	Satisfactory - basic understanding of the subject matter
C-	1.7	55-59	
D+	1.3	52-54	Minimal pass - Marginal performance
D	1.0	50-51	
F	0.0	49 and lower	Fail - Unsatisfactory performance

Students in the B.Ed. program must have an overall GPA of 2.5 in the semester to continue in the program without repeating courses.

### Academic Accommodation

Students seeking an accommodation based on disability or medical concerns should contact Student Accessibility Services; SAS will process the request and issue letters of accommodation to instructors. For additional information on support services and accommodations for students with disabilities, visit [www.ucalgary.ca/access/](http://www.ucalgary.ca/access/). Students who require an accommodation in relation to their coursework based on a protected ground other than disability should communicate this need in writing to their Instructor. The full policy on Student Accommodations is available at <http://www.ucalgary.ca/policies/files/policies/student-accommodation-policy.pdf>.

### Academic Misconduct

For information on academic misconduct and its consequences, please see the University of Calgary Calendar at <http://www.ucalgary.ca/pubs/calendar/current/k.html>

### Attendance/ Prolonged Absence

Students may be asked to provide supporting documentation for an exemption/special request. This may include, but is not limited to, a prolonged absence from a course where participation is required, a

missed course assessment, a deferred examination, or an appeal. Students are encouraged to submit documentation that will support their situation. Supporting documentation may be dependent on the reason noted in their personal statement/explanation provided to explain their situation. This could be medical certificate/documentation, references, police reports, invitation letter, third party letter of support or a statutory declaration etc. The decision to provide supporting documentation that best suits the situation is at the discretion of the student.

Falsification of any supporting documentation will be taken very seriously and may result in disciplinary action through the Academic Discipline regulations or the Student Non-Academic Misconduct policy.

<https://www.ucalgary.ca/pubs/calendar/current/n-1.html>

**The Freedom of Information Protection of Privacy Act** prevents instructors from placing assignments or examinations in a public place for pickup and prevents students from access to exams or assignments other than their own. Therefore, students and instructors may use one of the following options: return/collect assignments during class time or during instructors' office hours, students provide instructors with a self-addressed stamped envelope, or submit/return assignments as electronic files attached to private e-mail messages.

**For additional resources including, but not limited to, those aimed at wellness and mental health, student success or to connect with the Student Ombuds Office, please visit**

<https://www.ucalgary.ca/registrar/registration/course-outlines>

**Education Students Association (ESA)** President for the 2019 – 2020 academic year is Jonah Secreti, [jonah.secreti@ucalgary.ca](mailto:jonah.secreti@ucalgary.ca), [esa@ucalgary.ca](mailto:esa@ucalgary.ca).

**Werklund SU Representative** is Naomi Shaw, [educrep@su.ucalgary.ca](mailto:educrep@su.ucalgary.ca).