

EDUC 535.09 Specialization II - Elementary Science
Fall 2021

AB

Section	Days/Time	Location	Instructor	Email
S01	MWF 12:30-13:50	Online	Dr. Polly L. Knowlton Cockett	plknowlt@ucalgary.ca

Course Dates: September 7 to October 29, 2021

Zoom Sessions: All synchronous online classes will be within the scheduled MWF 12:30-13:50 timeslots, and these sessions may be whole class, small group, or individual work, or combinations. Weekly schedules will be posted in advance of the following week.

Office Hours: By arrangement; please email to set up an appointment to speak by phone or Zoom.

Email: Students are required to use a University of Calgary (@ucalgary.ca) email address for all correspondence.

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-requisites: 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:

Welcome to Specialization II: Seminar in Elementary Science Education!

The intent of the Specialization Seminar II is to deepen your understanding of the practical aspects of teaching within the specialization and to connect this practice with specific theoretical concepts. While this second specialization course focuses more on practical knowledge, you will also refine your knowledge of discourse and theory within the discipline and develop a deeper understanding of ways to enact this theory in a classroom context. You will additionally become familiar with any relevant Ministry documents associated with the Alberta curriculum and draw on practical classroom observation from the field experience to participate in meaningful discussion and to connect these observations with a vision for your own teaching. The emphasis of the course is on designing for student learning (subject-specific; assessment to strengthen student learning and improve instruction; and designing for inclusion, differentiation, and inquiry).

LEARNER OUTCOMES:

In this course, students will:

- 1) Further develop a deeper conceptual understanding of the historical, socio-cultural, political contexts of the *discipline*, and relate this to curriculum planning in the specialization areas;
- 2) Identify and critique the *key learning perspectives* (as outlined in the front matter of the Programs of Study) and *intentions* (learning objectives) across the units in a grade from the Alberta Programs of Study;
- 3) Successfully apply theoretical knowledge to the design of a longer-term unit and assessment plan.

COURSE DESIGN AND DELIVERY:

This course is delivered through a problem-based and inquiry-focused approach. Due to the nature of online learning, student participation is crucial to the knowledge building in this course. Students are expected to participate in all synchronous meetings organized as Zoom sessions, which may include interactive whole class, small group, or individual activities, and in all asynchronous conversations and activities through Desire2Learn (D2L) discussion forums that will include blogs, small-group discussions, opportunities for peer feedback, and other weekly engagements. Assessment is based on rubrics for the three Learning Tasks, and may include self-assessment opportunities.

D2L will be used to post class information and for submitting assignments and will be our primary class environment. Ahead of each week of the course, there will be a detailed outline for the following week posted in D2L that will guide you through that week's activities, such as what to prepare for the Zoom session, what to post in the discussions. This might include videos, links to activities, notes on the topics of the readings, suggestions for assignments, etc. For most class activities, you will need a device with fairly reliable internet connectivity to access D2L, the library website, YouTube, etc. For the Zoom sessions, you will need a device that supports online audio (and preferably video) communication.

LEARNING TASKS OVERVIEW

There are three (3) required Learning Tasks and completion of all tasks is required to pass this course.

Task	Description of Learning Task	Weight	Group/ Individual	Due Date
LT1	An Inquiry into Teaching Science: Knowledge Building in a Community of Inquiry	30%	Group	Sep 24
LT2	Evolving Conceptual Understanding of Science Teaching (including Blogs & Peer Responses)	30%	Individual	Weekly
LT3	Creation of a Unit and Assessment Plan	40%	Individual (in Groups)	Oct 29

WEEKLY COURSE SCHEDULE:

Date	Topic	Readings and Tasks
Week 1 Sep 7-10	Welcome & Introductions <ul style="list-style-type: none"> Intro to LT1 & online workshop format Intro to LT2 Essential Questions [EQ]: <ol style="list-style-type: none"> What are the goals of science teaching? What does it mean to teach science? 	Zoom 1 – Sep 8 Developing personal understanding of the goals of science education Readings: <ul style="list-style-type: none"> Rennie, L. (2005). Science awareness and scientific literacy. <i>The Journal of the Australian Science Teachers Association</i>. 51(1), 10-14. http://ezproxy.lib.ucalgary.ca/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ehh&AN=18133950&site=ehost-live Harlen, W. (2015). <i>Working with Big Ideas of Science Education</i>. Hatfield, UK: Association for Science Education. Chapter 1 (pp 3-6) https://www.ase.org.uk/download/file/fid/6740 Wilcox, J., & Lake, A. (2018). Teaching the Nature of Science to Elementary Students. <i>Science and Children</i>, 55(5), 78-85. http://ezproxy.lib.ucalgary.ca/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ehh&AN=126968551&site=ehost-live Science Programs of Study, Grades 1-6. Read the Program Overview (pp. 1-4) https://education.alberta.ca/media/159711/elemsci.pdf Tasks: <ol style="list-style-type: none"> Review Introductory materials, outline, etc. By Tuesday Sep 7, introduce yourself in the class D2L Discussion board and say Hi to your classmates. Begin thinking of ideas for LT1. Begin preparing your first blog post, on the topic of LT1
Week 2 Sep 13-17	EQ: How do teachers manage both the physical and instructional format of an inquiry-based classroom? Inquiry Big Picture	DUE: LT2 Blog post 1: Tuesday, Sep 14, midnight DUE: LT2 Peer Responses 1: Friday, Sep 17, midnight Readings: <ul style="list-style-type: none"> Friesen, S., Saar, C., Park, A., Marcotte, C., Hampshire, T., Martin, B., Brown, B., & Martin, J. (2015). Focus on Inquiry. [eBook] Retrieved from http://inquiry.galileo.org/*read Chapter Two Grueber, D. & Whitin, P. (2012). Valuing little steps toward inquiry. <i>Science and Children</i>, 50(3), 41-45. http://ezproxy.lib.ucalgary.ca/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ehh&AN=82669917&site=ehost-live Zangori, L., Forbes, C., & Biggers, M. (2012). This Is Inquiry... Right?. <i>Science and Children</i>, 50(1), 48-53. http://ezproxy.lib.ucalgary.ca/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ehh&AN=79310878&site=ehost-live Tasks: Work on LT1

<p>Week 3 Sep 20-24</p>	<p>EQ: How to manage both the physical and instructional format of an inquiry-based classroom? <i>Inquiry Specifics</i></p>	<p>DUE: LT1: Friday, Sep 24, midnight Readings:</p> <ul style="list-style-type: none"> • Bybee, R. W., Taylor, J. a, Gardner, A., Scotter, P. V, Powell, J. C., Westbrook, A., & Landes, N. (2006). <i>The BSCS 5E instructional model: Origins and effectiveness</i>. BSCS, (pp. 1–13, 32-43). https://media.bsccs.org/bsccsmw/5es/bscs_5e_full_rep_ort.pdf • Benedict-Chambers, A. & Fortner, T. (2019). The Right Kind Of Questions. <i>Science and Children</i>, 56(9), 50-57. https://ucalgary-primo.hosted.exlibrisgroup.com/permalink/f/1p0s7n7/TN_cdi_proquest_journals_2242627961 • Holt-Taylor, L. (2017). What’s The Buzz on Bees?. <i>Science and Children</i>, 55(4), 82-88. http://ezproxy.lib.ucalgary.ca/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=sch&AN=126367663&site=ehost-live <p>Tasks: Work on LT1</p>
<p>Week 4 Sep 27-Oct 1</p>	<p>EQ: What does it mean to be a “designer” of learning?</p> <ul style="list-style-type: none"> • Stage 1. Identify Desired Results: STS/NoS, knowledge, skills, and attitudes. • Design thinking & Big Ideas 	<p>DUE: LT2 Blog post 2: Tuesday, Sep 28, midnight DUE: LT2 Peer Responses 2: Friday, Oct 1, midnight Readings:</p> <ul style="list-style-type: none"> • Wiggins, G. & McTighe, J. (2005). <i>Understanding by design</i> (2nd Edition). Alexandria, VA: Association for Supervision & Curriculum Development. https://ebookcentral-proquest-com.ezproxy.lib.ucalgary.ca/lib/ucalgary-ebooks/reader.action?docID=3002118 * see Ch. 3, 4, 5, & 6 <p>Tasks:</p> <ul style="list-style-type: none"> • Start LT3: start Stage 1
<p>Week 5 Oct 4-8</p>	<p>EQ: What does it mean to be a “designer” of learning?</p> <ul style="list-style-type: none"> • Stage 1. Identify Desired Results: STS/NoS, knowledge, skills, and attitudes. 	<p>DUE: LT2 Blog post 3: Tuesday, Oct 5, midnight DUE: LT2 Peer Responses 3: Friday, Oct 8, midnight Readings:</p> <ul style="list-style-type: none"> • Sumrall, W., & Sumrall, K. (2018). Understanding by design. <i>Science and Children</i>, 56(1), 48-54. http://ezproxy.lib.ucalgary.ca/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ehh&AN=82669917&site=ehost-live • Harlen, W. (2015). <i>Working with Big Ideas of Science Education</i>. Hatfield, UK: Association for Science Education. Chapter 3-4 (pp 11-33) https://www.ase.org.uk/download/file/fid/6740 • Mensah, F. M. (2010). Who do I look like? Diversity in self, family, and others. <i>Science Activities</i>, 47(4), 125-132. https://ucalgary-primo.hosted.exlibrisgroup.com/permalink/f/1p0s7n7/TN_cdi_proquest_journals_749617376 <p>Tasks:</p> <ul style="list-style-type: none"> • Work on LT2

<p>Week 6 Oct 12-15</p>	<p>EQ: What will you accept as evidence that student understanding took place?</p> <ul style="list-style-type: none"> • Stage 2. Determine what constitutes acceptable evidence of competency in the outcomes and results (assessment). 	<ul style="list-style-type: none"> • Work on LT3: Stage 1 <p>DUE: LT2 Blog post 4: Tuesday, Oct 12, midnight DUE: LT2 Peer Responses 4: Friday, Oct 15, midnight</p> <p>Readings:</p> <ul style="list-style-type: none"> • <i>Understanding by design</i>: Ch. 7 & 8 • Minstrill, J. & van Zee, E. (2003). Using questions to assess and foster student thinking. In J. M. Atkin & J. E. Coffey (2003). <i>Everyday Assessment in the Science Classroom</i>. Chapter available through the library website. https://ebookcentral-proquest-com.ezproxy.lib.ucalgary.ca/lib/ucalgary-ebooks/reader.action?docID=355237&ppg=77 • McLaughlin, C. A., McLaughlin, F. C., & Pringle, R. M. (2013). Simply performance assessment. <i>Science and Children</i>, 51(3), 50-55. http://ezproxy.lib.ucalgary.ca/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ehh&AN=91710121&site=ehost-live <p>Additional Resources:</p> <ul style="list-style-type: none"> • Alberta Assessment Consortium: https://aac.ab.ca/ Username: teachers Password: master <p>Tasks:</p> <ul style="list-style-type: none"> • Work on LT2 • Work on LT3: Stage 2
<p>Week 7 Oct 18-22</p>	<p>EQ: How do you shift the responsibility of learning from the teacher to the students?</p> <ul style="list-style-type: none"> • Stage 3: Designing experiences that engage, develop, and challenge student understanding. 	<p>Readings:</p> <ul style="list-style-type: none"> • <i>Understanding by design</i>: Ch. 9 & 10 • Kurson, R. (2014). A Pattern In The Sky. <i>Science and Children</i>, 52(2), 48-54. http://ezproxy.lib.ucalgary.ca/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ehh&AN=98546000&site=ehost-live • Bang, M., Medin, D., and Cajete, G., (2009). Improving Science Education for Native Students: Teaching Place Through Community. <i>Sacnas News</i>, 12(1), 8-10. https://cosee.umaine.edu/files/coseeos/Bang_Medin_Cajete-Improving%20Science%20Education%20for%20Native%20Students-SACNAS.pdf <p>Additional Resources: Alberta Education. (2019). <i>Health and safety in the science classroom: Kindergarten to grade 12</i>. https://education.alberta.ca/media/3795623/health-and-safety-in-the-science-classroom.pdf</p> <p>Tasks: Work on LT3: Stage 3</p>
<p>Week 8 Oct 25-29</p>	<p>EQ: What does it mean to be a teacher of diversity?</p> <ul style="list-style-type: none"> • Stage 4: Learner differentiation 	<p>DUE: LT3: Friday, Oct 29, midnight</p> <p>Readings:</p> <ul style="list-style-type: none"> • Martínez-Gudapakkam, A., Mutch-Jones, K., & Hicks, J. (2017). Formative Assessment Practices to Support Students who Struggle in Science. <i>Science and Children</i>, 55(2), 88-93.

		<p>http://ezproxy.lib.ucalgary.ca/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ehh&AN=125326529&site=ehost-live</p> <ul style="list-style-type: none"> Gomez-Zwiep, S., Straits, W., & Topps, J. (2015). 5E for ELL. <i>Science and Children</i>, 53(2), 80. <p>http://ezproxy.lib.ucalgary.ca/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ehh&AN=110076305&site=ehost-live</p> <p>Additional Resources:</p> <ul style="list-style-type: none"> Alberta Education (n.d.). <i>Benchmarks, strategies and resources for teachers of English Language Learners</i>. https://www.learnalberta.ca/content/eslapb/index.html Alberta Education. (2010). <i>Making a difference: Meeting diverse learning needs with differentiated instruction</i>. https://education.alberta.ca/media/384968/makingadifference_2010.pdf <p>Tasks: Work on LT3: Stage 4</p>
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CHANGES TO SCHEDULE:

Please note that changes to the schedule may occur to meet the emerging needs and dynamics of the participants in the course, although specific weekly course schedules will still be provided in advance by your Instructor.

LEARNING TASKS AND ASSESSMENTS

LT1: An Inquiry into Teaching Science: Knowledge Building in a Community of Inquiry

Due Date: Friday, Sept. 24 in D2L Discussion and Dropbox

Percentage of the Final Grade: 30%

Length: 30 minutes (max)

Context: There is a strong movement to improve education in Alberta with an emphasis on Mastery Learning as an instructional strategy that results in a comprehensive grasp of curriculum as demonstrated through competency or performance-based evaluations. With an all-encompassing understanding of the curricular intent (the Front Matter), science teachers are being challenged to develop rigorous and relevant curriculum. As teachers of science, our focus is on emphasizing students' active engagement in genuine inquiry and problem-solving, an approach to make science learning appealing to all students. Of central importance are science teachers' pedagogical practices with a focus on the integration of students' learning of core disciplinary concepts with active engagement in "doing science". As a new teacher there will be challenges acquiring this pedagogical knowledge and skill to meet these expectations. This assignment introduces opportunities and challenges that science teachers face in translating curriculum documents, including the philosophy and rationale of the Programs of Study, into engaging instruction that leads to student understanding and development of related knowledge, skills, and attributes.

Expectations: For this assignment, students (in groups of 2-3) will develop an investigable question on the topic of teaching science nested within the above context. The question should emerge from Specialization I inquiry projects and class discussion, and readings along with your practicum experience. This work can also be connected to Alberta Education's (2018) *Teaching Quality*

Standard. You should consider many sources of evidence for answering your question: journal articles, teacher blogs, teacher resource books, and even conversations with experienced teachers.

During the course, you will present your work as a 20-30 min. (max) Professional Development workshop for teachers (your peers). Your presentation should focus on how these “understandings” will influence our pedagogical practices. The presentation along with references (APA 7: see *Purdue online writing lab: APA guide*) must also be submitted to both D2L Discussion and D2L Dropbox. You are also required to create a digital folder in D2L Discussion that could include text, visuals, media, and other supporting links for this inquiry. Be creative in the development of this folder.

Further explanations will be presented to you in both D2L Content and at our first Zoom Seminar.

Required elements of this project should include:

- An explanation of your inquiry question including: a clear statement of the question, your reasons for asking this question, and a summary of your conclusion or findings as well as new or further questions raised.
- A digital collection illustrating the evidence for your findings. You can create these and/or share existing links or examples (where copyright permits). The connection to your inquiry question should be made clear.
- A summary of your inquiry.
- List of resources used in the project completion (This must be presented in APA 7 format).
- Shared learning session
 - the significance of the inquiry,
 - how the inquiry fits in the ongoing pedagogical knowledge building focused on the teaching of science,
 - how these ideas generated from the inquiry may be achieved within the classroom, and
 - what implications does this inquiry have for each of you in shaping your own teacher identity and practice?

CRITERIA FOR ASSESSMENT OF LEARNING TASK 1

Criteria	A to A+	A- to B+	B to B-
	Meets all and exceeds some requirements	Meets all requirements	Meets most requirements.
Quality & Meaningfulness of Research Question			
Rationale: What and Why do you want to know “this” with respect to informing pedagogical practice?	The research question is clearly stated, specific and addresses a significant need or problem that teachers encounter in the classroom. The rationale for choosing the question is supported with personal interests in professional growth in this area. Considers and/or challenges common assumptions in this area.	The research question is appropriate and clearly stated but is either too general or too narrow, leading to a multitude of sub- question or ruling out new possibilities. The supporting rationale is generally well-written but not relevant to personal interest stemming from classroom experience or identification of professional growth areas.	The research question is roughly sketched and in need of refinement. The supporting rationale is weakly developed and/or does not address personal interest or identification of professional growth areas.

How will it make a difference to your teaching of the discipline?	The question has the potential to hold professional interest over time. Direct links are made to how new knowledge in this area will support teaching in the service of learning.	The question has the potential to hold professional interest beyond this assignment. Weak links are made to how new knowledge in this area will support teaching in the service of learning.	The question has limited importance for on-going investigation. Few or no links are made to how this question will support teaching in the service of learning.
Critique & Critical Analysis			
What are the connections between theory and practice?	Well-developed depth of understanding of the topic shown through credible and respected referenced connections between theory and practice. Cites all academic content obtained from other sources. APA 7 citation style is accurate.	Sufficient depth of understanding of the topic shown through limited referenced connections between theory and practice. Cites most content obtained from other sources. APA 7 citation style is accurate.	Little depth of understanding of the topic with minimum referenced connections between theory and practice. Citations do not employ APA 7 citation style.
Overall Presentation of Findings			
How effective is the creation and development of conceptual ideas in contributing to our pedagogical content knowledge?	Careful and critical development of the conceptual ideas through an inquiry approach so participants will be able to develop and apply pedagogical information, concepts, and skills to new teaching situations.	Some development of the conceptual ideas through an inquiry approach so participants will be able to develop minimal pedagogical understanding. with implications for practice in classrooms.	Little development of the conceptual ideas through an inquiry approach, with little or no connection to pedagogical development and with no implications for practice in classrooms
How effective is the video in allowing the viewer to follow your train of thought and supplementary support through the digital folder?	Video design and layout is creative, visually appealing, and effectively supports the audio; using word count, font style, color, headlines, bullets, and numbers. Graphics (e.g., diagrams, picture, tables, figures, etc.) effectively enhance key ideas. Audience provided with important resources or handouts for later consideration.	Overall design and layout of the video is appealing and supports the audio; adequate use of word count, font style, color, headlines, bullets, and numbers. Graphics enhance key ideas. Handouts and other resources provided may not directly relate to central topic.	Design and layout of video is adequate but somewhat cluttered. Choice of word count, font style, color, headlines, bullets, and numbers detract from the audio. Graphics are limited in enhancing the audio. Content arrangement is somewhat confusing and does not adequately assist the viewer in understanding order without narration.

LT2: Evolving Conceptual Understanding of Science Teaching (30%)

Due Dates:

- Blogs: Tuesdays (midnight), Sept. 14, 28 & Oct. 5, 12
- Peer Responses: Fridays (midnight), Sept. 17 & Oct. 1, 8, 15

Format: Blog Format, APA 7 formatting

Intent of LT2: The purpose of the assignment is to provide ongoing reflections on the following question: How is your conceptualization of teaching Science changing, being modified, or reinforced throughout the course? In order to address the question, you will be asked to view presentations from LT1. Your reflections will be in the form of a blog, that is, you will write from a personal perspective that allows you to connect directly with your readers.

Note: *While this is an overarching question, as a community of learners, we will pose prompts or sub-questions the week preceding the blog entry. Further details and explanations will be presented to you on D2L.*

- i For each of the specified blog weeks, you will post an approximately 500-word blog within your Small Discussion Group (3-4 members) on the D2L Discussion Board by Tuesday midnight.
- ii You will then respond to each of your Small Discussion Group peers by Friday midnight. Approximately 200 words each.

This connection allows you to interact and share ideas with your colleagues. Thoughtfully plan how you will engage the members of your class on your insights and learning. Your blogs and responses must be persuasive, that is, you should take a personal stance on the question and explain your response, using relevant and varied evidence. Your blog must include significant insights from:

- Professional discussions (Online Class Discussions, Learning Tasks, and Activities)
- Course readings and resources (including online Class Discussions on the readings)
- Current research
- Classroom observations/experiences (e.g., from Field Experiences)

CRITERIA FOR ASSESSMENT OF LEARNING TASK 2

Criteria	A to A+ Meets all and exceeds some requirements	B+ to A- Meets all requirements	B- to B Meets most requirements	Does not meet requirements
Articulates a clear, insightful and growing understanding of teaching concepts	Blog and responses are introduced, clearly communicated, and the focus is strongly maintained for the purpose of knowledge building.	Blog and responses are clear, and the focus is maintained for the purpose of knowledge building.	Blog and responses are generally clear, but the focus may be insufficiently sustained for the purpose of knowledge building.	Blog and responses are unclear and not clearly developed for the purpose of knowledge building.

Relevant evidence from LT1 and other sources to support responses	Build upon content from LT1, readings, conversations, and experiences to open new possibilities in understanding. Demonstrates skillful use of high quality, credible, relevant sources to develop ideas that are appropriate for the discipline. Cites all content obtained from other sources. APA 7 citation style is accurate.	Demonstrates consistent use of information from LT1 with credible, relevant sources to support ideas that are situated within the discipline. Cites most content obtained from other sources. APA 7 citation style is accurate.	Demonstrates an attempt to use information from LT1 with credible and/or relevant sources to support ideas that are appropriate for the discipline. Cites some content obtained from other sources. Citation style is either inconsistent or incorrect.	Does not use information from LT1 with credible and/or relevant sources to support ideas that are appropriate for the discipline. Does not cite sources.
Democratizing knowledge	Recognize all participants as legitimate contributors to the shared goals of the knowledge building community through dialogic interactions.	Recognize and praise everyone's work and help others find needed information.	You add your contribution with little recognition of others contribution.	You add little independent contribution with little dialogic interaction with others in the group.

LT3: Designing a Unit and Assessment Plan
(Individual submissions within Small Group work)

Due Date: Friday, October 29 in D2L Drobox

Percentage of the Final Grade: 40%

Intent of LT3: The intent of LT3 is to design a unit and assessment plan. We will be using a Whole-Part-Whole learning model over the last 4 weeks of the course to develop the unit plan. Through the D2L Content and our various Zoom seminars you will first be presented with an overview of the expectations for the final assignment. Then over the four weeks, we will scaffold the assignment through a process of jigsaw reading. Working within small groups of 2-3, individuals will also track and provide evidence of their contributions to the collective plan and provide ongoing self-assessments of their work.

Expectations of LT3:

- The unit plan will be comprised of one unit covering:
 - 7 weeks with 30-45 minutes classes for Elementary classes.
- The unit plan must follow a clear and comprehensive **design for learning focused template** (in D2L Content) that promotes deep understandings of a key concept or competency of the discipline.
- **Use the following rubric to guide your unit design and assessment.**

CRITERIA FOR ASSESSMENT OF LEARNING TASK 3

Criteria	A to A+ Meets all and exceeds some requirements	B+ to A- Meets all requirements	B- to B Meets most requirements
Stage 1 - Lesson Rationale: To what extent does the design focus on building understanding of targeted content based on an Alberta Education Programs of Study?			
Curricular Outcomes	Has identified targeted understandings of curricular outcomes that are truly enduring, based on transferable big ideas at the heart of the discipline, and in need of uncovering.	Has identified targeted understandings of curricular outcomes that are based on transferable big ideas of the discipline.	Has identified targeted understandings of curricular outcomes and sometimes incorporates them into inquiry-based learning
Targeted Understandings	The targeted understandings are framed by essential questions that spark meaningful connections, provoke genuine inquiry and deep thought, and encourage transfer of learning.	The targeted understandings are framed by some essential questions that adequately make connections for inquiry-based learning, deep thought, and encourage transfer of learning.	The targeted understandings are framed by questions that could be incorporated into inquiry-based learning.
Misconceptions	Misconceptions are relevant and targeted.	Some misconceptions are identified and targeted.	Some misconceptions are identified, but not targeted
Ab Ed PoS Outcomes General (unit) Specific (lesson)	Lists the outcomes students must meet in order for the enduring understandings to develop. Outcomes clearly reflect the PoS, including STS, knowledge, skills and attitudes and are linked to the targeted understandings.	Outcomes are stated but all of the elements needed to provide the needed knowledge, skills, and attitudes for the targeted understandings have not been included.	Outcomes are stated but do not link to the targeted understandings.
Stage 2 - Assessment Evidence: To what extent do the assessments provide fair, valid, reliable, and sufficient measures of the desired results			
Balanced Assessment	Balanced assessment is integral to the learning and woven into the day-to-day fabric of teaching and learning. Appropriate criterion-based scoring tools are used to evaluate student products and performances.	Balanced assessment is used on a regular basis and is part of the teaching and learning. Some criterion-based scoring tools are used to evaluate student products and performances.	Assessment is primarily summative with limited or irregular use of formative assessment to improve teaching and learning.
Learning Outcomes	Assessment is directly matched to learning outcomes from Stage 1. (<i>Ab Ed Achievement Indicators</i>)	Assessment closely matches the learning outcomes from Stage 1.	Limited match between assessment and Stage 1,
Assessment Through Authentic Performance Tasks	Students are asked to exhibit their understanding through authentic performance tasks to provide additional evidence of learning. (GRASP)	Students have limited opportunities to exhibit their understanding through authentic performance tasks to provide general evidence of learning.	Limited number of assessment data provides a partial or incomplete picture of student learning.

Clear Criteria are Established	Assessment criteria are collaboratively designed with students and mediated by or added to by the teacher to reflect authentic real-world standards for high quality work.	Assessment criteria are developed by the teacher and fully explained to students before the work begins.	Assessment criteria are shared after the work has been graded.
Self and Peer Assessment	Students are encouraged to self-assess and peer-assess	Students have limited opportunities to self-assess and peer-assess	No evidence of self or peer assessment.
Stage 3: To what extent is the learning plan effective and engaging			
Design Is Informed by Pedagogical Content Knowledge (e.g. 5Es)	Designs learning experiences that engage the students in doing work that require distinct ways of thinking about and acting in the world that disciplines embody to make meaningful connections and build deep understanding.	Designs learning experiences that are organized around disciplinary ideas and core concepts and requires that students make connections between exiting and new ideas to build understanding.	Selects activities that emphasize subject matter acquisition which deal with acquiring information, facts and formulas.
Authentic Performance Task	The work students undertake requires them to engage in productive collaboration with each other and with discipline and other experts around real problems, issues, questions or ideas that are of real concern and central to the discipline, to the students and to the broader community outside of school.	The work students undertake requires them to engage in productive collaboration with each other around matters that are central to the discipline and the broader community outside of school.	The work students undertake requires them to acquire and recall static, inert facts.
Work Fosters Deep Understanding	The work students undertake fosters strong habits of mind, innovation and creativity. Students are routinely asked to: <ul style="list-style-type: none"> • Formulate plausible, coherent working theories, • Formulate well- reasoned judgment and conclusions based on evidence with an examination of different viewpoints, • Analyze assumptions, • Discuss how things might be otherwise, i.e. supposition, • Thoroughly examine implications, • Consider ambiguities • Work across a variety of contexts, and, • Make connections between and among concepts 	The work students undertake fosters disciplined habits of mind. Students are asked to: <ul style="list-style-type: none"> • Formulate plausible solutions, • Articulate assumption, • Formulate reasoned judgment and conclusions based on evidence, and, Consider implication that reach beyond the immediate situation.	The work students undertake builds habits of mind that emphasize groupthink by requiring a simplistic solution and/or absolute conclusion attributed to an external authority with no consideration of implications
Stage 4: Learner Inclusion			
ESL Benchmarks (Level 3) reflected in the Performance Task	Appropriately selected ESL benchmark objectives for level 3 students with specific rationale for performance task.	Selected ESL benchmark objectives for level 3 students or rationale for performance task not clearly articulated.	Inappropriate or missing selected ESL benchmark objectives for level 3 students.

Learner Inclusion	A variety of effective and inclusive learning strategies are incorporated into the design to address the learning interests and needs of all students. Inclusion of technology, Indigenous, multicultural, and inter-disciplinary activities are highly evident.	A limited variety of teaching methods are used to engage all students. Inclusion of technology, Indigenous, multicultural, and inter-disciplinary activities are restricted.	There is no evidence of a variety of teaching methods used to engage all students.
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THE EXPECTATION OF EXCELLENCE IN PROFESSIONAL WORK

Please review the Academic Calendar 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.

- *Engagement in Class Discussion and Inquiry*

Another reason for the importance of attendance and participation in every class is that the course involves working with fellow students to share ideas and thinking. For example, each class 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 in assignments. If you find that you are experiencing difficulties as a group collaborating, please inform the instructor.

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>

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.

GRADING

Grade	GPA Value	%	Description per UCalgary 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.

Note: A+ is an exceptional and rare grade to be given only to works of the highest quality.

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/. 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 academic year is Kyle Corry, esa@ucalgary.ca.

Werklund SU Representative is Dwani Joshi, educrep@su.ucalgary.ca.