

EDUC 535.07: Specialization II: Elementary Mathematics
Fall 2023

Section	Instructor	Time	Location	Email
S01	Jo Towers	8am-11:50am		towers@ucalgary.ca

Class Dates: Wednesdays, 6th September 2023–25th October 2023

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.

Office Hours: By appointment only

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

COURSE DESCRIPTION:

The intent of the Specialization Seminar II is to deepen students' 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, students will also refine their knowledge of discourse and theory within the discipline and develop a deeper understanding of ways to enact this theory in a classroom context. Students will additionally become familiar with 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 their own teaching. The emphasis of the course is on designing for student learning (subject-specific; assessment that strengthens student learning and improves instruction; and designing for inclusion, differentiation, and inquiry).

LEARNER OUTCOMES:

Over the course of the semester, students will

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

COURSE DESIGN AND DELIVERY: This course will be delivered face-to-face on campus with some engagement in a D2L environment.

REQUIRED RESOURCES:

Required readings will be made available through D2L.

ADDITIONAL RESOURCES:

While not required, you may find the following resources helpful as you build your own professional library:

- Alberta Education Program of Study for Mathematics.
<https://curriculum.learnalberta.ca/curriculum/en> (2022 Curriculum)
- Alberta Education. (2011). *English as a Second Language Proficiency Benchmarks*.
<http://www.learnalberta.ca/content/eslapb/>
- Alberta Learning. (2010). *Making a difference: Meeting diverse learning needs with differentiated instruction*. https://education.alberta.ca/media/384968/makingadifference_2010.pdf
- Boaler, J. (2015). *Mathematical mindsets: Unleashing students' potential through creative math, inspiring messages and innovative teaching*. San Francisco, CA: Jossey-Bass.
<https://ebookcentral-proquest-com.ezproxy.lib.ucalgary.ca/lib/ucalgary-ebooks/detail.action?docID=4444210>
- Small, M. (2015). *Making math meaningful to Canadian students, K-8* (3rd Ed.). Toronto, ON: Nelson.
https://ucalgary-primo.hosted.exlibrisgroup.com/permalink/f/13e4ecq/01UCALG_ALMA21603432160004336
- Van de Walle, J.A., Karp, K.S., Bay-Williams, J.M., & McGarvey, L. M. (2017). *Elementary and middle school mathematics: Teaching developmentally*, 5th Canadian Ed. Toronto, ON: Pearson.
https://ucalgary-primo.hosted.exlibrisgroup.com/permalink/f/13e4ecq/01UCALG_ALMA21685767650004336

LEARNING TASKS OVERVIEW:

LEARNING TASK	DESCRIPTION OF LEARNING TASK	GROUP / INDIVIDUAL	WEIGHT	DUE DATE
Learning Task #1	Rights of the Learner Declaration	Individual	35%	Wednesday 20 th September, 2023
Learning Task #2	Co-Teaching Experience	Group	25%	Wednesday 27 th September 2023 (Group 1) Wednesday 11 th October, 2023 (Group 2)
Learning Task #3	Unit and Assessment Plan	Individual	40%	Wednesday 25 th October, 2023

WEEKLY COURSE SCHEDULE:

Date	Topic	Readings and Tasks	Due Dates
Wed 6 th Sept 2023	<ul style="list-style-type: none"> • Welcome & Introduction • Deconstructing field experience • Setting our agenda • Mathematical exploration 	Prasad, P. V., & Kalinec-Craig, C. A. (n.d.). Creating a democratic mathematics classroom. The interplay of the rights and responsibilities of the learner. <i>Democracy and Education</i> , 29(1), 1-4.	
Wed 13 th Sept 2023	<ul style="list-style-type: none"> • Identifying and critiquing the key learning perspectives and intentions in the Alberta Programs of Study • Mathematical exploration 	Alberta Program of Study for Mathematics, K-6	
Wed 20 th Sept 2023	<ul style="list-style-type: none"> • Developing a deeper conceptual understanding of teaching for and through inquiry in mathematics 	Group 1 Co-teaching Experience	Learning Task 1 Due
Wed 27 th Sept 2023	<ul style="list-style-type: none"> • Developing a deeper conceptual understanding of teaching for and through inquiry in mathematics 	TBA	Learning Task 2 Due (Group 1)
Wed 4 th Oct 2023	<ul style="list-style-type: none"> • Lesson Planning 	Group 2 Co-teaching Experience	
Wed 11 th Oct 2023	<ul style="list-style-type: none"> • Designing a Unit and Assessment Plan 	TBA	Learning Task 2 Due (Group 2)
Wed 18 th Oct 2023	<ul style="list-style-type: none"> • Assessment of K-6 mathematics • Designing a Unit and Assessment Plan 	TBA	
Wed 25 th Oct 2023	<ul style="list-style-type: none"> • Applying knowledge in new contexts • Preparing for teaching 	TBA	Learning Task 3 Due

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. Additional readings to be specified during the course.

LEARNING TASKS AND ASSESSMENT:

There are three required Learning Tasks for this course.

1. LEARNING TASK 1: Rights of the Learner Declaration—DUE: Wednesday 20th September 2023, 35%

For this assignment, and based on Torres' Rights of the Learner (see Week 1 readings), you will develop your own declaration of the Rights of the Learner, including attention to the concomitant responsibilities of the learner and implications for you as a teacher. You should also include your rationale for choosing each Right. More information about this assignment will be provided in class.

CRITERIA FOR ASSESSMENT OF LEARNING TASK 1

Your document will be assessed based on the following criteria:

- Depth of understanding of teaching and learning demonstrated by the choice of Rights.
- Sophistication of arguments supporting each chosen Right.
- Reasonableness of the responsibilities assigned to learners.
- Clarity of expression of the implications for teachers and teaching.

2. LEARNING TASK 2: Co-Teaching Experience—DUE: Wednesday 27th September 2023 (Group 1), Wednesday 11th October 2023 (Group 2), 25%

For this assignment you will work in a group to prepare and co-present a mathematics task with me within the class. Before the session we will meet to select a mathematics task and discuss possible ways to present it. Your group will be responsible for preparing a lesson plan for the presentation of the task, assembling materials, and presenting the activity within the class. At the end of the session you will receive peer feedback on your facilitation of the task and participate in a debriefing session with me to discuss your experience. In addition to preparing for and participating in the teaching activity, you will be required to submit a group paper that documents your experiences and incorporates a reflection on the successes and challenges of the experience. Further details about this assignment will be discussed in the first class.

CRITERIA FOR ASSESSMENT OF LEARNING TASK 2

The Co-Teaching Experience paper will be assessed based on the following criteria:

- Attention to detail in preparing the lesson plan and materials for the activity.
- Quality of the plan for teaching.
- Sophistication of facilitation of the task within the class.
- Meaningfulness of response to the peer feedback.
- Depth of reflection on the overall experience.

3. LEARNING TASK 3: Unit and Assessment Plan—DUE: Wednesday 25th October 2023, 40%

For this assignment, you will work independently to design a unit plan, including an assessment plan, illustrative of key aspects of theory introduced in the course. The plan should be designed to sponsor deep understanding of key disciplinary concepts and/or competencies. The main body of the unit should comprise:

- **A full lesson plan for the first lesson in the sequence** (using the provided lesson plan template),
- **A sketch of a minimum of six further lesson outlines** (using the provided lesson outline template), and
- **A detailed summative assessment for the unit** (this could be a quiz or test, a project- or performance-based assessment, etc., but it must be fully prepared/articulated with an accompanying marking scheme/rubric/assessment structure).

In addition to the above, the following supplementary material should be provided as a preface:

- Unit Title and Topic**—*The theme of your unit.* This should be developed in consultation with your instructor and should be clearly and specifically titled.
- Unit Rationale**—*Provide a paragraph where the value of the unit is presented.* This rationale should support your choice to create a full unit on this topic.
- Grade Level**—*The grade in which the material is to be taught.*
- Reference to the Alberta Program of Study for Mathematics, K-6, as it applies to your unit**—*Identify how your unit fits within the Alberta curriculum.* Provide an explanation if it doesn't fit explicitly. List *all* learning outcomes that your unit is intended to address. (Five or six learning outcomes should define what the students should know/be able to do by the end of the unit.)
- Reference to Learning Outcomes for Alberta Programs of Study other than Mathematics, as these apply to your unit**—*List all learning outcomes for other disciplines that your unit may also address.*
- List of Materials**—*List all materials needed to teach the unit, including technologies, children's literature, textbooks, manipulatives, etc.* Be specific and comprehensive.
- List of Sources**—*All sources consulted in preparation of the unit should be listed, in APA format.* Note: multiple sources are expected.
- Learner Differentiation/Explanation of how the unit plan addresses all students' needs**—*Discuss how your plan addresses the interests and needs of a wide range of students and how you will teach inclusively.* For example, how will you accommodate students with special needs? English language learners? Gifted students?
- Assessment Principles and Processes**—*Explain the principles that guide your assessment plans.* Cite relevant theory that supports your choices. Specify the key assessment processes or techniques used throughout the unit.

CRITERIA FOR ASSESSMENT OF LEARNING TASK 3

In collaboration with your peers and instructor, during the semester you will develop the assessment criteria for this assignment based on these five key themes:

- **Building and deepening understanding.** Strong learning tasks that foster inquiry and focus students on key disciplinary concepts and competencies.
- **Informed by disciplinary knowledge/Programs of Study.** Making meaningful connections to ways of thinking about the discipline, and in alignment with the Program of Study.
- **Authentic and engaged learning.** Learning is designed to be meaningful and relevant to students, and is of real concern and central to the discipline of mathematics.
- **Balanced assessment.** Assessment of learning provides a comprehensive and holistic picture of student learning and competencies.
- **Differentiated learning.** Addresses the diversity and range of students' needs (must include ELL strategies or integration).

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 collaborating as a group, 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. 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.

Academic Accommodation

It is the student's responsibility to request academic accommodations according to the University policies and procedures listed below. The student accommodation policy can be found at: <https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Student-Accommodation-Policy.pdf>. Students needing an accommodation because of a disability or medical condition should communicate this need to Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities: [ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Accommodation-for-Students-with-Disabilities-Procedure.pdf](https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Accommodation-for-Students-with-Disabilities-Procedure.pdf). Students needing an accommodation in relation to their coursework based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to their Instructor.

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 Claire Gillis,
esa@ucalgary.ca.

Werklund SU Representative is Elsa Stokes, educrep@su.ucalgary.ca.