

MATHEMATICS EDUCATION

Graduate Certificate in Educational Studies

The Graduate Certificate in Educational Studies (GCES) is a four-course experience designed to meet the needs of educators.

Through the certificate program, you will learn to:

- *Deepen and extend knowledge in mathematics education, recognizing the role of curriculum, historical and contemporary perspectives on learning, opportunities for culturally responsive teaching, and contexts for playful interactions.*
- *Describe, reflect and comment on current scholarly/practice issues in mathematics education grounded in research-based and collective experiences.*
- *Apply mathematics education research to enhance teaching and learning in varied contexts, and attend to diverse conceptualizations of learning to be responsive to learners' needs and experiences.*

Transform your mathematics teaching with purposeful practices.

The Graduate Certificate in Educational Studies is for teaching professionals and other educational specialists seeking advanced professional education. The program consists of four-courses (12 credits) centred on mathematics education.

The courses in the certificate are delivered fully online, in synchronous sessions, recorded for asynchronous viewing if needed.

THE PROGRAM

In this certificate, students will be challenged to examine their assumptions about mathematics learning alongside cultural, historical, and contemporary research and varied perspectives on learning. Mathematics pedagogy and learning will be explored through research and professional literature, experiential learning, and reflection. We will draw upon examples from Indigenous traditions and peoples, wisdom traditions, and mathematics education for social justice. This exploration will include the qualities of playful engagement, and the characteristics of tasks that encourage play in PreK-12 mathematics classrooms and beyond.

COURSES

 Full course descriptions on reverse.

Summer

EDU 546 Numeracy Across the Curriculum

Fall

EDU 547 Perspectives on Mathematics Learners and Learning

Winter

EDU 548 Playful Places of Learning in Mathematics Education

Spring

EDU 545 Culturally Responsive/Regenerative Mathematics

The Graduate Certificate may be laddered into some M.Ed. Programs (see reverse).

APPLICATIONS OPEN:
November 1 2025

APPLICATION DEADLINE:
March 31

(Start in Summer 2026)

For more information:
uab.ca/gcesmath
gcesinfo@ualberta.ca

ADMISSION REQUIREMENTS

- Bachelor of Education (BEd) or a four-year baccalaureate degree (or equivalent) from a recognized academic institution with a minimum grade point average (GPA) of 3.0
- Two years of teaching experience
- English Language Proficiency (*more information on website*)



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Course Descriptions

EDU 595 Numeracy across the Curriculum

This course develops concepts of numeracy in content areas across the PreK-12 curriculum. Mathematics, pedagogy and learning are explored through the research and professional literature, experiential learning, and reflection. Course includes cross-curricular mathematical topics.

EDU 595 Perspectives on Mathematics Learners and Learning

Teachers' implicit assumptions about learning influence their decisions about the tasks chosen, questions asked, tools available, classroom setup, and assessments posed. In this course, teachers will be asked to examine their assumptions about mathematics learning alongside historical and contemporary research and perspectives on learning.

EDU 595 Playful Places of Learning in Mathematics Education

This course will examine and critique the design, implementation, and assessment of places for learning in mathematics education with the intention of bringing forth playful (inter)actions among teachers/learners/mathematics/materiality. Exploration will include the qualities of playful engagement, and characteristics of tasks that encourage play in PreK-12 mathematics classrooms and beyond.

EDU 595 Culturally Responsive/Regenerative Mathematics

This course examines and develops culturally responsive teaching practices and explores regenerative mathematics in PreK-12 mathematics by drawing on perspectives and examples from Indigenous traditions and peoples, wisdom traditions, and mathematics education for social justice.

Laddering into a Master's Degree

The Graduate Certificate in Educational Studies can be laddered into the Master of Education in Educational Studies (MES) STEM Cohort.

The MES consists of 10 courses (30 credits); eight core courses and two additional electives. Students with a GCES receive 12 credits in advanced standing, reducing the number of courses in the master's to six. Courses are online with synchronous components.

Courses in the MES:

EDU 510
Fundamentals of Educational Research

EDU 514
Planning for Educational Change

EDU 515
Conducting Educational Research

EDU 900
Program Synthesis

Plus two graduate-level electives

Details on the
MES STEM Ladder Program
are available at uab.ca/MESSTEM

Contact: mesinfo@ualberta.ca

The GCES can also ladder into the following:

- *Traditional MES Program (online only)*
Contact mesinfo@ualberta.ca for details.
- *Master of Education in Elementary Education, Curriculum and Pedagogy, Secondary Education (online and in-person options available)*
Contact Dr. William Dunn at wdunn@ualberta.ca for details.



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