ELED 4313
Teaching Mathematics in the Elementary School
Thursday 8:00 a.m. – 10:45 p.m., BEP 218
Spring 2025

Instructor: Cynthia Sherman, M.Ed.
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Office Hours: Thursday: 11:00 am – 2:00 pm or by appointment

Course Catalog Description:
Scope and sequence of the elementary mathematics curriculum, materials, and selected instructional techniques. Prerequisites: MATH 1350, MATH 1351, and admission to Educator Preparation Program and Phase III Field Based course

Student Learning Outcomes:
The students will:
- Demonstrate an understanding of mathematical content from the elementary school grade levels. (3.A)
    - Number concepts and operation
    - Algebraic thinking
    - Geometry
    - Measurement
    - Probability and statistics
- Demonstrate an understanding of mathematical processes and reason mathematically. (3.A, 3.C)
- Solve mathematical problems and make connections within and outside of mathematics. (3.A, 3.C)

Learning Outcome	Activities	Assessment	Standards
Demonstrate an understanding of teaching mathematics in the elementary classroom	Small group activities Lesson planning Math projects	Inquiry lesson plan Math projects Quiz/Tests Reflections	Texas Educator Standards: 1bii 1biii, 1ci; 2bi, 2bii, 2biii, and 2ciii; 3ai, 3aii, 3aiii, 3bi, 3bii, 3biii, 3ci, 3cii, and 3ciii INTASC Standards: 1, 2, 4, 5 and 8
Demonstrate an understanding of mathematical processes and reasoning	Class problem solving activities	Homework problems Class problem solving tasks Math projects Reflections	TEKS: Math process standards K-6 INTASC: 4, 5 Texas Educator Standards: 3A, 3C CCRS: Math VII, IX
Solve mathematical problems and make connections within and outside of mathematics	Class problem solving activities	Homework problems Class problem solving tasks Reflections	TEKS: Math K-6 INTASC: 4, 5 Texas Educator Standards: 3A, 3C CCRS: Mathematics X

Teaching Models and Strategies:
The following instructional models will be utilized in class:
- inquiry
- teacher-directed
- cooperative learning

The following constructivist teaching strategies will be incorporated in class:
- reflective thinking

- technology integration
- critical thinking
- problem solving
- communication
- manipulative-based
- patterns and relationships

Strategies will be presented that address the academic and linguistic needs of children.

Required Text and Materials:

Reys, R.E., Lindquist, M. M., Lambdin, D. V., & Smith, N. L. (2014). *Helping children learn mathematics* (11th Ed.). New York: John Wiley & Sons Inc. ISBN: 978-1-118-65410

A student of this institution is not required under law to purchase a textbook from a university-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer.

Course Requirements/Policies:
Attendance, Participation, and Professionalism are prerequisites for success as a classroom teacher and crucial to being successful in this class.

1. Attendance: Attendance at all classes is an expectation of the course and a future professional skill. Each class represents an opportunity to learn. Weekly class discussions and activities cannot be made up if class is missed, however if class is missed due to illness it is the responsibility of the student to visit with the instructor.
2. Class Participation: The student will be required to read text chapters as assigned, participate in discussions, and work collaboratively and cooperatively with classmates. Class participation is essential to learning.
3. Math Project: Students will create a Math Project to share with classmates about nonroutine math activities and children's literature.
4. Math Project II: Students will create an assessment project.
4. Lesson plan: An inquiry lesson plan will be submitted that focuses on using problem solving.
5. Weekly reflections or math problem work will be submitted. You must be present in class to complete the assigned activities with classmates and instructor.
6. Exams: There are two scheduled exams. All exams must be taken on the assigned dates unless arrangements are made **prior** to the exam. If there is a documented emergency, contact the instructor within 24 hours of the exam.

*All assignments are due on or before the dates provided in the **Course Outline**. Each assignment must be **word-processed**. **No email attachments will be accepted**. A penalty will be assessed for late work. Assignment dates may be moved to later (but not earlier) than the scheduled dates during the course of the semester. Any changes will be discussed with students in class.

Evaluation:

Weekly Assignments or Reflections	30 points
Math project I	10 points
Math project II	10 points
Inquiry Lesson plan	10 points
Exams	100 points
TOTAL	160 points

(Point values may change slightly as the semester progresses. This will be shared with students as it occurs.)

A 90-100%	B 80-89%	C 70-79%	D 60-69%	F 59% and below

Last Day to Withdraw is March 31, 2025.

Bibliography

Donovan, M. S., & Bransford, J. D. (Eds) (2005). *How students learn: History, mathematics, and science in the classroom*. Washington, D.C.: The National Academies Press.

National Council of Teachers of Mathematics (2000). *Principles and Standards for School Mathematics*. Reston, VA.: Author.

Burns, M. (2015). *About teaching mathematics: A K-8 resource*. Sausalito, CA: Math Solutions Publications.

Reys, R.E., Lindquist, M. M., Lambdin, D. V., & Smith, N. L. (2015). *Helping children learn mathematics* (11th Ed.). New York: John Wiley & Sons Inc.

Van de Walle, J., Karp, K., & Bay-Williams, J. (2016). *Elementary and Middle School Mathematics*. Boston: Pearson Education, Inc.

NCTM website – www.nctm.org

Course Outline

Class	Topic(s)	Assignment Due
Week One	**Introduction/Orientation Math problem solving Algebraic thinking**	**Weekly readings prior to class will be posted on Canvas each week**
Week Two	**Problem solving process Assessment Algebraic thinking**	
Week Three	**Counting and Number Sense Algebraic thinking**	
Week Four	**Place Value Algebraic thinking**	
Week Five	**Operations and Basic Facts Algebraic thinking**	
Week Six	**Computation Methods Standard and Alternative Algorithms Algebraic thinking**	**Math project**
Week Seven		**Exam**
Week Eight	**Fractions Algebraic thinking**	
Week Nine	**Fractions, Ratio, Proportion and Percent Algebraic thinking**	**Inquiry Lesson plan**
Week Ten	**Algebraic Thinking Project presentations**	**Math Project II**
Week Eleven	**Decimals Algebraic thinking**	
Week Twelve	**Geometry Algebraic thinking**	
Week Thirteen	**Measurement Algebraic thinking**	**Oral portion of final during this week Sign up for time**
Week Fourteen	**Data Analysis, Statistics and Probability Algebraic thinking**	**Oral portion of final during this week Sign up for time**
May 1, 2025		**Final Exam**