



EDU 355 Mathematics in the Elementary Classroom

Sandra Starr

UNITED TRIBES TECHNICAL COLLEGE

COURSE INFORMATION

This course is the third in a series of three courses designed to develop the necessary foundations in mathematics for prospective elementary teachers. This course prepares teacher candidates to teach mathematics in elementary schools. The focus of this course will be on understanding mathematical concepts and developing appropriate lessons and strategies for teaching mathematical concepts to all children. An emphasis is placed on meeting the needs of all learners in culturally diverse educational environments, including differentiated instruction with accommodations and modifications, as needed. *UTTC Competency Requirement for Writing (Praxis Mathematics, ACT Score, or MTH 103. 104. 377 A or B)*

Instructional Level: Bachelor Degree

Credits: 2

Pre/Corequisites:

- Prerequisite: MTH 277
- Prerequisite: MTH 377

CLASS INFORMATION

Section Number:

Term: Fall Year: 2024 Start Date: 8/27/2024 End Date: 12/13/2024

INSTRUCTOR

Sandra Starr

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Office Location: Education Bldg. 119

Office Hours:

Mon-8:30-11; Tues.8:30- 9, 10:20-11:0010:30; Wed-8:30-11; Thurs.-8:30- 9, 10:20-11:00; Fri- 8:30-11

TEXTBOOKS

Johnson, Art., Tipps, S., & Kennedy, L. (2017). *Guiding Children's Learning of Mathematics* (13th Edition). Boston, MA: Cengage

INSTITUTIONAL LEARNER OUTCOMES

Critical Thinking: Employ critical thinking skills in the processes used to identify and solve problems.

Quantitative & Scientific Reasoning: Develop solutions to mathematical and scientific problems.

PROGRAM OUTCOMES

PLO 6 Monitor learner progress by using multiple methods of assessment.

PLO 4 Demonstrate understanding of content knowledge.

PLO 5 Utilize differing perspectives for the application of content.

PLO 7 Plan for instruction that supports every learner.

EXTERNAL STANDARDS

InTASC Standards

Target Standards

InTASC Standard #5: Applications of Content

The teacher candidate understands how to connect concepts and use differing perspectives to engage learners in critical thinking, creativity, and collaborative problem solving related to authentic local and global issues.

InTASC Standard #7: Planning for Instruction

The teacher candidate plans instruction that supports every student in meeting rigorous learning goals by drawing upon knowledge of content areas, curriculum, cross-disciplinary skills, and pedagogy, as well as knowledge of learners and the community context.

North Dakota Program Approval and Teacher Education Standards

Target Standards

50015 Elementary Education:

STANDARD 3 – Assessing, Planning, and Designing Contexts for Learning

Candidates assess students, plan instruction and design classroom contexts for learning. Candidates use formative and summative assessment to monitor students' learning and guide instruction. Candidates plan learning activities to promote a full range of competencies for each student. They differentiate instructional materials and activities to address learners' diversity. Candidates foster engagement in learning by establishing and maintaining social norms for classrooms. They build interpersonal relationships with students that generate motivation and promote students social and emotional development.

Components

50015.3a Candidates administer formative and summative assessments regularly to determine students' competencies and learning needs.

50015.3c Candidates plan instruction including goals, materials, learning activities and assessments.

Standard 4 – Effective Instruction.

Candidates make informed decisions about instruction guided by knowledge of children and assessment of children’s learning that result in the use of a variety of effective instructional practices that employ print, and digital appropriate resources. Instruction is delivered using a cohesive sequence of lessons and employing effective instructional practices. Candidates use explicit instruction and effective feedback as appropriate and use whole class discussions to support and enhance children’s learning. Candidates use flexible grouping arrangements, including small group and individual instruction to support effective instruction and improved learning for every child.

Components

50015.4b Candidates teach a cohesive sequence of lessons to ensure sequential and appropriate learning opportunities for each child.

50015.4c Candidates explicitly teach concepts, strategies, and skills, as appropriate, to guide learners as they think about and learn academic content.

COURSE OBJECTIVES

1. Identify various mathematical models and problem solving strategies for engagement and effective instruction.
2. Develop lesson plans based on the North Dakota Mathematics Content Standards, and include accommodations and modifications to meet the needs of all learners.
3. Utilize instructional strategies that are developmentally appropriate.
4. Investigate resources available for teachers of mathematics, including instructional materials, manipulatives, and digital resources.
5. Apply assessment practices in mathematics that inform differentiated instruction.

A. GRADING SCALE

Grade	Percentage
A	90-100%
B	80-89%
C	70-79%
D	60-69%
F	Below 60%

B. COMMUNICATION

Email is the official means of communication at UTTC. Information Technology (IT) will assign all students an official UTTC email address. All correspondence from the College to the student will be sent to the student’s UTTC email address. Students are expected to check their email regularly and are responsible for all information sent to them via

their UTTC email address. Faculty expect students to use their official email address for all instructional purposes, including communicating with the faculty.

C. ATTENDANCE

Students at UTTC are expected to participate in all of their class sessions and are expected to communicate with their instructors regarding any emergencies that cause them to miss class. Regardless of the circumstances, the student is responsible for obtaining any information missed because of the absence and completing any outstanding assignments. The student may refer to the course assignments in My.UTTC.edu, contact another student enrolled in the course, or meet with the course instructor during office hours to get the missing information. Attendance is entered as “Present”, “Absent-Unexcused”, or “Excused” (college-sanctioned absences).

SUMMIT PARTICIPATION - FALL 2024

All UTTC students attend the United Tribes Technical College Tribal Leaders Summit on September 4 - 5, 2024 at the Bismarck Event Center. Students are expected to be at the Summit all day Wednesday and Thursday. Transportation to and from the campus will be provided. Students will check in at the registration tables at the Event Center upon arrival and check out again at departure. Your instructors will provide a conference session summary form that you will fill out with information from each one of the sessions you attend. You will make copies of this form and turn it into the instructors for each one of your courses. Breakfast, lunch and snacks will be provided at no cost for students on both days.

Online students who do not live in the Bismarck/Mandan area will not be expected to attend the Tribal Leaders Summit and will have class as scheduled.

D. LATE ASSIGNMENT SUBMISSIONS

UTTC supports and fosters the student’s responsibility for completing and submitting assignments on or before scheduled due dates and times. If an assignment is due, the student should make every effort to submit the assignment on time. Occasionally, a student may experience an unexpected life event that results in the submission of late work. Communication is the key. Instructors are more than willing to work with students in the event of an emergency if the student communicates with them before the date and time the assignment is due to make other arrangements. Late assignment deadlines will vary among departments but will not exceed more than five (5) business days after which the assignment was initially due. Assignment due dates, late assignment deadlines, and late assignment penalties are outlined in course syllabi. Assignments not submitted by the initial deadline date will be reflected in the course gradebook as a zero (0) until the assignment has been submitted. The amount of points deducted for late work is at the discretion of the instructor. Assignments submitted via E-mail will not be accepted under any circumstances and will receive a grade of zero.

E. MISSED TEST, EXAMS AND QUIZZES (FORMAL ASSESSMENTS)

Students may not make up a missed test, exam or quiz without a valid reason for their absence (illness, family emergency). It is the student’s responsibility to contact their instructors before the absence, or within 24 hours after missing the formal assessment. The instructor will review the reason the student missed and determine if the circumstance justifies the student being allowed to take the formal assessment. Approved make-up assessments must be taken outside of the student’s regular class schedule and during a time and location agreed upon between the student and instructor. Students are not to miss another class in order to make-up an assessment for another course. If

the student fails to show on the date and time of the makeup assessment, the student will not be permitted to reschedule the makeup and the assessment and will earn a 0% grade.

F. EARLY ALERT SYSTEM

UTTC's Early Alert System (EAS) is a proactive, communication driven support system that provides timely identification and interventions to work with individual students to assist in generating plans to overcome challenges to college success. The system assists UTTC students by linking them to faculty and staff who can provide and connect students to available resources and strategies. The early alert serves as an opportunity for students to take ownership of their success and empower them to accomplish academic and personal goals. The system helps faculty and academic advisors connect and communicate with students as issues arise. The additional cross-wide partnerships create a culture of collaboration focused upon the best interest of UTTC students.

Academic related concerns such as attendance, missing assignments, or classroom behavior will result in an early alert being issued by faculty. When an early alert is issued, the student will receive an email requesting them to make arrangement to follow up with the instructor and/or their academic advisor. Students receiving an early alert should make the necessary arrangements to set up and meet with faculty as soon as possible to generate a plan of success.

G. ACADEMIC HONESTY

Students are expected to complete their own work. Academic dishonesty includes plagiarism; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using course materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to dishonestly obtain grades, honors, awards, or professional endorsement; altering, forging, misrepresenting, or misusing an academic record; or fabricating or falsifying data, research procedures, or data analysis. Refer to [Academic Affairs policies](#) and procedures handbook for further information.

H. STUDENTS WITH DISABILITIES

United Tribes Technical College recognizes its responsibility for making reasonable accommodations to ensure there is no discrimination on the basis of a disability. The Disabilities Support Services coordinates reasonable accommodations, support services, and appropriate referrals for the purpose of removing barriers and providing an equitable learning environment. If you have a disability, please contact the Disabilities Services (DS) office at (701) 221-1456 or email at dss@uttc.edu.

I. TITLE IX STATEMENT

Title IX is a federal civil rights law that prohibits discrimination on the basis of sex, including sexual harassment, rape and sexual assault. United Tribes Technical College is committed to upholding the law and standards that promote respect and human dignity in a safe environment. Sexual misconduct and relationship violence in any form violates UTTC's mission, cultural values, Student Code of Conduct, and may also violate federal and state law. If you or someone you know has been impacted by sexual assault, dating and domestic violence, stalking, or sexual exploitation, UTTC has resources available on the [Title IX website](#). you can find the appropriate resources on the UTTC campus and in the community

J. DIVERSITY AND EQUITY STATEMENT

United Tribes Technical College values diversity because it enriches the community and wealth of experiences that characterize a post-secondary education. Our students, faculty, and staff come from Tribal lands throughout the United States and Canada. The majority of our students come from the northern plains region of the country, with 70% representing the North Dakota tribes.

UTTC recognizes that diversity is about much more than race, ethnicity or geography. Because students from many Tribal nations are represented at UTTC, from a wide range of cultural and ethnic backgrounds, students are encouraged to share their own cultural practices, traditions, and beliefs in the classroom in an effort to build an inclusive and welcoming community for all individuals and one from which we can learn from one another. We believe engagement with diverse perspectives and ideas is critical to the education and growth of all people, and we value the unique experiences and viewpoints of all of our community members.

EQUITY STATEMENT

United Tribes Technical College (UTTC) believes that access to a high-quality education in an inclusive environment is the right of all individuals and imperative for the continued advancement of a strong democracy and workforce. Equity is ensuring that all students receive what they need to be successful through the intentional design of the college experience.

K. TECHNOLOGY REQUIREMENTS

To ensure that you are using the recommended personal computer configurations, please refer to the [minimal technology requirements](#).

COURSE CALENDAR

Module/Week	TOPICS COVERED	Support Materials, Book chapters, etc.	Activities and Assessment
1 Aug 27 - 30	Elementary Math for the 21 st Century	Ch. 1	Ch. 1 Quiz and Video Case
2 Sept 2 - 6	Labor Day Sept 2 (College Closed) Family Day at Powwow Sept. 6 (No Classes)		Tribal Summit Summary Assignment
	Tribal Leaders Summit Sept. 3 - 5		
3 Sept 9 - 13	Founders Day Sept. 9 (College Closed)	Ch. 2	Ch. 2 Quizzes and Image Case
	Defining a Comprehensive Mathematics Program		
4 Sept 16 - 20	Mathematics for Every Child	Ch. 3	Ch. 3 Video Case and Quizzes
5 Sept 23 - 27	Learning Mathematics	Ch. 4	Ch. 4 Video Case and Quizzes K-1 Lesson Plan
6 Sept 30 – Oct. 4	Organizing Effective Instruction	Ch. 5	Video Case – using concrete objects to

			teach math Quiz
7 Oct 7 - 11	Integrating Assessment	Ch. 6	Video Case- 5 th grade Math- Multiple means of formative assessment Quizzes
8 Oct 14 - 18	Indigenous Day Oct. 14 (College Closed)	UTTC short lesson plan	Lesson presentations
	Midterm Grades Due 10/18		
	Putting it into practice		
9 Oct 21 - 25	Problem-Solving Strategies	Ch. 7	Video Case Quiz
10 Oct 28 – Nov 1	Developing Concepts of Number	Ch. 8	Video Case Counting on Quizzes
11 Nov 4 - 8	Extending Number Concepts and Number Systems	Ch. 9	Video Case – learning about patterns Pattern Lesson Plan
12 Nov 11 - 15	Veterans Day Nov 11 (College Closed)	Ch. 10	Video Case- strategies for adding value on money in an inclusion classroom Quizzes
	Developing Number Operations with Whole Numbers		
13 Nov 18 - 22	Extending Computational Fluency with Larger Numbers	Ch. 11	Video Case- Multi-Digit Addition Quizzes
14 Nov 25 - 29	Thanksgiving Break (Nov. 27 No afternoon classes) Nov. 28 – 29 No classes	Ch 12	Video Case Fractions Activity
	Developing an Understanding of Common and Decimal Fractions		
15 Dec 2 - 6	Developing an Understanding of Common and Decimal Fractions	Ch 12	Video Case Fractions Activity
16 Dec 9 - 13	Final- Develop Full Math Lesson/		
GRADES DUE	Grades DUE December 16, 2024		