

Murray State University
COURSE SYLLABUS

Revised Fall 2015

DEPARTMENT: EARLY CHILDHOOD AND ELEMENTARY EDUCATION

COURSE PREFIX: ELE COURSE NUMBER: 304 CREDIT HOURS: 3

- I. TITLE:** Teaching Elementary Mathematics
- II. COURSE DESCRIPTION AND PREREQUISITES:** A study of the structure of mathematics, materials, and methods which build insight and skill in the area of teaching mathematics to elementary students. Field experiences required.
Prerequisites: EDU 303, MAT 115 and MAT 215.
- III. COURSE OBJECTIVES:**
Class activities will be centered on the attainment of the course objectives listed below. These objectives are understood to be reflective of, but not limited to those behaviors aligned with the Kentucky Core Academic Standards (KCAS). Following each objective, and enclosed in parentheses, are numbers that reference the Kentucky Teacher Standards for Preparation and Certification (KTS) addressed by that objective, Interstate New Teacher Assessment and Support Consortium (InTASC) addressed by that objective, and the National Council of Teachers of Mathematics (NCTM) addressed by that objective. Upon successful completion of this class, students will be able to
- A. demonstrate, appropriate psychomotor and perceptual aids in learning mathematics concepts and skills (KTS #1,2,3,4,7; InTASC #1,8; NCTM #1,2) ;
 - B. demonstrate the ability to sequence learning from a real and/or concrete experience to the more abstract form of experience (KTS #1, 2, 3, 4, 7; InTASC #1,4,5; NCTM #1,2,3) ;
 - C. demonstrate a variety of ways of reinforcing learning for mastery through differentiated instruction and a problem-based approach (KTS #1,2,3; InTASC #2,3,5,7,8; NCTM #1,3,4,5) ;
 - D. demonstrate knowledge of diversity, closing the achievement gap, reading and literacy, and assessment in mathematics and how to deal with the issues (KTS #1, 2, 3, 4, 9; InTASC #2; NCTM #4,6,7) ;
 - E. demonstrate knowledge of the scope and sequence of concepts and skills taught kindergarten through the fifth grade (KTS #1,2,4; InTASC #1,3,4,5; NCTM #1,2,4) ;
 - F. demonstrate models of mathematics teaching which are consistent with the Principles and Standards of the National Council of Teachers' of Mathematics and the Kentucky Core Academic Standards (KTS #1,2,3,4,5,7,8,9; InTASC #4,5,8; NCTM #1,2) ;
 - G. demonstrate ability to integrate mathematics into other content area instruction (KTS #1,2,4; InTASC #2,3,7,8; NCTM #1,2,3,4) ;
 - H. demonstrate the ability to integrate technology into the mathematics curriculum (KTS #2,4,6,9; InTASC #4,5; NCTM #2) ;
 - I. demonstrate the ability to design lessons for students in the K-5 school setting. (KTS

- #1-9; InTASC #1,2,3; NCTM #1,2,3,4,5);
- J. select, create, and use various materials for the teaching of mathematics (KTS #2,3,4,5,6,8; InTASC #4,5; NCTM #1,2,3,4,5); and
 - K. demonstrate the ability to reflect on student learning and teaching practices in a real classroom environment (KTS #7, InTASC #5, NCTM #6.7).

The COEHS Theme of Educator as Reflective Decision-Maker is addressed in this course by requiring students to reflect upon mathematical strategies in teaching, class activities, and field experiences. The COEHS emphasis on constructivism is emphasized when students explore ways to actively involve children in authentic mathematical experiences. The COE dispositions are formally assessed during field experiences.

Mathematical teaching success is stressed throughout every course activity as students learn how to teach elementary children to be successful mathematicians through the National Council of Teachers of Mathematics content and process standards.

The Theme of Assessment is explored in the course through identifying and creating multiple means of assessing for student learning both formative and summative. The Common Core State Standards for Mathematics and the Standards for Mathematical Practices are embedded, assessed, and connected to all coursework.

The Themes of Diversity and Closing the Achievement Gap are addressed as students learn how and why to use reflective assessments (formative and summative) to guide their teaching and understand the needs of diverse learners in the mathematics classroom.

Through class activities and field experiences, students develop an increasing awareness of the importance of establishing a learning climate conducive to building mathematical knowledge and environment for learning through growth. The learning climate encourages student engagement, provides instructional rigor, makes learning relevant, addresses individual learning needs, promotes a growth mindset, and builds knowledge of content.

Learned societies from each discipline should be referenced by the preservice/in-service teacher. Kentucky documents, including SB1 Initiatives (e.g., Kentucky Core Academic Standards) will be resources for all teacher candidates. **A standard or standards should be considered in aligning the curriculum project to a learned society (i.e., considering local/state/national standards).**

IV. CONTENT OUTLINE:

- A. Influences and Directions of Teaching Mathematics Today
- B. Teaching Through Problem Solving
- C. Building Assessment into Instruction
- D. Teaching Mathematics Equitably to All Children including the Diverse Learner
- E. Using Appropriate Tools for Teaching Mathematics
- F. Using Technological Tools to Teach Mathematics
- G. National Council of Teachers of Mathematics Process and Content Standards
- H. Common Core State Standards for Mathematics
- I. Common Core Standards for Mathematical Practice

- J. Counting and Cardinality
- K. Operations and Algebraic Thinking
- L. Number and Operations in Base Ten
- M. Number and Operations-Fractions
- N. Measurement and Data
- O. Geometry

V. INSTRUCTIONAL ACTIVITIES:

- A. Students will complete daily assignments and participate in large and small group discussions and activities. Participation includes active listening, contributing to group discussions, and working on in-class activities.
- B. Student-initiated activities include preparation for and participation in class lectures, discussions, and cooperative activities related to course goals and objectives, including but not limited to reading responses, discussions, group work, examinations, field experiences, and lesson plan design.

VI. FIELD, CLINICAL, AND/OR LABORATORY EXPERIENCES:

Students will participate in **twenty-one hours of field experience hours** in an elementary school setting. Field experiences will and/or may include whole class teaching, small group teaching, individual tutoring, classroom observations, response to intervention, and other experiences. **To earn a grade in this course, students must successfully complete the required field experiences and record the hours and related components on the LiveText FEM site. Students are also expected to record field experiences in KFETS.**

VII. TEXT(S) AND RESOURCES:

- A. Van de Walle, J., et.al (2016). *Elementary and Middle School Mathematics Teaching Developmentally*. Upper Saddle River, NJ: Pearson Education, Inc. Ninth Edition.
- B. Rogers, K., (2010). *Usborne Illustrated Elementary Math Dictionary*. London, England: Usborne Publishing Ltd.
- C. College *LiveText*-EDU *
- D. Solutions Student Membership/CHAMPs
- E. Other required readings of the instructor
- F. Common Core State Standards for Mathematics
- G. National Council of Teachers of Mathematics
- H. Kentucky Department of Education

VIII. EVALUATION AND GRADING PROCEDURES:

Grades will be awarded for successful performance in course tasks including but not limited to examinations, chapter summaries, quizzes, projects, lesson planning, reading responses, and performance tasks. **A complete lesson plan with reflection serves as the designated assignment for this course and must be posted in LiveText.***

***REQUIRED FOR COURSE COMPLETION**

IX. ATTENDANCE POLICY:

Students are expected to adhere to the MSU Attendance Policy outlined in the current *MSU Bulletin*.

X. ACADEMIC HONESTY POLICY:

Murray State University takes seriously its moral and educational obligation to maintain high standards of academic honesty and ethical behavior. Instructors are expected to evaluate students' academic achievements accurately, as well as ascertain that work submitted by students is authentic and the result of their own efforts, and consistent with established academic standards. Students are obligated to respect and abide by the basic standards of personal and professional integrity.

Violations of Academic Honesty include:

Cheating - Intentionally using or attempting to use unauthorized information such as books, notes, study aids, or other electronic, online, or digital devices in any academic exercise; as well as unauthorized communication of information by any means to or from others during any academic exercise.

Fabrication and Falsification - Intentional alteration or invention of any information or citation in an academic exercise. Falsification involves changing information whereas fabrication involves inventing or counterfeiting information.

Multiple Submission - The submission of substantial portions of the same academic work, including oral reports, for credit more than once without authorization from the instructor.

Plagiarism - Intentionally or knowingly representing the words, ideas, creative work, or data of someone else as one's own in any academic exercise, without due and proper acknowledgement.

Instructors should outline their expectations that may go beyond the scope of this policy at the beginning of each course and identify such expectations and restrictions in the course syllabus. When an instructor receives evidence, either directly or indirectly, of academic dishonesty, he or she should investigate the instance. The faculty member should then take appropriate disciplinary action.

Disciplinary action may include, but is not limited to the following:

- 1) Requiring the student(s) to repeat the exercise or do additional related exercise(s).
- 2) Lowering the grade or failing the student(s) on the particular exercise(s) involved.
- 3) Lowering the grade or failing the student(s) in the course.

If the disciplinary action results in the awarding of a grade of E in the course, the student(s) may not drop the course.

Faculty reserve the right to invalidate any exercise or other evaluative measures if substantial evidence exists that the integrity of the exercise has been compromised. Faculty also reserve the right to document in the course syllabi further academic honesty policy elements related to the individual disciplines.

A student may appeal the decision of the faculty member with the department chair in writing within five working days. Note: If, at any point in this process, the student alleges that actions have taken place that may be in violation of the Murray State University Non-Discrimination Statement, this process must be suspended and the matter be directed

to the Office of Equal Opportunity. Any appeal will be forwarded to the appropriate university committee as determined by the Provost.

XI. NON-DISCRIMINATION AND STUDENT WITH DISABILITIES:

Policy Statement

Murray State University endorses the intent of all federal and state laws created to prohibit discrimination. Murray State University does not discriminate on the basis of race, color, national origin, gender, sexual orientation, religion, age, veteran status, or disability in employment, admissions, or the provision of services and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities equal access to participate in all programs and activities.

In addition, Murray State University does not discriminate on the basis of sex in its educational programs and activities and is required by the Title IX and 34 CFR part 106 not to discriminate in such manner. The prohibition against sex discrimination specifically includes a prohibition of sexual harassment and sexual violence. This non-discrimination in education programs and activities extends to employment and admissions and to the recruitment, financial aid, academic programs, student services, athletics, and housing.

For more information, contact the Title IX Coordinator and Executive Director of Institutional Diversity, Equity and Access, 103 Wells Hall, [\(270\) 809-3155](tel:2708093155) (voice), [\(270\) 809-3361](tel:2708093361) (TDD).

Students with Disabilities

Students requiring special assistance due to a disability should visit the Office of Student Disability Services immediately for assistance with accommodations. For more information, students should contact the Office of Student Disability Services, 423 Wells Hall, Murray, KY 42071. 270-809-2018 (voice) 270-809-5889(TDD).

XII. FLAG SYSTEM/CONTINUOUS ASSESSMENT:

Student progress is continuously assessed throughout the teacher preparation program. Appropriate professional characteristics and dispositions, in addition to academic achievement, are assessed. Positive and negative flags are submitted by faculty to Teacher Education Services and then presented to admissions committees. Negative flags are carefully reviewed to make a determination as to whether a student should be denied admission OR if a professional development plan will be designed for the student's progress towards program completion. **NEGATIVE FLAGS MAY BE GROUNDS FOR DENIAL OF ADMISSION TO TEACHER EDUCATION AND/OR STUDENT TEACHING.**