

Murray State University
COURSE SYLLABUS

Revised Fall 2015

DEPARTMENT: EARLY CHILDHOOD AND ELEMENTARY EDUCATION

COURSE PREFIX: ELE COURSE NUMBER: 603 CREDIT HOURS: 3

I. TITLE: Integrating Mathematics in the Curriculum

II. COURSE DESCRIPTION AND PREREQUISITE(S):

Designed to give elementary teachers depth and understanding of the learning processes of mathematics. Students become familiar with current trends and develop competency in guiding children in developing mathematical concepts.

Prerequisite(s): None

III. COURSE OBJECTIVES:

Class activities will be centered on the attainment of the course objectives listed below. Following each objective, and enclosed in parentheses, are numbers which reference the Kentucky Teacher Standards for Preparation and Certification (KTS), Interstate New Teacher Assessment and Support Consortium (InTASC) 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. develop, identify, and explore resources available to teach mathematics to children (KTS #1,2,3; InTASC #4, NCTM #1);
- B. investigate and implement new technologies and strategies for teaching mathematics (KTS #4,6; InTASC #5, NCTM #2,4);
- C. relate new ideas in teaching mathematics to equity issues by providing high expectations and strong support for all students (KTS #1,3; InTASC #9, #7; NCTM #2,6);
- D. identify and implement the NCTM Principles and Standards to Kentucky Learner Goals and Academic Expectations, Core Content for Assessment and Program of Studies (KTS #2; InTASC #9; NCTM #1-7);
- E. extend professional growth and development by engaging in activities of professional organizations for teachers of mathematics (KTS #7,8,9,10; InTASC #9,10; NCTM #7));
- F. support the learning of important mathematical concepts and furnish useful information to both teachers and students through use of appropriate assessment development and analysis for future learning and teaching (KTS #2,4,5,6,7; InTASC #6; NCTM #1, #2); and
- G. create a mathematical learning environment that provides time, space, access, and a climate to take intellectual risks in raising questions and formulating conjectures (KTS #1,3,6; InTASC #3, NCTM #4).

The CAEP/EPBSB Themes of Diversity, Closing the Achievement Gap, and College and Career Readiness are major themes explored in the course through various chapters within the text and incorporated into classroom sessions.

The disposition of the Teacher Leader as *advocate* is addressed in this course by designing a curriculum project that puts student developmental and instructional needs as a first priority. The disposition of *dialogue/communication* is addressed as teacher leaders share knowledge of investigation in presentation to professional colleagues. Strategies for school *change* are explored as the teacher leader works towards improved student achievement.

The position paper will serve as a common course artifact for the teacher leader program. As a goal of university and school partnership, the plans and outcomes of the curriculum project will be negotiated with the teacher's building principal. Documentation of the collaboration is required.

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. Literacy Support in Mathematics
- B. Integrating Mathematics Across the Curriculum
- C. The Inclusive Mathematics Classroom
- D. Current Trends in Teaching Mathematics
- E. Cultural Responsive Pedagogy in the Mathematics Classroom
- F. Differentiated Instruction in Mathematics
- G. Response to Intervention in Mathematics
- H. The Role of Appropriate Manipulatives in Mathematics
- I. Assessment in Mathematics
- J. NCTM Curriculum Focal Points
- K. Senate Bill 1 Initiatives
- L. NCTM Process and Content Standards

V. INSTRUCTIONAL ACTIVITIES:

Students will reflect upon assigned readings and research and participate in class discussions and presentations. They will plan, develop, write, and present a semester-long **position paper**. The position paper will be posted in LiveText as a course artifact. Students may create videos, presentations, lesson plans, and other products to share and demonstrate the integration of mathematics in the classroom. Students will be expected to exhibit the COE student dispositions (inclusion, responsibility, enthusiasm, caring, confidence, and ethical behavior) during their class activities.

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

None. Graduate students are expected to draw upon their experiences when reading, studying, and participating in all activities and projects. Furthermore, the expectation is that all selected activities and projects will be relevant to their field or professional practice.

VII. TEXT(S) AND RESOURCES:

White, D., Spitzer, J. (2009) *Mathematics for every student: Responding to diversity grades pre-K - 5*. National Council of Teachers of Mathematics.

Leinwand, S., Brahier, D., Huinker, D. (2014) *Principles to Action: Ensuring Mathematical Success for all*. National Council of Teachers of Mathematics.

VIII. EVALUATION AND GRADING PROCEDURES

- A. Course Assignments: Students will be graded upon their professionalism and successful completion of course activities which include math modules, presentations, reading assignments, and the position paper.
- B. This course utilizes textbook, journals, periodicals, Internet, Kentucky education documents, and any other materials suggested in activities.

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.

VIII. 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. For more information, contact the Executive Director of Institutional Diversity, Equity and Access, 103 Wells Hall, (270) 809-3155 (voice), (270) 809-3361 (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).