I. TITLE: ELE 603-01 Integrating Mathematics in the Curriculum

II. COURSE DESCRIPTION:
Designed to give elementary teachers depth and understanding of the learning and teaching process in mathematics. Students will become familiar with current trends to develop competency in guiding children in developing mathematical concepts.

III. PURPOSE:
To increase the skills and competencies of primary teachers in teaching mathematics to children keeping in mind the NCTM Principles and Standards, for teaching and learning mathematics, Kentucky Learners Goals and Academic Expectations, Core Content for Assessment and Program of Studies.

IV. 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) 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)
B. Investigate and implement new technologies for teaching mathematics. (KTS 4, 6)
C. Relate new ideas in teaching mathematics to equity issues by providing high expectations and strong support for all students. (KTS 1, 3)
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)
E. Extend professional growth and development by engaging in activities of professional organizations for teachers of mathematics. (KTS 7, 8, 9, 10)
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)

The COE Conceptual Framework and the Theme of Educator as Reflective Decision-Maker are addressed in this course by urging teachers to reflect upon best practices in mathematics teaching in the elementary school based upon Kentucky documents and the NCTM Principles and Standards.

The EPSB Theme of Diversity is explored in the course through the examination of equity issues in teaching elementary mathematics. Teachers consider the behavior of
students, regardless of gender, ethnicity, race, socio-economic status, learning styles, or exceptionalities.

The disposition of Teacher Leader is addressed by providing course activities that develop skill in teacher-to-teacher collaboration, demonstrate content knowledge through successful completion of course assignments and reflections.

The Individual Mathematics Project will serve as a course artifact for the teacher leader portfolio. As a goal of university and school partnership, the plans and outcomes of this project will be negotiated with a project facilitator (administrator, supervisor, mentor, team teacher). Documentation of the collaboration is required.

The EPSB Themes of Assessment and Closing the Achievement Gap are themes explored in this course.

The course objectives are understood to be reflective of, but not limited to those behaviors aligned with the Kentucky Core Academic Standards (KCAS), Characteristics of highly Effective Teaching and Learning (CHETL), Association for Childhood Education International (ACEI), and National Council of Teachers of Mathematics (NCTM) guidelines and standards.

V. 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. Cooperative Learning  
I. Learning Strategies  
J. The Role of Appropriate Manipulatives in Mathematics  
K. Assessment in Mathematics  
L. NCTM Curriculum Focal Points  
M. Standards in Mathematics (Kentucky and Common Core Standards)  
N. NCTM Process Standards: Problem Solving, Reasoning and Proof, Communication, Connections, and Representations  
O. NCTM Content Standards: Number and Operations, Algebra, Geometry, Measurement, and Data Analysis and Probability

VI. INSTRUCTIONAL ACTIVITIES:
Course activities may vary by instructor. The * assignments are required by all course instructors.

Students will demonstrate their professionalism by attending class regularly and submitting assignments on time. They will evidence the College of Education
dispositions (tolerance, responsibility, enthusiasm, caring, confidence, and ethical behavior) by being positive, productive participants in all class activities related to course goals and objectives, including: reflecting upon assigned readings, contributing to team activities, making formal presentations, and performing successfully on written assignments.

Assignments in this on-line course will include:

**7 Math Modules:**
These assignments provide opportunities for you to create and share with your classmates. Students will create videos, presentations, lesson plans, and other products to share and demonstrate the integration of mathematics in the classroom.

**A Team Presentation on Integrating Mathematics:**
This assignment provides an opportunity for students to work collaboratively to solve a common problem, work together, and then share with classmates.

**Powerful Position Paper:**
To become a teacher leader who encourages students to assume responsibility for their behavioral choices, you will create and implement an Individual Mathematics Project in the form of a “Powerful Position Paper” which addresses the mathematical needs of the diverse student population in your classroom or school. At the end of the semester, you will present your findings in the form of a peer presentation. This assignment must be posted in your Teacher Leader Portfolio.

**VII. FIELD, CLINICAL, AND/OR LABORATORY EXPERIENCES:** None
No clinical or field experiences are included. However, 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 clinical professional practice.

**VIII. RESOURCES:**
- A. Waterfield Library at Murray State University
- B. Kentucky Department of Education Website
- C. Maths300
- D. Professional journals and publications related to classroom management
- E. Curriculum Materials Center AL 341
- F. Internet access: Kentucky public libraries, MSU computer labs
- G. *LiveText* User License for Professional Portfolio
- H. NCTM Publications and Journals
- I. AIMS publications
- J. Principle and Standards for School Mathematics
- K. Resource books from the instructor’s library

**IX. GRADING PROCEDURES:**
A. Course Assignments: Students will be graded upon their professionalism and successful completion of course activities which might include response activities, presentations, team activities, classroom management plan, and management/motivation project.

B. Grading Scale

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>93-100%</td>
<td>A</td>
</tr>
<tr>
<td>86-92 %</td>
<td>B</td>
</tr>
<tr>
<td>79-85 %</td>
<td>C</td>
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<tr>
<td>72-78 %</td>
<td>D</td>
</tr>
<tr>
<td>0-71 %</td>
<td>E</td>
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</tbody>
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X. ATTENDANCE POLICY:
This course adheres to the attendance policy stated in the current MSU Graduate Bulletin. This is an on-line course and all assignments must be completed and submitted on time.

XI. ACADEMIC HONESTY POLICY:
This course adheres to the academic honesty policy stated in the current MSU Graduate Bulletin.

XII. TEXTS AND REFERENCES:
Mathematics for All: Instructional Strategies to Assist Students with Learning Challenges/edited by Nancy C. Gallenstein and Dodi Hodges, 2011, Association for Childhood Education International.

XIII. PREREQUISITES: NONE

XIV. STATEMENT OF AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY:
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 information regarding nondiscrimination policies contact the Office of Equal Opportunity, 270-809-3155.

Note: Instructor reserves the right to make changes to course activities and assignments as deemed necessary.