I. **Course Description**

This course emphasizes the teaching of mathematics in Grades 1-8 using manipulatives in a program-solving format. Instruction will build upon the following topics which will have been introduced in previous courses: the teaching-learning process, curriculum organization, use of instructional technology, instructional planning, and instructional and student evaluation. Each student will participate in field experiences. Enrollment limited to graduate students seeking initial teacher certification. Prerequisites: 6 Hrs. Mathematics Content for the Elementary Teacher and EDCI 5306 Planning/Teaching/Learning Processes.

II. **Rationale**

This course extends topics introduced in the prerequisite courses (mathematics content courses and EDCI 5306) with special emphasis given to the methods of teaching mathematics in elementary and middle schools. Knowledge and experiences gained in this course should prepare students to effectively teach mathematics in the capstone course of their certification program—either Student Teaching or the Post-Baccalaureate Internship.

III. State Adopted Proficiencies for Teachers

1. Learner-Centered Knowledge: The teacher poses and draws on a rich knowledge base of content, pedagogy, and technology to provide relevant and meaningful learning experiences for all students.

2. Learner-Centered Instruction: To create a learner-centered community, the teacher collaboratively identifies needs; and plans, implements and assesses instruction using technology and other resources.

3. Equity in Excellence for all Learners: The teacher responds appropriately to diverse groups of learners.

4. Learner-Centered Communication: While acting as an advocate for all students and the school, the teacher demonstrates effective professional and interpersonal communication skills.

5. Learner-Centered Professional Development: The teacher, as a reflective practitioner dedicated to all students' success, demonstrates a commitment to learn, to improve the profession, and to maintain professional ethics and personal integrity.

IV. TExES Competencies

TExES Generalist EC-4 Domain II—Mathematics competencies are assigned to the mathematics content courses that are prerequisites for this course and will be applied in this course. As a methods course, EDCI 5315 emphasizes Pedagogy & Professional
Development competencies 1-10. Most of these have been introduced in the prerequisite course EDCI 5306. This course will extend and apply those competencies to the teaching of mathematics.

V. Course Objectives/Learning Outcomes

This course is designed to enable students to:
1. Reflect upon their own background in mathematics education and analyze their commitment and outlook toward being a mathematics education professional.
2. Examine research and present information gathered from various educational journals concerning topics being taught at their chosen grade level for the purposes of a) evaluating the research and b) incorporating the better ideas from the research into their planning/teaching.
3. Become proficient in the use of various manipulatives in the teaching of mathematics.
4. Observe and evaluate mathematics instruction for a minimum of 3 hours in an elementary or middle school setting.

VI. Course Topics

The major topics to be considered are:
- Number Sense, Operations & Basic Facts
- Place Value & Whole Numbers
- Algebraic Thinking
- Fractions
- Decimals & Proportional Reasoning
- Measurement & Geometry

VII. Instructional Methods and Activities

A. Traditional Experiences: background reading, exploration, reflection, lecture/discussion, demonstration, videos
B. Clinical Experiences: A substantial portion of the class instructional plan will be using physical models such as manipulatives to teach the content topics, and understanding how learning occurs through their use including simulations; cooperative groups; student demonstrations or presentations; guided discovery
C. Field Experiences: Observe and evaluate mathematics instruction for a minimum of 3 hours in an elementary or middle school setting.

VIII. Evaluation and Grade Assignment

The methods of evaluation and the criteria for grade assignment are: A. Methods and Percentage of Final Course Grade Each Assessment Constitutes

1. Written Assignments- 55%
   Assignment # 1: Write your math autobiography; recount your memories of mathematics and its place in your life, (at least 1 14 pages, typed).
   Additional assignments are article reviews and web assignments sent via BlackBoard. Due midnight before next class.
2. **Observations - 30%**
   You must observe three (3) mathematics classes. Use correct form when writing up the observations.

3. **Participation - 15%** See Class Attendance Policy.

   **B. Grading Scale**

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade</th>
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<tbody>
<tr>
<td>92-100%</td>
<td>A</td>
</tr>
<tr>
<td>83-91%</td>
<td>B</td>
</tr>
<tr>
<td>74-82%</td>
<td>C</td>
</tr>
<tr>
<td>65-73%</td>
<td>D</td>
</tr>
<tr>
<td>below 64%</td>
<td>F</td>
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</tbody>
</table>

**IX. Course Schedule and Policies**

**A. A tentative course schedule:**

<table>
<thead>
<tr>
<th></th>
<th>Topic</th>
<th>Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1. Introduction to Methods of Teaching Mathematics</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>2. Ch 9-11 Number Sense, Operations &amp; Basic Facts</td>
<td>Math Autobiography due</td>
</tr>
<tr>
<td>3.</td>
<td>3. Ch 12 &amp; 13 Place Value &amp; Whole Numbers</td>
<td></td>
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<tr>
<td>4.</td>
<td>4. Ch 15 Algebraic Thinking</td>
<td>First observation due</td>
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<td>5.</td>
<td>5. Ch 16-17 Fractions</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>6. Ch 18-19 Decimals &amp; Proportional Reasoning</td>
<td>Second observation due</td>
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<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>12/2</td>
</tr>
<tr>
<td>7.</td>
<td>7. Ch 20-21 Measurement &amp; Geometry</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>8.</td>
<td>Third observation due</td>
</tr>
</tbody>
</table>

**B. Class Policies Attendance/tardiness** Regular attendance is required for students enrolled in the course. Students missing one class meeting must complete a make-up assignment. For each make-up assignment not completed, the student's grade can be lowered by one letter grade.
**Late work and Make-up Exams** Points may be deducted for late work at the discretion of the professor.

**Extra Credit** Assignments may be given at the discretion of the professor.

**Cell Phone/Electronic Device Usage** Cell phones and other electric devices should not be used during class. If a potential emergency exists where a student is expecting an important call concerning a child or family member, the phone should be put on vibrate.

**Classroom/professional behavior**
- Participate cooperatively in class discussions & lessons.
- Word-process all assignments (1 inch margins, 12 point font, Times New Roman).
- Written work should be clear, concise, and written in an academic manner. The Writing Center is available for help with written assignments.
- Additional assignments may be required if they will benefit the course objectives.
- Assignments and due dates may be modified at the discretion of the instructor if they will benefit/enhance the outcomes of the course.
- Be responsible for any information and materials missed when absent.
- No incomplete grades will be given.
- All students are expected to participate fully in class discussions, presentations, and group work. Failure to participate will affect your grade.

**X. Textbook(s)**

*The textbook(s) adopted for this course is:*


**Website:**
- The Website that accompanies and is coordinated with this course
  

**XI. Bibliography**

*The knowledge bases that support course content and procedures include:*


XII. Grade Appeals*

As stated in University Rule 13.02.99.C2, Student Grade Appeals, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Rule13.02.99.C2, Student Grade Appeals, and University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules Web site at [http://www.tamucc.edu/provost/university rules/index.html](http://www.tamucc.edu/provost/university rules/index.html). For assistance and/or guidance in the grade appeal process, students may contact the Office of Student Affairs.

XIII. Disabilities Accommodations*

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call or visit Disability Services at (361) 825-5816.
If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

♦Required by SACS

Slightly revised again by Jack Cassidy, co-chair Curriculum Coordinating Committee, 11/10/10.