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TEXT: About Teaching Mathematics- 4th edition by Marilyn Burns

COURSE DESCRIPTION: This is a course that deals primarily with effective methods of teaching mathematics to students in grades EC-6. Emphasis will be on developing an understanding of numbers, teaching basic operations, and utilizing various teaching aids and materials to meet the different needs of elementary age students. Special emphasis will be placed on HOW CHILDREN LEARN rather than just HOW TO TEACH. This is a service-learning course, which means you will be expected to participate in a community/school service project called Family Math Night-A November Night of Numbers.

GENERAL COMPETENCIES:  
As a result of having had this course you should be able to:

1. Utilize effective methods in teaching contemporary or "modern" mathematics.  
2. Demonstrate competencies in basic mathematical operations.  
3. Demonstrate understanding of content of in-class and outside-class assignments orally and/or in written tests.  
4. Use various math manipulatives in helping children learn different mathematical concepts, basic facts, and algorithms.  
5. Develop math activities for various areas of study in the elementary mathematics curriculum.  
6. Develop activities that will elicit active participation on the part of the student.  
7. Understand the math curriculum with respect to its problem areas, scope, and sequence of skills and appropriate materials and activities for teaching.  
8. Apply knowledge of principles of instruction.  
9. Analyze teaching strategies for delivering basic instruction.  
10. Identify principles and techniques of classroom organization.  
11. Analyze uses of textbooks in instruction at the elementary level.  

04 ELEMENTARY TExES GENERALIST COMPETENCIES:  
1. The elementary teacher understands, applies, and encourages higher-order thinking and questioning skills in mathematics.  
2. The elementary teacher understands problem-solving strategies and techniques and applies these strategies and techniques to solve application and non-routine problems.  
3. The elementary teacher understands mathematical communication and uses mathematical language and vocabulary, representations, and data to communicate information.
4. The elementary teacher understands the role of number and numeration in the real number system (including the use of estimation) and applies these concepts to real-world situations.
5. The elementary teacher is familiar with recent developments and issues in mathematics education.

TOPICS TO BE DISCUSSED:

1. "Mathophobia" & Stress in the Math Classroom
2. State of the Art in Mathematics Education
3. Problem Solving
4. Teaching graphing skills
5. Strategies and Techniques for Teaching the Following EC-6 Math Skill Areas:
   - Pre-number
   - Number Concepts
   - Place Value
   - Addition & Subtraction
   - Multiplication & Division
   - Problem Solving
   - Math and Children’s Literature
   - Mathematical Processes and Perspectives
   - Mathematical Connections

COURSE REQUIREMENTS:

1. Read assigned sections and chapters in text.
2. Quizzes will be given over text readings.
3. Final Exam. Material for final will be taken from class work, assigned readings, handouts, and assignments in the textbook.
4. Complete a notebook. A binder notebook with dividers is required. It will be organized in sections according to areas of study covered in class. The following sections must be included:
   I. General Section
      A. course outline and calendar
      B. class and text notes
      C. unless they are filed in sections below
   II. Mathophobia
   III. Pre-number & Number Development
   IV. Place Value
   V. Addition & Subtraction
   VI. Multiplication & Division
   VII. Problem Solving
   VIII. Other topics as we cover them
   IX. TEKS for grades EC-6
       STAAR test info
   X. Guessing Jars
   XI. Graphing
5. Construct one “guessing jar” and write up its description – Write a description for 2 more jars. Bring your favorite jar idea to class to try with our classmates.
6. Create one activity for the number recognition and share it with the class.
7. Choose one children’s literature book that can be used at your own grade level interest. Develop a math activity that can be used as it relates to the book’s subject and present it to class.
8. Create one activity for the Family Math Festival and present to children on Family Math Night.
10. Create one activity for the Family Math Festival and present to children on Family Math Night.
11. Develop a math manipulative project that investigates one math manipulative and find a related math activity using that manipulative.
12. Find a game like activity that is used to help children practice basic facts.
13. You will collect a variety of problems related to the 5 types of problems presented in class.
14. You will collect at least 10 “problems of the day” that are ready for classroom use.
15. You are to create 3 different graphs and related statistics that can be used in an EC-6 classroom.

During the semester various changes such as deletions and additions may be made in the course requirements if deemed necessary.

**ELECTRONIC TEACHER RESOURCES**

Internet listings are provided below to help you begin your exploration of resources for teaching early childhood- grade 6 mathematics. Explore these sites to find lesson plans and activities as related to your various class assignments.

- [www.mathsolutions.com](http://www.mathsolutions.com)
- Eric Clearinghouse on elementary and Early Childhood Education- [http://eric.eecs.org](http://eric.eecs.org)
- Ask Dr. Math – [http://forum.swarthmore.edu/dr.math](http://forum.swarthmore.edu/dr.math)
- [pinterest](http://pinterest.com)
- [Lesson Plans and Activities for Teachers – http://www.lessonplanspage.com](http://www.lessonplanspage.com)
- Houghton Mifflin Education Place- [http://www.eduplace.com](http://www.eduplace.com)
- Texas Education Agency – [http://www.tea.state.tx.us](http://www.tea.state.tx.us)
- Supporting the TEKS and STAAR – [www.utdanacenter.org/mathtoolkit](http://www.utdanacenter.org/mathtoolkit)
- [Havefunteaching](http://havefunteaching.com)
- [Brain pop](http://www.brainpop.com)
- [Aims.org](http://www.aims.org)
**COURSE GRADE COMPOSITION:**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Possible Points</th>
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<tbody>
<tr>
<td>1. Text Quizzes</td>
<td>100</td>
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<tr>
<td>2. Final Exam</td>
<td>100</td>
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<tr>
<td>3. Children’s Literature Activity</td>
<td>50</td>
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<tr>
<td>4. Guessing Jar</td>
<td>25</td>
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<tr>
<td>5. Number Development Activity</td>
<td>50</td>
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<tr>
<td>6. Math Manipulative Project</td>
<td>50</td>
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<td>7. Pumpkin Activity</td>
<td>25</td>
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<tr>
<td>8. Basic facts activity/game</td>
<td>25</td>
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<tr>
<td>9. Graphs</td>
<td>25</td>
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<tr>
<td>10. Collection of problems assignment</td>
<td>50</td>
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<tr>
<td>11. Problems of the day assignment</td>
<td>25</td>
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<tr>
<td>12. Family Math event</td>
<td>50</td>
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**TOTAL POSSIBLE POINTS** 500

**GRADING SYSTEM:**

- **A** = 94% or above of 500
- **A-** = 90-93% of 500
- **B+** = 88-89% of 500
- **B** = 83-87% of 500
- **B-** = 80-82% of 500
- **C+** = 78-79% of 500
- **C** = 73-77% of 500
- **C-** = 70-72% of 500
- **D** = 60-69 % of 500
- **F** = Less than 60% of 500

**NOTES:**

1. Attendance and being on time for class are extremely important. You should exert every effort to attend unless providentially hindered. After the first absence, 3 points will be deducted from your final average. For each additional absence, you can neither participate nor contribute if you are not present.

   a) Share ideas - orally or hand in articles that relate to the topics being studied in class.
b) Speak up during discussions of the chapter or other assigned work.
c) Listen to the ideas of others and respond positively. Be open-minded.
d) Come to each class prepared - one must attend all classes and contribute to each class by speaking, discussing class issues, etc. One must come to class prepared and energetic. Sitting quietly is not contributing.
e) Have a positive attitude.

2. If you miss a quiz, you must make arrangements to make it up before the next class meeting or the grade is recorded a zero
3. Tardiness is disruptive and should be avoided. One point for each tardy will be subtracted from one’s final average. A student who enters the room after roll has been taken is responsible for checking with the instructor after class to have the recorded absence changed to tardy.
4. In all written work, grammar, sentence structure, organization, spelling, and handwriting are to be of such quality that would be an acceptable model for elementary students. Points will be deducted for such errors.
5. All assignments should be turned in on the designated due dates and time. For each assignment turned in after the date an assignment is due and/or one class date late, a letter grade will be deducted from the total score.

Professional Standards of Behavior:

- Academic Integrity—the university system is based on a respect of intellectual property. Citing sources of information used in one's work and total reliance on personal ability in individual assessments are fundamentals in scholarly behavior. Any instance of breach in academic integrity will be documented and reported to the Dean of the School of Education. Students will be informed of this action and must submit a written response to the charge. The instructor has the right to fail the student for the specific project or the entire course.
- Students may not bring their children to class as this can be disruptive to other students and to my instruction.
- Finally, I prefer that students do not eat in class except during breaks. Eating lunch or dinner during class can be disruptive to other students and your professor.

Disability Accommodations

- Student Disability—any student with a documented disability needing academic adjustments or accommodations is requested to speak with me during the first two weeks of class. All discussions will remain confidential. Students with disabilities will need to also contact Counseling and Disability Services in Crooker Center. This office can be reached at (713) 525-6953 or 2169.
Selected social justice teachings of the Catholic Church are used to inform the School of Education programs. As educators, the tenets of social justice should play a pivotal role in decision-making strategies in Catholic, private, and public schools of all levels.

- **Subsidiarity**: Educational institutions should be organized and governed as much as possible by the community being served; education should only be controlled at higher levels of society when it cannot be done effectively locally.

- **Dignity and rights of children**: Children possess full human dignity and are bearers of rights which should be recognized and upheld in the educational process.

- **People have a right to an education**: All people have a responsibility, for the good of society, to contribute to and foster education.