COURSE OUTLINE FOR ED 5372 N
CURRICULUM & INSTRUCTION IN ELEMENTARY MATHEMATICS
Fall 2016

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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, techniques for teaching a wide array of mathematical concepts and skills, teaching basic operations, and utilizing various teaching aids and materials to meet the different needs of elementary age students. This is a service learning class which means you will participate in a community/school service project called Family Math Night-A November Night of Numbers.

GENERAL OBJECTIVES: 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 understanding on content of in-class and outside-class assignments orally and/or in written tests.
3. Use various math manipulatives in helping children learn different mathematical concepts, basic facts, and algorithms.
4. Identify particular problems involved in teaching elementary mathematics.
5. Develop math activities, learning packets, centers, games, etc. for various areas of study in the elementary mathematics curriculum.
6. Acquire a variety of creative teaching ideas that will improve instruction.

TOPICS TO BE DISCUSSED:
1. State of the Art in Mathematics
2. Stress in the math classroom
3. Problem Solving
4. Problems Associated with Teaching the Various Math Skills
5. Graphing Skills
6. Strategies and Techniques for Teaching a Selection of the following Skill Areas according to the interest and needs of students:
   Pre-Number
   Number Development
   Place Value
   Addition & Subtraction
   Multiplication & Division
   Problem Solving
   Graphing
   Using Math Manipulatives to Teach Various Concepts and Skills
   Guessing Jars
**COURSE REQUIREMENTS:** Course requirements will incorporate attention to student’s special
needs and interests. Requirements will also incorporate:

1. Attend all class sessions; actively participate in class activities, and complete assignments for all sessions.

2. 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.

3. Four quizzes on selected chapters in textbook.

4. Final exam. The material for this test will be taken from class work, assigned readings, handouts, etc.

5. Keep a math journal, writing on designated topics.

6. Create one number development activity and share with the class.

7. Present one children’s literature book and related math activity to class.

8. Create one activity and present at our Family Math night (November Night with Numbers)

9. Complete a graduate project related to one of the math strands and selected activities from our textbook or another topic determined by student and myself.

10. Find a game/fun like activity that can be used to help children practice the basic facts.

11. Share a “what is trending” idea for math.

12. You will collect a variety of problems related to the 5 types of problems presented in class.

13. You will collect at least 10 “problems of the day” that are ready for classroom use.

14. You are to create 3 different graphs and related statistics that can be used in an EC-6 classroom.
GRADE COMPOSITION:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Possible Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes on text chapters</td>
<td>100 pts.</td>
</tr>
<tr>
<td>Final Exam</td>
<td>100 pts.</td>
</tr>
<tr>
<td>Graduate Project</td>
<td>100 pts</td>
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<tr>
<td>Number Development Activity</td>
<td>25 pts</td>
</tr>
<tr>
<td>Guessing jar</td>
<td>50 pts</td>
</tr>
<tr>
<td>Children’s Literature Activity</td>
<td>50 pts</td>
</tr>
<tr>
<td>Family math night activity</td>
<td>50 pts</td>
</tr>
<tr>
<td>What’s Trending in Math</td>
<td>25 pts</td>
</tr>
<tr>
<td>Basic facts activity</td>
<td>25 pts</td>
</tr>
<tr>
<td>Graphs</td>
<td>25 pts</td>
</tr>
<tr>
<td>Collection of math problems</td>
<td>50 pts</td>
</tr>
<tr>
<td>Pumpkin activity</td>
<td>25 pts</td>
</tr>
<tr>
<td>Math manipulative activity</td>
<td>50 pts</td>
</tr>
<tr>
<td>TOTAL</td>
<td>675 pts.</td>
</tr>
</tbody>
</table>

A = 94% or more of total points
A- = 90-93% of total points
B+ = 88-89% of total points
B = 84-87% of total points
B- = 80-83% of total points
C+ = 78-79% of total points
C = 74-77% of total points
C- = 70-73% of total points
D = 60-69% of total points
F = below 60% of total points

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.
2. Tardiness is disruptive and should be avoided. Repeated tardiness will be treated as an absence. (3 tardies = one absence) 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 a tardy.
3. In all written work, grammar, sentence structure, and spelling are to be of such quality that would be an acceptable model for students. Full credit will not be given for such errors.
4. All assignments should be turned in on the designated due dates. For each assignment turned in one class date late, a letter grade will be deducted from the total score.
5. If you miss a test, you must make arrangements to make it up before the next class meeting or the grade is recorded as a zero.
6. During the semester various changes such as deletions and additions may be made in the course requirements if deemed necessary.
Tips on how to be successful in class:

- Share ideas and readings you do that relate to the topics being studied in class.
- Speak up during discussions of the chapter or other assigned work.
- Listen to the ideas of others and respond positively.
- Be open-minded and help those that need help.
- Come to each class prepared – do the assigned homework.
- One must come to class prepared and energetic. Sitting quietly is not contributing.
- Have a positive attitude in class.
- Be quiet and sensitive when others are sharing their ideas.

- Professional Standards of Behavior:
  - (Student disability and academic integrity are required, should also include things like expectations for attendance, late work, etc.)
  - 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 Crocker Center. This office can be reached at (713) 525-6953 or 3162.
  - 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.

Selected social justice teachings

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.
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
- Eric Clearinghouse on elementary and Early Childhood Education – http://ericeeece.org
- Ask Dr. Math – http://forum.swarthmore.edu/dr.math
- Pinterest
- National Council of Teachers of Mathematics (NCTM) – http://www.nctm.org or www.nctm.org/profile
- Lesson Plans and Activities for Teachers – http://www.lessonplanspage.com
- Houghton Mifflin Education Place - http://www.eduplace.com
- Texas Education Agency – http://www.tea.state.tx.us
- Supporting the TEKS and STAAR – www.utdanacenter.org/mathtoolkit
- Havefunteaching
- Brain pop
- Aims.org
- Khan Academy https://www.khanacademy.org