

WATSON SCHOOL OF EDUCATION
DEPARTMENT OF CURRICULAR STUDIES
EDUCATION 322-800
The Teaching of Mathematics (K-6)
Summer I, 2006

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Course Description:

Prerequisites: EDN 301 and six semester hours of appropriate mathematics. Co-requisite: EDNL 322.
Focus on the curriculum, materials, and methods appropriate for the teaching of mathematics for the kindergarten through sixth grade level. A field-based activity is required.

Conceptual Framework:

The Watson School of Education strives to develop highly competent professionals to serve in educational leadership roles. EDN 322, The Teaching of Mathematics (K-6), supports this framework through discussions, class activities, readings, field experience, projects and evaluations. These projects afford students the opportunity to develop the following competencies:

- ✓ Informed data driven decision making
- ✓ Reflective practice
- ✓ Commitment to ethical and professional standards
- ✓ Knowledge in academic content and pedagogy
- ✓ Technology integration
- ✓ Ability to meet needs of diverse learners
- ✓ Knowledge and use of appropriate communication strategies

Individual student growth in these areas will result in educational practice that positively impacts learning.

Objectives:

The assessment plan correlates with the course objectives and indicates how the student demonstrates acquisition of concepts and skills. Upon successfully completing this course, the student should be able to:

1. demonstrate an understanding of the mathematical content which underlies the mathematics taught at the K-6 level.
2. compare the NCTM Standards with mathematics curricula and instruction at the K-6 level.
3. relate selected concepts in learning and child development to mathematics instruction.
4. use informal diagnostic techniques in planning instruction.
5. identify commercial, environmental, and technology-based materials useful in the teaching of mathematics.
6. integrate mathematics with other elementary subjects.
7. generate instructional sequences on topics such as:

classification	numeral formation	whole number algorithms
seriation	place value	basic fact mastery
patterning	basic operations	money and time
concept of number	fractions	graphing
rote counting	intuitive geometry	probability and statistics
rational counting	estimation	measurement

8. design activities to help children learn facts, acquire skills, develop concepts in mathematics and use calculators appropriately in applying concepts.

9. modify mathematics curriculum and instruction to meet individual needs.
10. apply the criteria of a good K-6 mathematics program according to the North Carolina Department of Public Instruction and the National Council of Teachers of Mathematics.

Texts:

- Reys, Robert; Suydam, Marilyn & Lindquist, Mary M. Helping Children Learn Mathematics, 7th ed. ISBN 0-471-15163-7
- Copley, Juanita V. The Young Child and Mathematics. National Association for the Education of Young Children (NAEYC) and the National Council of Teachers of Mathematics (NCTM). ISBN 0-035989-97-8
- Course packet. EDN 322, The Teaching of Mathematics K-6
- Reserve materials: software, textbooks, NCTM Addenda Series, N.C. Strategies for Mathematics.

Expectations:

Attendance

Because the instructor will model various practices advocated for classroom use, and because peer interaction is an important component of learning in this course, promptness and active participation is expected at every class. Your class folder serves as your attendance record. Please check its accuracy at the start of each class and signal any discrepancies as soon as possible. Students having more than one (1) absence will have 10 points deducted from their final grade. Two (2) tardies and/or early departures are equivalent to one absence. Missing more than two (2) classes will result in a failing grade.

If you are absent, materials distributed in class will be placed in your folder. Please plan to confer with a classmate concerning material you missed.

Effort

Successful completion of EDN 322 requires active class participation, thoughtful completion of assignments, and careful consideration of all assigned reading. Tests will cover all assigned readings and projects as well as material discussed in class.

COURSE OUTLINE

<u>Date</u>	<u>Topic</u>	<u>Copley</u>	<u>Reys, et al</u>
5/22/06	Course Introduction	1	Preface, 1
	The Curriculum Standards and Planning	2, 9, Appendix A	2-3, Appendix A
5/24/06	Assessment		4
	Meeting Individual Needs, Problem Solving	3	5-6
5/31/06	Geometry and Spatial Sense	6	15
	Reasoning and Patterns	5, Appendix B	7
6/5/06	Number Sense and Numeration	4, Appendix B	8
	<i>Test I</i>		
6/7/06	Whole Number Operations		9
	Computation and Estimation		10-11
6/12/06	Fraction Concepts and Algorithms		12-13
6/14/06	Algebraic Concepts, Measurement		14
	Graphing, Probability & Statistics	7-8, Appendix B	16-17
6/19/06	Probability and Statistics/ <i>Test II</i>	Appendix B	

*Please complete the assigned reading before class.

Instructor Availability:

Office hours are scheduled (see page one of this syllabus). You are also free to call the office any time. You may call my home phone before 9:00 PM. Contact can also be made by Taskstream or UNCW e-mail.

Disability Services:

**If you are a person with a disability and anticipate needing accommodations of any type in order to participate in this class, you must notify Disability Services (Westside Hall, 962-7555), provide the necessary documentation of the disability and arrange for the appropriate authorized accommodations. Once these accommodations are approved, please identify yourself to me so that the accommodations can be implemented.

Grading:

During this course, you can earn a total of 400 points. All tests and assignments are listed below. No extra projects will be accepted. Please keep a running total of the points you have earned on this syllabus. Grades will be determined as follows:

A = 371-400 points	B- = 320-330 points	C- = 280-290 points
A- = 360-370 points	C+ = 310-319 points	D = 240-279 points
B+ = 350-359 points	C = 291-309 points	F = below 240 points
B = 331-349 points		

TESTS

Test I	Date: June 5, 2006	95 points	_____
Test II	Date: June 19, 2006	100 points	_____

The first test will focus on the foundations of K-6 mathematics as covered up to the date of the test. Test II will focus on topics covered after Test I, but may include material from any part of the course. All class discussions, handouts, and assigned readings may be included. Because it is an unsuccessful strategy, cramming is not recommended.

PROJECTS

All materials submitted for grading must be well-edited and typed. You may neatly handwrite any assignment to be submitted on a required form. Projects which do not meet these standards will be returned ungraded. Grades on late projects may be decreased by 1 point per day.

		<u>Possible Points</u>	<u>Attained Points</u>
1. <u>Math Autobiography</u>	Due: May 24	5 points	(On Test I)
In about 2 typed pages, describe your previous experiences as a mathematics student in elementary school, in secondary school and in college. Discuss what material was covered, how it was taught, and how you felt about it. Then discuss how you feel about taking this course and about <u>teaching</u> mathematics. This paper will be completely confidential and will not be returned. Put your name on a cover sheet <u>only</u> . The 5 points will be added to your Test I score for the completion of this project.			
2. <u>Textbook Review</u>	Due: May 31	20 points	_____
3. <u>Software or Web Resource Review</u>	Due: June 5	20 points	_____
4. <u>Number Facts Assessment or Piagetian Task</u>	Due: June 12	20 points	_____
5. <u>Algorithm Demonstration</u>	Due: June 12, 14, or 19	20 points	_____
6. <u>Unit Plan</u>	Due: Part I - May 24 Due: Day 1 – June 7 for feedback Due: June 14	80 points	_____
Days 1-5, assessment, bibliography			
Use of the following projects are to be included in the unit plan.			
A. <u>Activity Construction</u>	Due: June 5	20 points	_____
B. <u>Connections Project</u>	Due: June 19	20 points	_____

7. Field Experience

Successful completion of the field experience requires attendance at EDNL 322 class meetings and completion of tasks as outlined in the EDNL 322 syllabus.

Tutor one child for 8 hours using a hands-on approach. Lesson plans must be approved by the Lab instructor before each session and must include the use of developmentally appropriate manipulatives. Tutoring sessions should begin as soon as possible.

INTEGRATION OF TECHNOLOGY

Through completion of the projects described above, students will design developmentally appropriate learning opportunities that apply technology-enhanced instructional strategies to support the diverse needs of learners. This work will be done through the use of TaskStream, a web-based curriculum builder and portfolio toolset, and other technology resources.

TaskStream:

Beginning with the fall 2005 semester, the Watson School of Education requires that all education majors enrolled in methods courses maintain an active account on TaskStream. You are asked to maintain that account for the duration of your program with the Watson School of Education (www.taskstream.com). Students in these courses will use TaskStream to maintain a Professional Development Portfolio. This portfolio includes evidence of your work to demonstrate progress toward meeting exit requirements and professional standards. Your instructor will advise you on how to obtain this account.

Academic Honor Code

Adherence to standards of professional conduct is expected in EDN 322. Please familiarize yourself with the requirements of the UNCW Academic Honor Code and the Watson School of Education Standards of Professional Conduct. These documents can be found in the course packet and on the course webpage.

Performance Evaluation Scale

You will be introduced to the Performance Evaluation Scale which is used during the internship. You will be asked to do a self-evaluation using these criteria. You will also identify your current areas of strength and what areas of growth you want to focus on at this time.