

Course Syllabus

Course Information

<i>Course Number/Sec.</i>	ED 3340 - 501
<i>Course Title</i>	Math Concepts for Teachers
<i>Term</i>	Fall 2010
<i>Days & Times</i>	Tuesday and Thursday, 7:00 – 8:15

Professor Contact Information

<i>Professor</i>	Julia Haun
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<i>Office Location</i>	CBW 1.203
<i>Office Hours</i>	Tuesday, 6:00 - 6:45 or by appointment
<i>Other Information</i>	Messages and assignments can be delivered to the Teacher Development Center, FN 3.118

Course Description

The primary objective of this course is to examine how to facilitate the learning of mathematics in grades Kindergarten through eight so that students are actively involved in their own learning. Teachers will be encouraged to become actively involved in visualizing mathematical concepts, solving problems, performing mental calculations, using manipulatives, and employing mathematical models to realize that mathematics is a way of thinking rather than a collection of rules. The content is designed to reflect the National Council of Teachers of Mathematics *Principles and Standards for School Mathematics* and the Texas Essential Knowledge and Skills for Mathematics (TEKS), Grades K-8. The content and pedagogy for problem solving; whole numbers; number theory; integers; fractions and decimals; pre-algebra; probability; geometry; and measurement will be examined.

Student Learning Objectives/Outcomes

1. The student will analyze problem situations, create solutions strategies, solve problems, and justify his/her thinking.
2. The student will hypothesize whether properties from one set of numbers will work for other sets of numbers and then validate his/her conjectures.
3. The student will construct concepts of number, patterns, geometry, measurement, probability, and statistics through the use of exploration and investigation.

TEXES Domains and Competencies - This content of this course relates to the following domains and competencies assessed on the TExES (Texas Examination of Educator Standards) indicated.

Generalist EC-4

Domain II - Mathematics, Competencies 013, 014, 015

Generalist 4-8

Domain II - Mathematics Competencies 010 - 025

Mathematics 4-8

Domain 1 - Competencies 001-003

Domain 2 - Competencies 004-007

Domain 3 - Competencies 008-011

Domain 4 - Competencies 012-014

Domain 5 - Competencies 015-016

Generalist EC-6

Domain 2 – Standards 1 – 5

Required Textbooks and Materials

Required Texts

Albert B. Bennett, Jr. And L. Ted Nelson, Mathematics for Elementary Teachers, a Conceptual Approach, 8th edition

Required Materials

Calculator, basic or scientific

Suggested Course Materials

Suggested Readings/Texts

Albert B. Bennett, Jr. And L. Ted Nelson, Student Solutions Manual for use with Mathematics for Elementary Teachers, 8th Edition

Assignments & Academic Calendar

Problems will be assigned to provide practice on concepts and skills covered as part of this course. Additional problems may be assigned to supplement the assigned problems.

Dates	Section Number	Assigned Problems
August 19	Sec. 1.1 - Introduction to Problem Solving	1.1 - 1, 3, 5, 7, 9, 10, 17, 19
August 24	Sec. 1.2 - Patterns in Problem Solving	1.2 - 3, 5, 7, 9, 23, 27, 28, 29
August 26	Sec. 2.1 – Sets and Venn Diagrams	2.1 - 31, 33, 35, 37, 39, 41 Chapter 1 Quiz
August 31	Sec. 2.2 – Functions, Coordinates, Graphs	2.2 - 3, 5, 7, 11, 19, 21, 23
September 2	Sec. 3.1 – Numeration Systems	3.1 - 21, 23, 25, 27, 39, 41 Chapter 2 Quiz
September 7	Sec. 3.2 – Addition and Subtraction	3.2 - 15, 19, 21, 35
September 9	Sec. 3.4 – Multiplication	3.3 - 9, 11, 13, 33, 43, 45
September 14	Sec. 3.4 –Division	3.4 - 1, 3, 5, 7a, 11, 19

September 16	Sec. 4.1 – Factors and Multiples	4.1 - 3, 27 Chapter 3 Quiz
September 21	Sec. 4.2 – GCF and LCM	4.2 - 1, 3, 7, 9, 11, 13, 15, 21, 25, 27
September 23	Test Number 1 - Chapters 1 - 3	
September 28	Sec. 5.1 - Integers	5.1 - 1, 3, 7, 9, 15, 17, 19, 21
September 30	Sec. 5.2 - Introduction to Fractions	5.2 - 9, 11, 13, 15, 17, 19, 21, 25, 27, 39, 43, 45 Chapter 4 Quiz
October 5	Sec. 5.3 - Fraction Operations	
October 7	Sec. 5.3 Fraction Operations, continued	5.3 - 3, 5, 11, 33, 35, 37, 49, 51
October 12	Sec. 6.1 – Decimals & Rational Numbers	6.1 - 5, 7, 13, 23, 35, 37 Chapter 5 Quiz
October 14	Sec. 6.2 - Decimal Operations	6.2 - 3, 9, 29, 43, 45
October 19	Sec. 6.3 - Ratios	
October 21	Sec. 6.3 - Percents	6.3 - 3, 5, 7, 9, 11, 13
October 26	Sec. 8.1 – Single-stage Experiments	8.1 - 1, 3, 5, 7, 9, 13, 15, 17 Chapter 6 Quiz
October 28	Test 2 – Chapters 4-6	
November 2	Sec. 8.2 – Multistage Experiments	
November 4	Sec. 8.2 – Multistage Experiments	8.2 - 3, 5, 7, 9, 11, 25
November 9	Sec. 9.1 – Plane Figures	9.1 - 7, 9, 11, 13 Chapter 8 Quiz
November 11	Sec. 9.2 – Polygons	
November 16	Sec. 9.3 – Space Figures	9.3 - 3, 5, 8, 9, 10 11, 27a, 28a
November 23	Sec. 10.1 – Systems of Measurement	10.1 - 5, 9, 10, 11, 13, 14, 25 Chapter 9 Quiz
November 30	Sec. 10.2 – Area and Perimeter	10.2 - 3, 9, 13, 15, 17, 21, 31
December 2	Sec. 10.3 – Volume and Surface Area	10.3 - 3, 5, 19, 21 Last day of class Chapter 10.1 and 10.2 Quiz
December 14	Test 3 – Chapters 8-10	7:00 pm

Grading Policy

In order to receive a *passing* grade in this course, each student must:

1. Participate in class discussions.
2. Complete all tests.

Homework will be assigned for each section and reviewed at the beginning of each class. Quizzes will be given over the homework assigned and problems worked in class. The lowest quiz grade will be dropped.

Three examinations will be given. Each exam will reflect the content of the problems or activities that have been assigned or discussed as a part of the course and problems from the text chapter tests. Completion of the homework will be your best preparation for the exams. A comprehensive final exam will not be given. Test 3 will be administered in place of the final.

Grading:

Quizzes	100 points
Test 1	100 points
Test 2	100 points
Test 3	100 points

The cumulative point total for the quizzes and tests is 400 points. The following point scale will be used to determine the final grade.

<u>Final Grade</u>	<u>Total Points</u>
A+	388 - 400
A	376 - 387
A-	360 - 375
B+	348 - 359
B	336 - 347
B-	320 - 335
C+	308 - 319
C	296 - 307
C-	280 - 295
D+	268 - 279
D	256 - 267
D-	240 - 255
F	Below 239

Course Policies

Make-up exams

Missed exams will be given at the discretion of the instructor and must be completed within seven days. Only extreme situations will warrant rescheduling an exam.

Retests

Students earning a grade below 70 on Tests 1 and 2 will be given the opportunity to retest. The highest grade that can be earned on a retest is a grade of 70.

Extra Credit

Students will have the opportunity to earn extra credit by completing problems from the Ole Miss Math Contest website (<http://mathcontest.olemiss.edu>) In order to receive credit, students must include their work on the problem and the response from the website indicating their answer is correct. Solutions to the Middle School Math or Elementary Brain Teaser problems will be accepted. One problem per week can be submitted. Correct solutions are worth three additional points per problem.

Late Work

No late work will be accepted.

Class Attendance

Attendance will be taken. Failure to attend class may impact the final grade.

Classroom Citizenship

All reading and homework assignments are expected to be completed before class. Cell phones are to be turned off.

Policies and Procedures for Students

The University of Texas at Dallas provides a number of policies and procedures designed to provide students with a safe and supportive learning environment. Brief summaries of the policies and procedures are provided for you at <http://provost.utdallas.edu/home/index.php/syllabus-policies-and-procedures-text> and include information about technical support, field trip policies, off-campus activities, student conduct and discipline, academic integrity, copyright infringement, email use, withdrawal from class, student grievance procedures, incomplete grades, access to Disability Services, and religious holy days. You may also seek further information at these websites:

- http://www.utdallas.edu/BusinessAffairs/Travel_Risk_Activities.htm
- <http://www.utdallas.edu/judicialaffairs/UTDJudicialAffairs-HOPV.html>
- <http://www.utsystem.edu/ogc/intellectualproperty/copypol2.htm>
- <http://www.utdallas.edu/disability/documentation/index.html>