Course Information

Course Number/Sec.   ED 3340 - 501
Course Title   Math Concepts for Teachers
Term   Spring, 2014
Days & Times   Tuesday and Thursday, 7:00 – 8:15

Professor Contact Information

Professor   Julia Haun
Office Phone   972-883-2730
Email Address   Julia.Haun@utdallas.edu
Office Location   CBW 1.203
Office Hours   By appointment
Other Information   Messages and assignments can be delivered to the Teacher Development Center

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; fractions and decimals; probability and statistics; 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, <u>Mathematics for Elementary Teachers, a Conceptual Approach</u>, 9th edition

Required Materials
Calculator, basic or scientific

Suggested Course Materials
Suggested Readings/Texts
Albert B. Bennett, Jr. and L. Ted Nelson, <u>Student Solutions Manual for use with Mathematics for Elementary Teachers</u>, 9th Edition

Assignments & Academic Calendar

Problems will be assigned for each section and reviewed at the beginning of each class. Additional problems may be assigned to supplement the assigned problems. Homework will be collected and evaluated using the following rubric. No emailed assignments will be accepted.

3	2	1
95 to 100% complete and explanations for any incomplete problems, all diagrams/graphs drawn, detailed work shown, easy to follow	Partially complete, partially labeled, few or no diagrams/graphs, work shown, easy to follow	Less than 50% complete, partially labeled, few or no diagrams/graphs, some work shown, challenging to follow

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

Test 1 – February 11
Test 2 – March 25
Test 3 – Thursday, May 1

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. Retests will be scheduled by the instructor.

Grading Policy

In order to receive a _passing_ grade in this course, each student must:
1. Participate in class discussions.
2. Complete all tests.
3. Attend 75% of scheduled class meetings.

Grading:

Homework	100 points
Test 1	100 points
Test 2	100 points
Test 3	100 points

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

Final Grade	Total Points
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.

Late Work
No late work will be accepted.

Class Attendance
Attendance will be taken. Students will be allowed up to four absences. After the fourth absence, twenty points will be deducted from the final point total for each absence.

Classroom Citizenship
All reading and homework assignments are expected to be completed before class.
Please turn off your cell phones during class and do not leave your devices out on your desk during class.

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

These descriptions and guidelines are subject to change at the discretion of the instructor.

Math Concepts for Teachers – Spring, 2014

Course Outline			
Dates	Section Number	Assigned Problems	Assignment Due
January 14	Sec. 1.1 – Intro to Problem Solving Texas Essential Knowledge and Skills	1.1 - 1, 3, 5, 7, 9, 19, 28	1/21
January 16	Sec. 1.2 - Patterns in Problem Solving	1.2 - 3, 5, 9, 23, 27, 28, 29, 51	1/21
January 21	Sec. 2.1 – Sets and Venn Diagrams	2.1 – 15a, 19, 31, 33, 35, 37, 39	1/28
January 23	Sec. 3.1 – Numeration Systems	3.1 – 11, 13, 21, 23, 25, 27, 39, 41	1/28
January 28	Sec. 3.2 – Addition and Subtraction	3.2 - 15, 19, 21, 25, 27, 45, 51	2/4
January 30	Sec. 3.3 – Multiplication	3.3 – 5a, 9, 11, 13, 19, 43, 45	2/4
February 4	Sec. 3.4 – Division	3.4 - 1, 3, 5, 7a, 11, 19, 26a, 26b, TQ 3	2/11
February 6	Sec. 4.1 – Factors and Multiples	4.1 - 3, 11, 27, TQ 1	2/11
February 11	*Test 1 - Chapters 1 - 3*		2/18
February 13	Sec. 4.2 – GCF and LCM	4.2 - 3, 7, 9, 11, 13, 15, 21, 25, 27	2/18
February 18	Sec. 5.2 - Introduction to Fractions	5.2 - 9, 11, 13, 15, 17, 19, 23, 25, 27, 43, 45	2/25
February 20	No class		
February 25	Sec. 5.3 - Fraction Operations, Add/Subt		3/4
February 27	Sec. 5.3 Fraction Operations, Mult/Div	5.3 - 3, 5, 13, 17, 35, 37, 39, 49, 51, 53	3/4
March 4	Sec. 6.1 – Decimals & Rational Numbers	6.1 - 5, 7, 11, 13, 17, 35, 37	3/18
March 6	Sec. 6.2 - Decimal Operations		3/18
March 10-15	Spring Break – no class		
March 18	Sec. 6.2 - Decimal Operations	6.2 - 3, 5, 9, 29, 43, 45	3/25
March 20	Sec. 8.1 – Single-stage Experiments		3/25
March 25	*Test 2 – Chapters 4-6*		4/1
March 27	Sec. 8.1 – Single-stage Experiments	8.1 - 1, 3, 5, 7, 9, 13, 15, 17	4/1
April 1	Sec. 8.2 – Multistage Experiments		4/8
April 3	Sec. 8.2 – Multistage Experiments	8.2 – 3, 5, 7, 11, 13, 15, 17	4/8
April 8	Sec. 9.1 – Plane Figures		4/15
April 10	Sec. 9.1 – Plane Figures, cont.	9.1 - 7, 9, 13, 15	4/15
April 15	Sec. 9.3 – Space Figures	9.3 - 3, 5, 8, 9, 10, 11	4/22
April 17	Sec. 10.1 – Systems of Measurement		4/22
April 22	Sec. 10.1 – Systems of Measurement	10.1 - 5, 9, 10, 11, 13, 14, 25	4/29
April 24	Sec. 10.2 – Area and Perimeter	10.2 - 3, 6, 9, 13a, 31	4/29
April 29	Sec. 10.2 – Area and Perimeter		
May 1	*Test 3 – Chapters 8-10*		