Course Information

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

Professor Contact Information

Professor	Julia Haun
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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 Six 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-46
  Domain II - Mathematics, Standards I - VIII

Required Textbooks and Materials

Required Texts

Albert B. Bennett, Jr. and L. Ted Nelson, Mathematics for Elementary Teachers, a Conceptual Approach, 9th edition

Required Materials
Calculator

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 – Tuesday, September 23
Test 2 – Thursday, October 23
Test 3 – Tuesday, December 9

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 <u>*passing*</u> grade in this course, each student must:
1. Participate in class discussions.
2. Complete all tests.
3. Attend 75% of scheduled class meetings.

<u>Grading:</u>

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.
Participate based on classroom norms.
Please silence your cell phones 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 – Fall, 2014

Date	Section Number	Assigned Problems	Assignment Due
August 26	Sec. 1.1 – Intro to Problem Solving Texas Essential Knowledge and Skills	1.1 - 1, 3, 5, 7, 9, 19, 28	9/2
August 28	Sec. 1.2 - Patterns in Problem Solving	1.2 - 3, 5, 9, 23, 27, 28, 29, 51	9/2
September 2	Sec. 2.1 – Sets and Venn Diagrams	2.1 – 15a, 19, 31, 33, 35, 37, 39	9/9
September 4	Sec. 3.1 – Numeration Systems	3.1 – 11, 13, 21, 23, 25, 27, 39, 41	9/9
September 9	Sec. 3.2 – Addition and Subtraction	3.2 - 15, 19, 21, 25, 27, 45, 51	9/16
September 11	Sec. 3.3 – Multiplication	3.3 – 5a, 9, 11, 13, 19, 43, 45	9/16
September 16	Sec. 3.4 – Division	3.4 - 1, 3, 5, 7a, 11, 19, 26a, 26b, TQ 3	9/23
September 18	Sec. 4.1 – Factors and Multiples	4.1 - 3, 11, 27, TQ 1	9/23
September 23	*Test 1 - Chapters 1 - 3*		
September 25	Sec. 4.2 – GCF and LCM	4.2 - 3, 7, 9, 11, 13, 15, 21, 25, 27	9/30
September 30	Sec. 5.2 - Introduction to Fractions	5.2 - 9, 11, 13, 15, 17, 19, 23, 25, 27, 43, 45	10/7
October 2	Sec. 5.3 - Fraction Operations, Add/Subt		
October 7	Sec. 5.3 Fraction Operations, Mult/Div	5.3 - 3, 5, 13, 17, 35, 37, 39, 49, 51, 53	10/14
October 9	Sec. 6.1 – Decimals & Rational Numbers	6.1 - 5, 7, 11, 13, 17, 35, 37	10/14
October 14	Sec. 6.2 - Decimal Operations		
October 16	Sec. 6.2 - Decimal Operations	6.2 - 3, 5, 9, 29, 43, 45	10/23
October 21	no class	probability overview	
October 23	*Test 2 – Chapters 4-6*		
October 28	Sec. 8.1 – Single-stage Experiments	8.1 - 1, 3, 5, 7, 9, 13, 15, 17	11/4
October 30	Sec. 8.2 – Multistage Experiments	8.2 – 3, 5, 7, 11, 13, 15, 17	11/4
November 4	Sec. 9.1 – Plane Figures		
November 6	Sec. 9.1 – Plane Figures, cont.	9.1 - 7, 9, 13, 15	11/11
November 11	Sec. 9.3 – Space Figures	9.3 - 3, 5, 8, 9, 10, 11	11/18
November 13	Sec. 10.1 – Systems of Measurement		
November 18	Sec. 10.1 – Systems of Measurement	10.1 - 5, 9, 10, 11, 13, 14, 25	12/2
November 20	Sec. 10.2 – Area and Perimeter	10.2 - 3, 6, 9, 13a, 31	12/2
November 25 / 28	Thanksgiving Holiday		
December 2	Sec. 10.3 - Volume	10.3 – selected problems	12/4
December 4	Geometry and Measurement		
December 9	Test 3 – Chapters 8 - 10		