Course #: MATH 3303 - 13222
Course Title: Properties of Real Numbers II
Course Hrs: 3
Term: Fall 2009

Course Meeting & Location:

LART 210
Monday – Wednesday, 4:30 PM – 5:50 PM

Prerequisite Courses: Math 1508 & Math 2303 with C or better in each.

Course Fee: none

Instructor: Lawrence W. Swienciki, Ph.D.

Office Location: Bell Hall 316

Contact Information: E-mail: lwswienciki@utep.edu
Phone: (915)-747-7004

Office Hours: Tuesday, Thursday 10 – 11 AM; TBA (Time by Appointment)


Course Objectives:

Algebra Connections: Mathematics for Middle School Teachers is a 45-hr course designed for prospective middle school teachers to deepen their understanding of fundamental mathematical principles. The course includes concepts of arithmetic sequences/series, geometric sequences/series, mathematical induction, binomial factor theorem, Fibonacci sequence, multiples/divisors, prime numbers, division and Euclidean algorithms, and modular arithmetic. The focus is on applying these concepts to hypothetical middle school scenarios.

Course Activities/Assignments:

1. For each major topic, read the text sections in advance of the classroom presentation/discussion.

2. There are 10 homework assignments listed on your syllabus, with the corresponding pages from the text. For each of the home works, you are to design three example problems with solutions for a hypothetical middle school class you create. Define the problems clearly and give a detailed solution. The assignments are due as announced, after the related section is presented/discussed. You are not restricted to material in the textbook. You are encouraged to be creative.
i. Arithmetic Sequences/Series (Text pp. 14 – 23)
ii. Geometric Sequences/Series (Text pp. 23 – 28)
iii. Mathematical Induction (Text pp. 29 – 34)
iv. Binominal Factor Theorem (Text pp. 35 – 51)
v. Fibonacci Sequence (Text pp. 51 – 62)
vi. Multiples and Divisors (Text pp. 63 – 76)
vii. Prime Numbers and Factorization (Text pp. 76 – 94)
viii. Division Algorithm (Text pp. 95 – 102)
ix. The Euclidean Algorithm (Text pp. 102 – 110)
x. Modular Arithmetic (Text pp. 145 – 155)

3. Your attendance and participation in the discussion is very important. There will be a sign-in sheet at each class session. Please sign the attendance sheet when you come in or before leaving.

4. There is a project providing you with the opportunity to apply the course-principles in your own creative way. Utilizing your homework examples, you are to prepare a 10-minute maximum lesson for a hypothetical middle school class of your creation. You will present your topic to the class, in the order the topics are considered in the course. Sign up the first week to chose one of the 10 topics for a lesson. If you choose a topic near the beginning of the list, your presentation occurs earlier in the course. Check with the instructor to focus on a particular date.

5. There is one mid-term exam, based on the first 5 home works covered from the beginning. The questions are similar to those found in the text and those found in student presentations.

6. The final examination follows the same structure as the midterm, but is more comprehensive.

Assessment of Course and Grading:

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<tbody>
<tr>
<td>Homework</td>
<td>200 pts</td>
<td>A</td>
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<td>Attendance</td>
<td>100 pts</td>
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<td>Project</td>
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<td>Midterm Exam</td>
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<td>Final Exam</td>
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Make-Up Policy: There are no retakes on exams, and no exam grades dropped. Missed class work cannot be made up. Late assignments are not accepted. With sufficient documentation, the instructor, at his discretion, allow make up exams.

Attendance Policy: Attendance is expected and required. There is an attendance sheet for the students to sign in at the beginning of the period. Attendance is part of the grade, as shown above.
**Academic Integrity Policy:** Acts of academic dishonesty are not accepted. Lapses in academic integrity are referred to the Dean of Students, as required at: http://academics.tep/Default.aspx?tabid=23785.

**Classroom Environment:**

This course is presented in a professional environment. Turn off cell phones, computers, and electronic devices. Put them away. Do not record conversations or take pictures. The privacy rights of everyone in class are to be maintained. Do not bring food/beverages to class. If for health reason, you need bottled water, it is acceptable in class.

**Disability Statement:**

If a student has or suspects he/she has a disability and needs an accommodation, he/she should contact the Disabled Student Services Office (DSS0) at (915)-747-5148 or at dss@utep.edu or go to Room 106 Union East Building. The student is responsible for presenting to the instructor any DSS accommodation letters and instructions. Once this is done the instructor will in this course will happily comply with all of the requirements.

**Military Statement:**

If you are a military student with the potential of being called to military service and/or training during the course of the semester, you are encouraged to contact me as soon as it appears that your service will interfere with this course. The instructor will work with you to ensure that your service will not adversely affect your academic progress.

**Course Schedules:**

Starts: Monday, August 24, 2009
Final Exam: Wednesday, December 7, 2009, 4 PM – 6:45 PM in LART 210