School Of Mathematical & Natural Sciences Course Syllabus

COURSE: MATH 3413 NUMBER THEORY

PREREQUISITES: A grade of C or better in Math 2213, Calculus I.

SEMESTER: Fall 2008

TIME & ROOM: MWF 9:10–10:00, SC A–3

INSTRUCTOR & OFFICE: Dr. Farrokh Abedi, Science Center A 9, Ext 1216

OFFICE HOURS: MWF 10:00 – 11:00 ,TTH 9:00–11:00
MTWH 2:00–4:00 and by appointment.

REQUIRED TEXT & MATERIAL: Elementary Number Theory, fifth edition by David M. Burton. Strongly Recommended: Texas Instruments TI-83 or TI-83 Plus, or TI-89. A TI-89 will be used by the instructor for classroom demonstrations.

COURSE OBJECTIVES:

1. The focus of the course is to study the fundamental properties of integers.
2. The specific objectives include basic properties of Number System, Congruences, Divisibility, Prime Numbers, Mathematical Induction, Chinese Remainder Theorem,
3. Fermat's Theorem, and Cryptology.

COURSE CONTENT:

The Integers :
Basic Properties, Summations and products, Mathematical induction, Binomial coefficients, Divisibility, Representations of integers and Prime numbers
Greatest Common Divisors and Prime Factorization :
Greatest common divisors, The Euclidean Algorithm, The Fundamental Theorem of Arithmetic, Factorization of integers and the Fermat numbers and Linear Diophantine equations
Congruences:
Introduction, Linear congruences, The Chinese Remainder Theorem, Systems of linear Congruences and Divisibility tests. Perfect Numbers, Mersenne Primes, Fermat's Theorem, the τ and σ Functions, Euler's ϕ-Function, Cryptology and the Pythagorean Triple.

Homework/Quizzes/Others:

Homework will be assigned daily. There will be quizzes and other assignments during the course. You should keep a 3 ring binder containing the following materials:

1) Homeworks & quizzes
2) Definitions and formulas
3) Reviews of at least one articles relating to numbers from the internet.
4) Class notes.
5) Tests

GRADING SCALE:

90-100%----A 80-89------B 70-79------C 60-69------D 0-59------F

GRADING: There are three components to your grade: homework & quizzes, tests and the final examination. These are weighted in the following manner:

Homework, Quizzes & Class Representation	15%
Four Chapter Exams	70%
Final exam	15%

Special Policies:

1. If one test is missed, then the final exam grade will be substituted for that test grade. If two or more tests are missed, then a grade of zero will be given for each missed test other than the first.

2. If no tests are missed and the final exam grade is greater than the lowest test grade, then the final exam grade will be substituted for that test grade.

3. Cheating and plagiarism are unacceptable activities and a grade of zero will be given for every case of verified cheating. In addition, all occurrences will be reported to the Vice Chancellor for Academic Affairs for other possible actions.

4. You are expected to attend all class meetings and make a serious effort to do the assigned work. Poor attendance is the greatest factor in unsuccessful performance in this course and college in general. You cannot possibly learn the material if you do not go to class. Students will receive 20 bonus points to their total quiz points. For each day they miss class, I deduct half a point from the 20 bonus points. The deduction will be rounded down to the closest whole ***number. You are responsible for all material covered in these meetings.

5. Disorderly Conduct: Any behavior which disrupts the regular or normal functions of the University community, including behavior which breaches the peace or violates the rights of others is prohibited under the Student Conduct Code. In particular, **all cell-phones must be off for the entirety of class period**.

Important Dates:

Wednesday, August 20	First day of classes
Tuesday, August 26	Last day to register or add a class
Monday, September 1	Labor Day Holiday
Friday, October 3	Deadline to apply for May graduation
Monday, November 3 – Friday, November 14	Preregistration
Wednesday, November 5	Last day to drop with a W
Wednesday, November 26 – Friday, November 28	Thanksgiving holiday
Tuesday, December 2	Last day to withdraw from class
Friday, December 5	Last day of classes
Monday, December 8 – Friday, December 12	Final exam period
Wednesday, December 10, 8:00 – 10:00	**Final Exam**

Expectations of the Student: Students usually have some difficulty with the course material, especially the content dealing with limits, integrations, sequences and series. It is vital that the student regularly attend class and make a serious effort on the homework. It is recommended that the student spend at least two hours per day outside class to study the material.

Students with Disabilities: It is the policy of the University of Arkansas--Monticello to accommodate individuals with disabilities pursuant to federal law and the University's commitment to equal educational opportunities. It is the responsibility of the student to inform the instructor of any necessary accommodations at the beginning of the course. Any student requiring accommodations should contact the Office of Special Student Services located in Harris Hall Room 120; phone 870 460-1026; TDD 870 460-1626; fax 870 460-1926.