

THE UNIVERSITY OF TEXAS AT EL PASO
COLLEGE OF SCIENCE
DEPARTMENT OF MATHEMATICS

Seminar - 27265 - MATH 5370 – Algebra & Number Theory

6:30 - 7:50 pm	TR	Bell Hall 130A	Spring 2017
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Instructor: Dr. Emil Schwab
Office Location: BH 201
Contact Info: Phone # 747-6758
E-mail address: eschwab@utep.edu

Office Hrs: TR 1:30 – 2:30 p.m. or by appointment

Textbook: A textbook is not required.

Contents: This course is designed for graduate students in the MATM Program to explore arithmetic from an advance standpoint of algebraic structures as an integrated approach. Topics include: groups and rings (in particular, the additive group of integers and its subgroups, the ring of integers and its ideals), arithmetical properties of rings (including divisibility in integral domains, the greatest common divisor, prime and irreducible elements, the Fundamental Theorem of Arithmetic) congruences on groups and rings (in particular, modular arithmetic, Fermat's Theorem, Wilson's Theorem, the Chinese Remainder Theorem) and the ring of arithmetic functions (including Dirichlet convolution, multiplicative arithmetic functions, the Möbius inversion formula, Euler's Theorem, perfect numbers and representation of integers as sums of squares).

Goal: This class deepens students' understanding of concepts, and students' ability to think abstractly and to elaborate rigorous proofs in number theory using algebraic tools.

Exams and Assignments: There will be two exams. Homework will be assign regularly. The homework will not be collected, but will be discussed in class. The exams will include problems from homework.

Grading Policy: Each exam (worth of 100 points) represents 50% of the final grade. The final grade will be determined by the average of the exam's scores respecting the following grading scale:

A 85-100; B 70-84; C 55-69; D 40-54; F below 40.

Make-up Policy: Make-ups/retests will be given only under extraordinary circumstances documented by the student and at the discretion of the instructor.

Attendance & Withdrawal: It is the student's responsibility to attend class, to be in contact with all the information transmitted in the class and to make up the work for the missed class. It is expected that everyone attend every class and arrive on time.

It is the student's responsibility to drop the course, the deadline to drop with an automatic W is **March 30th**, 2017. After the drop deadline the College of Science will not approve any drops (W) and you can be dropped only with an F.

Academic Integrity Policy: Students are required to follow UTEP policy (Academic Dishonesty at UTEP) and to comply with the Regents' Rules and Regulations.
<http://academics.utep.edu/Default.aspx?tabid=23785>
<http://www.utsystem.edu/bor/rules/homepage.htm>

Disability Statement: If you have a disability and need classroom accommodations, please contact The Center for Accommodations and Support Services (CASS) at 747-5148, or by email to cass@utep.edu, or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at www.sa.utep.edu/cass. The student is responsible for presenting to the instructor any CASS accommodation letters and instructions.

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 the instructor as soon as possible.