Course #: Math 5370/16203
Course Title: Seminar – Algebra and Number Theory
Credit Hrs: 3
Term: Fall 2015

Course Meetings & Location: TR 5:00 pm - 6:20 pm in BH 130A
Prerequisite Courses:
Instructor: Dr. Emil Schwab
Office Location: BH 201
Contact Info: Phone # 747-6758
E-mail address: eschwab@utep.edu

Office Hrs: TR: 3:00 – 4:00 pm
Textbook(s), Materials: A textbook is not required.

Course Objectives: This course is designed for graduate students in the
Master of Arts in Teaching - Mathematics (MATM) Program to enhance mathematical thinking and inquiry.
Students are expected to build a solid understanding of some concepts, principles, theorems and proofs, to
develop the ability to think abstractly by elaborating rigorous proofs and to be able to make connections with
the high school material.

Course Contents: 1) Groups and Subgroups. Rings, Subrings and Ideals.
The ring of integers and its ideals.
2) Divisibility on Rings.
g.c.d. and l.c.m. Prime Elements and Irreducible Elements. Fundamental Theorem of Arithmetic
3) Congruences on groups and rings.
Lagrange’s Theorem. Congruence modulo n. Fermat’s Theorem, Wilson’s Theorems and the
Chinese Remainder Theorem.
4) The Ring of Arithmetic Functions.
The Möbius Inversion Formula. Euler’s Theorem.

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 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 Oct. 30, 2015. 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) available at http://academics.utep.edu/Default.aspx?tabid=23785

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.