

COURSE SYLLABUS FOR MATHEMATICS 345-645 (DR. HOWARD)

Title:

Elementary Number Theory I

Text:

Elementary Number Theory, sixth edition by David M. Burton

Prerequisites:

A strong background in high school mathematics, including a good understanding of the basic properties of integers, rational numbers and real numbers, is essential. There are no other formal prerequisites, though some experience with proofs, including induction and proof by contradiction, is recommended.

Course Content:

We will cover the first nine chapters in the text. The main topics are divisibility theory in the integers, primes and their distribution, the theory of congruences, arithmetic functions, the Möbius inversion formula, primitive roots, and quadratic congruences.

Course Goals:

- (a) Students will gain an appreciation of the importance and beauty of the basic ideas in elementary number theory.
- (b) Students will develop and improve problem solving skills.

Methods of Evaluation:

- (a) Homework: Homework problems will be assigned for each class meeting. They will be turned in and graded, and a final homework grade will be determined for each student. There will be class discussion, and student presentations, of homework.
- (b) Tests: There will be two tests and a final examination. They will all be in-class.
- (c) Final Grade: The final grade is determined basically by the scores on the two tests (100 points each) and the final examination (200 points). The homework grade will be taken into consideration: Conscientious effort on the homework is required of all students, and extraordinary effort will be rewarded.

Class Attendance Policy:

Students are expected to attend class and to fully participate in class activities.

Wake Forest Policy on 300 / 600 Level Courses:

Students enrolled in a 600-level course will be held to a higher standard than students enrolled in the corresponding 300-level course. As appropriate, this expectation will be reflected in exams and grades.

Office Hours:

Dr. Howard's office is 337 Manchester. He is usually in his office from 3:00-5:00 pm each day, and you can also see him by appointment. His phone number is 5539 and his e-mail address is howard@wfu.edu