Math 4030-001/Foundations of Algebra/Fall 2017 Syllabus

Course webpage: www.math.utah.edu/∼bertram/4030

Class meets: MW 3:00-4:20 in LCB 225

Instructor: Aaron Bertram   Office: JWB 302

Email: bertram@math.utah.edu

Office Hours: MWF 10-11:30 or by appointment

Text: Instructor's Lecture Notes.

Grading: Based on homework, midterm and final exam scores.

Homework: Assigned on Mondays, collected the following Monday. You are encouraged to discuss the problem sets among yourselves and with me at office hours, but the final write-up must be your own work. Each problem set is worth 10 points, and the top 10 will be counted.

Midterms: Two midterms, in class.

   1st Midterm: Wednesday, October 4 (50 points)

   2nd Midterm: Wednesday, November 15 (50 points)

Final Exam: Tuesday, December 12, 3:30-5:30 (100 points)

Total: 10 problem sets + 2 Midterms + Final = 300 points.

ADA Statement: The Americans with Disabilities Act requires that reasonable accomodations be provided for each student with physical, sensory, cognitive, systemic, learning, and psychiatric disabilities. Please contact me at the beginning of the semester to discuss whether such accommodations are necessary.

Objectives: This is a course on the foundations of algebra, designed for a future teacher of algebra at the secondary level.

   Topics to be covered include: Basic set theory, equivalence relations, logic and truth tables, quantifiers, proof techniques including induction, numbers including unique factorization of integers and the fundamental theorem of algebra, polynomials, Euclidean and unique factorization domains, modular (clock) arithmetic, basic linear algebra applied to field extensions, constructible numbers and some Galois theory.