Class meets: Tuesday & Thursday 11:00–12:15, UH 4002
Instructor: Dr. Nándor Simányi
Office: UH 4014, phone: 934-2154, E-mail: simanyi@uab.edu
Office hours: Mondays and Wednesdays, 1:00–2:00, or by appointment.

**Course Description.** Well ordering and the most important algebraic structures: Rings, Groups, Fields.

**Text:** My weekly handouts and I. N. Herstein: Abstract Algebra. John Wiley & Sons. (A copy of this book can be found on the website dedicated to this class.)

Homework will be assigned on a weekly basis.

**Assessment Procedures.** Student achievement will be assessed by any or all of several measures: Regularly assigned homework problems, two midterm tests, and a comprehensive final exam. A numerical score is given on each of them.

**Class Attendance:** Class attendance is mandatory. One can get a passing grade only if the number of their unexcused absences is not more than 20% of the number of classes!

**Grading Policy.** Student achievement on the items assessed will be used to determine the final grade. The percentage of the final numerical grade assigned to each item is as follows: final exam: 40%; two midterm tests: 20% each; homework 20%. At the end I will “reasonably” curve the overall numerical scores.

**Final exam.** Tuesday, April 25, 10:45–1:15

**Draft Syllabus**

Rings: The Clock Arithmetic
Definitions and examples
Subring, center
Ideals, homomorphisms, quotient rings
Polynomial rings and their structure
Divisibility, irreducible vs. prime elements.
Unique Factorization Domains
Groups: Definition and examples
Subgroups, isomorphisms
Transformation groups
Cyclic groups, order of an element
Coset decomposition, Lagrange’s theorem
Homomorphisms. Normal subgroups and factor groups
The homomorphism theorems
Cauchy’s theorem

Fields: Definition, examples.
Prime fields, characteristics
Field extensions
Elements of Galois Theory