

(—; 3-0-1)

## Modern Algebra

MATH-212\*

Starting with familiar notions about integers (division with remainder), we see how this leads to greatest common divisor and unique factorization into the product of primes. In the process, we are introduced to the concept of a group. Symmetry groups of regular  $n$ -gons provide more examples and equivalence classes, cosets and quotient groups are studied, both abstractly and through these examples.

We revisit the integers and use the ideas with these to examine polynomial ring, quotients and field extensions. Finally, we consider several results about irreducible polynomials with integer coefficients.

**Textbook:** *Abstract Algebra*, 3rd Edition  
by I. N. Herstein (Wiley)

**Prerequisite:** MATH-110.

**Instructor:** D. Pollack

<b>Evaluation:</b>	Final examination	70%
	Mid-term test	20%
	Homework	10%