# Math 4580: Abstract Algebra I

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## 1 January 6, 2025

We didn't have any but Dr. Lipnowski did post a module on `carmen` about the syllabus and the course. This semester we will be covering the first few chapters of the book *Abstract Algebra: Theory and Applications* by Thomas Judson.

**Definition 1**

**Set**: A collection of distinct objects, considered as an object in its own right.

**Axioms**: A collection of objects S with assumed structural rules is defined by axioms.

**Statement**: In logic or mathematics, an assertion that is either true or false.

**Hypothesis and Conclusion**: In the statement "If P, then Q", P is the hypothesis and Q is the conclusion.

**Mathematical Proof**: A logical argument that verifies the truth of a statement.

**Proposition**: A statement that can be proven true.

**Theorem**: A proposition of significant importance.

**Lemma**: A supporting proposition used to prove a theorem or another proposition.

**Corollary**: A proposition that follows directly from a theorem or proposition with minimal additional proof.

## 2 January 8, 2025