Course #:   MATH 551
Title: Abstract Algebra
Description: Basic definitions of rings and modules. Homomorphisms. Sums and products. Exactness. Hom and tensor. Adjoint isomorphism. Free, projective, and injective modules. Chain conditions. Primary decomposition. Noetherian rings and modules. Artinian rings. Structure theorems.

Textbooks:
Algebra, by S. Lang, Third Edition, Graduate Text in Mathematics, 211, Springer.
Algebra, by T. Hungerford, Graduate Text in Mathematics, 73, Springer.

Prerequisite: Graduate Standing

Week	Topics
1	Rings, Homomorphisms, and Ideals
2	Modules and Exact Sequences
3	Continued
4	Free Modules
5	Projective and Injective Modules
6	Continued
7	Hom and Tensor
8	Continued
9	Chain Conditions
10	Prime and Primary Ideals
11	Primary Decomposition
12	Noetherian Rings and Modules
13	Artinian Rings
14	Structure of Rings
15	Continued

Grade Distribution
Exam I   25%
Exam II   25%
Assignments   20%
Final Exam   30%