Math 620: Groups, Rings, and Fields
Fall 2019
Lecture Schedule

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Below is a list of the topics we intend to cover, along with a rough schedule. Actual schedule is subject to change without notice. Last updated October 31, 2019.

Week	Topic	Chapters
8/26 – 8/30	Groups and Subgroups	1.1
	Direct Products	1.5
9/2	*Labor Day: No Classes*	
9/3 – 9/6	Permutation Groups	1.2
9/9 – 9/13	Cosets and Quotient Groups	1.3
9/16 – 9/20	Homomorphisms and Isomorphisms	
	The Isomorphism Theorems	1.4
9/23 – 9/27	Basic Ring Definitions and Properties	2.1
9/30 – 10/4	Ideals, Homomorphisms, and Quotient Rings	2.2
	Isomorphism Theorems for Rings	2.3
10/7 – 10/11	Maximal and Prime Ideals	2.4
	Rings of Fractions and Localization	2.8
10/14 – 10/18	Review for Midterm Exam 1	
	Midterm Exam 1: Thursday, October 17	
10/21 – 10/25	Polynomial Rings	2.5
	Unique Factorization	2.6
	PIDs and Euclidean Domains	2.7
10/28 – 11/1	Irreducible Polynomials	2.9
	Finite Fields	
11/4 – 11/8	Field Extensions	3.1
	Splitting Fields	3.2
	Algebraic Closures	3.3
11/11	*Veteran's Day: No Classes*	
11/12 – 11/15	Modules	4.1
	Isomorphism Theorems for Modules	4.2
11/18 – 11/22	Direct Sums and Product of Modules	4.3
	Module Homomorphisms and Matrices	4.4
11/25 – 11/27	Preview of Combinatorial Commutative Algebra	
11/28 – 11/29	*Thanksgiving Break: No Classes*	
12/2 – 12/6	Category Theory	
	Universal Properties	
12/9 – 12/11	Review for Final Exam	
12/12	**Final Exam: Thursday, December 12**	