

Syllabus

Algebra I

Prof.	Name	Hwang, DongSeon	Sub.	Student	Department	Mathematics
	Position	Associate Professor			Major	Mathematics
	Group	Mathematics				

1. Course Description

This course deals with important basic concepts in algebra such as group actions, rings, and modules together with interesting examples which are important in both algebra and geometry.

2. Teaching Methods

Lecture and Presentation

3. Evaluation

Homework/Presentation: 30%
Midterm Exam: 30%
Final Exam: 40%

4. TextBooks

주교재 : Algebra—A graduate course, I.M. Isaacs, Brooks/Cole 1994

참고도서:

1. Algebra, Lang
2. Algebra, Hungerford
3. The Theory of groups, Rotman
4. Algebra, M.Artin
5. Topics in Algebra, I.N. Herstein

5. Lecture Schedule

Week	Lecture contents	Lesson type	Remark
1	4.1 Group Actions and Permutation Representations	Lecture	
2	4.2 Groups Acting on Themselves by Left Multiplication	Lecture	
3	4.3 Groups Acting on Themselves by Conjugation	Lecture	
4	4.4 Automorphisms	Lecture	
5	5.5 Semidirect Products	Lecture	
6	10.1 Modules	Lecture	
7	10.2 Quotient Modules and Module Homomorphisms	Lecture	
8	중간고사	Midterm Ex	
9	10.3 Generation of Modules, Direct Sums, and Free Modules	Lecture	
10	10.4 Tensor Products of Modules	Lecture	
11	10.5 Exact Sequences	Lecture	
12	10.5 Projective Modules	Lecture	
13	10.5 Injective Modules	Lecture	
14	10.5 Flat Modules	Lecture	
15	11.5 Tensor Algebras, Symmetric and Exterior Algebra	Lecture	
16	기말고사	Final Exam	

6. Others

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