COURSE DETAIL

ALGEBRA II
Country Korea, South
Host Institution Korea University
Program(s) Korea University
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Mathematics
UCEAP Course Number 102
UCEAP Course Suffix
UCEAP Official Title ALGEBRA II
UCEAP Transcript Title ALGEBRA II
UCEAP Quarter Units 4.50
UCEAP Semester Units 3.00

Course Description

This course focuses on the basic concepts and theorems of Ring Theory and Field Theory, which are about generalized and abstracted properties of the set of integers and the set of rational numbers with respect to the four elementary arithmetic operations. Recommended Prerequisite: MATH321.

The course covers the following topics:

- Homomorphisms and Factor Rings
- Prime and Maximal Ideals
- Introduction to Extension Fields, Vector Spaces
- Algebraic Extensions
- Geometric Constructions
- Finite Fields
- Unique Factorization Domains
- Euclidean Domains
- Isomorphism Theorems, Series of Groups
- Sylow Theorems and it applications
- Automorphism of Fields
- The Isomorphism Extension Theorem
- Splitting Fields, Separable Extensions
- Galois Theory
- Cyclotomic Extensions
- Insolvability of the Quintic

Language(s) of Instruction
English

Host Institution Course Number
MATH362

Host Institution Course Title
ALGEBRA II

Host Institution Course Details

https://infodepot.korea.ac.kr/lecture1/lecsubjectPlanView.jsp?year=2023&term=2R...

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department
Mathematics

Course Last Reviewed
2023-2024

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