

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 its 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 Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department

Mathematics

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