Faculty of Eng. & Natural Sci.

MATH512-202102

Algebra II

Instructor(s)

Name	Email	Office	Phone	Web	Office Hours
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Course Content

Modules. Fields, extension fields, Galois theory. Categories and functors.

Objectives

Studying modules, fields, field extensions, Galois Theory

Recommend or Required Reading

Textbook

Dummit and Foote: Abstract Algebra, Wiley and Sons

Morandi: Field and Galois Theory, Springer Verlag, Addison-Wesley

Lang: Algebra

Assessment Methods and Criteria

	Percentage(%)	Number of assessment methods
Final	40	
Midterm	60	2
Exam		0

Learning Outcomes

  At the end of the course, the student should understand the following topics:
- field extensions, in particular finite algebraic extensions
- normal, separable extensions, splitting fields
- the notion of extending field embeddings
- Galois extensions and Galois groups
- the fundamental theorem of Galois theory, examples and some of its applications:
- cyclic and abelian extensions
- solving equations by radicals
- the fundamental theorem of Algebra
-Basics of Module theory
- tensor product of modules
- free, projective and injective modules