

MATH-317

Algebra V - Galois theory

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Cursus	Sem.	Type
Mathematics	BA5	Opt.

Language of teaching	English
Credits	5
Session	Winter
Semester	Fall
Exam	Written
Workload	150h
Weeks	14
Hours	4 weekly
Lecture	2 weekly
Exercises	2 weekly
Number of positions	

Summary

Galois theory lies at the interface of Field Theory and Group Theory. It aims to describe the algebraic symmetries of fields. We will focus on Galois theory for finite field extensions and some applications.

Learning Prerequisites**Required courses**

MATH-211
MATH-215

Important concepts to start the course

Groups, ring and fields.

Learning Outcomes

By the end of the course, the student must be able to:

- Quote the main results from the course.
- Apply the results from the course to other problems.
- Prove the main theorems of the course.

Teaching methods

Lectures and exercise classes.

Assessment methods

One final written exam.

Supervision

Office hours	No
Assistants	Yes
Forum	Yes

Resources**Bibliography**

James Milne: Galois Theory
Chambert-Loir: A field guide to algebra

Ressources en bibliothèque

- [A field guide to algebra / Chambert-Loir](#)

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Références suggérées par la bibliothèque

- [Fields and Galois Theory / Milne \[PDF on author's website\]](#)

Notes/Handbook

Notes will be provided during the course.

Moodle Link

- <https://go.epfl.ch/MATH-317>

Prerequisite for

MATH-328
MATH-417
MATH-429
MATH-482
MATH-489
MATH-494
MATH-535