lmat1361

2023

Galois Theory

5.00 credits	30.0 h + 15.0 h	Q2

Teacher(s)	Caprace Pierre-Emmanuel ;
Language :	French
Place of the course	Louvain-la-Neuve
Learning outcomes	
Evaluation methods	Assessment is based on a written examination during the exam session, covering both theory and exercises. The examination tests knowledge and understanding of fundamental concepts and results, ability to construct and write a coherent argument, and mastery of the techniques of calculation. One or several mini-projects may be proposed during the quadrimester, and contribute to a maximum of 25% of the final grade for the course. This contribution is taken into account only if it is beneficial to the student.
Teaching methods	Learning activities consist of lectures and exercise sessions. The lectures aim to introduce fundamental concepts, to explain them by showing examples and by supplying complete and detailed proofs of the main results. The exercise sessions are fundamental in apprehending the theoretic content and applying it in solving various problems and realizing simple proofs in an independent way.
Content	This course aims at introducing fundamental algebraic concepts from Galois theory and field theory. **The following topics are discussed :** • Polynomial rings. • Field extensions and their automorphisms. • Galois correspondence. • Resolution of polynomial equations by radicals. • Ruler and compass constructions.
Inline resources	Moodle website. Course notes, exercise sheets and projects are gradually posted during the course of the semester.
Bibliography	I. Stewart. Galois Theory. CRC Press, 2015. J.-P. Tignol. Galois' theory of algebraic equations. World Scientific, 2001.
Faculty or entity in charge	MATH

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Additionnal module in Mathematics	APPMATH	5		🔍
Bachelor in Mathematics	MATH1BA	5		🔍