



ALGEBRA 2

Enrollment year	2020/2021
Academic year	2021/2022
Regulations	DM270
Academic discipline	MAT/02 (ALGEBRA)
Department	DEPARTMENT OF MATHEMATICS "FELICE CASORATI"
Course	MATHEMATICS
Curriculum	PERCORSO COMUNE
Year of study	2°
Period	2nd semester (01/03/2022 - 10/06/2022)
ECTS	6
Lesson hours	56 lesson hours
Language	Italian
Activity type	WRITTEN AND ORAL TEST
Teacher	GHIGI ALESSANDRO CALLISTO (titolare) - 6 ECTS
Prerequisites	The courses of Linear algebra and Algebra 1.
Learning outcomes	The course is an introduction to Galois theory, with some complements of group theory and of the theory of modules over a ring.
Course contents	Modules over a ring. Finitely generated abelian groups. Group actions on sets; group representations. Sylow theorems. Field extensions; algebraic and transcendental elements. Ruler and compass constructions. Splitting fields of polynomials. Algebraic closure of a field. Normal, separable and Galois extensions. Fixed fields and Galois groups; the fundamental theorem of Galois theory. Polynomials solvable by radicals.
Teaching methods	Lectures and exercise sessions

Reccomended or required readings	I.N. Herstein, "Algebra", Editori Riuniti. J.S. Milne, "Group Theory", http://www.jmilne.org/math/CourseNotes/gt.html. D.J.H. Garling, "A Course in Galois Theory", Cambridge University Press. J.S. Milne, "Fields and Galois Theory", http://www.jmilne.org/math/CourseNotes/ft.html. M. Artin, "Algebra", Bollati Boringhieri. P. Aluffi, "Algebra: chapter 0", American Mathematical Society.
Assessment methods	The exam consists of a written test, during which the student must solve some exercises, and of an oral examination, during which the student must answer some questions, mainly of a theoretical nature.
Further information	
Sustainable development goals - Agenda 2030	\$lbl_legenda_sviluppo_sostenibile