

Anno Accademico 2015/2016

Enrollment year2014/2015Academic year2015/2016RegulationsDM270Academic disciplineMAT/02 (ALGEBRA)DepartmentDEPARTMENT OF MATHEMATICS "FELICE CASORATI"CourseMATHEMATICSCurriculumPERCORSO COMUNEYear of study2°Period2nd semester (01/03/2016 - 10/06/2016)ECTS6Lesson hours56 lesson hoursLanguageITALIANActivity typeORAL TESTPreroquisitesThe courses of Linear algebra and Algebra 1.Learning outcomesThe course is an introduction to Galois theory, with the necessary complements of group theory and of the theory of modules over a ring.Course contentsModules over a ring. Group actions. Sylow theorems. Soluble groups. Field extensions. Splitting fields. Galois theory.	ALGEBRA 2		
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	Field extensions. Splitting fields: existence and unicity. Galois correspondence. Normal extensions. Separable and inseparable extensions. Galois extensions. The fundamental theorem of Galois theory. Primitive Element Theorem. Galois theory for finite fields. Cyclotomic polynomials and their irreducibility. Galois group of a cyclotomic polynomial. Cyclic extensions. Polynomial solvable by radicals. The general polynomial of degree >4. Equations with integer coefficients which are not solvable by radicals. Cubics and quartics.
Teaching methods	Lectures and exercise sessions
Reccomended or required readings	I.N. Herstein, Algebra, terza edizione, Editori Riuniti, Roma 1993.
	D.J.H. Garling, A Course in Galois Theory, Cambridge University Press C. Procesi, Elementi di Teoria di Galois, Zanichelli
	M.F. Atiyah, I.G. MacDonald, Introduzione all'algebra commutativa, Feltrinelli, 1981.
	M. Artin, Algebra, Bollati Boringhieri, Torino 1997.
	I.N. Stewart, Galois Theory, second edition, CRC Press.
Assessment methods	Written and oral exam
Further information	Written and oral exam
Sustainable development goals - Agenda 2030	<u>\$Ibl_legenda_sviluppo_sostenibile_</u>