

MODULE DESCRIPTOR

MODULE TITLE	FIELDS AND GALOIS THEORY		
MODULE CODE	MA3811 (L6)	CREDIT VALUE	20 CREDITS (10 ECTS)
CAMPUS	UCLAN CYPRUS		
SCHOOL	SCHOOL OF SCIENCE		

MODULE AIMS

The aim of this course is to study fields, particularly subfields of the complex numbers, and their subfield structure by using Galois groups.

MODULE CONTENT

Fields and polynomials: Integral domains, fields, characteristic, cyclotomic polynomials.

Extensions: degree, algebraic, simple, minimum polynomials, splitting fields, normal, separable.

Galois Groups: construction, fixed fields, Galois correspondence, fundamental theorem of Galois theory.

INTENDED LEARNING OUTCOMES

On successful completion of this module a student will be able to:	
1.	Prove properties about fields and extensions.
2.	Determine degrees of extensions using minimum polynomials.
3.	Evaluate Galois groups and fixed fields.
4.	Determine the subfield structure of an extension using the Galois correspondence.

TEACHING METHODS

The module will be delivered on campus. The direct contact will consist of lectures. During these lectures theory will be introduced and developed. Examples will be demonstrated throughout the module during these lectures. The lectures will also contain assisted problem solving. Regular non-assessed work sheets will be provided. Due to the interdependency of all the material and the forward and reverse reinforcement, the students have maximum understanding of all the material at the end of the module. Thus, a single end-of-module exam is the best way to assess the students.

ASSESSMENT METHODS

The module is assessed through a Written examination.