

## Liverpool John Moores University

Title: NUMBER THEORY AND ALGEBRA 2  
Status: Definitive  
Code: **6116EDSTUD** (117578)  
Version Start Date: 01-08-2018

Owning School/Faculty: Education  
Teaching School/Faculty: Education

Team	Leader
Amir Asghari	Y

**Academic Level:** FHEQ6      **Credit Value:** 24      **Total Delivered Hours:** 51  
**Total Learning Hours:** 240      **Private Study:** 189

### Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	20
Workshop	28

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Portfolio	Problems	Portfolio of number theory proofs and problems	50	
Exam	Exam	Terminal exam	50	3

### Aims

*To develop basic number theory, using conjectures, theorems, proofs and applications. To introduce the concept of algebraic structure and enable an appreciation of how these structures are used throughout mathematics.*

### Learning Outcomes

After completing the module the student should be able to:

- 1 Select and use appropriate mathematical techniques to the solution problems drawn from the field of algebraic number theory in unseen contexts
- 2 Apply algebraic number theory to solve a number of practical problems
- 3 Understand the development of number theory and algebra through solving historical problems

### **Learning Outcomes of Assessments**

The assessment item list is assessed via the learning outcomes listed:

Collection of problems	2	3
Terminal assessment	1	

### **Outline Syllabus**

*Axioms*

*Algebraic numbers and similar structures*

*Rings of integers and similar structures*

*Irrational and transcendental numbers*

### **Learning Activities**

Mathematical concepts will be explored in of interactive lectures and workshops backed up by tasks for independent learning. These will use a mix of media e.g. web-based materials including video tutorials and on-line practice exercises, practical activities using ICT as well as more traditional text-book approaches

### **Notes**

Optional course for Mathematics and Education Studies