Subject Information Guide

Introduction to Algebraic Number Theory

Semester 1, 2014

Administration and contact details

Host Department	**School of Mathematics and Applied Statistics**
Host Institution	**University of Wollongong**
Name of lecturer	**Nathan Brownlowe**
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Subject details

Handbook entry URL	Click here to enter text.
Subject homepage URL	Click here to enter text.
Honours student hand-out URL	Click here to enter text.
Start date:	**3/03/2014**
End date:	**6/06/2014**
Contact hours per week:	**2.5**
Lecture day and time:	**Monday 10.00-12.30 (Tentative at this stage)**
Description of electronic access arrangements for students (for example, WebCT)	Click here to enter text.

Subject content

1. **Subject content description**

   We start with the required background from abstract algebra, including rings, integral domains, fields and field extensions. We then introduce algebraic number fields and their ring of integers. We spend the rest of the subject studying properties of the ring of

integers in a number field, including its description as a free module, the discriminant, its ideal structure and the unique factorisation of ideals, and the class group.

2. **Week-by-week topic overview**

   TBA

3. **Assumed prerequisite knowledge and capabilities**

   Basic knowledge of abstract algebra and number theory

4. **Learning outcomes and objectives**

   Develop an understanding of the abstract algebra involved in algebraic number theory
   Develop an understanding of the main objects of study in algebraic number theory
   Develop an understanding of the properties of rings of integers in number fields

5. **Learning resources**
   Printed notes

6. **Assessment**

Assignments and final exam. Weightings and dates TBA.

Exam/assignment/classwork breakdown					
Exam	Enter %	**Assignment**	Enter %	**Class work**	Enter %
Assignment due dates		Click here to enter a date.	Click here to enter a date.	Click here to enter a date.	Click here to enter a date.
Approximate exam date				Click here to enter a date.	

Institution Honours program details

Weight of subject in total honours assessment at host department	1/8
Thesis/subject split at host department	**BMath(Hons): Thesis worth 25%** **BMathAdv(Hons): Thesis worth 37.5%**
Honours grade ranges at host department:	
H1	85-100
H2a	75-84
H2b	65-74
H3	50-64