

3601 (An Introduction to Mathematica)

<i>Year:</i>	2014–2015
<i>Code:</i>	MATH3601
<i>Level:</i>	Advanced
<i>Value:</i>	Half unit (= 7.5 ECTS credits)
<i>Term:</i>	2
<i>Structure:</i>	4 hour classes per week
<i>Assessment:</i>	4 or 5 computer tests
<i>Normal Pre-requisites:</i>	Some programming knowledge is desirable, as covered in the post-examination course on Python
<i>Lecturer:</i>	Dr JA Haight

Course Description and Objectives

The Mathematica system is a high-level computing environment including computer algebra, graphics and programming. At the basic level, it can be used as a scientific calculator; at more advanced levels, it incorporates all the features of classical programming languages such as PASCAL, LISP, MIRANDA, C, etc. It is particularly suitable for mathematics, as it incorporates symbolic manipulation and automates many mathematical operations.

The aim of this course is to give all students a basic competence in its use, while encouraging more talented students to explore some of its advanced features.

Detailed Syllabus

Basic Mathematica use. Different styles of programming: functional programming, procedural programming, rule-programming, list and data manipulation, graphics, use of packages. If time allows, introduction to object-oriented programming or other topics.