

## **Course content for MT4000, MSci Project**

### **Prerequisites:**

Successful completion of Year 3

### **Aims:**

- To enable students to make a detailed study of one topic in mathematics;
- To develop their skills in finding and analysing information from a variety of sources;
- To develop their skills in writing and talking about mathematics.

### **Learning outcomes:**

On completion of the project students should

- be able to extract information from books and research papers;
- be able to write a coherent report;
- be able to give a clear presentation on a mathematical topic;
- understand the relevance of the project material to the appropriate branch of mathematics.

### **Course content:**

In the third term of the third year each student should decide on a project and a supervisor. A list of members of staff and the areas of mathematics in which they are willing to supervise projects can be found from the Departmental web site, or from the student's adviser. The choice of supervisor is by agreement with the student, the supervisor and the course co-ordinator. The topic and supervisor must be notified to the MSci Co-ordinator by the end of Term 3.

The task of the supervisor is to advise, not to direct the project. The student should discuss the project regularly with the supervisor; in particular the student must agree a title, outline, and supervision plan with the supervisor and give it to the Co-ordinator by October 31st. The student is expected to investigate in depth some branch of mathematics and write a report upon the investigation. The subject studied may vary from giving an overview of a broad area to a detailed analysis of a very narrow field.

The examiners will look for evidence that the student has understood the material and is able to present it coherently. The report should be word processed and approximately 10,000 words (30 pages of A4) in length. Overlong reports will be penalised. Factors which will be taken into account include the following:

1. Appreciation of the relations of the results described to one another and to the rest of mathematics.
2. Elaboration and extension of your source material.
3. Selection of material where choices exist.

Original research will be encouraged and rewarded, but is not expected.

### **Teaching and Learning Methods:**

The supervisor will point the student to sources of information, such as books, research papers, databases and suitable software as needed. An introduction to mathematical word processing will be given early in Term 1. There should be regular meetings with the supervisor, total 15 hours. The Department will provide advice and facilities as required to enable the student to produce a neat final version of the dissertation and visual aids for the presentation.

