

Research Skills for Computational Applied Mathematics

20 credit year long course

This is a broad-based course that provides training and practice in research practice, including:

- computational work (taught through Python exercises and workshops)
- oral presentation
- report writing
- group work
- and other secondary skills

All of these are essential for all those pursuing careers in research in computational applied mathematics.

Content

- During S1, the course is delivered through a series of lectures and workshops. These relate to specific content in ordinary differential equations, stochastic differential equations and partial differential equations.
- You will gain practical experience in applying some of the algorithms and numerical methods described in lecture by writing Python codes and preparing notebooks that present your solutions.
- The emphasis is on skills training and high quality presentation of numerical results.
- You will also attend seminars in the Computational Applied Mathematics seminar series. One of these seminars will form the basis for a presentation that you prepare and give in the last week of the term. You will also write a technical summary of the work presented in a seminar (which can be the same as the topic of your presentation).
- In S2, we have some further preparation including an individual assignment in which you write a paper review, and lectures on a variety of special topics.
- The main focus in S2 is on the group research project work you will undertake in supervised groups of 4 students, typically. These projects include study of related academic literature, numerical experimentation, analytical work, and careful preparation of a written report and presentation, given toward the end of the term.