

Dr Thomas Ostler

York, North Yorkshire
Tel: 01904 434623
Mobile: 07967444198
Website: tomostler.co.uk
Email: tomostler13@googlemail.com

Teaching Experience

During my PhD and postdoctoral positions I have gained a wide range of experience in teaching to undergraduates. I have had the opportunity to deliver teaching in a range of formats such as, tutorials, (invited) workshops, problem classes and demonstrating. As well as sampling a range of subjects as discussed below. I have enjoyed these parts of my work, in particular the interaction with the students and am keen to develop these skills going forward and take charge of lecture courses and develop my own teaching skills and style.

My experience in this area is outlined below with a brief introduction to the format and my role during my time involved in the courses.

Computational Laboratory Demonstrator: 3 years

Frequency – Once or twice per week for 2/3 semesters per year.

The computational physics laboratory for 2nd and 3rd year undergraduate students forms a core part of the theoretical/computational physics degree at the University of York. The format of the laboratory involves the introduction of the subject matter and the main motivation for the study. During the 3rd year lab I was responsible for introducing the Ising model of ferromagnetism fitting with my experience during my PhD. The students were encouraged to write and debug their own code and keep a record of the results and progress in the usual manner. As a demonstrator my main task was to guide the student through the project without writing the code for them, as well as marking of laboratory handbooks. The role required knowledge of the particular script as well as general theoretical approaches, such as, numerical integration, Monte Carlo and finite difference methods.

Mathematics Tutorials and Workshops: 2 years

Frequency – Once per week, one or two semesters per year.

During the semester a particular (usually core) lecture course would be complimented with tutorials. These usually involve groups of 5/6 people where I was expected to ensure that the students understood the material from the previous weeks and then guide them through a set of problems or derivation to help with understanding. This required preparation of material and engaging with the students in a way that allowed them to feel comfortable and ask questions and use the white board.

As well as tutorials in Mathematics I was also involved in so-called “workshops” whereby the students were arranged into larger groups, usually of around 20-25 students and given a set of problems to complete. The role was then to help the students through the problems and improve their understanding in the process. This requires a good knowledge of the underlying material and good interpersonal skills with the students themselves.

High Performance Computing Laboratory: 1 semester

Frequency – Every two weeks for one semester.

One of the most popular masters degree courses for the theoretical physics degree involves a large module on high performance computing. The course introduces various formats such as openMP, MPI and CUDA. My background in MPI and CUDA allowed me to demonstrate in the practical sessions of this course in a similar manner to the computational physics laboratory.

Marking (multiple courses): 2 years

Frequency – Once per week across multiple semesters.

Throughout my PhD I was involved in marking “weekly problems” that the students have to hand in for a range of courses, such as, quantum mechanics, solid state theory, Newtonian mechanics, optics and mathematics. This role involves spending time ensuring that the students have followed appropriate steps to arrive at a particular answer and where appropriate provide constructive criticism and feedback on where to improve their knowledge and understanding.

Solid State Physics (tutor): 1 year

Frequency – Every two weeks for one semester with 6 groups.

This involved leading small (5 or 6 pupils) groups of students through any difficulties experience during the solid-state course. This involved encouraging the students to discuss openly their issues with the course and leading them by examples to understand the course material.

Quantum Mechanics (tutor): 1 year

Frequency – Every two weeks for one semester with 6 groups.

The format is identical to the tutoring of the solid state course above,