Overview
This module develops academic and transferable skills in problem-solving, team-work, information retrieval and analysis, mathematical modelling of physical systems, numerical/computational work applied to physics, presentation skills and study skills. It is a core module for the level one programme "Physics and Astronomy (Gateway)".

Aims & Objectives
The second Gateway skills module is designed to build upon the PH1502 module. Students will develop their understanding of the core material covered in PH1012 as well as continuing to practise and enhance their basic mathematical skills and lab skills developed in semester 1. This is brought about by a series of workshops, supported self-study sessions as well as group exercises covering topics designed to run alongside material developed in PH1012 and MT1002.

Learning Outcomes
By the end of this module, students should

- have developed their fundamental subject knowledge and be able to express scientific ideas to their peers;
- be able to work independently and as part of a group;
- have experienced and demonstrated different methods of studying;
- have enhanced their communication skills by applying their subject knowledge to a particular topic and presenting their finding to their peers at an appropriate level.

Synopsis
Problem solving: problem solving strategies, peer instruction tutorials and regular problem solving workshops relevant for the material covered in PH1012. Practical laboratory work to develop basic lab skills. Independent research into a chosen area of physics.

Study skills and Communication: The production of revision summaries, regular reflection on own learning and supported study sessions. The creation and presentation of a poster on a chosen area of physics.

Computational skills: Introduction to basic programming techniques in Mathematica. Computational modelling and visualization of physical systems.

Pre-requisites
Entry to Physics and Astronomy (Gateway) or International Gateway Programmes

Anti-requisites
None
Assessment
Coursework = 100%

Made up of problem solving and study skills exercises (50%), Mathematica short course (20%), practical work (15%), poster development and presentation (15%)

(Reassessment 60% new assignments, 40% carried through from semester)

Additional information on continuous assessment etc

Recommended Books
Please view University online record:
http://resourcelists.st-andrews.ac.uk/modules/ph1503.html

General Information
Please also read the additional information in the School's handbook for first and second level modules.