PX451-15 Astrophysics Laboratory III

22/23

Department
Physics
Level
Undergraduate Level 4
Module leader
Andrew Howes
Credit value
15
Module duration
10 weeks
Assessment
100% coursework
Study location
University of Warwick main campus, Coventry

Description

Introductory description

The module builds on experience gained during the first and second year laboratories. The work is less structured than in earlier years, more open ended and normally performed in groups of three. You are expected to take more responsibility for the planning and direction of your work than in previous years. This will prepare you for independent research within a team, and for the project work next year.

Module web page

Module aims

To develop experimental skills

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

There are 10 scheduled sessions from 11am to 5pm. Many of the experiments require data collection over an extended period of time, so some work outside the scheduled times is expected. Students will perform 3 experiments, one of which will be a computer experiment. Students will

normally work in groups of three. Where possible, variations in the experiments are encouraged. A joint report, in the form of a publication, will be submitted from each group one week after completing the experiment.

The laboratory is staffed by members of academic staff and postgraduate demonstrators. There is a interaction between staff and students throughout the operation of the laboratory, and also outside formally timetabled hours.

Learning outcomes

By the end of the module, students should be able to:

- Progress, and report on, an experimental study in collaboration with others
- Start an experimental project
- Acquire and process data on a computer
- Use models and simulations to describe complex physical systems

Subject specific skills

Analysis of techniques and results, computer simulation, discussing with collaborators, writing in research paper format

Transferable skills

Analytical, communication, IT, organisational, problem-solving, self-study

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Study

Study time

Type	Required
Lectures	1 session of 3 hours (2%)
Practical classes	9 sessions of 6 hours (36%)
Private study	93 hours (62%)
Total	150 hours

Private study description

Analysis of techniques and results, discussing with partners, maintaining lab book, reading and working through background material, report-writing

Costs

No further costs have been identified for this module.

Assessment

You do not need to pass all assessment components to pass the module.

Assessment group A

	Weighting	Study time
Reports on the experiments completed Report written in research paper format	100%	

Feedback on assessment

Written and oral comments from the markers, interaction with demonstrators in the laboratory

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Availability

Courses

This module is Core for:

- Year 3 of UPXA-F3FA Undergraduate Physics with Astrophysics (MPhys)