

PHY480

Research Project in Physics & Astronomy



The
University
Of
Sheffield.

A Guide to Semester 2

Submission of Written Report and the Oral Examinations

Paper copies of final reports are due at the department office on the date posted on the fourth year web site. This is usually the Friday of reading week in semester 2. Oral examination times will vary from student to student. We will endeavour to schedule most of the oral exams during the exam period, but in a week where there are few written examinations. Usually this is the 3rd week of exams, although this is subject to the exam timetable.

Aims During the 2nd Semester

During semester 2 of your PHY480 work you should:

- Carry out the main body of the research work pertaining to your project.
- Continue to maintain records of your research in your log book.
- Write a final report on your project and prepare a presentation.
- Develop an understanding of the physics and/or astronomy underpinning the project.
- Draw conclusions from your research work.
- Develop the ability to communicate what you have done, your understanding of the subject, and conclusions you have reached.

A Guide to keeping log books.

Research work consists of a series of investigations, often building one upon the other towards some goal or key result. A log book is like a journal of your research work suitable for fellow researchers to read. You should use it to document the investigations that you do, with a good structure for documentation being 'aim, method, results, conclusion'. Plots, figures and drawings can be taped or pasted in. You should write the date on every new day you write in the log book. It should be legible.

A good rule is never to remove pages or plots, even when the work turned out to be wrong or lead to a dead end. Errors should be crossed out with a single line, and a brief explanation of why they were crossed out if this is helpful. A log book is a good place to record incidental information useful to your research - details of how to use equipment, contact information for people with whom you are working or who you might want to speak to, lists of items you need to obtain or make, locations of files or programs on the computer you are using, etc. If you keep a good log book, it will be a useful asset to you in doing your research, and it will certainly assist you when you come to compose your poster and report. Finally, your log book will allow you to see if you are managing the project well, doing sufficient work each week to build towards the final goal of the project. Think of log book keeping as a learning outcome of the project; if you go on to do further work in science research learning to keep a good log book is essential.

Time Allocation

Approximately twenty one hours per week of effort should go into the project in the spring semester. This is a factor of three more time per week than in semester one, reflecting the thirty credits carried by the written report and viva as opposed to ten credits in the autumn semester.

Supervisor Contact

A meeting should take place at least once a week to discuss progress. Sometimes your faculty supervisor may direct you to work with another staff member on your project. In these cases, most of your contact will be with this staff member, but it is required that you meet with your faculty supervisor every two weeks to discuss progress. Your log book should provide a vehicle for this discussion, and your faculty supervisor should sign and date this log book every two weeks.

Assessment

The 2nd semester assessment will be based on your supervisor's assessment of your project work, a written report approximately 20 pages in length, the contents and presentation of your log book, and an oral examination conducted by your supervisor and a second member of staff. The results of this assessment will collectively make up 75% of the overall credit (40 credits) for PHY480. See the pie chart at the end of this document for an overall breakdown of PHY480 assessment.

Working with a Partner

The same guidelines for working with a lab partner apply as applied in semester 1. It should be clear from your report, and your conduct in the viva, what contributions you yourself made to the research. Assessment is per student, not per partnership.

Assessment Panel

Your supervisor plus one other member of the PHY480 assessment panel, E. Daw, S. Cartwright, D. Whittaker, N. Cowlam or P. Crowther.

Plagiarism

The report must be entirely the student's own work. Students may face an allegation of plagiarism if work

- has been written or dictated wholly or partly by another person;
- has been wholly or partly copied from the work of another person, with or without that person's knowledge or consent;
- contains quotations from the work of others which are not acknowledged; or
- consists wholly or largely of the work of others even if the sources are acknowledged.

Penalties for plagiarism depend on the seriousness of the offence, but range from the docking of marks to the awarding of a zero grade. In some cases the University has refused to award degrees to plagiarists.

A Guide to the Written Report

The report should be written so as to be understandable to a non-specialist physics graduate and should, where appropriate, follow the standard structure of a scientific publication, and should be word processed.

It should begin with an abstract of about 150 words summarising the work and its conclusions. This should be followed by an introduction describing the background to the problem and the state of understanding at the commencement of the work.

The main body of the report should include a discussion of any experimental methods, theories, etc. relevant to the conduct of the project. Wherever appropriate adequate references should be cited in the text and a Reference list placed at the end of the report.

Experimental results should normally be shown in graphical or tabular form but large tables of data should not be included. Figures should be numbered in sequence with appropriate captions accompanying each one. Legends, annotations and axes labels, including units, must be clearly indicated. Figures taken or adapted from published sources should be appropriately referenced.

The report should end with a conclusion section which provides a critical discussion of the results obtained, places the work in its proper context and, if appropriate, makes suggestions for further related work.

Although the actual length is difficult to prescribe, as an indication Year 4 project reports should aim not to exceed 20 pages. This allocation does not include appendices which may be appropriate for some projects. For example you may want to include a source code listing of a computer program.

The main criteria for assessment will be the coherence of the scientific argument, the level of understanding displayed and the extent to which the structure and content are appropriate for the subject. However marks may be deducted (up to 20% in a 'worst case' scenario) for poor written English - this includes spelling (remember to use the 'spell check' facility on the word processor), syntax and punctuation. Allowance will be made for students whose first language is not English.

A Guide to the Oral Examination.

Each oral examination will begin with an invitation to present a 10 minute informed presentation to the two examiners giving an overview of the project work. This should be kept general at this stage and you must resist the temptation to become involved in the minutiae. As a general guide assume you are at an interview for a post and a non specialist asks you to describe, very briefly, what the project was about. Note that this is a verbal presentation only, like a mini Ph.D. thesis viva. You will not be able to show powerpoint slides, etc, as you would not be able to in a Ph.D. viva.

In the main part of the examination you will be expected to show a good understanding of the problem, the content of the report and other relevant background physics. You should bring with you a copy of your report, as questions may refer specifically to it. You will be allowed to consult your report in answering questions.

It is an opportunity to clarify ambiguities and possible omissions in the report.

Questions will be those judged relevant to the project work and should normally be straightforward to answer if you carried out the work thoroughly and thoughtfully.

Questions about PHY480

If you have questions, comments, or complaints about any aspect of PHY480, feel free to approach me in confidence: E. Daw, D28, Hicks, X2-4353, e.daw@shef.ac.uk. Alternatively, complaints can be addressed to D. Mowbray, head of the teaching committee, or through the staff/student committee.

PHY480 on the web

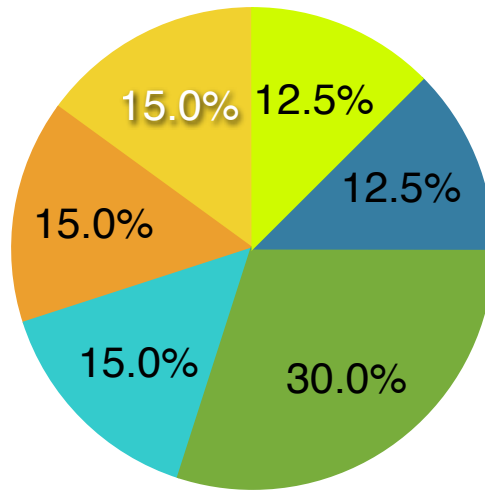
All of the information above is available on the web at

<http://www.shef.ac.uk/physics/teaching-resources/fourth-year>

Assessment Breakdown for PHY480

Bear in mind that this pie chart reflects the overall assessment structure for PHY480. A quarter of the assessment is based on your autumn semester work, and has already been completed.

- Poster content
- Poster oral discussion
- Written report content
- Viva
- Supervisor assessment
- Log book



Assessment forms for the Spring Semester portion of PHY480 are reproduced on the final three pages of this document.