

## Notes for the Project Reports for PHYS488

**Your group needs to hand a joint group report. This can be submitted into VITAL by one person from the group as long as all names are listed on the report. In addition EACH of you will need to submit an individual report.**

**The official hand in date is the end of week 11.**

**ALSO, along with the reports (or before) you need to hand back the “Programming with Java” book, either to Dr. Vossebeld or to the Physics Student Office.**

Your project is based around studying a physics problem. **The project presentation and the project group report should explain the problem you have tried to simulate and present convincing evidence that you and your group have understood the important physics issues and OO concepts, and that you have produced and tested(!) Java code based on suitable assumptions for the project.**

This is a similar philosophy to that governing any scientific report or presentation. It will be read by someone who knows nothing about your work, so it's up to you to explain what you did, why you did it and most of all that you have done a good job of it.

Suggested general outline for the **GROUP report**:

**Abstract:** A short summary of what the project was about and the principal outcomes.

**Introduction:** Explain the background and the motivation for your project. Describe the main challenges and discuss the most important assumptions you have made. If needed, introduce important computing or numerical tools you have used. Your introduction should focus on the work done by the group and the motivation for it. You should provide some context to the project, but an overly detailed account of the wider top is not required. When you need to reference a book, article or website use one of the approved methods, see e.g. <http://www.nottingham.ac.uk/is/documents/about/inductionguides/references.pdf>

**The Java Language.** Assume the reader is not familiar with Java. Avoid unnecessary technical detail! Rather, try to give the reader an understanding of the overall structure of the code and discuss some of the main features of the language and how you used these in you code. The focus should be on the Object Orientated aspects of the language such as Classes, class methods, instance methods and *abstract data types*.

**Results/Measurements:** Describe the particular problem you had to tackle and the assumptions you had to make. *Present evidence(!!!)* that your java code produces reasonable results (discuss the desk checks you performed). Present the results, making **extensive** use of graphs, tables charts, pictures and any other visual aids at appropriate places in the text (not all banished to the appendix).

**Group work.** Discuss the work your group did and write a brief summary of what the group achieved and how the work was organised and shared out.

**Conclusion:** Discuss the whole project. What can be learned from your work and what are the limitations. Point out specific problems and suggest how the project could be carried forward.

**Bibliography:** With *author, title, publisher, and date* for each reference.

**Appendix:** A *structured and indexed collection* of detailed **relevant** misc. items, **e.g.**

Hard copies of computer output.

Full listings of any computer programs developed.

Crucial extracts from Web sites used as a reference.

etc. etc...

**Exploration of a particular aspect of your model. Each person should arrange to explore a different aspect of the possible parameter space of the model you produced as a group.** For example, one person could explore the consequences of having a target of different thickness, another could investigate the effect of varying the beam energy. Agree with each other the area you **EACH** will investigate well before the project finishes; see **Dr Vosseveld or Dr King in good time if you can't resolve this issue.**

Suggested outline for the **INDIVIDUAL reports:**

The individual reports can be shorter than the group report, but should still follow the layout of a standard report. They should contain two components:

**Part I:** A description of the code you (as an individual) wrote, debugged and tested (15%). What was its purpose? What approach did you choose?

**Part II:** A description of studies you performed of one or more physics aspects of your group project, using the final group program (15%).

**Warning:** it takes a surprising amount of time to make graphs, charts etc. to put in a report. Start making these early on, so you are not rushing to produce them at the last minute.