Confirmation that this version of the module specification has been approved by the School Learning and Teaching Committee:

………19th June 2015………………………………………….

**MODULE SPECIFICATION**

1. **Title of the module**

PH603 Physics group project

1. **School or partner institution which will be responsible for management of the module**

School of Physical Sciences

1. **Start date of the module**

Revised specification; start date September 2015

1. **The number of students expected to take the module**

60-80 students

1. **Modules to be withdrawn on the introduction of this proposed module and consultation with other relevant Schools and Faculties regarding the withdrawal**

Existing module

1. **The level of the module (e.g. Level 4, Level 5, Level 6 or Postgraduate Level 7)**

Level 6

1. **The number of credits and the ECTS value which the module represents**

15 credits (7.5 ECTS)

1. **Which term(s) the module is to be taught in (or other teaching pattern)**

Spring, with introductory workshops in Term 1.

1. **Prerequisite and co-requisite modules**

None

1. **The programmes of study to which the module contributes**

All BSc programmes for Physics, Physics with Astrophysics, and Astronomy, Astrophysics and Space Sciences

This is not available as a wild module

1. **The intended subject specific learning outcomes**

**On successfully completing the module students will have:**

 11.1 An ability to identify relevant principles and laws when dealing with problems, and to make approximations necessary to obtain solutions.

 11.2 An ability to present and interpret information graphically.

 11.3 An ability to communicate scientific information, in particular to produce clear and accurate scientific reports.

 11.4 An ability to make use of appropriate texts, research-based materials or other learning resources as part of managing their own learning.

1. **The intended generic learning outcomes**

**On successfully completing the module students will have:**

12.1 Problem-solving skills, in the context of both problems with well-defined solutions and open-ended problems; an ability to formulate problems in precise terms and to identify key issues, and the confidence to try different approaches in order to make progress on challenging problems. Numeracy is subsumed within this area.

12.2 Investigative skills in the context of independent investigation including the use of textbooks and other available literature, databases, and the interaction with colleagues to extract important information.

12.3 Communication skills in the area of dealing with surprising ideas and difficult concepts, including listening carefully, reading demanding texts and presenting complex information in a clear and concise manner. C&IT skills are an important element to this.

12.4 Analytical skills – associated with the need to pay attention to detail and to develop an ability to manipulate precise and intricate ideas, to construct logical arguments and to use technical language correctly.

12.5 Personal skills – the ability to work independently, to use initiative, to organise oneself to meet deadlines and to interact constructively with other people.

1. **A synopsis of the curriculum**

The introductory workshops cover the general objectives of the module and a presentation of the specific topics available in the current year (students are explicitly encouraged to offer alternate topics provided they are able to secure the agreement of the module convenor). Additional workshops provide opportunities to discuss and share ideas, and to introduce what is needed within a successful presentation (the presentations are filmed, and the resulting DVD used for detailed feedback and for other purposes provided that the informed written consent of all group members is forthcoming). There is a distinct ‘role play’ element to the conduct of the module. Students *may* be given the opportunity to define their own groupings provided that there is overall agreement within the peer group, but the convenor will retain the right to define both the overall parameters (e.g. the number of students to be in each group) and the final assignment of students into groups if that proves to be necessary. Students then make a choice of topic and elect their group project manager. The groups arrange their own regular meetings, which will be minuted; the supervisor may be present at these sessions. The group will produce a word-processed report on the work undertaken; it will also present the work in appropriate ‘public’ forms (a poster and a talk). The report will include a statement on the group’s project methodology, presented in the context of their initial draft work plan and tasks assignment, as well as a statement describing the individual contributions to the group’s aims and objectives.

The project themes vary widely depending on student preferences/interests, but for example could fall in one of the following general categories:

* linked specifically to the goals of a suitable industrial partner;
* off-campus interactions, such as working with a school physics group or small business in the local area;
* the production of an instruction booklet, teaching aid or video aimed at a pre-define audience;
* a design project for a piece of instrumentation or a computational code;
* a survey or analysis of a physics-centred contemporary issue of scientific, social, political or ethical interest or concern;
* the input of physics to interdisciplinary issues such as those associated with environmental or conservation science.
1. **Indicative Reading List**

This is necessarily bespoke to the project itself.

1. **Learning and Teaching Methods, including the nature and number of contact hours and the total study hours which will be expected of students, and how these relate to achievement of the intended module learning outcomes**

*Workshops* (6h) – provide the opportunity to discuss and understand the nature and the requirements of a group project; 12.2, 12.3, 12.5

*Lecture* (1h) – to agree an outline of what is expected and required in the context of the project presentation; 11.2, 11.3, 12.3, 12.5

*Presentation and feedback* (~8h) – to provide the opportunity to present the group’s work, and subsequently to replay the recording of the project presentation in order to provide the opportunity for self-appraisal and the sharing of best practice; 11.1, 11.2, 11.3, 12.1, 12.2, 12.3, 12.4, 12.5

*Intra-group project planning and implementation meetings* (~41) – provide the opportunity for the group to work towards and finalise the synthesis of their final output; 11.3, 12.2, 12.3, 12.5

*Private study, leading to the synthesis of a group Report and a Poster* – to provide the opportunity for the individual student to generate material towards the work of the group and according to the group’s work plan/task list (~94h); 11.1, 11.2, 11.3, 11.4, 12.1, 12.2, 12.3, 12.4, 12.5

*Personal and ICT-based support for project managers* – from the convenor, to provide advice to the groups via their respective manager.

1. **Assessment methods and how these relate to testing achievement of the intended module learning outcomes**

Coursework 100%

The assessment will be based on:

the final report (50%, including prescribed appendices); 11.1, 11.2, 11.3, 11.4, 12.1, 12.2, 12.3, 12.4, 12.5

the presentation (30%); 11.1, 11.2, 11.3, 12.1, 12.2, 12.3, 12.4, 12.5

the supplementary poster; (10%) 11.1, 11.2, 11.3, 12.1, 12.2, 12.3, 12.4, 12.5

and an element of *intra*-group peer review (10%); 12.5

The majority of the marks are awarded on a group basis (i.e. all members of the group receive the same mark) but some adjustments on a ‘zero sum’ principle may be made to individual marks on the basis of student group and supervisor/convenor feedback regarding relative contributions. The exception to this is the 10% set aside for *intra*-group peer assessment; this is moderated by the supervisor/convenor. Each group is also given the opportunity to assess the talks presented by the other groups; this exposure to peer assessment is regarded as an integral element of the overall module training.

1. **Implications for learning resources, including staff, library, IT and space**

Existing module

1. The School recognises and has embedded the expectations of current disability equality legislation, and supports students with a declared disability or special educational need in its teaching. Within this module we will make reasonable adjustments wherever necessary, including additional or substitute materials, teaching modes or assessment methods for students who have declared and discussed their learning support needs. Arrangements for students with declared disabilities will be made on an individual basis, in consultation with the University’s disability/dyslexia support service, and specialist support will be provided where needed.
2. **Campus(es) or Centre(s) where module will be delivered:**

Canterbury