The University Of Sheffield.

DEPARTMENT OF PHYSICS AND ASTRONOMY

PHY346	**Group Industrial Project in Physics (GrIP)**
Academic year	***20 Credits***
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Outline Description	PHY346 provides students with an industrial project where team working, planning, time management, presentation and report writing are integrated with science problem solving. The industrial client poses a problem that a group work on over two semesters to resolve. Interim and final presentations are made to the client and academic supervisors. Project work may use laboratory measurement and computational approaches as well as referencing leading research literature.
Restrictions	Students will have the standard qualifications for the degree (maths and physics A-levels). Programming and lab skills are required.
Prerequisites	
Co requisites	
Approx Time allocation (hours)	200 hours of seminars (approx 10), Lab workshops (approx 10), Independent Study including lab work (160) and report and presentation writing (20)
Assessment (%)	Assessment will consist of the following: **1** An interim **Technology survey presentation** (20%) given by the team and assessed by academics with advice from industrial panel if appropriate. Credit will be given only to students who contributed to, and attended, the presentation. **2 A final Presentation** (25%), assessed by all academics in consultation with industry representatives. Credit will be given only to students who contribute to the presentation. **3** An individually written **Report** (25%), marked by two academics. Credit will be given only to students who have submitted an electronic copy to Turnitin, and only if the report was cleared by Turnitin. **4 Individual contribution** to group effort (30%). Individual contribution will be assessed by academic supervisors on the evidence of an individual **project diary**, attendance at cohort events, and self reflective assessment of progress made. Credit will be given only to students who have submitted a project diary, and reflective assessments.

Aims	This unit will provide students with the experience of working in a team for an external client. With this experience comes the development of the associated team working skills: communication, planning, leadership and negotiation. These are framed around a problem that utilises physics technical laboratory skills such as programming, instrumentation, measurement as well as theoretical frameworks of materials science, thermal physics, mechanics etc.. Teams of 4-6 students will work on a problem given by an industrial client. The teams will gain support from academic supervisors and they will have access to laboratory equipment. It is expected that a range of tasks will be undertaken in solving the problem. The delegation of these will be managed by the team. Intermediate and final reports to the client will be made.
Outcomes	By the end of the unit, a candidate will have: 1. Constructed and enacted a team agreement and by doing so learned about negotiation and leadership. 2. Managed the delivery of a series of defined tasks and have practiced and reflected on skills of planning and time management. 3. Developed technical tasks appropriate for the problem and learned how to choose the “right tool for the job”. 4. Experienced different approaches to creativity in respect of problem solving. 5. Understood that problem solving requires appropriate knowledge networks to be constructed and understood that these networks come from technical, professional and personal spheres. 6. Refined verbal and written communication skills for both a client and an academic audience and to understand the differences between them.
Recommended Books	
Syllabus	
Academic Notes	