Biomedical Engineering Group Research Project (MPHY0013)

**Description**

The module is 30 credits, and it runs through term 1 and 2. There are three elements within the module, those are a Design Group Project, a Research Skills Course, and How to Change the World; The Design Group Project accounts for most of the module. Here, students will be working on a Biomedical Engineering related product for a specific user community, e.g. wheelchair users, MND patients, blind, etc. In groups, the students will work in all stages of the design, from identifying a product that needs development or improvement, to designing solutions, manufacturing and testing prototypes, addressing IP and regulatory issues and conceiving a route to market; The learning objectives are: Demonstrate ability to understand a medical condition; Demonstrate ability to understand a problem need and their stakeholders; Demonstrate ability to appraise the problem research outcomes make an informed brief definition; Demonstrate ability of project management, with definition of a project plan from the start, plan milestones and targets ahead, and a produce steady progress; Demonstrate ability to lead work package and individual tasks successfully, and manage team members; Demonstrate ability to collaborate and communicate with others, both team members and supervisors/consultants/users; Demonstrate informed and broad creativity of ideas, capacity to evaluate them against a criterion, and recommend a design; Select material applying assistant tools such as CS Edupack; Identify manufacturing process; Estimate life span, and assess sustainability and viability of the recommended design; Critically assess recommended design, predict failing modes, and recommend mitigation solutions, e.g. via Failure Mode and Effect Analysis; Prepare professional technical instructions for the manufacture and assembly of the recommended design, this includes 2D and 3D drawings and other technical information; Produce and assemble (a) prototype(s), and a revised design; Identify and set up physical tests, models, pilots, etc for proof of concept and to assess the recommended design; Demonstrate awareness and compliance of legislation and

**Key information**

- **Year**: 2019/20
- **Credit value**: 30 (300 study hours)
- **Delivery**: UG L6, Campus-based
- **Reading List**: View on UCL website
- **Tutor**: Dr Pilar Garcia Souto
- **Term**: Terms 1 and 2
- **Timetable**: View on UCL website

**Assessment**

- Coursework: 80%
- Coursework: 10%
- Coursework: 10%

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ethical considerations; Assess business viability and define business and marketing plan; Identify, carry out and critically analyse the required market research; Presentation of the final design and project to a panel; Write deliverables timely and to professional standard levels; The Research Skills Course provides some taught sessions and small assignments aimed at helping students in their development of skills needed when undertaking a research and/or design project; The How to Change the World element mark is also accounted here, although this activity takes place entirely during the summer – check IEP website for more details;