

**Course Code:**

TBC

**1. Course Title:**

Product Design Engineering M4

**2. Academic Session:**

2011-12

**3. Level:**

4

**4. Credits:**

50

**5. Lead School/Board of Studies**

School of Design

**6. Course Contact:**

Craig Whittet

**7. Course Aims:**

Aim – General

By the end of Level 4M, students will be expected to have developed the knowledge and skill base acquired at the previous level, sufficient to have undertaken and negotiated two studio-based projects - a group project with a 'live' brief and a more speculative project.

Aims – Specific

To develop the ability to undertake and manage a studio-based, user-centred design project, including the design, engineering, development, testing, evaluation and prototyping of an appropriate product, to a proficient and professional level.

To develop an appreciation of client-design engineer relationships

To develop group-working skills and the ability to work as an effective and confident member of a project team.

To develop the ability to work in an effective, confident and autonomous manner.

To develop confidence and proficiency in all aspects of the practical and reflective design engineering process to a level where these skills can be transferred to a commercial/ professional working situation.

### **8. Intended Learning Outcomes of Course:**

By the end of this course students will be able to:

Ability to develop questionnaires; interview and reporting skills and understand how engineers operate in industry.

Identify ways by which organisations encourage innovation.

Recognise technical and environmental influences on the ability to innovate.

To work collectively in a group and develop: present a project brief based on interviewing a client. The brief will include: product design specification, project plan, marketing strategy and product/project costing.

Submit an individual account of their own contribution to the group project and their reflection on the experience.

Evaluate the influence that:

External environment, corporate cultures, management, structures, business processes and procedures have on the implementation of new ideas and product development

Demonstrate understanding of:

The processes of successful implementation of innovative projects

The management of risk.

How evidence of skills and capability in:

Critically engaging with and evaluating texts and journal articles.

The benefits of group and team-working and evaluating project planning techniques.

Independent analysis of the management problems.

Communicating conclusions effectively.

Identifying and addressing relevant aspects of responsibility and environmental impact.

### **9. Indicative Content:**

The staff-directed course content would primarily be delivered in studio with a series of project workshops, seminars and lectures. These would provide students with awareness and expertise that would be of benefit to final year projects.

Students would be introduced to: Working with clients, Co-operative Design, Brief Writing, Time and Team Management, Influencing and Negotiation skills, Project Accounting, Costing, Return on Investment, Pricing Variations and effects, Product Positioning and recognising Market Opportunities.

Project Scenarios

Preference for Live project and potentially working with SME's. Project duration would be approx. 10 weeks. Using the existing project arrangements, one project would team and the other individual.

Semester 1:

Group project with a 'live' brief and potentially involving an external client.

Design for Market

Input on engaging users to obtain research data.

Input on visualising user research for analysis and evaluation – use of storyboards, scenarios, user profiles and user journeys.

Input on graphic communication and presentation techniques.

Application of engineering science and appropriate technology for a defined project area.

Semester 2:

The semester 2 project will tackle a more speculative project brief. This project will encourage engagement with emerging technologies and socio-cultural issues.

Workshop on video prototyping techniques as a tool to communicate speculative product concepts and user-product interactions.

Development and refinement of a Product Design Specification.

**10. Description of Summative Assessment:**

The main aspects of **Summative assessment** are: **written assignments, practical projects outcomes/prototypes and presentations**

**10.1 Please describe the Summative Assessment arrangements:**

The completed PDE4M project outcomes will for the basis for the summative assessment. The final grade will be submitted to the University of Glasgow, School of Engineering Exam Board.

**11. Formative Assessment:**

Student and peer feedback is offered throughout projects with detailed feedback provided after interim presentation. The main areas of student engagement are: **seminars, critiques, workshops, tutorials**

**11.1 Please describe the Formative Assessment arrangements:**

After most assessment events, studio staff provide feedback. The purpose of this is to help students understand areas of strength and weakness and provide advice for future direction or further learning.

Feedback for PDE4M will consist of verbal comments made during studio critique or presentation, or one-to-one in the studio. Main assessment events will be followed-up by written feedback, accompanied by a tutorial discussion with studio staff.

**12. Collaborative:**Yes No **12.1 Teaching Institutions:**

Glasgow School of Art

**13. Requirements of Entry:**

Product Design Engineering 3 (9JTW).

**14. Co-requisites:**

None

**15. Associated Programmes:**

Product Design Engineering

**16. When Taught:**

Semester 1 and 2

**17. Timetable:**

Thursday 09:00-17:00 and Friday 09:00-17:00

**18. Available to Visiting Students:**Yes No **19. Distance Learning:**Yes No **20. Placement:**Yes No **21. Learning and Teaching Methods:**

Method	Formal Contact Hours	Notional Learning Hours (Including formal contact hours)
Lecture	10	10
Studio	30	300
Seminar/Presentation	10	20
Tutorial	20	20
Workshop		80
Laboratory work		
Project work		
Professional Practice		
E-Learning / Distance Learning		
Placement		
Examination		
Essay		
Private Study	Not Applicable	60(self directed)
Other (please specify below)		10
<b>TOTAL</b>	<b>70</b>	<b>500</b>

**22. Description of "Other" Teaching and Learning Methods:**

Industrial Visits

**23. Additional Relevant Information:**

N/A

**24. Indicative Bibliography:**

Ullrich, K &amp; Eppinger, S, Product Design Development, McGraw-Hill

Gardiner, P Project Management (A Strategic Planning Approach),

Perrin, R, Wiley, Real-World Project Management (Beyond Conventional Wisdom, Best Practices and Project Methodologies)

Norman, D A , The Invisible Computer, The MIT Press, NORVH

<http://www.designcouncil.org.uk/Case-studies/>

Thackara, J, In the Bubble: Designing in a Complex World

Papanek,V, Design for the Real World

Pacey, A, Culture of Technology