

**Glasgow School of Art Course Specification**

**Course Title: Product Design Engineering MSc Major Project**

*Please note that this course specification is correct on the date of publication but may be subject to amendment prior to the start of the 2023-24 Academic Year.*

|                        |                    |                          |
|------------------------|--------------------|--------------------------|
| <b>Course Code:</b>    | <b>HECOS Code:</b> | <b>Academic Session:</b> |
| PPDE301 (UoG ENG5257P) |                    | 2023-24                  |

|  |
|--|
| <b>1. Course Title:</b>                      |
| Product Design Engineering MSc Major Project |

|                             |                        |                          |
|-----------------------------|------------------------|--------------------------|
| <b>2. Date of Approval:</b> | <b>3. Lead School:</b> | <b>4. Other Schools:</b> |
| PACAAG August 2022          | School of Design       | N/A                      |

|                    |                       |                                |
|--------------------|-----------------------|--------------------------------|
| <b>5. Credits:</b> | <b>6. SCQF Level:</b> | <b>7. Course Leader:</b>       |
| 60                 | 11                    | Craig Whittet<br>Stuart Bailey |

|                                  |
|----------------------------------|
| <b>8. Associated Programmes:</b> |
| MSc Product Design Engineering   |

|                        |
|------------------------|
| <b>9. When Taught:</b> |
| Semester 3/Stage3      |

|   |
|---|
| <b>10. Course Aims:</b>   |
| <p>The course aims to:</p> <ul style="list-style-type: none"> <li>• To develop the ability to undertake and manage an individual studio based, human-centred design project, including the design, engineering, development, testing, evaluation and prototyping of an appropriate product, to a Masters level.</li> <li>• To develop the ability to work in an effective, confident and autonomous manner.</li> <li>• To develop confidence and proficiency in all aspects of the practical and reflective design process to a level where these skills can be transferred to a commercial/ professional working situation.</li> <li>• To apply and integrate the subjects covered earlier in the PDE MSc programme</li> </ul> |

|  |
|--|
| <b>11. Intended Learning Outcomes of Course:</b>   |
| <p>By the end of this course students will be able to:</p> <ul style="list-style-type: none"> <li>• Discuss and clearly demonstrate your understanding of Product Design Engineering principles for successful product design</li> <li>• Justify and apply appropriate Product Design Engineering methods and tools during of product research, specification, development and refinement</li> </ul> |

- Apply current sources of design data and demonstrate awareness of product legislation and approval
- Clearly demonstrate a range design engineering evaluation methods in project work through an iterative process
- Evidence of the application and use of appropriate software packages
- Evidence of the application of user research methodologies
- Integration of design management methods

### 12. Indicative Content:

The following sessions, given by guest speakers drawn from academia, industry and consultancy, have been chosen to show a wide range of considerations, and to encompass physical, psychological, social and cultural issues relating to products, tasks and environments. The series includes:

- Design and Engineering Implementation
- Design and Product Development Strategies
- Intellectual Property
- Design for Society
- Video Prototyping
- Software and software systems

### 13. Description of Summative Assessment Methods:

| Assessment Method      | Description of Assessment Method                                       | Weight % | Submission week (assignments) |
|------------------------|--|----------|-------------------------------|
| Project Design Journal | Portfolio of research, product development and technical investigation | 75       | Week 12                       |
| Technical Report       | Written Technical report that focuses on key technical challenges      | 25%      | Week 12                       |

#### 13.1 Please describe the Summative Assessment arrangements:

The completed PDE MSc Major Project Journal, Technical report and project outcomes are the basis for the summative assessment. Students must pass both components of the assessment.

Assessment of application of principles, research, methods, and tools in studio programme to be covered in Design journal and Viva presentation, 5mins covering key aspects of project followed by 5 mins Q&A.

Students on this course will be assessed on their ability to:

- Display a critical understanding of evaluated concepts and detailed designs through project work and design journal;
- Utilise a significant range of methods and tools when conducting research into developing Design Specification setting parameters, metrics, and specific objectives are identified;
- Demonstrate a significant range of core Product Design Engineering skills and the application of these in a practical project;
- Demonstrate that research material is appraised as a basis for producing effective design solutions;

- Demonstrate that product geometry is suitable for production and is to professional standard;
- Demonstrate that production and manufacturing has been considered and conclusions are integral to the design
- Demonstrate a capacity to undertake and manage a self-directed project brief with respect to the user group, potential collaborator and market;
- Communicate product solutions through physical and virtual models;
- Demonstrate a good command of visual, verbal and written outcomes.
- The final grade will be submitted to the Glasgow School of Art and University of Glasgow, School of Engineering Exam Board. Grades are ratified by the Glasgow School of Art Exam Board

#### 14. Description of Formative Assessment Methods:

Engagement with formative assessment is a mandatory requirement. Student and peer feedback are offered throughout the project with detailed feedback provided after interim presentation. The main areas of student engagement are: seminars, critiques, workshops, tutorials

##### 14.1 Please describe the Formative Assessment arrangements:

Formative assessment is primarily an interim student presentation event, 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 this project 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.

#### 15. Learning and Teaching Methods:

| Formal Contact Hours | Notional Learning Hours |
|----------------------|-------------------------|
| 40                   | 600                     |

##### 15.1 Description of Teaching and Learning Methods:

Industrial and Site Visits

Days of delivery depend on semester arrangements, PDE MSc Major Project scheduled to take place Monday to Friday. University of Glasgow Technical Supervision and tutorials are scheduled with the University of Glasgow.

#### 16. Pre-requisites:

Completion of Stage 1 and Stage 2 PDE MSc

|  |    |
|--|----|
| 17. Can this course be taken by Exchange/Study Abroad students?              | No |
| 18. Are all the students on the course taught wholly by distance learning?   | No |
| 19. Does this course represent a work placement or a year of study abroad?   | No |
| 20. Is this course collaborative with any other institutions?                | No |
| 20.1 If yes, then please enter the names of the other teaching institutions: |    |
| N/A  |    |

**21. Additional Relevant Information:**

This course will be delivered through a series of lectures, seminars and group discussions drawing from a range of expertise across Product Design Engineering. The main method of teaching is through studio engagement, this will include regular feedback sessions.

Each student will be allocated a Project Supervisor at the Glasgow School of Art and University of Glasgow. The University of Glasgow supervisor will take responsibility for assessing the Technical Report. Details and requirements of the Technical Report are discussed with the student, Glasgow School of Art studio tutor and University of Glasgow supervisor to ensure the project and scope is appropriate and at a Masters level of study.

**22. Indicative Bibliography:**

- Sterling, Bruce. (2005) *Shaping Things*, Massachusetts Institute of Technology, Cambridge, Massachusetts. ISBN 0-262-69326-7
- Lefteri, C. (2006) *Materials for Inspirational Design*, Rotovision SA, UK. ISBN-13 978-2-940361-50-2
- Thakara, John. (2005) *In the Bubble: Designing in a complex world*, The MIT Press, Cambridge, Massachusetts. ISBN 0-262-20157-7
- Verganti, Roberto. (2009) *Design-Driven Innovation: Changing the Rules of Competition by Radically Innovating*

University of Glasgow and Glasgow School of Art staff will recommend a variety of texts, but this will be based on project theme.