

**Glasgow School of Art Course Specification**  
**Course Title: Product Design Engineering 3**

*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 2025-26 Academic Year.*

<b>Course Code:</b>	<b>HECOS Code:</b>	<b>Academic Session:</b>
UoG EXT3013		2025-26

<b>1. Course Title:</b>
Product Design Engineering 3

<b>2. Date of Approval:</b>	<b>3. Lead School:</b>	<b>4. Other Schools:</b>
PACAAG April 2020	School of Design	N/A

<b>5. Credits:</b>	<b>6. SCQF Level:</b>	<b>7. Course Leader:</b>
40	9	Aileen Mhor-Biagi

<b>8. Associated Programmes:</b>
BEng/MEng Product Design Engineering

<b>9. When Taught:</b>
Semester 1 & 2

<b>10. Course Aims:</b>
<p>Aim – General</p> <ul style="list-style-type: none"> <li>By the end of Level 3, you will be expected to have developed the knowledge and skill base acquired during the previous levels, and to have become proficient in and achieved the learning outcomes of an intermediate programme of Studio and University with an increased responsibility for your own learning.</li> </ul> <p>Aims - Specific</p> <ul style="list-style-type: none"> <li>To develop and supplement the knowledge and skill base acquired at previous levels.</li> <li>To develop the ability to integrate and apply these capabilities, along with University-taught elements, in the competent practice of specifying, developing and detailing engineered products for defined user needs and markets, in readiness for tackling Level 3 studio activity.</li> <li>To provide a diagnostic experience in determining routes to the BEng or MEng programme.</li> <li>To develop the understanding and application of interface and interactions in Product Design Engineering.</li> <li>To develop to a competent level, a critical and reflective stance, in addition to a theoretical appreciation of Design Engineering.</li> </ul>

- To develop skills and apply tools that assist in managing projects at an individual and team level.
- Professional skills: Leadership, teamwork, motivation, influencing, negotiation and communication
- To develop an ability to rationalise a body of work in order to provide a summary of key points and specification.

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

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

In addition to the 3P's (Product, Process and Presentation) listed in the Programme Specification, students will be reviewed or assessed on the work, as presented in their project documentation, that evidences level of engagement with and the quality of achievement of the intended learning outcomes for PDE3 listed here.

- Apply the design process to a range of design problems addressing user needs and technical requirements.
- Design products that support a user experience within a social context.
- Apply a range of engineering knowledge and technical skills to resolve a design problem in a real situation.
- Work effectively in a team as well as individually; exercising initiative and taking account of own as well as others' roles and responsibilities.
- Present and communicate the design project clearly and concisely through the appropriate use of text, visualisations and illustrations, models, prototypes and engineering drawings.

#### **12. Indicative Content:**

Example of the Level 3 studio syllabus

- Project themes
  - Live/Industrial project
  - Thematic/Competition project
  - Connect 1-1 – potential collaborative project
- Problem discovery
  - exploration & definition, involving group & individual research
  - statement of requirements
  - Design for Market
- Concept generation
  - ideation techniques
  - divergent thinking
- Concept evaluation & optimization
  - convergent thinking
  - evaluation techniques
- Concept development
  - sketching
  - scale layout drawing
  - investigative physical modelling (group work where extensive), with intentions & outcomes
  - appropriately recorded
  - CAD
  - Sketch modeling and Prototyping
- Design detailing

- major assemblies: scale layout
- focus area and general arrangement
- CAD and rapid prototyping
- Design methods & professional practice
  - DMI
  - IDEO 5-step process
  - professional design activity mind-maps, materials & manufacturing methods charts
  - relevant text books available in studio
- Record keeping
  - design journal
  - logbook
- Group working – general
  - group support throughout of individual outcomes & process

**13. Description of Summative Assessment Methods:**

The main aspects of Summative assessment are: written assignments, practical projects, presentations

Assessment Method	Description of Assessment Method	Weight %	Submission week (assignments)
Studio Practice/Projects	Portfolio Submission	100	End of Semester 2 - teaching

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

The completed Product Design Engineering 3 assignments and project outcomes will form the basis for the summative assessment. The final grade will be submitted to the University of Glasgow, James Watt School of Engineering Exam Board.

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

Engagement with formative assessment is a mandatory requirement. Student and peer feedback are offered throughout 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:**

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 PDE3 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
96	400

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

Industrial and Site Visits

Timetable: Thursday 14:00-17:00 and Friday 09:00 – 17:00 are the dedicated studio time. Access to studio and workshops may be offered out with this time.

**16. Pre-requisites:**

PDE2

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

**21. Additional Relevant Information:**

N/A

**22. Indicative Bibliography:**

Flurscheim, Charles H Industrial Design in Engineering  
Gordon, J E The New Science of Strong Materials  
Gordon, J E Structures, or why things don't fall down  
Gordon, J E Science and Structures of Materials  
Manzini, Ezio The Solid Side  
Moggridge, Bill Designing Interactions  
Myerson, Jeremy IDEO, Masters of Innovation  
Sterling, Bruce Shaping Things  
Ulrich and Eppinger Product Design and Development