

Course Code:

EXT3013

Academic Session

2017/18

1. Course Title:

Product Design Engineering 3 (EXT3013)

2. Version

1.1

Date of Production/ Revision

2016/17

Approval Date

30 August 2017 (PACAAG)

3. Level:

3

4. Credits:

40

5. Lead School/Board of Studies:

School of Design

6. Course Contact:

Aileen Mhor-Biagi

7. Course Aims:

Aim – General

- 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.

Aims - Specific

- To develop and supplement the knowledge and skill base acquired at previous levels.
- 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.
- To provide a diagnostic experience in determining routes to the BEng or MEng programme.
- To develop the understanding and application of interface and interactions in Product Design Engineering.
- To develop to a competent level, a critical and reflective stance, in addition to a theoretical appreciation of Design Engineering.

- 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.

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

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.

#### 9. 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*
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**10. Description of Summative Assessment:**

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

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

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

**11. Formative Assessment:**

Student and peer feedback is offered throughout project 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 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.

12. Collaborative:

Yes

No

12.1 Teaching Institutions:

Glasgow School of Art

13. Requirements of Entry:

PDE2

14. Co-requisites:

None

15. Associated Programmes:

Product Design Engineering

16. When Taught:

Semester 1&2

17. 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.

18. Available to Visiting Students: Can this course be taken by visiting students? Please tick either yes or no.

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	14	30
Studio	25	200
Seminar/Presentation	45	50
Tutorial	12	20
Workshop		40
Laboratory work		
Project work		
Professional Practice		
E-Learning / Distance Learning		
Placement		
Examination		
Essay		
Private Study	Not Applicable	20
Other (please specify below)		40
<b>TOTAL</b>	<b>96</b>	<b>400</b>

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

Industrial and Site Visits

23. Additional Relevant Information:

24. Indicative Bibliography:

Flurschein, 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

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April 2017