PRODUCT DESIGN ENGINEERING (BEng)/(MEng)

Welcome to Product Design Engineering - one of the UK's leading departments combining design, creativity and engineering.

Established in the mid 1990's the Department grew from the GSA's Industrial Design and then Product Design Departments. Its unique history provides an impressive track record of graduate achievement, something which has grown considerably since the PDE programme was established, from people like Ian Callum, Design Director of Jaguar Cars, an Industrial Design graduate from 1977 to Jude Pullen, a graduate from 2009, winner of the GSA's top student prize - the Newbery Medal - who's final year project, a pressure alert for Endotracheal Tubes won him 10 awards and is currently being developed for market.

Product Design Engineering or "PDE" brings together two Cultures - the studio and creative environment of one of Europe's leading art schools - the GSA, and the Faculty of Engineering at the University of Glasgow - a world top 100 university (QS World Ranking).

If you can imagine bringing together your academic and creative abilities to design exciting and innovative products, then Product Design Engineering is the career path for you. PDE offer you a unique opportunity to gaining a Masters of Engineering (MEng) or Bachelor of Engineering (BEng) with honours and a foundation for a career as a design engineer.

Fundamentally, we seek people with a good imagination, who are conscientious and studious. If you come with this attitude, the opportunities are endless and we look forward to welcoming you to PDE at The Glasgow School of Art.

Craig Whittet BA(Hons) MDes FRSA
Head of Department

OUR ETHOS

GSA and GU pioneered the concept of bringing together design, creativity and engineering. This approach to undergraduate education has been awarded a Partnership Award for innovation in teaching. This integration of two distinctive cultures is the essence of PDEs success. The Institution of Mechanical Engineers, who accredit the course, said it had 'brought the joy and creativity back into engineering', an attribute it proudly maintains.

The aim of the PDE programme is to meet industries' demand for confident and creative graduates. Our graduates are able to demonstrate a comprehensive blend of core and multidisciplinary skills through creative practical application in;

- The development of 'user-centred' products:
- Creative thinking skills
- Multi- disciplinary skills in design and engineering
- A high level of investigative, analytical and problem-solving skills
- The ability to contribute as part of, or lead, multidisciplinary teams

- Interpersonal and communication skills
- Skills in creative visualisation and presentation
- Skills in design synthesis
- Sound engineering to I Mech E chartered status
- A high level of design and market awareness
- The ability to manage complex briefs with confidence

Our approach to design engineering education, balancing technical and human, theoretical and practical, has been widely acknowledged as innovative and has been extremely well-received by the companies and business organisations. Many of whom employ our graduates, as well as by the students themselves - who represent a new breed of young design engineer entrepreneurs. The distinctive features of the programme can be summed up as:

- Benefits from two distinctive educational cultures
- Accredited by the Institution of Mechanical Engineers
- Human-centred engineering design approach
- A project-driven, practice-led, studio ethos
- Strong partnerships with industry
- Good academic links
- Student owned Intellectual Property

PROGRAMME INFO

Core

The basic underlying approach for PDE is core-explore. The first three years of the studio programme at GSA are centred around core design project activities. The curriculum is designed to develop creativity, exploration and expression of ideas, and to build confidence in applying the PDE design process. You will be involved in a wide range of activities including design awareness and aesthetics, drawing and visualisation, model-making and prototyping. Skills in communication and project management are also developed.

At GU the first three years of the course contain elements common to the Mechanical Engineering degree and include the following engineering core studies: applied mathematics, mechanics, thermo fluids, electrical and electronic engineering, management, economics, and foreign languages.

Explore

The final years of the degree focus on the exploration of the skills from the first three years and the application of in-depth technical skills. The format for this is usually represented through substantial design engineering projects.

Students are introduced to industry through placements and visits, and the final year involves an individual major project often organised in collaboration with industry.

Contextual studies relate work to entrepreneurial, economic, business, and social considerations.

YEAR 1

Year 1 introduces students to a variety of skills with the emphasis on visualisation and creativity.

Throughout the session there is an underlying aim to show the importance of a Design Engineering Process and there are a variety of ‘design tool’ lectures and presentations to make students familiar and confident when applying a design engineering process.

These include drawing and visualisation, aesthetics, form giving, presentation skills, CAD, creativity sessions, human factors. Workshop practice also plays a key role in first year, the academic and support staff endeavour to make students confident in this area.

YEAR 2

Second year students benefit from the introduction of Glasgow University staff in studio and the nature of this session reflects the practical and analytical design engineering challenges.

One of these existing challenges is to Design, Build and Test a gravity powered downhill racer, this team activity takes place over terms 2 and 3 with an individual phase towards the end of term 3. The individual phase provides an opportunity to reflect and design a speculative concept based on a similar theme.

Throughout the session, second year aims to enhance the skills gained in first year and introduces you to appropriate Materials and Manufacturing terminology, practice and the methods to apply these. The students also take part in visits to local Manufacturing sites.

YEAR 3

This year usually revolves around a core theme running across the two semesters. Previous sessions have seen studio project activity include titles, such as 'personal transportation', 'inclusive design' or 'mechanisms'. There is an emphasis on group working for at least a part of the time, with small teams involved in research activity leading into the development and evaluation of ideas.

The early part of the session is normally given over to a highly-focussed, 'hands-on' phase of activity, with the emphasis on designing-through-making. In this, students explore, through drawing and modelling, the value of an iterative design approach and develop a practical ability to evaluate and improve their designs. During this phase there are also brief but intensive teaching sessions covering various skills and techniques, including the development and enhancement of IT skills.

A longer design project follows, which exploits the techniques learned in the first semester in greater depth. Throughout this level, a greater emphasis on individual working is encouraged, and students have the opportunity to develop their own speculative ideas beyond the limits of the original project brief. The continued practical studio experience also reinforces an understanding of the whole process of product development. This helps to establish the confidence necessary for progression to the more independent activity of fourth year.

Depending on your ability to meet progression requirements at the end of third year, you can progress to either the BEng and complete their degree at the end of fourth year, or to MEng and complete your degree in a further two years of study, at the end of fifth year. The MEng is based either in Glasgow for years 4 and 5, or with the MEng Euro option, year 4 can be based in a partner institution abroad. This arrangement also allows exchange students to enter the fourth year MEng programme from abroad. The fifth year of the MEng is always based in Glasgow.

YEAR 4

MASTER OF ENGINEERING

The students at this level engage with two projects, one team-based and the other an individual project. At least one of these projects is run in collaboration with an industrial partner.

A design and technology course is run at GSA for the MEng Year 4 students.

BACHELOR OF ENGINEERING

The students of the graduating years complete one individual design engineering project under the supervision of studio staff. The project is user-centred and based on real life issues, often in collaboration with industry, organisations and individuals.

The major project is a unique learning experience based on best professional practise and which prepares the students for working in industry. The studio offers a great opportunity to practise and apply creativity and knowledge gained from the course within the constraints and demands of a real

life project.

In the studio and workshops, the students bring together all their creativity, design investigation and applied Design Engineering process. The output from this process is a design engineering folio which explores design visually, supported by a technical report. Models and prototypes are also produced to represent the product.

A study trip to a centre of excellence in design, engineering and manufacturing is usually organised at the start of fourth year.

In addition to many excellent industry and professional contacts, the department offers a range of expertise gained across a wide spectrum of industry and academia, typified by the following project clusters:

- Domestic/ consumer products
- Environmental & renewables
- Emergency & Rescue
- Medical & Health care
- Lifestyle, sport and recreation
- Transport

YEAR 5 - MASTER OF ENGINEERING

The major project is a unique learning experience based on best professional practise and which prepares the students for working in industry. The studio offers a great opportunity to practise and apply creativity and knowledge gained from the course within the constraints and demands of a real life project.

In the studio and workshops, the students bring together all their creativity, design investigation and applied Design Engineering process. The output from this process is a design engineering folio which explores design visually, supported by a technical report. Models and prototypes are also produced to represent the product.

A human factors course is run at GSA for the MEng Year 5 students.

A study trip to a centre of excellence in design, engineering and manufacturing is usually organised at the start of fourth year.

In addition to many excellent industry and professional contacts, the department offers a range of expertise gained across a wide spectrum of industry and academia, typified by the following project clusters:

- Domestic/ consumer products
- Environmental & renewables
- Emergency & Rescue
- Medical & Healthcare
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UCAS Information:

Institution Name: GLASG
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