

PRODUCT DESIGN AND DEVELOPMENT ENGINEER DEGREE APPRENTICESHIP LEVEL 6

For new or existing staff

Product Design and Development Engineers work on all stages of product creation, product modification and product componentry. They support activities ranging on early concept feasibility, Computer Aided Design and other modelling, activities and stages through to final preparation for launch and customers. This includes working in concept studios, rapid prototyping, assembly, testing, validating and analysing performance. Typically they work closely with suppliers and managers in bringing new concepts to life or contributing to redesigns of existing products.

Qualification

BEng (Hons) Product Design and Development Engineer

Completers may want to progress to

- Working towards Incorporated Engineer (IEng) status within the Institution of Engineering and Technology (IET) or Institution of Mechanical Engineers (IMechE)
- Masters qualification - Level 7

Delivery model and duration:

Part time 5-year apprenticeship with first three years spent at Gloucestershire College and the remaining two years at UWE, Bristol.

Duration: 60 months + 3 months for End Point Assessment

Ideal for:

- Product Design Engineer
- Development Engineer
- Product Developer
- Manufacturing Engineer

The apprenticeship will cover the following core areas:

- Systems Design
- Dynamics, Modelling and Simulation
- Structural Mechanics
- Thermofluids
- Applied Electrical Technologies
- Engineering Practice
- Engineering Project
- A range of options in year 5

Entry Criteria:

5 GCSEs grade 9 - 4 or A* - C including maths, English and science, technology or an engineering related subjects and A Levels grade C or above in both a mathematical based subject and a science, technology, engineering or additional mathematics related subject or 90+ credits in an engineering BTEC. Learners must have the equivalent to 112 UCAS points.

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Benefits to business:

- Get work-ready, graduate-calibre employees embedded within your organisation who truly understand your business and bring fresh perspectives and ideas
- Attract and retain the best talent, whilst supporting the youth employment agenda
- Generate a return on investment through accelerated development and increased commitment

Benefits for learners:

- Learn practical and logical approaches to problem-solving
- Develop the ability to work well under pressure and take on new challenges
- Gain project management skills and the ability to work to tight deadlines
- Develop good commercial awareness

End Point Assessment

The End Point Assessment will consist of a case studies presentation to showcase the work that you have completed during your apprenticeship and an Occupational Professional Discussion. Each element is worth 50% of your final grade and will be graded Fail, Pass or Distinction.

Unit	Overview
Vocational Skills	<ul style="list-style-type: none"> • How to comply with statutory requirements and stringent organisational safety requirements • How to effectively use, interpret and evaluate a range of engineering data sources and documentation • Organising work efficiently and effectively in managing engineering resources when completing tasks • Producing components using hand fitting techniques and producing mechanical assemblies • Producing Electrical or Electronic Drawings or CAD Models using a CAD system • Preparing and using lathes, milling and other general or specialist high tech equipment • Applying mechanical, electrical and electronic devices and equipment • Using computer software packages to assist with engineering activities • Producing and managing engineering project plans • Project Management in undertaking engineering activities • Establishing design briefs, presenting and discussing technical proposals • Managing and controlling product design change • Supporting team feasibility design reviews • Demonstrating technical and commercial management in planning and managing tasks & resources
Academic Knowledge	<ul style="list-style-type: none"> • Mathematics and science for engineers • Materials and manufacture • Mechanical, electrical and electronic principles and applications • Statics and dynamics • How to undertake and apply business-led projects • Engineering operations and business management • Applying advanced technology techniques
Occupational Behaviours	<ul style="list-style-type: none"> • A safety mindset • A strong work ethic • A logical approach • Problem solving orientation • Quality focus • Personal responsibility and resilience • Clear communication • Being a team player • Applying Lean Manufacturing Principles • Adaptability