

What is The Diploma in Manufacturing and Product Design?

The Diploma
IN MANUFACTURING AND
PRODUCT DESIGN

The Diploma in Manufacturing and Product Design (MPD) – a clear business focus and product design content

The Diploma in MPD has been developed in consultation with employers, schools, colleges and universities to ensure it meets the needs of industry and young people.

It provides an introduction to the way modern businesses approach the diverse global manufacturing world. This qualification is about the design, systems, process and control of products manufacture based on common business disciplines. The topics covered range from customer requirements, product design and production to final delivery, enterprise and customer care. Quality assurance, sustainability and entrepreneurship are also included. All making this Diploma a great starting point for young people embarking on the world of work in this fast moving, challenging environment.

Learners will emerge with transferable knowledge and skills related to a wide range of different industries, sectors and types of employment, as well as manufacturing specific knowledge and understanding.

The Diploma in MPD will appeal to students of all abilities and aspirations and will help them develop a range of practical and intellectual skills valued by employers and universities.



Opportunities to work with real employers

Here is just a short list of companies which are working with Diploma students

- Ginsters
- Brompton Bikes
- Nestlé
- Kawasaki
- McKechnie Plastics
- Tate and Lyle
- C2M (UK) Ltd
- Portakabin
- Shepherd
- Orange
- JCB
- Princess Yachts
- Cadbury
- Polestar
- Muller

Young people taking the Diploma in Manufacturing and Product Design are given exciting opportunities to work with real employers. These businesses are involved in a number of different ways and provide work experience opportunities, set design projects, give student talks, act as mentors, host workplace visits and contribute to learning materials.

High-profile individuals from the sector

- Levi Roots (Reggae, Reggae Sauce owner)
- Jonathan Ive (ipod designer)
- James Dyson (Dyson inventor)
- Stella McCartney (Fashion designer)



What topics does The Diploma in MPD include?

Students will examine three themes

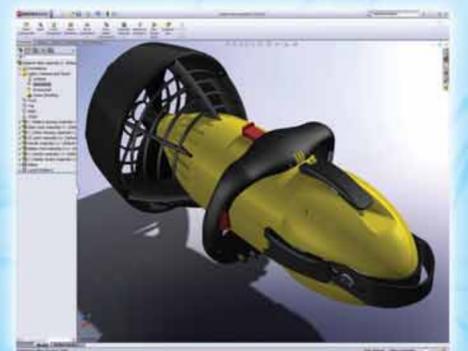
Theme A: Business and Enterprise

Manufacturing contributes to a large portion of the wealth generation in the global economy. Uses a range of business and enterprise activities to enable learners to gain practical experience of how the manufacturing industry works. Explores a range of business activities across all areas of manufacturing and considers the importance of these businesses to the local, national and global economy.



Theme B: Product Design and Materials Science

Successful future product development requires a detailed knowledge of manufacturing technology. It is the combination of both science and design that leads to innovation and the introduction of new products. Considers all aspects of manufacturing from raw materials through to the finished product, taking into account issues such as sustainability and waste reduction.



Theme C: Production Systems

Looks at implementation and improvement of manufacturing techniques and the development of production methods for product manufacturing. Also, implementation of quality assurance and continuous improvement techniques.

For further information about the Diploma in MPD please visit www.manufacturingdiploma.co.uk/schools-and-colleges. You can sign up via this website to receive our monthly Diploma e-bulletin, which includes regular news and updates.

Manufacturing & Product Design in the real world



What is manufacturing?

It's inventing, making, building and servicing. From design through to depot. Manufacturing operates at the macro level of aero engines, and the micro level of semiconductors.

Manufacturing is a network of skills – from executive leadership to human resources – from health and safety to environmental matters.

Today, manufacturing is beyond engineering. It's biotechnology. Pharmaceuticals. Food production. It comes alive in alloys and polymers and rests at the very pinnacle of scientific invention. Manufacturing is the real business. Critical to the UK economy. Critical to our future.

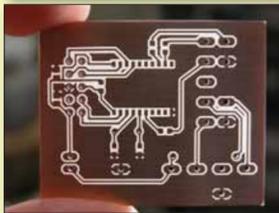
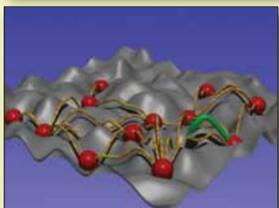
(EEF, the Manufacturers' Organisation, Report, July 2009)



The Diploma in Manufacturing and Product Design reflects the modern manufacturing sector

The Diploma in Manufacturing and Product Design (MPD) has been designed specifically to reflect the modern manufacturing sector, and is supported by employers. Graduates will emerge with the knowledge and understanding required of new recruits to the world of manufacturing.

This sector makes a huge contribution to the UK economy generating a turnover of approximately £504.5 billion per year. Contrary to the general perception, UK manufacturing has actually grown by 8% since 2001. Currently, more than 3 million employees are employed by almost 150,000 enterprises, meaning that there are lots of opportunities for skilled young people.



Activities involved in manufacturing

- Product design
- Invention
- Product assembly
- Prototyping
- Process design
- Materials science
- Testing
- Business planning
- Product launch and promotion
- Management
- Customer services
- Robotics
- Research and development
- Performance measurement
- Product sustainability
- Volume production
- Batch production
- Packaging and logistics
- Maintenance
- Sales and marketing
- Project management
- Communications
- ICT
- Procurement
- Pricing
- Profit monitoring
- Recycling
- Resource planning
- Quality control
- And many more

Products which emerge from manufacturing

- Bicycles
- Medicines
- Petrol
- Toys
- Ready meals
- Newspapers and magazines
- Furniture
- Cars
- Aircraft
- Fabrics
- Chocolate bars
- Bread
- Sweets
- Handbags
- Keyboards
- Digital radios
- iPod
- Mobile phone
- CDs and DVDs
- Make - up
- Clothes
- Skateboards
- Paper
- Glass
- Smoothies
- And many more



The manufacturing sector

Manufacturing is a sector, which is made up of these 5 sub-sectors

Food and drink manufacturing

UK food and drink manufacturing is one of the largest and most competitive of the manufacturing sub-sectors in the world. It is responsible for the manufacture of a wide range of products from milk to ready meals, baby food to whisky. Its purpose is to develop, manufacture, process, pack and distribute food and drink products for sale within the UK and overseas.

Businesses in this sub-sector include: Nestlé, Diageo, St Ivel, Tesco, Brooke Bond, Britvic, Unilever which produces Flora and P&G which produces Pringles and lams. Some smaller businesses include Kettle Foods and Yeovalley.

Engineering manufacturing

The engineering manufacturing sub-sector across the UK is very broad. It covers many diverse areas such as the manufacture of aircraft, ships and leisure boats, satellites, cars, electrical products and engines. It is also responsible for all the metal manufactured and precision items that hold these products together.

Businesses in this sub-sector include: Rolls Royce, BAE, Toyota, JCB, Bosch, Princess Yachts, Dell, Whirlpool, Sony, Omega. Examples of SMEs include BEC Engineering, Magnum Engineering, Brompton Bikes.

Chemicals, pharmaceuticals and polymers

A range of products types are included in this sub-sector, which include chemicals, pharmaceuticals, oil and gas, nuclear, petroleum and polymers. Many of the products which emerge from this area are an integral part of everyday life, such as cosmetics, plastic bags, bottles, bleach and antibiotics; whilst others are involved in nuclear operations and power generation.

Businesses in this sub-sector include: BP, Kodak, British Energy, Ciba, GlaxoSmithKline, Ministry of Defence and P&G which is responsible for Fairy, Max Factor, Daz, Duracell amongst other brands.

Fashion and textiles

This sub-sector covers the design and manufacture of ladies wear, men's wear and children's wear, plus the making of leather and sports footwear and leather accessories such as handbags and luggage. This area is responsible for the manufacture of textiles which are made into clothing and household fabrics such as carpets and curtains. It also produces "technical textiles" – highly innovative products that are used in aerospace, medical and construction industries because of their performance rather than their appearance. Examples of these include materials used to build Formula one racing cars and airplane wings.

Businesses in this sub-sector include: Top Shop, Burberry, Churches shoes, Brintons Carpets, Quantum Clothing, Sigmalex and W.T.Johnson. Examples of SMEs include: leather producers Charles F Stead, or sportswear brand Hilly Clothing.

Furniture, print and building products

There are 8 general types of products developed by this manufacturing sub-sector. These include building products, glazed ceramics, coatings, extractive and mineral processing, furniture, furnishing and interiors, glass and glazing, paper and printing.

Businesses in this sub-sector include: Lafarge, Bison, Tarmac, UK Coal, ICI, Sun Chemicals, Pilkington, Saint-Gobain, Hallmark cards, Polestar, Carlton cards.



Job roles and career opportunities in the sector

Young people who achieve a Diploma MPD are not limited to working in this sector. However, for those who do want to stick to this sector, there are lots of different job roles and career paths available. Here are some examples:

Food and drink

Chocolatier, product designer, food technologist, butcher, packaging specialist, production planner, marketing executive, brand manager, health and safety advisor, quality assurance, baker.

Engineering manufacturing

Manufacturing production manager, aerospace engineer, design engineer, aerospace engineering technician, stock controller, marine craftsperson, heat treatment operator, customer services professional.

Chemicals, pharmaceuticals and polymers

Chemical technician, process engineer, research and development, analyst, maintenance, product development, HR management, marketing and finance.

Fashion and textiles

Pattern-cutter or grader, cloth cutter, lay-planner, sample machinist, textile technologist, quality controller, spinner and weaver, brand manager, stock controller.

Furniture, print and building products

Trainee mobile plant operative, furniture designer, cabinet maker, marketing manager, product designer, glass cutter.

There are some job roles which exist in many organisations, regardless of the sub-sector, these include:

- Customer service
- Marketing and sales
- HR and training
- Research and development
- Product design
- Stock control
- Accounting
- Health and safety