

A2 level Graphic Products PLC

Topic	Yes I'm Happy	No, I need more information
<p>I understand the characteristics, processes, application, advantages/disadvantages of ICT in the development, manufacture and sales of products in the global marketplace:</p> <p>Electronic communications</p> <ul style="list-style-type: none"> • email • Electronic Data Interchange (EDI) • Integrated Services Digital Network (ISDN) and broadband • Local Area Networks (LAN) • global networks (internet) • video conferencing <p>Electronic information handling</p> <ul style="list-style-type: none"> • market analysis • specification development <p>Automated stock control</p> <ul style="list-style-type: none"> • 'just in time' (JIT) <p>Production scheduling and production logistics</p> <p>Flexible manufacturing systems (FMS)</p> <ul style="list-style-type: none"> • quick response manufacturing (QRM) <p>Production control</p> <p>Marketing, distribution and retailing of products using:</p> <ul style="list-style-type: none"> • electronic point of sale (EPOS) • internet marketing. 		
<p>I understand:</p> <p>a) Characteristics, advantages/disadvantages and the impact on the environment of the following genetic engineering techniques when manufacturing products:</p> <ul style="list-style-type: none"> • Altering genes in woods to provide quicker-growing trees, or to supply wood that resists wear, rot or infestation • Use of micro-organisms to aid the disposal of environmentally-friendly plastics • Producing materials that are totally recyclable. <p>b) The sources, manufacture, application and advantages/disadvantages of the following biodegradable polymer:</p> <ul style="list-style-type: none"> • Biopol®. <p>c) Characteristics, application and advantages/disadvantages of adding the following additives to polymers:</p> <ul style="list-style-type: none"> • plasticisers • fillers • fibres • stabilisers • foamants. <p>d) Characteristics, application and advantages/disadvantages of modifying woods:</p> <ul style="list-style-type: none"> • lamination. 		
<p>I understand the characteristics, processes, application and advantages/disadvantages of advanced manufacturing technology (AMT) which enable quick response manufacturing (QRM), including:</p>		

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<ul style="list-style-type: none"> • concurrent manufacturing • flexible manufacturing systems (FMS). 		
<p>I understand the characteristics, processes, application, advantages/disadvantages and its impact on employment of CIM systems to integrate the processing of production and business information with manufacturing operations, including:</p> <ul style="list-style-type: none"> • data integration involving product data management (PDM) and enterprise resource planning (ERP) systems • lean manufacturing using just-in-time (JIT) systems • computer-aided manufacture (CAM) involving CNC equipment and computer-aided quality (CAQ) in flexible manufacturing cells materials handling systems including automated storage and retrieval systems (ASRS) and automatic guided vehicles (AGVs). 		
<p>I understand the application, advantages/disadvantages and its impact on employment of complex automated systems, including:</p> <ul style="list-style-type: none"> • robots on fully automated production and assembly lines/cells • development of artificial intelligence (AI) for industrial • applications. 		
<p>I understand the application of flow charts to represent open and closed loop systems for quality control of production processes.</p>		
<p>I understand the impact and advantages/disadvantages of the following technological changes on society in relation to product manufacture.</p> <p>Mass production:</p> <ul style="list-style-type: none"> • consumer society including built-in obsolescence • employment. <p>The 'new' industrial age of high-technology production:</p> <ul style="list-style-type: none"> • computers in the development and manufacture of products • miniaturisation of products and components • use of smart materials and products for innovative applications. <p>The global marketplace:</p> <ul style="list-style-type: none"> • multinational companies in developed countries manufacturing <p>'offshore' in developing countries</p> <ul style="list-style-type: none"> • local and global production. 		

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<p>I understand the characteristics in terms of design styles, philosophy and influences on design culture of the following designers and design movements:</p> <ul style="list-style-type: none"> • William Morris and the Arts and Crafts movement • Charles Rennie Mackintosh and the Art Nouveau movement • Marcel Breuer and the Bauhaus modernist movement • Eileen Gray and the Art Deco movement • Raymond Loewy and streamlining • Philippe Starck and the New Design style (post-modernism). 		
<p>I understand the debate regarding 'form versus function' including the following two opposing views when designing products:</p> <ul style="list-style-type: none"> • form follows function (functionality as prime driver) • form over function (aesthetics as prime driver). 		
<p>I understand the principles and application of anthropometrics data and ergonomics:</p> <ul style="list-style-type: none"> • key ergonomic factors for a designer to consider when developing products, equipment and environments with human interaction • sources and applications of anthropometric data. 		
<p>I understand the application of LCA to assess the impact of a product 'from the cradle to the grave' using a life cycle inventory of:</p> <ul style="list-style-type: none"> • environmental inputs and outputs of raw materials, energy resources and emissions • economic inputs and outputs of products, components or energy that are outputs from other processes. 		
<p>I understand the application of 'cleaner' design and technology throughout each of the stages of a product's life cycle in relation to the following sustainable development issues:</p> <p>Design</p> <ul style="list-style-type: none"> • for reducing environmental impact • for recycling <p>Raw materials</p> <ul style="list-style-type: none"> • reduction or recycable • reduce environmental impact <p>Manufacture</p> <ul style="list-style-type: none"> • minimising waste and energy use • simplifying processes • efficient use of natural resources <p>Distribution</p> <ul style="list-style-type: none"> • reduce or lighten packaging • reduce mileage of transportation to the customer • alternatives to fossil fuels <p>Use</p> <ul style="list-style-type: none"> • repair versus replacement. 		

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<p>I understand the principles and application of minimising waste production throughout the product life cycle using the following 'four R's':</p> <ul style="list-style-type: none"> • reduce • reuse • recover • recycle. 		
<p>I understand the characteristics, comparisons, applications and advantages/disadvantages of using the following renewable and non-renewable sources of energy:</p> <ul style="list-style-type: none"> • wind • water • solar • biomass and biofuels • nuclear • fossil fuels. 		
<p>The I understand the responsibility in relation to social, economic and environmental issues for global sustainable development.</p> <p>Impact of industrialisation on global warming and climate change.</p> <ul style="list-style-type: none"> • United Nations Framework Convention on Climate Change (UNFCCC) including Kyoto Protocol. • Reduction of an individual's 'carbon footprint' by reducing carbon dioxide emissions and carbon offsetting • Non-Fossil Fuel Obligation (NFFO) in the UK. <p>Timber production and sustainable forest management.</p>		