

Year 10 Product Design Overview

Unit	Duration (lessons)	Learning Objectives/Outcomes
Lighting – Design brief, ideas & modelling	13	<ul style="list-style-type: none"> • Investigate, analyse & evaluate the work of past and present designers / companies. • Be able to use primary & secondary data to help understand the needs of your user, such as ergonomics & anthropometric data. • Be able to create your own design briefs & design specifications based on your on-going research • Use design strategies to produce creative ideas • Explore how a variety of materials can be transformed from their original standard form into complex shapes. • Develop your 3D sketching skills to communicate ideas such as isometric & perspective techniques. • Use annotation to show design thinking • Develop 2D & 3D CAD skills to model & improve ideas • Select appropriate materials for final idea based on their material properties. • Test ideas to demonstrate that they are viable and will work well. • Gain technical knowledge in new & emerging technologies such as - how they have changed the way in which we live & how they continue to shape the modern world, that new technologies need to be developed & produced in a sustainable way, how technology push & market pull affect consumer choice & employment, understand different manufacturing systems and the potential use of automation, know the advantages & disadvantages of planned obsolescence from different perspectives and how product can be designed to be repaired and recycled. • Gain technical knowledge in energy generation, modern & smart material, composite materials & textiles, electronic systems & mechanical devices
Lighting – material selection & manufacture	11	<ul style="list-style-type: none"> • Further develop communication skills such as the use of exploded & working drawings to show how your ideas can be made. • Be able to explain how your prototype satisfies the needs of your user in terms of – functionality, aesthetics and potential marketability. • Explore how products have environmental & social impact on the world and how designers can design for this. • Learn how to choose materials based on functionality, cost & availability. • Produce final plans for lamp – manufacturing specification

		<ul style="list-style-type: none"> • Be able to produce final outcomes accurately using tolerances and quality control. • Commence Final manufacture of product.
<p>Lighting – Final assembly</p> <p>Commence Non exam assessment (NEA) – Identify & investigate design possibilities</p>	13	<ul style="list-style-type: none"> • Explore different surface finishes and be able to explain how they benefit the product • Final assembly of lighting prototype • Test final product, evaluate and make suggestions on how it could be improved. • Investigate how & which type of products is manufactured – one offs, batch, mass & continuous production. • Introduce controlled assessment – understand how to meet all assessment objective requirements • Research design brief and select a variety of sources to help research the task. Analyse findings and produce a design criteria suitable for their chosen client • Analyse existing products to gain knowledge on how other designers have solved the problem. • Using a planned design strategy and inspiration, create imaginative ideas using a variety of communication & modelling skills