

A-Level Design and Technology: **PRODUCT DESIGN (3D)**

Examination Board Specification:

AQA 7552

Why Study Product Design: The course will be challenging and creative and will encourage students to develop higher order design skills. Students will be working primarily in designing, making and modifying products and they will be expected to present work to the group as part of their project. Great importance will be placed on the theoretical understanding of the development and design of products. The capacity to analyse a problem and synthesise to form a solution will also form an important element in the course. In addition, students will learn from demonstrations, their own practical work, experiments and visits to places of interest as well as discussions with industrialists. Traditional drawing skills will be developed as well as the use of Computer Aided Design and manufacturing. Lessons will involve the analysis of existing products from conception to manufacture, for example low voltage lighting, domestic devices and furniture. During the first year students will make a variety of products using a range of materials and manufacturing techniques. In Year 13 they will undertake the Non Examination Assessment (NEA). From the outset students ought to enjoy combining practical and intellectual skills. Students will be expected to demonstrate initiative, imagination and ingenuity and to be prepared to work on projects in the Technology Rooms outside the School day.

Content and Assessment of the Course:

Year 12	
Paper 1	Technical Principles
1.1	Materials, properties and their application
1.2	Performance characteristics of materials
1.3	Enhancement of materials
1.4	Forming, redistribution and additional processes
1.5	The use of finishes
1.6	Modern industrial and commercial scales of practice
1.7	Digital design and manufacture
1.8	The requirements for product design and development
1.9	Health and safety
1.10	Protecting design and intellectual property
1.11	Design for maintenance, repair and disposal
1.12	Feasibility studies
1.13	Enterprise and the marketing in the development of products
1.14	Design communication
NEA	<ul style="list-style-type: none"> - Term 1 - Engineering – metal race car project - Term 1 - Architectural – pavilion project - Term 2 - Practise contextual project (MTA Technology, Design and Innovation Challenge submission) - Term 3 - Commencement of NEA Section A & B – Investigation, Design Brief and Specification

Advancement to Year 13 will be based on satisfactory completion of the Year 12 projects and the end of year examination.

Year 13	
Paper 2	Designing and Making Principles
2.1	Design methods and processes
2.2	Design theory
2.3	Technology and cultural changes epitomises
2.4	Design processes
2.5	Critical analysis and evaluation
2.6	Selecting appropriate specialist tools, techniques and processes
2.7	Accuracy in design and manufacture
2.8	Responsible design
2.9	Design for manufacture and project management
2.10	National and international design standards in product design
NEA	<ul style="list-style-type: none"> - Term 1 – Section C & D – Design and Design Development - Term 2 – Section D & E – Prototyping and Evaluation

Final Assessment: The final grade will be made up of 50% NEA (project task in Year 13) and two examinations. Paper 1 (30%) is 2.5 hours and will test the Technical Principles and Paper 2 (20%) is shorter at 1.5 hours and tests the Designing and Making Principles.

Additional Information: Students ought to have a natural interest in Design and Technology and have an aptitude for practical work and project management. Independent study will form a large part of the course especially the Design and Make tasks.

Entrance Requirements: A grade from 7-9 in Design and Technology at GCSE is a minimum expectation.