***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. Information and communication technology, including CAD/CAM will be used extensively within project work. 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:**

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| **Year 12** |
| **Unit 1** | **Core Technical Principles** |
| 1.1 Materials and their applications1.2 Performance characteristics of materials1.3 Enhancement of materials1.4 Forming, redistribution and addition processes1.5 The use of finishes1.6 Modern and industrial scales of practice1.7 Digital design and manufacture1.8 Requirements for product design and development1.9 Health and Safety1.10 Protecting designs and intellectual property1.11 Design for manufacturing, maintenance, repair and disposal1.12 Feasibility Studies1.13 Enterprise and marketing in the development of products1.14 Design communication |
| **Design and Make Projects** |
| Term 1 Wooden ChairTerm 2 The Mini Golf ClubTerm 3 Architectural Pavilion |

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

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| **Year 13** |
| **Unit 2** |  **Designing and Making Principles**  |
| 2.1 Design methods and processes2.2 Design theory2.3 Technology and cultural changes2.4 Design processes2.5 Critical analysis and evaluation2.6 Selecting appropriate specialist tools, techniques and processes2.7 Accuracy in design and manufacture2.8 Responsible design2.9 Design for manufacture and project management2.10 National and international standards in product design |
| **Non-Examination Assessment** |
| Portfolios are separated into five key criterions, that each have their own key deadlines, as follows:Section A: Investigation – Year 12 Term 3Section B: Design Brief and Specification – Year 12 Term 3Section C: Developing design proposals – Year 13 Term 1Section D: Realising design proposals – Year 13 Term 2Section E: Analysing and Evaluating – Year 13 Term 3  |

**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 as well as the additional specialist knowledge.

**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.