

# AS / A2 Design & Technology

## *Product Design: 3D Design*

### Board and Syllabus

From September 2006 the department will be following the AQA Product Design (5551 / 6551) GCE course in the Lower Sixth. The upper sixth will continue to study the Edexcel specification (syllabus) in Design and Technology: Product Design until July 2007.

### Objectives / Nature of the Course

Students are expected to extend the knowledge, understanding and skills established at GCSE level and they **must have achieved at least a Grade B in GCSE Design & Technology (Resistant Materials or Graphic Products)** in order to pursue the AS course. The advanced subsidiary course encourages students to:

- Develop their creativity, innovation and independent learning
- Develop an understanding of industrial practices
- Design and produce high quality products
- Utilise Information and Communication Technology (ICT) including CAD/CAM to enhance their design and technological capability

### Course Content

In the Lower Sixth, the AS course is studied, three units are assessed at a standard above GCSE, but at a standard below A Level. Students wishing to gain the full A Level (A2), complete a three further units in the Upper Sixth. Unit 2 (AS Level) and Unit 5 (A2 Level) are both full coursework design and manufacture projects. Unit 4 (A2) tests a candidates' ability to research, analyse and communicate their understanding of a particular manufactured product. Students develop their own projects, with careful guidance from their teacher. This course also provides opportunities for developing and generating evidence for assessing the six Key Skills.

- Application of number
- Communication
- Improving their own learning style and performance
- Information Communication Technology
- Problem Solving
- Working with Others

AS PRODUCT DESIGN			A2 PRODUCT DESIGN		
<b>UNIT 1:</b> Materials and Components	<b>UNIT 2:</b> Product Development	<b>UNIT 3:</b> Design & Market Influences	<b>UNIT 4:</b> Product Study	<b>UNIT 5:</b> Product Development 2	<b>UNIT 6:</b> Materials & Components, Design & Market Influences and Processes / Manufacture
External Assessment	Internal Assessment	External Assessment	Internal Assessment	Internal Assessment	External Assessment
1 ½ Hour Examination	Coursework	1 ½ Hour Examination	Coursework Project	Coursework Project	3 Hour Examination
30% AS 15% of Advanced GCE	40% AS 20% of Advanced GCE	30% AS 15% of Advanced GCE	15% of Advanced GCE	15% of Advanced GCE	20% Advanced GCE

### Facilities

Workshop equipment includes: circular saw, radial arm saw, planer-thicknesser, 2 x bandsaws, vacuum forming machine, plastic dip coating machine, strip heater, convection oven, sand blasting unit, wood lathe, bowl lathe, 3 x metal centre lathes, milling machine, 3 x pillar drills, sheet metal fabrication equipment, mortising machine, abrasive disc sander, abrasive belt sander, 2 x scroll saws, polishing wheels, MIG Welding, TIG welding,

Resistance Welding (Spot), Oxy-Acetylene brasing, A2+ size Laser Cutting Machine, CAMM-2 engraving machine, CAMM-1 vinyl cutting machine, electronics / soldering equipment and numerous hand / fabrication tools.

The department has two design studios, a Computer Aided Design and Manufacture suite and 16 dedicated networked terminals for use by Design & Technology students. Each design studio has a permanent data projection system enabling large screen viewing of software, presentations and videos, one studio is also equipped with an electronic SMARTboard.

Software for Computer Aided Design, image editing, word processing, and data management is readily available. Colour printing up to A3 in size and two digital cameras are available along with full audio visual facilities.