



Design Technology 3D Product Design

OCR syllabus

One year AS/Two year A level.

Product Design is part of the continually evolving design field that has an impact on all walks of life. Though not aimed at the "high-tech", the course will develop academic and vocational skills such as analytical thinking, problem solving and computer aided manufacturing and design.

Requirements:

The College minimum to start an advanced level course is one grade B and four grade Cs at GCSE. Students wishing to undertake this course require grade C or above in an Art and Design GCSE, e.g. Resistant Materials or Graphic Products, along with a grade C or above in GCSE English Language. The student will also be expected to meet the Average Points Score for this subject. Some technical, mathematical and drawing ability would be an advantage.

Year 1:

INDUCTION

You will gain new skills in CAD/CAM drawing and making during the induction period. Students will have the opportunity to develop design ideas using traditional and digital modelling techniques.

PRODUCT STUDY

You will identify a consumer product of your choice (from an ipod to small furniture) which could be improved.

Following detailed research you will produce sketches of design models showing improvements using SolidWorks software, stereo lithography, laser cutting and traditional techniques. Work is produced in a digital multi-media format using animated CAD and real time video.

The final evaluation of the models is carried out in a realistic situation which will be used to assess the function of the modified design.

This project is worth 60% of the AS grade.

ADVANCED INNOVATION CHALLENGE

You will undertake a timed challenge where you are asked to create innovative solutions to a problem identified from a pre released theme. You will design and make your design using simple model making techniques.

The module is 40% of the AS mark.

Year 2:**DESIGN, MAKE, EVALUATE**

Students have to identify a real need and develop a range of solutions by drawing and modelling. This project will involve producing a large scale fully functioning prototype design of your choice. You will produce a set of working drawings which could allow the product to be manufactured by a third party.

The second part of the project involves students realising the design and carrying out a very rigorous evaluation which involves testing and gaining feedback from a professional as well as developing the design into a commercially viable product.

PRODUCT DESIGN EXAM

The A2 examination paper involves students in answering a set design question and producing a solution in 90 minutes. You will be asked to develop design ideas using freehand drawing techniques.

SUBJECT SPECIFIC SKILLS DEVELOPED ON THE COURSE:

- CAD for presentation, modelling and manufacturing using 2D design and SolidWorks;
- laser cutting, CNC machining and stereo lithography;
- traditional making techniques in wood, metal and plastic, using hand tools, power tools and workshop machines; and
- drawing techniques using fine liners and rendering pens.

Design Technology is a good foundation course for Higher Education, as well as being recognised by employers for various professions. After A Levels, Havering Sixth Form College offers an Art and Design Foundation Diploma which is designed for students who have completed a Design related A Level subject and will facilitate progression to appropriate Higher Education courses.

Other Information:

Basic materials will be supplied. However, students will be asked for a contribution towards the cost of course material. They will also need to provide themselves with a range of equipment which they will be advised about during the Induction process. Trips are arranged to local exhibitions and industrial manufacturing facilities and abroad.

Student Success at Havering Sixth Form College:

Rinesh Jethwa (ex Little Ilford) said: "This is a great combination of practical and theory work with excellent opportunities to develop new skills. I really enjoyed researching and designing the product of my choice."

In 2009, Design Technology A Level achieved a 100% pass rate. It was one of the highest achieving Design Technology courses in the country.