



AS/A2 DESIGN & TECHNOLOGY

Head of Department - Mr S. Stockley

Course Title - Systems and Control Technology

Examination board - AQA

Course reference – 2555

ENTRANCE REQUIREMENTS

A grade B in GCSE Design and Technology Electronic Products is a prerequisite for a normal acceptance onto the A Level course. Pupils who have reached the required grade in other D & T courses and have reached the required standard in Maths and Physics will be considered, interviewed by the HoD and in consultation with colleagues notified of the decision.

CONTENT

AS

Unit 1 (SYST1) Materials, Components & Application

50% of AS, 25% of A Level

This unit is delivered through a range of practical experiments and self directed research. It is examined with a 2 hour written paper on the following subject areas;

- Electronic system components
- Electronic processing systems
- Mechanical systems
- Development of Technologies and Design
- Design in the human context
- Industrial and Commercial Practices
- Product / Systems manufacturing
- Systems and Control
- Information Technology
- Modern Materials

Unit 2 (SYST3) Learning through Designing and making

50% of AS, 25% of A Level

The outcome of this unit is a written or electronic design portfolio alongside manufactured outcomes. There are 5 assessment criteria;

1. Investigation and Clarification of Problems
2. Development of Design Proposal
3. Making / Modeling
4. Evaluation and Testing
5. Communication and Presentation.

The AS coursework is assessed through a range of set tasks involving product analysis, reverse engineering, designing for consumer needs, utilising modern technologies such as smart materials and SMD and using commercially available production methods to design and make products. Part of the course will give students the opportunity to design and manufacture a competitive Scalextric car.

CONTENT

A2

Unit 3 – (SYS3) Design and Manufacture

25% of A level

A 2 hour written paper will assess students on the following topics;

- Pneumatic Processing Systems
- Electronic Processing Systems
- Development of Technologies and Design
- Design in Practice
- Design in the Human Context
- Energy
- Systems and control

This unit will be delivered through practical experimentation and self directed learning.

Unit 4 (SYST4) Design and Making Practice

25% of A Level

This module is assessed through coursework that is expected to take approximately 60 hours where students are expected to submit a written or electronic design folder along with a substantial manufactured outcome. The assessment criteria are as follows;

1. Context and Objectives
2. Plan of action and Clarification of Problem
3. Development of Design Proposal
4. Manufacture / Modelling
5. Conclusions, Evaluations and Recommendations
6. Communication and Presentation

WHY CHOOSE DESIGN AND TECHNOLOGY

This specification encourages candidates to take a broad view of design and technology, to develop their capacity to design and make products and to appreciate the complex relations between design, materials, manufacture and marketing.

SUPPORTING A LEVEL SUBJECTS

Mathematics, Physics, Computing and Art. *Students studying Maths and Physics along with Design and Technology may be eligible for the prestigious Arkwright Scholarship.*

CAREERS

Electrical \ Electronic & Mechanical engineering, (in fields such as; aerospace; medical; armed forces; transport; computing), consumer product design, engineering product design, marketing, industrial design consultancy, production engineering, project planning, technical sales, furniture design, interior/exhibition design, advertising, display design.

The UK energy sector is estimated to need 15,000 engineering graduates over the next two decades

*Martin Grant, managing director
of Atkins' Energy business*