

Electronics AS Level

Introduction

The Advanced Subsidiary GCE specifications aim to provide an introduction to and a thorough grounding in electronics. They are designed around a systems approach to electronics which introduces a wide range of transducers, and input, output and processing systems and encourages a practical, problem-solving approach. Project work allows the development of skills and the application of knowledge in the solution of a practical problem. The specifications aim to give an introduction to the electronics involved in modern communication and control systems. Prior acquaintance with relevant parts of GCSE Mathematics, Science and Design Systems specifications would be an advantage but it is not essential. It is more important that students have a genuine keen interest in the subject and a willingness to learn. The course provides a foundation for those wishing to pursue a career in electronics/electronic engineering or an associated discipline such as robotics and it also complements other subjects such as Physics and IT. It is also a course for the hobbyist who just wants to brush up on the theory as well as their practical skills.

Year 1

The course will be assessed through the completion of 3 short practical assignments and two formal exams (unit 1 and unit 2) relating to electronics theory. Unit 1 is based on Simple Digital systems, Digital from Analogue, Pulses, and Logic systems. Unit 2 is based on Storing signals, Negative feedback, Counting pulses, Amplifying audio, and Microcontrollers.

Students are expected to go through at least three cycles of design, construction, evaluation and modification as far as their coursework is concerned. Students build and test their circuits on breadboard and write up what they have done in a short report style (a bit like an extended practical). For assessment purposes they do not have to make a fully working model of their projects. During the projects students can expect individual advice and guidance from experienced members of staff.

Assessment

All external examinations take place during the summer term.

Coursework is submitted for assessment at the end of April.

Specific Entry Criteria

Grade C in Maths (Higher Tier).