ELECTRONICS A Level

PHYSICS – ENGINEERING – TECHNOLOGY

WHY STUDY ELECTRONICS AT IMBERHORNE?

- Electronics is a growth sector globally – lots of employment opportunities and opportunities for further study

- Recognised by universities as a 'Science based' subject

- A very successful subject at imberhorne – students typically exceed their expected grades

- Small class sizes

- Engaging mixture of theory and practical work

- Develop strong practical, mathematical, creative and problem solving skills

ENTRY REQUIREMENTS

- Entry requirements – 66+ GCSE Science, 5+ GCSE Maths

- An inquiring mind!

- There is *no requirement* to have studied electronics previously

COURSE CONTENT – COMPONENT 1

- Principles of Electronics – written exam 40% of qualification
  - Semiconductor components
  - Logic Systems
  - Operational Amplifiers
  - Signal conversion
  - AC circuits and passive filters
  - Communication systems
  - Wireless transmission
  - Instrumentation systems

COURSE CONTENT – COMPONENT 2

- Application of Electronics – written exam 40% of qualification
  - Timing circuits
  - Sequential logic systems
  - Microcontrollers
  - Digital communications
  - Optical communication
  - Mains power supply systems
  - High power switching systems
  - Audio systems

COURSE CONTENT – COMPONENT 3

- Extended system design & realisation tasks – 20% of qualification
    - Task 1 – development of a microcontroller system programmed using assembler language
    - Task 2 – design and make task using analogue and digital sub-systems in an integrated design

    - All circuits are designed, modelled and constructed using:
        - CAD software – i.e. control studio, circuit wizard
        - Prototype boards – plug & play

LEARN – MODEL – TEST - IMPROVE

- All circuits are designed, modelled and constructed using:
  - CAD software – i.e. control studio, circuit wizard
  - Prototype boards – plug & play
  - Stripboard or PCB – soldering

- Typically in an electronics lesson you will learn about a new electronic component or system; build that system using one of the methods above; then test and improve it to make it work effectively…

PROGRESSION PATHWAYS

- Degree or apprenticeship?

- Electronic engineering

- Software engineering

- Robotics

- Aerospace engineering

- Medical bio-technology

- Music production

- Sound engineering

COMPLIMENTARY POST 16 SUBJECTS

- Physics

- Maths

- Computer Science

- Music

- Media Studies