

Practical Electronics

National 5

Progression through Practical Electronics

Higher
Physics

A pass at National 5 level would give the foundations required for studying Higher Physics.



Course Content

Circuit Design

In this unit, candidates develop an understanding of key electrical concepts and electronic components. Candidates analyse electronic problems, design solutions to these problems and explore issues relating to electronics.

Circuit simulation

Candidates use simulation software to assist in the design, construction and testing of circuits and systems and to investigate their behaviour.

Circuit construction

In this area, candidates gain experience in assembling a range of electronic circuits, using permanent and non-permanent methods. They develop skills in practical wiring and assembly techniques, carrying out testing and evaluating functionality.

Skills Developed

- awareness of safe working practices in electronics
- analysing electronic problems and designing solutions to these problems
- simulating, testing and evaluating solutions to electronic problems
- skills in using a range of test equipment constructing electronic circuits using permanent (soldering) and non-permanent methods
- knowledge and understanding of the systems approach to electronics, including sub-systems
- knowledge and understanding of the use of concepts and principles associated with a range of electronic and electromagnetic components and circuits
- knowledge and understanding of combinational logic
- understanding of key electrical concepts — current, voltage, resistance, power, analogue/digital, capacitance, magnetic effect of current
- applying electronic knowledge and skills in a range of contexts

Assessment

Exam Paper

60 marks

Practical Activity

70 marks

Related Careers

A qualification in Electronics can lead to careers in:

- Aerospace engineer
- Broadcast engineer
- CAD technician
- Control and instrumentation engineer
- Design engineer
- Electrical engineer
- Electronics engineer
- IT consultant
- Network engineer
- Nuclear engineer
- Sound engineer
- Special effects technician

Bill Nye, Robert Watson Watt, Mike Bloomberg and Guglielmo Marconi all studied Electronics-related subjects.

