

Summary of Assessment

Component 1: Principles of Electronics

Written examination: 2 hours 45 minutes

40% of qualification

A mix of short answer and extended answer questions with some set in a practical context.

Component 2: Application of Electronics

Written examination: 2 hours 45 minutes

40% of qualification

A mix of short answer and extended answer questions with some set in a practical context.

Component 3: Extended system design and realisation tasks

Non-exam assessment

20% of qualification

Task 1

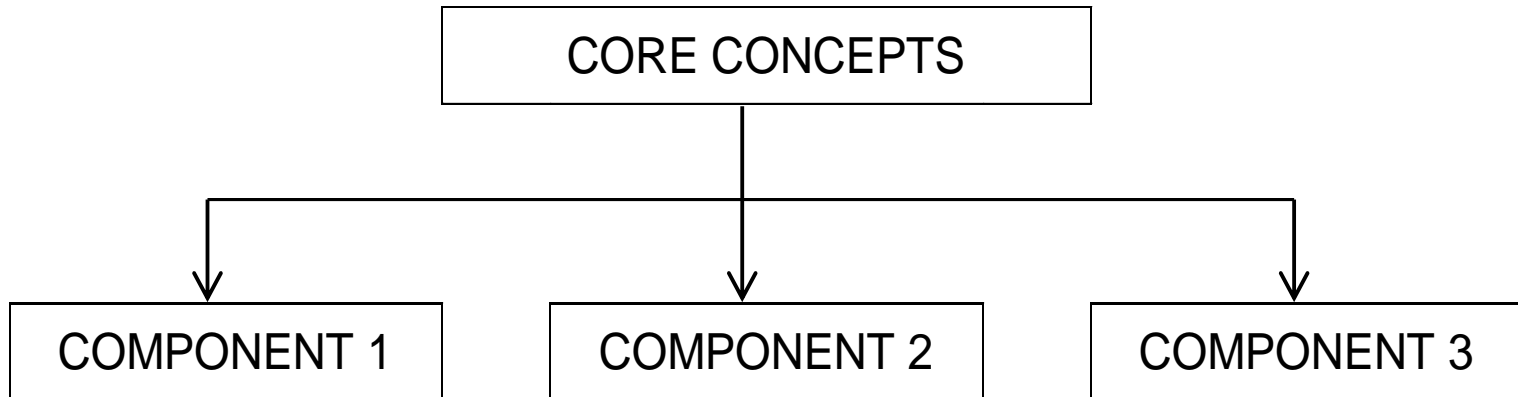
A design and program task to create a microcontroller system programmed in assembler language to solve an identified problem, need or opportunity.

Task 2

A substantial integrated design and realisation task to create an electronic system to solve an identified problem, need or opportunity.

Core concepts

The core concepts are fundamental to the study of electronics. They will be directly assessed in components 1 and 2 and are essential for the successful completion of Component 3.



Core concepts

Core concepts cover the following topics:

1. System synthesis
2. DC Electrical circuits
3. Input and output sub-systems
4. Energy and power

Component 1 – Principles of Electronics

Written examination: 2 hours 45 minutes

40% of qualification – 140 marks

This component covers the following topics:

- | | |
|-----------------------------|------------------------------------|
| 1. Semiconductor components | 5. AC circuits and passive filters |
| 2. Logic systems | 6. Communications systems |
| 3. Operational amplifiers | 7. Wireless transmission |
| 4. Signal conversion | 8. Instrumentation systems |

Component 2 – Application of Electronics

Written examination: 2 hours 45 minutes

40% of qualification – 140 marks

This component covers the following topics:

- | | |
|-----------------------------|---------------------------------|
| 1. Timing circuits | 5. Optical communication |
| 2. Sequential logic systems | 6. Mains power supply systems |
| 3. Microcontrollers | 7. High power switching systems |
| 4. Digital communications | 8. Audio systems |

Component 3 – Non-exam assessment (NEA) **Extended system design and realisation tasks**

20% of qualification – 70 marks

Task 1 (20 marks) – involves the development of a microcontroller system programmed through assembler language.

Task 2 (50 marks) – is a substantial system development including analogue and digital sub-systems in an integrated design.