# H06CA: Computer Architecture

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|---|---|
| **Module Code:** | H06CA |
| **Long Title** | Computer Architecture APPROVED |
| **Title** | Computer Architecture |
| **Module Level:** | LEVEL 6 |
| **EQF Level:** | 5 |
| **EHEA Level:** | Short Cycle |
| **Credits:** | 5 |
| **Module Coordinator:** | KEITH MAYCOCK |
| **Module Author:** | KEITH MAYCOCK |
| **Departments:** | School of Computing |
| **Specifications of the qualifications and experience required of staff** | |

**Learning Outcomes**

*On successful completion of this module the learner will be able to:*

| # | Learning Outcome Description |
|---|---|
| LO1 | Identify and describe the relationship between each component of the computer system and how each individual component works |
| LO2 | Distinguish between different computer number systems |
| LO3 | Understand the constructs and the functionality of assembly language programming. |
| LO4 | Adhere to lab practices and procedures in relation to computer hardware |
| LO5 | Dismantle and Assemble a PC |
| LO6 | Diagnose and Correct device conflicts in relation to computer hardware by applying problem solving scenarios. |

**Dependencies**

*Module Recommendations*

No recommendations listed

*Co-requisite Modules*

No Co-requisite modules listed

*Entry requirements*

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## Module Content & Assessment

### Indicative Content

**Computer Architecture**
• System Overview. • Data transfer and Bus Architecture. • Internal Memory. • System Components. • Peripherals.

**Digital Circuits**
• Binary Logic and Gates. • Introduction to Circuit Design. • Introduction to Boolean Algebra. • Boolean Algebra Identities. • Algebraic Manipulation of Logic expressions.

**Hardware**
• The PC. • Types of Systems. • Documentation and Warranties. • The Case. • System BIOS. • Hardware Resources Lab Practices. • Precautions. • Electrostatic Discharge. • Hazards. • Basic Test Equipment. • Disassembly and Reassembly Procedures. • Preventative Maintenance and Backups. • Safety and Recycling Diagnostic Tools. • Power On Self Test • Diagnostic Software: General Purpose, Disk and Shareware

| Assessment Breakdown | % |
| --- | --- |
| Coursework | 50.00% |
| End of Module Assessment | 50.00% |

**Assessments**

## Full Time

### Coursework

| | | | |
| --- | --- | --- | --- |
| **Assessment Type:** | Practical (0260) | **% of total:** | 20 |
| **Assessment Date:** | n/a | **Outcome addressed:** | 1,2,3,4,5,6 |
| **Non-Marked:** | No | | |

**Assessment Description:**
There are four practical sessions throughout the semester each worth 5%.

| | | | |
| --- | --- | --- | --- |
| **Assessment Type:** | Mid Semester Examination | **% of total:** | 30 |
| **Assessment Date:** | Week 9 | **Outcome addressed:** | 1,2,3 |
| **Non-Marked:** | No | | |

**Assessment Description:**
n/a

### End of Module Assessment

| | | | |
| --- | --- | --- | --- |
| **Assessment Type:** | Terminal Exam | **% of total:** | 50 |
| **Assessment Date:** | End-of-Semester | **Outcome addressed:** | 1,2,3,4,5,6 |
| **Non-Marked:** | No | | |

**Assessment Description:**
End-of-Semester Final Examination

No Workplace Assessment

### Reassessment Requirement

**Repeat examination**
*Reassessment of this module will consist of a repeat examination. It is possible that there will also be a requirement to be reassessed in a coursework element.*

## H06CA: Computer Architecture

| Module Workload | | | | |
|---|---|---|---|---|

**Module Target Workload Hours 0 Hours**

**Workload: Full Time**

| Workload Type | Workload Description | Hours | Frequency | Average Weekly Learner Workload |
|---|---|---|---|---|
| Lecture | No Description | 2 | Every Week | 2.00 |
| Lab | No Description | 1 | Every Week | 1.00 |
| Independent Learning | No Description | 7.5 | Every Week | 7.50 |
| | | | Total Weekly Contact Hours | 3.00 |

**Workload: Part Time**

| Workload Type | Workload Description | Hours | Frequency | Average Weekly Learner Workload |
|---|---|---|---|---|
| Lecture | No Description | 24 | Every Week | 24.00 |
| Lab | No Description | 12 | Every Week | 12.00 |
| Independent Learning | No Description | 89 | Every Week | 89.00 |
| | | | Total Weekly Contact Hours | 36.00 |

## Module Resources

| Recommended Book Resources |
|---|
| **Patterson, D and Hennessy. (2013), Computer Organization and Design: The Hardware/Software Interface, 5th. Morgan Kaufmann, [ISBN: 01397801240].** |

| Supplementary Book Resources |
|---|
| **Morris, M. and Kime C.. (2015), Logic and Computer Design Fundamentals,, 5th. Pearson International Edition.** |

*This module does not have any article/paper resources*

*This module does not have any other resources*

| **Discussion Note:** | |
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