# UNIVERSITY OF NORTHAMPTON

# MODULE SPECIFICATION

This document forms the definitive overview as to the nature and scope of this module and is used in the University’s quality assurance processes. The information in this document cannot be changed without approval (except for the Indicative Content).

[A glossary of key terms is available.](https://www.northampton.ac.uk/ilt/current-projects/defining-contact-time/types-of-student-contact-time/)

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| **FACULTY** | Faculty of Art, Science & Technology |
| **SUBJECT AREA** | Technology |
| **SUBJECT FIELD** | Computing |
| **MODULE TITLE** | Mathematics for Computer Science |

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| **MODULE CODE** | CSY1060 |
| **LEVEL** | 4 |
| **CREDIT VALUE** | 20 |
| **MODULE LEADER** | Muawya Eldaw |

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| **DELIVERY MODE(S)** | Standard |
| **DELIVERY LOCATION(S)** | UON |

**PRE-REQUISITES:**

None

**CO-REQUISITES:**

None  
  
**RESTRICTIONS:**None

**SUPPLEMENTARY REGULATIONS**:

This module has supplementary regulations No

**MODULE OVERVIEW:**

**INDICATIVE CONTENT:**

This module introduces a set of mathematical topics, which include binary number system, logic circuits, linear systems, graph theory, probability and statistics, that are widely studied by those learning computing sciences. The module equips students with fundamental mathematical skills which underpin a range of computing disciplines.

* Number Systems
* Computer Code
* Computer Arithmetic
* Logic and Truth Tables
* Algorithms, Flowcharts, and Pseudocode
* Sets and Relations
* Boolean Algebra and Logic Gates
* Logic Circuits
* Vectors and Matrices
* Linear Equations
* Combinatorial Analysis
* Probability
* Statistics and Random Variables
* Graph Theory

**LEARNING OUTCOMES:**

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| **Module Learning Outcomes** |
| **On successful completion of the module, with detailed guidance, students will be able to:** |
| **Subject-Specific Knowledge, Understanding & Application** |
| 1. Recognise and explain mathematical concepts and techniques used in computer science. |
| 1. Interpret information relevant to problem space. |
| 1. Apply mathematical methods to well-defined problems. |

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| **Employability & Changemaker Skills** |
| 1. Identify and solve problems using problem-solving strategies within a given context. |
| 1. Communicate information in a style and format appropriate for a particular audience, purpose and context. |

**Readers are referred to the Programme Specification document for the list of PSRB requirements met by this module.**

**TYPICAL LEARNING, TEACHING AND ASSESSMENT HOURS (for the module as delivered on-site at the University of Northampton):**

[View this table on how learning, teaching and assessment hours map to the KIS Categories.](https://www.northampton.ac.uk/ilt/current-projects/defining-contact-time/kis-guidance/)

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| **Learning and teaching information for this module when delivered off-site by UN partners is available from the partner institution’s NILE site (or equivalent). Any variation in study hours must be approved by the University of Northampton before students are enrolled, ensuring that study hours provision is always appropriate to support student achievement of the module learning outcomes.** |

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| **Learning, Teaching and Assessment activities** | **Study hours** |
| **Contact hours: (total)**  Comprising face-to-face and online contact hours as follows: | **48** |
| * **Face-to-face (total) -** this may include the following: * Face to face interactive small group session (generic space in groups of approx. 30 e.g. seminars/workshops/tutorials) | 36 |
| * **Online contact hours** **(total)**  (comprising online activities with mediated tutor input) | 12 |
| **Guided independent study hours**  **(including hours for assessment preparation)** | **152** |
| **Module Total** | **200** |

**ALIGNMENT OF LEARNING OUTCOMES AND ASSESSMENTS:**

**University of Northampton:**

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| **Assessment Activity** | | | **Learning Outcomes** | **Weighting (%)** |
| **Code** | **Assessment Type** | **Assessment Deliverables** |  |  |
| TC1 | Time constrained assignment | Time-constrained assignment -  Two hours. | a, b, c | 50% |
| TC2 | Time constrained assignment | Time-constrained assignment -  Two hours. | d, e | 50% |

The assessment items listed above are graded and contribute to the overall module grade (assessment *of* learning). In addition, there are opportunities for formative assessment (assessment *for* learning), which are ungraded, to support students in achieving the module learning outcomes. These are NOT listed.

**APPROVAL/ REVIEW DATES:**

**Version: 1**

Date of approval: