Anglia Ruskin University

# Module Definition Form (MDF)

| **Module code: MOD005423** | **Version:** 1 **Date Amended:** 04/May/2016 |
|---|---|

| **1. Module Title** |
|---|
| Maths for Computing |

| **2a. Module Leader** |
|---|
| Jamie Myland |

| **2b. Department** |
|---|
| Department of Computing and Technology |

| **2c. Faculty** |
|---|
| Faculty of Science and Technology |

| **3a. Level** |
|---|
| 4 |

| **3b. Module Type** |
|---|
| Standard (fine graded) |

| **4a. Credits** |
|---|
| 15 |

| **4b. Study Hours** |
|---|
| 150 |

**5. Restrictions**

| **Type** | **Module Code** | **Module Name** | **Condition** |
|---|---|---|---|
| Pre-requisites: | None | | |
| Co-requisites: | None | | |
| Exclusions: | None | | |
| **Courses to which this module is restricted:** | | | |

## LEARNING, TEACHING AND ASSESSMENT INFORMATION

### 6a. Module Description

A good foundation in Mathematics is important to any computing professional, knowledge such as number systems and Boolean logic are integral to both programming and computer systems, therefore this module will provide students with an understanding of the underlying mathematical concepts that support the diverse fields supported by software engineers.

The module covers conditional statements, graphics and gaming (geometry and vectors), relationships in databases, the calling of methods (or procedures), matrices in the handling of arrays, large datasets and mapping, statistics and set theory. This theory will be applied in a programming context with real world examples and case studies introduced to aid understanding.

Students will be introduced to key concepts in both a theoretical and practical sense and will use a high level programming language to apply relevant concepts. On completion of the module, students will be armed with the necessary knowledge to facilitate understanding of future modules involving computer systems and programming.

Assessment is through a final exam and weekly in-class worksheets which will develop into a portfolio of evidence and worked examples.

Delivery will be supported using the Virtual Learning Environment and students will be expected to undertake interactive online activities on a weekly basis to support understanding and to share knowledge.

### 6b. Outline Content

Algebraic concepts.

Statistical techniques to analyse data.

Binary and Hex mathematics.

Boolean logic.

Data representation.

Matrices in the handling of arrays.

### 6c. Key Texts/Literature

The reading list to support this module is available at: http://readinglists.anglia.ac.uk/modules/mod005423

### 6d. Specialist Learning Resources

None

| 7. Learning Outcomes (threshold standards) | | |
|---|---|---|
| **No.** | **Type** | **On successful completion of this module the student will be expected to be able to:** |
| 1 | Knowledge and Understanding | Understand core mathematical skills for software engineers. |
| 2 | Knowledge and Understanding | Understand the application of algebraic and binary concepts. |
| 3 | Intellectual, practical, affective and transferrable skills | Be able to manipulate boolean and algebraic logic. |
| 4 | Intellectual, practical, affective and transferrable skills | Be able to apply statistical techniques to analyse data. |

| 8a. Module Occurrence to which this MDF Refers | | | | |
|---|---|---|---|---|
| **Year** | **Occurrence** | **Period** | **Location** | **Mode of Delivery** |
| 2017/8 | F01UCP | Semester 2 | University Centre, Peterborough | Face to Face |

| 8b. Learning Activities for the above Module Occurrence | | | |
|---|---|---|---|
| **Learning Activities** | **Hours** | **Learning Outcomes** | **Details of Duration, frequency and other comments** |
| Lectures | 12 | 1,2,3,4 | lecture 1 hr x 12 weeks |
| Other teacher managed learning | 24 | 1,2,3,4 | workshops 2 hr x 12 weeks |
| Student managed learning | 114 | 1,2,3,4 | self-study and practice |
| TOTAL: | 150 | | |

| 9. Assessment for the above Module Occurrence | | | | | |
|---|---|---|---|---|---|
| **Assessment No.** | **Assessment Method** | **Learning Outcomes** | **Weighting (%)** | **Fine Grade or Pass/Fail** | **Qualifying Mark (%)** |
| 010 | Coursework | 3,4 | 30 (%) | Fine Grade | 30 (%) |
| **Worksheets completed during class work. 1,000 words equivalent** | | | | | |
| **Assessment No.** | **Assessment Method** | **Learning Outcomes** | **Weighting (%)** | **Fine Grade or Pass/Fail** | **Qualifying Mark (%)** |
| 011 | Examination | 1,2 | 70 (%) | Fine Grade | 30 (%) |
| **Exam 2 hours** | | | | | |

**In order to pass this module, students are required to achieve an overall mark of 40%.**
**In addition, students are required to:**
**(a) achieve the qualifying mark for each element of fine graded assessment of as specified above**
**(b) pass any pass/fail elements**