# Module Definition Form (MDF)

| Module code: MOD008106 | **Version:** 2 **Date Amended:** 17/10/2024 |
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| 1. Module Title |
|---|
| Maths for Scientists |

| 2a. Faculty Leader |
|---|
| Chinchu Babu |

| 2b. School |
|---|
| SE: ARU College |

| 2c. Faculty |
|---|
| Faculty of Science and Engineering |

| 3a. Level |
|---|
| 3 |

| 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

Foundation Maths for Science is a course that ensures if you are on the extended programmes for degrees in the departments of Life Sciences, Biomedical and Forensic Sciences, and Vision and Hearing Sciences, you will have the necessary basic mathematical skills required for entry to level 4.

By the end of the course, you will be able to carry out the basic mathematical manipulations and understand the relevant key concepts required in order to progress on to your chosen degree course. Each mathematical concept will be introduced to you by a lecture, in which examples are given to you of how to use and apply the concept are demonstrated. You will then practise problems in a tutorial for each topic, using worksheets given out in advance of the sessions. The worksheets that you are given will include problems applied to the various degree pathways to which you will progress, to indicate the importance and applicability of mathematics to your future degrees. The subjects covered are a range of arithmetic skills, algebra, areas and volumes, trigonometry and basic statistics.

### 6b. Outline Content

- Arithmetic: basic arithmetic and the correct order of mathematical manipulations; negative numbers; fractions; percentages; ratios; decimals; significant figures; scientific notation and indices
- Algebra: using symbols; brackets; solving linear equations; rearranging equations
- Data: graphic presentation; straight line equations
- Statistics: mean; standard deviation and standard error of the mean;
- T-tests
- Inequalities
- Areas and volumes of simple shapes
- Basic trigonometry
- Quadratic equations
- Exponentials and Logarithms

### 6c. Key Texts/Literature

The reading list to support this module is available at: http://readinglists.anglia.ac.uk/modules/mod008106

### 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 | Perform arithmetic calculations, express numbers in different formats and manipulate algebraic expressions |
| 2 | Knowledge and Understanding | Use basic statistics to determine the significance of data |
| 3 | Knowledge and Understanding | Use trigonometry and geometry to calculate areas and volumes of simple shapes |
| 4 | Intellectual, practical, affective and transferrable skills | Present and interpret graphical data |

| 8a. Module Occurrence to which this MDF Refers | | | | |
|---|---|---|---|---|
| **Year** | **Occurrence** | **Period** | **Location** | **Mode of Delivery** |
| 2022/3 | F01CAM | Trimester 1 | ARU Cambridge Campus | Face to Face |

| 8b. Learning Activities for the above Module Occurrence | | | |
|---|---|---|---|
| **Learning Activities** | **Hours** | **Learning Outcomes** | **Details of Duration, frequency and other comments** |
| Lectures | 0 | N/A | N/A |
| Other teacher managed learning | 48 | 1-4 | 4 hours per week x 12 teaching weeks |
| Student managed learning | 102 | 1-4 | Pre and post session preparation, reading and research. Other tasks as detailed in Module guide |
| 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 | 1 2 3 4 | 50 (%) | Fine Grade | 30 (%) |
| **In-class test (up to 1.5 hours)** | | | | | |
| **Assessment No.** | **Assessment Method** | **Learning Outcomes** | **Weighting (%)** | **Fine Grade or Pass/Fail** | **Qualifying Mark (%)** |
| 011 | Coursework | 1 2 3 4 | 50 (%) | Fine Grade | 30 (%) |
| **In-class test (up to 1.5 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**