Module Definition Form (MDF)

Module code: MOD008106	**Version:** 2 **Date Amended:** 06/Jun/2022

1. Module Title
Maths for Scientists

2a. Module Leader
Vida Keshtvarz

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: https://readinglists.aru.ac.uk/

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**
2025/6	ZZF	Template For Face To Face Learning Delivery		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% (for modules at levels 3, 4, 5 and 6) or 50% (for modules at level 7*).

In addition, students are required to:
(a) achieve the qualifying mark for each element of fine graded assessment as specified above
(b) pass any pass/fail elements

[* the pass mark of 50% applies for all module occurrences from the academic year 2024/25 – see Section 3a of this MDF to check the level of the module and Section 8a of this MDF to check the academic year]