

ICA SPECIFICATION

Module Title: Introduction to Mathematics	Module Leader: Annalisa Occhipinti
	Module Code: <u>CIS0004-N</u>
Assignment Title: Portfolio of Mathematical Exercises	Deadline Date: 13/05/2021 (week 13)
	Deadline Time: 4:00PM
	Submission Method: Middlesbrough Tower <input type="checkbox"/> Online (Blackboard) <input checked="" type="checkbox"/>

Central Assignments Office (Middlesbrough Tower M2.08) Notes:

- All work (including CDs etc) needs to be secured in a plastic envelope or a folder and clearly marked with the student name, number and module title.
- An Assignment Front Sheet should be fully completed before the work is submitted.
- When an extension has been granted, a fully completed and signed Extension form must be submitted to the SCMA Reception.

Online Submission Notes:

- Please follow carefully the instructions given on the Assignment Specification
- When an extension has been granted, a fully completed and signed Extension form must be submitted to the SCMA Reception.

Library Support for Academic Skills

Did you know you can book an individual 30 minute tutorial in the [Learning Hub](#) with an adviser to help you with your academic skills, writing or numeracy? Or that there are IoEDT of really useful workshops available to help you with your studies and assessments? Have a look at the [Succeed@Tees](#) workshops for more details.

**FULL DETAILS OF THE ASSIGNMENT ARE ATTACHED
INCLUDING MARKING & GRADING CRITERIA**

Introduction to Mathematics

ICA Requirements & Logistics

This document details the in-course assessment (ICA) for the module Introduction to Mathematics. Assessment will be 100% individual in-course work that will assess all learning outcomes. You will be required to:

- i) produce an **evolving portfolio** of exercises (**60%**) that demonstrates your developing subject knowledge and ability to use mathematical techniques relevant to solving mathematical problems. The portfolio will consist of a series of exercises to show that you have gained the required knowledge for each of the covered topics. You need to work through the questions and annotate your working out for each question. A clear breakdown of the marks awarded for each question will be given on the question paper.

The portfolio is divided into **three** parts and they will cover the following topics:

- Part 1: Numbers Bases, two's complement and Hexadecimal numbers;
- Part 2: Algebra, Equations, Simultaneous Equations, Quadratic Equations and Matrices;
- Part 3: Set Theory, Probability and Statistics.

- ii) Take three **multiple-choices quizzes (40%)** on Blackboard on the topics below:

- Quiz 1: Numbers Bases, two's complement and Hexadecimal numbers;
- Quiz 2: Algebra, Equations, Simultaneous Equations, Quadratic Equations and Matrices;
- Quiz 3: Set Theory, Probability and Statistics.

Each quiz will be made available once the related topics have been covered in the lessons and the quiz will stay open until the submission deadline (see front page). You will have only one attempt to each test, but there is no time limit to complete it.

The table below summarises the percentages of the portfolio tasks and quizzes.

Topics			
	Numbers Bases, two's complement and Hexadecimal numbers (25%)	Algebra, Equations, Simultaneous Equations, Quadratic Equations and Matrices (50%)	Set Theory, Probability and Statistics (25%)
Portfolio of Exercises (60%)	15%	30%	15%
Multiple-choices Quiz (40%)	10%	20%	10%

Each part will assess all the learning outcomes.

Module Learning Outcomes

Personal and Transferable Skills

1. Communicate mathematical information accurately and effectively in writing (PT3).
2. Apply laws of algebra to manipulate expressions and solve equations (PT).
3. Use mathematical methods to perform operations intuitively, efficiently and correctly (PT7).

Research, Knowledge and Cognitive Skills

4. Understand the principles of numbering systems and convert between number bases (RKC1)
5. Understand the key differences between analogue and digital signals (RKC1).
6. Demonstrate an understanding of sets and logic (RKC3).
7. Select and apply appropriate mathematical concepts, principles and methods to problems relevant to computing (RKC5).

Marking Criteria

The portfolio will be assessed for accurately solved problems using suitable techniques with clear documentation of the process. In particular, students will be assessed for:

- Appropriate modelling of the given problems
- Appropriate use of their models to reason about the given problems
- Appropriate use of problem-solving skills and techniques studied in the module
- Quality of their solutions

The marks awarded for each question are given in the question paper. Feedback and marks for this assessment will be released on the date given in the ICA Assessments.

GRADE	Grade Descriptors
70+	Demonstrates a thorough knowledge and understanding of the syllabus; successfully applies mathematical principles at a sophisticated level in a wide variety of contexts. Successfully uses problem-solving techniques in challenging situations; recognizes patterns and structures, generalizes and justifies conclusions. Understands and explains the significance and reasonableness of

	results and draws full and relevant conclusions; communicates mathematics in a clear, effective and concise manner, using correct techniques, notation and terminology; demonstrates the ability to integrate knowledge, understanding and skills from different areas of the course; uses technology proficiently.
60 - 69	Demonstrates a good knowledge and understanding of the syllabus; successfully applies mathematical principles in performing routine tasks. Successfully carries out mathematical processes in a variety of contexts, and recognizes patterns and structures; understands the significance of results and draws some conclusions; successfully uses problem-solving techniques in routine situations; communicates mathematics effectively using suitable notation and terminology; demonstrates an awareness of the links between different areas of the course; uses technology appropriately.
50 - 59	Demonstrates a satisfactory knowledge of the syllabus; applies mathematical principles in performing some routine tasks; successfully carries out mathematical processes in straightforward contexts; shows some ability to recognize patterns and structures; uses problem-solving techniques in routine situations; has limited understanding of the significance of results and attempts to draw some conclusions; communicates mathematics adequately, using some appropriate techniques, notation and terminology; uses technology satisfactorily
40-49	Demonstrates minimal knowledge of the syllabus; demonstrates little or no ability to use mathematical processes, even when attempting routine tasks; is unable to make effective use of technology.

Submission and Deadlines

You must submit your ICA work to Blackboard by the due date on the front page.

Present your work neatly with a word-processed cover sheet clearly stating your module code, name, student number and date. You may submit your solutions as either a handwritten then scanned (not photographed) document or fully word-processed document. Regardless of your method of submission your solutions must have a typed cover sheet and be submitted as a single PDF. NOTE: If we cannot read your work through either poor quality scanning or handwriting that is difficult to read we cannot mark it.

A submission link for the portfolios' submission will be available via Blackboard under the Assessments link.

The deadline for submission (and the date on which you will receive feedback) have been determined by the Program Leader or Centre Leader as appropriate.

Please ensure your submitted documentation is clearly labelled with your name and relevant details.

Please also make sure that submitted documentation has been tested and verified and is not corrupted in any way which would prevent access for marking.

Logistics

After the in-course assessment briefing has taken place and the assessment requirements made available, you will have the opportunity to progress your work and receive formative feedback during study sessions as scheduled.

Progress reviews with your tutors will be facilitated during timetabled sessions to monitor and guide your assessment responses. Such reviews will provide formative feedback on your progress and assistance with any difficulties but cannot include any marking of your work.