BIC4028-A module descriptor	
Module Title	Mathematics for Informatics
Credit Level	10 credits (FHEQ Level 4)
Session	2026/7 academic year
BDA occurrence	Semester 1 available at University of Bradford
BDA occurrence	Semester 2 available at University of Bradford

Transparency notice

This specification for module code BIC4028-A has been generated automatically in advance of the academic year 2026/7. Every effort has been made to ensure that the information is accurate at the time of publication, but changes permitted by our Student Contract Terms and Conditions could be made in the interval between publishing and commencement of teaching; where changes impact the terms and conditions of an applicant's or student's offer, these are communicated to them as soon as possible.

BIC4028-A module aims

This module will provide you with a solid a grounding in computational thinking and the use of the mathematical structures that underpin programming and data structures. The principal aim of this module is to bring students up to a common standard in mathematics in order to facilitate their entry into second year computational studies.

BIC4028-A module learning outcomes

No.	Students completing the module will be able to:
01	Describe the fundamental mathematical principles which underpin computational related disciplines.
02	Use the mathematical language and methods accurately in the description of computational system.
03	Apply mathematical methods, tools and notations proficiently in solving computational problems.

BIC4028-A module outline syllabus

The module focuses on the following areas:

(a) understanding mathematical concepts associated with computing applications
(b) applying the mathematical skills and techniques to solve computing problems

And covers the following topics:
Algebra: powers, matrices and vectors
Concepts of Boolean algebra and Karnaugh maps in solving logic problems
Calculus: differentiation and integration of functions
Algorithms: construction and applications
Probability: basic concepts, discrete and continuous distributions
Computational analysis using MATLAB.

For more information, visit the VLE (**Canvas**) page, go to our **Reading Lists webpage for this module** or search **https://bradford.rl.talis.com** for this module.

BIC4028-A module notional learning hours

- 50 hours Lectures
- 50 hours Directed Study

The overall expected hours may include contact time, scheduled learning activity, directed and independent study and any minimum expectations for placement learning. Most learning at the University of Bradford has some online content and sessions which are delivered fully by virtual means are labelled as "online".

BIC4028-A module learning, teaching and assessment

Groups are small and classes are student-centred and interactive.

The classroom approach is explicitly designed to help international students acquire new knowledge and skills, to build their confidence and enable them to become more independent learners. By doing this consistently and across all modules, the programme provides them with a strong foundation for further study in their chosen subject area.

The approach is inclusive and recognises that students come from different backgrounds with a range of previous learning experiences and associated expectations, beliefs and behaviours. Teaching and learning methods are clearly explained so that students understand why (where appropriate) they need to engage in new ways of learning and why those they have used or relied on up to this point may be less suited to supporting their ongoing development and their chances of success in UK Higher Education.

Formative work is an integral part of the approach. In class, students are set tasks that require them to apply their knowledge and skills, to think critically and to solve problems. The level of challenge is gradually increased as the students grow in confidence and Tutors help them to see that experimentation, trial and error are central to the learning process, providing constructive feedback on both what has been achieved and how.

Students are also expected to engage in independent study, to reflect on their own performance and to discuss this with their module tutor or personal academic tutor, who will provide support and advice and, when necessary, draw the attention of Module and Programme Leads to a struggling student using the 'Students of concern' process.

The summative assessment tasks require students to demonstrate and apply their understanding of key concepts with reference to real-world situations.

BIC4028-A mode of assessment

Type	Mode	Assessment description	Weight
Summative	Examination - Closed Book	Unseen end-of-term examination, covering all topics and testing LO1, LO2 & and LO3	100%

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