

PROGRAMME SPECIFICATION

1 Awarding Institution	Newcastle University
2 Teaching Institution	Newcastle University
3 Final Award	BSc (Hons)
4 Programme Title	Mathematics and Accounting Mathematics and Accounting with Placement Year
5 UCAS/Programme Code	NG41 1139U
6 Programme Accreditation	None
7 QAA Subject Benchmark(s)	Mathematics, Statistics and Operational Research; Accounting
8 FHEQ Level	6
9 Date written/revised	May 2023

10 Programme Aims

In respect of Mathematics and Statistics:

- 1 To provide an integrated but flexible degree structure, enabling each student to choose either broad or more specialist study in the final year.
- 2 To produce graduates who have a sound, broad knowledge of the fundamental aspects of mathematics and statistics, complemented by knowledge of specialist areas, and an awareness of applications of these subjects.
- 3 To allow students to develop the ability to reason logically and their capacity for mathematical and statistical thinking, and to equip students with a range of subject-related key skills.

In respect of Accounting:

- 4 To produce graduates with the following qualities:
 - (i) The knowledge, understanding, key and specific skills and general intellectual development required to make them employable in graduate positions in accounting, business, management and a wide range of other employments or capable of undertaking a taught postgraduate programme
 - (ii) a capacity for inquiry, abstract logical thinking and critical analysis and the ability to work independently.
- 5 To combine the study of both the conceptual and the applied aspects of accounting.
- 6 To provide teaching informed by research (both relevant research in the discipline and research carried out by members of staff) and by the Subject Area's strong professional links.
- 7 To relate accounting to a broader business context.

For students on the Placement Year programme:

- 8 Provide students with the experience of seeking and securing a position with an employer.
- 9 Facilitate independent self-management and proactive interaction in a non-university setting.
- 10 Provide a period of practical work experience that will benefit current academic study and longer term career plans.
- 11 Enable students to ethically apply their knowledge and skills in the work place, reflect upon their development and effectively evidence and articulate their learning in relevant future settings.

11 Learning Outcomes

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the following areas. The programme outcomes have references to the benchmark statements for Mathematics and Statistics, and Economics.

Knowledge and Understanding

On successful completion of the programme students should have:

In respect of Mathematics and Statistics:

- A1 A broad understanding of fundamental concepts and methods of mathematics and statistics.
- A2 Further knowledge and experience of theoretical concepts and analytical techniques in mathematics and statistics.
- A3 Further broad knowledge of a number of topics in mathematics and statistics or a more specialist knowledge of particular areas within these subjects, as appropriate to the pathway chosen and as reflected in the degree title awarded.

In respect of Accounting:

- A4 An understanding of the basic framework of financial reporting, management accounting and finance.
- A5 (Depending on option choices) progression to Stage 2 level in at least two of the following three areas and to Stage 3 (honours level) in at least one of the following areas:
 - a) UK financial reporting including consideration of alternative recognition and measurement rules and of the impact of accounting choices.
 - b) Principal aspects of management accounting and the use of accounting information for internal decision making and control
 - c) The principal models used in finance and consideration of the application of these models in the context of the multinational corporation.
- A6 Knowledge and understanding of key research in the disciplines studied (including research by members of staff where relevant), critical evaluation of theories and empirical evidence.
- A7 The opportunity to explore other aspects of accounting, finance and business.

For students on the Placement Year programme, an ability to:

- A8 Apply personal and professional development strategies to prioritise, plan, and manage their own skills development and learning.
- A9 Research, select and apply relevant knowledge aimed at enhancing their own skills and effectiveness in specific duties at their placement.
- A10 Demonstrate an understanding of a work environment, how it functions and their contribution to it.
- A11 Relate their work based learning to other areas of personal development, including academic performance.

Teaching and Learning Methods

Lectures are the principal means to impart knowledge and understanding and to present the essential material for each module. In Mathematics and Statistics, problem classes are used to support lectures and enhance students' understanding by providing an opportunity to clarify issues arising from lectures and work through additional examples; in Stage 1, there is a module that includes regular seminars where students present solutions to mathematical problems.

In Accounting, the primary method of imparting knowledge and understanding is lectures. These are supplemented by seminars, workshops and large group problem sessions where students

are able to check their learning through discussion and through practice. Much learning in accounting and finance is accomplished through a problem-based approach.

Students are encouraged to supplement taught material through independent reading, with extensive guidance being given about which books and articles to read. Students also enhance their learning through student-centred project work and by analysing case studies.

Assessment Strategy

The standard assessment format, used for nearly all Mathematics and Statistics modules, is based on an unseen written examination (counting for at least 70% of the assessment), together with an appropriate mixture of in-course assignments, in-course tests and mini-projects. These methods enable assessment of the Learning Outcomes A1-A3. Assessment by unseen examinations is seen as a valid and reliable method of assessing both ability and knowledge. Details of the specific assessment modes and weighting, for each module, are set out in the module specification in the Module Catalogue.

In Stages 2 and 3, the MAS modules use a standard format for examination papers in which there is a Section A, consisting of short, straightforward questions which cover the whole module, and a Section B with questions designed to test a greater depth of understanding. In Stage 1, there are a variety of short and medium length questions enabling the students to demonstrate their knowledge of the subject unconstrained by the need to answer complete long questions. In Accounting, knowledge and understanding is primarily assessed by unseen examinations, but also to some extent by various forms of coursework – essays, projects, reports, case studies and worksheets.

Intellectual Skills

On completing the programme students should be able to:

- B1 Formulate problems.
- B2 Prove results by following a sequence of logical steps.
- B3 Solve problems.
- B4 Present data in an understandable way.
- B5 Interpret data.
- B6 Demonstrate a critical evaluation of arguments and evidence.
- B7 Draw conclusions from structured, and to a lesser extent from unstructured, problems using given data or data acquired by the student.

Teaching and Learning Methods

In addition to lectures and problem classes, regular drop-in sessions are used in all Stages to give students the opportunity to ask individual questions about exercises and to clarify issues arising from lectures. This helps with learning outcomes B1 – B3 in most mathematics modules and with B4 and B5 in most statistics modules.

B6 is principally developed through seminars, where students can discuss such matters and learn to evaluate arguments and evidence. Problem-solving skills (B7) are principally developed through workshops, problem sessions and projects. Students can enhance their learning through independent reading, undertaking case study analysis and project work.

Assessment Strategy

In Mathematics and Statistics, in-course tests and coursework assignments are designed to allow students to test and develop these intellectual skills. Typically there are three or four assessments in a 10 credit module: a combination of in-course tests, written assignments, mini-project and computer based assessments (CBAs), as appropriate to the module. Stage 1 modules usually have five assessments. Model solutions to all written assignments are made available to students when the marked work is returned, sometimes earlier if appropriate. Marked work is returned within two weeks of the submission date. Computer based assessments are used in Stage 1 and, to a lesser extent, in Stage 2 to help the students to develop their problem solving skills (B3). The students are given access to try questions in CBA practice mode and then a fixed period to attempt randomly generated questions in 'exam' mode. Having completed an assignment, they are given their marks and the full solutions. In-course tests give students practice in problem solving under exam-like conditions (B3). All forms of in-course assessment contribute to both formative and summative assessment.

In Accounting, cognitive skills are assessed by unseen examinations, essays and presentations for B5 and B6. Worksheets, case studies and projects are also used for B6.

Practical Skills

On completing the programme students should be able to:

- C1 Use the mathematical programme Python to solve mathematical problems.
- C2 Use the statistical programme language R to solve various statistical problems.

On completing the programme students should be able to:

- C3 Record and summarise transactions and prepare financial statements
- C4 Analyse business operations for decision-making purposes
- C5 Perform financial projections for decision-making and control

Teaching and Learning Methods

In Mathematics and Statistics, practical classes, held in a computer teaching laboratory, introduce students to the use of computer packages (R and Python). Python and R will be met in a Stage 2 mathematical computing module for Major/Minor and Joint Honours students.

Students are expected to use the computer network, as appropriate, for homework assignments or minor projects. Such work often starts in a practical session and is finished in the student's own time.

In Accounting, practical skills are often demonstrated in lectures with follow-up in large group problem sessions and in workshops to enable students to develop these skills in a supportive environment where help is available. Mastery of these skills requires practice which students gain through workshops and through preparing problem-based worksheets. There are also open help sessions where students can seek help, as well as consultation with members of staff.

Assessment Strategy

In Mathematics and Statistics, computing skills are assessed through tests and mini projects or through questions in coursework assignments. (C1-C2)

In Accounting, practical skills are assessed by unseen examinations, worksheets, projects and case studies.

Transferable/Key Skills

On completing the programme students should be able to:

- D1 Write project reports using Word.
- D2 Demonstrate a high level of numeracy.
- D3 Demonstrate a high level of computer literacy.
- D4 Manage time and prioritise tasks by working to strict deadlines.
- D5 Use appropriate verbal and written communication skills to convey information.
- D6 Work in a team, contributing appropriately and effectively towards the team-based activity.

For students on the Placement Year programme:

- D7 Reflect on and manage own learning and development within the workplace.
- D8 Use existing and new knowledge to enhance personal performance in a workplace environment, evaluate the impact and communicate this process.
- D9 Use graduate skills in a professional manner in a workplace environment, evaluate the impact and communicate the personal development that has taken place.

Teaching and Learning Methods

In Mathematics and Statistics, students' learning is supported by regular exercises (D2 and D3). Project work is normally started within practical sessions (D1 and D3). Further support is given in drop-in sessions (D2). Short presentations in a core module at Stage 1 introduce presentation skills (D5).

In Accounting, these skills (largely D1 – D5) are introduced to students through sessions in the induction programme and skills session within modules. IT is taught in specific modules through lectures and workshops, but is further used and developed in other knowledge based modules. Modules also draw on quantitative skills developed in the other part of the joint programme. Oral

communication skills are in particular developed through seminars and presentations. Students have the opportunity to develop work and study skills, but there is a limit to the extent to which these can be taught.

Students can develop these skills further through project work and worksheets.

Assessment Strategy

Many statistics modules and some mathematical modules have a project element (D1 and D3). Most modules involve exercises which improve numeracy (D2). A short presentation is assessed in one of the Stage 1 core modules. All modules have exercises/projects with strict deadlines (D4).

In Accounting, D1, D2, D3 and D5 are assessed through unseen examinations, worksheets, essays, projects and presentations. Time management skills and the ability to work independently (D4) are tested indirectly through the need to prepare material and meet rigid deadlines.

12 Programme Curriculum, Structure and Features

Basic structure of the programme

In respect of Mathematics and Statistics:

In **Stage 1**, the first aim is to consolidate and reinforce the students' knowledge on entry, and to provide a sound body of introductory material in mathematical methods and in the subject areas of Mathematics and Statistics. This provides the foundation for subsequent study in these areas. Students also take 'methods' modules that reinforce work in other modules and one of these provides an opportunity to give a short presentation. All modules in Stage 1 are Core and Compulsory.

In **Stage 2**, students undertake further compulsory modules in each of Applied Mathematics and Statistics. These modules develop relevant knowledge and experience of more theoretical concepts and further analytical techniques.

In **Stage 3**, a wide choice of modules is provided. This allows students either to specialise or to continue to study a broad curriculum.

In respect of Accounting:

Stage 1 provides the foundation of accounting and finance. The emphasis in accounting and finance is mostly on the applied aspects of the discipline, with the key techniques being introduced. Contact hours are greater at Stage 1 than in later Stages in order to ensure that students master key technical issues.

Stage 2 focuses on the two main streams of financial reporting and management accounting. At this Stage the emphasis on the conceptual as opposed to the applied aspects of the discipline is increased, and students start to be introduced to research findings.

At **Stage 3** further specialisation takes place with students taking credits covering financial reporting and management accounting. The research element in the curriculum increases, covering both key research in the area, but also relevant research by members of staff.

Student on the Careers Placement Year programme will take their placement in the penultimate year of studies.

Key features of the programme (including what makes the programme distinctive)

In respect of Mathematics and Statistics:

The programme is structured to ensure that students receive a broad mathematical and statistical education throughout the first two years. This allows them to choose either to continue studying a broad range of subjects in Stage 3, or to specialise in Stage 3 (largely in Applied Mathematics or Statistics).

In respect of Accounting:

The programme provides a broadly-based curriculum, suitable for many careers in accounting and business.

Programme regulations (link to on-line version)

[-RMaths Stats JH.pdf \(ncl.ac.uk\)](#)

13 Support for Student Learning

Generic information regarding University provision is available at the following link.

[Generic Information](#)

14 Methods for evaluating and improving the quality and standards of teaching and learning

Generic information regarding University provision is available at the following link.

[Generic Information](#)

Accreditation reports

Additional mechanisms

15 Regulation of assessment

Generic information regarding University provision is available at the following link.

[Generic Information](#)

In addition, information relating to the programme is provided in:

The University Prospectus: <http://www.ncl.ac.uk/undergraduate/degrees/#subject>

Degree Programme and University Regulations: <http://www.ncl.ac.uk/regulations/docs/>

Please note. This specification provides a concise summary of the main features of the programme and of the learning outcomes that a typical student might reasonably be expected to achieve if she/he takes full advantage of the learning opportunities provided.