PROGRAMME SPECIFICATION		

1	**Awarding Institution**	Newcastle University
2	**Teaching Institution**	Newcastle University
3	**Final Award**	MMath Honours or MMathStat Honours
4	**Programme Title**	G103 Mathematics GGC3 Mathematics and Statistics 1168U Mathematics with Placement Year 1169U Mathematics and Statistics with Placement Year
5	**UCAS/Programme Code**	See 4.
6	**Programme Accreditation**	Institute of Mathematics and its Applications
7	**QAA Subject Benchmark(s)**	Mathematics, Statistics and Operational Research
8	**FHEQ Level**	7
9	**Date written/revised**	May 2025

10	**Programme Aims**

1   The two programmes aim to provide an in-depth understanding of mathematics and statistics for those who wish to enhance their employability by acquiring greater technical skills than those provided by the BSc programme, or who may wish to proceed to postgraduate study.
2   The structure aims to produce graduates who have a sound, broad knowledge of the fundamental aspects of mathematics and statistics, complemented by a knowledge of specialist areas, and an awareness of applications of these subjects.
3   The structure aims to develop students' ability to reason logically and their capacity for mathematical and statistical thinking, and to equip students with a range of subject-related key skills.

For students on the Placement Year programme:

4   Provide students with the experience of seeking and securing a position with an employer.
5   To provide students with a period of practical experience and the opportunity to develop their workplace skills.
6   Facilitate independent self-management and proactive interaction in a non-university setting.
7   Provide a period of practical work experience that will benefit current academic study and longer-term career plans.
8   Enable students to ethically apply their knowledge and skills in the workplace, 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, Statistics and Operational Research.

Knowledge and Understanding

On completing the programme students should have:
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	In areas of the student's specialization, a more in-depth understanding of mathematical and/or statistical concepts and methods.

For students on the Placement Year programme:

A4	Apply personal and professional development strategies to prioritise, plan, and manage their own skills development and learning.
A5	Research, select and apply relevant knowledge aimed at enhancing their own skills and effectiveness in specific duties at their placement.
A6	Demonstrate an understanding of a work environment, how it functions and their contribution to it.
A7	Relate their work-based learning to other areas of personal development, including academic performance.

Teaching and Learning Methods

Lectures are the principal vehicle for presenting the essential material which defines the module and provide the key element towards achieving the learning outcomes A1-A3.

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.

There is one 10 credit problem solving module in Stage 1. There is one 10 credit module in Stage 1 that involves group working through Assignment Labs. There is one 20 credit module in Stage 3 that involves group working.

Assessment Strategy

The standard assessment format, used for most modules, is based on an unseen written examination (counting for at least 70% of the assessment), together with an appropriate mixture of course assignments, in-course tests and mini-projects integrated within the stage-level in-course assessment. These methods all 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 weightings, for each module, are set out in the module specification in the Module Catalogue.

In Stages 2 and 3, modules are assessed mainly by examination. The typical format for examination papers includes a Section A, consisting of short, straightforward questions which cover the whole module, and a Section B, with longer questions designed to test a greater depth of understanding. In Stage 1, we set 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.

The modules that incorporate group learning are largely assessed by coursework (a combination of in-course tests, presentations, projects, as appropriate to the module).

In Stage 4, assessment is more varied. There is a major project which is assessed by a dissertation, oral presentation and poster presentation.

Intellectual Skills

On successful completion of 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

Teaching and Learning Methods

Regular drop-in sessions are used to give students the opportunity to ask individual questions about exercises and to clarify issues arising from lectures.

Regular drop-in sessions and problems classes help with learning outcomes B1-B3 in most mathematics modules and with B4 and B5 in most statistics modules.

Assessment Strategy
Coursework assignments are designed to allow students to test and develop these intellectual skills. Typically, there are typically three assessments in a 10-credit module: a combination of in-course tests, written assignments, mini-project and computer-based assessments, as appropriate to the module. Model solutions to all written assignments are made available to students after the submission point has closed, with the solutions forming a material part of the feedback and learning process for the student cohort. Individual hand-marked work is typically returned within two weeks of the submission date, and marks for computer-based assignments marked by machine are released immediately. 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). Having completed an assignment, they are given their marks and the full solutions. Some in-course assignments give students practice in problem solving under exam-like conditions (B3). All forms of in-course assessment contribute to both formative and summative assessment.

Practical Skills
On successful completion of the programme students should be able to: C1   Use the mathematical programme Python to solve various mathematical problems. C2   Use the statistical programming language R to solve various statistical problems.

Teaching and Learning Methods
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 Stage 1, with further development in later stages (C1, C2). 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.

Assessment Strategy
Computing skills are assessed through tests and mini projects or through questions in coursework assignments. (C1, C2)

Transferable/Key Skills
On successful completion of the programme students should be able to: D1   Write project reports using typesetting and/or word-processing packages. 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   Communicate effectively in English, using a range of media including oral, poster and written report form. D6   Take responsibility for their own learning. D7   Give a presentation. D8   Work in a team. For students on the Placement Year programme: D9   Reflect on and manage own learning and development within the workplace. D10   Use existing and new knowledge to enhance personal performance in a workplace environment, evaluate the impact and communicate this process. D11   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

Students learning is supported by regular exercises, typically on a fortnightly cycle (D2, D3). Project work is normally started within Practical sessions (D1, D3). Further support is given in drop-in sessions (D2, D6). The project module in Stage 3 develops higher level presentational skills and provides an environment for group work (D7, D8).

Lectures within the project modules are used to instruct on how to give oral presentations and how to use LaTeX (D5, D6). Regular supervisory meetings with the Stage 4 project students allows progress to be monitored (D4, D5).

Assessment Strategy

12 Programme Curriculum, Structure and Features

Basic structure of the programme

The programmes without a placement year last four years and comprise of 480 credits spread equally over the four Stages.

The programmes with a placement year last five years and comprise 480 credits spread equally over four Stages together with the placement year. Students are not admitted to a programme with a placement year but may transfer early in Semester 2 of stage 2, subject to approval by the Degree Programme Director.

In **Stage 1**, the School aims first to consolidate and reinforce the students' knowledge on entry, and to provide a sound body of introductory material in mathematical methods and in the three subject areas of Applied Mathematics, Pure Mathematics and Statistics without emphasising boundaries between the subject areas. Students also take problem solving modules that introduce the computing packages Python and R and provide opportunities for teamwork. This comprises 120 credits of compulsory material.

In **Stage 2**, all students undertake further compulsory study in each of Applied Mathematics, Pure Mathematics and Statistics. These modules develop relevant knowledge and experience of more theoretical concepts and further analytical techniques. This comprises at least 90 credits of compulsory material. The remaining credits are selected from a selection of modules in the three subject areas.

In **Stage 3**, a wide choice of modules is provided, extending over the three subject areas. This allows students either to specialise or to continue to study a broad curriculum. There is also a further opportunity to take modules from outside the School (up to 20 credits) at the appropriate level.

Choice of modules at Stage 3 is affected by what a student intends to take in Stage 4.

In **Stage 4** students are required to study advanced modules which are intended to take the students closer to the frontiers of research. They also undertake a substantial project in their chosen subject area which develops their skills of independent study and presentation of results both orally and in writing.

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

Some statistics modules and some mathematical modules have a project element (D1, D3).

Most modules involve exercises which improve numeracy and computer literacy (D2, D3).

All modules have exercises/projects with strict deadlines (D4). Oral and poster presentations count towards the assessment of the Stage 3 group project and Stage 4 project (D5, D7).

Key features of the programme (including what makes the programme distinctive)
A distinctive feature of the School's curriculum is the flexible structure, operating within the University's modular system, in which students can choose pathways which provide either: • a broad mathematical and statistical education throughout their programme of study, or • a general mathematical and statistical background followed by more specialised study of chosen areas. The balance of modules chosen by a student, through optional choices in Stages 3 and 4, is reflected in the degree title awarded. Subject to approval, students may transfer to a programme including a placement year between Stage 2 and 3.
Programme regulations (link to on-line version)
RG103-1169U

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   Degree Programme and University Regulations

Last Updated: 09/05/2025