

# Mathematical Sciences (with a Foundation Year)

A four-year route to a number of BSc (Hons) degree programmes within the Department of Mathematical Sciences.



UCAS Code G108 | 4 Years (1+3) | Full-time

**This course provides students with the opportunity to enter a range of BSc (Hons) degree programmes from within the Department of Mathematical Sciences.**

## Entry Requirements

A typical offer is likely to be CDD or 80 points in three subjects at A Level, preferably in related subjects. Students with alternative A Level combinations are welcome to apply but should expect to be made higher offers. All students must meet the baseline GCSE requirements of 5 GCSEs at grade C or above including Mathematics (grade 5 if numerical), English Language (grade 4 if numerical) and Sciences (either core and additional science or two separate sciences). Adult learners will be considered without Level 3 qualifications but must meet the GCSE requirements and may be invited for interview. Students with overseas qualifications should contact the college to enquire about whether their qualification are accepted for entry.

Students holding offers at the University of Liverpool may be made a change of course offer to G108, after the examination results, if they fail to gain the required number of points for their first choice course.

Applicants will be expected to fall into one of the following categories:

Adult learners returning to education with A Level passes

Adult learners returning to education with 5 GCSE / O Level passes or more inc. Maths, Sciences and English Language

Sixth Form school leavers currently studying A Levels or BTEC L3 Extended Diploma (Applied Science)

Students from within the European Union

## CONTACT

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UNIVERSITY OF  
**LIVERPOOL**

**carmel**  
college

## Course Modules

All students will study **Mathematics** and a choice of two other modules from **Physics, Chemistry, Computing, Biology and Geography**. Degree titles and modules are marked on the course selection chart; **[E]** for essential, **[P]** for preferred and **[O]** for optional.

### Mathematics (2 semesters compulsory)

This module introduces graph work, differentiation and integration, vectors, statistics, trigonometry, logarithms, iteration and partial fractions. Students can expect to develop problem solving and analytical skills.

### Additional Mathematics

(2 semesters compulsory)

This module covers sequencing and series, binomials, complex numbers, polynomials, differentiation, mechanics, momentum, vectors and differential equations. Students can expect to further develop their problem solving and analytical skills.

### Physics (2 semesters preferred)

The module explores in some depth the topics of measurement, mechanics, electricity thermodynamics, atomic physics, forces, magnetism, materials, waves and oscillations. Assignments are set on a regular basis, aimed to extend the ideas studied as part of the lecture course. Practical work is used to reinforce theory.

### Chemistry (2 semesters preferred)

This module covers atomic structure, atoms & moles, the periodic table, chemical bonding, chemical energy, kinetics and an introduction to organic chemistry, alkanes and alkenes. In the second semester organic chemistry, the chemistry of the main group elements & equilibria are studied in further depth.

### Computing (2 semesters recommended)

This module covers hardware & software, basics of programming, components of a processor, data representation, algorithms for data structures, defining problems using Boolean logic, systems analysis, databases, project management.

### Biology (2 semesters optional)

The module covers cell structure and function, biological molecules, cell division, genetics and metabolism. Semester two includes hormonal control, transport systems in mammals and multicellular animals, the action of drugs, pharmacology and immunity. There are lots of opportunities for lab investigations and practical sessions.

### Geography (2 semesters optional)

The module takes an enquiry approach into the investigation of the way people interact with their varied environments. Topics include ecosystems, atmospheric processes, natural hazards and environmental pollution. Students will develop a range of case studies concerning the questions, issues and problems these geographical areas present.

## Progression

Assessment is by examination and coursework. Students are expected to score an overall mark of 50% to progress to the second year of the course starting the first year of:

G100 Mathematics

GL11 Economics and Mathematics

G1N3 Mathematics with Finance

GG13 Mathematics and Statistics

GG14 Mathematics and Computer Science

G1F7 Mathematics with Ocean & Climate Sciences

GV15 Mathematics and Philosophy

NG31 Actuarial Mathematics

FG31 Physics and Mathematics

G19R Mathematics with Languages

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