Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

Mathematics at Trinity

TR031
TR035
TR001

Entry routes

Advanced topics

TR035

TR031

TR001

Theoretical Physics

Mathematics

Two-subject moderatorship

English Literature
Economics
French
Geography
German
Music
Philosophy
Psychology

Statistical Methods

Scientific Computing

Field Theory

Geometry of the Universe

Symmetry in Mathematics

Modern Analysis

Mathematics Education

Science at Trinity
Faculty of Science, Technology, Engineering and Mathematics (STEM)

Mathematics has been around for a long time, and there are good reasons to study Mathematics, either on its own, or combined with Physics or other subjects.

Mathematics is useful. To give two examples, Mathematics (and Physics) make satellite navigation possible, and digital images are routinely improved using mathematical techniques.

Mathematics is sceptical. It has uniquely high standards of proof, and very little is taken for granted.

Mathematics is challenging. For example, algebraic equations have a long history, with progress made in the 7th, 16th, and 19th centuries!

Theoretical Physics includes a good deal of Mathematics, and like Mathematics it is useful, sceptical, and challenging.

The third way of studying Mathematics at Trinity is through a **Two subject Moderatorship (TSM)**.

Course Code:	**TR001, TR031, TR035**
Places 2017/18:	**100**
Degree Awarded:	**B.A. (Moderatorship)**
Degree Type:	**Honors Bachelor Degree**
NFQ:	**Level 8**
Awarding Body:	**Trinity College Dublin, The University of Dublin**

www.maths.tcd.ie

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The University of Dublin

Trinity is the first and only Irish university to join the prestigious ranks of the **League of European Research Universities (LERU)**.

LE RU PUSHING THE FRONTIERS OF INNOVATIVE RESEARCH

Why study these at Trinity?

- Mathematics can be studied on its own (TR031), in a special combination with Physics (Theoretical Physics, TR035), or in special combinations with Economics, English Literature, French, German, Geography, Music, Philosophy, or Psychology (Two-Subject Moderatorship, TR001).
- The theoretical physics degree in Trinity is very unusual in that, while enough mathematics is learnt to enable the study of advanced modern physics, there is also a solid core of experiment and laboratory work. Theoretical Physics gives a precise understanding of the laws of Nature as humanity understands them now, using the descriptive power of mathematics to express them.
- Two-subject moderatorship courses are tailored for students who wish to combine subjects as mentioned above, so that their studies are broader, and to a high standard.
- In all three courses students undertake a substantial research-oriented project in fourth year.
- The School of Mathematics at Trinity College includes the Hamilton Mathematics Institute (HMI), which has an intensive programme of research support with scholarships, workshops, and visiting academics.

Pure Mathematics
In the first two years, modules will be taken in algebra, analysis, mathematical methods, mechanics, statistics, and computation. There is some choice, but it is limited. In third and fourth years modules are available, with more choice, to both years. The topics cover advanced areas of pure and computational mathematics. Statistics and computer science modules can also be taken. There is also a course in Mathematics Education, with placement in secondary schools.

Theoretical Physics
In the first two years students take the complete Physics lectures and practicals, together with the algebra, analysis, group theory, mechanics, methods of mathematical physics and the mathematical computation parts of the Moderatorship course in Mathematics. The final two years of the programme consist of advanced topics in mathematics and theoretical physics including quantum mechanics, general relativity, electromagnetic theory, statistical mechanics, and quantum field theory provided by the School of Mathematics, and a selection of specialist physics courses (including atomic and nuclear physics, condensed matter theory, cosmology, electron and photon physics, high energy physics, nanoscience, and stellar and galactic structure) from the School of Physics.

Two-subject moderatorship
Where Mathematics is combined with Economics, Geography, and Philosophy, the student can give equal weight to both subjects. In the other 5 combinations (English Literature, French, German, Music, and Psychology), the student pursues just one subject in the final year. In the first two years, students take half as many subjects in Mathematics (and in the other subject) as do Mathematics students. In third and fourth year the same topics are available as in pure Mathematics.

Employment prospects
Statisticians and Computer Systems Analysts are much sought after, and the Mathematics course includes many statistical and computational options. Many mathematicians find employment in Financial Services, and indeed the company Careercast reports that mathematicians are generally in demand thanks to new advancements in statistical analysis. Theoretical Physics graduates are also well-qualified in this area. Another growth area is STEM education (science, technology, engineering, and mathematics).