

2.1. Brief description of the programme & programme aims

This is the student handbook for the companion programmes TU078 Higher Certificate Mathematics, TU079 BSc Ordinary Mathematics and TU080 BSc Honours Mathematics delivered by the School of Mathematics & Statistics, Technological University Dublin. Each is a 60 ECTS (European Credit Transfer System), single-stage programme at levels 6, 7 and 8 respectively on the National Framework of Qualifications (NFQ). They are offered on a part-time basis.

Students study four modules each year and each programme requires the successful completion of eight modules. The modules are delivered in the evenings, making the programme attractive to those in full-time employment. The programme is ideal for career development and upskilling and graduates will have enhanced employment opportunities in industry, commerce and the public services. Graduates are also eligible to proceed to the next programme, at the next NFQ level, and ultimately to postgraduate study via an MSc programme in the School, TU Dublin or elsewhere, or to research.

The programme aims and learning outcomes are summarised below, consistent with the award-type descriptor for the NFQ level of each programme (i.e. Higher Certificate; Ordinary Degree; Honours Degree).

2.1.1. TU078 Learning Outcomes

The programme Higher Certificate in Mathematics is designed for those with an interest in the mathematical sciences or who require a better understanding of mathematics for their jobs and wish to improve their mathematical skills for their future career. It is a single-stage, add-on programme and provides a solid background in the fundamentals of mathematics. The programme is suitable for individuals who have already studied some mathematics at third level within mathematics or another discipline.

On completion of this programme, the graduate will be able to:

- explain the basic concepts underpinning a range of topics in mathematics and statistics;
- formulate and solve problems encountered in mathematics and statistics;
- apply mathematical and statistical computations with rigour and accuracy;
- devise and compute mathematical and statistical calculations using software;
- apply analytical and problem-solving skills to practical problems.

2.1.2. TU079 Learning Outcomes

The programme TU079 is a single-stage, add-on programme which offers a valuable BSc qualification in Mathematics and also provides the necessary mathematical foundations for entry to the BSc Honours Degree in Mathematics. A degree in mathematics is highly sought after by many employers and produces extremely flexible graduates. This programme provides a core of modern mathematics that is ideal for second-level teachers, professionals in industry, commerce and public services. The programme is suitable for those who have already studied a significant amount of mathematics, within various disciplines, at third level.

On completion of this programme, the graduate will be able to:

- demonstrate knowledge of mathematics and statistics across a range of topics;
- apply mathematical and statistical tools and techniques to solve practical problems;
- solve problems in an analytical, precise and rigorous manner;
- analyse and interpret results of mathematical models;
- model real world applications and analyse and interpret results using software;

- represent the outputs of mathematical models in the form of scientific graphs and visualisations;
- design and implement solutions to problems using software.

2.1.3. TU080 Learning Outcomes

Advanced mathematical skills and the ability to apply mathematics to problems are extremely important modern graduate attributes. TU080 is a single-stage, add-on programme which studies a range of modern topics in pure and applied mathematics at honours-degree level. The programme is suitable for anyone with an interest in mathematics or who wishes to develop their mathematical understanding from general or pass degree to honours-degree level.

On completion of this programme, the graduate will be able to:

- demonstrate strong knowledge of abstract mathematics across a range of topics;
- apply knowledge and skills in appropriate technical and scientific contexts;
- design and implement solutions to problems within a mathematical framework;
- present mathematical information in written form in a clear, precise and professional manner;
- manage tasks and projects in an independent and professional manner.

2.1.4. Programme title & award

Candidates registered on the programme TU078 who successfully complete 60 ECTS are eligible for the award:

Higher Certificate Mathematics

The award is made with classification (see Studying on the programme/Assessment/Award).

Candidates registered on the programme TU078 who successfully complete 60 ECTS are eligible for the award:

BSc Ordinary Mathematics

The award is made with classification (see Studying on the programme/Assessment/Award).

Candidates registered on the programme TU078 who successfully complete 60 ECTS are eligible for the award:

BSc Honours Mathematics

The award is made with classification (see Studying on the programme/Assessment/Award).

2.1.5. NQAI level

The programme TU078 is level 6 on the National Framework of Qualifications.

The programme TU079 is level 7 on the National Framework of Qualifications.

The programme TU080 is level 8 on the National Framework of Qualifications.

2.1.6. Location

The School of Mathematics & Statistics is responsible for mathematics and statistics across Technological University Dublin. It therefore engages in activities across TU Dublin's locations including on its campus locations in Grangegorman, Bolton Street, Tallaght, Blanchardstown, Aungier Street.

The School's main office and address for correspondence is in Central Quad on the Grangegorman campus.

Your programme is principally onsite, based on the Grangegorman campus, although individual activities may take place in other onsite locations or online platforms.