

2.1. Brief description of the programme & programme aims

This is the student handbook for the programme TU276 MSc Applied Mathematics delivered by the School of Mathematical & Statistics, Technological University Dublin. It is a 90 ECTS (European Credit Transfer System) programme at level 9 on the National Framework of Qualifications (NFQ).

The MSc Applied Mathematics is designed to offer a programme in applied mathematics and statistics, the mathematics that are most useful in mathematical and statistical modelling and in business and industry. It is appropriate for postgraduate students who do not necessarily have a primary degree in mathematics or mathematical sciences but who, through a highly numerate first degree, have already demonstrated a strong degree of mathematical knowledge. It is designed to provide a deeper knowledge and understanding of mathematics, its methods and theory, and develop students' analytical and technical skills. Thus, the programme equips graduates with the analytical and problem-solving skills required in the workplace for advanced professional and technical roles.

The programme aims and learning outcomes can be briefly summarised as follows, consistent with the award-type descriptor for a Masters Degree.

2.1.1. TU276 Learning Outcomes

Knowledge – breadth and kind

On successfully completing this programme, the learner will:

- develop their existing discipline knowledge with a wide range of topics in applied mathematics and statistics at the forefront of these disciplines;
- apply advanced rigorous mathematical and statistical skills to formulate and solve practical problems often complex, unpredictable and ill-defined.

Know-how and skill – range and selectivity

On successfully completing this programme the learner will:

- demonstrate an in-depth knowledge of topics in applied mathematics and statistics; appreciate the interaction between theory and application; effectively communicate complex information and justify recommendations to a broad audience including specialists and non-specialists;
- be able to employ tools and techniques of academic enquiry and conduct guided research, professional or advanced technical activity;
- select the mathematical and statistical approaches and skills appropriate to problems; develop new skills to a high level, including novel and emerging techniques; take due account of social and ethical insights; develop personal techniques of discovery.

Competence – context, role, learning to learn and insight

Graduates of the programme will:

- act in a wide variety of professional roles often in dynamic and ill-defined contexts;
- interact with peers and take significant responsibility for the work of individuals and groups; lead, initiate activity and enable change;
- develop analytical and problem-solving skills as an independent and adaptive thinker in appropriate technical and scientific contexts; scrutinise and reflect on current and emerging tools and techniques; have a capacity for independent study;

- contribute to the provision of highly-qualified, technical professionals with advanced analytical and problem-solving skills in the workplace; be able to critically self-evaluate and have the ability to continue their own academic/professional development;
- scrutinise and reflect upon their learning in the context of the wider external impact of progress in applied mathematics and statistics; contribute positively to society, as a responsible global citizen who apply their talents to solve problems and make a difference.

2.1.2. Programme title & award

Candidates who successfully complete 90 ECTS are eligible for the award:

Master of Science Applied Mathematics

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

2.1.3. NQAI level

The programme is level 9 on the National Framework of Qualifications.

2.1.4. 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.

Elements of the programme will be delivered online, through the University VLE, and on our Grangegorman campus although activities may take place in other onsite locations or online platforms.