

Nottingham Trent University Course Specification

Basic Course Information		
1.	Awarding Institution:	Nottingham Trent University
2.	School/Campus:	Science & Technology/Clifton Campus
3.	Final Award, Course Title and Modes of Study:	Foundation Year in Engineering and Mathematics
4.	Normal Duration:	Full time, 1 year
5.	UCAS Code:	HG10

6.	Overview and general educational aims of the course The Foundation certificate in Engineering and Mathematics represents a condensed and bespoke entry route to the Engineering and Mathematics degrees at Nottingham Trent University. The knowledge and understanding you will gain of mathematics and science and their applications will equip you for further study as a specialist mathematician, statistician or engineer on a variety of courses. In addition to developing a strong awareness of key themes in mathematics and engineering, the course will provide you with general transferable skills, which will boost your professionalism and confidence. In summary, the course aims to: • Develop a broad-based knowledge of the key themes and approaches in mathematics and the skills to apply this knowledge to real world situations. • Provide you with experience and skills which are directly applicable to practical situations in Engineering. • Give you an overview of the general scientific basis for the principles of Engineering. • Train you in the etiquette, approaches and mechanisms needed to succeed in Higher Education. • Enable you to take a professional and confident first step into your chosen discipline. • Equip you with the knowledge and skills necessary to appreciate a wide range of technological developments and the opportunities afforded by them. Successful completion of the course allows you to enter year 1 of any of the BSc Mathematics or BEng Engineering courses in NTU's School of Science and Technology.
7.	Course outcomes Course outcomes describe what you should know and be able to do by the end of your course if you take advantage of the opportunities for learning that we provide.
	Knowledge and understanding By the end of the course you should be able to: - K1. Demonstrate awareness and understanding of a broad range of mathematical and statistical concepts and techniques. - K2. Identify and describe the key principles underpinning modern science and engineering. - K3. Select and apply scientific skills and concepts to solve engineering problems. - K4. Relate practical findings to relevant theory. - K5. Use professional, mathematical and engineering software, and apply them to a range of tasks. - K6. Approach learning as a conscious participant, aware of the expectations of students as independent learners and of the support available to them.

Skills, qualities and attributes	
By the end of the course you should be able to:	
S1. Apply mathematical and statistical techniques to problems as directed. S2. Construct and complete practical projects under expert direction. S3. Work safely and effectively in the laboratory and workshop under supervision. S4. Formulate and appropriately present numerical and scientific information. S5. Communicate information confidently and clearly in a variety of ways, using professional technologies effectively. S6. Work effectively as part of a team, and work and learn independently, adopting a planned and professional approach to your studies.	
8.	Learning and teaching methods
The teaching and learning strategies for the Foundation Year in Mathematics and Engineering have been developed to support your acquisition of knowledge, understanding, and skills in these important areas. Independent learning is encouraged and motivated within the course by use of the following practices: • Interaction with other students through small group-based work. • Presentation of ideas and findings to fellow students and tutors. This helps you to organise your thoughts and reflect on your understanding. • Discussion of ideas with tutors. Staff-directed investigation is important to your development as an autonomous learner. This approach sees you begin by adding to existing work as directed and ends with you being able to produce work independently. • The directed additional reading assigned to support your learning and broaden your understanding as you meet new topics. The delivery of material is supported by strategies to encourage your ability to gain and retain knowledge. To realise the course aims, the following practices will be adopted: • Lectures to introduce and develop concepts and to explore the application of these concepts. • Directed learning to supplement the development of concepts. • Computer workshops to develop skills and to underpin the lecture material with concrete learning experiences. • Seminars to support the consolidation and application phase of your learning process. • Laboratory project work to illustrate how disparate concepts combine to achieve complex goals. • Training in the study skills needed to get the most from Higher Education and support your future academic career. The University runs an online resource to support teaching and learning, referred to as a Virtual Learning Environment and known as the NTU On-line Workspace (NOW). All modules are represented on NOW and most use it to provide you with learning material and news associated with the module or the course. The nature of the subject means that some of your learning can be directly computer-aided. To this end, NOW is a useful way of providing data-files, demonstrations, and macros/programs.	
9.	Assessment methods
Modules are assessed by a range of methods, including laboratory notebooks, coding exercises, portfolios, presentations, coursework and examinations. The range of assessment types will introduce you to new skills and approaches as well as encouraging the development of the time management and communication skills valued by employers.	

	You will be given practical tasks to complete, which you then write up in a report. You may also have to demonstrate what you have done or give a presentation on what you have achieved. Some coursework assessments will involve working together in small groups. Coursework can also include the use of tests.										
10. Course structure and curriculum	The course is studied Full Time over one year. You will study a range of modules as indicated below. These develop your knowledge and skills along themes of: Mathematics; Data analysis; Science; Computing and Engineering. In addition to these themes, a further theme of the course, the study skills theme, is designed to develop your skills as an independent learner. This theme also develops your professional and transferable skills. You need to obtain 120 cps (credit points) to pass the course. Your modules will be a mix of 20 cps and 40 cps weightings. Successful completion of the course allows you to progress onto a Mathematics or Engineering degree at Nottingham Trent University. Modules: <table data-bbox="352 801 1102 947"> <tr> <td>Introductory Mathematics</td><td>20cps</td></tr> <tr> <td>Intermediate Mathematics</td><td>20cps</td></tr> <tr> <td>Foundation Science</td><td>20cps</td></tr> <tr> <td>Foundation Engineering</td><td>20cps</td></tr> <tr> <td>Practical and Professional Skills</td><td>40cps</td></tr> </table>	Introductory Mathematics	20cps	Intermediate Mathematics	20cps	Foundation Science	20cps	Foundation Engineering	20cps	Practical and Professional Skills	40cps
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11. Admission to the course	Entry requirements. For current information regarding all entry requirements for this course, please see the 'Applying' tab on the NTU course information web page.										
12. Support for learning	There is an induction programme at the start of the course. This gives an overview of the way the course runs and includes introductions to the IT and library resources. During induction you will receive a course handbook which contains the essential information about the course and the support we provide for your learning. You will also meet your Personal Tutor. You are assigned a Personal Tutor at the start of the course and regular meetings will take place throughout the year. Module Leaders and a Course Manager oversee the smooth running of the course and they also serve as an additional source of support and advice for you. Extensive online module information including learning materials is provided on the University Virtual Learning Environment, NOW. This also includes course information such as the course handbook and module specification documents. We have excellent computing facilities with some 24-hour availability for IT labs. The School has a Student Information Desk for assessment hand-in and return, queries about fees, and other general queries. In addition to the above support, the University Student Support Services can give you extensive support and advice on a range of issues, e.g. financial problems, dyslexia and disability, and personal problems.										
13. Graduate destinations/employability	Graduate employability is fundamental to the strategic aims of Nottingham Trent University, as reflected by the fact that NTU is consistently placed close to the top of the league table of all UK universities for graduate employment. Indeed 92% of our graduates* from full-time undergraduate courses are employed or engaged in										

	further study six months after leaving (*of those available for work, HESA survey 2015/16). The Foundation Year in Engineering and Mathematics will equip you with the knowledge and skills for further study at NTU, enabling you to move forward towards your intended eventual graduation in your chosen discipline. In addition to this, the course will prepare you with many of the professional, transferable skills sought after by employers in all fields, for example: communication, organisation, numeracy, MS office use, coding, data analysis etc. In addition to the expertise available within the School, our Employability Team can support you at all stages of your future planning with specialist careers consultants available to offer advice on work experience, planning your career, improving your CV, completing applications and performing at interviews.
14.	Course standards and quality
	All aspects of quality management within the School are in accordance with the University's Quality Handbook. The Course Management Team, which includes the Course Manager and module leaders, oversees the operational arrangements for the course. In addition, the Course Committee, central to which are the student representatives, meets regularly throughout the year to review, evaluate and develop the course. Formal course monitoring takes place at the end of each module through the administration of questionnaires offering closed and open-ended questions, which is in addition to informal feedback received from students throughout the year. Overarching responsibility for quality control lies with the School Academic Standards and Quality Committee whose remit is to provide guidance and support to academic courses. External examiners offer further quality control through monitoring academic standards, and moderation of assessment tasks and processes.
15.	Assessment regulations This course is subject to the University's Common Assessment Regulations (located in Section 16 of the Quality Handbook). Any course specific assessment features are described below:
	There are no course specific exceptions from the University regulations.
16.	Additional information Collaborative partner(s): N/A Course referenced to national (QAA) N/A Benchmark Statements: Course recognised by: N/A NTIC progression route(s): Date this course specification approved: May 2019
	Any additional information: