Faculty of Engineering Mathematics
admission exam 2019
Information for applicants

Who is this for?
- Some applicants to University of Bristol Engineering courses who are applying without an A-level mathematics qualification or evidence of Mathematics study to A-level standard eg BTEC, Access to Engineering etc.
- You will be informed by the Admissions Team if this applies to you. If you are unsure please get in touch using the information on the admissions contact page.

What is the purpose of the admission exam?
Engineering courses at the University of Bristol are challenging and students without A-level Mathematics or equivalent have struggled in the past. The first-year Engineering Maths unit covers a broad range of concepts that are fundamental to many other units across the courses and we want to ensure that applicants are prepared to succeed. We are doing this in two ways:
- an entry exam that assesses applicants’ ability to handle the mathematical challenges in the first year of the course;
- offering support throughout the first year to address any issues students may have.

What is the format of the exam? What will I need?
The exam is a one-hour paper with questions based on the A-level topics detailed below. Applicants will sit the exam in standard exam conditions and cannot use notes etc.

In addition to the test, you will have the opportunity to join a visit day to the department along with other applicants.

You must bring:
- Pencils, ruler and eraser;
- Scientific calculator - we recommend Casio FX85GTPLUS, available for £10 from Amazon, WH Smith and other retailers (this is an approved calculator for undergraduate exams and can be used throughout our courses);
- Bottle of water (if desired).
You will be provided with:
- Exam paper (similar to the published specimen paper);
- Answer booklet;
- Formulae sheet (identical to the one provided with the specimen paper).

Accessibility advice for disabled applicants

If you are invited to a test date, and you are usually entitled to extra time in assessments due to a disability (such as dyslexia) and you wish to be given extra time in the Maths test, you must:

1. Contact the admissions team on admissions-eng@bristol.ac.uk to advise them that you wish to be granted extra time, and explain the reason for this. Please quote your UCAS Personal ID number in your correspondence.

2. Send hard-copy documentary evidence of your entitlement to extra time in assessments to the Admissions Office 10 days before the test at the very latest.

Completing these two steps will give you 25 per cent more time to complete the test. If you do not complete these steps, we will not be able to provide you with extra time.

What is covered in the exam?

The exam is based on a subset of A-level Mathematics topics that are fundamental to the first year of our Engineering courses. Topics that may be included are detailed below, referenced to the AQA exam board specification (other exam boards will cover similar material).

Exam content

From the AQA Mathematics (6360) specification, for A-level exams from 2014:

- AS Module - Pure Core 1
  - 12.1 Algebra
  - 12.2 Coordinate Geometry
  - 12.3 Differentiation
  - 12.4 Integration

- AS Module - Pure Core 2
  - 13.1 Algebra and functions
  - 13.2 Sequences and series
  - 13.3 Trigonometry
  - 13.4 Exponentials and logarithms
  - 13.5 Differentiation
  - 13.6 Integration
• A2 Module - Pure Core 3
  o 14.1 Algebra and functions
  o 14.3 Exponentials and logarithms

How should I prepare?

Below are links to a range of resources that you can use to learn or revise the topics that may be examined.

*Please note that the University of Bristol cannot support applicants with revision/study beyond providing the information in this guide and specimen paper. If you feel that you require further support please use any resources available to you, eg school/college teachers/lecturers.*

Learning resources

It is important to note that the content detailed above is only a subset of the full A-level curriculum. A-level texts and revision guides will cover wider topics than necessary for this exam, so applicants should take the time to determine what is necessary to learn/revise and what is not.

• Textbooks
  Standard A-level texts will contain relevant material. There are editions published by all of the major exam boards. Older/second-hand texts will also contain appropriate material.

• Revision guides
  CGP and Letts produce well-regarded revision guides, which contain summaries of A-level content. Again, these will cover wider material than is necessary for this exam.

• Online resources
  There are an extremely wide range of online learning and revision resources available for free, which cover all necessary material for this exam. Some recommendations:
    o Khan Academy - an excellent range of videos and exercises, which take students through a logical progression of concepts. Arranged by topic, and also in a knowledge map that shows prerequisites for each concept - this view can be a little daunting but goes all the way back to single-digit addition!
    o PatrickJMT - a large collection of YouTube videos. Hit Ctrl-F to search for specific keywords.

• Past papers
  All exam boards publish past papers and solutions - these are very useful because they are of the level at which this admission exam is set. Again, a caution to take care selecting only appropriate questions that cover the topics above.
    o AQA
Preparing for the exam

- Specimen paper
  We publish a specimen paper similar to what you will expect for the admission exam. It is recommended that you sit this in exam conditions so that you can assess your progress and accurately identify areas to work on.

- Formulae booklet
  You will be provided in the exam with a formulae booklet similar to that given in AQA exams. You should familiarise yourself with this - it contains more information than required, and not all formulae are given. The unit specifications detail what must be memorised.

What’s the pass mark?

Your exam result will be taken into consideration by the admissions team as one of a number of different pieces of information - we do not publish a specific pass mark, but you should aim to perform at a level equivalent to our contextual offer grades.

For reference, an A grade at A-level is usually around 80 per cent, and a B grade 70 per cent. Achieving a high mark in the test does not guarantee you will be offered a place.

After the exam

You will be informed as to whether you have been offered a place through UCAS, the University’s standard admissions system.

If you accept your offer we strongly encourage you to read around and get a head-start on relevant content for the Engineering Mathematics 1 unit, and other material that may be important for your course - see the Unit Catalogue for details. Topics that are important across a number of courses include:

- **A-level Mathematics**
  - Pure Core 1-4
  - Further Pure 1-4
  - Mechanics 1-4

- **A-level Physics**
  - Mechanics and materials
  - Further mechanics and thermal physics
  - Engineering physics
The core text for Engineering Mathematics 1 is *Modern Engineering Mathematics (Glyn James)* - the University has a (slightly cheaper) customised version available once students begin the course, but the standard text contains all relevant material. Second-hand copies and earlier editions can be found much cheaper than new copies, and the fourth and fifth editions are equally applicable to the course.

Some students have indicated that *Engineering Mathematics (Stroud)* presents a more accessible introduction to most of the topics covered in the course, and current and older editions of this text are suitable for pre-course study.