Mathematics

# Course Overview

* **Exam Board** – AQA
* **Usual Age Range** – 16-18
* **Qualification** – Equivalent to ½ A-Level
* **Curriculum Time** – 2x50 minute lessons per week in class plus additional work in Independent Learning Time
* **Assessment** – this curriculum is assessed via 2 exams
* **Grading** – A\*-U
* **Full specification** - https://filestore.aqa.org.uk/resources/mathematics/specifications/AQA-1350-SP-2014.PDF

# Curriculum Intent

The intent of the Mathematics curriculum is to enable UTC students to become the best mathematicians they can be. Mathematics is, inherently, a sequential subject. There is a progression of material through all levels at which the subject is studied. It is assumed that students will already have confidence and competence in the content presented in standard type within the GCSE mathematics criteria. Students will make use of elements of this content when addressing problems within this Level 3 Certificate Mathematical Studies specification but this is not explicitly set out in subject content. This Level 3 Certificate Mathematical Studies specification aims to build on the knowledge, understanding and skills established in GCSE mathematics.

Our mathematics curriculum will give students the opportunity to:

* Become fluent in the fundamentals of mathematics, through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
* Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
* Can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and preserving in seeking solutions.
* Communicate, justify, argue and prove using mathematical vocabulary.

Students are encouraged to develop their appreciation and love of mathematics by taking part in extracurricular opportunities such as inter-school maths competitions and lectures.

Suggested next step destinations after completion include: Pathways into degrees particularly for certain non-science courses with a distinct mathematical or statistical element – this includes courses like Psychology where students might not initially make the link with Mathematics

Almost all future career paths will require a certain level of mathematics, be they in technology, health care or industry. Employers value the many ‘soft’ skills that mathematics builds up – such as problem solving, critical thinking and numerical awareness.

# Study Tips

Students will benefit additional study using the following resources:

* Kerboodle - <https://www.kerboodle.com/users/login>
* Practice Assessments and papers
* Exam Solutions - <https://www.examsolutions.net/>
* AMSP - <https://amsp.org.uk/teachers/core-maths/resources>

**Core Maths**

The learning in GCSE Mathematics Higher strand is structured as follows.

Year 12:

Year 13: