AS and A2 MATHEMATICS Course Description – Summer 2015

Entry requirements:

5 GCSEs at grades A* to C including a high B Grade at Higher level Tier of GCSE Mathematics. However, you will also need a Level 2 Literacy qualification (Grade C in GCSE English or equivalent). If you do not have this we can assess your current level of literacy.

In order to progress from year 12 into year 13, we require that you achieve a D grade or better in your AS Mathematics units collectively.

Topics Covered:

There are a variety of modules over the varying branches of Mathematics. The A level is made up of 6 units which equate to one A Level qualification. The first 3 units that you will study in year 12 will count for an AS qualification. At AS Level students will do two Pure/Core Mathematics modules C1 and C2 and one application module, Statistics (S1). In the second year students will do two more Pure/Core Mathematics modules, C3 and C4, and one more application module, either Decision Maths (D1) or Mechanics (M1).

In addition students who take A Level Mathematics can take an extra AS in Further Mathematics by studying three further units in year 12.

Skills You Should Have

The Mathematics A-level follows on from the work that you have done for GCSE across all the branches of Mathematics that you have met so far. Below is the list of the skills you should be confident with before starting the A-Level Maths course:

Basic Algebra (non-calculator)

- simplifying algebraic expressions by collecting like terms
- general laws of indices
- expanding and factorising expressions (one term outside)
- laws of indices for all rational exponents (positive, negative, fractions)

Quadratic Functions (non-calculator)

- plotting graphs of quadratic functions
- expanding and factorising quadratics (two brackets)
- solving quadratic equations by factorising
- solving quadratic equations using the formula

Equations And Inequalities (non-calculator)

- solving simultaneous linear equations by elimination
- solving simultaneous linear equations by substitution
- solving linear inequalities

Sine Rule And Cosine Rule (calculator allowed)

- using the sine rule to find missing sides and angles
- using the cosine rule to find missing sides and angles

- using sine rule, cosine rule, trig ratios and Pythagoras in problems

Exam Board:

Edexcel

Exam format to include AS position and progress to Year 13

The AS consists of C1, C2 and an applied module, such as S1.
The A2 consists of C3, C4 and another applied module, such as M1.

Each module contributes an equal weight to the result in the AS, A2 or A Level. So, for example, your result for C1 counts as one-third of AS level Maths and one-sixth of A level Maths.

The exam for each module lasts 1 hour and 30 minutes and carries a total of 75 marks. Each exam contains 6 to12 questions of varying length.

Your result for each module exam is given as a UMS score out of 100.

A UMS score between 90 and 100 is a grade A*.
A UMS score between 80 and 100 is a grade A.
A UMS score between 70 and 79 is a grade B.
A UMS score between 60 and 69 is a grade C.
A UMS score between 50 and 59 is a grade D.
A UMS score between 40 and 49 is a grade E.
A UMS score between 0 and 39 is a grade U.

(NOTE: You can only receive an A* for a full A level and not for an AS qualification).
Grade boundaries for your AS and A Level use the same percentages.

C1 is the only non-calculator module in AS or A Level Maths, a calculator is not allowed in the exam. All the other modules require a calculator in the exam.

Controlled Assessment Requirements:

AS and A Level Mathematics is currently assessed purely by examination as described above. There is no coursework or controlled assessment element for the Edexcel examination board which we follow.

Progression/Pathways:

Following an A level or AS Level in Mathematics many pathways are open to you. Many Degree courses in subjects related to Mathematics at University require a degree in Mathematics, such as: Mathematics, Statistics, Physics, Astronomy, Engineering and Computer Science. Many others, including Medicine, Architecture and the Social Sciences, have a certain amount of mathematical or statistical content may require Mathematics and certainly will be of great assistance to you.

Career opportunities

Maths has wide applications in Industry, Business, Finance, Science, Technology, Education and many others. Mathematics qualifications can help you towards a future career in these areas. There is currently a national shortage of qualified Mathematicians.

Lead member of staff:

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