

### SUBJECT GUIDE:

Exam Board - Edexcel  
2 year - A Level

## WHY CHOOSE MATHEMATICS

An A Level in Mathematics is a valuable qualification that is always in demand in both the employment markets and universities. The ability to understand logical arguments and numerical information makes an A-Level mathematician sought after. Career opportunities range from financial and economic planning through management services, to scientific and industrial research, engineering and computing.

## HOW WE STUDY MATHEMATICS

Achievement in Post 16 Mathematics relies on hard work, motivation and commitment. Every lesson generates at least one hour of private study and students will complete set work relating to new topics. You are advised to make full use of Maths Workshops that are available throughout their one or two years of study.

## ENTRY REQUIREMENTS

A-Level Mathematics:  
Grade A\* or A at GCSE is required, as is a Grade B in two other relevant subjects.

## WHAT WE STUDY: A LEVEL

A Level Syllabus consists of 3 units, two of them being Core units, C1 and C2 and the third being either Mechanics (M1), Statistics (S1), Decision Maths (D1).

## Unit 1: Core Mathematics 1

Course Code - 6663  
Exam Weighting - 33.3% of AS, 16.7% of A Level

**Core 1** - develops algebraic skills initially covered at GCSE, including work on sequences and series. Calculus is introduced.

## Unit 2: Core Mathematics 2

Course Code - 6664  
Exam Weighting - 33.3% of AS, 16.7% of A Level

**Core 2** - continues the topics studied in Core 1 and also covers trigonometry, exponentials and logarithms.

## Unit 3: Mechanics 1

Course Code - 6664  
Exam Weighting - 33.3% of AS, 16.7% of A Level

**Mechanics 1** - studies the motion of particles, looking at velocity and acceleration, forces, friction and also introduces moments.

## Unit 3: Statistics 1

Course Code - 6683  
Exam Weighting - 33.3% of AS, 16.7% of A Level

**Statistics 1** - continues GCSE topics such as histograms, standard deviation, correlation and probability. The Normal distribution is also introduced.

## WHAT WE STUDY: UPPER SIXTH

**Mathematics A-level** requires a further 3 units: C3, C4 and a second Applications unit. The Applications unit could extend the first Application studies (M2 or S2), or students could opt to study the other Application (S1, M1 or D1).

### Unit 4: Core Mathematics 3

Course Code - 6665  
Exam Weighting - 33.3% of A2, 16.7% of A Level

### Unit 5: Core Mathematics 4

Course Code - 6666  
Exam Weighting - 33.3% of A2, 16.7% of A Level

**Core 3 and Core 4** - both extend topics covered earlier, with increasingly complex work on calculus and trigonometry. Vectors are also studied.

### Unit 6: Statistics 2

Course Code - 6684  
Exam Weighting - 33.3% of A2, 16.7% of A Level

**Statistics 2** - includes study of the Binomial and Poisson distributions, sampling and hypothesis testing.

### Unit 6: Decision Mathematics 1

Course Code - 6686  
Exam Weighting - 33.3% of A2, 16.7% of A Level

**Decision Mathematics 1** studies algorithms, algorithms on graphs, the route inspection problem, critical path analysis, linear programming and matching.

## HOW YOU WILL BE ASSESSED

All units are assessed through 1½ hour examinations.

## A\* IN MATHEMATICS

A\* will be awarded to student who have achieved a grade A overall (480 UMS or more) and 180 UMS or more on their total of their C3 and C4 units.

## COURSE READING LIST

### Edexcel AS and A Level Modular Mathematics

Core Mathematics 1 - ISBN 9780435519100

Core Mathematics 2 - ISBN 9780435519117

Core Mathematics 3 - ISBN 9780435519094

Core Mathematics 4 - ISBN 9780435519070

Statistics 1 - ISBN 9780435519124

Statistics 2 - ISBN 9780435519131

Decision Mathematics 1 - ISBN 9780435519193

Mechanics 1 - ISBN 9780435519162

## PROGRESS PATHS

Mathematics is essential if you want to study for a Mathematics degree and is often necessary for Physics, Engineering or Computing. It can also provide useful support for studies in Biology, Chemistry, Finance, Business, Economics and Social Sciences.

An A and AS Level in Mathematics demonstrates that you have a level of numerical and problem solving skills which are well above average, making you particularly valued by employers and higher education establishments.

## **THE MATHEMATICS DEPARTMENT**

### **Kandiah Vasanthakumaran – Head of Mathematics**

Joined the College in September 2000. Kandiah is qualified with BSc Hons. (Mathematics), MSc (Computational Mathematics with Modelling - Brunel), and PGCE (Post compulsory- Institute of education) and has taught Mathematics since 1996. He has been a GCE Mathematics examiner for Edexcel since 2003.

### **Ragulan Amirthalingam**

Joined the College in September 2001. Ragulan is qualified with B Eng. Hons. (City) and also successfully completed the 'Preparing to teach in lifelong learning' course. He has taught Mathematics since 2000. He has been a GCE Mathematics examiner for Edexcel since 2005.

### **Amit Obhrai**

Amit joined the college in September 2009. Amit is qualified with BSc Hons. (Mathematics – Brunel). He can teach KS2, KS3, GCSE and GCE AS & A2 mathematics.