A Level Maths Course Details

Specification link:
https://ocr.org.uk/Images/308740-specification-accredited-a-level-gce-mathematics-b-mei-h640.pdf

Entry requirements: Grade 7 or above in GCSE Maths

Specification details: OCR (MEI) H640

Course Overview:

Content	Assessment
Component 1 – Pure Maths and Mechanics	Written paper 100 marks 2 hours 36.4% of total A Level
Component 2 – Pure Maths and Statistics	Written paper 100 marks 2 hours 36.4% of total A Level
Component 3 – Pure Maths and Comprehension	Written paper 75 marks 2 hours 27.3% of total A Level

Course Content Summary:

Component	Year 1	Year 2
Pure	Proof Algebraic language Solution of equations Inequalities Surds Indices Proportion Polynomials Graphs Sketching curves Transformations Coordinate geometry of lines Coordinate geometry of curves Binomial expansions Basic Trigonometry Trigonometric functions Area of a triangle using sine Sine and cosine rules Trigonometric identities Trigonometric equations Exponentials and logarithms Exponential growth and decay Basic Differentiation	Proof Partial fractions Rational expressions Language of functions Modulus function Modelling Transformations Sketching curves Parametric equations Binomial expansions Sequences Arithmetic series Geometric series Radians Secant, cosecant and cotangent Compound angle formulae Trigonometric equations Trigonometric proof & problems Differentiation of functions Chain rule, product rule & quotient rule Implicit differentiation Applications of differentiation Integration by substitution

	Differentiation of functions Applications of differentiation Integration Integration – area under a curve Vectors	Integration by parts Differential equations Numerical solution of equations Numerical integration
Mechanics	Standard models Units and quantities Motion in 1 dimension Kinematic graphs Calculus in kinematics Constant acceleration formulas Problem solving Identifying and representing forces Vector treatment of forces Newton's laws for a particle Connected particles	Motion in 2 or 3 dimensions Motion under gravity in 2 dimensions Forces in equilibrium Finding resultant forces Frictional force Normal contact force Rigid bodies in equilibrium Projectiles
Statistics	Sampling techniques Data presentation Summary measures Probability Binomial distribution Discrete probability distributions Hypothesis testing (binomial)	Probability of events from two experiments Conditional Probability Normal distribution Hypothesis testing (Normal) Hypothesis testing for correlation

Resources:

A Level calculator

Students need a calculator which is more advanced than the calculator used at GCSE level.

We recommend the Casio FX-991EX, which is a reasonably priced calculator that has all the necessary functions.

Textbooks

Students must have a copy of the textbooks for use at home (we have shared class copies in school).

Publisher: Hodder Education

Year 1: MEI A Level Mathematics Year 1 (AS) 4th Edition (ISBN: 9781471852978)

Year 2: MEI A Level Mathematics Year 2 4th Edition (ISBN: 9781471852985)