

## A Level Further Maths Course Details

Specification link:

<https://ocr.org.uk/Images/308768-specification-accredited-a-level-gce-further-mathematics-b-mei-h645.pdf>

**Entry requirements:** Grade 7 or above in GCSE Maths

**Specification details:** OCR (MEI) H645

**Course Overview:**

Content	Assessment
Mandatory Paper: Core Pure (Y420)	Written paper 144 marks 2 hours 40 minutes 50% of total A Level
Minor option: Mechanics Minor (Y431)	Written paper 60 marks 1 hour 15 minutes 16 <sup>2</sup> / <sub>3</sub> % of total A Level
Minor option: Statistics Minor (Y432)	Written paper 60 marks 1 hour 15 minutes 16 <sup>2</sup> / <sub>3</sub> % of total A Level
Minor option: Modelling with Algorithms (Y433)	Written paper 60 marks 1 hour 15 minutes 16 <sup>2</sup> / <sub>3</sub> % of total A Level

**Course Content Summary:**

Component	Year 1	Year 2
<b>Pure</b>	Matrices and transformations Complex numbers Roots of polynomials Sequences and series Complex numbers and geometry Matrices and their inverses Vectors and 3D space	Vectors Matrices Series and Induction Further Calculus Polar coordinates Maclaurin series Hyperbolic functions Applications of integration First order differential equations Complex numbers Second order differential equations
<b>Modelling with Algorithms</b>	Algorithms Modelling with graphs and networks Network algorithms Critical path analysis Network flows Linear programming Simplex method	

	Reformulating network problems as linear programming problems	
<b>Statistics</b>	Statistical problem solving Discrete random variables Discrete probability distributions Bivariate data – correlation coefficients Bivariate data – regression lines Chi-squared tests	
<b>Mechanics</b>		Kinematics Forces and Motion A model for friction Moments of forces Work, energy and power Impulse and momentum Centre of mass Dimensional analysis

### 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.

This is the same calculator as the one used in A Level Mathematics

#### 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 Further Mathematics for Core Year 1 and AS 4th Edition (ISBN: 9781471852992)

Year 1: MEI AS and A Level Further Mathematics Modelling with Algorithms (ISBN: 9781510403130)

Year 1: MEI A Level Further Mathematics Statistics 4<sup>th</sup> Edition (ISBN: 9781471853029)

Year 2: MEI A Level Further Mathematics for Core Year 2 4th Edition (ISBN: 9781471853012)

Year 2: MEI A Level Further Mathematics Mechanics 4<sup>th</sup> Edition (ISBN: 9781471853036)