



Course Information

Students who are considering taking this course need to be heading for a grade 6, or above, in their GCSE Mathematics. They also need to be confident in the use of algebra, since this is the basic tool required for much of the course. Students will be taught by two teachers for a total of eight hours a fortnight.

Students will be set one homework a week by each of their teachers, and it is essential that they quickly develop the ability to work independently. For this reason they should not only enjoy maths but also want to follow the course.

Assessment:

A level Mathematics is linear and students sit all their exams at the end of the course. (2 academic years)

There will be no coursework element to any Mathematics A level.

Content is assessed across three papers and for most exam boards exams are all weighted equally. Although the weightings of the papers may vary slightly they are titled the same. Pure Mathematics (includes comprehension); Pure Mathematics with Mechanics and Pure Mathematics with Statistics.

The statistics element of the paper will involve a pre-released, 'real' data set that all students must become familiar with. Including the use of technology to support their analysis.

All level 3 Mathematics exams will require students to demonstrate three overarching skills throughout the papers:

1. Mathematical argument, language and proof
2. Mathematical problem solving
3. Mathematical Modelling

What could I go on to do after the Course?

Many university courses, and many professions, consider A level Mathematics a desirable entry qualification. In particular you might want to take this A level if you are interested in:

- Financial services (Banking, Accountancy etc.)
- Medicine
- Science
- The Social Sciences
- Engineering

$$\frac{\partial}{\partial a} \ln f_{a, \sigma^2}(\xi_1) = \frac{(\xi_1 - a)}{\sigma^2} f_{a, \sigma^2}(\xi_1) = \frac{1}{\sqrt{2\pi\sigma^2}} \exp\left\{-\frac{(\xi_1 - a)^2}{2\sigma^2}\right\}$$

$$\int_{x_1}^{x_2} T(x) \cdot \frac{\partial}{\partial \theta} f(x, \theta) dx = M\left(T(\xi) \cdot \frac{\partial}{\partial \theta} \ln L(\xi, \theta)\right) = \int_{x_1}^{x_2} T(x) \cdot \left(\frac{\partial}{\partial \theta} \ln L(x, \theta)\right) \cdot f(x, \theta) dx = \int_{x_1}^{x_2} T(x) \cdot \left(\frac{\partial}{\partial \theta} \frac{f(x, \theta)}{f(x, \theta)}\right) f(x, \theta) dx$$

$$\frac{\partial}{\partial \theta} \int_{x_1}^{x_2} T(x) f(x, \theta) dx = \int_{x_1}^{x_2} T(x) \frac{\partial}{\partial \theta} f(x, \theta) dx = \int_{x_1}^{x_2} T(x) \left(\frac{\partial}{\partial \theta} \frac{f(x, \theta)}{f(x, \theta)}\right) f(x, \theta) dx$$



2018

A Level Mathematics

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