

Statistics AS/A level

Introduction

Information processing skills are increasingly important in the 21st Century. Being able to collect, process, analyse & interpret data are sought after skills. Many employers and higher education courses are looking for applicants who are both numerate and able to handle data.

The study of A or AS level Statistics will equip you with these vital skills. You will also broaden your numerical knowledge and understanding.

As a tool, Statistics will complement and aid many other subjects such as: social and environmental sciences, biology, economics, business studies and engineering. If you just enjoy processing numbers and wish to gain an advanced qualification in a mathematically related subject this is the course for you.

Year 1

In the first year you will study three modules: **Statistics 1 (S1)**. The module extends the Statistics you will have covered as part of GCSE Maths including probability and numerical measures (averages and measures of spread); techniques for solving real-life problems using the Normal and Binomial Probability distributions are developed and the very useful tools of correlation and regression are studied.

In **Statistics 2 (S2)** via Time Series analysis you will investigate seasonal variation and trends using moving averages to estimate seasonal effects and make forecasts. Sampling methods and hypothesis testing is covered and you will investigate the various ways in which data can be represented diagrammatically. You will model real-life situations using the Poisson distribution and solve practical problems related to Discrete Probability distributions.

The **Statistics 3 (S3)** module investigates many of the Statistical tests used by social scientists to test hypotheses. These include Chi-squared, Sign test, Wilcoxon test, the Mann-Whitney test and Kruskal-Wallis test. You will also calculate the Spearman's rank correlation coefficient to test for association between two variables.

S3 is taken in January and S1 and S2 are taken in summer.

Year 2

In the second year you will study 3 more modules Statistics 4,5 and 6. All assume that students are familiar with the knowledge, skills and understanding implicit in the AS modules. Continuous probability distributions and hypothesis testing are applied to practical situations and results are interpreted in context. The t-test is introduced and the Poisson distribution is revisited in Statistics 4 and the examination is sat in January. In Statistics 5 real-world situations are modelled using Rectangular and Exponential probability distributions, further work on confidence intervals hypothesis testing are covered and the independent sample tests (F-test, t-test and z-test) are studied. Experimental design, analysis of variance and further sampling is covered in Statistics 6.

Both S5 and S6 are taken in summer.

Assessment

Each module is assessed by a 1½ hour exam

Specific Entry Criteria

Grade C at least in Maths (Higher tier); (GCSE grade C in English Language preferred.)