

MATH1005 Statistics**3 credit points**

Assumed knowledge: HSC Mathematics.

Prohibition: May not be counted with MATH1905 or MATH1015.

Contact Hours: 6 per week (Summer School), or 3 per week (Semester 2).

Assessment: One 1.5 hour examination and assigned work.

Data Analysis. Histograms, stem-leaf displays. Quartiles, box-plots. Summary statistics. Bivariate data: correlation; regression.

Probability. Introduction. Probability rules. Integer random variables, binomial distribution. Expectation. Variance. Introduction to continuous random variables. Normal distribution. Use of statistical tables. Sampling distributions. The Central Limit Theorem. Normal approximation to the binomial.

Inference. Tests for hypotheses about proportions. Sign test (a non-parametric test). Normal test for hypotheses about the population mean. One and two sample t -tests. Confidence intervals for the population mean and for proportions. Chi-squared tests: goodness of fit.

Textbook

M C Phipps and M P Quine. *A Primer of Statistics*. Prentice Hall, Australia, 4th edition, 2001.

Reference book

J E Freund and G A Simon. *Modern Elementary Statistics*. Prentice Hall, USA, 9th edition, 1996.