

NM318 Modelling the Marine Environment NM317 Marine Experiments and Analysis

Syllabus/20 Credits for NM318 and 317

Overview and Aims

To demonstrate the application of basic statistical techniques and numerical analysis in naval architecture; to illustrate the use of some software packages.

Syllabus

Statistics - Elementary Probability: randomness; independence; conditional and joint probability. Discrete Probability Distributions: discrete random variables; binomial and Poisson distributions. Continuous Probability Distributions: continuous random variables; uniform, exponential, normal and Rayleigh distributions. Estimations and Hypothesis Tests: sampling distribution of sample mean; point estimates; confidence intervals; formulating hypotheses; null and alternative hypothesis; one sample cases, Chi-square test. Linear Regression: linear model; correlation; least squares fitting; significance tests. Experimental Designs: analysis of variance (ANOVA).

Computational methods - to be added by Dr. P.G. Sayer.

Assessment

30% coursework; 70% May examination

Lecturers

Professor X. Mao (Ext.3669, Rm. LT825) for statistics,
Dr. P.G. Sayer for computational methods.

Textbooks

- (1) Chris Chatfield, *Statistics for Technology*, 3rd Ed., Chapman & Hall, 1997.
- (2) The title of the textbook for computational methods: to be given by Dr. P.G. Sayer.

Timetable

Tuesday 1-2pm Room HD 113
Thursday 1-3pm Room JW 212

Information on WWW

Course details, lecture notes, class notices, samples of past exam papers etc can be founded at

<http://classes.myplace.strath.ac.uk>

<http://personal.strath.ac.uk/x.mao/teaching/>