UCD Curriculum Archive for Academic Year 2017/2018

Statistical Modelling (STAT10060)

School: Mathematics and Statistics

Level: 1 Credits: 5 Pass Mark: 40 Semester: Two

Module Coordinator: Professor Andrew Parnell

Description

Hypothesis Tests and Confidence Intervals for the difference between two population means or proportions using independent samples and using paired data. Hypothesis testing for proportions and independence. Testing the fit for a population model. The simple linear regression model. Inferences based on the estimated regression line. Inferences on the population correlation. Checking model adequacy. Single factor ANOVA. Multiple comparisons. Randomised block experiment. Two-factor ANOVA. Distribution free procedures. One and two way frequency tables.

Learning Outcomes

On completion of this module students should be able to compute the equation of the least squares line. They should be able to compute confidence intervals and prediction intervals from the least squares estimates. They should be able to perform some basic diagnostic checks on the performance of regression models. They should be able to conduct single factor and two factor analyses of variance. They should understand the problems associated with multiple comparisons and be able to compute appropriate confidence intervals. They should be able to perform a hypothesis test and compute a confidence interval for the difference between two population means or proportions using independent samples and using paired data. They should be able to conduct some basic non-parametric hypothesis tests and should be able to conduct some basic goodness of fit tests

Associated Programmes

N/A

Workload

Lectures	24 hrs
Tutorial	12 hrs
Computer Aided Lab	12 hrs
Autonomous Student Learning	75 hrs
Total Hours	**123 hrs**

Assessment Strategies

Description	Timing	%Final Grade
Assignments, MCQ, Computer Lab Exam	Varies	40
End of Semester Exam	End_Sem_Exam_2	60