

INTRODUCTION TO STATISTICS FOR ENVIRONMENTAL ANALYSIS GEOG 5122

- **Academic Session:** 2020-21
- **School:** School of Geographical and Earth Sciences
- **Credits:** 10
- **Level:** Level 5 (SCQF level 11)
- **Typically Offered:** Semester 1

Short Description

This course will introduce students systematically to the theory and application of statistical techniques in environmental science, using a step-by-step approach to facilitate the understanding of the use of statistical tools to collect and interpret data in the field of environmental science. The course will be centred around the use of univariate and multivariate statistical methods, presenting statistical theories without the need for a complex mathematical proof. The statistical concepts will be presented through effective hands-on practice, including labs and tutorials, as well as reinforce scientific and critical thinking skills to develop the ability a problem-solving approach to environmental science.

Timetable

5 three-hour workshops over 5 weeks

Requirements of Entry

None

Excluded Courses

None

Co-requisites

None

Assessment

Practical Skills assessment (50%) Integrated report on a case study (50%)

Course Aims

This course aims to provide an introduction to the theory and application of statistical techniques to environmental sciences. It should help students to develop a critical ability to appropriately chose the most appropriate statistical tools for analysing different sets of data and, ultimately, the student's data.

Intended Learning Outcomes of Course

By the end of this course students should be able to...

- explain and assess the concepts of univariate and multi-variate analyses and their normal distribution;
- distinguish quantitative and qualitative variables, continuous and discrete variables;
- describe, compare and assess methods of data collection and sampling strategy
- perform and assess the validity of analysis of variance and multivariate analysis of variance
- perform and assess procedures of testing regression analysis
- critically assess and justify the statistical methods used to solve a particular problem.

Minimum Requirements

Students must submit at least 75% by weight of the components (including examinations) of the course's summative assessment.