

BSc Honours Degree in Zoology

Semester	5		
Course code	ZOOL 41512		
Course Name:	Statistical Methods in Zoology		
Credit Value:	2		
Core/Optional	Core		
Pre requisites	ZOOL 22543		
Co-requisites	None		
Hourly Breakdown	Theory	Practical	Independent Learning
	25	15	60
Course Aim/Intended Learning Outcomes:			
After completion of the course unit, the student will be able to;			
<ul style="list-style-type: none"> ➤ apply appropriate statistical methods for the analysis of numerical data relevant to biological studies, ➤ use appropriate software packages to analyse biological data, and ➤ interpret biological data in a scientific manner. 			
Course Content:			
Introduction to scientific method and the statistical approach, Introduction to types of biological data, Sample statistics and population parameters, Probability and cumulative density functions, Models of probability distributions including binomial distribution, hypergeometric distribution, Poisson distribution and normal distribution. Confidence intervals, Error-bound, Hypothesis testing. Chi-square test, Kolmogorov-Smirnov test, Product moment correlation, Simple linear regression, Probit analysis, One-way ANOVA, Two-way ANOVA. Multiple comparison procedures including Tukey's test, Scheffe's test. Non-parametric statistics including; Mann-Whitney U test, Kruskal Wallis test, Wilcoxon signed rank test, Rank correlation, Multivariate statistics including similarity matrix, cluster analysis, MDS and PCA.			
Practical sessions on the use of statistical software packages for data analysis.			
Teaching /Learning Methods: A combination of lectures, computer based learning on the use of statistical software packages, assignments, self-studies, small group discussions.			
Assessment Strategy: Continuous assessment and end of course examination.			
Continuous Assessment 20%		Final Assessment 80%	
Details: Online and/or in-class assignment/quizzes 20%		Theory (%) 80%	Practical (%) NA Other (%) (specify) NA
Recommended reading:			
<ol style="list-style-type: none"> 1. Fowler, J. & L. Cohen (1994). Practical Statistics for Field Biology: Wiley & Sons, Chichester. 2. Sokal, R. R. & F. Rohlf (1995). Biometry. W.H. Freeman and company, New York. 3. Zar, J. H. (1999). Biostatistical Methods. Prentice-Hall, New Jersey. 			