University of Pretoria Yearbook 2019

Mathematical statistics 221 (WST 221)

Qualification	Undergraduate
Faculty	Faculty of Economic and Management Sciences
Module credits	24.00
Programmes	BCom
	BCom Econometrics
	BCom Statistics
	BSc Actuarial and Financial Mathematics
	BSc Applied Mathematics
	BSc Mathematical Statistics
	BSc Mathematics
	BSc Meteorology
	BSc Physics
Service modules	Faculty of Engineering, Built Environment and Information Technology
	Faculty of Natural and Agricultural Sciences
Prerequisites	WST 211 GS
Contact time	4 lectures per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Statistics
Period of presentation	Semester 2

Module content

Stochastic convergence: Asymptotic normal distributions, convergence in probability. Statistics and sampling distributions: Chi-squared distribution. Distribution of the sample mean and sample variance for random samples from a normal population. T-distribution. F-distribution. Beta distribution. Point estimation: Method of moments. Maximum likelihood estimation. Unbiased estimators. Uniform minimum variance unbiased estimators. Cramer-Rao inequality. Efficiency. Consistency. Asymptotic relative efficiency.
Bayes estimators. Sufficient statistics. Completeness. The exponential class. Confidence intervals. Test of statistical hypotheses. Reliability and survival distributions. Practical applications. Practical statistical modelling and analysis using statistical computer packages and the interpretation of the output.

General Regulations (G Regulations) apply to all faculties of the University of Pretoria. It is expected of students to familiarise themselves well with these regulations as well as with the information contained in the General Rules section. Ignorance concerning these regulations and rules will not be accepted as an excuse for any transgression.