

University of Pretoria Yearbook 2016

Mathematical statistics 211 (WST 211)

| | |
|-------------------------------|--|
| Qualification | Undergraduate |
| Faculty | Faculty of Economic and Management Sciences |
| Module credits | 24.00 |
| Programmes | BCom Econometrics BCom Statistics BSc Information Technology Information and Knowledge Systems BSc(Computer Science) Computer Science BSc Actuarial and Financial Mathematics BSc Applied Mathematics BSc Mathematical Statistics BSc Mathematics |
| Service modules | Faculty of Engineering, Built Environment and Information Technology Faculty of Economic and Management Sciences Faculty of Natural and Agricultural Sciences |
| Prerequisites | WST 111, WST 121, WTW 114 GS and WTW 124 GS |
| Contact time | 2 practicals per week, 4 lectures per week |
| Language of tuition | Double Medium |
| Academic organisation | Statistics |
| Period of presentation | Semester 1 |

Module content

Set theory. Probability measure functions. Random variables. Distribution functions. Probability mass functions. Density functions. Expected values. Moments. Moment generating functions. Special probability distributions: Bernoulli, binomial, hypergeometric, geometric, negative binomial, Poisson, Poisson process, discrete uniform, uniform, gamma, exponential, Weibull, Pareto, normal. Joint distributions: Multinomial, extended hypergeometric, joint continuous distributions. Marginal distributions. Independent random variables. Conditional distributions. Covariance, correlation. Conditional expected values. Transformation of random variables: Convolution formula. Order statistics. Stochastic convergence: Convergence in distribution. Central limit theorem. Practical applications. Practical statistical modelling and analysis using statistical computer packages and the interpretation of the output.



The information published here is subject to change and may be amended after the publication of this information. The [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.