University of Pretoria Yearbook 2016

MCom Statistics (Coursework) (07250062)

Duration of study	2 years
Total credits	180
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Admission requirements

- Relevant honours degree in Statistics with an average of at least 65%.
- Student numbers are limited to a maximum of 20 collectively over all master's programmes in the Department of Statistics.

Additional requirements

1. A candidate may be refused admission to a master's degree by the head of the department if he/she does not comply with the standard of competence in the subject as determined by the department – with the proviso that a candidate who does not comply with the required level of competence, may be admitted, provided that he/she completes additional study assignments and/or examinations.
2. The head of department concerned may set additional admission requirements.
3. Specific departments have specific requirements for admission.
4. The number of students will be determined in line with the growth strategy of the University of Pretoria as approved by the Executive.
5. Allowance will be made for the diversity profile of students.
6. A completed Postgraduate Diploma in Economic and Management Sciences can also be considered for admission to the Master's programme in Entrepreneurship.

All MCom candidates need to have adequate knowledge of Management, Financial and Economic Sciences as well as Statistics, as determined by the head of department concerned, in consultation with the Dean.
A pass mark in the following modules:

- Financial accounting 1 (FRK 111 and FRK 121/122);
- Economics 1 (EKN 110 and EKN 120);
- Statistics 1 (STK 110 and STK 120) and one of the following:
- Business management 1 (OBS 114 and OBS 124); or
- Marketing management 1 (BEM 110 and BEM 122); or
- Public administration 1 (PAD 112 and PAD 122); or
- Industrial and organisational psychology (BDO 110 and BDO 120) or equivalent modules passed at another institution as approved by the head of the department concerned in consultation with the Dean.

Other programme-specific information

As long as progress is satisfactory, renewal of registration of a master's student will be accepted for a second year of study in the case of a full-time student. Renewal of registration for a third and subsequent years for a full-

time student will only take place when Student Administration of the Faculty receives a written motivation (the required form can be obtained from the Head of Department) that is supported by the Head of Department and Postgraduate Studies Committee.(See Regulations G.32 and G.36.)

Examinations and pass requirements

The pass mark for both a dissertation and a mini-dissertation is 50%. The provisions regarding pass requirements for dissertations, contained in General Regulation G.12.2, apply mutatis mutandis to mini-dissertations. A pass mark of at least 50% is required in the examination of each module.

Research information

Dissertations/mini-dissertations/research reports, curricula and modules

1. The degree programme requires that a dissertation/mini-dissertation/research article must be submitted in a field of study chosen from the fields covered for the honours degree, provided that the Dean may, on the recommendation of the head of department concerned, approve the replacement of the required dissertation by the successful completion of a prescribed number of module credits and a mini-dissertation/research article.
2. Information on modules, credits and syllabi is available, on request, from the head of department concerned.
3. A module in Research Methodology is compulsory in all programmes. The Dean may, on the recommendation of the head of department concerned, waive the prerequisites.
4. Sufficient number of bound copies of the thesis/dissertation must be submitted to the Head: Student Administration for examination, after permission is granted by the supervisor.

Article for publication

A dean may require, before or on submission of a dissertation, the submission of a draft article for publication to the supervisor. The draft article should be based on the research that the student has conducted for the dissertation and be approved by the supervisor concerned. The supervisor should then have the opportunity to take the paper through all the processes of revision and resubmission as may be necessary and/or appropriate in order to achieve publication.

Submission of dissertation

A dissertation is submitted to the Head: Student Administration, before the closing date for the various graduation ceremonies as announced annually.

For examination purposes, a student must, in consultation with the supervisor, submit a sufficient number of bound copies of the dissertation, printed on good quality paper and of good letter quality, to the Head: Student Administration. Permission to submit the dissertation in unbound form may be obtained from the supervisor concerned on condition that a copy of the final approved dissertation is presented to the examiners in bound format or electronic format.

In addition to the copies already mentioned, each successful student must submit a bound paper copy as well as two electronic copies of the approved dissertation to the Head: Student Administration in the format specified by the faculty and in accordance with the minimum standards set by the Department of Library Services, before 15 February for the Autumn graduation ceremonies and before 15 July for the Spring graduation ceremonies, failing which the degree will only be conferred during a subsequent series of graduation ceremonies.

Curriculum: Year 1

Minimum credits: 80

Core modules

Statistical learning 880 (MVA 880)

Module credits	20.00
Service modules	Faculty of Natural and Agricultural Sciences
Prerequisites	No prerequisites.
Contact time	1 lecture per week
Language of tuition	English
Academic organisation	Statistics
Period of presentation	Semester 1 or Semester 2

Module content

Supervised and unsupervised methods, including computational methods, within the broader context of data mining. Supervised learning. Linear methods for Regression, Classification and Prediction. Basis Expansions, Regularisation, Smoothing, Additive models and Support Vector Machines.
Unsupervised learning: Clustering, principal components, dimensional reduction. Data methods: Organisation of data and exploratory data analysis.

Capita selecta: Statistics 880 (STK 880)

Module credits	20.00
Service modules	Faculty of Natural and Agricultural Sciences
Prerequisites	No prerequisites.
Contact time	1 lecture per week, 1 other contact session per week
Language of tuition	English
Academic organisation	Statistics
Period of presentation	Semester 1 or Semester 2

Module content

The module is primarily an article based on and covers the most recent literature that discusses the developments and research in, for example, Shewhart charts, Exponentially Weighted Moving Average (EWMA) charts, Cumulative Sum (CUSUM) charts, Q-charts, Parametric and Nonparametric charts, Univariate and Multivariate charts, Phase I and Phase II control charts, profile monitoring and other research topics.

Analysis of time series 880 (TRA 880)

Module credits	20.00
Service modules	Faculty of Natural and Agricultural Sciences
Prerequisites	WST 321 or TRA 720

Contact time	1 lecture per week
Language of tuition	English
Academic organisation	Statistics
Period of presentation	Semester 1 or Semester 2

Module content

Difference equations. Lag operators. Stationary ARMA processes. Maximum likelihood estimation. Spectral analysis. Vector processes. Non-stationary time series. Long-memory processes.

Data analytics and visualisation 880 (TRG 880)

Module credits	20.00
Service modules	Faculty of Natural and Agricultural Sciences
Prerequisites	No prerequisites.
Contact time	1 lecture per week
Language of tuition	English
Academic organisation	Statistics
Period of presentation	Semester 1 or Semester 2

Module content

Regression introduction: Simple and multiple regression. Multicollinearity, Heteroscedasticity, Ridge regression. Logistic regression: Estimation, inference and applications. Non Linear regression: Estimation, inference and applications. Text mining: Topic modelling with applications. Survival regression: Survival models applied in regression. Regression extensions: CART, MARS and Conjoint analysis.

Curriculum: Final year

Minimum credits: 100

Core modules

Mini-dissertation: Statistics 895 (STK 895)

Module credits	100.00
Prerequisites	No prerequisites.
Language of tuition	English
Academic organisation	Statistics
Period of presentation	Year

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.