University of Pretoria Yearbook 2018

MSc eScience (Coursework) (02250193)

Minimum duration of study	2 years
Total credits	180

Programme information

The curriculum for the MSc (eScience) coursework degree programme comprises 180 credits of coursework and a research component. One of the key features of the curriculum is a capstone project that runs parallel with coursework modules in the first year of study. During the capstone project, students will go through the entire cycles of solving a real-world data science problem, collecting and processing real-world data, designing methods to solve the problem, and implementing a solution. The capstone project and coursework prepare the student for the mini-dissertation problem supervised by an expert.

Admission requirements

The admission requirements are:

- an honours degree in either statistics, mathematics, computer science, physics, or related fields; AND demonstrable knowledge of basic principles of probability and statistics, computing, calculus and linear algebra;

  OR
- passing an entrance evaluation designed by the academic advisory committee of the programme within the consortium. An average of 65% at honours level is the minimum for consideration, although admission will be competitive and an honours average of at least 70% is highly recommended.
- Student numbers are limited to a maximum of 30.
- Admission is additionally dependent on availability of supervisor/s and/or projects within the participating departments.
- Historical performance during prior studies will also be considered in selecting students. Specific attention will be given to modules repeated and duration of study.
- The research proposal of applicants should be in line with the research focus of the participating departments.
- Any further additional entrance requirements as specified by the head of department in consultation with the departmental postgraduate selection committee.
- The head of department, in consultation with the departmental postgraduate selection committee and participating departments reserves the right to prescribe additional modules.

Other programme-specific information

Candidates are required to familiarise themselves with the General Regulations regarding the maximum period of registration and other requirements for master's degrees.

Promotion to next study year

The progress of all master's candidates is monitored biannually by the supervisor and the postgraduate coordinator. A candidate's study may be terminated if the progress is unsatisfactory or if the candidate is unable to finish his/her studies during the prescribed period.

Subject to exceptions approved by the dean, on recommendation of the head of department, and where applicable, a student may not enter for the master's examination in the same module more than twice.

Pass with distinction

The MSc degree is conferred with distinction to candidates who obtain a final average mark of at least 75%, with a minimum of 65% in each module, and a mark of at least 75% for the mini-dissertation from each of the members of the examination panel. Where a member of the examination panel awards a mark of less than 75% for the mini-dissertation, that member of the examination panel must offer, in writing, support for his/her decision, or indicate in writing that he/she supports the examination committee's decision to confer the degree with distinction.

Curriculum: Year 1

Choose 4 modules to the value of 60 credits from the list of electives.

Core modules

Research methods and capstone project in data science 801 (NEP 801) - Credits: 15.00
Data privacy and ethics 802 (NEP 802) - Credits: 15.00

Elective modules

Adaptive computation and machine learning 803 (NEP 803) - Credits: 15.00
Data visualisation and exploration 804 (NEP 804) - Credits: 15.00
Large-scale computing systems and scientific computing 805 (NEP 805) - Credits: 15.00
Mathematical foundations of data science 806 (NEP 806) - Credits: 15.00
Special topics in data science 807 (NEP 807) - Credits: 15.00
Statistical foundations of data science 808 (NEP 808) - Credits: 15.00
Large-scale optimisation for data science 809 (NEP 809) - Credits: 15.00

Curriculum: Final year

Fundamental modules

Mini-dissertation: eScience 800 (NEP 800) - Credits: 90.00

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.