MSc eScience

This Masters programme aims to train postgraduate students in computational, mathematical and statistical methods to solve data-driven problems.

The programme will create opportunities for students interested in the interdisciplinary perspective on the emerging field of Data Science to demonstrate their ability of combining their specific subject-related knowledge with the latest trends in data analytics. This programme forms part of the DST-funded National e-Science Postgraduate Teaching and Training Platform (NEPTTP) (www.escience.ac.za). Students will register at the University of Pretoria but will attend coursework at Wits University in Johannesburg, Gauteng, in the first year. On completion of the coursework modules, students will move back to their home institutions for their second year of study.

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.

Applications

Students are advised to apply online.

Apply online:
www.up.ac.za/online-application

More details in the Postgraduate brochure:
www.up.ac.za/statistics
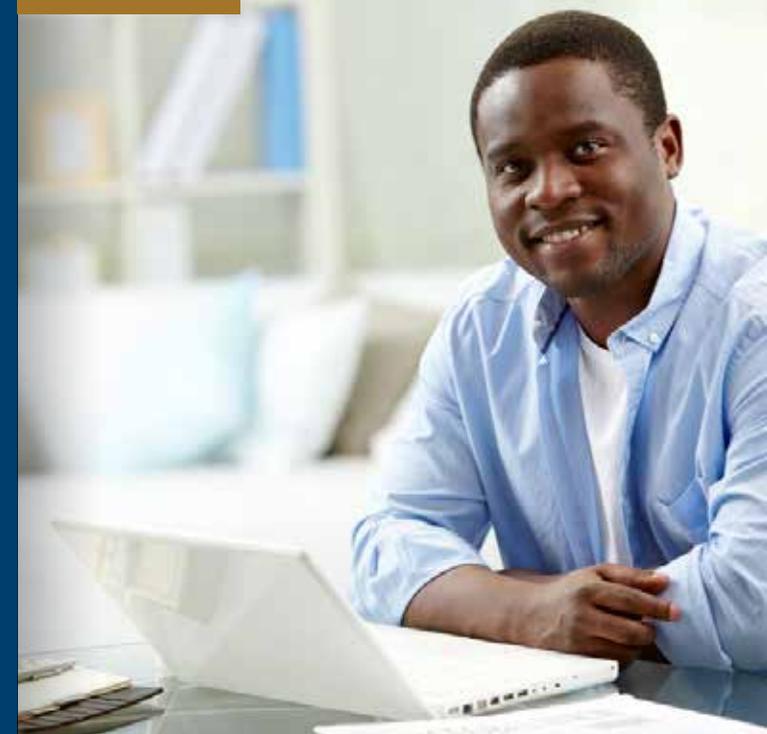
Contact

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Tel: (012) 420-3444

Faculty of Natural and Agricultural Sciences

Fakulteit Natuur- en Landbouwetenskappe
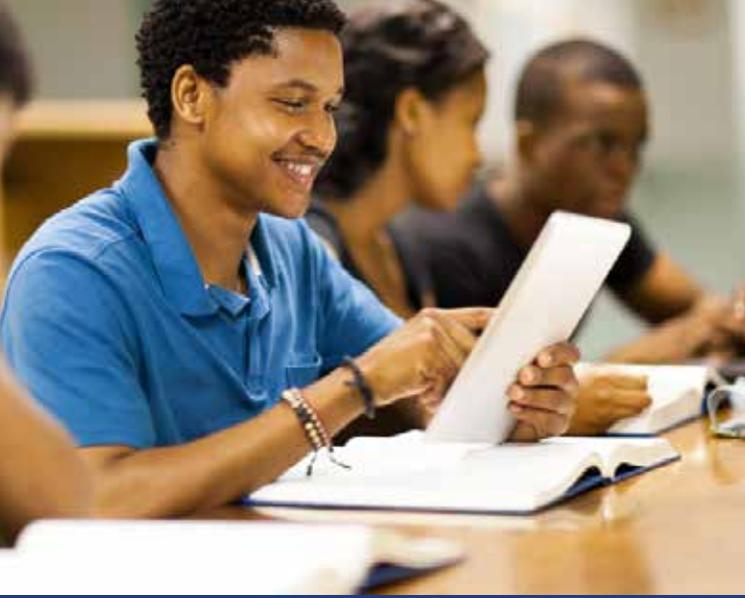Lefapha la Disaense tša Tlhago le Temo

Make today matter

www.up.ac.za

ANY 4 ELECTIVE COURSES ON OFFER
- Adaptive Computation and Machine Learning (15 credits)
- Data Visualisation and Exploration (15 credits)
- Large Scale Computing Systems and Scientific Programming (15 credits)
- Large Scale Optimisation for Data Science (15 credits)
- Mathematical Foundations of Data Science (15 credits)
- Special Topics in Data Science (15 credits)
- Statistical Foundations of Data Science (15 credits)

Research Report
(Year 2 at the University of Pretoria)
- Mini-dissertation: eScience (90 credits) **

Funding

Competitive DST-CSIR MSc bursaries, covering tuition, accommodation and stipend, are made available by the Department of Science and Technology (DST) to qualifying offer holders with a record of excellent academic achievement. Priority for bursaries will be given to South African Citizens and Permanent Residents.

Careers

Graduates of the programme can find data-oriented roles within academic institutions, technology, healthcare companies and the finance sector.

Admission requirements

Applicants are required to have a Bachelor with Honours degree (NQF level 8 qualification) from a relevant discipline in Science or Engineering (Computer Science, Mathematics, Physics, and Statistics) OR a relevant NQF level 8 qualification or a relevant Professional Engineering Degree with demonstrable knowledge of basic principles of Computing, Calculus, Linear Algebra, Probability and Statistics. Applicants require a minimum of 65 percent in their NQF level 8 qualification and fulfil any additional institutional application requirements of the institution through which they are applying, and must be co-approved by the programme body.

Degree Information

The Masters programme covers coursework in the first year and research in the second year. The programme comprises compulsory and elective modules. Cross-disciplinary data-driven projects are offered both within the University of Pretoria and from a wide range of industry partners. A candidate must undertake modules to the value of 180 credits and must successfully complete the following courses to obtain a Master of Science in eScience.

Coursework Modules (Year 1 at Wits University)

2 COMPULSORY COURSES
- Research Methods and Capstone Project in Data Science (15 credits)
- Data Privacy and Ethics (15 credits)