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Department of Statistics and Actuarial Science

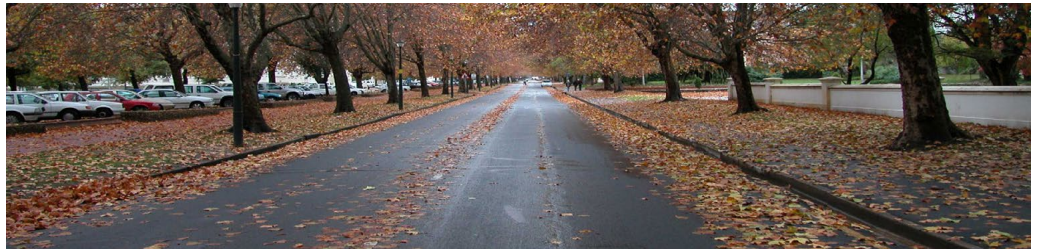
Open Day General Information

Contents

The Information era

Read any articles in the media today and it won't be long before someone, somewhere is quoting facts and figures. As modern technology generates large volumes of data and information on anything you can think of, we increasingly rely on skilled professionals to analyse this data and information. These professionals interpret the outcome of the analyses and from the gained insight, improved decisions of importance can be made.

At Stellenbosch University the courses offered by the Department of Statistics and Actuarial Science are designed to develop the skills needed by these professionals. Prospective students may choose from a number of degree programmes that open the door to careers in Statistics, Actuarial Science, Data Science and Financial Risk Management, amongst others.



About the Department

- The Department celebrated its 75th anniversary in 2021. It was founded 1946, with the appointment of Professor SJ (Faantjie) Pretorius. He was the first professor in Statistical Mathematics. This makes it one of the oldest Statistics Departments in South Africa.
- In recent years the number of subjects offered by the Department, as well as the areas where courses were given, increased dramatically. Currently, students from most Faculties follow a course in Statistics. The subjects Mathematical Statistics, Actuarial Science, Applied Statistics, Data Science and Financial Risk Management are modules in the main programmes that are offered in the Department. Service courses are offered to the Engineering, Sciences and Economic and Management Sciences students.
- In 1985, the Department of Statistics started to present courses in Actuarial Science and it was decided to change the name to the Department of Statistics and Actuarial Science. BCom (Actuarial Science) is a selection programme that will put students on the path to becoming an Actuary.
- The Department not only offers a variety of undergraduate and service courses to students, but students from the Faculties of Science and Economic and Management Sciences can also register for Honours, Masters and Doctoral degrees in Statistics, Mathematical Statistics, Financial Risk Management and Actuarial Science.
- The Department was instrumental in launching the Bachelor of Data Science (BDatSci) degree in 2021.
- The Department consists of 23 permanent and 11 part-time lecturers and 4 emeritus professors, the Director of the Centre for Statistical Consultation, a departmental officer and two secretaries. Our Department is one of eight departments in the Faculty of Economic and Management Sciences.

Undergraduate Degree Programmes

The following undergraduate degree programmes are offered in the Department:

- BCom (Actuarial Science) – a separate presentation with brochures is available
- BCom (Mathematical Sciences) with focal areas in:
  - Data Science – a separate presentation with brochures is available
  - Financial Risk Management – a separate presentation is available
- BDatSci with the main focal area in Statistical Learning – a separate presentation with brochures is available
  - A Bachelor degree in Data Science over 4 years with 8 focal areas, one being Statistical Learning

Postgraduate Degree Programmes

The following postgraduate programmes are offered in the Department (see www.sun.ac.za/statistics for more information):

Honours programmes:

- BComHons (Actuarial Science)
- BComHons (Financial Risk Management)
- BComHons (Mathematical Statistics) or with focal area specifically in:
  - Data Science
- BComHons (Statistics)

Masters programmes:

- MCom (Actuarial Science)
- MCom (Financial Risk management)
- MCom (Mathematical statistics)
- MCom (Statistics)

PhD programmes in Actuarial Science, Mathematical Statistics or Statistics

BCom (Actuarial Science)

Minimum requirements for admission:

- A National Senior Certificate average based on the 6 best subjects, excluding Life Orientation, 80%
- Mathematics 80%
- Home Language 60%
- If the Home Language (in the requirement above) is not English, then also English First Additional Language 75%

BCom (Actuarial Science) is a selection programme. The Selection Mark, on which selections will be based is calculated as the average of a student's best 6 NSC marks (or best 4 where students have fewer than 6 subjects), including Mathematics and English/Afrikaans and excluding Life Orientation.

For automatic provisional acceptance applicants will need to have met the minimum admission requirements and have a selection mark of at least 85% (based on Grade 11 results, or NSC results if matriculated). Applicants with a selection mark of below 85% will then be considered on academic merit, taking account of the number of places available.

Enquiries

- Programme coordinator: Prof Garrett Slattery
- E-mail: slattery@sun.ac.za

BCom (Mathematical Sciences)

Admission requirements

- Overall National Senior Certificate average of at least 70%, excluding Life Orientation
- Mathematics 75%
- One of the following: Afrikaans Home Language 50% *or* English Home Language 50% *or* Afrikaans/English First Additional Language 60

Enquiries

Data Science focal area

- Prof Danie Uys
- E-mail:dwu@sun.ac.za

Financial Risk Management focal area

- Dr Carel van der Merwe
- E-mail: cjvdmerwe@sun.ac.za

Focal area: Data Science

Description of focal area

Data is important and is analysed in almost all environments. A data scientist must have the skills for the following: to gather data and to store it, to transform data and graphically represent it, to ask relevant questions and to analyse data so as to answer decision-making questions. Data scientists are employed as statisticians, data analysts, data managers and statistical analysts in, for example, the marketing, information and management positions of firms. In this capacity they form part of the exciting management and decision-making processes in large organisations. If you have this training, you can negotiate exciting and well-paid career opportunities for yourself.

BCom (Mathematical Sciences)		
Focal area: Data Science		
First year (136 credits)	**Second year (124 credits)**	**Third year (134 credits)**
Compulsory modules Actuarial Science 112(8) Computer Science 114(16), 144(16) Economics 114(12), 144(12) Financial Accounting 188(24) Mathematics 114(16), 144(16) Probability Theory and Statistics 144(16)	**Compulsory modules** Business Management 113(12) Computer Science 214(16), 244(16) Mathematics 214(16), 244(16) Mathematical Statistics 214(16), 245(8), 246(8) Operations Research 244(16)	**Compulsory modules** Business Management 142(6) **Recommended elective modules** *Choose any two subjects (all the modules per subject):* Computer Science 314(16) or 315(16), 334(16), 344(16), 354(16) Mathematical Statistics 312(16), 316(16), 344(16), 364(16) Operations Research 314(16), 322(16), 344(16), 352(16)

Focal area: Financial Risk Management

Description of focal area

People with training in Financial Risk Management, Mathematical Statistics and Financial Mathematics are employed by large financial institutions as quantitative financial analysts, among which are financial risk managers, portfolio managers and dealers in financial instruments. This training gives students the necessary background for building a stimulating and financially rewarding career in the financial sector.

BCom (Mathematical Sciences)		
Focal area: Financial Risk Management		
First year **(136 or 138 credits)**	**Second year** **(136 or 154 credits)**	**Third year** **(144 credits)**
Compulsory modules Actuarial Science 112(8) Economics 114(12), 144(12) Financial Accounting 188(24) Probability Theory and Statistics 144(16) Mathematics 114(16), 144(16) **Plus** Business Management 113(12), 142(6) and Computer Science 113(16) *or* Computer Science 114(16), 144(16) *Please note:* You must take Business Management 113(12) and 142(6) in the second year.	**Compulsory modules** Actuarial Science 211 (18) Financial Risk Management 212(8), 242(8), 252(6) Mathematical Statistics 214(16), 245(8), 246(8) Mathematics 214(16), 244(16) Economics 214(16), 244(16) *or* Financial Accounting 288(32) *or* Operations Research 214(16), 244(16) *Please note:* If you took and passed Computer Science 114(16) and 144(16) in the first year, you must take Business Management 113(12) and 142(6), plus the compulsory modules listed above.	**Compulsory modules** Financial Mathematics 378(32) Financial Risk Management 314(24), 344(24) Mathematical Statistics 312(16), 316(16), 344(16), 364(16)

BDatSci (4-year degree programme)

Interdepartmental and interfaculty collaboration

This programme is presented in four faculties, namely Economic and Management Sciences, Science, AgriSciences and Arts and Social Sciences. The faculty where you are registered awards the degree.

Admission requirements

- Overall NSC average of at least 80%, excluding Life Orientation
- Mathematics 80%
- One of the following: Afrikaans Home Language 60% *or* English Home Language 60% *or* Afrikaans/English First Additional Language 75%

Articulation (changes) to BDatSci from other existing academic programmes is subjected to approval by the BDatSci Programme Committee.

BDatSci …continues

Enquiries

For further information about the BDatSci programme, visit www.sun.ac.za/datascience or use the contact details below.

For general enquiries about the programme:

- Prof Paul Mostert
- E-mail: pjmos@sun.ac.za

For enquiries about specific focal areas in the Faculty of Economic and Management Sciences:

Statistical Learning focal area

- Prof Danie Uys (Statistics and Actuarial Science, E-mail: dwu@sun.ac.za)

Analytics and Optimisation focal area

- Prof Stephan Visagie (logistics, E-mail: svisagie@sun.ac.za)

Behavioural Economics focal area

- Prof Rulof Burger (Economics, E-mail: rulof@sun.ac.za)

Note that the other 5 focal areas are in different faculties (see clarification later)

More Information

- Consult other information brochures, as well as further slides on the Actuarial Science specific degree programme, as well as the Financial Risk Management focal area, that can be found elsewhere on this website/portal.
- Please view the BDatSci promotional video that explains further detail on this programme. This video focusses on the 8 focal areas. You are welcome to visit the BDatSci website at: www.sun.ac.za/datascience for a lot more information.
- The Departmental website also contains more information about our programmes and general activities at: www.sun.ac.za. Please view our Departmental Newsletters on this link to see who is who, who are alumni, achievements of our students and staff and much more.
- We are proud to have celebrated our 75th anniversary in 2021.

General Contact details:

- Chairperson of the Department: Prof PJ Mostert (021-808-3536 or pjmos@sun.ac.za)
- Departmental secretary: Ms Elizna Huysamen (021-808-3244 or krugere@sun.ac.za)

THANK YOU FOR YOUR INTEREST IN THE DEPARTMENT AND ITS PROGRAMMES