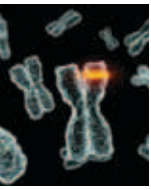
Faculty of Science

Mathematical Statistics

Statisticians contribute to scientific enquiry and decision-making by applying their mathematical and statistical knowledge to the design of surveys and experiments; the collection, processing, and analysis of data; and the interpretation and presentation of the results.

WHO WOULD BE INTERESTED IN THIS MAJOR?

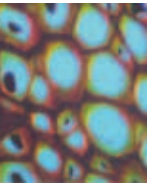
Mathematical Statistics is a mathematical science, and so a taste and aptitude for mathematical thinking is a crucial ingredient. The field of statistics, like other areas of applied mathematics, often attracts those interested in the analysis of patterns in data: developing, understanding, abstracting, and packaging analytical methods for general use in other subject areas.



Statistics is also, by definition, an information science. Imaginative use of both computing power and new computing environments drives much current research - so an interest in computation and/or computer science can also be a start for a statistician.

WHAT COURSES WILL YOU TAKE?

The compulsory courses listed below must be included in your selection of courses for a major in Mathematical Statistics.



1ST YEAR LEVEL COURSES

- MAM1000W Mathematics 1
- STA1006S Mathematical Statistics

2ND YEAR LEVEL COURSES

- STA2004F Statistical theory and inference
- STA2005S Linear models

3RD YEAR LEVEL COURSES

- STA3041F Markov processes and time series
- STA3043S Decision theory and GLMs
- STA3045F Advanced Stochastic Processes (optional)
- MAM2000W Mathematics 2 (recommended)

CAREER OPPORTUNITIES FOR GRADUATES

One advantage of working in Statistics is that you can combine your interest with almost any other field in science, technology, or business. Statisticians are routinely rated as being involved in one of the most desirable professions. Statisticians are employed in many fields, including biology, finance, economics, engineering industry, medicine, public health, psychology, marketing, government, education and sports.

Statisticians are a key players in the Analytics environment using their skills to transform large amounts of data into information to solve real-world problems and enhance decision-making.

SUGGESTED CO-MAJORS

- Computer science

POST GRADUATE STUDY OPTIONS

- BSc (Hons) Statistical Sciences
- MSc (Decision Sciences & Advanced Analytics)
- MSc (Mathematical Statistics / Operations Research /Statistics for Ecology and the Environment) *Dissertation only*
- PhD (Statistical Sciences/ Statistics for Ecology and the Environment)

MINIMUM ADMISSION AND SUBJECT REQUIREMENTS
(See Table on Page 2)
NSC, FPS of 420
Mathematics 70% & Physical Science 60%
NBT in Mathematics, AL & QL to be written

UNIVERSITY OF CAPE TOWN
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For further information on any of the majors, contact the Science Faculty Office on the following;
Tel: **(021) 650 2712** Fax: **(021) 650 2710**
e-mail: **sci-science@uct.ac.za**

Faculty of Science

Applied Statistics

Applied Statistics refers to quantitative methods for the collection, analysis, and presentation of data to solve real world problems and aid decision making

WHO WOULD BE INTERESTED IN THIS MAJOR?

The field of statistics often attracts those interested in the analysis of patterns in data: developing, understanding, abstracting, and packaging analytical methods for general use in other subject areas.

If you enjoy quantitative subjects, have problem-solving skills and would like to apply these skills to subject areas like Biology, Genetics, Microbiology, Marketing, Economics, Finance and Psychology, then a major in Applied Statistics is for you.

SUGGESTED CO-MAJORS

Applied Biology, Ecology and Evolution, Computer Science, Microbiology, Genetics, Marine Biology and Economics

POSTGRADUATE STUDY OPTIONS

- BSc (Hons) Statistical Sciences
- MSc (Decision Sciences and Advanced Analytics)
- MSc (Mathematical Statistics/ Operations Research/ Statistics for Ecology and the Environment) *Dissertation only*
- PhD (Statistical Sciences/ Statistics for Ecology and the Environment)

WHAT COURSES WILL YOU TAKE?

The compulsory courses listed below must be included in your selection of courses for a major in Applied Statistics.

1ST YEAR LEVEL COURSES

- MAM1000W/ MAM1004F Mathematics 1
- STA1000S /STA1007S Introductory Statistics

2ND YEAR LEVEL COURSES

- STA2020F/STA2007F Business Statistics/ Applied Statistical Modelling
- STA2030S Theory of Statistics

3RD YEAR LEVEL COURSES

- STA3030F Inferential Statistics
- STA3036S/STA3022F Operational Research Techniques/ Research and Survey Statistics

CAREER OPPORTUNITIES FOR GRADUATES

One advantage of working in Statistics is that you can combine your interest with almost any other field in science, technology, or business. Statisticians are routinely rated as being involved in one of the most desirable professions. Statisticians are employed in many fields, including biology, finance, economics, engineering industry, medicine, public health, psychology, marketing, government, education and sports.

Statisticians are a key players in the Analytics environment using their skills to transform large amounts of data into information to solve real-world problems and enhance decision making.

MINIMUM ADMISSION AND SUBJECT REQUIREMENTS
(See Table on Page 2)
NSC, FPS of 420
Mathematics 70% & Physical Science 60%
NBT in Mathematics, AL & QL to be written

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