STATISTICS AND DATA SCIENCE

UCT FACULTY OF SCIENCE

Data science is a combination of mathematics, statistics, specialised programming, and advanced analytics, with specific subject matter expertise to uncover actionable insights hidden in an organisation's data.

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, Marketing, Economics, Finance and Psychology, then a major in Statistics and Data Science is for you.

SUGGESTED CO-MAJORS

Biology, Computer Science, Genetics, Marine Biology, Economics, Physics and Astronomy

POST GRADUATE STUDY OPTIONS

- BSc (Hons) Statistical Sciences
- MSc (Advanced Analytics)
- MSc (Biostatistics)
- MSc (Data Science)
- MSc (Mathematical Statistics/ Operations Research/ Statistics for Ecology & the Environment) Dissertation only
- PhD (Statistical Sciences/ Statistics for Ecology & the Environment)

WHAT COURSES WILL YOU TAKE?

The compulsory courses listed below must be in your selection of courses for a Statistics and Data Science major. Students will need to choose between the Mathematical and Applied Statistics streams.

1ST YEAR LEVEL COURSES

- Computer Science 1
- Mathematics 1
- Introductory Statistics (Applied Stats) OR Mathematical Statistics (Math Stats)

2ND YEAR LEVEL COURSES

- Computer Science 2
- Mathematics 2 (Advanced Calculus and Linear Algebra)
- Statistical Theory (Applied Stats) OR Statistical Theory and Inference (Math Stats)
- One of: Applied Statistics (Applied Stats) OR Study Design & Data Analysis for Scientists (Applied Stats) OR Linear Models (Math Stats)

3RD YEAR LEVEL COURSES

- Statistical Inference & Modelling (Applied Stats OR Markov Processes & Time Series (Math Stats)
- One of: Operational Research Techniques (Applied Stats) OR Applied Multivariate Data Analysis (Applied Stats) OR Statistical Modelling, Machine Learning & Bayesian Analysis (Math Stats)

RECOMMENDED COURSES

- Advanced Stochastic Processes (Math Stats)
- Mathematics 2 (Real Analysis and Differential Equations)

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 key players in the Analytics/ Data Science 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

FPS of 550 (but admission only guaranteed at FPS above 660)
Mathematics 70% & Physical Science 60%
NBT in Mathematics, AL & QL to be written