



APPLIED MATHEMATICS

FACULTY OF SCIENCE



SCAN ME

Applied mathematicians develop and utilise mathematical tools to analyse, understand and improve processes in physics, computer science, engineering, biology, cosmology and beyond. In this way mathematics has become one of the most powerful promoters of

scientific developments, since all modern sciences are founded essentially on mathematical principles. Many technological developments such as mobile phones, computers, cars, airplanes, large telescopes and the interpretation of the universe were unthinkable without mathematical progress.

WHO WOULD BE INTERESTED IN THIS MAJOR?

Students who are interested in mathematics and science in general and who are excited about analyzing complex problems in mathematics and other scientific disciplines should seriously consider majoring in applied mathematics. While the ability and confidence to learn mathematics is required, even more important is a fascination with solving mathematical problems that are relevant to physics, chemistry, computer science, astrophysics, biology and many other disciplines.

WHAT COURSES WILL YOU TAKE?

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

1ST YEAR LEVEL COURSES

- Mathematics 1031 and Mathematics 1032 or equivalent
- Modelling & Applied Computing
- Dynamics

2ND YEAR LEVEL COURSES

- Mathematics 2000
- Applied Mathematics 2046

3RD YEAR LEVEL COURSES

- Applied Mathematics 3040: Modules in Advanced numerical methods, Methods of functions of complex variables,
- Methods of mathematical physics, General Relativity and Fluid dynamics.

Many students major in both mathematics and applied mathematics because there is considerable overlap in the requirements of the two majors and because this approach leads to the broadest possible range of career opportunities and the deepest possible understanding of mathematics in general. Other popular combinations are with physics, astrophysics, chemistry or biology.

CAREER OPPORTUNITIES FOR GRADUATES

Applied Mathematics is a popular subject among students. Applied mathematicians have excellent career opportunities and they are highly valued by employers for their problem solving skills and their excellent ability in analysing complex and abstract problems. The fact that these skills are transferable and that mathematics is relevant to almost every aspect of modern life explains why mathematicians have a huge variety of job opportunities. Nowadays applied mathematicians work in research departments, engineering laboratories, observatories, software companies, education, actuarial sciences, finance and many other fields. Moreover, many South African academic institutions host Theoretical Physics, Gravity and Cosmology research groups where postgraduate and career opportunities are available.

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