BScHons Applied Mathematics

Programme code

02240172

The programme compilation consists of seven honours modules of 15 credits each as well as the mandatory project (30 credits). It is required that students select the stream and elective modules according to the prerequisites of the modules.

Stream 1: Applied analysis

Code

Module

Credits

Semester

Research:

WTW 795

Project 795

30

year

Core modules:

WTW 710

Functional analysis 710

15

1

WTW 734

Measure theory and probability 734

15

1

WTW 776

Partial differential equations of mathematical physics 776

15

2

Elective modules:

Four (4) electives from below. The selection must contain at least one of WTW 787 or WTW 764 and at least one of WTW 733 or WTW 763.

WTW 733

Numerical analysis 733

15

1

WTW 750

Mathematical optimisation 750

15

1

WTW 763

Finite element method 763

15

2

WTW 764

Stochastic calculus 764

15

2

WTW 772

Mathematical methods and models 772

15

1

WTW 787

Continuum mechanics 787

15

2

A total of at least 135 credits is required.

Stream 2: Differential equations and modelling

Code

Module

Credits

Semester

Research:

WTW 795

Project 795

30

year

Core modules:

WTW 733

Numerical analysis 733

15

1

WTW 735

Main principles of analysis in applications 735

15

1

WTW 750

Mathematical optimisation 750

15

1

WTW 763

Finite element method 763

15

2

WTW 772

Mathematical methods and models 772

15

1

WTW 776

Partial differential equations of mathematical physics 776

15

2

WTW 787

Continuum mechanics 787

15

2

A total of at least 135 credits is required.

Apart from the prescribed coursework, a research project is an integral part of the study.

For more information, please consult the Faculty webpage.

Faculty notes

The Faculty of Natural and Agricultural Sciences is home to more than 6 500 undergraduate and postgraduate students. The Faculty presents degrees in fields ranging from the proverbial A to Z – from actuaries to zoologists, and consists of 13 departments.

All degree programmes are designed to develop problem-solving individuals who can easily adapt to changing circumstances and take the lead in their chosen fields of specialisation. The qualifications awarded are of world-class and provide access to a multitude of career opportunities for dynamic and creative people. According to the latest Times Higher Education World University Rankings the University has achieved new world rankings in Physical Sciences, a discipline which features strongly in NAS and also maintains excellent positions on the ISI Web of Science (WOS) field rankings in Plant and Animal Sciences, Agricultural Sciences, and Environment and Ecology Sciences.

In the Faculty of Natural and Agricultural Sciences, we strive to continuously improve our high impact research and significantly address the national shortage of PhD graduates that respond to global and local challenges.

Minimum duration

1 years, full-time

Admission requirements

1. BSc (Mathematics) degree or BSc (Applied Mathematics) degree or relevant bachelor's degree

2. At least 60% in all mathematics and applied mathematics modules at final-year level

3. At least four (4) of the following modules/subjects (or equivalent) with at least 60% at final-year level:

· Partial differential equations

· Dynamical systems (ordinary differential equations)

· Real analysis

· Complex analysis

· Numerical analysis

· Continuum mechanics