University of Pretoria Yearbook 2024

BScHons *Applied Mathematics* (02240172)

Department	Mathematics and Applied Mathematics
Minimum duration of study	1 year
Total credits	135
NQF level	08

Programme information

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

Curriculum: Final year

Minimum credits: 135

Additional information:

- The programme compilation consists of seven honours modules of 15 credits each as well as the mandatory project (WTW 795 – 30 credits).
- It is required that students select the stream and modules according to the prerequisites of the modules.
- WTW 795 is a compulsory module for both streams.
- The modules to be selected for each stream, are set out below.

Stream 1: Applied analysis
Core credits: 75 credits
Elective credits: 60 credits

Core modules: WTW 795, WTW 710, WTW 734 and WTW 776
Elective modules: Four (4) electives must be chosen from the list below. The selection must contain at least one of WTW 782 or WTW 764 and at least one of WTW 733 or WTW 763. (Students are also allowed to register for all 4 these modules.)

Stream 2: Differential equations and modelling
Core credits: 135 credits

Core modules: WTW 795, WTW 733, WTW 735, WTW 750, WTW 763, WTW 772, WTW 776 and WTW 782.

Core modules

Functional analysis 710 (WTW 710) - Credits: 15.00
Numerical analysis 733 (WTW 733) - Credits: 15.00
Measure theory and probability 734 (WTW 734) - Credits: 15.00
Main principles of analysis in application 735 (WTW 735) - Credits: 15.00
Mathematical optimisation 750 (WTW 750) - Credits: 15.00
Finite element method 763 (WTW 763) - Credits: 15.00
Mathematical methods and models 772 (WTW 772) - Credits: 15.00
Partial differential equations of mathematical physics 776 (WTW 776) - Credits: 15.00
Dynamical systems 782 (WTW 782) - Credits: 15.00
Project 795 (WTW 795) - Credits: 30.00

Elective modules

Special topics 727 (WTW 727) - Credits: 15.00
Numerical analysis 733 (WTW 733) - Credits: 15.00
Mathematical optimisation 750 (WTW 750) - Credits: 15.00
Finite element method 763 (WTW 763) - Credits: 15.00
Stochastic calculus 764 (WTW 764) - Credits: 15.00
Mathematical methods and models 772 (WTW 772) - Credits: 15.00
Dynamical systems 782 (WTW 782) - Credits: 15.00

General Academic Regulations and Student Rules

The General Academic Regulations (G Regulations) and General Student Rules apply to all faculties and registered students of the University, as well as all prospective students who have accepted an offer of a place at the University of Pretoria. On registering for a programme, the student bears the responsibility of ensuring that they familiarise themselves with the General Academic Regulations applicable to their registration, as well as the relevant faculty-specific and programme-specific regulations and information as stipulated in the relevant yearbook. Ignorance concerning these regulations will not be accepted as an excuse for any transgression, or basis for an exception to any of the aforementioned regulations. The G Regulations are updated annually and may be amended after the publication of this information.

Regulations, degree requirements and information

The faculty regulations, information on and requirements for the degrees published here are subject to change and may be amended after the publication of this information.

University of Pretoria Programme Qualification Mix (PQM) verification project

The higher education sector has undergone an extensive alignment to the Higher Education Qualification Sub-Framework (HEQSF) across all institutions in South Africa. In order to comply with the HEQSF, all institutions are legally required to participate in a national initiative led by regulatory bodies such as the Department of Higher Education and Training (DHET), the Council on Higher Education (CHE), and the South African Qualifications Authority (SAQA). The University of Pretoria is presently engaged in an ongoing effort to align its qualifications and programmes with the HEQSF criteria. Current and prospective students should take note that changes to UP qualification and programme names, may occur as a result of the HEQSF initiative. Students are advised to contact their faculties if they have any questions.