University of Pretoria Yearbook 2021

BScHons Financial Engineering (02240277)

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

Programme information

Renewal of registration

i. Subject to exceptions approved by the Dean, on the recommendation of the relevant head of department, a student may not sit for an examination for the honours degree more than twice in the same module.
ii. A student for an honours degree must complete his or her study, in the case of full-time students, within two years and, in the case of after-hours students, within three years of first registering for the degree. Under special circumstances, the Dean, on the recommendation of the relevant head of department, may give approval for a limited extension of this period.

In calculating marks, General Regulation G.12.2 applies.

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

Admission requirements

1. Relevant bachelor's degree
2. At least 60% for all mathematics and applied mathematics modules at final-year level
3. A minimum of 60% each in the following subjects/modules (or equivalent) at second-year level:

- Calculus
- Differential equations
- Linear algebra

Promotion to next study year

The progress of all honours candidates is monitored biannually by the postgraduate coordinator/head of department. A candidate's study may be terminated if the progress is unsatisfactory or if the candidate is unable to finish his/her studies during the prescribed period.

Pass with distinction

The BScHons degree is awarded with distinction to a candidate who obtains a weighted average of at least 75% in all the prescribed modules and a minimum of 65% in any one module.

Curriculum: Final year

Minimum credits: 135

Core credits: 91
Elective credits: 44

The Postgraduate Coordinator has to approve the final programme composition for this programme.

1. Students who have included Statistics, Mathematical Statistics or Industrial Engineering in their undergraduate degree programme, will not be allowed to take BAN 780. Additional modules from the list of electives should be included in the programme composition.
2. Lectures for BAN 780 and ISE 780 are scheduled in “blocks” – consult the relevant departments at the Faculty of Engineering, Built Environment and Information Technology.
3. WTW 732 and WTW 762 will be presented weekly as well as some extra “block” lectures.

Core modules

Industrial analysis 780 (BAN 780) - Credits: 16.00
Mathematical models of financial engineering 732 (WTW 732) - Credits: 15.00
Mathematical optimisation 750 (WTW 750) - Credits: 15.00
Mathematical models of financial engineering 762 (WTW 762) - Credits: 15.00
Project 792 (WTW 792) - Credits: 30.00

Elective modules

Systems thinking and engineering 780 (ISE 780) - Credits: 16.00
Linear models 710 (LMO 710) - Credits: 15.00
Linear models 720 (LMO 720) - Credits: 15.00
Multivariate analysis 710 (MVA 710) - Credits: 15.00
Multivariate analysis 720 (MVA 720) - Credits: 15.00
Modern portfolio theory 712 (WTW 712) - Credits: 15.00
Special topics 727 (WTW 727) - Credits: 15.00
Numerical analysis 733 (WTW 733) - Credits: 15.00
Main principles of analysis in application 735 (WTW 735) - Credits: 15.00
Finite element method 763 (WTW 763) - Credits: 15.00