



University of Pretoria Yearbook 2022

BScHons (Actuarial Science) (02240278)

Department Actuarial Science

Minimum duration of study 1 year

Total credits 135

NQF level 08

SAQA ID 83929

Admission requirements

1. Relevant bachelor's degree with Mathematical Statistics and Actuarial Science
2. Mathematical Statistics and Actuarial Science passed at final-year level
3. A weighted average of at least 60% at final-year level
4. An admission interview may be required
5. Pass the following module/subject (or equivalent) at final-year level: Contingencies

Requirement: Exemption for at least five of the A100- and A200-level subjects of the Actuarial Society of South Africa

Other programme-specific information

To qualify for this degree, the candidate must successfully complete a total of at least 135 credits, made up from modules from the curriculum in collaboration with, and subject to, the approval of the Head of the Department of Actuarial Science.



Curriculum: Final year

Minimum credits: 135

Fundamental credits: 30

Core credits: 75

Elective credit: 30

Core modules

Actuarial risk management 712 (IAS 712)

Module credits	50.00
NQF Level	08
Contact time	2 practicals per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Actuarial Science
Period of presentation	Year

Module content

Surplus management. Mergers, acquisitions, insolvency and closure. Options and guarantees. Stakeholders. External environment. Regulation. Introduction to financial products and customer needs. Benefits overview and providers of benefits. Life insurance overview and life products. General insurance overview and products. Cash flows of simple products. Contract design. Project management. Capital project appraisal. Money markets. Bond markets. Equity markets. Property markets. Futures and options. Collective investment schemes. Overseas markets. Economic influences on investment markets. Other influences on investment markets. Relationship between returns on asset classes. Valuation of individual investments. Valuation of asset classes and portfolios. Investment strategy – institutions. Investment strategy – individuals. Developing an investment strategy. Modelling. Data. Setting assumptions. Expenses. Pricing and financing strategies. Discontinuance. Valuing liabilities. Accounting and disclosure. Surplus and surplus management. Sources of risk. Risks in benefit schemes. Pricing and insuring risks. The risk Management process. Risk management tools. Capital management. Monitoring.

Actuarial communication 722 (IAS 722)

Module credits	15.00
NQF Level	08
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Actuarial Science
Period of presentation	Semester 2



Module content

Communicating technical actuarial concepts effectively, the drafting process of a document, planning and structure of a document or presentation, style and tone of a document or presentation. Drafting documents (letters, reports, discussion documents, memos, emails). Presentations (preparation and delivery, follow up, designing visual aids).

Research project 780 (NPN 780)

Module credits	30.00
NQF Level	08
Prerequisites	No prerequisites.
Language of tuition	Module is presented in English
Department	Actuarial Science
Period of presentation	Year

Module content

The research project is compulsory. A detailed project proposal should be submitted to the head of department by a prescribed date for approval, as described in the departmental document in this regard.

Elective modules

Finance and investment 700 (FNI 700)

Module credits	40.00
NQF Level	08
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Actuarial Science
Period of presentation	Semester 2

Module content

The application of modern techniques in financial management to the financing of corporate entities and the management of assets. Topics include: the theory of finance, valuation of investments, asset modelling, capital structure and the cost of capital, portfolio management, capital project appraisal and performance management.

Enterprise risk management 721 (IAS 721)

Module credits	40.00
NQF Level	08
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Actuarial Science
Period of presentation	Semester 2



Module content

ERM framework. External risk frameworks. Stakeholders. Risk appetite. The risk management function. Risk management processes. Risk identification and assessment. Risk classification. Risk Measurement. Risk modelling. Analysis of data. Copulas. Fitting models. Extreme Value Theory. The use of models in ERM. Analysis of selected risks. Risk optimisation and risk responses. Risk management of selected risks. Economic Capital.

Life assurance 700 (LEW 700)

Module credits 40.00

NQF Level 08

Prerequisites No prerequisites.

Contact time 2 lectures per week, 2 practicals per week

Language of tuition Module is presented in English

Department Actuarial Science

Period of presentation Semester 2

Module content

The following aspects of the operation of a life insurance company are covered: General business environment; products offered; asset shares for life insurance contracts; with-profits surplus distribution; actuarial funding; models; setting of assumptions; aspects of products design; alterations to contracts; development and maintenance; investment; risk management procedures including reinsurance and underwriting; cost of guarantees; policy data checks; capital management and the actuarial control cycle. Modelling and monitoring policy cashflows for purposes of pricing, profit analysis, statutory valuation reserves and ongoing solvency.

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