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# University of Pretoria Yearbook 2022

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## BScHons *Actuarial Science* (02240278)

**Department** Actuarial Science

**Minimum duration of study** 1 year

**Total credits** 135

**NQF level** 08

### 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)

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

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

<b>Module credits</b>	30.00
<b>NQF Level</b>	08
<b>Prerequisites</b>	No prerequisites.
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Actuarial Science
<b>Period of presentation</b>	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)

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

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