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# University of Pretoria Yearbook 2016

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## Actuarial modelling 382 (IAS 382)

<b>Qualification</b>	Undergraduate
<b>Faculty</b>	<a href="#">Faculty of Natural and Agricultural Sciences</a>
<b>Module credits</b>	20.00
<b>Programmes</b>	<a href="#">BCom Statistics</a> <a href="#">BSc Actuarial and Financial Mathematics</a> <a href="#">BSc Applied Mathematics</a> <a href="#">BSc Mathematical Statistics</a> <a href="#">BSc Mathematics</a>
<b>Service modules</b>	Faculty of Economic and Management Sciences
<b>Prerequisites</b>	WST 312 60%
<b>Contact time</b>	1 practical per week, 2 lectures per week
<b>Language of tuition</b>	English
<b>Academic organisation</b>	Actuarial Science
<b>Period of presentation</b>	Semester 2

### Module content

Principles of actuarial modelling and stochastic processes. Markov chains and continuous-time Markov jump processes. Simulation of stochastic processes. Survival models and the life table. Estimating the lifetime distribution  $F_x(t)$ . The Cox regression model. The two-state Markov model. The general Markov model. Binomial and Poisson models. Graduation and statistical tests. Methods of graduation. Exposed to risk. The evaluation of assurances and annuities. Premiums and reserves.

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