

ACTL30006 Financial Mathematics III

Credit Points:	12.50
Level:	3 (Undergraduate)
Dates & Locations:	2010, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.
Time Commitment:	Contact Hours: Three hours of lectures and/or tutorials per week Total Time Commitment: Not available
Prerequisites:	<u>300-204 Financial Mathematics II (/view/2010/300-204)</u> .
Corequisites:	None
Recommended Background Knowledge:	Please refer to Prerequisites and Corequisites.
Non Allowed Subjects:	Students may not gain credit for both 300-334 Financial Mathematics III (/view/2010/300-334) and either 306-331 Investments or <u>333-301 Investments (/view/2010/333-301)</u> .
Core Participation Requirements:	For the purposes of considering requests for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements for this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the Disability Liaison Unit website: http://www.services.unimelb.edu.au/disability/
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Subject Overview:	This subject introduces actuarial students to stochastic asset liability modelling. It aims to expand the student's knowledge of basic actuarial principles in the fields of investments and asset management. Topics include: utility theory, stochastic dominance, measures of investment risk, portfolio theory, models of asset returns, asset liability modelling, equilibrium models, the efficient markets hypothesis, stochastic models of security prices and Brownian Motion and its application.
Objectives:	<ul style="list-style-type: none"> # Understand the objectives of Modern Portfolio Theory # Define mean-variance efficiency # Find efficient portfolios using Gaussian Elimination # Define and apply single- and multi- factor models for investment returns # Use expected utility theory to make investment choices # Use and critique the Capital Asset Pricing Model # Find portfolio expected returns using the Arbitrage Pricing theory # Distinguish differing methodologies for making investment choices in terms of the strengths of their assumptions # Make decisions regarding investment choice using a variety of mathematical techniques # Discuss market efficiency and rationality # Use stock price models across time to assess long-term risk in portfolios # Give an actuary's viewpoint on all these topics.
Assessment:	A 2-hour end-of-semester examination (80%) and up to three assignments totalling not more than 4500 words (20%).

Prescribed Texts:	You will be advised of prescribed texts by your lecturer.
Recommended Texts:	Information Not Available
Breadth Options:	<p>This subject potentially can be taken as a breadth subject component for the following courses:</p> <ul style="list-style-type: none"> # Bachelor of Environments (https://handbook.unimelb.edu.au/view/2010/B-ENVS) # Bachelor of Music (https://handbook.unimelb.edu.au/view/2010/B-MUS) <p>You should visit learn more about breadth subjects (http://breadth.unimelb.edu.au/breadth/info/index.html) and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.</p>
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	# High level of development: written communication; problem solving; statistical reasoning; application of theory to practice; interpretation and analysis.
Notes:	Students may not gain credit for both 300-334 Financial Mathematics III (/view/2010/300-334) and either 306-331 Investments or 333-301 Investments (/view/2010/333-301) .