

## Course Descriptions None 2024-2025

Course Title	Life Insurance I							
Course Code	EBC4119							
ECTS Credits	6,5							
Assessment	Whole/Half Grades							
Period	Period	Start	End	Mon	Tue	Wed	Thu	Fri
	4	3-2-2025	30-3-2025		X			X
Level	Advanced							
Coordinator	Antoon Pelsser For more information:a.pelsser@maastrichtuniversity.nl							
Language of instruction	English							
Goals	<p>In this course we aim to teach students the basic principles of pricing life-insurance and pension contract and basic principles of measuring value creation on a market-consistent basis (Market-Consistent Embedded Value).</p> <p>The underlying principle for this course is the notion that the market-consistent value of a life-insurance or pension contract is based on the market-value of the Replicating Portfolio plus an 'add-on' for the remaining (unhedgeable) portions of the risk that are not covered by the Replicating Portfolio.</p>							
Description	<p>In this course we aim to teach students the basic principles of pricing life-insurance and pension contracts and basic principles of measuring value creation on a market-consistent basis (Market-Consistent Embedded Value). The underlying principle for this course is the notion that the market-consistent value of a life-insurance or pension contract is based on the market-value of the Replicating Portfolio plus an 'add-on' for the remaining (unhedgeable) portions of the risk that are not covered by the Replicating Portfolio.</p> <p>Students should have knowledge of stochastic processes, in particular Brownian Motion, geometric Brownian motion and the underlying stochastic differential equations. Moreover, students should be familiar with the Ito integral and the Ito formula. Computer programming skills are required for all the cases, as these involve numerical calculations.</p>							
Literature	Wüthrich and Merz (2013), Financial Modeling, Actuarial Valuation and Solvency in Insurance, Springer.							
Prerequisites	<p>This course is in transition for the master Business Research. See the Master Education and Examination Regulations for more information.</p> <p>The following rule applies to master Business Research students who started the programme prior to academic year 2024-2025. TRANSITIONAL REGULATION (EBC4119): The master Business Research has been discontinued. Courses of the Business Research master's programme will continue to be offered until and including academic year 2025-2026 with exam opportunities running until and including 2026-2027.</p> <p>PREREQUISITES: Bachelor Level Econometrics and Operations Research, including preparatory courses Actuarial Sciences.</p>							
Teaching methods	Lecture / Assignment							
Assessment methods	Assignment							
Evaluation in previous academic year	For the complete evaluation of this course please click <a href="http://iwio-sbe.maastrichtuniversity.nl/rapporten.asp?referrer=codeUM">http://iwio-sbe.maastrichtuniversity.nl/rapporten.asp?referrer=codeUM</a>							
This course belongs to the following programme / specialisation	Master Business Research - Operations Research		Transitional Regulation					
	Master Econometrics and Operations Research		Elective Course(s)					
	Master Economic and Financial Research - Econometrics		Elective Course(s)					
	Master Economic and Financial Research - No specialisation		Elective Course(s)					
	SBE Exchange Master		Master Exchange Courses					
	SBE Non Degree Courses		Master Courses					