Course Descriptions None 2026-2027

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	1-2-2027	25-3-2027					

Level	Advanced
Coordinator	Antoon Pelsser For more information:a.pelsser@maastrichtuniversity.nl
Language of instruction	English
Goals	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). 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.
Description	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. 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.
Literature	Wüthrich and Merz (2013), Financial Modeling, Actuarial Valuation and Solvency in Insurance, Springer.
Prerequisites	Bachelor Level Econometrics and Operations Research, including preparatory courses Actuarial Sciences.
Transitional Regulations	<ul class="trcohorts"> - Master Business Research - Operations Research [2023-2024 and earlier] - In 2024-2025 and 2025-2026 education and exam/resit opportunities are offered. - In 2026-2027 exam/resit opportunities are offered. - From 2027-2028 onwards, the course is cancelled. <table><col style="width: 200px;"><col style="width: 120px;"><col style="width: 120px;"><col><thead><tr><th>Academic Year</th><th>Education</th><th>Exam/Resit</th><th>Replacement(s)</th></tr></thead><tbody><tr><td>2024-2025 - 2025-2026</td><td>X</td><td>X</td><td> </td></tr><tr><td>2026-2027</td><td> </td><td>X</td><td> </td></tr><tr><td>2027-2028 onwards</td><td> </td><td> </td><td> </td><td> </td></tr></tbody></table> <ul class="trcohorts"> - Master Econometrics and Operations Research [2025-2026 and earlier] - Master Economics and Financial Research [2025-2026 and earlier] - In 2026-2027 and 2027-2028 exam/resit opportunities are offered. - In 2028-2029, the course is cancelled. <table><col style="width: 200px;"><col style="width: 120px;"><col style="width: 120px;"><col><thead><tr><th>Academic Year</th><th>Education</th><th>Exam/Resit</th><th>Replacement(s)</th></tr></thead><tbody><tr><td>2026-2027 - 2027-2028</td><td> </td><td>X</td><td> </td></tr><tr><td>2028-2029</td><td> </td><td> </td><td> </td></tr></tbody></table>
Teaching methods	Lecture / Assignment
Assessment methods	Assignment
Evaluation in previous academic year	For the complete evaluation of this course please click http://iwio-sbe.maastrichtuniversity.nl/rapporten.asp?referrer=codeUM

This course belongs to the following programme / specialisation

Master Business Research - Operations Research	In transition - Year 1+2 Elective Courses
Master Econometrics and Operations Research	In transition - Elective Courses
Master Economic and Financial Research - Econometrics and Operations Research	In transition - Elective Courses
Master Economic and Financial Research - No specialisation	In transition - Elective Courses