

Valid from 2025.FS

Module description: Actuarial Methods and Pricing		
Module Code	w.BA.XX.3AMP-RI.XX	
ECTS Credits	3	
Language of Instruction/Examination	German	
Module Description	Students will know, understand, and be able to master the mathematical tools of actuarial principles, especially common loss distributions, methods of premium calculation in life and non-life (composite), reserving procedures in life and non-life, and common modeling and simulation procedures. In addition, they will be able to apply these to the requirements in the underwriting processes and contribute to them.	
Organizational Unit	Institut für Risk & Insurance	
Module Coordinator	Wolfgang Sickinger	
Deputy Module Coordinator	Jürg Portmann	
Program and Specialization	<ul style="list-style-type: none"> Business Administration - Specialization in Risk and Insurance 	
Legal Framework	Academic Regulations BSc dated 29.01.2009, for the degree programs in Business Administration, International Management, Business Information Technology, Business Law, Business Law and Applied Law, first adopted on 12.05.2009	
Module Category	Module Type Compulsory	Program Phase Main Study Period
Prerequisite Knowledge	All previous modules of the Bachelor's program and the specialization in Risk & Insurance.	
Contribution to Program Learning Objectives (by the concerned Module)	<ul style="list-style-type: none"> Professional Competence Methodological Competence Social Competence Self-Competence 	
Contribution to Program Learning Objectives	<p>Professional Competence</p> <ul style="list-style-type: none"> Knowing and Understanding Content of Theoretical and Practical Relevance Apply, Analyze, and Synthesize Content of Theoretical and Practical Relevance Evaluate Content of Theoretical and Practical Relevance <p>Methodological Competence</p> <ul style="list-style-type: none"> Problem-Solving & Critical Thinking Scientific Methodology Work Methods, Techniques, and Procedures Information Literacy Creativity & Innovation <p>Social Competence</p> <ul style="list-style-type: none"> Written Communication Oral Communication Teamwork & Conflict Management Intercultural Insight & Ability to Change Perspective <p>Self-Competence</p> <ul style="list-style-type: none"> Self-Management & Self-Reflection Ethical & Social Responsibility Learning & Change 	

Module description: Actuarial Methods and Pricing

Module Learning Objectives	Students... <ul style="list-style-type: none">• are able to name and explain the key responsibilities and challenges of actuarial work in insurance.• know the actuarial principles of rate calculation and underwriting in life insurance. They can apply these and interpret/estimate results.• know the actuarial principles of rate calculation and underwriting for non-life insurance (composite). They can apply these and interpret/estimate results.• know the principles of calculating actuarial reserves in life insurance and can apply these to key issues.• know the principles of reservation procedures in non-life insurance (composite) and can apply these to key issues.• know the measures for estimating solvency in insurance companies and can apply them to examples.																															
Module Content	<ul style="list-style-type: none">• Tariff calculation and underwriting• Reservation and actuarial reserves• Solvency of insurance companies• Actuarial work and tasks																															
Links to other modules	This module is linked to the following modules: <ul style="list-style-type: none">• w.BA.XX.3GRI-RI.XX• w.BA.XX.2Komm.XX• w.BA.XX.1Stat.XX• w.BA.XX.1SK.XX• w.BA.XX.1MatBO2.XX• w.BA.XX.1MatBO1.XX																															
Digital Learning Resources	<ul style="list-style-type: none">• Teaching Videos• Practice and Application Exercises (with Key)																															
Methods of Instruction	<ul style="list-style-type: none">• Interactive Instruction• Case Studies• Exercises• Lecture• Application Tasks		Social Settings Used: <ul style="list-style-type: none">• Group Work• Individual Work• Pair Work																													
Type of Instruction	<table><tr><th></th><th>Classroom Instruction</th><th>Guided Self-Study</th><th>Autonomous Self-Study</th></tr><tr><td>Large Class</td><td>20 h</td><td>55 h</td><td></td></tr><tr><td>Small Class</td><td>-</td><td>-</td><td></td></tr><tr><td>Group Instruction</td><td>-</td><td>-</td><td></td></tr><tr><td>Practical Work</td><td>-</td><td>-</td><td></td></tr><tr><td>Seminar</td><td>-</td><td>-</td><td></td></tr><tr><td>Total</td><td>20 h</td><td>55 h</td><td>15 h</td></tr></table>					Classroom Instruction	Guided Self-Study	Autonomous Self-Study	Large Class	20 h	55 h		Small Class	-	-		Group Instruction	-	-		Practical Work	-	-		Seminar	-	-		Total	20 h	55 h	15 h
	Classroom Instruction	Guided Self-Study	Autonomous Self-Study																													
Large Class	20 h	55 h																														
Small Class	-	-																														
Group Instruction	-	-																														
Practical Work	-	-																														
Seminar	-	-																														
Total	20 h	55 h	15 h																													
Performance Assessment	<table><tr><th>End-of-module exam</th><th>Form</th><th>Length (min.)</th><th>Weighting</th></tr><tr><td>Written exam</td><td>Specified documentation</td><td>60</td><td>40.00</td></tr><tr><td>Permitted Resources</td><td>Spec. calculator acc. to leaflet "Utilities"</td><td colspan="2">With dictionary</td></tr></table> <table><tr><th>Others</th><th>Assessment</th><th>Format</th><th>Length (min.)</th><th>Weighting</th></tr><tr><td>Talk/oral presentation</td><td>Grade</td><td>Einzelarbeit</td><td>10</td><td>30.00</td></tr><tr><td>Written Assignment</td><td>Grade</td><td>Gruppenarbeit</td><td>0</td><td>30.00</td></tr></table>				End-of-module exam	Form	Length (min.)	Weighting	Written exam	Specified documentation	60	40.00	Permitted Resources	Spec. calculator acc. to leaflet "Utilities"	With dictionary		Others	Assessment	Format	Length (min.)	Weighting	Talk/oral presentation	Grade	Einzelarbeit	10	30.00	Written Assignment	Grade	Gruppenarbeit	0	30.00	
End-of-module exam	Form	Length (min.)	Weighting																													
Written exam	Specified documentation	60	40.00																													
Permitted Resources	Spec. calculator acc. to leaflet "Utilities"	With dictionary																														
Others	Assessment	Format	Length (min.)	Weighting																												
Talk/oral presentation	Grade	Einzelarbeit	10	30.00																												
Written Assignment	Grade	Gruppenarbeit	0	30.00																												

Module description: Actuarial Methods and Pricing

Classroom Attendance Requirement	<p>Other</p> <p>Individual presentations; absences must be justified in writing.</p>
Compulsory Reading	<ul style="list-style-type: none">• Ortmann, K. (2016). Praktische Lebensversicherungsmathematik : mit zahlreichen Beispielen sowie Aufgaben plus Lösungen, Studienbücher Wirtschaftsmathematik. 2., überarbeitete und erweiterte edition. Wiesbaden: Springer Spektrum. ISBN 9783658101992.• Cottin, C. & Döhler, S. (2013). Risikoanalyse: Modellierung, Beurteilung und Management von Risiken mit Praxisbeispielen, Studienbücher Wirtschaftsmathematik. 2., überarb. u. erw. Aufl edition. Wiesbaden: Springer Fachmedien. ISBN 9783658008291.
Recommended Reading	<ul style="list-style-type: none">• Goelden, H., Hess, K. & Schmidt, K. (2016). Schadenversicherungsmathematik. Berlin Heidelberg: Springer. ISBN 9783662488591.• Führer, C. & Grimmer, A. (2010). Einführung in die Lebensversicherungsmathematik. 2. Edition. Karlsruhe: Verlag Versicherungswirtschaft. ISBN 978-3-89962-466-6.
Comments	