

COURSE OF STUDY Master's Degree in Statistics and Methods for Economics e Finance (SMEF)
ACADEMIC YEAR 2025-2026
ACADEMIC SUBJECT Non-Life Insurance techniques

General information	
Year of the course	<i>Second year</i>
Academic calendar (starting and ending date)	<i>First semester (08/09/2025-19/12/2025)</i>
Credits (CFU/ETCS):	6
SSD	STAT-04/A
Language	<i>Italian</i>
Mode of attendance	<i>Optional</i>

Professor/ Lecturer	
Name and Surname	Giovanni Villani
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Telephone	
Department and address	<i>Department of Economics and Finance</i>
Virtual room	<i>TEAMS x35m79h</i>
Office Hours (and modalities: e.g., by appointment, on line, etc.)	Monday at 15.00 using TEAMS (on line)

Work schedule			
Hours			
Total	Lectures	Hands-on (laboratory, workshops, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
<i>150</i>	<i>42</i>		<i>108</i>
CFU/ETCS			
<i>6</i>	<i>6</i>		

Learning Objectives	<p><i>The course intends to provide students with the knowledge and methodological tools necessary to analyze the technical characteristics of the insurance business, with specific reference to the non-life classes, with the aim of understanding their management models and the mechanisms that regulate pricing, reservation and reinsurance.</i></p> <p><i>The student must be able to deal with the study of the management of insurance companies active in the non-life sector and must be able to interpret the problems associated with the pricing, reserve and reinsurance mechanisms and, in general, with the implementation of the related actuary models.</i></p>
Course prerequisites	<i>Elements of Financial Mathematics and Probability Calculation.</i>

Teaching strategie	<i>Lectures and exercises related to the topics covered in class. At the end of each CFU, the exercises will consist in carrying out the exams of the previous sessions.</i>
Expected learning outcomes in terms of	
Knowledge and understanding on:	<i>The course aims to provide the student with the notions and analytical tools useful for understanding the functioning of the insurance markets and for the</i>

	<i>analysis of economic-financial-insurance phenomena.</i>
Applying knowledge and understanding on:	<i>The student must be able to interpret the main economic, insurance and financial phenomena. In particular, he must be able to build models to formulate and solve insurance premium pricing problems on all the topics covered in the course program</i>
Soft skills	<ul style="list-style-type: none"> • <i>Making informed judgments and choices</i> The student must know how to autonomously evaluate the necessary information, conduct surveys and set up quantitative analyzes of financial and insurance phenomena. • <i>Communicating knowledge and understanding</i> The student must be able to communicate effectively on financial and insurance matters, using adequate technical language. There multidisciplinary economic-financial and mathematical-statistical communication skills is, from this point of view, the main result of the course. • <i>Capacities to continue learning</i> The student must be able to face the subsequent teachings with a significant analytical capacity and with a quantitative investigation method well founded.
Syllabus	<p><u>Insurance coverage.</u> Damage insurance. Financial operations and insurance. Certain operations and random operations. Assessment. Fair prize. Uploads. Insurance applications of the expected utility criterion.</p> <p><u>Management of an insurance portfolio.</u> Mutuality and solidarity of a portfolio. Risk classes and premium classes. Portfolio disbursement randomness. Risk and reinsurance. Portfolio management insurance.</p> <p><u>Damage insurance.</u> The insurance premium. Claims, damages, compensation. The fair prize. The pure prize. Classes you risk. Personalization of the award. Pricing based on community experience. Pricing based on personal experience. Bonus Malus. Award management. Technical reserves.</p>
Content knowledge	
Texts and readings	<i>Pitacco E. Elementi di matematica delle assicurazioni, Luglio Editore, Trieste, 2022</i>
Notes, additional materials	<i>https://www.uniba.it/it/docenti/villani-giovanni</i>
Repository	
Assessment	
Assessment methods	<i>The verification of knowledge will take place through a written test and an oral test. The final grade will be given by an average of the two tests. The written test will focus on exercises proposed during the course. Furthermore, there are two exemptions during the course (which exempt from the written test). In the event of a positive outcome of the two exemptions, the oral exam can be taken within the third session of March 2024.</i>
Assessment criteria	<ul style="list-style-type: none"> • <i>Knowledge and understanding</i> <ul style="list-style-type: none"> ○ The teaching has objectives in line with the general objective of the course of study of providing the economic, mathematical-statistical and legal skills for an adequate understanding of the economic system and

	<p>the functioning of the insurance markets.</p> <ul style="list-style-type: none"> • <i>Applying knowledge and understanding</i> <ul style="list-style-type: none"> ○ The course, in particular, aims to provide students with the technical tools necessary for understanding financial phenomena and premium pricing. • <i>Autonomy of judgment</i> Learn the basic concepts and tools of insurance (RCA, premiums, reserves); know how to formulate and solve basic insurance problems. • <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> ○ The student must be able to face the subsequent teachings with a significant analytical capacity and with a well-founded method of quantitative investigation learned in this course.
Final exam and grading criteria	<i>The measurement of learning takes place through exam tests and the attribution of the mark based on the knowledge and skills shown on site exam.</i>
Further information	
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