University of Gdańsk

Subject card

Subject name and code	General Insurance, PG_00206874		
Field of study	Mathematics		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2027/2028
Education level	Master's studies	Subject group	Obligatory subject group in the field of study Optional subject group Subject group related to scientific research in the field of study
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish
Semester of study	3	ECTS credits	5.0
Learning profile	academic	Assessment form	exam
Conducting unit			
Name and surname of lecturer (lecturers)	Subject supervisor	dr Monika Wrzosek	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	30.0	0.0	0.0	0.0	60

E-learning hours included: 0.0

Learning activity and number of study hours

Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM
Number of study hours	60	3.0	62.0	125

Subject objectives

To familiarize participants with property insurance models at the actuarial examination level.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[MATMU2_U04] is able to apply the scientific method in solving advanced problems in a selected branch of mathematics or its applications, and appropriately selects methods and tools - mathematical or computer - needed to solve such problems	The student is able to apply mathematical and probabilistic methods to analyze problems in property insurance, correctly selects models, and interprets the obtained results.	[SU4] test/exam - oral or written
[MATMU2_W03] knows and understands to a deep degree a selected field of theoretical or applied mathematics and is able to understand the formulations of issues in this field that are still at the research stage and knows the connections between issues in this field and other areas of mathematics	The student knows and understands the proofs of selected theorems in the field of property insurance.	[SW4] test/exam - oral or written

<table>
<tr><td>Subject contents</td><td>1. Conditional expected value. Moment generating functions.
2. Distributions of random sums, parameters of these distributions and generating functions. Approximations by selected distributions.
3. Classical risk process. Probability of ruin for this process (martingale approach).
4. Lundberg and Cramer-Lundberg estimation. Maximum loss, record values.
5. Discrete risk model.
6. Reinsurance models.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>exam</td><td>51.0%</td><td>50.0%</td></tr>
<tr><td>observation of the student's attitude</td><td>51.0%</td><td>0.0%</td></tr>
<tr><td>test</td><td>51.0%</td><td>50.0%</td></tr>
</table>
</td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>• W.Otto, Ubezpieczenia majątkowe. Teoria ryzyka, WNT 2004.
• J. Grandell, Aspects of risk theory, Springer, 1992.
• E. Straub, Non-life Insurance Mathematics, Springer, 1997.</td></tr>
<tr><td>Supplementary literature</td><td>none</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>not included</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
</table>

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