

Study programme: Bachelor studies – Mathematics			
Course name: Elements of Actuarial Mathematics			
Lecturers: Pavle Mladenović, Lenka Glavaš			
Status: Compulsory for the module Statistics, actuarial and financial mathematics			
ECTS: 5			
Attendance prerequisites: Stochastic processes			
Course aims: Learning objectives are: familiarizing with basic concepts and models used in actuarial mathematics, especially in non-life insurance mathematics.			
Course outcome: Student has acquired basic concepts and knowledge concerning modelling in actuarial mathematics. Student has also become acquainted with the possibilities of applying mathematical methods based on the theory of stochastic processes in solving problems in non-life insurance mathematics.			
Course content: Introduction to risk theory. Claim arrival point process. The distribution of the total claim amount. Typical models and various distributions that are useful in non-life insurance. Normal approximation. The ruin probability and solvency analysis. The classical Cramér-Lundberg model and the fundamental theorem of actuarial risk science. Introduction to extreme values theory. Heavy-tailed distributions. Modelling extremal events for insurance.			
Literature: Павле Младеновић: <i>Елементи актуарске математике</i> , Математички факултет, Београд 2014. Thomas Mikosch: <i>Non-Life Insurance Mathematics</i> , Springer-Verlag Berlin Heidelberg 2009. Paul Embrechts, Claudia Klüppelberg, Thomas Mikosch: <i>Modelling Extremal Events for Insurance and Finance</i> , Springer-Verlag Berlin-Heidelberg 2012. Павле Младеновић: <i>Екстремне вредности случајних низова</i> , Математички факултет, Београд 2002.			
Number of hours: 4	Lectures: 2	Exercises: 2	
Teaching and learning methods: Lectures (frontal). Classes and exercises (interactive).			
Assessment (maximal 100 points)			
Course assignments	Number of points	Final exam	Number of points
Lectures	-	Written exam	-
Exercises / Tutorials	-	Oral exam	40
Colloquia	48	Written-oral exam	-
Tests	12		
Essay / Project	-		