

## Incoming student mobility

UNIOS University Unit: DEPARTMENT OF MATHEMATICS

COURSES OFFERED IN FOREIGN LANGUAGE  
FOR ERASMUS+ INDIVIDUAL INCOMING STUDENTS

Department or Chair within the UNIOS Unit	Department of Mathematics
Study program	Graduate university study programme in mathematics (Master level) Branches: <ul style="list-style-type: none"> <li>• Financial Mathematics and Statistics-obligatory</li> <li>• Mathematics and Computer Science-elective</li> </ul>
Study level	Graduate (master)
Course title	Stochastic Processes II
Course code (if any)	M121
Language of instruction	English
Brief course description	<p>Syllabus.</p> <ol style="list-style-type: none"> <li>1. Wide and strict sense stationarity of a stochastic process. Stochastic processes with stationary and independent increments. Important examples.</li> <li>2. Continuous-time martingales. Examples from applications.</li> <li>3. Continuous-time Markov chains. An important class of examples - birth and death processes. Transition probabilities. Kolmogorov's differential equations. Limiting distribution. Ergodicity.</li> <li>4. Diffusions. Ito's integral. Ito's formula. Concept and interpretation of stochastic differential equation (SDE). Numerical solutions of SDEs. Important examples from applications.</li> </ol>
Form of teaching	Consultative teaching.
Form of assessment	Lectures and exercises are obligatory. The final exam is oral, taken after the completed lectures and exercises and achieved minimum number of credits at the midterm exams. Students can influence the grade by writing homework during the semester.

## ERASMUS+

EU programme for education, training, youth and sport

Number of ECTS	6
Class hours per week	2+2+0
Minimum number of students	
Period of realization	Summer semester
Lecturer	Nenad Šuvak