# Incoming student mobility

## UNIOS University Unit: SCHOOL OF APPLIED MATHEMATICS AND INFORMATICS

### COURSES OFFERED IN FOREIGN LANGUAGE
### FOR ERASMUS+ INDIVIDUAL INCOMING STUDENTS

| Department or Chair within the UNIOS Unit | School of Applied Mathematics and Informatics |
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| Study program | Graduate university study programme in mathematics (Master level) Branches: <ul><li>Financial Mathematics and Statistics-obligatory</li><li>Mathematics and Computer Science-elective</li></ul> |
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| Study level | Graduate (master) |
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| Course title | Stochastic Processes II |
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| Course code (if any) | M121 |
| Language of instruction | English |
| Brief course description | Syllabus. <br>1. Wide and strict sense stationarity of a stochastic process. Stochastic processes with stationary and independent increments. Important examples. <br>2. Continuous-time martingales. Examples from applications. <br>3. Continuous-time Markov chains. An important class of examples - birth and death processes. Transition probabilities. Kolmogorov's differential equations. Limiting distribution. Ergodicity. <br>4. Diffusions. Ito's integral. Ito's formula. Concept and interpretation of stochastic differential equation (SDE). Numerical solutions of SDEs. Important examples from applications. |
| Form of 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. |

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