ERASMUS+
EU programme for education, training, youth and sport

# Incoming student mobility

**UNIOS University Unit:** DEPARTMENT OF MATHEMATICS

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

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| Department or Chair within the UNIOS Unit | **Department of Mathematics** |

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| Study program | ***Graduate university study programme in mathematics (Master level)***<br>***Branch:***<br>• ***Financial Mathematics and Statistics-elective*** |

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| Study level | Graduate (master) |

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| Course title | **Measure and Integral** |
| Course code (if any) | M127 |
| Language of instruction | English |
| Brief course description | **Syllabus.**<br>1. Introduction. Countable sets and basic topological terms.<br>2. Measure. Problem of measure. σ-algebra. A measure on σ-algebra. External measure. Measurable sets. Carathéodory's Theorem. Lebesgue external measure. Lebesgue measure. Cantor's set. Lebesgue-Stieltjes measure. Space of full measure.<br>3. Integral. Measurable functions. Simple functions. Property "almost everywhere". Integral of non-negative simple functions. Integral of non-negative measurable functions. Levi's theorem on monotonic convergence. Fatou's lemma. Integral of measurable function. Lebesgue's theorem on dominance convergence. Relationship between Riemann and Lebesgue integrals. |
| Form of teaching | Consultative teaching. |
| Form of assessment | Lectures and exercises are obligatory. The exam consists of a written and an oral part. Upon completion of the course, students can take the exam. Successful midterm exam scores replace the written exam. |
| Number of ECTS | **7** |

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| Class hours per week | **3+2+0** |
| Minimum number of students | |
| Period of realization | **Winter semester** |
| Lecturer | *Dragan Jukić*<br>*Dragana Jankov Maširević* |