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

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

Study program	Graduate university study programme in mathematics (Master level) Branch: • Financial Mathematics and Statistics • Mathematics and Computer Science • Graduate Mathematics and Informatics Education Study Programme

Study level	Graduate (master)

Course title	Normed Spaces
Course code (if any)	M111
Language of instruction	English
Brief course description	Syllabus. 1. Inner product spaces and normed spaces. Banach and Hilbert spaces. Subspaces of normed spaces. Convexity in the normed space. 2. Orthonormal basis of the Hilbert space. Fourier series. Parseval equality. Bessel inequality. Topological basis of the normed space. Hölder and Minkowski inequality. l^p spaces. 3. The best approximation. Riesz theorem of projection in the Hilbert space. Continuous linear functionals on the Hilbert space. 4. Dual space of the normed space. Hahn-Banach theore. Geometric form and consequences. 5. Bidual of the normed space and reflexivity. Completition of the normed space. Quotient space. 6. L^p spaces and spaces of continuous functions. Their dual spaces. Weak and weak* convergence. 7. Bounded operators. Spectrum of the operator.
Form of 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	6
Class hours per week	2+2+0
Minimum number of students	
Period of realization	Summer semester
Lecturer	Krešimir Burazin