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) Branches: • Mathematics and Computer Science

Study level	Graduate (master)

Course title	Heuristic algorithms
Course code (if any)	I072
Language of instruction	English
Brief course description	Syllabus. 1. Introduction to optimization. Combinatorial optimization problems. 2. Complexity of algorithms and optimization problems. 3. Defining the concepts of heuristics, metaheuristics and hyperheuristics. 4. Constructive and improvement heuristics. Categorization of heuristics. 5. Design of metaheuristics; solution representation and objective function. 6. Local search: elements, algorithm, improvements 7. Nature-inspired metaheuristics: Simmulated Annealing, Tabu Search, Evolutionary algorithms, Ant Colony optimization algorithm 8. Overview of other heuristics. 9. Applying heuristic algorithms to solve real life problems.
Form of teaching	
Form of assessment	Lectures and exercises are obligatory. The exam consists of a written part. Upon completion of the course, students can take the exam. Successful midterm exam scores replace the written exam. Exercises are performed as auditory, and partly as laboratory using computers.

	During the semester, students are required to write homework assignments and make a final project. Points from the homework assignment and project affect the final grade.
Number of ECTS	6
Class hours per week	2+2+0
Minimum number of students	
Period of realization	Winter semester
Lecturer	Domagoj Ševerdija