Incoming student mobility

Name of 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	• *Undergraduate university study programme in Mathematics and Computer Science* • *Undergraduate university study programme in Mathematics*

Study level	Undergraduate (Bachelor)

Course title	**Theoretical Foundations of Computer Science**
Course code	M097
Language of instruction	English
Brief course description	**Syllabus.** 1. Automata. Computability. Complexity. 2. Regular languages: Finite Automata. Nondeterminism. Regular Expressions. Non-regular Languages. 3. Context-Free Languages: Context-Free Grammars. Pushdown Automata. Non-Context-Free Languages. Deterministic Context-Free Languages. 4. Decision problems for Context-Free Languages. Turing machines. 5. Decidability. 6. Rice's Theorem 7. Time complexity. P and NP. NP-completeness. 8. Polynomial time reductions (NP-complete reductions).
Form of teaching	Consultative teaching.
Form of assessment	Classes are organized through lectures and exercises. During lectures students will be familiarized with basic terms and results in mathematical theory of computation through illustrative examples and/or proofs. Exercises are auditory. During exercises students apply the acquired abstract knowledge to concrete problems. Lectures and exercises are obligatory. Final examination consists of a written and oral part which is taken after the completion of lectures.

	Acceptable mid-term exam scores replace the written examination. Homework and seminar papers done during the semester could influence the final result of the exam.
Number of ECTS	**6**
Class hours per week	**2+2+0**
Minimum number of students	
Period of realization	**Summer semester**
Lecturer	Zoran Tomljanović