

Study program: Mathematics (MA), Applied Mathematics (MB)				
Level: master				
Course title: Information systems (MB-17)				
Lecturer: Danijela N. Boberić Krstićev				
Status: elective				
ECTS: 6				
Requirements: none				
Learning objectives: Modelling of information systems using unified modelling language – UML.				
Learning outcomes: <i>Minimum</i> Knowledge of syntax and semantics of unified modelling language. <i>Desirable</i> System modelling using UML.				
Syllabus: <i>Theoretical instruction</i> Overview of methodologies regarding the information system modelling. Unified modelling language - UML. Basic concepts of the object-oriented approach in system modelling. Requirement engineering. Modelling systems using use cases. Static model of system. Class diagram. Dynamic model of system. Sequence diagram. System architecture. Management of information system development. Examples of models of systems. <i>Practical instruction</i> Modelling of individual aspects of the system using the appropriate UML diagrams. Drawing diagrams using the CASE (Computer-aided software engineering) tools that support UML 2.0.				
Literature: <i>Suggested</i> Станојевић, И., Сурла, Д., <i>Увод у обједињени језик моделирања</i> , Група за информационе технологије Нови Сад, 1999. <i>Alternative</i> O'Docherty, M., <i>Object-Oriented Analysis and Design: Understanding System Development with UML 2.0</i> , John Wiley & Sons, Ltd., 2005. Bruegg, B., Dutoit, H. A., <i>Object-Oriented Software Engineering Using UML, Patterns, and Java</i> , Prentice Hall, 2010. UML 2.0 specification, available at: http://www.uml.org/				
Weekly teaching load				
Lectures: 2	Exercises: 3	Other forms of teaching:	Student research:	Other:
Teaching methodology Blackboard and computer equipment are used in the lectures for presenting the teaching contents. Students are introduced to object-oriented analysis and system design. Specification of an information system starting from the activities of gathering user requirements to system design is presented in theoretical exercises. The specification covers only the first three phases of waterfall model of system development (planning, analysis and design). The exercises are carried out in a specialized computer classroom, which is equipped with appropriate hardware and software equipment. Students' knowledge is checked by two tests and a project. Tests are done on computers and they can verify the ability of students to model certain aspects of the system using a single UML diagram. The project is done in teams of 3-4 students and consists of creating complete specifications of a given information system. At the oral exam, students answer questions related to				

object-oriented analysis and system design.

Grading (maximum number of points 100)

Pre-exam obligations	Points	Final exam	Points
test 1	15	Oral exam	40
test 2	25		
project	20		