

<b>Study programme(s):</b> Information Technologies				
<b>Level:</b> Bachelor				
<b>Course title:</b> Modeling of Information Systems				
<b>Lecturer:</b> Danijela N. Boberić Krstićev				
<b>Status:</b> obligatory				
<b>ECTS:</b> 7				
<b>Requirements:</b>				
<b>Learning objectives</b> Educating students how to make good specification and model of an information system. Modelling of information systems using unified modelling language – UML				
<b>Learning outcomes</b> <i>Minimum:</i> Knowledge of syntax and semantics of unified modelling language. <i>Desirable:</i> Student is able to make analysis of complex system, and to model different aspects of system using UML language				
<b>Syllabus</b> <i>Theoretical instruction</i> Overview of methodologies regarding information system modelling. Unified modelling language -UML. Basic concepts of object-oriented approach in system modelling. Modelling systems using use cases. Static, dynamic and physical models. Applying UML in system modelling. Examples of models of systems. <i>Practical instruction</i> Modelling of individual aspects of the system using appropriate UML diagrams. Drawing diagrams using the CASE (Computer-aided software engineering) tools that support UML 2.0 and higher.				
<b>Literature</b> <i>Recommended</i>				
<ul style="list-style-type: none"> <li>• O'Docherty, M., <i>Object-Oriented Analysis and Design: Understanding System Development with UML 2.0</i>, John Wiley &amp; Sons, Ltd., 2005.</li> <li>• Bruegg, B., Dutoit, H. A., <i>Object-Oriented Software Engineering Using UML, Patterns, and Java</i>, Prentice Hall, 2010</li> <li>• Seidl, Martina, et al. <i>UML@ classroom: An introduction to object-oriented modeling</i>. Springer, 2015.</li> </ul>				
<b>Weekly teaching load</b>				
Lectures: 2	Exercises: 1	Practical Exercises: 2	Student research:	Other:
<b>Teaching methodology</b> Blackboard and computer equipment are used in the lectures for explanation of teaching contents. Students are introduced with object-oriented analysis and design of system. Theoretical instruction goes through the specification of an information system starting from the activities of gathering user requirements to system design. 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. Knowledge of students is checked by two tests and 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 given information system. At the oral exam, students answer questions related to object-oriented analysis and design of system.				
<b>Grading method (maximal number of points 100)</b>				
<b>Pre-exam obligations</b>	<b>points</b>	<b>Final exam</b>	<b>points</b>	
Test 1	15	Oral exam	40	
Test 2	25			
Project	20			