

<b>Study program: Civil Engineering</b>			
<b>Course: Information Systems</b>			
<b>Professor/assistant: PhD Miloš B. Stojanović / Milan Protić</b>			
Status of course: elective			
ECTS credits: 5			
Pre-requisites: none			
<b>Aims of the course:</b> As part of this course, the student will become familiar with the basic methodology of the development of information systems such as SCRUM, OUP, MSF and others. After that, the students will be introduced to the concept of service-oriented modelling of the business processes, within which they will be taught to use the BPMN language, at the same time learning about basic concepts such as SOA, BPM and WS. After modelling, the students will learn about the possibilities of the BPEL language and the appropriate tools. The most important part of this course is understanding of techniques and principles of objective-oriented analysis and information system design. Using the Rational Software Architect tool in class, and solving tasks during lectures, the students are taught to define system architecture, to recognize the appropriate design patterns, and do the analysis and design of the overall system by using the UML language. In the end, students are introduced to the pre-existing business solutions which are mostly implemented in large organizations (ERP, CRM, SCM, PLM). The basic concepts of intelligent business systems are studied, and the students are instructed on how to create conceptual Data Warehouse models, how to make use of possibilities offered by the OLAP cube and the algorithms of data mining.			
<b>Learning outcomes:</b> The student will be able to: model business processes using the DFD, IDEF0 and UML standards, understand information systems from various angles, both from the aspect of implemented developed solutions, and the aspect of development of specific systems, and solve any current problems in the IT domain which any modern institution may face.			
<b>Syllabus:</b> <u>Theoretical part</u> The basic concepts of information systems. Methodology of the development of information systems (MSF, RUP, SCRUM, OUP). Modelling business processes (DFD, IDEF0, UML). Service-oriented modelling of business processes (SOA, BPM, WS, BPMN). Executing business processes (BPEL, ESB). An objective-oriented analysis of information systems. The design of information systems. The implementation and introd. of inform. systems. Busin. solutions (ERP, CRM, SCM, PLM). Intellig. Busin. systems. Manag. master data. <u>Practical part</u> Learning how to use the Rational Software Architect tool. The use diagram. The activity diagram. The sequence diagram. The state diagram. The class diagram. The distribution diagram. The BPMN diagram. Using the RSA – added functionality, the component diagram.			
<b>Literature:</b> <ol style="list-style-type: none"> <li>Petrović. S., <i>Informacioni sistemi proizvodnje</i>, Niš, 2000.</li> <li>Craig. L., <i>Applying UML and Patterns: An Introduction to Object-Oriented Analysis and Design and Iterative Development (3rd Edition)</i>, Prentice Hall, 2004.</li> <li>Njeguš. A., <i>Poslovni informacioni sistemi</i>, Univerzitet Singidunum, Belgrade, 2009.</li> </ol>			
<b>Number of active classes</b>			Other forms of teaching:
Lectures: 2	Practical classes: 2	Laboratory classes: 0	
<b>Teaching methods:</b> Interactive classes incl. solving practical examples.			
<b>Grading system</b> (maximum 100 points), <b>grading scale</b> from 5 to 10: below 51 points grade 5, grade 6 from 51-60 points, grade 7 from 61-70 points, grade 8 from 71-80 points, grade 9 from 81-90 points, grade 10 from 91-100 points.			
<b>Pre-commitments</b>	<b>points</b>	<b>Final exam</b>	<b>points</b>
activity during lectures	5	written exam	-
activity during practice	5	oral exam	30
colloquium(s)	20 + 20		
seminar paper(s)	20		
<b>Sum</b>	<b>70</b>	<b>Sum</b>	<b>30</b>