Course Unit Descriptor

Study Programme: Information Systems Engineering
Course Unit Title: Information Systems Integration
Course Unit Code: IZMO03
Name of Lecturer(s): Sladojević Srđan
Type and Level of Studies: Master Academic Degree
Course Status (compulsory/elective): compulsory
Semester (winter/summer): summer
Language of instruction:english
Mode of course unit delivery (face-to-face/distance learning): face-to-face
Number of ECTS Allocated:5
Prerequisites: none
Course Aims: The goal of course is learning students about basic concepts and principles of Enterprise Application Integration (EAI), Enterprise Architecture (EA) and their usage in Cloud Computing technologies. Students will also be trained for mastering the methods, techniques and tools for analysis and implementation on such solutions in business.
Learning Outcomes: After completion of the course and passing the exam, students will be able to implement integration project patterns during the integration of distributed and heterogeneous enterprise information systems, as well as cloud computing solutions. The acquired knowledge rely on SOA concepts and XML technologies.
SyThis course will cover the following areas: MoM (Messaging Oriented Middleware), EA (Enterprise Architecture) and Cloud Computing. MoM area covers: Introduction to information systems integration (A2A, B2B, BPM, SOA). Message systems, integration patterns and concepts: message channels (point-to-point, publish-subscriber, bridge...), transformations (Envelope, Canonic Data Model...), validation, routing (selectors, filters, splitters, brokers...), security mechanisms, rules. Message structures (Request-Reply, Fire-and-Forget, Event, Correlation ID...). Systems and transport protocols for integrations (JMS, SOAP, Filesystem, JDBC, FTP, mails, EJB...). Message flows (synchronous, asynchronous). ESB (Enterprise Service Bus) concepts: endpoints, adapters, components, logging, monitoring. The use of Java platform and Spring libraries during the information systems integration. Comparison and introduction to Open Source (Mule, Apache ServiceMix, Apache Camel...) and commercial (Oracle Fusion, TIBCO BW...) solutions in the field of integration. Examples of information systems integration in practice (telecommunications, banking, wholesales...). EA area covers: TOGAF ADM (Architecture Development Method), the vision of architecture, business, IT, Data, applicational, technological and other architectures. Reference TOGAF model. Cloud Computing covers: business cloud models (IaaS, PaaS, SaaS), examples of cloud solutions of enterprise information systems (ERP, CRM, DMS, GIS, HRM...).**llabus:**
Required Reading: Relevant literature in English TBD

Weekly Contact Hours:	**Lectures:**	**Practical work:**
Teaching Methods: Teaching activity includes lectures with the practice examples, computer laboratory exercises and consultations. Students solve specific problems in the field of information systems integration, independently and/or in group		

Knowledge Assessment (maximum of 100 points):100			
Pre-exam obligations	points	**Final exam**	points
Lecture attendance	5	Oral part of the exam	50
Project task	15		
Project	10		
Tests	20		
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			