

Level: bachelor				
Course title: Distributed systems (code I386)				
Status: elective				
ECTS: 7,5				
Requirements: none				
Learning objectives To provide practical overview of distributed systems and architectures that they are based on, with emphasis on the service-oriented architecture. Within those topics, web service technology is studied in detail, including the concepts related to security and transactional data management in distributed environment. The use of the stated concepts is illustrated and practiced using Java EE platform.				
Learning outcomes <i>Minimal:</i> Students should show clear understanding of theoretical concepts of distributed systems and service-oriented architecture. Besides, it is expected that students are capable of applying the basic technologies related to web services. <i>Desirable:</i> Student should show the ability to discuss advantages and disadvantages of different architectures for realization of distributed systems with deep understanding of the SOA concept. Understanding the influence of this topic to modern trends in development of information systems. Additionally, detailed knowledge of all studied technologies and specifications related to web services, as well as knowledge of their use in development of complex applications is expected.				
Syllabus <i>Theoretical instruction</i> Theoretical background of distributed systems. Service oriented architecture – the concept and variations. Web services: SOAP protocol, WSDL and UDDI, interoperability – WS-I and Basic Profile, Java EE and web services – JAX-WS technology. Web services security – OASIS WS Security and its practical use from Java. Transactional data management – OASIS WS Transaction and its practical use from Java. <i>Practical instruction</i> Analysis of case studies of different architectures. Development of web services using Eclipse development environment and JBoss application server. Use of the advanced web service concepts. Individual work on a comprehensive case study.				
Weekly teaching load				Other:
Lectures: 2	Exercises: 3	Other forms of teaching:	Student research:	