Course Unit Descriptor

Study Programme: Information Technology - Software Engineering

Course Unit Title: Distributed software systems

Course Unit Code: OAS302

Name of Lecturer(s): Associate Professor Zeljko Stojanov, PhD

Type and Level of Studies: Bachelor 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: 6

Prerequisites: None

Course Aims:

Acquiring knowledge about the basic principles, design and implementation of distributed software systems, multilayered architectures, web-based systems and systems based on services.

Learning Outcomes:

The acquired knowledge will enable students to understand the following concepts of distributed software systems: design and implementation, communication principles and techniques, distributed object-based systems, distributed web-based systems, web services. Students will be trained for practical independent and teamwork, as well as for solving problems.

Syllabus:

Theory

Distributed systems - principles, characteristics, types. Architecture of distributed systems. Communication - basic principles, calls to remote procedures, communication based on messages and flows. Distributed systems based on objects - architecture, processes, communication. Distributed web-based systems - architecture, processes and communication. Web services - concepts and architecture.

Practice

Mastering selected topics from theoretical lessons through practical examples realized in a computer laboratory.

Required Reading:

1. Pierre Bourque and Richard E. (Dick) Fairley (Editors). Guide to the Software Engineering Body of Knowledge, Version 3.0, SWEBOK. IEEE. 2014.
2. Ian Sommerville. Software Engineering, 9th edition. Addison-Wesley, Boston, MA, USA. 2011.
3. Andrew S. Tanenbaum and Maarten Van Steen. Distributed systems: principles and paradigms. Prentice Hall. Upper Saddle River, NJ, USA. 2007.
4. Ram Kulkarni. Java EE Development with Eclipse, 2nd Edition. Packt Publishing. Birmingham, UK. 2015.

Weekly Contact Hours: 4	**Lectures:** 2	**Practical work:** 2

Teaching Methods:

Lectures. Practical laboratory exercises.

Knowledge Assessment (maximum of 100 points): 100

Pre-exam obligations	Points	**Final exam**	points
Test I	40	oral exam	40

Test II	20		