Course Unit Descriptor

Study Programme: Information Technologies

Course Unit Title: Software Engineering

Course Unit Code: IT304

Name of Lecturer(s): Zoran Budimac

Type and Level of Studies: Bachelor Academic Degree

Course Status (compulsory/elective): Compulsory

Semester (winter/summer): Winter

Language of instruction: Serbian (primary), English (secondary)

Mode of course unit delivery (face-to-face/distance learning): Face-to-face

Number of ECTS Allocated: 8

Prerequisites: None

Course Aims:

Overview of elementary and advanced phases and techniques of software development. Preparation of students for teamwork in characteristic phases of software development: requirements, analysis, design, implementation, elements of management, and quality control.

Learning Outcomes:

Minimum: Students are expected to present knowledge and ability of its application, and to be able to work as a team member on the development and delivery of high quality software products.
Desirable: Students are expected to present good knowledge, but also ability for critical analysis and application of knowledge from the field, ability to work both individually and as a team member on the development and delivery of high quality software products, and ability to analyze their quality level.

Syllabus:

Theory

Basic notions and definitions. Software quality criteria. Models and possible views on the software development process. Object-oriented analysis and design. Formal specification. Principles and methods of implementation. Software testing. Software metrics. Reverse engineering.

Practice

Analysis and improvement of requirements specification. Training in methods of software cost estimation. Training in object-oriented analysis. Training in description of software product by methods of formal specification. Practical work on software testing. Practicing of methods of software quality measurement.

Required Reading:

1. Zoran Budimac, Mirjana Ivanovic, Zoran Putnik: *Advanced Topics in Software Engineering*, University of Novi Sad, Faculty of Science, Department of Mathematics and informatics, Novi Sad, 2007.
2. Ian Sommerville: *Software Engineering*, 9th Edition, Pearson Education Limited, 2010.

Weekly Contact Hours: 6	**Lectures:** 4	**Practical work:** 2

Teaching Methods:
Classic methods of teaching are used such as use of presentations and video-beam. All of the presentations are also available on a web-site of the Department as a static PDF files for printing, but also as dynamic slide-shows and electronic lessons. At theoretical exercises, applicable methods for individual phases of software development are presented and explained. At practical exercises, presented methods are practiced by students using teamwork.

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	Points 60	**Final exam**	Points 40
Active class participation		written exam	

Practical work		oral exam	
Preliminary exam(s)		…….	
Seminar(s)			
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			