Study programme(s): Computer science

Level: academic bachelor studies

Course title: Introduction to Software engineering

Lecturer: Zoran D. Budimac

Status: obligatory

ECTS: 6

Requirements: None

Learning objectives

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

Theoretical instruction:

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.

Practical instruction

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.

Literature

Recomended

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 teaching load				
Lectures: 2	Exercises: 1	Practical Exercises: 1	Student research:	Other:

Teaching methodology

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.

Grading method (maximal number of points 100)

Pre-exam oblications	**Points**	**Final exam**	**points**
Assignments	**60**	Oral exam	40