

Specification for the book of courses

Study program		Electrical Engineering and Computer Science		
Module		Computing and Informatics		
Type and level of studies		Undergraduate Academic Studies		
The name of the course		Object Oriented Design		
Lecturer (for lectures)		Janković S. Dragan, Rančić D. Dejan, Nejković M. Valentina		
Lecturer/associate (for exercises)		Rajković J. Petar, Milenković M. Aleksandar, Antolović D. Igor		
Lecturer/associate (for OFE)		Rajković J. Petar, Milenković M. Aleksandar, Antolović D. Igor		
Number of ECTS	6	Course status (obligatory/elective)	Obligatory	
Prerequisites				
Course objectives	Introducing students to the area of object-oriented (OO) software design and introduction to the basic techniques and principles of object-oriented software design.			
Course outcomes	Knowledge of object oriented software design basic principles as well as basic methodologies for the OO software design. Knowledge of design patterns and UML unified language. Practical knowledge for the OO applications design and realisation using Visual C#.			
Course outline				
Theoretical teaching	Review of methods and techniques for OO design. Object-oriented design using UML unified modeling language. Identification of the elements of the project. Identification of project mechanisms. Description of run-time architecture. Designing Use-Case diagrams. Subsystems design. Designing class: class structure, modeling the states, relations between classes. Design Patterns. The implementation model. Designing components. Distributing applications through Web services. The advantage of components with simpler classes. Decomposition of the system across processors, tasks and threads. Mapping project in a concurrent system. OO project example of the real system.			
Practical teaching (exercises, OFE, study and research)	Exercises. Practical work on the design and OO programming of Windows applications using UML and Visual C #. Consulting.			
Textbooks/references				
1	Rančić Dejan, Janković Dragan, Power Point presentations, 2013.			
2	Gamma, Richard Helm, Ralph Johnson, John Vlissides, Design Patterns: Elements of Reusable Object-Oriented Software, Addison-Wesley, 2000.			
3	Larman, C., Applying UML and Patterns: An Introduction to Object-Oriented Analysis and Design and the Unified Process (2nd Edition) , Prentice Hall Publishing Company, 2001.			
4	Dragan Milićev, Object oriented design using UML – Practicum, Mikro knjiga, 2001.			
5				
Number of classes of active education per week during semester/trimester/year				
Lectures	Exercises	OFE	Study and research work	Other classes
2	2	1	0	0
Teaching methods	Lectures, excises, individual student work on the project.			
Grade (maximum number of points 100)				
Pre-exam duties	Points	Final exam	Points	
Activity during lectures	30	Written exam	40	
Exercises		Oral exam	30	
Colloquia				
Projects				