

Study program / course: Mechanical Engineering				
Type and level of study: Bachelor academic studies				
Course: Programming Languages				
Lecturers: Grujović A. Nenad				
Status of course: Obligatory for module M ₇ , V semester				
Number of ECTS: 6				
Precondition: No				
The objective of course Introduction to programming languages. Programming with use of data bases in Internet environment. Experience of team work in designing and producing of real scale software.				
The outcome of course Individual development of standard and advanced procedural consol applications using C programming language, object oriented software using C++. Installing, configuration and use of components for implementation in software applications in Internet environment with connection to data base.				
Syllabus Theoretical study Basic terms. Procedural programming – Programming language C. Object oriented programming (OOP) – Programming language C++. Internet programming. WEB servers. HTML, JAVA-SCRIPT, XML. Dynamic HTML documents (DHTML). Programming in PHP. Using MySQL data base, programming language SQL. Latest trends in programming .NET, C#, ASP.NET.				
Practical classes Programming in Windows environment, compare to other OS. Use of Visual Studio. Programming problem solving from algorithm to final testing. Programming with various data types and structures. Principals of Object oriented programming and introduction to C++. Objects and classes. Use of standard Windows controls in software. Internet programming in PHP. Analyses of complex open source software and reengineering.				
Recommended reading (in Serbian) [1] www.elearning.kg.ac.yu [2] A.Hensen: Programming in language C, Mikroknjiga, Belgrade, 1991. [3] M. Čabarkapa: C++ basic programming, CET, Belgrade, 2007. [4] D. Milićev: Object oriented programming in language C++, Mikroknjiga, Belgrade, 1991.				
The number of hours of active teaching:				Other classes: 1
Theory: 3	Practical classes: 1.6	Other forms of teaching: 0.4	Research study: 0	
Methods of teaching Theoretical lectures and exercises in computer lab. Teaching material available on e-learning portal of University e-learning Center.				
Evaluation of knowledge				
Pre-final exam obligations	Points 70	Final exam 30	points	
Activities during the classes:	5	Writing	0	
Practical classes:	0	Oral	30	
Colloquiums(s) :	30			
Seminar(s) :	35			