

UP Fac.of Sciences		Course description	page nr.: 1/2
2. Course Title: The methodology of programming			
3. Code:		4. Kind (lecture, lab stb.): lecture+lab	
5. Nr. of hours weekly: 4 (2 lect.+2 lab)		5	
/7. Preconditions (max. 3 preceeding course): –			
8. How often is it offered: <input type="checkbox"/> Fall semester, <input checked="" type="checkbox"/> Spring semester, <input type="checkbox"/> Both semesters			
9. Maximal nr. of students: 24 per groups			
10. Lecturer responsible: (faculty, institute and department): Dr. Kilián Imre (Fac. of Sciences, Institute of Matematics and Informatics, Department of Information Technology and Biorobotics)			
11. Lecturers with their procentual rates:	Dr. Kilián Imre		100%
12. Course language: English			
13. Learning outcomes: Main purpose of the course is that students own the methodology and usual approaches of programming and algorithm constructions, based primarily on C++ as a programming language. Students, completing the course: <i>know</i> the basic elements of C++ programing language, they <i>own</i> the basic approach for algorithm design, <i>own</i> the basic concepts of object orientation, and... <i>able</i> to express and create and implement algorithms applying object orientation as a principal paradigm			
14. Course program divided to 13 weeks: 1: Basic principles of object orientation: objects, classes, inheritance 2: Basic principles of object orientation: virtual function, early and late binding, polymorphism 3: Object orientation in C++: new and delete operators. Constructors and destructors. 4: Object orientation in C++. Program specification in header files. 5: Overloading of methods and operators 6: Data types and classes in C++. Basic and derived types. Constant types. 7: Template types and their implementation 8: Implementation of C++. Virtual functions and attributes. 9: File and stream handling. 10: Exception and signal handling 11: Namespaces in C++. 12: Multi-threading in C++. 13: Overview of C++ Standard Type Library (STL) class library			
15. Special tasks during the semester:			
16. Description of evaluation: <ul style="list-style-type: none"> oral exam 			
17. Required reading: [1] Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, Clifford Stein: Introduction to Algorithms. MIT Press, 1990.			
18. Proposed reading: [1] O.-J. Dahl, Edsger W. Dijkstra, C. A. R. Hoare: <i>Structured Programming</i> (Academic Press, London, 1972)			
This course description	15-March-2017.	Created by:	

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has been made:			Dr. Kilián Imre lecturer	
			Approved by:	