

Level: bachelor				
Course title: Data Structures and Algorithms 1 (code I021)				
Status: obligatory				
ECTS: 8				
Requirements: none				
Learning objectives Enabling students to understand and use dynamic data structures.				
Learning outcomes <i>Minimum:</i> At the end of the course, successful students should be able to realize a given data structure using pointers. <i>Desirable:</i> At the end of the course, successful students should be able to identify a suitable data structure for solving a problem and implement it using pointers where applicable.				
Syllabus <i>Theoretical instruction</i> Basic concepts of programming languages needed for efficient programming of data structures and algorithms. The definition of abstract data types. Various criteria for implementing data types. Algorithm efficiency and complexity score. Abstract data type LIST. Implementation of a list and basic operations with a list. Circular lists, use of headers and limiters. Multiply linked lists. Abstract data type stack and its implementation. Basic concepts of discrete simulation. <i>Practical instruction</i> Implementation of various data structures (list, stack, queue...), and various ways of their practical application.				
Weekly teaching load				Other:
Lectures: 2	Exercises: 2	Other forms of teaching: 1	Student research:	