LITHUANIA BUSINESS COLLEGE

DESCRIPTION OF STUDY MODULE (FOR ERASMUS+ STUDENTS)

DATA STRUCTURE AND ALGORYTHMS

Volume of subject	**6.0 ECTS**
Lecturer in charge	Prof. Dr. Vitalij Denisov
Annotation	The aim of the course is to provide students with a basic knowledge of dynamic data structures and to develop programming skills for these structures and the algorithms that process them. The course provides students with knowledge of composite dynamic data structures, algorithms and their implementation and application in C/C++, Pascal/Delphi and/or Java programming languages. It develops students' practical skills in the application of dynamic data structures for storing and processing information, as well as in evaluating the performance of the algorithms used. An introduction to the specification, implementation and application of abstract data types is provided. The course provides students with the ability to apply data structures and implement algorithms for classical and atypical programming problems.
Topics	• Dynamic memory management, dynamic structures. • Realization of standard operations in linear dynamic structures. • Table as a data structure, table operations. • Creating and operating on the SCI tree. • Analysis and evaluation of expressions. • Simple and fast sorting algorithms and their evaluation. • Graph representation in software. Basic graph algorithms: search, shortest path finding.
Procedure for assessment of knowledge and competences	✓ 20 percent – midterm tests. ✓ 20 percent – individual work. ✓ 60 percent – final exam.