

Algorithms and Data Structures					
Course Code CIF62004	Student Workload 120 hours	Credits (according to ECTS) 6 ECTS (4.5 for theory and 1.5 for practical work)	Semester Sem. 2	Frequency each even-semester	Duration 16 meetings
1	Types of courses <i>compulsory (study programme level)</i>	contact hours 84 hours	independent study 36 hours	class size 20-40 students	
2	Prerequisites for participation Have completed Basic Programming course				
3	<p>Learning outcomes</p> <p>IF-PLO-2 Graduates have the ability to be scientific, work collaboratively, have a professional attitude, and have good adaptation skills when working in groups or as an individual</p> <p>IF-PLO-3 Graduates are able to develop professional careers in the field of computer science based on quality aspects, data-based decision making, be responsible, and make continuous improvements.</p> <p>IF-PLO-7 Mastering the theoretical concept and principles of computer science, especially in the aspect of algorithms, programming, intelligent systems, information management, parallel and distributed computing, information security, human-computer interaction, software engineering, and fundamentals of computer systems and networks.</p> <p>IF-PLO-12 Graduates are able to apply the principles of engineering to develop good quality software on top of various platforms.</p> <p>IF-PLO-13 Graduates are able to perform abstraction, modeling, representation, and data acquisition in order to perform the data analysis.</p>				
4	<p>Subject aims</p> <p>Students are able to understand the basic concepts of abstract data type (ADT) in data structures.</p> <p>Students are able to abstract, identify, and apply linear and/or non-linear data structures to solve computational problems.</p> <p>Students are able to understand and apply data search algorithms.</p> <p>Students are able to understand and apply data sorting algorithms.</p>				

	Students are able to understand and apply hashing algorithms
5	Teaching methods lectures, case study, class discussion, presentation
6	Assessment methods assignment, mid-term examination, end-term examination, project evaluation, practical-skill assessment
7	This module is used in the following degree programs as well Informatics Engineering (IE), Informatics Systems (IS)
8	Responsibility for module
9	Other information 1 Michael T. Goodrich, Roberto Tamassia, Michael H. Goldwasser, "Data Structures and Algorithms Using Java 6 edition", Wiley, USA, 2014 2 Object-Oriented Software Engineering Using UML, Patterns, and Java™