

Module name	Algorithms and Data Structures
Module number	INF-IST-C-AuD
Lecturer in charge	Holder of the Chair of Algorithms
Objectives	After completing the module, students will be familiar with important algorithmic problems and the basic approaches to solving these problems. They will be able to translate these approaches into concrete algorithms using suitable data structures and analyze their formal properties.
Contents	The module covers sorting and searching problems as algorithmic questions, as well as problems involving graphs and trees, approaches to divide-and-conquer methods, dynamic programming, recursion, backtracking, and various methods for the formal analysis of algorithm complexity.
Modes of teaching and learning	2 hours per week lectures, 2 hours per week exercises and self-study.
Prerequisites	The skills to be acquired in the modules Introduction to Analysis and Algebra and Programming and RoboLab are required.
Usability	The module is a compulsory module in the basic studies of the degree programme Information Systems Engineering. It creates the prerequisites for the modules that list that module in the "Prerequisites" field.
Requirements for the award of credit points	The credit points are awarded when the module assessment is passed. The module assessment consists of a written exam of 90 minutes.
Credit points and grades	6 credit points can be obtained by the module. The module grade is the grade of the examination.
Frequency	The module is offered every summer semester.
Workload	The total effort is 180 hours.
Duration	The module takes one semester.