

**This course is a prerequisite for most of advanced courses in the study plan, and covers the basic concepts of advanced programming that include: sequential data structures: arrays, lists, linked lists, stacks, and queues. Hierarchical data structures: general tree structures, binary trees, binary search trees and dictionaries, and heaps. Hash tables and hash functions are also included. This course introduces some algorithms for sorting and searching. All the presented techniques are applied by a selected programming language such as Java.**