Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
INF224-A	Algorithms And Data Structures	3	3	0	2	4	4

Prerequisites	INF103/INF114
Admission Requirements	INF103/INF114

Language of Instruction	French
Course Type	Compulsory
Course Level	Bachelor Degree
Objective	The aim of the course is to equip student with skills of choosing the most appropriate data structure, using these data structures into different types of algorithms, analyzing the performance of proposed algorithms and choosing the most efficient one and programming these algorithms in C.
Content	Week 1: Algorithm analysis. Week 2: Principal data structures (arrays, linked lists, queues). Week 3: Tree structures, binary search tree. Week 4: AVL tree structure. Week 5: Tree traversal algorithms. Week 6: Hash functions and tables. Week 7: Graph structure. Week 8: Midterm. Week 9: Graph algorithms (shortest path, minimum spanning tree). Week 10: Sorting algorithms. Week 11: Sorting algorithms. Week 12: Search algorithms. Week 13: Search algorithms. Week 14: Coding algorithms.
References	1. M.A. Weiss, Data Structures & Algorithm Analysis in C++, 1999, Addison Wesley. 2. A.M. Tanenbaum, Data Structures using C, 1989, Prentice Hall. 3. A. Drozdek, Data Structures and Algorithmss in C++, 2004, Course Technology. 4. R. Sedgewick, Algorithms in C, Parts 1-4: Fundamentals, Data Structures, Sorting, Searching, 1997, Addison-Wesley. 5. Olcay Taner Yıldız, C && Java ile Veri Yapılarına Giriş, Boğaziçi Üniversitesi Yayınevi, 2013.

Theory Topics

Week	Weekly Contents
1	Algorithm analysis.
2	Principal data structures (arrays, linked lists, queues).
3	Tree structures, binary search tree.
4	AVL tree structure.
5	Tree traversal algorithms.
6	Hash functions and tables.
7	Graph structure.
8	Midterm.
9	Graph algorithms (shortest path, minimum spanning tree).
10	Sorting algorithms.
11	Sorting algorithms.
12	Search algorithms.
13	Search algorithms.
14	Coding algorithms.