Arab Academy for Science and Technology & Maritime Transport
College of Computing and Information Technology
Department of computer science

Course Code: CS212

Course Title: Data Structures and Algorithms

Form no. (11A)
Knowledge and skills matrix for a course

Course content	Week	Knowledge	Intellectual skills	Professional skills	General skills
Arrays / Functions review	1	**K3.** Tools, practices and methodologies used in the specification, design, implementation and evaluation of computer software systems. **K13.** Use high-level programming languages. **K15.** Interpret and analyzing data qualitatively and/or quantitatively.	**I3.** Identify criteria to measure and interpret the appropriateness of a computer system for its current deployment and future evolution. **I4.** Analyze, propose and evaluate alternative computer systems and processes taking into account limitations, and quality constraints. **I6.** Evaluate the results of tests to investigate the functionality of computer systems. **I10.** Define traditional and nontraditional problems, set goals towards solving them, and. observe results. **I11.** Perform comparisons between (algorithms, methods, techniques...etc).	**P2.** Implement comprehensive computing knowledge and skills in projects and in deployment of computers to solve position practical problems. **P3.** Deploy the equipment and tools used for the construction, maintenance and documentation of computer applications. **P9.** Use appropriate programming languages, web-based systems and tools, design methodologies, and knowledge and	**G1.** Demonstrate the ability to make use of a range of learning resources and to manage one's own learning. **G3.** Show the use of information-retrieval. **G7.** Show the use of general computing facilities.
Pointers & Structs review	2				
Linked Lists (1)	3				
Linked lists (2)	4				
Stacks	5				
Queues	6				
Exam	7				
Hashing	8				
Binary Search Tree	9				
AVL Tree	10				
Heaps	11				
B Trees	12				
Graph Represntation	13				
Graph Processing	14				
Searching & Sorting	15				
Final exam	16				

			I12. Perform classifications of (data, results, methods, techniques, algorithms.. etc.). **I17.** Identify a range of solutions and critically evaluate and justify proposed design solutions.	database systems. **P14.** Specify, design, and implement computer-based systems.	

Course Instructor:

Head of Department:

Program Manager: