Republic of Iraq
The Ministry of Higher Education &
Scientific Research

University: Anbar
College: CS & IT
Department: Computer Science
Stage: 2
Instructor name: Mohammed Salah Ibrahim

Course Weekly Outline

Course Name: Data Structures

Course Instructor	Dr. Mohammed Salah Ibrahim				
E-mail	moh.salah@uoanbar.edu.iq				
Title	Teacher				
Course Coordinator	Dr. Mohammed Salah Ibrahim				
Course Objective	1- Learning different data structures 2- Understand why this data structure is better than the other one. 3- Learning how to choose the best data structure for your algorithm. 4- learn how to deal with your problem, building its algorithm and fitting the best data structures to it.				
Course Description	This course covers all data structure types. It starts with defining algorithms and their complexity from the time and space prospection. Then, a list of data structure and their description is presented. The course describes every data structure in detail. In addition to that, it gives the reason to why we need this data structure and where to use it. This course includes many projects that give more understanding to the data structure studied. These projects talks about real life problems that we ask student to use one of the data structure that has been presented in the course to solve it.				
Textbook	Introduction to Algorithm, third Edition, Thomas H. Cormen Algorithms, fourth edition, Robert Sedgewick and Kevin Wayne				
References	Introduction to Algorithm, third Edition, Thomas H. Cormen Algorithms, fourth edition, Robert Sedgewick and Kevin Wayne				
Course Assessments	Term Tests	Laboratory	Quizzes	Project	Final Exam
	%20	%10	%5	%15	%50
General Notes					

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Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1		**Introduction to Data Structures**		
2		**Algorithms and Complexity**		
3		**Arrays and Pointers**	Accountant application using arrays	
4		**Linked List 1**		
5		**Linked List 2**	Student information system using linked list	
6		**First exam**		
7		**Stack**	Color cubes games using Stack	
8		**Queue**	A snake game using queu	
9		**Tree 1**		

10		**Tree 2**		
11		**Graph 1**		
12		**Graph 2**	Social Media connections using Graph data structure	
13		**Hashing 1**		
14		**Hashing 2**	Simple search engine application using hashtable data structure	
15		**Second try exam**		

Instructor Signature: **Dean Signature:**