



AL-HUSSEIN BIN TALAL UNIVERSITY

School of Information Tehnology

Computer Science Department

Semester: Spring 2016

Course: Data Structure **Course #:** 0612222 **Credit Hours:** 3

Description: Data type and structures; Abstract data types and encapsulation; Stacks; Queues; Recursion; Linked Lists; Binary trees; General trees; File organization: sequential and indexed files; Graphs: representation, traversing, shortest path; Sorting: exchange, insertion, quick sort, heap and others; Searching. Weekly practice in the lab. Practical work for three hours weekly is also included

Teacher : Bilal I. Alqudah , PhD

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Office Location: CSE Department , School of Information Technology.

Contact method: email is the most preferable communication media, office hours , and you are welcome to stop by if the office is open outside office hours. Any question asked by email should be replied to within 24 hours. Please read your email frequently (more thank Facebook!)

Textbook:

Data Structures and Algorithm Analysis. By: Clifford A. Shaffer. The book is available online @ <http://www.bilal-qudah.com/ds/> . Slides and other materials will be provided in the same website as well.

Highly-recommended resource is: <http://www.cplusplus.com/>.

For C++ compiler : minGW at <http://www.mingw.org/> ,
or Cygwin at <https://www.cygwin.com/>

For editor: Notepad++ is available at <https://notepad-plus-plus.org/>

Grading:

First Exam:15%

Second Exam:15%

Homework and projects : . 20%

Final exam: 50%

Roles:

* Google(copy, paste) = 0 * referencing is a MUST

* NO cellphones

Attendance: Attendance is a MUST for all students, exams have to be taken in the classroom, ANY unexcused (i.e. medical) absence will be counted.



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AHU regulations: All AHU regulations should be followed, as it should, NO EXCEPTIONS. Please refer to AHU students' handbook to educate yourself about your rights and duties.

Topics	Will cover (at least)
C++ refresh	Write a simple and intermediate C++ code to get back the flavor of C++ programming
Arrays (single and multi-dimension)	Know the relation between arrays and indexing
Structures	Revisit structures and create arrays of structures, sorting
Sorting and recursion	Bubble sort, Quicksort, heapsort ...
Linked lists and doubly linked lists	Will involve pointers, insert in a list, delete, and update
Stacks & Queues	Discuss the concepts, implement
Binary trees	Why BTs, how to use them and some operations and concepts.
Complexity	Introduce complexity of solutions
Introduction to advanced data structure	Chapter 11

NOTE : All topics are covered in the provided book in details, you are supposed to refer to the book ALL the time. Questions, exams, and home works will be from the book.

So READ READ READ

** This document could be modified during the semester based on the educational needs. Any changes will be discussed with students to be approved for better serving for the education process.