Philadelphia University
Course Outline

Course Syllabus	
Course Title	Algorithms and Data Structures
Course Number	630231
Course Level	2th year
Class Time	10.10 - 11.10 Sun/Tues/Thurs
Instructor	Dr. Qadri Hamarsheh
email	qhamarsheh@philadelphia.edu.jo
website	www.philadelphia.edu.jo/academics/qhamarsheh
Prerequisites	Object Oriented Programming (630205)
Office Hours	Hours: 09:00-10:00(Sun-Tue-Thu), 09:30-10:30 (Mon-Wed) Office 712
Text Book	Data structures using C++,D.S.Malik, Course Technology,2nd edition, 2010,ISBN:13-978-1-4390-4023-2

Course Goals:
To study the data structures and algorithm design methods and to adopt analyst of computer programs.

Time Schedule:
Duration: 16 weeks   **Lectures:** 3 hours /week
Tutorial: None   **Laboratories:** None

Objectives:
At Completing this module the student should be able to :
1- Understand the sorting and searching fundamentals.
2- Describe and/or define the Abstract Data Types covered, including lists, stacks, queues, trees, hash tables and graph.
3- Understand, explain, demonstrate, and evaluate alternate implementations of examples of the methods associated with Abstract Data Types.
4- Implement and test the Abstract Data Type implementations as generic programs.

Course Contents	Week
❖ Programs complexity	1
❖ Sorting & Searching algorithms	2
❖ Data representation: linear and linked lists	2
❖ Arrays and Matrices.	2
❖ Stacks	1
❖ Queues.	1
❖ Binary and other Trees.	2
❖ Binary search trees	3
❖ Graphs.	2

Mode of Assessment	
1- **First Exam**	**15%**
2- **Second Exam**	**15%**
3- **Reports\Homeworks\ and or Projects**	**20%**
4- **Final Exam**	**50%**

References
1- C programming for engineering & Computer Science H.H.Tan. McGraw- hill.1999.
2- C++: An Introduction to Data Structures by Larry R. Nyhoff. Hardcover. 1999
3- Algorithms and Data Structures in C++. By Leendert Ammeraal. 1996.
4- C++ How to program. By H.M.Deitel & P.J. Deitel.2 ed, Prentice-hill, 1998.