


Sub.	Course Description – توصيف مقرر دراسي	الموضوع	 كلية المعرفة ALMAAREFA COLLEGE
Date		التاريخ	

Course Code & No	Comp211	211 حاسب	رقم المقرر ورمزه
Course Name	Data Structures	تراكيب البيانات	اسم المقرر
Credit Hours	3 (2+1+0)	(0 + 1 + 2) 3	عدد الساعات المعتمدة
Pre-requisite	Comp112	112 حاسب	المتطلب السابق

General Description	توصيف عام
<p>This course aims at introducing the students with: The course covers, in detail linear data structures such as stacks, queues, and lists. It introduces and discusses implementation and uses of hierarchical data structures such as trees and graphs. It also covers recursion, sorting, searching, and hashing. The development of several medium scale programming projects will take place in this course.</p>	

Course Objectives	أهداف المقرر
<ul style="list-style-type: none"> • Describe several applications for various data structures. • Define data structures for specific situations. • Recognize several different ways to implement data structures. • Define commonly used specifications for stacks, queues, linked lists and binary trees. • Write programs that support various data structures. • Write recursive programs. • Analyze objects and data structures composed of objects. • Create data structures to design new objects. 	

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<ul style="list-style-type: none"> • Summarize the tradeoffs between different searching and sorting algorithms. • Design and write more complex programs. • Discuss professional responsibilities in program development, documentation, and testing. • Use fundamental data structures and algorithms for solving real world problems. • Demonstrate the theoretical and practical tradeoffs involved when choosing a data structure or algorithm. 	
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Course Outlines	مفردات المقرر
<ul style="list-style-type: none"> • Review for OOP in JAVA • Software Life Cycle. • Recursion • Stacks • Queues • Lists • ADT Design and Implementation. • Sorting Algorithms. • Searching Algorithms • Trees and Binary Trees. 	

References	المراجع
<ul style="list-style-type: none"> • Data Structures & Algorithms in JAVA, Goodrich & Tamassia, Wiley, 6th Edition, 2014. • William H. Ford and William R. Topp Data Structures with Java, Prentice-Hall, 2005, 1st Edition. 	

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