

**Kingdom of Saudi Arabia**  
**Ministry Of Higher Education**  
**Majmaah University**  
**Deanship of Quality assurance**  
**and Human Development**



## **Course Specification**

### **Data Structures**

#### **CIS 214-Z**

(Summary)

1431/1432

# Course Specification

Institution : **Majmaah University**

College/Department : **College of Science in AL-Zulfi / Computer Science& Information**

## A- Course Identification and General Information

1. Course title and code: **Data Structures - CIS 214-Z**

2. Credit hours: **3**

4. Name of faculty member responsible for the course : **Mohammad Al-Othman**

5. Level/year at which this course is offered: **6 level / 3 year**

6. Co-requisites for this course (if any) : : **CIS 283**

7. Location if not on main campus : **College of Science in AL-Zulfi**

## B- Objectives

The main objective of this course is to provide students with the theoretical background and practical experience relating to the design and implementation of several types of data structures. Students, during this course, are trained to deal with Abstract Data Types (ADT) and to implement different data structures using different methods.

### Topics include:

- **Review ( array , class , Struct ,Pointer , References)**
- **Recursion**
- **Stack**
- **Stack application**
- **Queues**
- **Linked list**
- **Tree and applications**
- **Introduction to Graphs and applications**
- **projects**

**C- Course Description** (Note: General description in the form to be used for the Bulletin or Handbook should be attached)

1. Topics to be Covered		
Topics	No Of Week	Contact hours
Review of Array in C++	1	4
Review of structure in C++	1	4
Review of Pointers in C++	1	4
Recursion	1	4
Stack	2	8
Stack application	2	8
Queue	1	4
Link List	2	8
Graph	2	8
<b>projects</b>	1	4

2. Course components (total contact hours per semester):				
Lecture: 40	Tutorial:	Laboratory:16	Practical/Field work/Internship	Other:

3. Additional private study/learning hours expected for students per week. (This should be an average: for the semester not a specific requirement in each week)

#### D- E-Learning Resources.

1. Required Text(s) :
<ul style="list-style-type: none"><li>• Data Structures and Program Design in C++ , Robert Kruse and Alexander Ryba , <a href="#">Prentice</a> – Hall , 1999 ,1 edition</li></ul>
2. Essential References :
<ul style="list-style-type: none"><li>• Larry Nyhoff, ADTs, Data Structures and Problem Solving with C++, 2<sup>nd</sup> Ed. , Printice Hall, 2005.</li><li>• Malik, Data Structures using C++, Thomson , 2003.</li></ul>
3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)
<ul style="list-style-type: none"><li>• Clifford Shaffer, A practical Introduction to Data Structures and Algorithm Analysis, 2<sup>nd</sup> Ed. , Prentice Hall, 2001.</li></ul>
4-.Electronic Materials, Web Sites etc
5- Other learning material such as computer-based programs/CD, professional standards/regulations

#### E- Assessment

<b>Assessment Policy</b>		
<b>Assessment Type</b>	<b>Week</b>	<b>Weight</b>
First Exam	<b>6</b>	<b>15%</b>
Second Exam	<b>12</b>	<b>15%</b>
Quizzes Home works and Project		<b>10%</b>
Final Exam		<b>60%</b>
Total		<b>100%</b>