

**Kingdom of Saudi Arabia**  
**The National Commission for Academic Accreditation & Assessment**

**212CSS-3**  
**Data Structures**

**Course Specification**  
**Second Semester 2016-2017**

## Course Specification

<b>Institution : Najran University</b>	<b>Date of Report : 05-May-2017</b>
<b>College/Department : College of Computer Science and Information Systems, Department of Computer Science</b>	

### A. Course Identification and General Information

1. Course title and code : Data Structures, 212CSS-3		
2. Credit Hours : 3		
3. Programs : Bachelor of Science in Computer Science		
4. Name of the faculty member responsible for the course: Mrs. Soad Mohammed Fadl almula		
5. Level of the Course offered : Level - 5		
6. Pre-requisites for this course : 113CSS-4		
7. Co-requisites for this course : 113CSS-4		
8. Location : Female Campus		
9. Mode of Instruction :		
a. Traditional classroom	<input type="checkbox"/> What percentage?	<input type="text"/>
b. Blended (traditional and online)	<input type="checkbox"/> What percentage?	<input type="text"/>
c. e-Learning	<input type="checkbox"/> What percentage?	<input type="text"/>
d. Correspondence	<input type="checkbox"/> What percentage?	<input type="text"/>
e. Other	<input type="checkbox"/> What percentage?	<input type="text"/>
Comments:		

## B. Objectives

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## C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should

1. Topics to be Covered		
List of Topics	No. of Weeks	Contact Hours
1. Introduction to data structures and algorithms analysis	1	
2. Algorithms Analysis (cont.)	1	
3. Stacks and Queues	1	
4. Single and Node (double linked) Lists	1	
5. Trees	1	
6. Binary Search Trees, AVL Tree	1	
7. Priority Queues and Heaps	1	
8. Sorting	1	
9. Maps and Hashes	1	
10. Hashes and Dictionaries	1	
11. Hashes and Dictionaries	1	
12. Graphs	1	
13. Graphs	1	
14. No Lecture	1	

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other	Total
Contact Hours						0
Credits						0

3. Additional private study/learning hours expected for students per week.	<input type="text"/>
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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy
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	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Method
<b>1.0</b>	<b>Knowledge</b>		
1.1	Not applicable to this course		
<b>2.0</b>	<b>Cognitive</b>		
2.1	Not applicable to this course		
<b>3.0</b>	<b>Interpersonal</b>		
3.1	Not applicable to this course		
<b>4.0</b>	<b>Communication</b>		
4.1	Not applicable to this course		
<b>5.0</b>	<b>Psychomotor</b>		
5.1	Not applicable to this course		

#### 5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task	Week Due	Proportion of Total Assessment
1.	Assignment 1		2 %
2.	Assignment 2		2 %
3.	First Midterm Exam		15 %
4.	Second Midterm Exam		15 %
5.	Lab Performance		10 %
6.	Final Lab Exam		10 %
7.	Final theory exam		40 %
8.	Quiz 1		2 %
9.	Quiz 2		2 %
10.	Quiz 3		2 %

#### D. Student Academic Counseling and Support

1.

#### E. Learning Resources

1. List Required Textbooks - Data Structures and Algorithms in Java, 5th Edition, by Michael Goodrich and Roberto Tamassia.
2. List Essential References Materials (Journals, Reports, etc.) - Mark Allen Weiss: Data Structures and Algorithm Analysis in Java, 3rd Edition 2006. - Robert Lafore, Data Structures & Algorithms in Java, Latest Edition.
3. List Recommended Textbooks and Reference Material (Journals, Reports, etc) -

4. List Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.) -
5. Other learning material such as computer-based programs/CD, professional standards or regulations and software. -

## F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) -
2. Computing resources (AV, data show, Smart Board, software, etc.) -
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) -

## G. Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching		
Methods	Ways	Plan of Action
2. Other Strategies for Evaluation of Teaching by the Program/Department Instructor		
3. Processes for Improvement of Teaching		
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)		
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.		

**Teaching Staff : Mr. Muhammad Akram**

Signature : \_\_\_\_\_

Date of Report Completed : 15-Jun-2017

Received by : \_\_\_\_\_

Dean/Department Head

Signature : \_\_\_\_\_

Date : \_\_\_\_\_

