

Course Name	Algorithms & Data Structures-1		Course Code	COMP 221		
Credit Hours	3		Contact Hours	Theory	Lab	Total
				2	2	4
Offered as	<input type="checkbox"/> University Requirement <input checked="" type="checkbox"/> College Requirement <input type="checkbox"/> Program Requirement <input checked="" type="checkbox"/> Core <input type="checkbox"/> Elective <input checked="" type="checkbox"/> ITEC <input checked="" type="checkbox"/> COMP <input checked="" type="checkbox"/> CNET					
Level	5		Prerequisite	None		
Course Description: <p>This course focuses on the study and implementation of various data Structures-Arrays, Linked lists, Stacks, Queues, Trees and Graphs. The course introduces the asymptotic complexity and performance measurement of simple algorithms. The topic includes the concepts of hashing, hash-tables, implementation and analysis of Sorting Algorithms-Bubble Sort, Insertion Sort, Selection Sort and Searching algorithms- Linear Search, Binary Search.</p>						
Course objectives: <ul style="list-style-type: none"> ◆ Explain various linear and nonlinear data structures. ◆ Introduces the concepts of asymptotic complexity and compute the efficiency of algorithms. ◆ Describe how to choose the appropriate data structure required to solve some simple problems. ◆ Demonstrate the implementation of the various data structures and their algorithms using Java programming. ◆ Illustrate the methods to analyse and calculate the complexity and efficiency of algorithms and data structures. 						
Grading	<input checked="" type="checkbox"/> Exam 1	10%	<input checked="" type="checkbox"/> Exam 2	10%	<input checked="" type="checkbox"/> Assignment(s)	10%
	<input checked="" type="checkbox"/> Final	40%	<input checked="" type="checkbox"/> Lab	20%	<input checked="" type="checkbox"/> Mini Project	10%
Text Book: <ul style="list-style-type: none"> ◆ Nell Dale, Daniel T. Joyce, and Chip Weems., Object-Oriented Data Structures Using Java, Fourth Edition, 2018, Jones & Bartlett Learning, ISBN-13: 9781284089097 						
References: <ul style="list-style-type: none"> ◆ Michael T. Goodrich, Roberto Tamassia, Michael H. Goldwasser, Data Structures and Algorithms in Java, 6th Edition, 2014, John Wiley & Sons Inc. ISBN: 978-1-118-771334 						