



Computer Science Department

Course Syllabus
CS242 - Data Structures

Catalog Description:	This course provides the students with understanding of the concepts on data representation and organization used in development of computer applications. The topics to be covered includes: 1. Abstraction and encapsulation through Abstract Data Types (ADT). 2. Knowledge of basic and advanced data structures such as Linked Lists, Stacks, Queues, Trees and Graphs. 3. Knowledge of basic algorithmic analysis: Asymptotic analysis of worst and average complexity bounds; identifying differences among best, average, and worst case behaviors; big“O” notation. 4. Various sorting and searching algorithms are taught to illustrate the above concepts.
Credit Hours:	4 Credit hours: 3 Lectures per week 2 Labs. per week 0 Recitation per week
Prerequisites:	CS104 Discrete Structures and CS141 - Computer Programming-II
Course Learning Outcomes:	CLO1. Understanding of Abstraction and Encapsulation through Abstract Data Types (ADT) CLO2. Analyse problem space especially for time and space complexities (i.e. Asymptotic analysis of worst and average complexity bounds) CLO3. Understanding of basic and advanced data structures such as Linked Lists, Stacks, Queues, Trees, etc. CLO4. Analysis, design, and implementation of proper data structures for certain problems. CLO5. Differentiating between various sorting and searching algorithms and being able to choose the most suitable one in a certain problem context.
Major Topics:	- Review of Encapsulation, Inheritance, and Simple Data Structures - Introduction to Algorithm Analysis - Sorting - Searching - Linked Lists - Staks - Queues - Trees - Hash Tables
Text Books:	Data Structures and Algorithm Analysis, by Clifford A. Shaffer, Edition 3.2.0.10, dated March 28, 2013.



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Grading:

- ⦿ The grading scale for this course is:
 - . 95 - 100 A+ Passing
 - . 90 - 94 A Passing
 - . 85 - 89 B+ Passing
 - . 80 - 84 B Passing
 - . 75 - 79 C+ Passing
 - . 70 - 74 C Passing
 - . 65 - 69 D+ Passing
 - . 60 - 64 D Passing
 - . 0 - 59 F Failing

- ⦿ Final grades will be determined based on the following components:
 - . 60% Semester Work
 - . 40% Final Exam

- ⦿ Students may not do any additional work for extra credit nor resubmit any graded activity to raise a final grade.

- ⦿ Late submissions will not be accepted for any graded activity for any reason.

- ⦿ Students have one week to request the re-grading of any semester work.

Attendance Policy:

Students should attend 80% of the overall course hours taught in the semester as per the University regulations.

If a student fails to achieve this portion, he/she shall not be allowed to appear in the final exam and shall be awarded "DN" grade and repeat the course.

Cheating and Plagiarism Policy:

The instructor will use several manual and automated means to detect cheating and/or plagiarism in any work submitted by students for this course.

When a student is suspected of cheating or plagiarism, the instructor raises the issue to the disciplinary committee.



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Communications: Registered students will be given access to a section of the Blackboard Learning System for this course. Bb will be used as the primary mechanism to disseminate course information, including announcements, lecture slides, assignments, and grades.

Communication with the instructor on issues relating to the individual student should be conducted using CIS email, via telephone, or in person.