SUSSEX COUNTY COMMUNITY COLLEGE

Master College Syllabus

COMS223	DATA STRUCTURES	
COURSE #	COURSE TITLE	CLASSIFICATION
3	2	2
CREDITS	CLASS HOURS	LAB HOURS

RECOMMENDED TEXTS:

Title:	Data Structures Outside In with Java
Author:	Venugopal
Publisher:	Pearson
Date:	2007
ISBN:	0-13-198619-8

CATALOG DESCRIPTION

This course, in a lecture/lab setting, focuses on intermediate to advanced programming topics dealing with logical structures of data, together with the design and analysis of related algorithms. Topics include arrays, lists, linked lists, trees, stacks, graphs, and memory management. Algorithms for searching, sorting and information retrieval are also explored. Students demonstrate proficiency by completing laboratory assignments.
Lab Fee Required.

PREREQUISITE: COMS115 or 143 Recommended

TOPICS TO BE INCLUDED

1. Programming Principles
2. Introduction to Software Engineering
3. Stacks and Recursion
4. Queues
5. Lists
6. Searching and Sorting
7. Tables and Information Retrieval
8. Binary and Multiway Trees
9. Graphs
10. Case Study

COURSE COMPETENCIES/LEARNING OUTCOMES:

Each outcome is linked directly to Program Goal 1 of the A.S. Degree in Science/Mathematics – Computer Science Option. In a manner deemed appropriate by the instructor and approved by the department, students will be able to:

1. Create data structures using a high level programming language (A.S. Computer Information Systems, Program Goal 1, 7).
2. Identify and implement the basic operations needed to manipulate data structures (A.S. Computer Information Systems, Program Goal 1, 7).
3. Analyze the run-time analysis of algorithms and express them using O ( ) notation. (A.S. Computer Information Systems, Program Goal 1, 7).
4. Understand the effectiveness and inefficiencies of recursion (A.S. Computer Information Systems, Program Goal 1, 7).
5. Identify the characteristics of various sorts and be able to apply them to problems (A.S. Computer Information Systems, Program Goal 1, 7).
6. Execute test plans for data structures (A.S. Computer Information Systems, Program Goal 1, 7).

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