

Chemeketa Community College

4000 Lancaster Drive NE

PO Box 14007

Salem, Oregon 97309

Course Outline

Course Identification CS260 Credits 4 Date 5/05

Course Title: Computer Science 3: Data Structures

Total Instructional Hours, for Course, per Term:

44 Lecture Hours = 4 Credit(s)
0 Laboratory Hours = 0 Credit(s)

Prerequisite Course(s):

Grade of C or better in CS162 Computer Science 2, or equivalent as determined by the instructor

Required Text(s):

Sahni, *Data Structures, Algorithms and Applications in Java*, 2nd Edition, Silicon Press

Course Description:

Presents a further analysis of topics in CS162 with additional concepts in recursion, binary trees, and object-oriented programming.

Performance-Based Learner Outcomes:

Upon successful completion of the course, students should be able to:

1. Apply the binary tree structure to a list of data items.
2. Choose between iteration and recursion in solving problems.
3. Use recursion to sort more efficiently.
4. Use team skills to work as a member of a team on the design of a moderately complex programming project.
5. Use team skills to work as a member of a team on the implementation of a moderately complex programming project.
6. Explain the theory of object-oriented programming.

Course Content Outline:

- I. Large Program Design
- II. Data Abstraction and Structures
- III. Object Orientation
- IV. Recursion and Binary Trees
- V. Complexity Analysis
- VI. Inheritance
- VII. Virtual Functions