

Bossier Parish Community College  
Master Syllabus

**Course Prefix and Number:** CTEC 243

**Credit Hours:** 3-3-0

**Course Title:** Data Structures

**Course Prerequisite:** CTEC 150

**Required Textbook(s):** Nell Dale, Daniel T. Joyce, Chip Weems. Object-Oriented Data Structures Using Java, 4th Ed. Jones & Bartlett Learning, 2017. ISBN: 9781284205602

**Course Description:** This course focuses on the definition, representation, and manipulation of basic data structures such as arrays, stacks, queues, trees, and graphs, with an emphasis on practical applications.

**Learning Outcomes:**

At the end of this course, the student will:

- A. explain sorting and searching operations;
- B. implement programming solutions using Recursion;
- C. implement programming solutions using Data Structures; and
- D. compare programming solutions based on efficiency.

To achieve the learning outcomes, the student will or will be able to:

(The letter designations at the end of each statement refer to the learning outcome(s).)

1. describe how searching and sorting algorithms function; (A)
2. analyze searching and sorting algorithms; (A, D)
3. build recursive algorithms; (B)
4. describe and use array-based lists in Java programming; (C)
5. implement linked lists using Java programming; (C)
6. navigate the Java Collections framework; (C)
7. describe and use stacks and queues in Java program solutions; (C)
8. describe and use trees in Java program solutions; (C)
9. describe and use maps in Java program solutions; (C)
10. describe measurements of complexity. (D)

**Course Requirements:**

1. A student must successfully complete the course with an average of 70% or above on the combined learning outcomes.
2. Each student is expected to attend classes regularly; excessive unexcused absences constitute grounds for suspension (refer to the student handbook for attendance policies).

**Course Grading Scale:**

- 90 – 100 = A  
80 – 89 = B  
70 – 79 = C

60 – 69 = D  
0 – 59 = F

**Attendance Policy:** The college attendance policy is available at <http://www.bpcc.edu/catalog/current/academicpolicies.html>

**Course Fees:** This course is accompanied with an additional non-refundable fee for supplemental materials, laboratory supplies, software licenses, certification exams, and/or clinical fees.

**Nondiscrimination Statement:** Bossier Parish Community College does not discriminate on the basis of race, color, national origin, gender, age, religion, qualified disability, marital status, veteran's status, or sexual orientation in admission to its programs, services, or activities, in access to them, in treatment of individuals, or in any aspect of its operations. Bossier Parish Community College does not discriminate in its hiring or employment practices.

**COORDINATOR FOR SECTION 504 AND ADA**

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