SYLLABUS

Code: COMP228 **Title:** Data Structures

Institute: STEM **Department:** Computer Science

Course Description: This course will introduce students to the use of various data structures and related concepts found in Computer Science. The data structures to be studied include arrays, strings, lists, stacks, queues, trees, graphs, and tables. For these structures, generic operations and their efficiencies will be examined, as well as specific applications for these structures and operations. Recursive processes will be studied, and searching and sorting techniques will be evaluated.

Prerequisites: COMP135 – Computer Architecture Using Assembly Language
COMP271 – Programming II

Corequisites:

Prerequisites or Corequisites:

Credits: 3 **Lecture Hours:** 3 **Lab/Studio Hours:** 0

REQUIRED TEXTBOOK/MATERIALS:

Text: Introduction to Java™ Programming, 11th Edition
Y. Daniel Liang
Pearson Education, 2018. ISBN 13: 978-0-13-467094-2

OpenDSA CS2 Software Design & Data Structures

Software: Java™ available as a free download from http://java.com/en/download/index.jsp

ADDITIONAL TIME REQUIREMENTS:

For information on Brookdale's policy on credit hour requirements and outside class student work refer to Academic Credit Hour Policy.

The Computer Science Main Lab is available for your use. Hours of operation are posted at the LAH 103 door and at the Computer Science department web site:
https://www.brookdalecc.edu/stem-institute/computer-science/computer-science-lab/

COURSE LEARNING OUTCOMES:

Upon completion of this course, students will be able to:

- Understand abstract data structures concepts
- Implement solutions for a variety of data structure problems
- Use object-oriented Java programming techniques

GRADING STANDARD:

To be considered acceptable, a project must be free of all syntax and logic errors and must meet all of the requirements outlined by the problem statement. Projects must also meet documentation and style requirements as outlined by the instructor. The final grade requirements for the course will be:

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GRADE	REQUIREMENTS
A	Complete Programming Projects 1-5 and Tests 1-2 Earn an average grade of 94 thru 100 on the above coursework
A-	Complete Programming Projects 1-5 and Tests 1-2 Earn an average grade of 90 thru 93 on the above coursework
B+	Complete Programming Projects 1-5 and Tests 1-2 Earn an average grade of 87 thru 89 on the above coursework
B	Complete Programming Projects 1-5 and Tests 1-2 Earn an average grade of 84 thru 86 on the above coursework
B-	Complete Programming Projects 1-5 and Tests 1-2 Earn an average grade of 80 thru 83 on the above coursework
C+	Complete Programming Projects 1-5 and Tests 1-2 Earn an average grade of 75 thru 79 on the above coursework
C	Complete Programming Projects 1-5 and Tests 1-2 Earn an average grade of 70 thru 74 on the above coursework
D	Complete Programming Projects 1-5 and Tests 1-2 Earn an average grade of 60 thru 69 on the above coursework *A "C" grade is required to successfully complete a Computer Science degree.*
F	Fail to complete Projects 1-5 and Tests 1-2, or Earn an average grade below 60 on the above coursework

INC An incomplete (INC) may be assigned at the discretion of the course faculty for students who have extraordinary circumstances of documented hardship or emergency. These students have been actively participating throughout the term and have completed a significant portion of the course in a satisfactory manner but approach the end of the term without completing all assignments. The following process should be followed:

- The student contacts the faculty with the appropriate documentation.
- The incomplete contract is completed by the faculty and must be signed by both faculty and student.
- Students will be notified by email to check their grades and to speak to their counselor about the impact of an incomplete.
- All course work should be completed by the twenty-first day after the end of the current semester or term, exclusive of official college closings.

When a student completes the work satisfactorily, faculty will submit a change of grade. If work is not completed satisfactorily, the INC will be changed to an F by the registrar. Students will be notified by email. For the purpose of calculating academic standing, the INC will be treated as an F.

(College Grading System Regulation 5.0013R)

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COURSE CONTENT: The 6 (units) comprising the course are:

Unit	Title
1.	Introduction to Abstract Data Types
2.	Stacks, Queues and Recursion
3.	Lists and More Lists
4.	Binary Search Trees
5.	Heaps and Graphs
6.	Sorting and Searching

Each unit is comprised of objectives, specifically:

UNIT OBJECTIVE: Tells you what you will be able to do after successfully completing the unit.

LEARNING OBJECTIVE: Indicates the details of each unit.

RECOMMENDED LEARNING EXPERIENCE: Indicates by what means the unit will be completed. These include class meetings, text assignments, and lab/programming assignments.

METHODS OF EVALUATION: Tells you the tools to be used for self-evaluation, as well as those which will enable your instructor to evaluate your progress.

ESTIMATED TIME TO ACHIEVE: Indicates the approximate time needed to complete the unit objective.

DEPARTMENT POLICIES:

Testing: Students will be allowed to take each test only **one** time. There are **no retests**. If a student has a valid excused absence on the day of the test, the test may be taken in Testing Center, with the permission of the instructor.

The exam must be taken within 10 days and will be graded for full credit. Saturdays and Sundays count as days when calculating the 10-day limit. If not taken within the 10 days, a grade of zero will be assigned to the test. A valid Brookdale ID is required to take the test at the Testing Center.

Only one in-class test may be missed. Any other test taken in LAH 103 will receive a maximum grade of 70.

Resubmitted assignments: In the case that an assignment needs to be corrected, the assignment must be corrected and resubmitted for grading no later than 2 weeks from the original due date.

Late assignments: Labs are to be submitted on a timely basis. The instructor will assign due dates. No more than 25 percent of the total labs may be submitted during the last two weeks of the semester.

Attendance: Attendance is required every week. More than three absences will result in a failing grade.

Addendums: Individual Instructors may add additional requirements to this syllabus in written form (assignment due dates, cover sheets, class behavior, etc.).

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ACADEMIC VIOLATION: The instructor of the course has the authority to give a course grade of **F** if the student submits the work of another person in a manner that represents the work as one's own, or knowingly permits one's work to be submitted by another person without the instructor's authorization. All computer work must be on your own portable storage device.

College Policies:
As an academic institution, Brookdale facilitates the free exchange of ideas, upholds the virtues of civil discourse, and honors diverse perspectives informed by credible sources. Our College values all students and strives for inclusion and safety regardless of a student's disability, age, sex, gender identity, sexual orientation, race, ethnicity, country of origin, immigration status, religious affiliation, political orientation, socioeconomic standing, and veteran status. For additional information, support services, and engagement opportunities, please visit www.brookdalecc.edu/support.

For information regarding:

- Brookdale's Academic Integrity Code
- Student Conduct Code
- Student Grade Appeal Process

Please refer to the **BCC STUDENT HANDBOOK AND BCC CATALOG**.

NOTIFICATION FOR STUDENTS WITH DISABILITIES:
Brookdale Community College offers reasonable accommodations and/or services to persons with disabilities. Students with disabilities who wish to self-identify must contact the Disabilities Services Office at 732-224-2730 (voice) or 732-842-4211 (TTY) to provide appropriate documentation of the disability, and request specific accommodations or services. If a student qualifies, reasonable accommodations and/or services, which are appropriate for the college level and are recommended in the documentation, can be approved.

ADDITIONAL SUPPORT:

- Academic Tutors are available in the Computer Science Main Lab located in LAH 103, during scheduled hours of operation.
- See instructor addendum for specific information about class schedule and assignments, instructor information (hours, office, phone, and email), grading policy, etc.

MENTAL HEALTH:

- Mental Health Crisis Support: From a campus phone, dial 5555 or 732-224-2329 from an external line; off-hours calls will be forwarded to BCC police (2222 from a campus phone)
- Psychological Counseling Services: 732-224-2986 (to schedule an appointment during regular hours)

The syllabus is intended to give student guidance in what may be covered during the semester and will be followed as closely as possible. However, the faculty member reserves the right to modify, supplement, and make changes as the need arises.