Bossier Parish Community College
Master Syllabus

Course Prefix and Number: CTEC 151   **Credit Hours:** 3-3-0

Course Title: Advanced Java Programming

Course Prerequisites: CTEC 102

Textbook(s): Lewis and Loftus. <u>Java Software Solutions</u>, 9th edition. Pearson. ISBN: 9780134544021

Course Description: This course provides a basic foundation in Object-Oriented program design in Java with an emphasis on data types, encapsulation, polymorphism, inheritance, and basic algorithms. This course also covers simple data structures, exception handling, file i/o, and an introduction to recursion.

Learning Outcomes:
At the end of this course, the student will:
  A. understand and demonstrate the concepts of various conditional and looping structures;
  B. develop structures to represent objects and methods to operate on objects;
  C. apply the object-oriented principles of abstraction, encapsulation, inheritance, interfaces, and polymorphism in program design;
  D. utilize arrays or array lists in programs;
  E. write programs that read from and write to files;
  F. design fault-tolerant programs with exception handling;
  G. examine the design, implementation, and efficiency of recursive algorithms.

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. identify input, output, conditionals, loops, scope, comments, and programming style (A);
  2. implement methods, classes, and objects (B,C);
  3. describe and implement inheritance and polymorphism (C);
  4. store and retrieve data in arrays or list structures (D);
  5. save data and read data from a file (E);
  6. describe exception handling and use try and catch blocks (F);
  7. implement and compare recursive and iterative solutions to programming problems (G);

Course Requirements:
  - To pass the course, student must achieve a course average of 70% or above.
  - Students must have access to a computer (not mobile device), Microsoft Office, and the Internet to complete the assignments. Computer, software, and the Internet are available to students on campus during scheduled computer lab times and in the Learning Commons located in the BPCC Library.
  - Students are required to use BPCC's LMS and are encouraged to use the BPCC Library to research topics and employment opportunities

Revised: 8/22/2023

Course Grading Scale:
- A = 90 - 100
- B = 80 - 89
- C = 70 - 79
- D = 60 – 69
- F = 0 – 59

Attendance Policy:
Each student is expected to attend class regularly; excessive unexcused absences constitute grounds for suspension. Refer to the student handbook for Attendance Policy.

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.

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Equity/Compliance Coordinator
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