COURSE SYLLABUS

Course Title: Advanced Java Programming
Course Number: CPT 237

Lecture hours per week: 3.0   **Lab/Clinic Hours:**   **Semester credit hours:** 3.0

Prerequisites: CPT 236. Computer Technology students must obtain a minimum grade of "C" in all CPT and IST courses.

Catalog Course Description: This course is a study of advanced topics of the Java programming language by building on a basic knowledge of the Java language. Topics covered will include multi-threading, Swing classes, Swing event models, advanced layout managers, the JavaBean component model, network programming and server-side programming.

Purpose of the Course: This course introduces the student to advanced topics of the Java programming language. The course continues to explore Java's object-oriented programming approach to programming and stresses the inclusion of advanced concepts such as exceptions, streams, multi-threading and Swing class components for programming solutions that are more robust and reflect the current Java programming model. The goal is to expand the student's knowledge of the Java programming language and the programming techniques necessary for the creation of more advanced Java program development.

Required text(s) and other materials:

1. ***Introduction to Java Programming***, 10th edition, Brief Version, Y. Daniel Liang, Pearson, ISBN: 9780133592207.
2. NOTE: Students in traditional classes must access Blackboard for course-related information. Students in hybrid and online classes will access their online content through Blackboard.

COLLEGE-WIDE STUDENT LEARNING OUTCOMES

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1. Communication – Students will demonstrate the ability to use active reading and listening skills and to produce effective written and oral communication for varying audiences.

2. Information Technology and Technological Literacy – Students will demonstrate competency in using computer technology within a field of study.

3. Critical Thinking/Reasoning – Students will demonstrate the ability to apply the scientific method, mathematical processes, and research skills to analyze and solve problems/issues by using reflection and reasoning to justify conclusions.

4. Professional and Personal Responsibility – Students will demonstrate the ability to exhibit conduct, attitudes, and etiquette appropriate to the student's community and chosen career. Students will

demonstrate the ability to manage time, to use effective interpersonal skills, and to display responsible behavior.

5. Diversity – Students will demonstrate the ability to recognize diversity and to demonstrate respectful conduct and attitudes toward all. Students will demonstrate the ability to explain how global issues impact life, work, and opportunities.

Revised December 31, 2012

COMPUTER TECHNOLOGY PROGRAM LEVEL STUDENT LEARNING OUTCOMES

Upon successful completion of the Computer Technology Degree students will be able to:

1. Install computer and network hardware.

2. Install computer operating systems and application software.

3. Design, create and test computer programming solutions.

4. Demonstrate the ability to take initiative, assume responsibility, and work under pressure with minimum supervision by successfully completing "hands-on" computer assignments.

5. Analyze, troubleshoot, and correct computer related technical problems.

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CPT 237 COURSE OUTCOMES

Students who successfully complete this course will have demonstrated the skills required to accomplish the following objectives with a minimum competence level of 70 percent.

1. Students will be able to analyze, design, develop and document a group project using a design methodology and programming language standard.

2. Students will be able to demonstrate initiative by completing a project assignment with minimal direction and minimal supervision.

3. Students will be able to design, create and test programming solutions according to program specifications.

The objectives of the CPT 237 course are intended to meet the CPT program level student learning outcomes.

PLAN OF INSTRUCTION:

TOPIC

Topic 1   Exception Handling

Chapter Test – Chapter 12

Topic 2   Swing GUI

Chapter Test – Chapter 14

Topic 3   JavaFX GUI

Chapter Test – Chapter 15, 16

Topic 4   File I/O

Chapter Test – Chapter 17

Topic 5   Multi-Dimensional Arrays

Chapter Test – Chapter 7, 8

Topic 6   Recursion

Chapter Test – Chapter 18

Topic 7   Sorting & Searching

Chapter Test – Chapter 7

Topic 8   Graphics

Chapter Test – Chapter 12

Final Exam Project

The Final Exam will be administered on the Barton Campus and will be scheduled at a time determined by the department.

The instructor reserves the right to modify the Plan of Instruction by changing the sequence of text material or testing content.

Tutoring is now available in the Business Division Student Lab located on the Barton Campus in the Engineering Building (Building 103), Room 113.   The hours for tutoring are posted on door of Room 113; no appointment is necessary. There are no fees required for this service.

CPT 237 – COURSE SPECIFIC REQUIREMENTS

There are no specific course requirements other than attachment 1.

CPT 237 – EVALUATION AND GRADING INFORMATION

Grades will be calculated as follows:

Exams represent 50% of the final grade: 30% midterm tests, 20% final exam.

Lab assignments count 50% of the final grade.
1. Programming assignments will be 30 percent of the grade.
2. There will be one group project for 20 percent of the grade.
3. The following factors will be considered in grading assignments:
    a. The program must work correctly and produce the desired results.
    b. The program must use good style / good programming practices.
    c. Program must be efficient.
    d. Documentation should be clear and meaningful.

All assignments (i.e., labs, projects, research papers, etc.) for this course must be completed and submitted to the instructor by the due date established in order to receive credit for the assignment.

Final letter grades will be issued as follows:

A	=	90 - 100
B	=	80 - 89
C	=	70 - 79
D	=	60 - 69
F	=	0 - 59