

# GREENVILLE TECHNICAL COLLEGE

## Business and Technology Division Computer Technology Course Syllabus Advanced Java Programming – CPT 237

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### **Credit/Contact Hours:**

3.0

### **Prerequisite:**

CPT 236 and MAT 102 or higher. Computer Technology students must obtain a minimum grade of "C" in all CPT and IST courses.

### **Co-requisite:**

None

### **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 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

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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

### **Required Texts:**

1. **Introduction to Java Programming**, 10<sup>th</sup> edition, Brief Version, Y. Daniel Liang, Pearson, ISBN: 978-0-13-359220-7.
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.

### **Additional Materials:**

There are no specific course requirements other than attachment 1.

### **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.*

### **Program Student Learning Outcomes:**

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

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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.

*Revised August 2012*

### **Greenville Technical College Core Competencies:**

**Communication Core Competency:** Students will demonstrate effective written and oral communication skills to convey information, ideas, or opinions.

- Written Communication: Students will demonstrate effective written communication skills to convey information, ideas, or opinions.
- Oral Communication: Students will demonstrate effective oral communication skills to convey information, ideas, or opinions.

**Critical Thinking Core Competency:** Students will demonstrate effective reasoning, problem solving, or quantitative skills to develop an opinion or conclusion.

- Critical Reasoning: Students will employ inquiry, analysis, and synthesis of information to formulate and/or evaluate an opinion or conclusion.
- Problem Reasoning: Students will design and formulate a strategy to answer a question or achieve a desired goal.
- Quantitative Reasoning: Students will be able to analyze numerical information or observable facts resulting in informed conclusions.

**Information Literacy Core Competency:** Students will be able to locate, evaluate, and use information effectively from diverse sources.

**Professionalism Core Competency:** Students will demonstrate conduct and etiquette appropriate to the community and chosen career.

- Professionalism: Students will display professional conduct and work habits.

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- Teamwork: Students will collaborate with others to accomplish a shared goal.

### **Instructional Agreement:**

This syllabus is an agreement between the student and instructor concerning course objectives, course content, grading and other policies and procedures particular to the course as well as any posted program, departmental, and divisional policies. It is also the student's responsibility to become familiar with the Student Handbook/College Catalog found in the Student Resource area of Blackboard.

### **Grading Scale:**

#### **Grades will be calculated as follows:**

Exams represent 80% of the final grade: 30% midterm tests, 50% final exam.

Lab assignments count 20% of the final grade.

1. Programming assignments will be 20 percent of the grade.
2. 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

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### Course Policies:

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.

### **Disabilities Information**

Students with disabilities, including those who were served in Special Education (resource or tutorial), should contact Student Disability Services (SDS) to discuss their need for services and accommodations. The main SDS office is located on the Barton Campus in the Student Center Building 105, office 113. Staff can be reached by phone at 864 250-8202 or via email to [DisabilityServices@gvltec.edu](mailto:DisabilityServices@gvltec.edu). Appointments are available at all satellite campus locations. Please check the GTC website for more information concerning Student Disability Services: <http://gvltec.edu/disability-services/>

Efforts have been made to ensure all materials presented in an electronic format are accessible for students with disabilities and the college is committed to this obligation. However, if you experience any difficulty accessing these materials please notify your instructor immediately so a solution can be provided. You may also contact Student Disability Services directly at 864-250-8202 or by email at [DisabilityServices@gvltec.edu](mailto:DisabilityServices@gvltec.edu).

Students who need a PDF reader for accessibility of course documents presented in PDF format may download a free reader at <https://acrobat.adobe.com/us/en/products/pdf-reader.htm>

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## **PLAN OF INSTRUCTION:**

Topic 1 Exception Handling

Topic 2 Swing GUI

Topic 3 JavaFX GUI

Topic 4 File I/O

Topic 5 Animation

Topic 6 Java Utilities

Topic 7 SQL Database Access

Topic 8 Android Apps