SENG 505
Programming Applications with Java
Spring 2020
Credit Hours: 3
Method of Instruction: online

Instructor: Cynthia Tanner
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Class Meets: W 6-8:20 pm.

Office Hours: contact to make an appointment

Course Pre or Co Requisites:

Instructor Consent

Course Description:

This course serves as an introduction to developing application software. It covers solving problems using the Java programming language. Topics include problem-solving, fundamentals of programming, basic algorithms and data structures, data organization, defensive programming, relational databases and creating database applications,

Expected Learning Outcomes:

Upon successful completion of this course, the student will be able to:

1. Use data structures and recursion for solving problems.

2. Design and implement classes using inheritance and polymorphism.

3. Develop applications using the Java programming language.

4. Utilize a relational database in an application.

Course Resources:

Selected chapters from the following eBooks available from WVU libraries.

1. Sedgewick, Robert, and Kevin Wayne. *Introduction to Programming in Java : An Interdisciplinary Approach*. Second ed. Boston: Addison-Wesley, 2017
2. Brian D Hahn; Katherine M Malan[2002].***Essential Java for scientists and engineers. Boston, Ma. Oxford.***
3. Horstmann, Cay S. *Big Java*. 4th ed. Hoboken, NJ: Wiley, 2010. 2010.

Course Requirements

Tentative Course Schedule:

Week, Module, Unit Title	Assignments & Assessments Due
Week 1-3 Module 1: Basics: Problem Solving Techniques Data Types: Primitive types Classes Java API Sequential Statements Methods Selection Iteration File-IO Defensive Programming Advanced Data types: Arrays, one and two dimensional Recursion Threads	Program Set 1
Week 4-6 Module 2: Classes Inheritance Advanced Applications	Application Project 1
Week 7-10 Module 3: Data Organization Stacks Queues Linked Lists Binary Search trees HashMaps HashFunctions	Program Set 2

Week 11-14 Module 4: Managing Information File Structures: XML, JSON files Relational Databases Queries SQL – Java Database Applications	Application Project 2
Week 15	Project Demonstrations

Evaluation/Grading:

The assigned work will include two programming assignment sets and two large-scale applications. The program sets will be individual projects. The large-scale applications will be group projects.

- Program Set 1– 185 points
- Program Set 2 – 65 points
- Application Project 1 – 100 points
- Application Project 2 – 100 points
- Discussion Participation – 30 points

Course Grading Scale:

432+ points = A
384-431 points = B
336-383 points = C
288-335 points = D
Below 288 = F

Late Assignments:

Late assignments will not be accepted. Partial credit will be given.

WVU Course Policies/Statements:

Academic Integrity *

The integrity of the classes offered by any academic institution solidifies the foundation of its mission and cannot be sacrificed to expediency, ignorance, or blatant fraud. Therefore, I will enforce rigorous standards of academic integrity in all aspects and assignments of this course. For the detailed policy of West Virginia University regarding the definitions of acts considered to fall under academic dishonesty and possible ensuing sanctions, please see the West Virginia University Academic Catalog at http://catalog.wvu.edu/undergraduate/coursecreditstermsclassification/#academicintegritytext. Should you have any questions about possibly improper research citations or references, or any other

activity that may be interpreted as an attempt at academic dishonesty, please see me before the assignment is due to discuss the matter.

Inclusivity Statement *

The West Virginia University community is committed to creating and fostering a positive learning and working environment based on open communication, mutual respect, and inclusion.

If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please advise me and make appropriate arrangements with the Office of Accessibility Services (293-6700).

For more information on West Virginia University's Diversity, Equity, and Inclusion initiatives, please see http://diversity.wvu.edu

Sale of Course Materials

All course materials, including lectures, class notes, quizzes, exams, handouts, presentations, and other materials provided to students for this course are protected intellectual property. As such, the unauthorized purchase or sale of these materials may result in disciplinary sanctions under the Campus Student Code.

Student Evaluation of Instruction

Effective teaching is a primary mission of West Virginia University. Student evaluation of instruction provides the university and the instructor with feedback about your experiences in the course for review and course improvement. Your participation in the evaluation of course instruction is both strongly encouraged and highly valued. Results are strictly confidential, anonymous, and not available to the instructor until after final grades are released by Admissions and Records. Information about how you can complete this evaluation will be provided later.

Attendance Policy

At West Virginia University, class attendance contributes significantly to academic success. Students who attend classes regularly tend to earn higher grades and have higher passing rates in courses. Excessive absences may jeopardize students' grades or even their ability to continue in their courses. There is a strong correlation between regular class attendance and academic success.

Feedback Response Time

I generally reply to email and discussion posts within 48 hours, except during holidays. Often I will reply much more quickly, but you should not count on a same-day reply. Please plan accordingly so that you do not miss deadlines! I generally return assignments within one week of when a discussion or assignment closes. If you would like to get help on an assignment ahead of the deadline, please email me! I am happy to give preliminary feedback or answer questions.