CS 172/01: Introduction to Java Programming
Spring 2018

MW 11:00 – 12:15 p.m., McGraw #115

Instructor: Jiehui (Jenny) Ma
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Office Hours: Laurentide Hall #2227, MW 9:30 – 10:45 a.m.; TuTh 12:30 – 2:30 p.m. and by appointment.

Textbook (Required)
Java Programming, A Comprehensive Introduction, by Herbert Schildt (available to rent from University Bookstore)

Prerequisites
Math 141 with a grade of C or better, or Math 139 with a grade of B or better, or a waiver of Math 141, or a score of 3 or better on the AP Computer Science Principles exam.

Course Description
This course teaches the essentials of object-oriented programming in Java. Students will learn to formulate algorithms, solve problems, and implement those solutions with a Java program that employs objects and classes. Students will be introduced to object-oriented design, class construction, methods and message passing, arrays, string processing, and file processing.

Students completing this course with a grade of C or better will be prepared to take the Intermediate Java course.

Course Learning Objectives
Students who complete this course will:
- Develop basic proficiency in the Java programming language
- Formulate programmatic solutions for real problems
- Translate algorithms into programs using selection statements, loops, and methods
- Know and apply concepts that relate to program quality, including program readability, style, testing, and documentation

Course Outline by Week (subject to change)
1. Introduction to Computers and Programs
2. Introduction to the Java Language
3. Primitive Data Types and Operations
4. Selection Statements
5. Loops
6. Strings
7. Debugging Techniques
8. Midterm Exam (see Tentative Test Schedule)
9. Methods
10. More about Methods
11. Objects and Classes
12. More about Objects and Classes
13. Arrays
14. Sorting and Searching
15. File Input and Output
16. Final Exam (see Tentative Test Schedule)

Computing:
You need to use the Java Development Kit (JDK) for the class. All computers in the classroom and the General Access Lab have the software installed. Also, the JDK can be downloaded for free from the following website: http://www.oracle.com/technetwork/java/javase/downloads/index.html . Follow the instructions for the type of computer that you have.

Homework Assignments (40%) The homework assignments will be given weekly. The homework assignments will be downloaded from the course website on D2L. these assignments are **due on the Sunday after they are assigned by 11:59 pm. Late penalty = 10% per day**. When you turn in your assignments, you need to upload the files on D2L.

Collaboration There are no group assignments in this course, and just like an essay or term paper, the programs are expected to be your own. You may discuss homework problems with your instructor, other students, or do on-line research, but you must design and write the code yourself. You may consult with others about your design or seek help in debugging, but you may not collaborate with anyone on the writing of your code. Solutions prepared "in committee" or by copying or paraphrasing someone else's work are not acceptable.

Quizzes (15%) Surprise quizzes will be given throughout this semester. The purpose of pop quizzes is to track your attendance, so there will be no make-up quizzes. A student can make up a quiz if he/she misses class due to a university-sponsored activity. Additionally, students with legitimate, documented excuses will be allowed a make-up quiz. The two lowest quiz scores will be dropped.

Tests (midterm test 20% and final test 25%) **Two announced** closed-book examinations will be given. Exams are to be taken when scheduled. If you have an emergency or are ill on the day of the exam, contact me **before the exam** to schedule a make-up.

Tentative Test Schedule

	Date	Time	Room
Test1 (Midterm)	Wednesday, Mar. 14	11:00 – 12:15 p.m.	McGraw 115
Test2 (Final)	Wednesday, May. 16	10:00 – 12:00 noon	

Course Evaluation

Lab Assignments/Homework	40%
Quizzes	15%
Test1 (Midterm)	20%
Test2 (Final Exam)	25%
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Final Grade	100%

Grading Scheme (Course scores are kept up-to-date in the D2L grade session)

93 – 100% A	87 – 89.9% B+	77 – 79.9% C+	67 – 69.9% D+	0 – 59.9% F
90 – 92.9 % A-	83 – 86.9% B	73 – 76.9% C	63 – 66.9% D	
	80 – 82.9% B-	70 – 72.9% C-	60 – 62.9% D-	

Important Dates

Date	Deadline
Jan. 29	Last day to add a semester course.
Feb. 2	Last day to drop a course so that no 'W' grade is assigned.
Feb. 4	Last day to drop a course for 100% refund.
Feb. 18	Last day to drop a course for 50% refund.
Mar. 2	Last day to drop a course – 'W' grade assigned.

Course Policies
- Students should attend every class meeting. New concepts in this class always build on older concepts. If you miss a class, you may struggle later. If you miss a class, check D2L for announcements, assignments, and lecture slides.
- No other coursework, readings, surfing online, or chatting online is allowed in class.
- Cell phones must be in their off or vibrate mode in classes. No phone conversations are permitted in class!
- No extra credit work will be given to substitute the required work.
- Discussions, answering questions in class, and coming prepared to class with assigned readings are expected; asking questions in class are greatly appreciated.

UWW Policies

The University of Wisconsin-Whitewater is dedicated to a <u>safe</u>, supportive and <u>non- discriminatory</u> learning environment. It is the responsibility of all undergraduate and graduate students to familiarize themselves with University policies regarding <u>Special Accommodations</u>, <u>Misconduct</u>, <u>Religious Beliefs</u> Accommodation, <u>Discrimination</u> and <u>Absence for University Sponsored Events.</u> For details please refer to the Undergraduate and Graduate Timetables; the "<u>Rights and Responsibilities"</u> section of the Undergraduate Bulletin; the <u>Academic Requirements and Policies</u> and the <u>Facilities and Services</u> sections of the Graduate Bulletin; and the "Student Academic Disciplinary Procedures" [<u>UWS Chapter 14</u>]; and the "Student Nonacademic Disciplinary Procedures" [<u>UWS Chapter 17</u>].

General Education

This course is a Quantitative Reasoning (GQ) elective in the General Education program. It addresses the following General Education goals:

- Critical and Creative Thinking: Students apply their knowledge of the programming constructs taught in this course to design and evaluate strategies (i.e., algorithms) for solving a variety of increasingly complex problems. Specific General Education learning outcomes addressed include:
    - o 2a: Explain and analyze relevant ideas, arguments, and problems
    - o 2g: Design, evaluate, and implement strategies to solve problems or answer open-ended questions
- Quantitative Reasoning: Algorithms and computer programs are mathematical formalizations of strategies for solving problems. Students convert problem statements given in English and/or in algebraic forms into algorithms and then into programs. They then evaluate the correctness of their programs' output and correct errors in their strategies as needed (e.g., debugging). Students are also sometimes asked to explain information presented in mathematical forms, e.g., the expected behavior of a segment of program code when executed by a computer. Specific General Education learning outcomes addressed include:
    - o 5a: Explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words
    - o 5b: Convert relevant information into various mathematical forms (e.g., equations, graphs, diagrams, tables, words)
    - o 5c: Efficiently and accurately carry out calculations to solve problems using appropriate tools and technology

Achievement of these outcomes will be assessed through in-class lab assignments, programming homework assignments, quizzes, and tests. Feedback will be given primarily through grades and comments on assignments, particularly programming assignments.

I HOPE THAT YOU ENJOY THIS COURSE AND WORK FOR PERSONAL SATISFACTION AND AS WELL AS FOR GETTING A GOOD GRADE.