Syllabus: SWE 510 Object-Oriented Programming in Java

Fall, 2017

Instructor Information

Instructor: Dr. Yonghee Shin **Email**: yshin9@gmu.edu

Office Hours: 6:00pm – 7:00 pm on Thursdays in the computing lab on the 3rd floor of Innovation Hall

You can also communicate with me by email and on the discussion board on Blackboard. I may respond at night during weekdays and more frequently on weekends.

Course Information

Description

This course introduces students to programming in the Java language. Topics include problem-solving methods and algorithm development, program structures, abstract data types, simple data and file structures, and program development in a modular, object-oriented manner. Introductory use of OO language features, including data hiding, inheritance, polymorphism, and exception handling.

Objectives and Learning Outcomes

After completing this course students should be able to

1. solve problems using various Java language and library features
2. understand and use Object Oriented concepts to develop reusable, reliable, and maintainable software

Prerequisites Undergraduate courses or equivalent knowledge in programming in a high-level language.

Text Java: How to Program (Early Objects), 11th Edition, by Paul Deitel and Harvey Deitel, Pearson (Required)

Meeting Times and Location Thursday 7:20 P.M. - 10:00 PM, Innovation Hall 133

* Please see Class Schedule Listing for SWE 510 for additional course information.

Grading Policies

Programming languages can be learned by practice. To reinforce your learning, there will be frequent assignments and quizzes.

Class Attendance: 10%

One class will be excluded from the calculation of attendance score after your registration. However, it is your responsibility to follow up the contents from the missing classes by checking course contents, assignments, announcements from Blackboard and/or by asking the instructor. I emphasize class attendance to promote good learning atmosphere together and you will be challenged and encouraged by colleagues when you attend the classes. Because

Assignments, Projects, and Quizzes: 60%

There will be one to four programming assignments (depending on the difficulty) and a home quiz in most weeks. Depending on the class progress, it is possible to have one or two in-class quizzes. One day late submission is allowed with 20% reduction of score. The late submission is allowed only for emergency situations. Please try to submit assignments on time so that you have enough time to work on the next assignments. You should start working on the assignments early so that you have enough time to get help from the instructor if you have any questions.

Final exam: 30%

There will be no makeup for the missed final exam.

Course Schedule

Date	Topic	Text Chapters
Aug 31	Introduction to Computers, the Internet and Java Introduction to Java Applications; Input/Output and Operators	Chapter 1,2
Sep 7	Introduction to Classes, Objects, Methods, and Strings Control Statements: Part 1; Assignment, ++ and – Operators	Chapter 3,4
Sep 14	Control Statements: Part 2; Logical Operators Introduction to JShell: Java 9's REPL Debugging / Testing / GUI basic	Chapter 5, 25
Sep 21	Methods: A Deeper Look Arrays and ArrayLists	Chapter 6, 7
Sep 28	Classes and Objects: A Deeper Look Object-Oriented Programming: Inheritance	Chapter 8, 9
Oct 5	Object-Oriented Programming: Inheritance (Continue) Object-Oriented Programming: Polymorphism and Interfaces	Chapter 9, 10
Oct 12	Exception Handling: A Deeper Look	Chapter 11
Oct 19	JavaFX Graphical User Interface: Part	Chapter 12,13, (optionally 22)
Oct 26	Strings, Characters, and Regular Expressions Files, Streams, and Object Serialization	Chapter 14, 15
Nov 2	Generic Collections Java SE 8 Lambdas and Streams	Chapter 16, 17
Nov 9	Recursion Searching, Sorting, and Big O	Chapter 18, 19
Nov 16	Generic Classes and Methods Custom Generic Data Structures	Chapter 19, 20
Nov 23	Introduction to JShell Java Module System and Other Java 9 Features *. This class may be moved to an earlier class after Oct 19. *. It will be fine even if you don't have access to the online chapter.	Chapter 25, 36
Nov 30	Thanksgiving recess	
Dec 7	Final Exam Review	
Dec 14	Final Exam (7:30pm – 10:15 pm)	

General Policies

Academic Integrity

All CS students must adhere to the GMU Honor Code (http://oai.gmu.edu/mason-honor-code), CS Department Honor Code (See below). ***It is important and mandatory for you to read and understand these rules. The assignments, quizzes, and the final exam with any violations of the rules will be scored as zero and the violator may be reported to the university Honor Committee. The violations include copying other's code, giving your code to others, and sharing critical solutions other than helping solve compilation errors, and cheating in the quizzes and the exam.***

Warning: Students who rely on external sources for their assignments are less likely to succeed in their final exams.

Disability Accommodations

If you are a student with a disability and you need academic accommodations, please contact Disability Services at 703-993-2474. All academic accommodations must be arranged through Disability Services. Please also let me know your accommodation needs before the first lecture.

Privacy

In response to Federal Privacy Regulations, all academic email communications between the instructor and students must be conducted via Mason email accounts. I will not respond to messages sent from a non-Mason email address.

Electronic devices

To help students focus on the lecture, the usage of mobile electronic devices such as laptops and mobile phones are not allowed in class if such usage is not directly related with the class. Habitual violators may be asked to leave the class. Please read a useful article on Why You Shouldn't Use Laptops in Classrooms by Dr. Jeff Offutt.

Social Media

If there are social media connection requests from students, I prefer to accept the requests only after the course is over.

CS Department Honor Code

The Honor code below was copied from http://cs.gmu.edu/resources/honor-code/.

The CS department has a Statement on Academic Integrity.

You (or your group, if a group assignment) may:

- seek assistance in learning to use the computing facilities;
- seek assistance in learning to use special features of a programming language's implementation;
- seek assistance in determining the syntactic correctness of a particular programming language statement or construct;
- seek an explanation of a particular syntactic error;
- seek explanations of compilation or run-time error messages

You (or your group, if a group assignment) may not seek assistance from anyone else, other than your instructor or teaching assistant:

- in designing the data structures used in your solution to a problem;
- in designing the algorithm to solve a problem;
- in modifying the design of an algorithm determined to be faulty;
- in implementing your algorithm in a programming language;
- in correcting a faulty implementation of your algorithm
- in determining the semantic correctness of your algorithm.

Unless permission to do so is granted by the instructor, you (or your group, if a group assignment) may not

- give a copy of your work in any form to another student;
- receive a copy of someone else's work in any form;
- attempt to gain access to any files other than your own or those authorized by the instructor or computer center;
- inspect or retain in your possession another student's work, whether it was given to you by another student, it was found after other student has discarded his/her work, or it accidently came into your possession;
- in any way collaborate with someone else in the design or implementation or logical revision of an algorithm;
- present as your own, any algorithmic procedure which is not of your own or of the instructor's design, or which is not part of the course's required reading (if you modify any procedure which is presented in the course's texts but which is not specifically mentioned in class or covered in reading assignments, then a citation with page number must be given);
- incorporate code written by others (such as can be found on the Internet);

You must:

- report any violations of II and III that you become aware of;
- if part of a group assignment, be an equal "partner" in your group's activities and productions, and represent accurately the level of your participation in your group's activities and productions.