Syllabus
CS 2463 Advanced Java
Spring 2020

Instructor Information:

Name: **Dr. John D. Goulden**

Phone: (405) 682.1611 ext 7370

John.d.goulden@occc.edu

Email: If you email me (or message me on Moodle) please include your course name and section number. Responses to emails without this information might be delayed.

Office Location: Library 313

Office Hours:

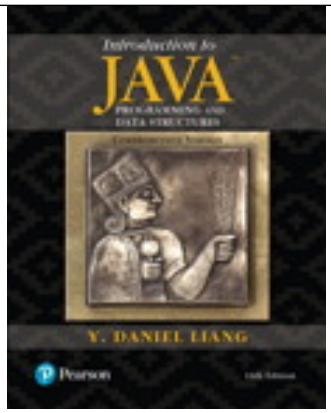
MONDAY	9:00 – 10:45 AM
TUESDAY	3:00 – 5:00 PM
WEDNESDAY	9:00 – 10:45 AM
THURSDAY	3:00 – 5:00 PM

Class Information:

This syllabus applies to the following sections of CS 2463

CS 2463 01S Tuesday and Thursday	11:00 – 12:20	LIB 211
CS 2463 02S Tuesday	5:30 – 8:00	LIB 121

Text:

	*Introduction to Java Programming* by Y. Daniel Liang, 11th edition (Prentice Hall / Pearson, 2018) ISBN 9780134670942 Textbook only; online access code is *not* required. Older editions are also acceptable.

Materials:

You will need some way to save work done in class, and to access previous work for continued study. How you do this is up to you; USB drives, your cloud account, email, whatever.

System Requirements

The programming language used in the course is the current version of the Java Developer's Kit. The JDK is available as a free download from www.oracle.com, and is installed on all classroom and Student Computer Center computers.

There are several coding environments available for use. Two common IDEs for Java are NetBeans (which is installed with the JDK) and Eclipse, a language-neutral environment. *It is strongly recommended that you use both of these environments*. If you desire a simpler environment, Notepad++ is free to use as a student. However, in the interest of simplicity, the instructor will use plain old generic Notepad for in-class demos.

All programs will be compiled from the command line using the javac compiler. This can be an issue if you use Eclipse, which inserts "package" statements that trip up the command-line compiler. Remove these statements and make sure your programs compile from the command line before submitting your work.

College Resources:

(Note : The campus is closed on Sundays)

College Website:

http://www.occc.edu/

Student Handbook:

http://www.occc.edu/handbook/index.html

Student Computer Center:

http://occc.edu/bit/scc.html

Testing Center:

http://www.occc.edu/testing/index.html *(Valid Student ID required)*

Note : Must be in Test Center at least one hour before closing.

Online Student Resources:

http://www.occc.edu/onlineresources/index.html

Student Support Services

Check out what services are available and contact Student Services at 405-682-7520

http://occc.edu/support/index.html

Course Description:

This course is a continuation of the study of object-oriented programming covered in CS 2163 Java Programming. Students will use Java to write event-driven GUI applications and applets that demonstrate comprehension of the advanced features of the language. Technical topics include recursion; generics; data structures including lists, stacks, queues, trees, hashes, and graphs; multithreaded and parallel programs, networking, web applications, and Java database programming.

Prerequisites:

CS 2163 Java or permission of instructor.

Course Competencies:

Students who successfully complete this course will be able to:

- Design and implement object-oriented Java programs.
- Develop Java classes that utilize data abstraction, encapsulation, inheritance, containment, and polymorphism.

- Design and make use of data structures including arrays, linked lists, stacks, queues, heaps, and trees.
- Demonstrate the use of Java GUI libraries such as AWT, Swing and JavaFX.
- Create and make use of dynamic data structures.
- Create networked client and server applications.
- Implement professional best practices and conventions in program design and implementation.
- Adhere to the ethical standards required in the field.
- Model professional job skills including attendance, promptness, meeting deadlines, handing in work that adheres to job requirements, and positive collaboration with other members of a programming team.

Learning Objectives:

Unit 1: Recursion and Algorithm Performance

- Understand the notation of asymptotic algorithm performance and determine the performance of algorithms.
- Make use of recursion, backtracking, and memoization to solve complex problems.
- Make effective use of single- and multi-dimensional arrays.

Unit 2: OOP and GUI Programming

- Design hierarchies of classes to model a system.
- Implement event-driven GUIs using the Swing, AWT, and JavaFX libraries.
- Understand and use abstract classes and interfaces

Unit 3: Data Structures, Abstract Data Types, Parallel Programming, and Database Fundamentals

- Use generic programming and the Java Collections Framework.
- Understand and make use of dynamic ADTs (including sets, maps, trees, and hashing) to solve data structures-related problems.
- Understand and demonstrate the use of trees and graphs.
- Design and implement algorithms requiring multiple concurrent threads.

Class Requirements

The on-campus class will be taught in a computer-equipped classroom. Online students are recommended to complete the work for each week as laid out in Moodle. Class material will be presented on-line. It is the student's responsibility to check for new assignments, class announcements, due dates, etc. Completed work will be submitted on-line through MOODLE. Both campus and online students can have access to the Student Computer Center. It is the student's responsibility to arrange his/her schedule for completion of assignments. It is of utmost importance that students stay current and turn all work in on time.

Learning Support

Student success is a high priority in the BIT Division. In case the instructor feels that a student might benefit more with personalized learning, student names may be referred to Student support Services. More details can be found at http://www.occc.edu/catalog/2018-2019/regulatory/services-for-students/learning-support.html

Class Policies

All classes

- The information on Moodle is meant for use only by students currently enrolled. Students may NOT give access to their accounts to individuals outside of this class. Failure to abide by this additional requirement could result in loss of your Moodle account, failure in the class, or other appropriate action.
- Students must abide by the College's Information Technology Resources Acceptable Use Policy.
- All emails and voicemails will be answered within 48 business hours (weekends and holidays don't count).

On Campus classes

- In respect for the instructor and fellow students, cell phones, pagers, etc. are to be turned off or placed on vibrate during the class. If there is an emergency requiring availability via a cell phone/pager, please let the instructor know at the beginning of that class period.

- Students may NOT surf the net, check email, text or engage in similar activities during class time. Not only does it affect the person doing it, but it is a potential distraction to others in the class.

Additional Policies

Additional policies are found on Moodle under "Institutional Statements and Policies."

Email Address Request

The college provides students with an email account. For more information http://www.occc.edu/email/.

Grading Criteria and Procedures

This is the tentative grading scheme. They may be changed at the discretion of the instructor.

The course is divided into eight units, with 125 points worth of assignments per unit, for a total of 1000 points possible.

A (4.0 Grade Point)
The sum of the test and assignment scores must be 90% or better of the total possible points
B (3.0 Grade Point)
The sum of the test and assignment scores must be 80% or better of the total possible points
C (2.0 Grade Point)
The sum of the test and assignment scores must be between 70% and 79% of the total possible points
D (1.0 Grade Point)
The sum of the test and assignment scores must be between 60% and 69% of the total possible points. **This grade level does not satisfy Computer Science course prerequisites.**
F (0.0 Grade Point)
The sum of the test and assignment scores is below 60% of total possible points

Issuance of Grades

Grades will be posted in MOODLE at http://online.occc.edu/. Check the grades area after each assignment has been graded. Students have one week after the grades have been posted to challenge a grade. Failure to request the review in a timely manner or to provide requested information will result in the grade remaining as originally posted. It is highly recommended that all graded assignments (for all classes) be saved until after the final grade has been posted.

Programming Assignments:

This is a programming course, and you will write several programs during the semester. Programs will be graded using several criteria: internal documentation, consistent style, appropriate use of the programming language, and how well they satisfy the specifications given in the problem statement. These grading criteria will evolve as your mastery of the language progresses during the course.

A portion of your program grade may be determined by a worksheet. To complete the worksheet you must design and implement a program that solves the problem given. Other, more challenging lab projects will require more extensive write-ups. A portion of your grade will also be determined from inspection of your source code and data files. Major evaluations of lab work are incorporated into each of the examinations.

Programming Project:

You will complete a programming project. You may work alone or in a group of two or three. In this project you will demonstrate your mastery of the concepts learned in this course by designing and creating a project in Java. Your project grade will be in several components, beginning with the formation of your group and an initial proposal and ending with the final presentation of your work to the rest of the class.

There are several milestones related to this project to be completed during the semester. Treat these milestones as though you (and your group, if any) are the brilliant programmers with a world-changing idea, and the professor is the venture capitalist who might fund your project. The final presentation is not merely a demo of your program; you are *selling* your project to the venture capitalist and his team (your classmates) through a presentation of the program, a discussion of how it works, and how each member of the team contributed to the overall project. *The dress code for the final presentation is business formal.*

Assistance with Assignments:

In addition to my being available during office hours and via email, the Student Computer Center staff and tutors are also available for assistance. While some of the best learning takes place when we solve problems ourselves, please do not wait until it is too late. Ask for help when you need it. They will be happy to explain concepts and procedures.
A list of the full-time staff can be found at the following URL. There are also other tutors and supplemental instructors available depending on the semester. Check with the Student Computer Center for details. Information can be accessed at:
http://occc.edu/bit/scc.html

Due Dates:

All assignments are due by the posted due date. Due dates will be posted as and when the assignments are assigned. If there are extenuating circumstances, each situation will be reviewed on an individual basis only if requested by the student. Programs that will not run, that produce incorrect results, are partially completed, or not running according to the assignment specifications will be eligible for a maximum of 50% credit. Programs that are submitted late or as resubmits will be eligible for a maximum of 90% credit.
Be sure to check the Assignment Drop Box on Moodle for due date information. The time on OCCC's server will be the "official time". If your computer's clock varies from the server, the server's clock will be the controlling factor. When the due date and time arrives, the server will no longer accept submissions. (All programs must be uploaded and submitted. I will not have access to Assignments which have been uploaded, but not submitted)

Late Work / Resubmitted Work:

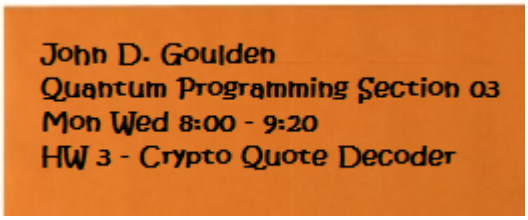
Late / resubmitted homework will be accepted for *up to* half credit. If you were unable to submit your homework in a timely fashion on Moodle, or if you wish to re-submit work for regrading, do the following:

- Put your homework files on a flash drive. This would (usually) be your source code and your screen shots. The flash drive should not contain any other documents.
- Write (and print) a one page document explaining why the homework is late, or why you wish already-graded work to be reconsidered. This is your time to shine! Worthy excuses may gain you more than half credit, and sometimes even full

credit! If your work was late because of illness, include a copy of your doctor's note.

- If you are re-submitting homework for regrading:
    - Include that assignment's check sheet with your original grade.
    - Include screen shots of your program in action that demonstrate successful completion of all test cases on that check sheet.
- Place the flash drive and printed document in a standard 9 x 12 manila envelope.

    - On the outside that envelope write your name, the name / section number / time of the class, and the name of the assignment.



    - Do *not* seal the envelope.
    - Include only *one* homework submission per envelope / flash drive.
    - Submit that envelope to me in person, either in class or at my office.
    - **Submissions that do not adhere to this policy will be returned ungraded.**
    - **Late or resubmitted work will not be accepted during the last two calendar weeks of class.**
    - **Flash drives that remain unclaimed after the end of the semester will find new homes.**

Testing Dates:

If you are unable to take a test or a quiz at the designated time, you must make arrangements with the instructor. This must be done **before** the posted test deadline.

Only under very extreme circumstances will a student be allowed to schedule a makeup test. Retesting to improve an exam score will not be allowed. Test may be a combination of theory and performance. Specifics will be announced prior to each test. Usually the theory will be multiple choice, true/false, or short answer. Performance tests will consist of writing program code.

Attendance

Students need to attend class regularly to achieve an acceptable level of competence. Students who miss more than 25% of the class will not be able to satisfactorily complete the course and will receive a grade of 'F'. If you miss class, it is your responsibility to get the notes and assignments from the day you missed. You will be expected to hand in any assignment given during your absence, on the regular due date.

Requests for an exception must be made in writing to the instructor stating the conditions surrounding the reason for the request. Only under extenuating circumstances (for example, extended hospitalization or death in the family) will the instructor consider granting the request.

Audit

Students who audit the course are expected to participate in the course the same as credit seeking students. This includes attending class and submitting assignments. (Audit students may not take the tests.)

Never Attended - Non Attendance

- Students who do not attend class(es) for which they have enrolled, will be reported as Never Attend and will receive a status of NA. The deadline for students to attend class or engage in an online class is the drop with refund date for the respective term.
- The NA will **not** be reported on the student's transcript.
- The status of NA is given **regardless** of the student's financial aid status and/or if the student has made any payments.
- A first semester student who is NA'd from **all** of their respective classes, will not be charged the $30 enrollment fee.
- Students **will not** be charged for the class(es) for which they receive an NA.
- Students' financial aid awards will be recalculated to remove NA courses, which may

result in a reduced award amount.

Network Acceptable Use Policy

Every user of the college network, equipment, communications systems, and/or college-owned software will comply with the Information Technology Resources Acceptable Use Policy. Information regarding the policy can be found at http://www.occc.edu/policy/pdf/3058.pdf.

Pregnant and Parenting Students

Pregnancy and Parenting Statement:

Oklahoma City Community College does not discriminate against any student on the basis of pregnancy, parenting or related conditions. Pregnant or parenting students seeking accommodations should notify your professor immediately. For purposes of this notification, "parenting student," means a student who is pregnant or has recently been pregnant, or another student in a parenting role (regardless of gender), who is participating in a pregnancy-related or birth process.

Pregnancy-Related Absences:

When a doctor determines absence is necessary, absences will be excused for students who are pregnant or parenting for as long as the student's doctor determines. Reasonable time will be given to make up missed work.

Title IX Coordinators:

OCCC has a designated Director of Equity and Compliance Senior Deputy Title IX Coordinator, Cary Pirrong, J.D. (405-682-7850) cary.m.pirrong@occc.edu. Contact Dr. Pirrong when a pregnant or parenting student needs assistance in understanding or protecting the students' rights under Title IX.

Academic Accommodation Statement

Oklahoma City Community College Complies with Section 504 of the Rehabilitation Act and the Americans with Disabilities Act. Students with disabilities who seek academic adjustments/ accommodations must make their request by contacting the Office of Student Support Services located on the first floor of the main building near SEM entry 3 or by calling 405-682-7520. All academic adjustments/accommodations must be approved by Student Support Services.
If you have been approved by Student Support Services to receive academic adjustments/ accommodations you must talk with your instructor in private at a mutually agreeable time such as during the instructors posted office hours. This will allow the instructor to be better informed on how to assist you with access during the semester. To respect your privacy the instructor will not approach you, but the academic adjustments/ accommodations must be discussed to ensure ideal implementation for you. All information will remain confidential.

Disclaimer

The assignments, point values, schedule, and testing dates presented in this syllabus are subject to change in the event of extenuating circumstances or if class progress warrants. Adjustments may be made as the semester progresses.

Tentative Course Calendar

Dates and Assignments may and will be changed as class progress warrants. Actual due dates will be available in Moodle, Assignment, and Calendar/Due Dates areas.

The assignments posted here should match the assignments posted to the Moodle course site. If there is a discrepancy between the information posted here and what you see in the Moodle course section, Moodle wins (and please inform the instructor so that the syllabus can be corrected).

Week	Chapter	Topics Covered and Homework Assignments
Week 1	**1-5**	Syllabus; Rapid Review of Java
Week 2		…continued
Week 3	**7**	Arrays and Vectors
Week 4	**8**	…continued

Week 5	**18, 22**	Recursion, algorithm efficiency, backtracking, memoization
Week 6		…continued
Week 7	**6, 9-11, 13**	Classes and Objects
Week 8		…continued
Week 9	**14-16**	GUI basics, graphics, event-driven programs, GUI components, containers, layout managers, menus, toolbars, dialogs…
Week 10		…continued
Week 11	**19-21**	Generics and Data Structures
		The end of the twelfth week (Friday) is the deadline for withdrawing or changing to audit. If students feel that they cannot successfully complete the course and wish to withdraw/change to audit, it is their responsibility to do so.
Week 12		…continued
Week 13	**12**	Exceptions
Week 14	**32**	Multithreaded and concurrent programming
Week 15		OPEN LAB
Week 16		PRESENTATION OF PROGRAMMING PROJECTS

Once you have read through the Syllabus, email me through Moodle stating that you have read the Syllabus and that you plan to abide by the rules stated in it, and tell me something interesting about yourself.