VALENCIACOLLEGE

Course Syllabus   Summer 2017   Online

COURSE: **COP 2805c Advanced Java Programming**

PROFESSOR: Dr. Colin Archibald (Dr A)

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Student engagement hours: An announcement in Blackboard will show office hours. They are also posted on my office door West Campus 9-140c.

Catalog Description:

A continuation of COP 2800c. Advanced topics in Java SE (Standard Edition) including Graphical User Interface using Swing, event handling, file input/output, collections, multi-threaded applications, and database connectivity. Object-oriented design and analysis is introduced using the Unified Modeling Language (UML).

CRN: 32072
Credit Hours: 3.0
Prerequisite(s) and Co-requisite(s): Minimum grade of C in COP 2800c

Meeting place and time: Online in Blackboard

Appointments by Skype

COURSE OUTCOMES:

o	The student will be able to define classes, and create objects. This is a review topic from COP 2800.
o	The student will be able to create inheritance hierarchies, and to create and implement interfaces.
o	The student will be able to throw and catch exceptions.
o	The student will be able to create multi-threaded programs.
o	The student will be able to create simple user interfaces, that listen for and respond to events
o	The student will be able to write code that creates and modifies a relational database.

EDUCATIONAL MATERIALS:

REQUIRED

Revel: This is the new concept of a 'textbook.' The original book, by Daniel Liang, is one of the best Java books available. It is available as an E-Book. The publisher started adding exercises, and video clips. The book has transitioned into an online learning tool that includes the original book.

At Valencia we are transitioning into this new way of learning materials, formerly known as the 'textbook.'

For this semester you can EITHER use the original textbook by Liang as follows:

Textbook: Introduction to Java Programming: Comprehensive. 10th edition. Daniel Liang.

OR

You can purchase the "Revel" version of the same book.

Each of you will receive an email inviting you to the online Revel course.

Revel is cheaper than purchasing the book.
It's even cheaper than the E-book.
Revel has exercises, video clips, self-quiz things to test your understanding as you go along.
It is available in the Valencia West-campus Bookstore, and it is available to purchase online.
It is a License that will expire in one year.
It may not be cheaper than a used copy of the book.
You cannot steal a copy, like you might have done with other electronic publications.

The development environment for assignments is Eclipse and Oracle's Java 1.8 (There is no charge for these.)

A **webcam and a free Skype account** are **required** for this class.

 If you are purchasing a webcam, you might consider the Logitech model C310 as a good quality and affordable choice.)

ASSESSMENT METHODS AND EVALUATION:

- **Midterm test**

    This will be announced at least one week in advance. It is a proctored test, closed book, on paper. It will be held in the Valencia Testing Centers on West, Osceola campuses. It will not be available on East campus.*

- **10 Programming Assignments.**
    Late assignments are penalized by up to 20%. Assignments more than 1 week late will not be graded. Assignments must be submitted in BlackBoard under the assignments tab (not by email attachment). The first and last Assignment must be submitted by the due date.

- **Programming Project –** a larger assignment that integrates many of the skills that have been developed during the semester.

- **Final Exam will be available in the Valencia Testing Centers on West and Osceola Campuses on July 27, 28, 29. (Thursday, Friday, Saturday)**

- The final exam in this course is MANDATORY. Any student not completing the exam will receive a grade of F for the course.

*Alternate Testing Centers: If you are not in the region, or cannot get to the Valencia testing centers, you can make arrangements with testing centers at other colleges. You must make those arrangements on your own. It is becoming quite common to do this. Give the testing center contact information to DrA at least one week before the midterm / final exam. If even that doesn't work,

Assignments and tests do not have the same weight in the grade calculation:

Assignments	40%
Midterm Test	25%
Programming Project	10%
Final Exam	25%

Please note that the assignments are worth about 4% each, and the midterm is worth 25%.

The sum of these will determine a letter grade as follows:

90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
0 – 59	F

ATTENDANCE POLICY:

For Online Sections:

Attendance is logging into BlackBoard, reading and posting on the discussion boards, and submitting the assignments.

When more than 3 assignments are past due, you will be withdrawn from the course.

For In-Person and Hybrid Sections:

It is expected that students will attend all classes. Missing more than 3 classes will result in being withdrawn from the class.

You will lose 2% of your grade for each missed class (late counts as missed), up to 6% points, and then you will be withdrawn on the 4th absence for excessive absences.

It is required that students read all email and discussion postings in Blackboard.

It is expected that an average student will require a total of **10-12 hours of work per week** to be successful in this course.

Any student who wishes to withdraw may do so in Atlas by the Withdraw date. (see **Important Dates** below)

NO-SHOW PROCEDURE

Any student who does not attend class prior to the start of the no-show period for each part of term will be withdrawn by the instructor as a no-show. This will count as an attempt in the class, and students will be liable for tuition. If your plans have changed and you will not be attending this class, please withdraw yourself through your Atlas account during the drop period for this term.

To avoid being withdrawn as a "NO-SHOW" you must attend Submit Assignment 1 by the Due Date

WITHDRAWAL

Per Valencia Policy 4-07 (Academic Progress, Course Attendance and Grades, and Withdrawals), a student who withdraws from class before the established deadline for a particular term will receive a grade of "W". A student is not permitted to withdraw after the withdrawal deadline. A faculty member MAY withdraw a student up to the beginning of the final exam period for violation of the class attendance policy. A student who is withdrawn by faculty for violation of the class attendance policy will receive a grade of "W". Any student who withdraws or is withdrawn from a class during a third or subsequent attempt in the same course will be assigned a grade of "F". For a complete policy and procedure overview on Valencia Policy 4-07 please go to:

http://valenciacollege.edu/generalcounsel/policy/

Effective July 1, 2009, for students on Bright Futures scholarships: Students who withdraw or are withdrawn from a class must pay the college for the cost of the class (because the college must refund that cost to the State).

MAKE-UP POLICY: Make-up work (assignments, quizzes, exams) will be allowed in cases of documented student emergencies. For student emergencies, it is the student's responsibility to contact the instructor and provide documentation within one week unless special arrangements have been made previously.

ACADEMIC HONESTY: Each student is required to follow Valencia policy regarding academic honesty. All work submitted by students is expected to be the result of the student's individual thoughts, research, and self-expression unless the assignment specifically states "group project." Any act of academic dishonesty will be handled in accordance with Valencia policy as set forth in the Student Handbook and Catalog.

Students who make their work available to others will also be considered to have been dishonest. Clarification: If someone passes in your homework with their name on it, you have both broken the academic honesty policy.

COLLEGE POLICIES:

A full description of all College policies can be found in the College Catalog: http://valenciacollege.edu/catalog

Policy Manual: http://www.valenciacollege.edu/generalcounsel/policy

Student Handbook: http://valenciacollege.edu/studentdev/CampusInformationServices/

IMPORTANT DATES:

Students may withdraw themselves and receive a W up until **July 7, 2017** 11:59 pm. Students may not be withdraw themselves after that date.

- **Classes start** May 8
- **No-Show** May 16
- **Withdraw (W)** July 7
- **End of Semester** August 1

- **College Closed** May 29, July 4

See College calendar for important dates and final exam schedule at http://valenciacollege.edu/calendar

SPECIAL RULES:

All email communication with DrA will be by BlackBoard email (this is for organizational purposes).

STUDENTS WITH DISABILITIES: Students with disabilities who qualify for academic accommodations must provide a Notification to Instructor (NTI) form from the Office for Students with Disabilities (OSD) and discuss specific needs with the professor, preferably during the first two weeks of class. The Office for Students with Disabilities determines accommodations based on appropriate documentation of disabilities.

East Campus Bldg. 5, Rm. 216 Ph: 407-582-2229 Fax: 407-582-8908 TTY: 407-582-1222
West Campus SSB, Rm. 102 Ph: 407-582-1523 Fax: 407-582-1326 TTY: 407-582-1222
Osceola Campus Bldg. 1, Rm. 140A Ph: 407-582-4167 Fax: 407-582-4804 TTY: 407-582-1222
Winter Park Campus Bldg. 1, Rm. 212 Ph: 407-582-6887 Fax: 407-582-6841 TTY: 407-582-1222

STUDENT ASSISTANCE PROGRAM: Valencia students can get immediate help with issues dealing with stress, anxiety, depression, adjustment difficulties, substance abuse, time management as well as relationship problems dealing with school, home or work. BayCare Behavioral Health Student Assistance Program (SAP) services are free to all Valencia students and available 24 hours a day by calling (800) 878-5470. Free face-to-face counseling is also available.

DISCLAIMER: Changes may be made at the discretion of the instructor. Any changes to this document during the semester will be delivered to each student by BlackBoard email.

SCHEDULE OF TOPICS COVERED:

This schedule is tentative; including the order. We may adjust the schedule depending on performance and interests of the class.

1. Review primitive parts of the language (before classes and objects) – focus on detail, rules of legality and rules of convention.

2. Less used primitives: break and continue, and labeled break and continue.

3. Review of: Object-oriented concepts, classes, objects, interfaces. Abstract classes, overriding, overloading.

4. OO concepts: abstraction, encapsulation, cohesion, coupling, polymorphism.

5. Exception Handling. Throwing and catching exceptions. Creating customized exceptions.

6. Creating Graphical User Interfaces (GUIs). Handling events. MVC (Model-View-Controller) architecture.

7. Mechanisms that are best demonstrated using GUIs: interfaces, inner classes, local classes, anonymous classes.

8. Files, Streams, and input/output in Java. Byte streams and character streams. The inheritance hierarchy of the stream classes. Object serialization, and input/output of objects. Transient data members.

9. Collections with generics. ArrayList. Vectors, linked lists, maps, and others. Enumeration of items in the utility classes using Iterators.

10. Threads. How threads synchronize and communicate. Thread scheduling, and problems with thread scheduling, including deadlock and starvation. The Runnable interface. Creating Runnable classes.

11. Regular expressions. Processing unformatted data to extract information.

12. Database access with Java. Creating and updating relational databases using the JDBC.

13. Pulling it all together with a 3-tier application.

Course Learning Outcome	Evidence of Learning
The student will be able to define classes, and create objects. This is a review topic from COP 2800.	• Write code that defines classes that correctly employ all of the access modifiers. • Write code from a problem statement that correctly uses the keywords 'this' and 'super.' • Write code that correctly implements accessors, mutators, and method overloading.
The student will be able to create inheritance hierarchies, and to create and implement interfaces.	• Write and analyze code that consists of multiple levels of inheritance. • Write code to create interfaces, and create classes that implement those interfaces. • Write code that demonstrates polymorphism using inheritance hierarchies, and using interfaces as a compile time data type.
The student will be able to throw and catch exceptions.	• Write code that effectively uses the try-catch- finally structure. • Create exceptions classes, and distinguish between run- time errors, and run time exceptions. • Write code that uses the 'assert' mechanism correctly

The student will be able to create multi-threaded programs.	• Write code that extends the Thread class, and implements the Runnable interface. • Write code that creates multi-threaded programs that coordinate, and share data among the threads. • Effectively use the 'synchronized' keyword to protect resources shared among threads.
The student will be able to write code that uses the major classes in the Collections framework.	• Describe the Collections classes hierarchy. • Write code that uses collections classes, including Sets, Lists, and Maps. • Use Collections classes that include generics. • Create simple Generic classes.
The student will be able to create simple user interfaces, that listen for and respond to events.	• Write code that displays windows, and various JFC components. • Create user interfaces using the most common layout managers. • Write code that handles events generated by the Swing components.
The student will be able to write code that creates and modifies a relational database.	• Write code that connects to an existing database using the JDBC:ODBC bridge. • Write code to perform common SQL queries to retrieve data, and modify data in the database.