

CSCI310: Advanced Programming: Java

1.	Course Prefix and number	CSCI 310
2.	Number of semester hours	3 An undergraduate student should expect to spend on this course a minimum of two hours outside the classroom for every hour in the classroom. The outside hours may vary depending on the number credit hours or type of course. More details are available from the faculty member or department office and in CMU's <i>Curriculum Policies and Procedures Manual</i> .
3.	Pre-requisites	CSCI 110 or CSCI 111
4.	Location of classroom and time course meets	WS 113 11:00-12:14 Tue,Thu
5.	Intstructor Web Page	Dr. Warren MacEvoy http://www.coloradomesa.edu/~wmacevoy
6.	Office Hours	See my web page.
7.	Course Description	We will learn how to use java for developing applications; directed towards students with familiarity with other programming languages.
8.	General Education Objectives	This is not a general education course.
9.	Textbook and Materials	None.
10.	Course Objectives	Learn about Java, the relationship between Java and Android, and develop applications that interoperate with other JVM languages.
11.	Policy on absences and	You are expected to attend class, including in particular days where you or other students are presenting their works or reviews.

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12.	Policy on late work	If a student needs more time on an assignment, the instructor needs to be contacted before the assignment is due.
13.	Policy on academic dishonesty	It is illegal to plagiarize content, or to use content not permitted by copyright policy. It is dishonest to claim other's work as your own or use tools outside the scope of the projects to build your website. You may be given a failing grade on a project or the course overall for academic dishonesty.
14.	Disability Arrangements	In coordination with Educational Access Services, reasonable accommodations will be provided for qualified students with disabilities. Please meet with the instructor the first week of class to make arrangements. Educational Access Services can be contacted at 248-1801, or in person in Houston Hall, Suite 108.
15.	Evaluation and grading	Tests and assignments will be graded on a combination of objective and subjective basis. You will be graded on programming projects and tests.
16.	Major assignments	TBD
17.	Course Topics	• JVM • Java • Android

Week	Tue	Thu
17-Aug	Tue 19-Aug 1	Thu 21-Aug 2
24-Aug	Tue 26-Aug 3	Thu 28-Aug 4
31-Aug	Tue 02-Sep 5	Thu 04-Sep 6
7-Sep	Tue 09-Sep 7	Thu 11-Sep 8
14-Sep	Tue 16-Sep 9	Thu 18-Sep 10
21-Sep	Tue 23-Sep 11	Thu 25-Sep 12
28-Sep	Tue 30-Sep	Thu 02-Oct

	13	14
5-Oct	Tue 07-Oct 15	Thu 09-Oct 16
12-Oct	Tue 14-Oct 17	Thu 16-Oct 18
19-Oct	Tue 21-Oct 19	Thu 23-Oct 20
26-Oct	Tue 28-Oct 21	Thu 30-Oct 22
2-Nov	Tue 04-Nov 23	Thu 06-Nov 24
9-Nov	Tue 11-Nov 25	Thu 13-Nov 26
16-Nov	Tue 18-Nov 27	Thu 20-Nov 28
23-Nov	Tue 25-Nov *Thanksgiving*	Thu 27-Nov *Thanksgiving*
30-Nov	Tue 02-Dec 29	Thu 04-Dec 30
7-Dec	Tue 09-Dec 10:00-11:50 Final	Thu 11-Dec *Finals*

DAY	TOPIC	DESCRIPTION
1	overview	understanding the java context
2	tools	netbeans/android studio/maven
3	intro/1	hello world
4	intro/2	Java

Create a “Hello World” JavaFX/FXML application Due sep 4.

Create an application (Java, FX optional) that takes advantage of a collection in some way. Extra credit for documentation (using at least some of the @keywords used correctly) using javadoc. It is fine to extend the last project, but explain the changes that apply to this project. Due Sep 23.

Create a model or something (Java, FX optional) that uses classes, abstract classes, anonymous inner classes, interfaces, and lambda expressions. Due: Oct 14. ClassesAndInterfaces demonstrates an example of all these (source on K drive).

Create an application that uses threads & synchronization due Oct 28. (Example source in Threading on K drive). Add a readme to explain what parts apply to this project if useful.

Create an application that uses a database for storage of something. Due Nov 4 (Nov 11 if you are going to the programming contest).

EITHER (Due by finals):

1. Create an application that uses some standard tool set for serialization (Serializable, Gson, ProtocolBuffers, or an ORM like cayenne. Send data into a DB, or save to file, or a client/server connection...
2. Create an android application (it can be simple)

OR

Propose a final project.

Resources

Android Studio

Android Studio download does not contain SDK

Download SDK Tools separately (put it in like /Developer/android-sdk-macosx, or c:/sdk/android-sdk-windows)

Start studio ->

Configure -> Project Defaults -> Project Structure -> [Put in the directory above in box] backup

Configure -> SDK Manager (used to be greyed out) check off x86 accel (last package) and choose "install 17ish packages" wait....

[Java Class Notes](#)

<http://www.oracle.com/technetwork/java/javase/downloads/jdk-netbeans-jsp-142931.html>

<http://www.oracle.com/technetwork/java/javase/downloads/sb2download-2177776.html>

<https://netbeans.org/>

<http://maven.apache.org/>

<https://github.com/>

Adding SQLite to your project:

Download JDBC sqlite connector from

<https://bitbucket.org/xerial/sqlite-jdbc/downloads/sqlite-jdbc-3.8.6.jar>

Create “lib” folder (like c:/projects/java/SQLite/lib) in your project root directory and place this jar file in that directory.

OS X: You have sqlite

Ubuntu: sudo apt-get libsqlite3-dev

Windows: <http://sqlite.org/2014/sqlite-dll-win32-x86-3080600.zip>

Unzip file and place sqlite3.dll in your lib directory

project (right click on project in solution explorer)->project properties->run->VM Options

Add -Djava.library.path=”c:\projects\java\SQLite\lib” (wherever you put it) to the VM

Options

Installing Android Studio

Download [android studio](#)

On OSX the [SDK is a separate download](#) - your mileage may vary, I installed it in /Developer/android-sdk-macosx. Run the tools/android, I checked the Intel x86 Emulator Accelerator but left the other defaults alone. Then “Install 17 packages”

When launching android studio, drive through

configure|project defaults|project structure|sdks

To pick off the SDK (if you see no whining, it might be part of the install already for you)