

VALENCIA COLLEGE

Course Syllabus Spring 2016

COURSE: COP 2660 Android App Development

PROFESSOR: Dr. Colin Archibald (Dr. A.)
Office: West Campus 7-127
E-mail: CArchibald@valenciacollege.edu (Please Use Blackboard email system)
Phone number: (407) 582-1517
Skype: Dr.Colin.Archibald

Student engagement hours:

Office Hours

M 5:00 PM - 6:00 PM In my office West 7-127, also available online
T 6:00 PM - 7:00 PM In my office West 7-127, also available online
W: 4:30 PM – 5:30 PM In my office West 7-127, also available online
R: 4:00 PM – 6:00 PM In my office West 7-127, also available online
F: 9:00 PM - 2:00 PM Online in Skype, email communication including in Blackboard.

Connecting in Skype is by far the easiest way to meet with me.

Catalog Description:

Hands-on application development for Android devices. Native Android apps will be written in Java and executed in an emulator. Topics include the application architecture, user interface, data persistence, graphics, multimedia, and location-based services. Advanced apps will communicate with device sensors including the accelerometer, microphone and camera. The business of app development is explored, including distributing in the Android Market. Owning an Android device is not required.

CRN: 27986

Credit Hours: 3.0

Prerequisite: COP2800 Java Programming with a grade of C or better.

Meeting places and times: Tuesday 7:00 PM – 8:45 PM, Room 7-129 West Campus

COURSE OUTCOMES:

Students will be able to:
• create simple applications that run on the Android emulator
• create mobile applications that include common user interface widgets and perform event handling.
• utilize online documentation that describes and demonstrates the use of API's.
• create mobile applications that include data persistence using onboard files and databases.
• create mobile applications that use existing API's for communication with onboard sensors and actuators.
• demonstrate knowledge of how the mobile app business functions including the Android Market

EDUCATIONAL MATERIALS:

A webcam and a Skype account (free) are recommended.

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

Instructional videos on YouTube:

https://www.youtube.com/playlist?list=PLExJ0mIfzKfW6nMo_LTIXR88XLQQxytI7

Orange County Public Library Card – gives you access to Lynda.com

Android Studio, Java Developers Kit

Required Textbook:

Android Bootcamp: A Guide to Creating Your First Android Apps, Corinne Hoisington 3rd Ed., Cengage Learning 2016. ISBN 1-305-85799-2

ASSESSMENT METHODS AND EVALUATION:

- There will be weekly homework assignments for the first 8-10 weeks, then we will shift to weekly project progress reports
 - Late assignments are penalized by up to 20%
 - Assignments must be submitted in BlackBoard.
- Students will be **assigned topics** to research and present to the class. Some of these presentations will be done in pairs.
- **Final Exam Period**
 - The ‘exam’ will be your project presentation - in the usual classroom
 - The final exam in this course is MANDATORY. Any student not appearing for the exam will receive a grade of F for the course.
 - **The project presentation will be April 26, 2016**

Assignments & Progress Reports	50%
Project	40%
Presentation and Participation	10%

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:

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 **8-10 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 class on January 12 or 19, 2016.

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/> Page 4 of 6

IMPORTANT DATES:

Students may withdraw themselves and receive a W up until **April 1, 2016** 11:59 pm. Students may not be withdraw themselves after that date.

College Closed (Credit Classes Do Not Meet):

Jan 18, MLK

Feb 12, College Learning Day

Mar 7-13 Study Break

Withdraw: April 1

No Show: Jan 20

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 CLASSES:

The schedule is tentative, and more ambitious than is required in the course outcomes.

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1. Intro to Android. History, what is it?
Android physical devices, evolution.
Setting up. Using Eclipse for Android.

Set up AVD's – Android Virtual Devices.

Using the SDK Manager from within Android Studio.

Create Hello Android World, run on an AVD.

Explore the architecture, components of the Hello Android World app.

2. Activities and Views. Create a user interface. Resources, Strings, Colors.
Gain some comfort with creating apps.
Intent. Moving from one Activity to another. "Here and There" example.
The manifest, and app permissions.
Friday App Reviews, Game Reviews: Geeky edutainment.
3. Looking at existing apps. Design an app. Look at a simple app design. Look at the Android Market. Begin implementation of the reference app – "My Bowling Scores" Create the interface.
4. Get the data from the interface in the reference app. Collections, Application class, pop-up dialogs.
5. SQLite database. Putting data into the database, and retrieving it – use a ListView. Delete a database record. File I/O
6. Customize the ListView. Allow the user to delete data from the database. Clean up the interface. Test, and Deploy the App to the Android Market.
7. Getting help – StackOverflow, Google Developers Office Hours.
Audio and video playback and recording. MediaPlayer, MediaRecorder
8. The Main thread (GUI thread, and the dreaded ANR Application Not Responding exception)
Drawing on the SurfaceView. Graphics Libraries.
Dealing with various screen sizes and densities.
9. Sending Email from your app.
Communicating with the accelerometer
Services.
10. Location-based services – the GPS
11. Miscellaneous topics suggested by students (Telephony, Notifications, Widgets, Alarms, Services, Broadcasts, Broadcast Receivers, User Preferences,
12. Making money.
http://www.youtube.com/watch?v=DJdx_Wd_EOo

Marketing your app. The Android market. Other markets, the Nook, Kindle Fire, Amazon market. Advertising. The marketing Funnel.
13. WebView and Web-based apps. Tools for creating non-Java apps. PhoneGap, Titanium.
HTML-5
14. Project work.
15. Project Presentations

Course Learning Outcome	Evidence of Learning
Students will be able to create applications that run on the Android emulator	<ul style="list-style-type: none"> • Demonstrate understanding of the Android Software Stack • Create programs using the Android Developer Tools (ADT) and Java • Create and configure the Android device emulators • Create user interfaces that employ the common layout managers. • Handle events from the common widgets in the interface
Students will be able to utilize online documentation that describes and demonstrates the use of API's.	<ul style="list-style-type: none"> • Read online documentation for calling methods and integrate these into their own software projects. • Locate, download, and run example code that demonstrates the use of the common API's.
Students will be able to create mobile applications that include data persistence using onboard files and databases.	<ul style="list-style-type: none"> • Write code to open, read, write, and close files that are onboard the mobile device. • Write code that connects to a single-table database onboard the device, and execute SQL queries to insert and select data.
Students will be able to create mobile applications that use existing API's for communication with onboard sensors and actuators.	<ul style="list-style-type: none"> • Write code that uses the API's for controlling at least one of the onboard actuators • Write code that uses the API's to communicate with at least one of the onboard sensors, collecting data for use in an app.
Students will be able to demonstrate knowledge of how the mobile app business functions including the Android Market, and other ways to distribute Android Apps.	<ul style="list-style-type: none"> • Describe the various monetizing mechanisms including serving advertisements, in-app purchase, and fee for download. • Describe the alternative marketing channels for Android apps, such as Amazon Marketplace, Nook, and Kindle Fire • Describe how the Android Market has evolved into its current state, and how individuals and corporations market their apps.