ACADEMIC YEAR 2017-2018

HUDSON VALLEY COMMUNITY COLLEGE
TROY, NEW YORK

COURSE OUTLINE

COURSE TITLE: Mobile Computing Technologies

COURSE SUBJECT AND NUMBER: CISS 229

DEPARTMENT: Computing and Information Sciences

CREDIT HOURS: 3

CONTACT HOURS: ___ Lecture

SEMESTER COURSE IS OFFERED: Fall, Spring

OFFERED DISTANCE LEARNING: No

PREREQUISITES (list): Yes

CISS 100 Fundamentals of Information Processing
AND
CISS 110 Programming & Logic I
AND
CISS 220 Web Design and WWW programming
OR permission of CIS Department Chair

COREQUISITES (list): No

PRE OR COREQUISITES (list): No

TEXT(S):

Title: Programming With Mobile Applications
Author: Thomas J. Duffy
Publisher: Cengage
URL: http://www.cengagebrain.com/shop/isbn/9781133628132

Beginning Mobile Application Development in the Cloud
By Richard Rodgers, Wrox Publishing
Hard Copy or DRM-free ebook available from the publisher

**This book is also currently available via the HVCC library website as an ebook**
LAB FEES: No

FINAL EXAM/FINAL PROJECT: YES, Final Exam (or Final Project)

ORIGINAL SUBMISSION DATE: 4/12/10

CURRICULUM COMMITTEE APPROVED REVISION DATE:

PREPARED BY: Andrew Hurd

COURSE DESCRIPTION:

This course will discuss the theory and practices of programming mobile devices for modern technologies. The students will have the opportunity to program as well as test application programming for current smart phones and other 3g and 4g devices. This class is meant to be a hands-on class in mobile computing application programming. Platforms will include but are not limited to the iPhone OS and Google Android OS architectures.

ACTIVITIES AND ASSIGNMENTS:

Coursework will consist of lectures, lab activities and projects, homework, tests, and quizzes. Students will be assigned laboratory problems using mobile devices.

GRADE COMPUTATION: (In general terms as defined by college policy. Specifics, including Z grade, will be defined on the instructor’s syllabus).

Laboratory assignments, projects, in-class assignments, homework, quizzes/tests: 75%
Final Exam: 25%

ADA COMPLIANCE: In compliance with the Americans with Disabilities Act of 1990 and with Section 504 of the Rehabilitation Act, Hudson Valley Community College is committed to ensuring educational access and accommodations for all its registered students, in order to fully participate in programs and course activities or to meet course requirements. Hudson Valley Community College’s students with documented disabilities and medical conditions are encouraged to access these services by registering with the Center for Access and Assistive Technology to discuss their particular needs for accommodations. For information or an appointment contact the Center for Access and Assistive Technology, located in room 130 of the Siek Campus Center or call 518-629-7154/TDD: 518-629-7596.

STUDENT BEHAVIORAL OBJECTIVES:

Upon completion of this course, through the use of assignments, projects and assessments the student will be able to:

- identify current mobile technologies
- create applications that execute on current mobile technologies
- discuss and explain current problems with mobile technology programming
- discuss and explain the differences between multiple Mobile Technology API’s
SEMESTER OUTLINE:

First Eight weeks:

Modules:

1: Introduction to iPhone App Development
2: iPhone App Store and App Business Issues
3: Welcome App Dive-Into® Xcode, Cocoa and Interface Builder
4: Tip Calculator App Introducing Objective - C Programming
5: Favorite Twitter® Searches App Collections and Cocoa GUI Programming
6: Flag Quiz Game App Controllers and the Utility Application Template
7: Spot-On Game App Using UIView and Detecting Touches
8: Cannon Game App Animation with NSTimer and Handling Drag Events
9: Painter App Using Controls with a UIView
10: Address Book App Tables and UINavigationController
11: Route Tracker App Map Kit and Core Location (GPS and Compass)
12: Slideshow App Photos and iPod Library Access
13: Enhanced Slideshow App Serialization Data with NSCoder and Playing Video
14: Voice Recorder App Audio Recording and Playback
15: Enhanced Address Book App Managing and Transferring Persistent Data
16: Twitter® Discount Airfares App Internet Enabled Applications

Second Eight weeks:

Modules:

1: Introducing Android
2: Your Android Development Environment
3: Writing Your First Android Application
4: Understanding the Anatomy of an Android
5: Managing Application Resources
6: Exploring User Interface Screen Elements
7: Designing Android User Interfaces with Layouts
8: Drawing and Working with Animation in Android
9: Using Android Data and Storage APIs
10: Using Android Networking APIs
11: Using Location-Based Services (LBS:APIs
12: Using Android Multimedia APIs
13: Using Android Telephony APIs
14: Using Android 3D Graphics with OpenGL ES
15: Using Android’s Optional Hardware APIs
16: Working with Notifications
17: Working with Services
18: The Mobile Software Development Process
19: Developing and Testing Bulletproof Android
20: Selling Your Android Application

Benefits for Veterans:

https://www.hvcc.edu/veterans/
Mobile application development is the process of creating software applications that run on a mobile device, and a typical mobile application utilizes a network connection to work with remote computing resources. Hence, the mobile development process involves creating installable software bundles (code, binaries, assets, etc.), implementing backend services such as data access with an API, and testing the application on target devices. These back-end services are typically accessed through a variety of application programming interfaces, most commonly known as APIs. There are different types of APIs, such as REST and GraphQL, and there are also a wide variety of means and styles of accessing them. In terms of mobile apps, C++ has been doing exceptionally well since it helps develop cross-platform mobile apps easily with its unified debugging experience and powerful environment. It can be used to create stunning apps for Android, Windows, and iOS. Not just mobile apps, but C++ has the potential to create some of the biggest tools like Google Chrome, Amazon, PayPal, World of Warcraft, Photoshop, and many others. SQL is not a language that is used for developing mobile apps but it supports applications. Mobile apps where you have to access data from the server, SQL will be used. Essentially, it is the single language that will be integrated with most of the mobile apps. Learning SQL is, therefore, crucial. Key features