CLEVELAND INSTITUTE OF ELECTRONICS SYLLABUS

Course Number: K900

Course Name: Mobile Applications Programming

Course Clock Hours: 120 Clock Hours

Course Prerequisites: None

Course Co-requisites: None

Course Contact Information: **www.cie-wc.edu** **faculty@cie-wc.edu**
http://cie-wc.edu/Student-services-policies.aspx 1-800-243-6446 (216) 781-9400 (216) 781-0331 (fax)

Course Description: This course was designed to introduce students on how to start developing smartphone apps on three major platforms. The course includes hands-on tutorials with screenshots and step-by-step instructions to guide students in developing applications for Google Android, Apple iOS, and Windows Phone 7. Featured topics of discussion are installation and setup, best practices for small device programming, Google Android App Inventor, Google Android: Motorola MOTODEV Studio, Apple iOS, Microsoft Windows Phone 7 and Cross-Platform Development with PhoneGap.

Course Objectives: Upon the completion of this course the student will be able to:

- Create native apps for the three major smartphone platforms
- Develop identical apps for each platform and compare the different development processes
- Analyze current best practices for application development
- Understand and practice methods in topics such as optimization and object-oriented programming
- Gain a deeper understanding of programming principles

Course Readings: The required readings will be drawn from a textbook published by Course Technology/Cengage Learning. The author is Thomas J. Duffy. The title of the textbook is Programming with Mobile Applications – Android™, iOS, and Windows® Phone 7 (ISBN: 9781133628132). Students should complete the required readings and solve all problems in the exercise sections before continuing to the next topic.

Student Evaluation, Grading and Assessment: Each of the ten lessons concludes with an examination; all examinations are open book. The examinations consist of multiple-choice questions (MCQs) that measure cognitive learning levels. The minimum passing score of 70% must be achieved but if the score is less than 70%, the examination must be retaken to earn a passing score of 70% for the lesson. The ten examination scores are averaged together and constitute the course grade. Course requirements include maintaining an overall GPA of 78% or better to graduate.

93% - 100%	A	The final grade for this course will be determined as follows:	
86% - 92.9%	B	Ten examinations =	100%
78% - 85.9%	C	Total =	100%
70% - 77.9%	D		

Course Schedule: You should complete the following lessons in the order shown in the table. It is best to complete 1-2 lessons per week to maintain your schedule.

Lesson Number	Title of Lesson	Topics Covered
9001C	Computer of the Future	• Define programming terms • Describe the three major smartphone platforms • Define what a smartphone is • Explain current device capabilities
9002C	Small Device Development	• Summarize the similarities and differences between platforms • Explain the life cycle of an app on each platform • Compare life cycle features in each platform
9003C	Small Device Programming	• Describe best practices for smartphone development • Explain object-oriented programming techniques, including encapsulation, inheritance, and polymorphism • Optimize your code for smartphones
9004C	Android App Developer	• Describe the Android architecture • Use Google App Inventor to create Android apps • Deploy an app created with App Inventor
9005C	MOTODEV studio	• Distinguish between Eclipse and MOTODEV Studio • Use MOTODEV Studio to create Android apps • Write a basic game program that draws onscreen
9006C	Apple iOS	• Write code with Objective-C • Compare Objective-C syntax and metaphors with Java syntax and metaphors • Run apps in the iOS simulator
9007C	Windows Phone 7	• Compare C# with Java and Objective-C • Work with properties in C# • Use the Windows Phone Location service
9008C	Web Applications	• Determine when users access your Web pages with a mobile device • Choose tools for creating Web page files • Use HTML and CSS as the view layer in Web pages • Test Web pages in different emulators
9009C	Cross-Platform Development	• Create cross-platform smartphone apps with PhoneGap • Create PhoneGap projects for Android and iOS • Add existing files to projects in MOTODEV Studio and Xcode • Use an Android handset in MOTODEV Studio
9010C	Final Exam	• Course overview