SPRINGFIELD TECHNICAL COMMUNITY COLLEGE

ACADEMIC AFFAIRS

DEVELOPED BY: KOBI SHEMESH

Course Title: Mobile Programming Department: Computer Information Technologies

Course Number: PROG–320 Credits 3

Prerequisites: PROG-116 OR PROG-407 Semester: Spring Year: 2013

Objectives/Competencies

Course Objective	Competencies
1. What you need to know to start developing smartphone apps on the three major platforms.	1. Define Programming terms 2. Describe the three major smartphone platform 3. Choose a target platform 4. Describe available development tools 5. Define what a smartphone is 6. Summarize the smartphone history 7. Explain current devices capabilities
2. The architecture and life cycle events for each platform	1. Describe the architecture of each platform 2. Summarize the similarities and differences between platforms 3. Explain the life cycle of an app on each platform 4. Compare life cycle features in each platform
3. Best practices for software development in the context of the smartphone	1. Describe best practices for smartphone development 2. Explain object-oriented programming techniques, including encapsulation, inheritance, and polymorphism 3. Use design patterns 4. Optimize your code for smartphones

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4. App Inventor tool offered by Google	1. Describe the Android architecture 2. Use Google App Inventor to create Android apps 3. Use the App Inventor app designer 4. Use the App Inventor Blocks Editor 5. Use non-visible components 6. Incorporate messaging, locations, and media into an app 7. Deploy an app created with App Inventor
5. Android development in the traditional way using a dedicated IDE – in this case Motorola's MOTODEV Studio for Android.	1. Distinguish between Eclipse and MOTODEV Studio 2. Use MOTODEV Studio to create Android apps 3. Create Android Services and Broadcast Receivers 4. Create a standard "Hello World" app that displays an alert message 5. Handle click and touch events 6. Write a basic game program that draws onscreen 7. Use the Java Timer and TimerTask classes 8. Create context menus 9. Store and retrieve app data 10. Play sounds in code 11. Use the Location API 12. Send and receive text (SMS) messages
6. Apple iOS	1. Write code with Objective-C 2. Compare Objective-C syntax and metaphors with Java syntax and metaphors 3. Manage memory in Objective-C 4. Describe the iOS development process 5. Use Xcode and Interface Builder to create iOS apps 6. Make use of delegates 7. Use the Delegate and Model-View-Controller design patterns 8. Run apps in the iOS simulator

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7. Windows Phone 7. It introduces students to C#, Visual Studio, and the WinPhone 7 development process.	1. Compare C# with Java and Objective-C 2. Work with properties in C# 3. Use Visual Studio 2010 Express 4. Create Silverlight apps for Windows Phone 7 5. Use the XAML language to create user interfaces for Windows Phone 7 apps 6. Code events and event handlers with Visual Studio 2010 7. Use the Delegate design pattern to create events and event handlers in C# 8. Run apps in the Windows Phone 7 emulator 9. Package and deploy Windows Phone 7 apps 10. Create and send an SMS (text) message 11. Use the Windows Phone 7 Location service
8. Overviews of web technologies: HTML, CSS, and JavaScript. How to launch platform emulators without using the coding tools and then loading web pages into the emulator browser	1. Determine when users access your Web pages with a mobile device 2. Choose tools for creating Web page files 3. Use File Transfer Protocol to upload files to a Web server 4. Use JavaScript as the programming language for Web pages 5. Design and create JavaScript objects 6. Use HTML and CSS as the view layer in Web pages 7. Test Web pages in different emulators
9. PhoneGap – an open-source, cross-platform tool for creating native apps using Web technologies.	1. Create cross-platform smartphone apps with PhoneGap 2. Create PhoneGap projects for Android and iOS 3. Use different strategies for PhoneGap development 4. Use existing Web projects to create native apps built with PhoneGap 5. Create Web files in MOTODEV Studio and Xcode 6. Add existing files to projects in MOTODEV Studio and Xcode 7. Use the PhoneGap Geolocation API 8. Use an Android handset in MOTODEV Studio