Miami Dade College

Course Description
COP2662 | Android Application Development 2 | 4.00 credits
This course for majors in Computer Science, Computer Information Systems, and related disciplines teaches how to develop advanced Android applications. Students will learn how to create applications utilizing the advanced capabilities of Android smartphones, including interfacing the application to the device's content provider's databases, GPS and location-based services, notifications, background threads, audio, video, SMS, motion sensors, and network connectivity. Prerequisites: COP2660, 2800.

Course Competencies:
Competency 1: The student will demonstrate how to use the local media content provider by:
1. Creating, modifying, or editing existing event information within the Android Calendar
2. Creating, modifying, or editing existing contact information within the Android Contacts

Competency 2: The student will demonstrate an understanding of GPS and location-based services by:
1. Accessing the audio and video media lists within the Android Media Store
2. Utilizing the appropriate location provider to find the physical location of the device
3. Creating map-based activities to show the current location of the device

Competency 3: The student will demonstrate how to utilize notifications by:
1. Creating a notification and configuring the status bar icon
2. Triggering notifications and utilizing the device's audio, LEDs, and vibrating motor to notify the user

Competency 4: The student will demonstrate how to use background threads by:
1. Creating and controlling background services
2. Registering a background service in the manifest

Competency 5: The student will demonstrate how to use the audio and video hardware by:
1. Preparing audio and video for playback utilizing the media player interface
2. Preparing audio and video for recording utilizing the media recorder interface
3. Controlling the camera and taking pictures

Competency 6: The student will demonstrate how to create SMS communication by:
1. Utilizing the SMS manager to send SMS messages
2. Handling and parsing incoming SMS messages

Competency 7: The student will demonstrate how to use the device's motion sensors by:
1. Employing the sensor manager to identify the available sensors
2. Employing the sensor manager to read the compass, accelerometer, and orientation sensors
3. Interpreting the sensor values

Competency 8: The student will demonstrate how to establish network connectivity by:
1. Utilizing Bluetooth to create a connection with another Bluetooth device
2. Establishing a TCP/IP wireless connection to a remote address

Learning Outcomes:
- Use quantitative analytical skills to evaluate and process numerical data
- Solve problems using critical and creative thinking and scientific reasoning
- Use computer and emerging technologies effectively

Updated: Fall 2025