APT3060: Mobile Programming

Prerequisite: APT 1030: Fundamentals of Programming

APT 3040: Object Oriented Analysis and Design & Programming

3 Credit Units

Course Rationale

This course involves a careful examination of mobile device programming. Emphases are on developing applications as a community that run on the Android platform. This course will also give students insight to today's common procedures for getting their mobile application work academically published.

Course Description

This module develops an understanding of the principal ways in which a mobile computer, or device, can access a network and includes practical laboratory work. Specifically, it aims to develop an understanding of the design, characteristics and operation of a number of networks supporting mobility. The course focuses upon Wireless Local Area networks in the home, hotspots and business, and mobile computing. A central theme is the associated protocols including use of the Internet Protocol in mobile scenarios. The use of GSM and 3G cellular networks to interconnect mobile computing devices is explained. The module includes descriptions of radio propagation and antennas related to wireless networking

Course learning outcomes

At the end of the course, students should be able to:

1. Develop and deploy an Android application
2. Apply skills to work with Unix version control system
3. Create mobile application

Course Content

J2ME Basic: Small Computing Technologies ; Mobile Radio Networks;Cellular Tel. Networks; Difference: Analog and Digital; Networks;Cellular Digital Packet Data; Digital Wireless Transmission;Messaging; PDA;Mobile power;Set Top Boxes;Smart Cards; J2ME Overview;Java;JVM; J2SE;J2EE; Birth of J2ME; Inside J2ME;J2ME Architecture: Configurations; Profiles; Wireless Toolkit; How to install J2ME app. In Mobile**J2ME User interface:** Display; Commands; Items; Event Processing Exception Handling; High- Level Display; Screens; Alert; Form; Item; DateField; Gauge; StringItem; TextField; ImageItem; List; TextBox; Low-Level Display: Canvas; User Interactions; Graphics: Clipping Region Animation;J2Me Management:Record Data Management : Record Storage; Accessing Records; Sorting & Searching. **Exploring MIDlet IO:** Introduction to MIDP : Networking; InputStream; OutputStream; Communicating Across; Network