Tulane University

Sponsored by NIH/Fogarty International Center

Using Mobile Technologies to Conduct PDA-Based Surveys in Remote Areas

Course starts: Open Enrollment

Course ends: Seven weeks from date of registration
Level of Training: Knowledgeable
Contact Hours: 8
Instructor: Jeffrey Shaffer, PhD and Christopher Swalm, MS

Course Description: This course provides instruction on the use of mobile technologies for conducting PDA-based surveys in remote areas. A case study is presented for Chagas' disease in two rural Mexican communities. The course topics include the classification and application of PDA-based electronic forms, PDA-based electronic form design, data collection methods for PDA-based surveys, and preparation and visualization of data collected using PDA devices. These methods are intended to facilitate data collection in remote areas. The topics covered in this course include:

- Module 1: Mobile Device Technologies and Applications Overview
- Module 2: Completion of Mobile Device Technologies and Applications Overview
- Module 3: Hardware/Software Setup for PDA/GPS
- Module 4: Continuation of Hardware/Software Setup for PDA/GPS
- Module 5: PDA/GPS Device Demonstration
- Module 6: Motivation and Practices
- Module 7: PDA-based Electronic Form Design I
- Module 8: PDA-based Electronic Form Design II
- Module 9: Data Preparation, Management, and Visualization
- Module 10: A Complete Case Study

Learning Objectives:

Module 1: Mobile Device Technologies and Applications Overview

- Describe the course structure.
- Explain the motivation for the use of mobile device based surveys.
- Name various forms of technology currently under development and use in remote areas of the globe.
- Describe what will be explored for the remainder of the hardware modules.

Module 2: Completion of Mobile Device Technologies and Applications Overview

- Illustrate recent innovations in Smartphone technology that broaden the scope of applications in mobile health technology
- Complete the introduction to selected forms of technology currently under development and use for mobile health applications in remote areas of the globe (Netbooks, Satellite systems).

- Begin the detailed introduction to the PDA/GPS device for health data collection.
- Describe what will be explored for the remainder of the hardware modules.

Module 3: Hardware/Software Setup for PDA/GPS
- Illustrate and describe a small assortment of hardware devices that can be assembled and prepared for mobile health applications.
- Identify and illustrate loading procedures of PDA operating system modules required for interface to selected software used in mobile health applications.
- Identify and illustrate loading procedures for commercial market software used in mobile health applications.

Module 4: Continuation of Hardware/Software Setup for PDA/GPS
- Illustrate the installation of the compact SQL communications' modules required by the GPS Sample software.
- Illustrate the installation of the GPS Sample software.
- Show various post processing outcomes using the data collected by the PDA/GPS.

Module 5: PDA/GPS Device Demonstration
- Demonstrate the use of GPS Sample in the field.

Module 6: Motivation and Practices
- Describe the format for Part II.
- State the course competencies for Part II.
- Define three classifications of electronic forms.
- Identify several software applications for developing PDA-based electronic forms.
- Use data synchronization software to transfer files between a PC and a PDA.
- Capture PDA screenshots.

Module 7: PDA-based Electronic Form Design I
- Identify several issues involved with setting up mobile-based forms for household survey questionnaires.
- List the basic requirements for developing mobile-based forms.
- Identify the components of mobile-based forms.
- Describe the steps for constructing mobile-based forms.
- Understand the structure of mobile tables and describe how they relate to mobile-based forms.
- List the basic control types associated with mobile-based forms.

Module 8: PDA-based Electronic Form Design II
- Define and understand events, commands, and macros.
- Understand the usefulness of programmed skip logic and learn how to incorporate it into an electronic form.
- Learn the structure of a skip logic macro.
- Understand how to lay out an electronic form to optimize ease of use and space usage.

Module 9: Data Preparation, Management, and Visualization

- Upload a mobile table to a PC.
- Import a mobile table into Microsoft Excel.
- Link survey data with geo-referenced data using Microsoft Excel and ArcGIS.
- Outline the process for creating a dot map of survey respondent locations.

Module 10: A Complete Case Study

- Outline a plan for developing PDA-based electronic forms for conducting a household survey.
- Develop a paper-based questionnaire.
- Construct a PDA-based e-form.
- Enter data into the e-form and upload the resulting table onto a PC.

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http://lms.southcentralpartnership.org