

ITMD 455 SYLLABUS

ITMD 455 Open-Source Intelligent Device Applications

Hours: 3 credit hours / 45 contact hours

Instructor: James Papademas

Textbook, title, author, and year: *Professional Android 4 Application Development*, Reto Meier, 2012

Specific course information

- a. **Catalog description:** Intelligent device application development is covered with various technologies on mobile and robotic platforms. Utilizing contemporary toolkits, the student considers design and development on emulated and real "smart" devices including smart phones, personal digital assistants, sensors, actuators, and robots. Numerous exercises reinforce concepts gained throughout the course. A term project will integrate course topics into a comprehensive intelligent device application.
- b. **Prerequisites:** ITM 311

Specific goals for the course

- a. **Course Outcomes:** Engage students in learning about Mobile Application development. This section will focus on mobile applications for Android platforms. Students will learn how to successfully build and publish apps for the Android Marketplace.
- b. **Course student outcomes:**
 - Describe technical challenges posed by current mobile devices, including competitive devices and wireless communications; evaluate and select appropriate solutions.
 - Describe the need to keep up with rapid changes and new developments.
 - Identify current trends in mobile communications technologies and systems.
 - Use mobile analytics.
 - Select and evaluate suitable software tools and Google APIs for the development of a particular mobile application and understand their strengths, scope and limitations.
 - Use an appropriate application development to design, write and test small interactive programs for mobile devices (cells or tablets).
 - Demonstrate a deployable working app to sites such to Google's Play store and similar type stores.
 - Work a fully documented prototype model of the app and presentation of the mobile app. Themes are selected based on current trends in the mobile world.

Topics to be covered

- a. Course overview: Android versioning, the SDK/Studio IDE overview; Gradle The AVD.
- b. Android features and capabilities.
- c. App Creation Essentials.
- d. UI layouts.
- e. Life Cycles.
- f. Android Architecture.
- g. Intents, Splash screens.
- h. Creating Views.
- i. Adapters.
- j. File Processing.
- k. XML parsing vs. JSON parsing.
- l. Fragments.
- m. Advanced interfaces-Navigation Drawer, Tabbed Layouts.
- n. SQLite database: Content Providers, Preferences, Cursors, LogCat, Master / Detail
- o. Concurrency, background services.
- p. Advanced UX.
- q. Intro to APT's- Google, Facebook, Firebase
- r. Distribution of App on the Play Store.
- s. Marketing your App.
- t. Final project