MOBILE APPLICATION DEVELOPMENT
CSIT 2250

Class Hours: 2.0
Credit Hours: 3.0
Laboratory Hours: 2.0
Revised: July, 2015

Instructor:
Office:
Phone:
Email:

Catalog Course Description:
A study of mobile computing devices with emphasis on development of mobile computing applications using the Android platform. Topics include mobile computing hardware and technologies, Android development environment, Android application components, Android user interface design principles, and Android APIs.

Entry Level Standards:
Students should have familiarity with the Windows/Linux/Unix operating system and an integrated program development environment such as NetBeans or Eclipse. In addition, students are expected to have knowledge of Java programming fundamentals and graphical user interface design concepts.

Prerequisites: CSIT 1520 or department approval.

Corequisites: None

Textbook(s) and Other Course Materials:
Required:

Optional:

I. Week/Unit/Topic Basis:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to mobile technologies and devices</td>
</tr>
<tr>
<td>2</td>
<td>Android platform and applications overview</td>
</tr>
<tr>
<td>3</td>
<td>Introduction to Android development environment</td>
</tr>
<tr>
<td>4</td>
<td>Writing first Android application</td>
</tr>
<tr>
<td>5</td>
<td>Understanding anatomy of an Android application</td>
</tr>
<tr>
<td>6</td>
<td>Managing application resources</td>
</tr>
<tr>
<td>7</td>
<td>Essentials of Android user interface design</td>
</tr>
<tr>
<td>8</td>
<td>User interface design layouts and event handling</td>
</tr>
<tr>
<td>9</td>
<td>Working with fragments and dialogs</td>
</tr>
<tr>
<td>10</td>
<td>Working with texts and shapes</td>
</tr>
<tr>
<td>11</td>
<td>Working with animations</td>
</tr>
<tr>
<td>12</td>
<td>Using Android location based APIs</td>
</tr>
<tr>
<td>13</td>
<td>Using Android storage APIs</td>
</tr>
<tr>
<td>Week</td>
<td>Topic(s)</td>
</tr>
<tr>
<td>------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>14</td>
<td>Using Android web APIs</td>
</tr>
<tr>
<td>15</td>
<td>Final Exam Period</td>
</tr>
</tbody>
</table>

II. Course Goals*:

The course will

A. Enhance student’s understanding of mobile computing technologies and devices.
B. Guide students to write mobile applications using the Android platform.
C. Expand student understanding of advanced Java programming concepts and integrated software development environment. (III, IV, V)
D. Guide students to understand and use Android APIs. (IV, V)
E. Enhance effective use of object-oriented programming concepts and software development principles. (III, IV)
F. Guide students to understand GUI design principles for mobile applications. (I, II)

*Roman numerals after course objectives reference goals of the CSIT program.

III. Expected Student Learning Outcomes*:

Students will be able to:

1. Explain mobile technologies and Android platform and its components. (A, B)
2. Write, run and debug mobile applications. (B, C, D, F, E)
3. Perform mobile application tasks with activities, intents, services and manifest file. (B, D, F)
4. Create and use different types of application resources. (B, C, D, E)
5. Explain mobile application life cycle. (B, D)
6. Write mobile apps using GUI elements such as text views, buttons, check boxes, spinner controls, indicators and layouts. (A, B, C, D, E, F)
7. Understand and use event handling, fragments and dialogs. (A, B, D, F)
8. Draw basic shapes and apply paint gradients, styles and colors to shapes. (B, D, F)
9. Draw text and apply default font typefaces and styles. (B, D, F)
10. Write apps using frame-by-frame and tweened animations. (B, C, D, E, F)
11. Create GPS enabled apps to geocode locations and to provide mapping features using Google maps and MapView widget. (B, C, D, E, F)
12. Create, update and modify SQLite databases and interface files, directories and databases from apps. (B, C, D, E)
13. Write apps to display and retrieve web contents via Intent and WebView control. (A, B, C, D, E)
14. Generate project documents such as requirement specifications document, design document and test document. (A, C, E)

* Capital letters after Expected Student Learning Outcomes reference the course goals listed above.

IV. Evaluation:

A. Testing Procedures: 40% of grade
   At least three tests are recommended for the course. There will be no make-up tests unless prior arrangements have been made with the instructor. Failure to make a passing test average may result in a grade of F for the course.
B. Laboratory Expectations: 50% of grade
At least 4 lab assignments are recommended for the course. In addition, team project(s) may be assigned. A late penalty will be imposed on any overdue assignment. Failure to make a passing average in lab assignments and team project(s) may result in a grade of F for the course.

C. Field Work: None

D. Other Evaluation Methods: 10% of grade
Homework assignments and/or quizzes

E. Grading Scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>93 – 100</td>
</tr>
<tr>
<td>B+</td>
<td>88 – 92</td>
</tr>
<tr>
<td>B</td>
<td>83 – 87</td>
</tr>
<tr>
<td>C+</td>
<td>78 – 82</td>
</tr>
<tr>
<td>C</td>
<td>73 – 77</td>
</tr>
<tr>
<td>D</td>
<td>65 – 72</td>
</tr>
<tr>
<td>F</td>
<td>Below 65</td>
</tr>
</tbody>
</table>

V. Policies:

A. Attendance Policy:
Pellissippi State expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning courses) must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. For the complete policy, please refer to the Academic Information in the online college catalog at www.pstcc.edu/catalog.

B. Academic Dishonesty:
Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the following practices:

* Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments.
* Plagiarism, including but not limited to paraphrasing, summarizing, or directly quoting published or unpublished work of another person, including online or computerized services, without proper documentation of the original source.
* Purchasing or otherwise obtaining prewritten essays, research papers, or materials prepared by another person or agency that sells term papers or other academic materials to be presented as one’s own work.
* Taking an exam for another student.
* Providing others with information and/or answers regarding exams, quizzes, homework or other classroom assignments unless explicitly authorized by the instructor.
* Any of the above occurring within the Web or distance learning environment.
Please see the Pellissippi State Policies and Procedures Manual, Policy 04:02:00 Academic/Classroom Conduct and Disciplinary Sanctions for the complete policy.

C. **Accommodations for Disabilities:**
Students that need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Disability Services (DS) in order to receive accommodations in this course. Disability Services may be contacted by sending email to disabilityservices@pstcc.edu, or by visiting Alexander 130. More information is available at http://www.pstcc.edu/sswd/.

D. **Computer Usage Guidelines:**
College-owned or -operated computing resources are provided for use by students of Pellissippi State Community College. All students are responsible for the use of computing resources in an effective, efficient, ethical and lawful manner. It is each individual user's responsibility to abide by the policy available at www.pstcc.edu/ppm/pdf/08-13-05.pdf. Additional requirements and procedures may be required for the authorized use of specific college computing laboratories.

E. **Extended College Closure:**
Pellissippi State Community College is committed to the educational process and student learning. In the event of a prolonged college closure (of at least a week), the educational process will continue through the use of the college’s on-line learning environment (Desire2Learn). The instructor will post instructions, specific assignments, due dates, etc. in Desire2Learn (D2L). It is the student's responsibility to login to D2L and check posted instructions and assignments.