COSC 5362.001 Mobile Software Development  
School of Engineering and Computer Science  
Spring 2016

A. COURSE INFORMATION
Course number/section: COSC 5362.001  
Class meeting time: MW 5:30 - 6:45 PM  
Class location: CI-226  
Course Website: http://faculty.tamucc.edu/~akatangur/sp16/COSC5362

B. INSTRUCTOR INFORMATION
Instructor: Dr. Ajay K Katangur  
Office location: CI 340  
Office hours: MW 3:00 PM -5:00 PM, T 11:00 AM - 12:00 PM  
Telephone: 361-825-2478  
e-mail: ajay dot katangur at tamucc dot edu  
Appointments: By e-mail

C. COURSE DESCRIPTION
Catalog Course Description  
This course introduces mobile application development for the Android platform. Students will learn skills for creating and deploying mobile applications, with particular emphasis on Android. We will focus on software engineering topics as related to mobile programming, primarily in how software design differs on Android. This course counts as an elective for all CS Options.

Extended Course Description  
None

D. PREREQUISITES AND COREQUISITES
Prerequisites  
COSC 5321 (Data Structures). If you do not have the prerequisites (or equivalents from another university) shown on your TAMUCC records, you may be dropped from class at any time.

Corequisites  
None

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES  
Required Textbook(s)

Optional Textbook(s) or Other References
None

Supplies
None

F. STUDENT LEARNING OUTCOMES AND ASSESSMENT
Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

By the end of this course, students should be able to:
1. Produce and maintain a high-quality mobile software product using Android
2. Evaluate and analyze existing Android apps.
3. Develop applications with the Android SDK
4. Work as a member of a project development team with deadlines
5. Demonstrate ability with the software development process
6. Effectively communicate about mobile application development
7. Develop high quality android mobile apps working in groups by applying their Android development skills.
8. Individually develop a high quality android mobile app groups by applying their Android development skills.

Assessment of objectives will be conducted through exams, quizzes, homework assignments, and projects.

G. INSTRUCTIONAL METHODS AND ACTIVITIES
Lectures using online electronic documents and slides.

H. MAJOR COURSE REQUIREMENTS AND GRADING
This is a difficult course that demands all students attend all classes! Regular completion of all reading, homework, and other outside assignments, are absolutely essential for success in this course.
Your course grade will be decided on your performance in the homework assignments, quizzes, projects, and two exams. The distribution of points is as follows:

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exams</td>
<td>30</td>
</tr>
<tr>
<td>Quizzes</td>
<td>10</td>
</tr>
<tr>
<td>Homework Assignments</td>
<td>35</td>
</tr>
<tr>
<td>Final Individual Project</td>
<td>25</td>
</tr>
</tbody>
</table>

**Grading scale:** A: 100-90, B: 89-80, C: 79-70, D: 69-60, and F: 59-0.

**Homework Assignments and Quizzes:** Approximately 6-7 homework assignments will be given. Partial credit will be given for incomplete assignments.

**Quizzes:** There will be several announced and unannounced quizzes during the semester.

**Group Project:** There will be a semester long programming project to develop a mobile application of the student's choosing. This project should be done individually. The idea for the project must be approved by the instructor. Additional details on the project will be available on the class website.

**Exams:** The first exam will be given on February 22, 2016, and the second exam will be given on March 30, 2016. The final exam time will be used for final project presentations.

I. **COURSE CONTENT/SCHEDULE**

<table>
<thead>
<tr>
<th>Week 1:</th>
<th>Syllabus, Introduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 2:</td>
<td>Android App Basics, Hw1</td>
</tr>
<tr>
<td>Week 3:</td>
<td>Android Market and App Business Issues</td>
</tr>
<tr>
<td>Week 4:</td>
<td>User Interface, Hw2</td>
</tr>
<tr>
<td>Week 5:</td>
<td>Building Android App with Java, Hw3</td>
</tr>
<tr>
<td>Week 6:</td>
<td>Exam 1, Shared Preferences, Buttons, Nested Layouts, Intents, AlertDialogs, Inflating XML Layouts and the Manifest File</td>
</tr>
<tr>
<td>Week 7:</td>
<td>Shared Preferences, Buttons, Nested Layouts, Intents, AlertDialogs, Inflating XML Layouts and the Manifest File, Hw4</td>
</tr>
<tr>
<td>Week 8:</td>
<td>Assets, Asset Manager, Tween Animations, Handler, Menus, Error Logs</td>
</tr>
<tr>
<td>Week 9:</td>
<td>Spring Break</td>
</tr>
<tr>
<td>Week 10:</td>
<td>Touches and Gestures, Frame-By-Frame Animation, Graphics, Sound, Threading, SurfaceView and SurfaceHolder, Hw5</td>
</tr>
<tr>
<td>Week 11:</td>
<td>Exam 2, Property Animation, ViewPropertyAnimator, AnimatorListener, Thread-Safe Collections, Default SharedPreferences for an Activity</td>
</tr>
<tr>
<td>Week 12:</td>
<td>Two-Dimensional Graphics, SensorManager, Multitouch Events and Toasts,</td>
</tr>
<tr>
<td>Week 13:</td>
<td>Hw6</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>ListActivity, AdapterViews, Adapters, Multiple Activities, SQLite, GUI Styles, Menu Resources and MenuInflater</td>
</tr>
<tr>
<td>Week 14:</td>
<td>Hw7</td>
</tr>
<tr>
<td></td>
<td>Google Maps API, GPS, LocationManager, MapActivity, MapView and Overlay, Menu Resources and MenuInflater</td>
</tr>
<tr>
<td>Week 15:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Web Services, JSON, Fragments, ActionBar, App Widgets, Broadcast Intents and BroadcastReceivers</td>
</tr>
<tr>
<td>Week 16:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Final Projects Demo</td>
</tr>
</tbody>
</table>

Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.

### J. COURSE POLICIES

**Course Syllabus:** We will meet for lecture on Mondays and Wednesdays, when new material will be presented. We will follow the text generally, but non-text material may also be included in the lectures. The assignments and exams will be given during the class hours. You are responsible for all the material presented during the lecture.

**Exams:** Exams will cover all lecture and reading material discussed in the class. Exams must be taken on the hour they are scheduled.

**Missed Exam:** In the event, if you cannot attend the class to take the exam due to some emergency or some unavoidable situation (such as serious illness, death in the family, participation in university sports, religious observations, and so on) you must notify me as soon as possible before the exam and also you must validate your absence by providing me a document (e.g., with a letter from your doctor). Once your cause is validated a make-up exam will be given.

**Homework Assignments & Projects:** They will significantly be based on the material from the lectures and other material considered essential for the successful completion of this course. They will be posted on the course web page or hard copies are handed out in the class during the lecture sessions. The submission details will be provided to you along with the assignment. All the homework assignments and projects are due at the beginning of the class on the due date. If the student is absent on the due date, it is the student's responsibility to see to it that the assignment is submitted on the designated date. *No late homework assignments will be accepted.* Late projects will be accepted. There is a penalty for late submissions. A project that is turned in after the class on the due date is considered one day late. There is a penalty for late submissions. 25% penalty for 1 day late, 50% penalty for 2 days late, 75% penalty for 3-4 days late and 100% penalty (i.e. no credit) if submitted after 4 days. If you have not completed your assignment by the due date, you should submit the work you have
done for partial credit. No work will be accepted once the graded work has been returned or
the solution has been disclosed to the class, except for unusual circumstances which the
instructor feels reasonable. Note that any kind of hardware or software failure or machine
unavailability in the lab does not merit an extension on the assignment. Diskettes upon which
major examinations, assignments, projects or papers submitted may be retained by the
instructor as a permanent record of the student's work.

**Grading Error:** All questions concerning a test score or grading of a returned test or
assignment must be resolved within one week. It is always a good idea to keep all of your
work until the end of the semester. In case of any recording errors or doubts, you may
produce them for correction or verification.

**Academic Honesty Policy:** You are expected to avoid all forms of academic dishonesty as
defined in Catalog. In addition, students are expected to behave in an ethical manner in all
class activities. If you feel uncertain about a particular activity, please speak to me BEFORE
problems arise. Ethical behavior is a requirement for passing this course. All work submitted
for grading must be the student's own work. Plagiarism will result in a score of 0 (zero) for
the work or dismissal from the course and the Dean of Students office will be notified. No
copying from another student's work, of any class, is allowed. It is the student's duty to allow
no one to copy his or her work. Anyone found cheating and/or copying, in the exams or
assignments, in the instructor's opinion, will receive an automatic F for the course.

**Collaboration:** If two or more people collaborate on an assignment assigned it should be
notified on the assignment and each student should submit his or her solutions for grading.
The grade obtained on such an assignment is the total points obtained for the assignment
divided by the square of the number of people who collaborated on the assignment (e.g., if 3
people collaborate on an assignment and the grade for that assignment is 90 out of 100, then
each student receives a grade of 90/3^2 = 10). If you do not notify me of such collaboration it
will be treated as copied and action will be taken as discussed under the academic honesty
policy.

**Attendance:** You must attend all classes and labs. While in class or lab attendance will not
directly affect the grade, you are responsible for any materials covered or handed out or
announcements made for the tests and assignments in your absence. Records of your
attendance will be maintained and reported to the university. Students found missing classes
without the instructor's permission will be automatically withdrawn from the course.

**Absence from class:** Students are responsible for all materials covered in class and assigned.
Should a student be absent from class, it is his/her responsibility to get the notes, etc. for that
missed class. More important, should there be assignments, it is the student responsibility to
obtain such assignments. No excuse will be accepted for assignments not turned in because
the student was absent when it was due.

**Cell Phone Use:** Cell phones and pagers must be turned off during class. First violation
receives a warning. All succeeding violations result in a ten point deduction on the final
exam. Any violation during a quiz or exam results in a ten percent deduction off the corresponding paper. No warnings for quizzes or exams.

**Laptop Use**
Laptops, Tablets cannot be used in the class.

**Food in Class**
No food in the class or labs.

**Student Security Statement:** Please read the Student Security Statement.

### K. COLLEGE AND UNIVERSITY POLICIES

- **Academic Integrity (University)**
  It is expected that university students will demonstrate a high level of maturity, self-direction, and ability to manage their own affairs. Students are viewed as individuals who possess the qualities of worth, dignity, and the capacity for self-direction in personal behavior. See Full University Policy at [http://catalog.tamucc.edu/content.php?catoid=10&navoid=313#Academic_Integrity](http://catalog.tamucc.edu/content.php?catoid=10&navoid=313#Academic_Integrity)

- **Classroom/Professional Behavior**
  You are expected to behave professionally in the classroom, labs and during office visits. Unprofessional behavior will be reported to the dean of students.

- **Deadline for Dropping a Course with a Grade of W (University)**
  The grade of W will be assigned to any student officially dropping a course by Friday, April 8, 2016. No student is eligible to receive a W without completing the official drop process by this deadline. Visit the Office of the University Registrar for the Course Drop Form that must be submitted. After April 8, 2016 a student will not be allowed to drop a course.

- **Grade Appeals (College of Science and Engineering)**
  As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at [http://www.tamucc.edu/provost/university_rules/index.html](http://www.tamucc.edu/provost/university_rules/index.html), and the College of Science and Engineering Grade Appeals webpage at
http://sci.tamucc.edu/students/GradeAppeal.html. For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

- **Disability Services**
  The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call (361) 825-5816 or visit Disability Services in Corpus Christi Hall 116.

  If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

  http://disabilityservices.tamucc.edu/

- **Academic Advising**
  The College of Science & Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the department chair. Meetings are by appointment only; advisors do not take walk-ins. Please call or stop by the Advising Center to check availability and schedule an appointment. The College’s Academic Advising Center is located in Center for Instruction 350 or can be reached at (361) 825-3928.

L. **OTHER INFORMATION**

  None

**GENERAL DISCLAIMER**

I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.