

CPS 396M: Mobile Computing: Android

Spring 2012

Instructor	: Dr. Patrick Seeling
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Email	: patrick.seeling@cmich.edu (email is the best way to contact me)
Meeting Time(s) & Place	: M/W 15:30-16:45 in PE 124/424
Section Number(s)	: 22177517
Office Hours	: M/W 13:00 – 15:00 PM or by appointment
Prerequisites	: CPS 181 or permission of the instructor.

Text Books (Required)

Komatinen, Satya, Dave MacLean, and Sayed Y. Hashimi. *Pro Android 3*. 1st ed. New York: Apress, 2011.

Print and eBook editions available, also part of ACM's Learning Center (free with ACM student membership)

Companion website: <http://androidbook.com/>

Catalog Description

This course will explore the development of mobile applications for phone and tablet using the Android system.

Course Format

This course will be taught using a very 'hands-on' approach for the Google Android mobile operating system, including work on simulators and mobile devices. Several individual and group projects as well as homework will be assigned during the semester. A group may consist of up to 2-3 members and will be formed or assigned partway through the semester.

Blackboard

The instructor uses the Blackboard Course Management system to post announcements and other reading, reference, and assignment materials.

Students who are registered for the course must review the contents of the class Blackboard site(s) regularly. Visit

<http://blackboard.cmich.edu> to access the course using your global id and password. Additional materials will be posted on Blackboard on a timely basis.

Attendance

Attendance is very important in this course, not only for you but also for your group. Group interaction is often encouraged during the class period. If you have to miss any class for any reason, please inform the instructor and your group members as soon as possible, preferably beforehand. You are expected to make arrangements with your classmates to obtain any missed material, including important announcements made during your absence.

Americans with Disabilities Act

CMU provides students with disabilities reasonable accommodation to participate in educational programs, activities, or services. Students who need any such accommodations should first register with the office of Student Disability Services (Park Library 120, phone 989-774-3018, TDD #2568) and then contact the instructor as early as possible. This ADA information may be found from the following web page:

<http://www.cmich.edu/student-disability/ada.htm>

Academic Dishonesty

Plagiarism or collaboration (that is presentation as one's own of any work done wholly or in part by someone else) or any other form of cheating will not be tolerated and may result in minimum penalty of zero credit on the specific assignment. More severe penalties may be assigned as the situation warrants. All students must adhere to the university's **Policy on Academic Integrity**. This policy may be found from the following web page:

http://www.cmich.edu/documents/policies-procedures/ACADEMIC_INTEGRITY_POLICY.pdf

Classroom Civility

Students are expected to participate in class, and as such are asked not to use the Internet (not just the web and including social networking) or work on other homework during class. Disruptive students may be asked to leave according to the **Code of Student Rights, Responsibilities, and Disciplinary Procedures**. This policy may be found from the following web page:

http://www.cmich.edu/Policies_and_Procedures/Code_of_Student_Rights_Home.htm

Class Policy

- All projects and homework assignments will be due by the date and time specified on the project specification or homework assignment unless an extension has been granted beforehand.
- Late projects will be penalized 10% per day for 5 calendar days; after that, the score will drop to zero. Late homework assignments will be penalized 20% per day for 2 calendar days; after that, the score will drop to zero. **Computer or printer breakdowns are regrettably not an excuse.**
- **Even if late, every homework assignment and project must be completed and turned in, to pass the course.**
- Makeup exams, quizzes, projects, or homework assignments can be granted only in advance (for reasonable cause) or in case of a documented medical emergency.

Submitting Work

All work should be submitted as described in the homework assignment or project specification. Some homework assignments may utilize Blackboard. For Flash projects, you must copy your file to a folder on one of our servers, the "Submit" drive. This drive is available from PCs in Pearce.

Record Keeping

SAVE YOUR WORK AND SAVE IT OFTEN, INCLUDING ANY REVISIONS. You can readily use USB flash memory drives or your 'U: drive' to store files. Keep all items that have been returned to you with a grade in case of bookkeeping errors. Grades cannot be changed without proof.

Changes

The instructor reserves the right to modify any of the information found in this outline, particularly the syllabus, grading, and class policy. The instructor will notify you of any changes to this outline.

Exams

There will be a total of 2 exams – one midterm, one **cumulative final**. Each of these exams consists of two parts (Project Part and Theory Part) that are offered over one or more class days. In the project part, the student is expected to complete assigned project(s) that assess various skills during one or more class periods or as take-home exam. The theory part involves answering questions (true/false, multiple choice, short essay questions, problems, etc.) in class, and the duration is about 30 minutes at the end of class.

Important Dates (Tentative)

Exam 1 (Theory Part): Second class of Week #8	(Monday, February 27, 2012)
Exam 1 (Project Part): First class of Week #8	(Wednesday, February 29, 2012)
Exam 2 (Project Part): First class of Week #15	(Monday, April 23, 2012 – last week of classes)
Exam 2 (Theory Part): Final exam time slot	(Wednesday, May 2012 - 14:00 – 15:50)

Grading

Grade Distribution

Homework (10)	[HOMEWORK]	30%
Projects (2 Individual + 2 Group)	[ASSIGNMENT]	40%
Exams (2)	[EXAM]	30%

Note: (Tentative) categories used to record scores in the 'Gradebook' on Blackboard are shown in [UPPERCASE]

Tentative Grading Scheme

	>= 92	A	[90 - 92)	A-	
[87 - 90)	B+	[82 - 87)	B	[80 - 82)	B-
[77 - 80)	C+	[72 - 77)	C	[70 - 72)	C-
[67 - 70)	D+	[62 - 67)	D	[60 - 62)	D-
< 60	E				

NOTE: Overall class performance may affect the grade ranges specified above. If adjustments are needed, they will be made for the benefit of the entire class. In other words, instructor reserves the right to grade on a "curve".

Week (Mon – Sun)	Topics	Hands-On	Reading	Assignments/ Exams	Due
1 01/09/2012	<ul style="list-style-type: none"> Course introduction The Mobile Space: "To infinity ... and beyond!" 	<ul style="list-style-type: none"> Android Development Environment Hello World - Android Applications 	Chapters 1-2 Web resources	Find favorite web app, mobile app (I)	
2 01/16/2012 Mon: Holiday	<ul style="list-style-type: none"> Resources Providers Intents 	<ul style="list-style-type: none"> Android application development and debugging basics 	Chapters 3-5, 10 Web resources	App idea 1 (I)	Favorite web app, mobile app
3 01/23/2012	<ul style="list-style-type: none"> User Interfaces (I) 	<ul style="list-style-type: none"> Multi-activity application design UI creation 	Chapters 6 - 8 Web resources	App1 UI and flow concept (I)	App idea 1
4 01/30/2012	<ul style="list-style-type: none"> Data persistency Saving preferences SQLite 	<ul style="list-style-type: none"> Saving application preferences and user data 	Chapters 9 Web resources	App idea 2 w/UI and flow concept (I) App 1 review	App1 UI and flow concept
5 02/06/2012	<ul style="list-style-type: none"> Processes Services Alarms 	<ul style="list-style-type: none"> Multi-process applications Background applications Using Internet services 	Chapters 11,13-15 Web resources	App 2 prototype (I)	App idea 2 w/UI and flow concept
6 02/13/2012	<ul style="list-style-type: none"> Working with Sensors 	<ul style="list-style-type: none"> Working with sensors: location, orientation LBS application 	Chapters 17,26 Web resources	Solo App (I) App 2 review	App 2 prototype
7 02/20/2012	<ul style="list-style-type: none"> Multimedia 	<ul style="list-style-type: none"> Working with playback Working with capture (audio, photo, video) 	Chapter 19 Web resources	Group App (G)	Solo App
8 02/27/2012	<ul style="list-style-type: none"> Networking (I) 	<ul style="list-style-type: none"> Different network connections (Cell, WLAN, Bluetooth) 	Web resources	Take-home Midterm	Group App, Take-home Midterm
9 03/05/2012 Spring Break	Spring Break				

Week (Mon – Sun)	Topics	Hands-On	Reading	Assignments/ Exams	Due
10 3/19/2012	<ul style="list-style-type: none"> Group Project Kick-Off 	<ul style="list-style-type: none"> Code repositories, team development 			
11 03/26/2012	<ul style="list-style-type: none"> User Interfaces (II) <ul style="list-style-type: none"> Touch TTS Widgets 	<ul style="list-style-type: none"> Widget programming TTS examples 	Chapters 22,24, 25 Web resources	Widget/TTS App	
12 04/02/2012	<ul style="list-style-type: none"> User Interfaces (III) <ul style="list-style-type: none"> Tablets Google TV 	<ul style="list-style-type: none"> UI redesign for tablet 	Chapters 29,31 Web resources	Multi-resolution interface design (I)	Widget/TTS App
13 04/09/2012	<ul style="list-style-type: none"> Group project Milestone 	<ul style="list-style-type: none"> Group project Milestone 	Peer review		Multi- resolution interface design Peer review
14 04/16/2012	<ul style="list-style-type: none"> Application Deployment 		Chapter 28 Web resources		
15 04/23/2012		Poster/Review Week			
Finals Week					