COM 250, Mobile Application Development

American University of Central Asia
Software Engineering Department

1   Course Information

Course ID
COM 250, 3371

Course Repositories
`https://github.com/auca/com.250`

Place
AUCA, laboratory G30

Time
Monday 9:25
Friday 9:25

2   Prerequisites

COM 112, Programming II. Object Oriented Design and GUI Programming

3   Contact Information

Instructor
Toksaitov Dmitrii Alexandrovich
toksaitov_d@auca.kg

Office
AUCA, room 315

Office Hours
Monday 12:00–14:00
Wednesday 14:00–15:00
Friday 12:00–14:00

4   Course Overview

This course introduces students to development tools and APIs to build applications for the Google Android operating system. Students will learn how to build unique interactive user interfaces for multi-touch mobile devices. The course covers object-oriented design using the ModelViewController paradigm, the Java programming language for the Dalvik virtual machine, the Android development framework, device emulators, and application build tools. Other topics include multi-threading, power and performance considerations, the accelerated 2-D and 3-D graphics APIs.

5   Topics Covered

- Development tools (Android Studio, SDK, device emulators)
- A Java language crash course
- App. fundamentals (activities, services, content providers)
- User interface elements
- Graphics and animation
- Data storage
- Connectivity
- Media and camera
- Working with device sensors
- Publishing and distributing applications

6   Practice Tasks

Students are required to finish 10 practice tasks. The tasks are based on topics discussed during lectures. Each task should be finished during the class to receive a grade.

7   Course Projects

Each student has to select a topic of interest and develop an app for the Android platform. The challenge of the project is to maintain a certain level of quality for the application to be able to publish it to end users on Google Play Store at the end of the course.

8 Final Exam

At the end of the course, students have to take a final examination in a form of a quiz with a number of multiple choice questions on topics discussed during classes.

9 Reading

1. Introduction to Android Application Development: Android Essentials, 5th Edition by Joseph Annuzzi Jr., Lauren Darcey, Shane Conder (ISBN: 978-0134389455)

2. Java: A Beginner's Guide, 6th Edition by Herbert Schildt (ISBN: 978-0071809252)

9.1 Supplemental Reading

1. Design Patterns: Elements of Reusable Object-Oriented Software by Erich Gamma, Richard Helm, Ralph Johnson, John Vlissides (AUCA Library Call Number: QA 76.64 D47 1995, ISBN: 978-0201633610)

2. Refactoring: Improving the Design of Existing Code by Martin Fowler, Kent Beck, John Brant, William Opdyke, Don Roberts (AUCA Library Call Number: QA76.76.R42 F695 1999, ISBN: 978-0201485677)

10 Grading

- Practice tasks (30%)

- Course project (40%)

- Final examination (30%)

  - 90%–100%: A
  - 80%–89%: A-
  - 70%–79%: B+
  - 65%–69%: B
  - 60%–64%: B-
  - 56%–59%: C+
  - 53%–55%: C
  - 50%–52%: C-
  - 46%–49%: D+
  - 43%–45%: D
  - 40%–42%: D-
  - Less than 39%: F

11   Rules

Students are required to follow the rules of conduct of the Software Engineering Department and American University of Central Asia.

Team work is NOT encouraged. Equal blocks of code or similar structural pieces in separate works will be considered as academic dishonesty and all parties will get zero for the task.