COM 299, Game Development

American University of Central Asia
Software Engineering Department

1 Course Information

Course ID
COM 299, 3956

Course Repository
`https://github.com/auca/com.299`

Place
AUCA, laboratory G30

Time
Wednesday 10:50
Friday 10:50

2 Prerequisites

COM 117, Programming II. Object-oriented Design

3 Contact Information

Instructor
Toksaitov Dmitrii Alexandrovich
toksaitov_d@auca.kg

Office
AUCA, room 315

Office Hours
Monday 12:45–14:45
Wednesday 12:45–14:45
Friday 14:00–16:00

4 Course Overview

The course introduces students to a topic of game development. It covers theory and practice of video game production. It delves into of fields of computer graphics, computational physics, artificial intelligence, and game-play design. During the course students will get an opportunity to build two market-ready games for desktop, web, or mobile platforms. They will not only learn how to create their own lightweight graphics, physics and game-play engines, but also how to use third-party solutions such as Unity or Unreal Engine.

5 Quizzes

Students will get four quizzes throughout the course on topics discussed during classes.

6 Presentation

Students will make one presentation about a game of their choice. The presentation should be focused on the internals of the game, development or production process, tools or techniques used for the first time.

7 Course Projects

Students will finish three course projects.

In the first project students will modify an implementation of a classic old game created during practice classes into a different similar game of their choice. Both games will be created with the help of the Unity engine. All scripts will be written in C#.

In the second project students will implement several subsystems of a toy 3-D real-time OpenGL 2.0 rendering engine written in C++. Students will also write a number of programs for the GPU in GLSL. At the end, students will port their Unity game from the first project the newly created engine.

The final project is similar to the first one, except students are free to use any other engine (e.g., Unreal 4). The complexity of the game will be much higher and students will get an opportunity to try out as much systems of the selected game engine as possible.

8 Reading

3D Math Primer for Graphics and Game Development, Second Edition by Fletcher Done and Ian Parberry (ISBN: 978-1-4398-6981-9)

9 Grading

- Quizzes (20%)
- Presentation (20%)
- Course projects (60%)

– 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

10 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. The same 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.