CENG 538 - Advanced Graphics and User Interfaces
Monday, Tuesday 18:00 - 21:20
Room: BMB5

Instructor: Ahmet Oğuz Akyüz, Computer Eng. Dept. B-210, Phone: 210-5565

Office Hours: By appointment

Textbook: Fundamentals of Computer Graphics (3rd ed.) by Peter Shirley and Steve Marschner

Prerequisites: C++ and some math background on vector algebra and trigonometry

Course Outline:

- Week 1: Introduction (1 hr), math review (3), images and displays (3)
- Week 2: Backward rendering pipeline (7), **HW1 assigned**
- Week 3: Forward rendering pipeline (1), transformations (3), viewing (3)
- Week 4: **Midterm**, GPU programming model and shaders (3.5)
- Week 5: Lighting (2), texturing (2), shadows (3), **HW2 assigned**
- Week 6: Curves and surfaces (3.5), radiosity (3.5)

Grading: Midterm (30%), Final (30%), Homeworks (40%), Attendance (required: see below).

- Missing more than 3 classes will automatically result in a grade of NA.
- Receiving less than 30% from each homework will result in a grade of NA.
- Receiving less than 30% from the midterm will result in a grade of NA.

Course Objectives: This course aims to familiarize the students with fundamental and advanced techniques of computer graphics. Students will learn to implement their own renderers. Hands on experience with 3D graphics APIs (OpenGL) will be gained.

Homework Policy: All homeworks must be done individually. Unless explicitly allowed, using source code from others, the Internet, or any other resource is forbidden. The homeworks will be due in **10 days** after they are announced. Late submission up to **3 days** is allowed but each late day will incur a penalty of **10 points**.

Cheating: All university, faculty, and department principles on academic honesty will be strictly enforced. The usual consequence for academic dishonesty is failure in the course and additional

disciplinary action. Examinations and homeworks are individual and are to be completed without unauthorized outside assistance.

Classroom Interaction: Our goal is to maximize the learning experience in class and have a good time in the process. So please be attentive, ask questions, and contribute to classroom discussions.