

Syllabus

Course

Code: *CSC 452*
Title: *Computer Graphics*

Credits

3-0-0-3

Text Books

- D. Hearn and M. Baker (2010). **Computer Graphics with OpenGL**. fourth ed., Prentice Hall.

References

- Edward Angel (2008). **Interactive Computer Graphics: A Top-Down Approach with OpenGL**, 5th edition Addison-Wesley.

Prerequisite:

CSC 321 Design and Analysis of Algorithms

Course Description

This course aiming to write programs that utilize the OpenGL graphics environment, use polygonal and other modeling methods to describe scenes and understand and be able to apply geometric transformations. This course covers the fundamentals of computer graphics. Topics include overview of graphics systems, output primitives, attributes of graphics primitives, geometric transformations, two-dimensional viewing, three-dimensional viewing, visible-surface detection methods, illumination models and surface-rendering methods, color models and color applications and computer animation.

Objectives:

- Develop a facility with the relevant mathematics of computer graphics.
- Learn the principles and commonly used paradigms and techniques of computer graphics.
- Describe the names and functions of the elements of the graphics pipeline.
- Gain a proficiency with OpenGL.
- Understand and be able to apply geometric transformations.
- Create basic animations.

Course Outline

<i>Week</i>	<i>Lecture Topics</i>
1	A Survey of Computer Graphics
2	Overview of Graphics Systems
3	Overview of Graphics Systems (Continue)
4	Graphics Output Primitives
5	Graphics Output Primitives (Continue)
6	Attributes of Graphics Primitives
7	Attributes of Graphics Primitives (Continue)
8	Geometric Transformations
9	Two-Dimensional Viewing
10	Two-Dimensional Viewing (Continue)
11	Three-Dimensional Viewing
12	Three-Dimensional Viewing (Continue)
13	Three-Dimensional Object Representations
14	Computer Animation
15	Computer Animation (Continue)
16	Review / Final exam

Grading

Assessment/Evaluation:

1. Class work.	(20%)
2. Quizzes (5)	(10%)
3. Midterm-1 Exam.	(15%)
4. Midterm-2 Exam.	(15%)
5. Final Exam.	(40%)
Total	(100%)

Method of Teaching:

- Lectures - 15 weeks (3 hrs per week).
- Individual exercises.
- In-class discussion
- Selection of Readings