Computer Science 272

Syllabus for Computer Graphics (CSCI272)	
Fall 2019	*Department of Computer Science, California State University, Fresno*
Computer Graphics	*Instructor: Dr. Dhanyu Amarasinghe*
Units: 3	*Office: Science 2, Room 249*
Time: MoWeFr 3:00PM - 4:45AM	*E-Mail: dhanyu@mail.fresnostate.edu*
Location: McKee-Fisk Room 208	*Telephone: (940)781-7346*
Website: canvas or http://www.dhanyu.com/csci272	*Office Hours: MoWe 9:00 AM – 10:30 AM, MoWe 2:00 PM – 3:30 PM*

Prerequisites

CSCI 272 or permission of instructor.

Course Description

The primary objective of this course is to introduce basic principles of 3-D transformations, visible surface algorithms, shading, textures, curves and surfaces, computer-aided design, advanced modeling techniques, solid modeling, advanced raster graphics architecture, advanced geometric operations algorithms and fractals.

Course Goals and Primary Learning Outcomes

Course Goals:

The course prepares students to understand fundamentals of Computer Graphics. The goal of this course is also included the theory and practice of computer graphics. The course will assume a good background in programming in C or C++ and a background in mathematics including familiarity with the theory and use of coordinate geometry and of linear algebra such as matrix operations. Aim of this course is preparing student with more research oriented knowledge in field of Computer Graphics.

Required Textbooks and Materials

There are no required text books in this course. Lecture notes will be distributed in the website and in the Blackboard. Useful links for the study materials listed in the class website.

Reference books:

Real-Time Rendering Third Edition
by Tomas Akenine-Moller, Eric Haines,
Naty Hoffman ISBN-13: 978-1568814247
ISBN-10: 1568814240

Computer Graphics: Principles and Practice, 3rd Edition
By John F. Hughes, Andries van Dam, Morgan McGuire,
David F. Sklar ISBN-13: 078-5342399523
ISBN-10: 0321399528

OpenGL Programming Guide: The Official Guide to Learning OpenGL, Version 4.3 / Edition 8
by Dave Shreiner, Graham Sellers, John M. Kessenich, Bill
M. Licea-Kane ISBN-13: 978-0321773036
ISBN-10: 0321773039

Grading

Attendance is mandatory. If students are absent from class, it is students' responsibility to check on announcements made while students were absent.

Grading Determination

Student's final grade for this course will be determined by the following items:

Project Assignments *(There will be 5 or 6 projects throughout the semester)*	*55%*
Homework Assignments, Quizzes and Attendance	*10%*
Midterm Exam	*15%*
Final Exam	*20%*

Grading Criteria

Your final grade will be based on your total score according to the following scale.

Score Grade	Letter Mark
88 ~ 100	A
75 ~ < 87	B
65 ~ < 74	C
55 ~ < 64	D
< 54	F

Subject to Change Statement

This syllabus and schedule are subject to change in the event of extenuating circumstances. If you are absent from class, it is your responsibility to check on announcements made while you were absent.

University Policies

Students with Disabilities:

Upon identifying themselves to the instructor and the university, students with disabilities will receive reasonable accommodation for learning and evaluation. For more information, contact Services to Students with Disabilities in the Henry Madden Library, Room 1202 (278-2811).

Honor Code:

"Members of the Fresno State academic community adhere to principles of academic integrity and mutual respect while engaged in university work and related activities." You should: understand or seek clarification about expectations for academic integrity in this course (including no cheating, plagiarism and inappropriate collaboration)

a) *neither give nor receive unauthorized aid on examinations or other course work that is used by the instructor as the basis of grading.*

b) *take responsibility to monitor academic dishonesty in any form and to report it to the instructor or other appropriate official for action.*

Instructors may require students to sign a statement at the end of all exams and assignments that "I have done my own work and have neither given nor received unauthorized assistance on this work." If you are going to use this statement, include it here.

Cheating and Plagiarism:

Cheating is the actual or attempted practice of fraudulent or deceptive acts for the purpose of improving one's grade or obtaining course credit; such acts also include assisting another student to do so. Typically, such acts occur in relation to examinations. However, it is the intent of this definition that the term 'cheating' not be limited to examination situations only, but that it include any and all actions by a student that are intended to gain an unearned academic advantage by fraudulent or deceptive means. Plagiarism is a specific form of cheating which consists of the misuse of the published and/or unpublished works of others by misrepresenting the material (i.e., their intellectual property) so used as one's own work. Penalties for cheating and plagiarism range from a 0 or F on a particular assignment, through an F for the course, to expulsion from the university. For more information on the University's policy regarding cheating and plagiarism, refer to the Class Schedule (Legal Notices on Cheating and Plagiarism) or the University Catalog (Policies and Regulations).

Computers:

"At California State University, Fresno, computers and communications links to remote resources are recognized as being integral to the education and research experience. Every student is required to have his/her own computer or have other personal access to a workstation (including a modem and a printer) with all the recommended software. The minimum and recommended standards for the workstations and software, which may vary by academic major, are updated periodically and are available from Information Technology Services or the University Bookstore (http://www.kennelbookstore.com). In the curriculum and class assignments, students are presumed to have 24-hour access to a computer workstation and the necessary communication links to the University's information resources."

Disruptive Classroom Behavior:

"The classroom is a special environment in which students and faculty come together to promote learning and growth. It is essential to this learning environment that respect for the rights of others seeking to learn, respect for the professionalism of the instructor, and the general goals of academic freedom are maintained. Differences of viewpoint or concerns should be expressed in terms which are supportive of the learning process, creating an environment in which students and faculty may learn to reason with clarity and compassion, to share of themselves without losing their identities, and to develop an understanding of the community in which they live. Student conduct which disrupts the learning process shall not be tolerated and may lead to disciplinary action and/or removal from class."

Copyright Policy:

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Tentative Course Schedule Fall 2019

	Date	Topic	Reading Assignment
1	Wed., Aug 21	Lec01 - Introduction to Graphics	
2	Mon., Aug 26	Lec02 - History & Overview	
3	Wed., Aug 28	Lec03 - Linear Algebra	
	Mon., Sept 2	HOLIDAY – Labor Day	
4	Wed., Sept 4	Lec04 - Vectors & Matrixes	
5	Mon., Sept 9		
6	Wed., Sept 11	Lec05 - Affine Transformations	
7	Mon., Sept 16	Lec06 - Homogeneous Coordinates	
8	Wed., Sept 18	Lec07 -Introduction to OpenGL	
9	Mon., Sept 23	Lec08 - OpenGL Fundamentals	
10	Wed., Sept 25	Lec09 - Colors & Shaders	
11	Mon., Sept 30	Lec10 - Antialiasing	
12	Wed., Oct 2	Lec11 - Clipping Algorithms	
13	Mon., Oct 7	Lec12 - Quaternions	
14	Wed., Oct 9	Exam Review	
15	Mon., Oct 14	Midterm Exam	
16	Wed., Oct 16	Lec13 - Curve Fitting	
17	Mon., Oct 21	Lec14 - Curve Fitting II (Bezier curve)	
18	Wed., Oct 23	Lec15 - Cubic Spline (or other)	
19	Mon., Oct 28	Lec16 - 3D models	
20	Wed., Oct 30	Lec17 - Texture Mapping	

	Date	Topic	Reading Assignment
21	Mon., Nov 4	Lec18 - Texture Mapping Methods	
22	Wed., Nov 6		
	Mon., Nov 11	HOLIDAY – Veteran's Day	
23	Wed., Nov 13	Lec20 - Calculating Normal	
24	Mon., Nov 18	Lec21 - Barycentric Coordinates	
25	Wed., Nov 20		
26	Mon., Nov 25	Lec 22 - TBA	
	Wed., Nov 27	Thanksgiving Break	
27	Mon., Dec 2	Lec 23 - TBA	
28	Wed., Dec 4	Lec 24 - TBA	
29	Mon., Dec 9		
30	Wed., Dec 11	Last Day of Instruction	

Finals week	**Days**	**Dates**
Final Exam Preparation & Faculty Consultation Days:	Thursday and Friday	Dec 12 – 13
Final Semester Examinations	Monday – Thursday	Dec 16 – 19
Final Exam in this course		