



Syllabus for EECS267-01: Computer Graphics

Fall 2017

Instructor: Marcelo Kallmann

Designation:	EECS267 Computer Graphics
Catalog Description:	This course covers the main algorithms and techniques required to implement modern computer graphics applications: the OpenGL rendering pipeline, transformations, illumination and shading, programmable shaders, ray tracing, scene graphs, data structures for graphics, curves and surfaces, solid modeling and representations, quaternions, and additional topics from the research literature.
Text Books and Other Required Materials:	Fundamentals of Computer Graphics 4th edition by Peter Shirley, Michael Ashikhmin, Steve Marschner CRC Press
Course Objectives/ Student Learning Outcomes:	After taking this course students will master both the theoretical and applied aspects of the main algorithms and techniques used in modern computer graphics applications.
Program Learning Outcomes:	
Prerequisites by Topic:	Undergraduate level knowledge of algorithm design and analysis, linear algebra, and programming experience in C/C++.
Course Policies:	The course is organized in about 3h of lectures and one lab session per week. The grading is based on lab assignments, exams, presentations, and a project. Depending on the number of students enrolled, students may present a selection of research papers from the literature.
Academic Dishonesty Statement:	<p>a. Each student in this course is expected to abide by the University of California, Merced's Academic Honesty Policy. Any work submitted by a student in this course for academic credit will be the student's own work.</p> <p>b. You are encouraged to study together and to discuss information and concepts covered in lecture and the sections with other students. You can give "consulting" help to or receive "consulting" help from such students. However, this permissible cooperation should never involve one student having possession of a copy of all or part of work done by someone else, in the form of an e mail, an e mail attachment file, a diskette, or a hard copy. Should copying occur, both the student who copied work from another student and the student who gave material to be copied will both automatically receive a zero for the assignment. Penalty for violation of this Policy can also be extended to include failure of the course and University disciplinary action.</p> <p>c. During examinations, you must do your own work. Talking or discussion is not permitted during the examinations, nor may you compare papers, copy from others, or collaborate in any way. Any collaborative behavior during the examinations will result in failure of the exam, and may lead to failure of the course and University disciplinary action.</p>

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Disability Statement:	Accommodations for Students with Disabilities: The University of California Merced is committed to ensuring equal academic opportunities and inclusion for students with disabilities based on the principles of independent living, accessible universal design and diversity. I am available to discuss appropriate academic accommodations that may be required for student with disabilities. Requests for academic accommodations are to be made during the first three weeks of the semester, except for unusual circumstances. Students are encouraged to register with Disability Services Center to verify their eligibility for appropriate accommodations.
Topics:	The OpenGL rendering pipeline, transformations, illumination and shading, programmable shaders, ray tracing, scene graphs, data structures for graphics, curves and surfaces, solid modeling and representations, quaternions, and additional topics from the research literature.
Class/laboratory Schedule:	3h of lectures and one 3h lab session per week
Midterm/Final Exam Schedule:	Midterm by week 8 and Final by week 15
Course Calendar:	Approximate tentative calendar: Weeks 1-5: Rendering Pipeline, Transformations, Scene Graphs, Illumination and Shading, Textures and Mappings; Weeks 5-10: Ray Tracing, Parametric and Implicit curves, Lagrange, Hermite, Bézier, B-Splines, Interpolating Splines; Weeks 10-15: data structures for graphics, quaternions, keyframe animation, modeling, representations, project-related topics.
Professional Component:	
Assessment/Grading Policy:	30% Lab assignments 40% Exams 30% Project
Coordinator:	Marcelo Kallmann
Contact Information:	mkallmann@ucmerced.edu
Office Hours:	TBD, and by appointment