Required Texts/Readings

Textbook

There is no textbook required for CS134. The following books are recommended reading:

Jason Gregory, *Game Engine Architecture (Second Edition).*
David H. Eberly, *3D Game Engine Design*
Robert Nystrom, *Game Programming Patterns*

Software and Computer

Students will be required to have access to a modern capable laptop or desktop computer running recent version of Windows or macOS. It is preferable to have a machine with a GPU. In addition to a computer, a three-button mouse is required for the programming assignments. The development projects for this class will be done in C++. Students will be required to download and install a development framework for their particular operating system including Visual Studio (Windows) or Xcode (macOS) and a C++ graphics development library (instructions will be provided on first day of class).

Software Packages

Students are required to use the following software packages for this course:

1. Unity Game Engine (Downloadable Free Version Available)
2. Visual Studio 2017 Free Community Version (PC) or Xcode (MAC)
3. Adobe Photoshop CC or equivalent open software package such as GIMP
4. Camtasia or SnagIt Video Capture Software (or equivalent)
5. Autodesk Maya (free student version available)
6. OpenFrameworks 0.10.X C++ Library (Open Source)

Adobe Photoshop will be used in the class for creating game content, such as sprites, background images and textures.

Autodesk Maya will be used for generating 3D content.

Camtasia or SnagIt will be used for creating videos of your assignments and projects.

Course Requirements and Assignments

It is expected that students will spend a minimum of forty-five hours for each unit of credit (normally three hours per unit per week), including preparing for class, participating in course activities, completing assignments, and so on. More details about student workload can be found in University Policy S12-3 at http://www.sjsu.edu/senate/docs/S12-3.pdf.

1. Development Projects (60%)
Students will complete a series of development projects involving the use of C++ and/or production tools

covered in the class. The projects will be specified on Canvas.

2. Engagement (5%)
Students are expected to attend every class and be engaged. This component of the grade will be determined by quiz results and graded short in-class exercises.

3. Mid-Term Exam (10%)
The student will be required to take a closed book mid-term exam or a take-home exam

Grading Policy

No make-up tests (exams and quizzes) will be given and ***no* late work will be accepted**. This includes: homework, projects, videos, in-class exercises or any other work related to the class. If an exam or work is
If you are in doubt about the submission time for an assignment, it is better to submit it early.

At least	Grade
97%	A+
93%	A
90%	A-
87%	B+
83%	B
80%	B-
77%	C+
72%	C
70%	C-
67%	D+
62%	D
60%	D-
<60%	F

grade-
University Policy F13-1 at http://www.sjsu.edu/senate/docs/F13-1.pdf for more details.

NOTE that University policy F69-24 at http://www.sjsu.edu/senate/docs/F69-
attend all meetings of their classes, not only because they are responsible for material discussed therein, but because active participation is frequently essential to insure maximum benefit for all members of the class.

Classroom Protocol

Class attendance is required to gain maximum benefit from the presented materials, presentations and discussion.

Laptop are used for the in-class assignment/exercises and not permitted (including tablets) during the lecture part of the class.

Cell phones are not permitted to be used in class.

Please be courteous and minimize any classroom distractions which may affect the learning environment including conversation, eating, taking unnecessary breaks and coming to class late.

Students with special requirements should notify the instructor or contact the Accessible Education Department.

Since the material presented in class is copyrighted, there is no photography allowed (including mobile phone cameras).

University Policies

Per University Policy S16-9, university-

This schedule is tentative and is subject to change. Due dates for assignments will be posted in Canvas and are generally due the following week after are assigned.

Course Schedule

Week	Date	Topics, Readings, Assignments, Deadlines
1	1/27, 1/29	Introduction and Development Environment, Game Engine Dev
2	2/3, 2/5	Vector Mathematics Review Basic 2D Vintage Arcade Game Project
3	2/10,2/12	Basic 2D game interactivity - Rendering/Drawing and Input
4	2/17,2/19	Basic 2D game interactivity Sprites and Animation
5	2/24,2/26	Physics Physics Engine Basics
6	3/2,3/4	Physics Trajectory, Ballistic Motion and Integrators Introduction Exercise in 3D