

CSCI 441 - Computer Graphics

Fall 2026 Syllabus

<https://cs-courses.mines.edu/csci441/index.html>

Instructor:

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Lectures: Mondays & Wednesdays 1:00 PM – 1:50 PM Berthoud Hall 243

Labs: Fridays 1:00 PM – 1:50 PM Marquez Hall 022

Recommended Textbooks:

- 1) OpenGL Programming Guide, 9th ed., John Kessenich, Graham Sellers, Dave Shreiner, 2017.
- 2) OpenGL 4 Shading Language Cookbook, 3rd ed., David Wolff, 2018.
- 3) OpenGL Quick Reference API Version 4.6, Khronos Group, 2017.

Grading:

The final course grade will be computed from the following course percentage breakdown:

- | | |
|----------------------------|----------------------------------|
| • 30% Homework Assignments | • 10% Exam I |
| • 15% Labs | • 10% Exam II |
| • 10% Midterm Project | • 10% Participation & Hero Level |
| • 15% Final Project | |

Final grades will be determined using a *straight scale*. The straight scale assigns letter grades as follows:

- | | | | | | |
|-------------|----|---|----------|----|---|
| • [90, 100] | -- | A | [60, 70) | -- | D |
| • [80, 90) | -- | B | [0, 60) | -- | F |
| • [70, 80) | -- | C | | | |

Exams:

- Make-up exams will be allowed only in accordance with University policy. Make-up exams resulting from illness require notification (email is fine) the day of the exam and a doctor's note with excused absence.

Assignments:

- There will be **individual** programming assignments throughout the semester. Due dates will be specified and are firm. Individual programming assignments **must** represent individual student work.
- Assignments build off the labs, so you should strive to complete the labs prior to assignments.
- Your goal should be to make it easy for us to see how great you did. If we make a couple of good faith attempts but fail to get your program running, we will try once to contact you to help us. If we still cannot get your work to compile, it will receive a zero grade.

Projects:

- There will be two course projects, to be completed in teams of three. In addition to the programming project, each team will give a brief presentation showcasing their project.

Late Policy & Discrepancies:

- There will be a 3% deduction for each calendar day an item is submitted late with a maximum deduction of 50%.
- If you have any questions regarding how any item is graded and you think you deserve more points than you received, you must see the grader within **one week** of the day the item was returned. No claims, justifiable or not, will be considered after this deadline. If you and the grader cannot reach a consensus, then contact the instructor.

Participation:

- A portion of the student's grade will be comprised of in-class and online participation. After the first week of class, students are expected to participate by making regular forum posts, either asking a question or responding to an existing topic. From time to time, there may be specific discussion topics.

Achievement System

- By completing assignments and labs, you will earn XP for your hero. Each assignment will have several achievements you can earn by adding various features to your program. Some of these achievements will be hinted at for you to discover, others will be explained as extra credit, and a last set will be hidden for you find on you own. Earning an achievement will also award your hero with XP.
- *What if I miss an achievement on an assignment?* If after submitting an assignment you find out you did not earn an achievement, then you will be permitted to go back and attempt to earn the achievement. Each student will be allowed **ONE RESUBMISSION** of the assignment at any point in the semester. This resubmission **will not be regraded**, i.e. your grade for the assignment will not be recomputed or altered. However, if you satisfy the requirements for an achievement then you will earn the achievement and the associated XP.
- At the end of the semester, the instructor will award up to 500 bonus XP for exemplary attendance, participation in class, etc. If you participate regularly and come to class, this could be enough to get you up a level and over the hump to the next letter grade.
- XP required to level up:

Level	XP		Level	XP
1	250		11	4500
2	500		12	5000
3	750		13	5500
4	1000		14	6000
5	1250		15	6500
6	1500	Your hero can reach Level 15, which will earn you 15 participation points. Participation counts for 10% of your overall grade, this is your opportunity for extra credit.		
7	2000			
8	2500			
9	3000			
10	4000			

Generative Artificial Intelligence



Selectively Permitted: Use of GenAI is allowable to assist with debugging of programs. You will find that the generation of GenAI code for computer graphics will either be deprecated and/or not compatible with the library/framework/code base we are using. You will spend more time trying to force the code into the project compared to creating the solution yourself.

Collaboration Policy for Programming Assignments & Projects

We follow the Colorado School of Mines Student Honor Code and Policy on Academic Integrity. Work submitted for grading should not be derived from work of others. The programming assignments are an integral part of the Computer Science learning experience. These projects will be fun, challenging, illuminating, time consuming, frustrating, and rewarding. Your sense of pride upon finishing is well deserved and your efforts earn your powerful skills and deep understanding. Don't cheat yourself out of this opportunity!

The Honor Code is a powerful community statement that asserts our shared values of integrity. This is a community we are committed to be a part of – please join us! Below are some additional guidelines that apply to CS courses. However, in every course, the instructor has the final say about expectations of academic honesty.

There are various ways to use a resource for assigned work and we distinguish them in two ways:

- **What kind of source is it?** Is it a general resource that you are drawing on to do the assigned work, or is it a solution to the assigned work? Does the resource trivialize the assigned task?
- **How is the source used?** Do you consult the source, or do you copy from it more or less verbatim?

Academic Code of Honor

- All students are expected to follow the University's Academic Code of Honor.
- A student or assigned team working on a program may discuss high-level ideas with other students or teams. However, at time of submission all work submitted **must be his/her/their own work**.
- Use of the Internet as a reference is allowed but directly copying code or other information is **cheating**. It is cheating to copy, allow another person to copy, all or part of an exam or a project, or to fake program output. It is also a violation of the Code of Honor to observe and then fail to report academic dishonesty. *You* are responsible for the security of your own work.
- We will provide, as part of the course, functional code examples for most of the topics covered. While you are encouraged to examine these examples, your submissions must represent a good-faith effort to complete the assignment. Merely copying and pasting code from the examples will result in a failing grade. Furthermore, relying too heavily on the given examples will fail to prepare you for the much more open-ended final project.
- Developing a program is a creative exercise; just like in art, no two programs will look exactly the same (unless the "canvas" has been copied). To ensure copying does not exist, homework assignments are checked via an automated system that generates similarity metrics between your work and that of all other students and previous student work in this class. When a high-level of similarity is detected, the course coordinator is notified and investigates the similarity. If plagiarism is evident, the course coordinator begins the process of submitting an Academic Misconduct.
- **!! Achievement Unlocked !!** You are doing a rather thorough reading of the syllabus. Email the professor with the subject line "I See All" to earn the Eye of Sauron achievement.

Disclaimer

This syllabus is intended to give the student guidance in what may be covered during the semester and will be followed as closely as possible. However, the professor reserves the right to modify, supplement and make changes as the course needs arise. Any changes will be communicated in an appropriate and timely fashion.

Mines Policies and Resources

Absences: Mines students are expected to fulfill their academic requirements through attendance and/or participation. Class attendance is required of all students unless the student has an excused absence granted by the school or the student's professor. It is the student's responsibility to request an excused absence with the professor or through the established protocol. Excused absences may be issued for unforeseen illness or anticipated and/or authorized medical or personal matters including religious observance, military commitments, and other qualifying reasons (upon review, exclusions apply). Opportunistic or habitual abuse of the excused absence policy violates the Mines Code of Conduct. To review the Excused Absence Policy and/or to request an excused absence, please visit <https://www.mines.edu/student-life/student-absences/>.

Sexual Misconduct, Discrimination, and Retaliation: Mines prohibits discrimination and harassment on the basis of age, ancestry, creed, marital status, race, color, ethnicity, religion, national origin, sex (including stalking, dating and domestic violence, non-consensual sexual contact or penetration, sexual exploitation, and sexual harassment), pregnant or parenting status, gender, gender identity, gender expression, disability, sexual orientation, genetic information, veteran status, or military service with any of its education programs or activities (including admissions and employment), or sponsored conferences and events. This prohibition applies to all students employees, contractors, visitors (including conference attendees), and volunteers. Please note that faculty and instructors are mandatory reporters as an instructor and are required to report it to the Title IX Coordinator. Anyone in our campus community can report or file a complaint of discrimination or sexual misconduct. Please reach out to OIE@Mines.edu or file through the [Discriminatory Harassment and Retaliation Reporting Form](#). Confidential resources are available at Mines and listed [here](#).

Preferred First Name: Mines recognizes members of the campus community may prefer to use a first name other than their legal name to identify themselves. Many services on campus, like Canvas, utilize and display preferred first names. Additional information on utilizing a Preferred First Name can be found on the Office for Institutional Equity [Preferred First Name page](#), or you can reach out directly to the Title IX Coordinator at OIE@Mines.edu.

Pregnant and Parenting: If you are a pregnant or parenting student, you have the right to reasonable, non-disability related modifications. Please contact the Title IX Coordinator in the Office for Institutional Equity at oie@mines.edu for more information and to request support and/or modifications.

Academic Integrity: Colorado School of Mines affirms the principle that all individuals associated with the Mines academic community have a responsibility for establishing, maintaining, and fostering an understanding and appreciation for academic integrity. Please read the [full academic misconduct/integrity policy](#) for full definitions of academic misconduct. Additionally, please use [resources provided by the Department of Community Standards](#) for guidance should you need to know more about the procedures of the policy for academic misconduct/integrity.

Copyrighted Materials: Readings, lectures, media, data and software used in this course may be protected by copyright law. You should not post, share, copy, distribute, upload or publicly display these materials outside of class without permission from the copyright owner. Unauthorized use may result in disciplinary action (link to <https://www.mines.edu/policy-library/copyright-infringement-and-illegal-file-sharing/>) and legal liability.

Disability Support Services: Disability Support Services (DSS) works collaboratively with students, faculty, and staff to minimize barriers and support an accessible campus community. When barriers to access occur, Disability Support Services works one-on-one with students to determine accommodations and facilitate access to programs and services. If you've been approved for accommodations through Disability Support Services, please contact your professor to confirm receipt of your accommodation letter and to discuss the implementation of accommodations in this course. Please visit mines.edu/disability-support-services for more information or to request accommodations.

Digital Accessibility: The Colorado School of Mines is committed to supporting an accessible digital environment for all members of our community, including students with disabilities. If you have an accessibility concern with Canvas or any digital materials or software used in this course, please contact your professor or request support from Information Technology. Please visit <https://www.mines.edu/accessibility/> for more information.

Student Outreach & Support (SOS) Resources: If you feel overwhelmed, anxious, depressed, or concerned about your overall wellbeing, you can connect with an SOS Case Manager who can help navigate the resources available to support you. If you need assistance, please ask for help from a trusted faculty or staff member, fellow student, or submit a [referral](#) for yourself. As a community, we can help one another get through difficult times. If you are concerned for another student, offer assistance and/or ask for help on their behalf. Students seeking resources for themselves or others should visit <https://student-life.mines.edu/student-outreach-and-support/>. Student Outreach and Support can help connect you with a variety of resources; some of those might include: (1) Counseling Center - <https://counseling.mines.edu/> or students may call to make an appointment. There are also online resources for students on the website. Located in the Wellness Center 2nd floor. Located at 1770 Elm St. (2) Health Center - <https://studenthealth.mines.edu/> or students may call to make an appointment. Located in Wellness Center, 1st floor. (3) SHAPE Office for sexual and interpersonal violence support - <https://shape.mines.edu/> or students may call or [email](#) to make an appointment. Located in the Wellness Center on the 2nd floor. (4) 988 Colorado: Colorado Mental Health Line - For support with any mental health and/or substance use concerns you can call or text 988, visit a walk-in center or chat with someone via <https://www.988colorado.com/en>. In an emergency, you should call 911, and they will dispatch a Mines or Golden PD officer to assist.

Policy on Academic Integrity/Misconduct: The Colorado School of Mines affirms the principle that all individuals associated with the Mines academic community have a responsibility for establishing, maintaining and fostering an understanding and appreciation for academic integrity. In broad terms, this implies protecting the environment of mutual trust within which scholarly exchange occurs, supporting the ability of the faculty to fairly and effectively evaluate every student's academic achievements, and giving credence to the university's educational mission, its scholarly objectives and the substance of the degrees it awards. The protection of academic integrity requires there to be clear and consistent standards, as well as confrontation and sanctions when individuals violate those standards. The Colorado School of Mines desires an environment free of any and all forms of academic misconduct and expects students to act with integrity at all times. Academic misconduct is the intentional act of fraud, in which an individual seeks to claim credit for the work and efforts of another without authorization, or uses unauthorized materials or fabricated information in any academic exercise. Student Academic Misconduct arises when a student violates the principle of academic integrity. Such behavior erodes mutual trust, distorts the fair evaluation of academic achievements, violates the ethical code of behavior upon which education and scholarship rest, and undermines the credibility of the university. Because of the serious institutional and individual ramifications, student misconduct arising from violations of academic integrity is not tolerated at Mines. If a student is found to have engaged in such misconduct sanctions such as change of a grade, loss of institutional privileges, or academic suspension or dismissal may be imposed. The complete policy can be found in the [Mines' Policy Library](#).