

COMP SCI 559 section 001 Syllabus



Computer Graphics

COURSE INFORMATION

Computer Graphics

COMP SCI 559 001 (3 Credits)

2021 Spring [1214]

Description

Survey of computer graphics. Image representation, formation, presentation, composition and manipulation. Modeling, transformation, and display of geometric objects in two and three dimensions. Representation of curves and surfaces. Rendering, animation, multi-media and visualization. Fluency with vector mathematics (e.g., from MATH 234 or a linear algebra class) is recommended. Enroll Info: None

Prerequisite(s)

(MATH 222 or MATH 276) and (COMP SCI 367 or 400) or graduate/professional standing or declared in the Capstone Certificate in Computer Sciences for Professionals

Instruction Mode

Online Only

Section Level Com B

False

Department: Computer Sciences

College: Letters and Science



2021 Spring [1214]

Term Start Date: Monday, 25-Jan-2021 **Term End Date:** Tuesday, 1-Jun-2021

Location and Schedule: ONLINE TR 11:00 AM-12:15 PM

CRN: 266021402

How Credit Hours are Met

This class meets for two 75-minute class periods each week over the semester and carries the expectation that students will work on course learning activities (reading, writing, problem sets, studying, etc) for about 3 hours out of classroom for every class period. The syllabus includes more information about meeting times and expectations for student work.

Regular and Substantive Student-Instructor Interaction



See the course web for details on class interactions.

The course staff will

- provide materials in written and video form
- provide regular synchronous lectures (that may be viewed afterwards)
- provide feedback on student assignments
- provide opportunities for group and 1-on-1 consulting on course material

Other Course Information

See the course web for a complete description.

Instructional Modality

This class will be taught in an online, synchronous modality.

There will be no in-person class meetings. All contact with course staff (including lectures, consulting, and office hours) will be via electronic communication.

There will be class components (such as exams) that must be completed synchronously (during the scheduled class periods).

QUARANTINE OR ISOLATION DUE TO COVID-19

Student should continually monitor themselves for COVID-19 symptoms and get tested for the virus if they have symptoms or have been in close contact with someone with COVID-19. Student should reach out to instructors as soon as possible if they become ill or need to isolate or quarantine, in order to make alternate plans for how to proceed with the course. Students are strongly encouraged to communicate with their instructor concerning their illness and the anticipated extent of their absence from the course (either in-person or remote). The instructor will work with the student to provide alternative ways to complete the course work.

STUDENTS' RULES, RIGHTS & RESPONSIBILITIES

During the global COVID-19 pandemic, we must prioritize our collective health and safety to keep ourselves, our campus, and our community safe. As a university community, we must work together to prevent the spread of the virus and to promote the collective health and welfare of our campus and surrounding community.

INSTRUCTORS AND TEACHING ASSISTANTS (TAs)

Instructor



Michael GLEICHER
✉ GLEICHER@CS.WISC.EDU

Instructor Availability and Preferred Contact







The instructor is available for online contact. See the course web for details.

TA Availability and Preferred Contact

The course has 3 Teaching Assistants and several Peer Mentors. See the course web for instructions on how to contact the course staff.

COURSE OUTCOMES, GRADING, and OTHER COURSE MATERIALS

Course Learning Outcomes (CLOs)

-  Develop interactive graphical applications using web-based technologies.
S7747
-  Develop graphics programs using different kinds of graphics APIs.
S7748
-  Use coordinate systems and transformations to model objects hierarchically and prepare them for viewing.
S7749
-  Select and use shape modeling techniques, such as meshes and parametric curves, to describe and display various kinds of objects and phenomena.
S7750
-  Use appearance modeling techniques, such as surface shading, texture and lighting, to create object appearances.
S7751
-  Summarize the methods used by graphics hardware and apply these concepts in software that uses the hardware effectively.
S7752

Grading

The final grade will consider exams (35%) and programming assignments/workbooks (65%). Participation in class, surveys and other class components may be considered in edge cases.

Course Website, Learning Management System and Digital Instructional Tools

See the Course Web for details on the class communications policy.

The course will use the course web, the Canvas learning management system, the Piazza online discussion system, GitHub and GitHub classroom, and Blackboard Collaborate Ultra.

It is strongly suggested that students become familiar not only with these tools navigation but with content and resources available for the course.

Discussion Sessions (in-person or remote)

N/A

Laboratory Sessions (in-person or remote)

N/A

Required Textbook, Software, & Other Course Materials

See the course web for details.

There is no required textbook. Reading materials will be provided online. Many of the "readings" will be videos (including lectures and other tutorials). The contents of the workbooks and the course web are considered required reading.

Students must use software tools that enable them to complete the class assignments. This includes a modern web browser, a text editor or integrated development environment, and a GIT client. The course web provides no-cost options that students may choose.

Homework & Other Assignments

See the course web for details.

The primary assignments for the class are weekly workbooks, which combine tutorials, required readings, and programming assignments. These workbooks are distributed and collected using GitHub classroom with further information provided through Canvas.

Campus Spaces for Virtual Learning & Testing

Dedicated on-campus spaces with high-speed internet are available for students to [reserve](#) for any exam/quiz taken during the semester. Computers can also be requested.

EXAMS, QUIZZES, PAPERS & OTHER MAJOR GRADED WORK

Exams, Quizzes, Papers & Other Major Graded Work

See the course website for details. Briefly, graded work will include:



- Exams given during scheduled class periods (including Thursday class times and the final exam period)
- Weekly workbooks
- While weekly "surveys" are not graded, they may count towards the final grade (particularly in edge cases)
- Other participation in class activities may be considered towards the final grade

General Reminders for Remote Exams

This course will have required remote exams. See the Course Web for details.

Exams will be given online using Canvas in a semi-synchronous fashion. Students are required to take exams during the specified windows.

While we do not intend to use a digital proctoring service, we reserve the right to require one. If a proctoring service is required, we will not allow students to earn points on the exam without using it. We will use the tools officially sanctioned by the University.

Privacy of Student Information and Digital Proctoring Statement

The privacy and security of faculty, staff and students' personal information is a top priority for UW-Madison. The university carefully reviews and vets all campus-supported teaching and learning tools, including proctoring tools and takes necessary steps to ensure that tool providers prioritize proper handling of sensitive data in alignment with FERPA, industry standards and best practices.

Under the Family Educational Rights and Privacy Act (FERPA – which protects the privacy of student education records), student consent is not required for the university to share with Honorlock those student education records necessary for carrying out the proctoring service. 34 CFR 99.31(a)(1)(i)(B). FERPA specifically allows universities to treat vendors as school officials and to share student education records with them where they perform services for the university and are subject to FERPA requirements governing the use and redisclosure of personally identifiable information from education records. Honorlock is FERPA compliant and is bound by the terms of its agreement with the university to comply with FERPA's restrictions on the use of student education records.

ADDITIONAL COURSE INFORMATION AND ACADEMIC POLICIES





Privacy of Student Information & Digital Tools: Teaching & Learning

Analytics & Proctoring Statement

The privacy and security of faculty, staff and students' personal information is a top priority for UW-Madison. The university carefully reviews and vets all campus-supported digital tools used to support teaching and learning, to help support success through [learning analytics](#), and to enable proctoring capabilities. UW-Madison takes necessary steps to ensure that the providers of such tools prioritize proper handling of sensitive data in alignment with FERPA, industry standards and best practices.

Under the Family Educational Rights and Privacy Act (FERPA – which protects the privacy of student education records), student consent is not required for the university to share with school officials those student education records necessary for carrying out those university functions in which they have legitimate educational interest. 34 CFR 99.31(a)(1)(i)(B). FERPA specifically allows universities to designate vendors such as digital tool providers as school officials, and accordingly to share with them personally identifiable information from student education records if they perform appropriate services for the university and are subject to all applicable requirements governing the use, disclosure and protection of student data.



Privacy of Student Records & the Use of Audio Recorded Lectures

See information about [privacy of student records and the usage of audio-recorded lectures](#).

Lecture materials and recordings for this course are protected intellectual property at UW-Madison. Students in this course may use the materials and recordings for their personal use related to participation in this class. Students may also take notes solely for their personal use. If a lecture is not already recorded, you are not authorized to record my lectures without my permission unless you are considered by the university to be a qualified student with a disability requiring accommodation. [Regent Policy Document 4-1] Students may not copy or have lecture materials and recordings outside of class, including posting on internet sites or selling to commercial entities. Students are also prohibited from providing or selling their personal notes to anyone else or being paid for taking notes by any person or commercial firm without the instructor's express written permission. Unauthorized use of these copyrighted lecture materials and recordings constitutes copyright infringement and may be addressed under the university's policies, UWS Chapters 14 and 17, governing student academic and non-academic misconduct.



How to Succeed in This Course

Resource links to other campus services:

- [University Health Services](#)
- [Undergraduate Academic Advising and Career Services](#)
- [Office of the Registrar](#)
- [Office of Student Financial Aid](#)
- [Dean of Students Office](#)





Course Evaluations

Students will be provided with an opportunity to evaluate this course and your learning experience. Student participation is an integral component of this course, and your confidential feedback is important to me. I strongly encourage you to participate in the course evaluation.

Digital Course Evaluation (AEFIS)

UW-Madison uses an online course evaluation survey tool, [AEFIS](#). In most instances, you will receive an official email two weeks prior to the end of the semester when your course evaluation is available. You will receive a link to log into the course evaluation with your NetID where you can complete the evaluation and submit it, anonymously. Your participation is an integral component of this course, and your feedback is important to me. I strongly encourage you to participate in the course evaluation.





Students' Rules, Rights & Responsibilities

During the global COVID-19 pandemic, we must prioritize our collective health and safety to keep ourselves, our campus, and our community safe. As a university community, we must work together to prevent the spread of the virus and to promote the collective health and welfare of our campus and surrounding community. [Rights & Responsibilities](#)

UW-Madison Badger Pledge

Campus Guidance on the use of Face Coverings

Face coverings must be [correctly worn](#) on campus at all times and in all places (both outside and inside), except by students in their assigned residence hall rooms; by employees when alone in a private, unshared lab or office; when traveling alone in a private vehicle; and when exercising outside in a way that maintains 6 feet of distance from other people.

Students with disabilities or medical conditions who are unable to wear a face covering should contact the [McBurney Disability Resource Center](#) or their Access Consultant if they are already affiliated. Students requesting an accommodation unrelated to disability or medical condition, should contact the Dean of Students Office.

Students who choose not to wear a face covering may not attend in-person classes, unless they are approved for an accommodation or exemption. All other students not wearing a face covering will be asked to put one on or leave the classroom. Students who refuse to wear face coverings appropriately or adhere to other stated requirements will be reported to the [Office of Student Conduct and Community Standards](#) and will not be allowed to return to the classroom until they agree to comply with the face covering policy. An instructor may cancel or suspend a course in-person meeting if a person is in the classroom without an approved face covering in position over their nose and mouth and refuses to immediately comply.

Quarantine or Isolation Due to COVID-19

Student should continually monitor themselves for COVID-19 symptoms and get [tested](#) for the virus if they have symptoms or have been in close contact with someone with COVID-19. Student should reach out to instructors as soon as possible if they become ill or need to isolate or quarantine, in order to make alternate plans for how to proceed with the course. Students are strongly encouraged to communicate with their Instructor concerning their illness and the anticipated extent of their absence from the course (either in- person or remote). The instructor will work with the student to provide alternative ways to complete the course work.



Diversity & Inclusion Statement

[Diversity](#) is a source of strength, creativity, and innovation for UW-Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals. The University of Wisconsin-Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world.





Academic Integrity Statement

By virtue of enrollment, each student agrees to uphold the high academic standards of the University of Wisconsin-Madison; academic misconduct is behavior that negatively impacts the integrity of the institution. Cheating, fabrication, plagiarism, unauthorized collaboration, and helping others commit these previously listed acts are examples of misconduct which may result in disciplinary action. Examples of disciplinary action include, but is not limited to, failure on the assignment/course, written reprimand, disciplinary probation, suspension, or expulsion.



Accommodations for Students with Disabilities

The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform faculty of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Faculty, will work either directly with the student or in coordination with the McBurney Center to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA. (See: [McBurney Disability Resource Center](#))



Academic Calendar & Religious Observances

See: <https://secfac.wisc.edu/academic-calendar/#religious-observances>

