JOHNS HOPKINS
WHITING SCHOOL
of ENGINEERING

Computer Science EN.601.457/657
Computer Graphics
Fall, 2023 (3 credits, EQ)

Meeting

- Time: Monday, Wednesday, Friday, 11:00–11:50 am
- Location: Hodson 311

Instructor

Professor Misha Kazhdan

- Contact: misha@cs.jhu.edu (https://www.cs.jhu.edu/~misha)
- Office hours: Wednesdays 12-1pm @ Malone 229

Assistants

- Hongyi Liu (TA)
  - Contact: liuhongyi@jhu.edu
  - Office hours: Wednesdays 3-5pm @ Malone 216
- Zejun Ma (CA)
  - Contact: zma37@jh.edu
  - Office hours: Thursdays 11-12pm @ Malone 216
- Aryavrat Gupta (CA)
  - Contact: agupt110@jhu.edu
  - Office hours: Tuesdays 4:30-5:30pm @ Malone 216
- Swarali Mahimkar (CA)
  - Contact: smahimk1@jh.edu
  - Office hours: Mondays 10-11am @ Malone 216

Online Resources

Course notes and videos will be available at http://www.cs.jhu.edu/~misha/Spring25/.

Assignments will be posted on Canvas, https://canvas.jhu.edu/.

Discussions will be facilitated via Piazza https://piazza.com/jhu/spring2025/601457657.

Course Information

- This course introduces computer graphics techniques and applications, including image processing, rendering, modeling and animation.
- **Prerequisites**
  Intermediate Programming (EN.601.220 or the equivalent)
  Data Structures (EN.601.226 or the equivalent)
  Linear Algebra (AS.110.201 or the equivalent)

Course Goals

Specific Outcomes for this course are that

- Students will become familiar with the basics of computer graphics.

This course will address the following Criterion 3 Student Outcomes

Graduates of the program will have an ability to:

(1) Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
(2) Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
(3) Apply computer science theory and software development fundamentals to produce computing-based solutions.

Course Topics

- Image processing
- Ray tracing
- Real time rendering
- Animation

Course Expectations & Grading

Students will be graded based on four homework assignments and two exams. Each homework assignment and exam will comprise 15 percent of the final grade. Participation can make up an additional 10 percent of the final grade. (For students who choose not to participate, the final grade will be determined by homework assignments and exams and will be normalize, so that students will not be penalized for lack of participation.)

Finally, the class will include semi-weekly labs. **Attendance of the labs is mandatory**.

Key Dates

See course webpage at http://www.cs.jhu.edu/~misha/Spring25.

Assignments & Readings

Assignments will be posted on Canvas https://canvas.jhu.edu/.

Ethics

The strength of the university depends on academic and personal integrity. In this course, you must be honest and truthful, abiding by the *Computer Science Academic Integrity Policy*:

> Cheating is wrong. Cheating hurts our community by undermining academic integrity, creating mistrust, and fostering unfair competition. The university will punish cheaters with failure on an assignment, failure in a course, permanent transcript notation, suspension, and/or expulsion. Offenses may be reported to medical, law, or other professional or graduate schools when a cheater applies.
>
> Violations can include cheating on exams, plagiarism, reuse of assignments without permission, improper use of the internet and electronic devices, unauthorized collaboration, alteration of graded assignments, forgery and falsification, lying, facilitating academic dishonesty, and unfair competition. Ignorance of these rules is not an excuse.

Academic honesty is required in all work you submit to be graded. Except where the instructor specifies group work, you must solve all homework and programming assignments without the help of others. For example, you must not look at anyone else's solutions (including program code) to your homework problems. However, you may discuss assignment specifications (not solutions) with others to be sure you understand what is required by the assignment.

If your instructor permits using fragments of source code from outside sources, such as your textbook or online resources, you must properly cite the source. Not citing it constitutes plagiarism. Similarly, group projects must list everyone who participated.

Falsifying program output or results is prohibited.

Your instructor is free to override parts of this policy for particular assignments. To protect yourself: (1) Ask the instructor if you are not sure what is permissible; (2) Seek help from the instructor, TA, or CAs—as you are always encouraged to do—rather than from other students; and (3) Cite any questionable sources of help you may have received.

On every exam, you will sign the following pledge: "I agree to complete this exam without unauthorized assistance from any person, materials, or device. [Signed and dated]." Your course instructors will let you know where to find copies of old exams, if they are available.

For more information on university ethics, see the university's undergraduate academic ethics policy and graduate-specific policies.

Report any violations you witness to the instructor.