Welcome to CS559!
Introduction to Computer Graphics
Fall Semester 2016
• What about the class waitlist?

• Where do I find information about the class?

http://graphics.cs.wisc.edu/WP/cs559-fall2016/

• How do I communicate with you?

Email: cs559.f2016@gmail.com
• Discuss scope of class, and indicative topics
• Clarify class logistics
  • Communication mechanisms
  • Assignments
  • Evaluation procedure
• A few details about your instructor
• Getting started with drawing & transforms
What is the class about?

- How is computer-imagery created?
- What are the building blocks we use? (triangles, points, etc)
- Acquiring graphics *programming* experience
- Textures, curves, color, etc ...

Who is this class for?

- Undergraduates excited about graphics & images
- Prerequisite: being willing to learn to code in Javascript!
- We’ll cover the linear algebra basics - some familiarity is useful
- Enthusiasm a must!
Your main source of information

Class webpage: graphics.cs.wisc.edu/WP/cs559-fall2016
CS 559 - Computer Graphics (Fall 2016)

Syllabus

Table of Contents
- Basic Info
- Tentative list of topics
- Course Components
- Grading
- Late Policy

This brief syllabus has the basic info. Really the course web is the syllabus, and most topics here are discussed in more detail somewhere (links provided from this document – although this document is written first, so that the links may appear later).

Basic Info

Lectures: Mondays and Wednesdays, 2:30-3:45, Room 1221 Computer Sciences
You are responsible for the material in lecture, and we might have in-class activities that are counted.

Instructor: Eftychios Sifakis, Office 6387 Computer Sciences. For class-related email, please use the email address cs559.f2016@gmail.com. This will reach both the instructor and the TA.

Instructor Office hours: The instructors regular office hours will be 11:00-11:45am on Wednesdays (Room 6387). There will also be an extra in-class office hour every Monday 4:00-4:45pm (Room 1221, right after our regular lecture), unless explicitly cancelled. You are strongly encouraged to attend the in-class meeting for questions about programming (esp. Javascript) at-large, as your questions might benefit some of your other colleagues in attendance. If no questions from students are presented on the Monday sessions, the instructor will devote this time to discussing programming and debugging practices, while giving practical examples of programming concepts taught in class.

TA: Chih-Ching Chang, Office 1302 Computer Sciences. It is important that when you send email to “the TA” you address it to the email address for the TA at cchang@cmu.edu. He is the person responsible for grading the Programming Assignment #1.

This Week in 559

Extra Instructor Office Hour
- Thursday Sep 9th, 11:00-11:45

Due Tuesday 9/13, 11:59pm
- Programming Assignment #1

Due Friday 9/12, 11:59pm
- Quiz #1 (Coming soon)

Due Sunday 9/18 11:59pm
- Programming Assignment #2 (Coming soon)

To search, type and hit enter

Recent Posts
- Programming Assignment #2 : Hierarchical Modeling in 2D
- Welcome to CS559!
- Programming assignment #1 : Intro to HTML Canvas
- Hello world!

Archives
• Your main source of information
  • Class webpage: graphics.cs.wisc.edu/WP/cs559-fall2016
• Other support resources
  • Class discussion: Piazza
  • Quizzes/Assignments: Canvas
• EMAIL: cs559.f2016@gmail.com
• Be aware of communication policy … use Piazza when possible!
• Evaluation
  • Regular quizzes (keyed to reading assignments, every 1-2 weeks)
  • (Mostly weekly) programming assignments (most important)
  • Midterm & final exam
Details on “Syllabus” Page

- graphics.cs.wisc.edu/WP/cs559-sp2016/Syllabus

All three components of the class are important!

Programming scores provide a Baseline

Quizzes/Exams modify this baseline

Grading on a curve, but you are guaranteed a “B” if:

- Adequate performance on programs ("Check" on all)
- Almost all quizzes correct
- Respectable performance on exams (>=“BC")
Outcomes

• Historically, what have students gotten from 559?

• Graphics theory and principles

• Concepts and practice of graphics programming

• Experience with nontrivial programming, at large
Expectations

• Math & Linear Algebra
  • Requirements more relaxed than before
  • We’ll fill in the blanks where necessary
  • Focus on abstractions

• Programming (!!!)
  • You will learn a (new?) language
  • Must use online resources (pointers are provided)
  • Must be willing to sharpen development skills
  • Debugging
  • Formalizing programmatic tasks
• Typical reply turnaround time? (typically 24-48hrs but may delay until next lecture)

• Use Piazza whenever possible (and make sure to sign up!)

• Announcements on Webpage (you are responsible for monitoring it)

• For very rare occasions: broadcast via classlist (compsci559-1-f16@lists.wisc.edu)
• 2 programming assignments due next week (one should be very easy)

• 1 quiz due next week (with reading assignment)
• Midterm : Tuesday November 1st, 7:15-9:15pm
• Final : Friday December 23rd, 12:25-2:25pm

• Proposed lecture substitution (will ask you …)
  • Instead of MW Dec 5 & 7
  • …. meet on Fridays Dec 2 & 9 (2:30pm as usual)

• Lookout for a survey in next few days
Office hours

• Instructor (Eftychios Sifakis)
  • Regular O/H : Wed 11-11:45am (CS6387)
  • In-Class O/H : Mon 4-4:45pm (CS1221 - Depending on demand)
  • Come with questions on Mondays (otherwise will talk about programming practices)

• TA (Chih-Ching Chong)
  • Tentative : Tuesday 1-2pm (CS1302)
  • May (and likely will) add one more time slot
Research interests:

• Physics-based modeling
• Digital humans
• Simulated elastic objects
• Fluid animation
• Fracture & destruction
• Fast math in general
Animating models of human bodies
Detailed anatomy and complex environments

Freestyle Swimming
Jiggly deformable models & fast simulation
Hairy & messy collisions
Fracture, destruction & mayhem
Clinical “skill simulators”
Clinical “skill simulators”
Smoke on the water ....
... and as much detail we can afford

Smoke flow past sphere

Effective resolution: 1Kx1Kx2K

135M active voxels
... and as much detail we can afford

Smoke flow past sphere

Effective resolution: 1Kx1Kx2K

135M active voxels
Present-day stuff: Contact in fracture
Present-day stuff: Cache optimized skinning
Present-day stuff: Fluids on heterogeneous computers
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