Welcome to CS559!
Introduction to Computer Graphics
Spring Semester 2017
Brief answers to most pressing questions …

• What about the class waitlist?

• Where do I find information about the class?

http://graphics.cs.wisc.edu/WP/cs559-sp2017/

• How do I communicate with you?

Email: cs559.s2017@gmail.com
Today’s lecture

• 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-sp2017
- Other support resources
  - Class discussion: Piazza
  - Quizzes/Assignments: Canvas
- EMAIL: cs559.s2017@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

- [link](https://graphics.cs.wisc.edu/WP/cs559-sp2017/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”)
Historically, what have students gotten from 559?

- Graphics theory and principles
- Concepts and practice of graphics programming
- Experience with \textit{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-s17@lists.wisc.edu)
• 2 programming assignments due next week (one should be very easy)

• 1 quiz due next week (with reading assignment)
Special time constraints

- Midterm: Thursday March 2nd, 7:15-9:15pm
- Final: Thursday May 11th, 10:05am-12:05pm

- Special lecture arrangements (tentative)
  - Substitute instructor on Feb 7th, Feb 16th, Feb 23rd
  - Lecture of Thursday March 9th to be cancelled; a make-up lecture will be scheduled for Friday March 10th

- Lookout for a survey in next few days
Office hours

• Instructor (Eftychios Sifakis)
  • Regular O/H : Tue 3:00-3:45pm (Office CS6387; starting next week)
  • In-Class O/H : TBD - Once we get new classroom. (Aiming for directly before or after class)
  • In-class sessions to focus on your questions (otherwise will talk about programming practices)

• TA (Kevin Zhang)
  • Wednesdays 2:30-3:30pm, Thursdays 1:00-2:00pm
  • Office TBD - In meantime, meet in Graphics Lab (CS1346)
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
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