Welcome to CS224!

CS224 is a graduate-level computer graphics course. The primary goal of the course is to expose students to a wide range of subjects in computer graphics, taking a hands-on approach to each one.

Many students take CS224 as the second half of a two-course sequence starting with CS123. The course will move quickly and cover many topics. A strong emphasis will be placed on programming projects and class participation. Students will form groups and complete a final project in a computer graphics topic of their choosing.

Class: MWF 11am-11:50am CIT 316

The course website can be found at http://cs.brown.edu/courses/csci2240/

Prerequisites

(CS123 or equivalent graphics background) and (CS32 or equivalent software engineering experience). Some mathematical maturity (calculus, linear algebra, probability) is expected.

The Staff

Instructor: John “Spike” Hughes (jfh)
Head TA: Eric Jang (evjang)
TA: Mike Ravella (mravella)

See the course website for office/TA hours.

Expectations and Assignments

As mentioned, CS224 is a graduate-level course, and we have high expectations of the students. Students are expected to be mature and professional about their work habits and should expect to spend 15–20 hours per week on the course. The programs test more complex concepts than those in CS123, and usually require significant thought before any code is written. In several cases, the time spent understanding the problem and devising a solution will constitute a majority of the time devoted to the assignment.
The final project is perhaps the best-known and most rewarding assignment in CS224. It is important that students keep the final projects in mind throughout the entire semester. Groups that form and research ideas for topics early will be more successful.

Your final grade breakdown is as follows:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>% of Final Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project: Ball</td>
<td>3%</td>
</tr>
<tr>
<td>Project: Furnace</td>
<td>4%</td>
</tr>
<tr>
<td>Project: Settlement</td>
<td>12%</td>
</tr>
<tr>
<td>Project: Path Tracing</td>
<td>12%</td>
</tr>
<tr>
<td>Project: Photon</td>
<td>9%</td>
</tr>
<tr>
<td>Project: Simulation</td>
<td>12%</td>
</tr>
<tr>
<td>Written Homeworks</td>
<td>12%</td>
</tr>
<tr>
<td>Class Participation (incl. labs)</td>
<td>6%</td>
</tr>
<tr>
<td>Group Final Project</td>
<td>30%</td>
</tr>
</tbody>
</table>

The Final Project Demo Day is scheduled be Friday, May 6th at 4 pm. Attendance is mandatory. If you believe that you cannot attend, contact one of the TAs immediately.

Course Website

See the course website [http://cs.brown.edu/courses/csci2240/](http://cs.brown.edu/courses/csci2240/) for the collaboration policy and calendar of assignments and labs.

Late Policies

Handing in late will cost 10% for every 24 hours past the due date. The penalties come in units of 10%, so if a submission is 10 minutes late, it loses 10%. This means that a B project becomes a C project.

Everyone is allowed three late days for programming assignments (this does NOT mean 72 “late hours”). If you wish to use late days on an assignment, state how many late days you wish to use in the README of your late handin. For example, if you hand in three days late and want to use only two late days, your final grade will receive a 10% penalty. You cannot retroactively use a late day after you have handed in an assignment.

All coding projects are due at 11:59pm and all written homeworks are due at the beginning of class. Final projects and written homework may NOT be handed in late.

Community Spirit Credit

In keeping with the goal of engaging thoughtful discussion about graphics, we have a policy in which community service of particular kinds is rewarded. If, for example, you start working on an
assignment and you find a bug in the support code (we hope this won’t happen, of course!), you can tell the TAs. Not only will they fix the bug, but they’ll reward you with some number of points for community service. If you find a bug and fix it, you get more points.

There are other kinds of community service as well: if you find an interesting procedural technique on ShaderToy and write up a derivation of the technique so that your peers can use it, we may award extra credit.

Of course, it’s not counted as community spirit if you post the solutions for an assignment to the course newsgroup. When in doubt, present community spirit contributions to a TA before posting to the newsgroup.

This extra credit is awarded at the discretion of the grading staff. The category these points go under depends on the nature of the contribution.

**Newsgroup**

We use Piazza for class announcements and discussions, and for instructors to answer questions. If you have a question whose answer that does not give away the key points of the assignment, please post it to the newsgroup. When in doubt, ask a TA.

Example of an OK Newsgroup Question: “In my ray tracing I keep getting little black dots in my image. I’ve tried small test cases and know that my reflection model works. Any ideas?”

Answer: “Check your epsilon values.” (Note that the answer did not say exactly what was wrong)

Bad Newsgroup Question: “I can’t get specular highlighting to work. What’s wrong?”

This is a bad question because we want students to be able to realize mistakes in their code and/or conceptual understanding of the assignment on their own. Asking people to point out where your code is wrong is a no-no.

Bad Newsgroup question: “What’s specular highlighting?”

This is a bad question because there are plenty of resources online to explain this clarification. Make sure to read the collaboration policy before you consult online references.

You are responsible for knowing all the information in all articles posted in the newsgroup — read it frequently! (You’re also responsible for all in-class announcements and material. “I missed that class” is not an excuse.)

We reserve the right to update any course materials and the calendar during the semester.