

# Computer Graphics CSCI 441 - Syllabus

Computer graphics is a field of computer science that involves generating visual content. Applications of computer graphics includes modeling and animation software, CAD design software, image manipulation packages such as Photoshop or Illustrator, video games, medical visualisation tools and much, much more. In this class, we'll be going over some of the fundamentals of computer graphics from transformations and camera projections, to light and shading models, to simulations that approximate phenomena in the real world. We'll be using C++, Qt and OpenGL to explore practical, real-time, graphics programming while learning the theory behind it so you can apply it to other environments.

## Assignments

There will be many lab assignments, generally one per week, that should take about one full class session to complete. Code will be provided to get you up and running with the labs, which you can work on in pairs. You must demo your labs to me in class to get credit. There will also be a few major programming assignments as well. The program assignments will take significantly more time than the labs and are designed to inspire individual creativity and self expression. I'll try to keep lectures as short as possible to give you time in class to work on your assignments with me available to ask questions. Mondays will be a lab only day, where I generally won't lecture at all. All assignments will be made available via Github:

<https://github.com/jallwine/MSU-CSCI441-Spring-2015>

See instructions at the link above to get started.

## January Schedule

Date	Topic
1/14	Intro, applications of computer graphics
1/16	Overview of graphics pipeline - Assign Lab 1
1/19	MLK Day - No class
1/21	Rasterization / Barycentric coordinates / Color basics
1/23	OpenGL Basics / 2D coordinate systems
1/26	Lab day - Assign Lab 2
1/28	Graphics math - vectors, matrices and quaternions
1/30	Camera projections - Last day to demo Lab 1

## **Office hours**

MWF 2:10-3 in EPS 358

## **Grading**

**Programs - 50%**

**Midterm + Final - 25%**

**Labs - 25%**