



**Instructor:** Prof. Han-Wei Shen

Office: 789 Dreese Lab

Office hours: MWF 11:18 AM - 12:30 PM

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**Grader:** TBA

## Course Information

- Lecture location and time: DL 357 10:30-11:18 AM
- Course web page: <http://www.cse.ohio-state.edu/~hwshen/681>
- Newsgroup: cse.course.cse681

## Text

- Required: Fundamental of Computer Graphics, Peter Shirley, AK Peters
- Reference:
  1. Realistic Ray Tracing, Peter Shirley, AK Peters
  2. An Introduction to Ray Tracing, A. Glassner (ed.) Morgan Kaufman

## Description

- Introduction to computer graphics concepts with a focus on ray tracing
- Program your own ray tracer, including illumination, texture mapping, anti-aliasing, and distributed ray tracing
- This course is programming intensive and requires
  - A working knowledge of C/C++
  - A basic understanding of object-oriented programming concepts

## Prerequisites

- CSE 560 or permission of instructor; Math 568 or Math 571
- Strong C/C++ programming skills

## Grading

- Lab Assignments: 50%
- Midterm: 20%
- Final: 30%

**Tentative Class Schedule**

<b>Week</b>	<b>Topics</b>
1	Course Overview; Introduction to Computer Graphics Algorithms
2	Basic Ray Tracing Algorithm; Viewing and Transformation; OpenInventor
3	Local Illumination Algorithms
4	Global Illumination Algorithms: Shadows, Reflections, Refractions
5	Ray-Object Intersection Algorithms
6	Texture Mapping
7	Anti-aliasing and Distributed Ray Tracing
8	Optimization and Spatial Data Structures
9	Advanced Topics
10	Advanced Topics