

## CSC320H – Introduction to Visual Computing Spring 2011

**Instructor:** Prof. Kyros Kutulakos

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**Office hours:** W5 (or by appointment)

**Lectures:** W 7-9pm

**Location:** BA1210

**Tutorials:** W 6pm (BA1210, BA3012)

**TAs:** Noah Lockwood (A-K), Micha Livne (L-Z)

**Web site:** <http://www.cs.toronto.edu/~kyros/courses/320>

This course is a beginner-level introduction to computer graphics and computer vision. It is aimed at undergraduates who have an interest in imaging or the visual arts. It will offer a unified treatment of image synthesis and image analysis techniques and will cover three major topics: (1) *Principles of Visual Computing*: Computational and mathematical methods for creating, capturing, analyzing and manipulating digital photographs. (2) *Digital Special Effects*: Case studies that examine how visual computing principles were used to create visual effects in movies and commercials. (3) *Visual Programming*: Programming assignments intended to give hands-on experience with creating graphical user interfaces and with implementing programs for synthesizing and manipulating photographs.

### Grading:

50%	Assignments (three, with weights 12%, 13% and 25%)
50%	One in-class test held in tutorial (20%) and a final exam (30%)

Late penalty for assignments is 15% per day for up to five days. See web site for approximate hand-out and due dates of assignments.

### Prerequisites:

CSC209H1/270H1/(CSC207H1, proficiency in C or C++); MAT137Y1, MAT223H1/MAT240H1; CGPA 3.0/enrolment in a CSC subject POST. No background in vision, graphics, or image processing will be assumed. Students interested in graphics are encouraged to take Visual Computing before taking CSC418. There is very little overlap between CSC320 and CSC418.

### Suggested Textbooks/Readings (there is no required textbook)

- K. R. Castleman, *Digital Image Processing*, Prentice Hall, 1996
- OpenGL Architecture Review Board, *OpenGL Programming Guide: The official guide to learning OpenGL, version 1.4*, Addison-Wesley, 2003