# CSC418H/2504 – Computer Graphics
# Winter 2012

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**Office hours**: W2 (or by appointment)

**Lectures**: W 3-5
**Locations**: BA1180
**Tutorials:** M3 (BA2175, BA2185)
**TAs:** Xavier Snelgrove (A-K), Michael Tao (L-Z)
**Web site:** http://www.dgp.toronto.edu/~karan/courses/418

This course introduces the basic concepts and algorithms of computer graphics. It covers the basic methods needed to model and render 3D objects, including much of the following: graphics displays, basic optics, line drawing, affine and perspective transformations, windows and viewports, clipping, visibility, illumination and reflectance models, radiometry, energy transfer models, parametric representations, curves and surfaces, texture mapping, graphics hardware, ray tracing, graphics toolkits, animation systems.

**Grading:**

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| 50% | Assignments (three, with weights 25%, 15%, 10% approx. every 3 weeks) |
| 50% | One in-class test held in tutorial (15%) and a final exam (35%) |

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

**Prerequisites**:

CSC336H1/CSC350H1/CSC351H1/CSC363H1/364H1/CSC365H1/CSC373H1/ CSC375H1/378HI, MAT137Y1, CSC209H1/proficiency in C or C++ ; CGPA 3.0/enrolment in a CSC subject POSt. The student is expected to read background material on the hardware and local software, and should be comfortable with elementary linear algebra, geometry, and vector calculus. It is also assumed that the student is comfortable programming in basic C++.

**Required Readings**

- P. Shirley, *Fundamentals of Computer Graphics, 2nd Edition*, A. K. Peters, 2005
- In-class lecture slides

**Suggested Textbooks/Readings**

- OpenGL Architecture Review Board, *OpenGL Programming Guide: The official guide to learning OpenGL, version 2.1 (6th edition)*, Addison-Wesley
- Dave Shreiner, *OpenGL Reference Manual: The Official Reference Document to OpenGL, version 1.2 (3rd edition)*, Addison-Wesley