

# CS 4204 Computer Graphics

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## *Final Exam Preview*

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# Final Exam

- ***(90%) Classroom exam (3:25pm – 5:25pm, Tuesday, 05/08/2012)***
  - Include 10 – 15 multiple choice questions and 2-3 written questions.
  - For multiple choice questions, **NO** points will be subtracted for the wrong answers.
- ***(10%) Take home exam***
  - Questions will be posted on Tuesday, 05/08/2012 on class website.
  - Due by 11:59pm, Wednesday, 05/09/2012.
  - Upload to the Dropbox in Scholar website.

# Transformation

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- *Affine Transformation and its properties*
- *2D and 3D Transformation Matrix*
- *Transformation in Homogeneous coordinate system*

# Projection

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- *Orthographical projection*
- *Perspective projection*
  - Perspective Projections of 3-D Objects
  - Properties of perspective projection
  - Projection of lines and vanish point
  - **NOT COVERED: pseudo-depth, projection matrix**

# Lighting and shading

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- ***Phong local illumination model***
  - Specular component
  - Diffuse component
  - Ambient component
- ***Gouraud and Flat Shading model***

# Texture Mapping

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- *Texture coordinate*
- *OpenGL texture mapping functions and parameters*
- Warping mode: GL\_REPEAT and GL\_CLAMP

# Curves and Surfaces

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- ***Implicit, explicit and parametric representation***
  - Lines, circles and spheres
  - Tangents and normals
- ***Cubic polynomial form***
  - Constraint condition equations for Interpolation and Hermite curves

# Raytracing

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- *Basic raytracing algorithms*
- *Computation bottle neck and acceleration method*