

CS 4204 Computer Graphics

Final Exam Preview

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Final Exam

- ***(90%) Classroom exam (10:05am – 12:05pm, Friday, 12/07/2007)***
 - Include 15 – 20 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, 12/04/2007 on class website.
 - Due by 11:59pm, Thursday, 12/13/2007.
 - Email your answer to your TA, (ponce@vt.edu)

Transformation

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

Projection

- *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

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

Texture Mapping

- *Texture coordinate*
- *OpenGL texture mapping functions and parameters*
- Warping mode: GL_REPEAT and GL_CLAMP

Curves and Surfaces

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

Raytracing

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