CS 4620 Midterm Review

**Regular Exam:** Oct. 29th 7:30 - 9:00 pm Gates G01

**Makeup Exam:** **not listed** 5:30 - 7:00 pm Hollister 362

**Extra-Time Exam:** **not listed** 6:45 - 9:00 pm (as per Ruojin’s email)

**Allowed:** 1 letter-sized cheat sheet, both sides

**Materials covered:** Everything before fall break

**Total marks:** 80 points

1. Ray tracing (35-40%)
   - Definition: difference from rasterization
   - Familiar w/ programming assignment
     - Ray-object intersection: triangle, sphere, bounding box
     - Pipeline: Recall the bugs you’ve run into
     - Ray acceleration: BVH tree / bounding box

2. Mesh (25%) — Read through slides very carefully
   - OBJ file format (v, vn, vt, f v1/v2/v3)
   - Be careful with ordering counter-clockwise

3. Transformations & Manipulators (25%)
   - Similar to written assignments
   - Characteristics of scale/rotation transformation/reflection matrices
   - Rotation/scaling w.r.t. a given point

4. Filters (15%-20%)
   - B-spline, cubic spline → Catmull-Rom spline
   - Behaviours
   - Familiar w/ functions for each type of filter
- Very similar to written assignment
  - Linear interpolation, nearest neighbors

Suggestions:
- Skip questions & come back to them later
- Read through descriptions carefully
- Don't be scared if you are given a set of images to compare