

CMSC 427 – Tentative Course Plan

Fall 2003, Amitabh Varshney

Sep 2	Motivation, Overview <i>applications, graphics pipeline</i>	Sep 4	Graphics Display Technology <i>vector/raster CRT, LCD, DMD human visual system</i>
Sep 9	Event-Driven Computing <i>events, various primitives</i>	Sep 11	Graphics APIs <i>OpenGL overview</i>
Sep 16	Designing Interactive Programs <i>GLUT overview, menus</i> Assignment 1 given	Sep 18	Pixel Operations <i>bitmaps, pixmaps, images</i>
Sep 23	Line Drawing <i>overview, algorithms</i>	Sep 25	Polygon Filling <i>overview, algorithms</i> Assg 1 due, Assg 2 given
Sep 30	Sampling and Filtering <i>antialiasing</i>	Oct 2	Color and Transparency <i>models, theory</i>
Oct 7	Geometric Primitives <i>lines, triangles basic linear algebra</i>	Oct 9	2D Transformations <i>translate, rotate, scale, shear homogeneous coordinates</i> Assignment 2 due
Oct 14	3D Transformations <i>representation, composition local and global coords</i>	Oct 16	Mid-Term Exam
Oct 21	Picking and Dragging <i>selection, hierarchies</i>	Oct 23	3D Viewing <i>parallel, perspective</i> Assignment 3 given
Oct 28	Visibility and Cullings <i>depth cues, coherence VFC, Backface</i>	Oct 30	Visibility Determination <i>hidden surfaces, Z-buffer other algorithms</i>
Nov 4	Illumination & Shading <i>ambient, diffuse, specular flat, Gouraud, Phong</i>	Nov 6	Textures <i>use, types, mappings</i> Assg 3 due, Assg 4 given
Nov 11	Ray Tracing <i>overview, acceleration</i>	Nov 13	Radiosity <i>overview</i>
Nov 18	Modeling Overview <i>various approaches</i>	Nov 20	Curves <i>Bézier and B-spline</i>
Nov 25	Surfaces <i>Bézier and B-spline</i> Assignment 4 due	Dec 2	Volume Rendering <i>overview, applications</i>
Dec 4	Other Graphics Primitives <i>points and images</i>	Dec 9	Virtual Environments <i>technology, applications</i>
Dec 11	Wrap-up Review	Dec 15	Final Exam 8:00am – 10:00am