SketchUp Introduction
The Benefits of SketchUp

● What is Google SketchUp?
  ○ 3D modelling program
  ○ Connected to many other Google products
  ○ Conceptual modelling with plugins for rendering
  ○ Vast component library

● What can it do?
  ○ Insert your model into Google Earth
  ○ Make sections from 3D models
  ○ Produce digital sketch or massing models
Workshop Goals

● What we'll cover:
  ○ Basic commands
  ○ Applying materials
  ○ Components
  ○ Styles
  ○ Shadows
  ○ Exporting graphics

● What we won't cover:
  ○ Importing other files
  ○ Insertion into Google Earth
  ○ Layers
  ○ Section Planes
  ○ Camera Views
  ○ Creating scenes
Moving Around

- You can **Orbit** by holding the *click-wheel*.
- You can **Pan** by holding *Shift+Click-Wheel*.
Drawing Commands

- Line - Set start and end points
- Circle - Set center point and radius
- Rectangle - Set opposite corners
- Arc - Set start-end-middle points
- Polygon - Specify # of sides, then center and radius

*You can click or type to define all dimensions.*
Manipulation Commands

- Push/Pull - Extrude a face, but only perpendicular to it
- Offset - Set the distance to offset the concentric shape
- Rotate - Set the reference angle and angle of rotation
- Move - Set the base point and new location
- Follow Me - Extrude a face along any path
- Scale - Select a direction and magnitude to scale

*You can click or type to set your magnitudes.*
Applying Materials

- Paint Bucket (B) - Apply materials to faces
- Lots of preset textures and colors
- Can create new materials with buttons in window
  - Can load in images to use as materials
- Select material and click on face to apply to
- Use eyedropper to match another object's material
Making/Using Components

- Make Component (G) - select pieces, give a name
- Great for large-scale projects with repeating components; e.g. beams, columns, stairs
- Double click on a component to open it and make changes
- SketchUp has a database of shared components, such as people and furniture

*Display component info by opening the Entity Info window.
Changing Styles

- Open the Styles UI from the Window menu
- If the Styles toolbar is not there, open with View->Toolbars->Styles
- Styles change the visuals of a project with one click
- You can make a new style with the button on the right
- The Styles toolbar will let you change face styles without changing edges or corners.
Using Shadows/Sun Data

- Open the Shadow UI from Window->Shadows
- Ensure that Shadows are turned on under View
  - You can also click the button on the left
- If you have the correct timezone, you can create approximate sun studies
  - Use the Geo-Locate function to be more exact

Select the timezone
Select the time of day
Select the date
Always check this
Select the faces and ground
Exporting Graphics

- You can save a 2D image of your current view, without just taking a screenshot
- The graphic will not show the axes or anything that is not part of the model
- You can also export a 3D model for use with Google Earth
  - In Pro, there are other formats possible
What's Next?

● Some other useful tools:
  ○ Camera Views
  ○ Creating Scenes
  ○ Using Layers
  ○ Section Planes
  ○ Importing other files
  ○ Insertion into Google Earth

● There are also outside plugins for rendering
  ○ SkIndigo
  ○ VRay
  ○ SU Podium
  ○ Twilight Renderer
  ○ Shaderlight
  ○ Kerkythea

● [http://sketchup.google.com](http://sketchup.google.com)