

Unit	Topic	Lesson	Lesson Objectives
------	-------	--------	-------------------

3D Art I

Course Overview

Introduction

- Define 3D modeling
- Describe some of the careers found in this field
- List tips for achieving academic success in the course

Start the Course

- Identify computer requirements
- Learn how to move through the course
- Switch between windows

Set Up Your Computer

- Find files and folders on a computer
- Set up a computer to show the List folder view and file name extensions
- Make a course folder

Set Up a Browser and Install 7-Zip

- Set up a Web browser
- Download and install a zip utility

Download Resources and Zip Assignments

- Get the course resources
- Install software
- Zip and unzip files and folders

Make a Hat

Navigating 3D Space

- Open a project
- Switch between Object and Edit Mode
- Switch between Preset Views using the number pad
- Zoom with the mouse and the keyboard
- Pan with the mouse and the keyboard

Unit	Topic	Lesson	Lesson Objectives
		Transforming a 3D Object	<ul style="list-style-type: none"> Turn on and identify the 3D Transform Manipulator Define the following terms: translate, scale, and rotate Move a 3D object and move a 3D object along one axis Stretch a 3D object and stretch a 3D object along one axis Rotate a 3D object and rotate a 3D object along one axis
		Saving Files	<ul style="list-style-type: none"> Identify the File Navigation screen Define the parent directory Save a project using Save and Save As
		Create a 3D Object	<ul style="list-style-type: none"> Define the following terms: meshes, plane, sphere, cylinder, cone, 3D Cursor, radius, and vertex Add a 3D object Join 3D Objects together
		Rendering 3D Objects	<ul style="list-style-type: none"> Define rendering Move the camera to change the rendered image Render a 3D object
Build a House			
		Make the House	<ul style="list-style-type: none"> Use the 3D View grid as a modeling guide Shape a plane into a rectangular door Shrink a plane to window-size Move the planes onto the house
		Create the Roof	<ul style="list-style-type: none"> Identify Vertex and Edge Select Mode Define edges Use Vertex and Edge Select modes to shape a cube into a triangular shape for a roof

Unit	Topic	Lesson	Lesson Objectives
		Paint the House	<ul style="list-style-type: none"> Define material and texture Identify the Buttons Window, Material Editor, Shading Panel, Mini-Windows, and the Blender Lamp Add a material to a 3D object Add an image-based texture to a 3D object Move the light
		Add Materials to the House	<ul style="list-style-type: none"> Identify the Color Picker and Map To mini-window Add color to a material and a texture to a 3D object Add a texture to a 3D object Change texture settings and change the color of a texture
		Render the House	<ul style="list-style-type: none"> Define the following terms: Lamp, Area, Spot, Hemi, Sun, parent-child objects, and path constraint Change the Lamp's lighting type Set the camera's current view as the rendering frame and identify a path Constrain a camera to follow a path and modify a path's shape Reduce rendering time and render an animation
		Make a Creature	
		Make an Arm and a Leg	<ul style="list-style-type: none"> Define the following terms: symmetry, faces, subdivide, and extrusion Use a background image as a picture guide Subdivide a cube Select vertices using Box Select mode Extrude cubes to create an arm and a leg
		Make a Head	<ul style="list-style-type: none"> Extrude cubes to create a neck and head Box select and move vertices to shape the head Box select vertices to extrude an ear from the head Remove a background image

Unit	Topic	Lesson	Lesson Objectives
		Add Body Parts	<ul style="list-style-type: none"> Identify Face Select mode Box select and move vertices to shape a hand Select a face and extrude to create a basic foot Select a face and move it to create a rounded belly and nose Select a face, extrude, and move it to create a tail
		Mirror the Body	<ul style="list-style-type: none"> Define the following terms: mirror, merge limit, and subsurf Delete faces to prepare a 3D object for mirroring Add the Mirror and Subsurf modifiers Identify the Set Smooth and Apply buttons
		Add the Face	<ul style="list-style-type: none"> Add new objects while in Edit mode Identify mirrored objects and add 3D objects as mirrored objects Shrink, move, and rotate mirrored planes to create eyes and teeth Shrink, move, and rotate mirrored cylinders to create eyebrows and a mouth Assign names to specific vertex groups and apply modifiers
		Make the Creature Colorful	<ul style="list-style-type: none"> Define Nor Assign materials and textures to specific vertex groups Add bumpiness to a texture
Animate the Creature			
		Add Bones	<ul style="list-style-type: none"> Define the following terms: rigging, bones, body, root, and tip Identify Wireframe Viewport Shading Switch to Wireframe View Add bones to create an armature Duplicate and flip an armature to create mirrored bones
		Name the Bones	<ul style="list-style-type: none"> Define armature Name bones

Unit	Topic	Lesson	Lesson Objectives
------	-------	--------	-------------------

Attach the Bones

Define skinning

Make the bones in an armature parents of selected vertices

Create Keyframes

Define the following terms: pose, keyframe, and LocRot

Fix bone rotation so Paste Flipped Pose works

Insert a keyframe

Copy and paste poses

Render Your Animation

Render the animation

Create Terrain

Make Hills and Valleys

Erase an object

Add a grid

Identify the Transform Properties Panel

Define the following terms: proportional edit, falloff, constant - no falloff, root falloff, random falloff, sphere falloff, linear falloff, smooth falloff, and sharp falloff

Make hills and valleys

Add Grass and Dirt

Define the following terms: specularity and stencil texture

Change a material's specularity

Add a stencil texture

Change texture settings

Add a Sky Backdrop

Create a sky

Add a sun lamp

Add a Moon

Define the following terms: IcoSphere, ZTransp button, colorband, and color gradient

Identify the Ramps mini-window and the colorband

Create a Colorband

Add a light inside the moon to make it glow

Add stars to the 3D scene

Unit	Topic	Lesson	Lesson Objectives
Build a Car			
		Make a Tire	<ul style="list-style-type: none"> Extrude a circle to make a tire Define the terms library and append Append a material
		Build a Car	<ul style="list-style-type: none"> Add a subdivided grid Stretch a grid's vertices to match a background image Extrude a grid shape into three dimensions
		Paint the Car	<ul style="list-style-type: none"> Append materials Add materials to specific vertex groups
		Move the Car	<ul style="list-style-type: none"> Append objects Join 3D Objects together Animate the car driving
Make a Scene			
		Bring the House and Creature Together	<ul style="list-style-type: none"> Append objects, armatures, and animations Shrink an armature and its child object
		Follow the Path	<ul style="list-style-type: none"> Create an animation of the creature walking towards the house
		Adjust the Animation	<ul style="list-style-type: none"> Identify the Animation Screen Switch between the Animation and Modeling Screens Identify the Outliner, Timeline, and Action Editor Windows Increase an animation's length with the Action Editor
		Open the Door	<ul style="list-style-type: none"> Create an animation of a door opening Insert rotation keyframes

Unit	Topic	Lesson	Lesson Objectives
------	-------	--------	-------------------

Finish the Scene

Define the following terms: tweening, Bezier curve, and curve handles

Modify an animation's Bezier curve

Modify the shape of an animation's Bezier curve