ULTRAREAL

A4534x TECHNIQUES OF THE ULTRAREAL
A4542x IMAGINING THE ULTRAREAL

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Fall 2015
Wednesday 7-9PM
Avery 600 - Ware Lounge
Office Hours: Wednesday, 9PM

Description

The use of perspective and rendering is often an afterthought. With the abundance of 3D modeling software and the ability to see every angle of a project instantaneously, renderings are often thought of as a last minute tool for representation. This class challenges the participants to not only think of rendering as a method of presentation, but also a tool for design. We encourage the use of perspective and rendering early and often in the design process. In addition to learning techniques for creating ultrarealistic images, we will teach a workflow that encourages early exploration. We will focus on color, light, material, context, reflection, and opacity throughout the course of the entire design project. Will will look for inspiration in many places, including art, photography and cinematography.

The class will use V-Ray for 3D Studio Max as the main engine for exploration, but will also encourage the use of other modeling applications, post processing software, and 3rd party plug-ins. Students will also be required to explore additional methods of composition, including sketching and photography. No knowledge of V-Ray or 3DS Max is required, but students should be able to model in an application of their choice. The class will focus on Rhino and 3DS Max as modeling tools.

Class Structure

Classes will consist of a combination of student presentations, lectures, and software demonstrations. There is a more detailed breakdown of each class in the schedule below. Other instructional video tutorials will be found online at digitalconceptsnyc.com. There will be weekly office hours with teaching assistants and critics, as well as several weekend working sessions with critics. Please note, that online tutorials and office hours are not a substitute for attending lecture.

Session A will start to explore the basic aspects of the rendering process, including but not limited to modeling, cameras, lights, and material. Session B will expand on these ideas and delve deeper into each aspect, as well as introduce additional techniques. Students who take session B are **highly encouraged** to take session A.

Grading is dependent on multiple factors. The first is weekly progress and participation. We will check blogs on a weekly basis. In order to achieve the level of quality that this class requires, it is necessary to test and revise the techniques that we show you each week. A few groups will be asked to present their progress in the beginning of class throughout the semester. The second factor in grading is overall quality of midterm and final images.

Project

Students will be encouraged to work in small groups of up to four (4) members for the semester. The project will consist of a small scale pavilion or other architectural object that will be developed and presented through rendering. Images will be uploaded to a team website each week, and critics and assistants will provide feedback. **The project must be new, original work.** Students **are not** allowed to use an existing project or previous studio work. You must design, model, and render a project from scratch.

In addition to the project, there will be small assignments throughout the course of the semester. Each group must create a Tumblr blog and upload assignments and progress images on a weekly basis.

Schedule
September 9th - Intro
LECTURE: Visual Studies presentation, project intro, and project walkthrough
-Introduction to the class and review syllabus
-Walkthrough sample project
-Website explanation
-Session A and/or B explanation
-Review of first assignment
-Questions
Due Next Week: One sketch of a proposed perspective for each student, uploaded to blogs

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September 16th - Photography & Composition
REVIEW: Perspective Sketches
-Several groups will be selected to present their sketches
LECTURE: Photography and Camera Techniques
-Digital SLR Camera Set-up
-F Stop
-Shutter Speed
-Composition set up
DEMONSTRATION: Intro Photoshop
-Photoshop Perspective Correction
-Image Cropping & Composition
Due September 30th: Photo Composition Assignment

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September 23rd - 3D Modeling and Max Basics
DEMONSTRATION: Rhino Bootcamp
-Modeling techniques, specifically for Floors, Windows, & Repetitive Elements
-Exporting to 3DS Max
DEMONSTRATION: Max Bootcamp
-Importing from Rhino
-Merging vs. Importing
-3DS Max settings, units
-Modeling in Max

- using the modifier stack
- Viewport Navigation

-Archiving your work for file sharing
-Camera Set Up
Due Next Week: Photo Composition Assignment

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September 30th - Lights, Camera, Vray
REVIEW PHOTO ASSIGNMENT
All groups discuss composition
DEMONSTRATION: Vray Basic Settings
Vray Basic Settings
Saving Settings for Batch Rendering
Basic Lighting
Setting up Cameras
- shutter speed
- f stop
- white balance
- vignetting
- tilt/shift
- perspective correction

Basic Materials
- WHITE 200
- GLASS

Rendering & Saving
Due Next Week: Perspective Screenshots of model, uploaded to blog

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October 7th - Materials 01
DEMONSTRATION: Materials
Procedural Materials
- Titanium
- ETFE
- Metals
- Water
- Chrome
- Plastic
- Channel Glass
- Frosted Glass

Due Next Week: Material Palettes

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October 10th - WEEKEND DESK CRITS with JOE
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October 14th - Materials 02

REVIEW MATERIAL PALETTES
Selected groups discuss material choices
DEMONSTRATION: Materials
Bitmap Materials (Arroway, CG Textures, Dirt Maps)
- scale
- bump, displacement, reflectivity
- UVW Map modifiers
- Material IDs

Unfolding geometry to map textures
Due Next Week: Rendered views of model with at least 1 refined material

October 14th - Materials 03
DEMONSTRATION: Custom Bitmaps
Using existing bitmaps to compile and create new ones
Extracting geometry to create maps
Creating maps from scratch
Crazy Bump
Due Next Week: Midterm Images: Custom bitmaps, Rendered view of model with custom bitmap material

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October 17th - WEEKEND DESK CRITS with PHILLIP

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October 21st - Collage Images
DEMONSTRATION: Custom Photo merging and collaging
How to collage Photos with renderings
Extracting render elements
Perspective Matching in 3D Max
Photoshop Blending Techniques
Due Next Week: Site selection- context images, look and feel of site

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NOVEMBER 4th - Composition and Site Context
REVIEW SITE SELECTION
Selected groups review site selection images
LECTURE: Context
DEMONSTRATION: 3DS Max and Photoshop for Custom Environments
Grass, rock, paths using Photoshop
Proxy Objects
Creating rocky cliff face using Photoshop and displacement
Environment fog and containers
DEMONSTRATION: Forest Pack
Advanced context modeling
Forest Pack Pro plug-in
Using particle systems to mimic flowing water

Due Next Week: Context Catalog

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-- **November 11th - 3/4 REVIEW**--

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November 18th - Lighting
LECTURE: Lighting Systems
DEMONSTRATION : Interior Lighting
Advanced lighting
Interior lighting
IES profiles
Due Next Week: Nighttime view of model

November 14th - WEEKEND DESK CRITS with PHILLIP
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November 21ST - WEEKEND DESK CRITS with JOE
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November 25th - NO CLASS, THANKSGIVING BREAK

December 2nd
REVIEW NIGHTTIME RENDERS
Selected groups review night renders
DEMONSTRATION: Post Processing
Using Vray render elements
Adjusting levels
Layer masks
Lens blur / depth of field
Using After Effects / Magic Bullet / Volumetrics
Due Next Week: First draft renders of final images
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December 9th - NO CLASS, FINAL STUDIO REVIEWS
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December 16th - Final Review (TENTATIVE)

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