

ULTRAREAL SYLLABUS

A4534x TECHNIQUES OF THE ULTRAREAL

A4542x IMAGINING THE ULTRAREAL

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Fall 2017

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 digicon-nyc.tumblr.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 groups of up to four (4) members for the semester. Deliverables will be the same for each group, regardless of number of students. The project will consist of a small scale pavilion or other architectural object that will be developed and presented through rendering. The focus of the images must be the exploration of this project through three scales. Environment and context will play a supporting/secondary role to your focal design. 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. See attached project description for details. Blogs will be reviewed in class each week.

Schedule

September 6th - Intro

LECTURE: Visual Studies presentation, project intro, and project walkthrough

- Introduction to the class and review syllabus
- Walkthrough sample project
- Discuss major goals for a rendering 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 13th - Photography & Composition

REVIEW: Perspective Sketches

- Several groups will be selected to present their sketches

GUEST LECTURE: Composition

- Gian Colangelo

LECTURE: Photography and Camera Techniques

- Digital SLR Camera Set-up
- F Stop
- Shutter Speed
- Composition set up

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September 20th - 3D Modeling in Rhino for Rendering

REVIEW: Perspective Sketches 2

- Several groups will be selected to present their updated sketches

DEMONSTRATION: Rhino Bootcamp

- Modeling techniques, specifically for Floors, Windows, & Repetitive Elements
- Modeling to a high level of detail

- Prepping your Rhino model for rendering
- Exporting to 3DS Max using DWG, OBJ, and 3DS. Pros and cons of each.

DEMONSTRATION: Intro Photoshop

- Photoshop Perspective Correction
- Image Cropping & Composition

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September 27th - Lights, Camera, Vray

REVIEW: Photo Assignment

Selected groups discuss photos

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

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October 4th - Materials 01

REVIEW: White Renderings

Selected groups discuss white renderings

LECTURE: Bump, Reflection, Diffuse Maps

DEMONSTRATION: Procedural Materials

Modeling in Max for specific materials

Procedural Materials

- Titanium
- ETFE
- Metals
- Water
- Chrome
- Plastic
- Channel Glass
- Frosted Glass

Due Next Week: Material Palettes

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October 7th & 8th - WEEKEND DESK CRITS
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October 11th - Materials 02

REVIEW: Material Palettes

Selected groups discuss material choices

LECTURE: Project Examples with Materials

DEMONSTRATION: Materials

Bitmap Materials (Arroway, CG Textures, Dirt Maps)

- scale
- bump, displacement, reflectivity
- UVW Map modifiers
- Material IDs

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October 14th & 15th - WEEKEND DESK CRITS
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October 18th - Materials 03

REVIEW: Three Final Views

Selected groups discuss selected views w/ 1 refined material

DEMONSTRATION: Custom Bitmaps

Using existing bitmaps to compile and create new ones

Extracting geometry to create maps

Creating maps from scratch

Dirt Maps

FSSS2

Crazy Bump

October 25th - Composition and Site Context

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

Environment Maps

DEMONSTRATION: Forest Pack

Advanced context modeling

Forest Pack Pro plug-in

November 1 - Collage Images

REVIEW: Context Images

Selected groups review their images with context

DEMONSTRATION: Custom Photo merging and collaging

How to collage Photos with renderings

Extracting render elements

Perspective Matching in 3D Max

Photoshop Blending Techniques

November 8th - Lighting

REVIEW: Collage Swap Assignment

Selected groups review their collaged swap assignments

LECTURE: Lighting Systems

DEMONSTRATION : Interior Lighting

Advanced lighting

Interior lighting

IES profiles

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November 11th & 12th - WEEKEND DESK CRITS

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November 14th - Advanced Post Processing

REVIEW: Night Time Renders

Selected groups review night renders

LECTURE: Advanced Post Processing

DEMONSTRATION: Realflow

DEMONSTRATION: Advanced 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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November 18th & 19th - WEEKEND DESK CRITS

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----- **APRIL 19th - 9/10 REVIEW** -----

SEE REQUIREMENTS

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November 22nd - NO CLASS, THANKSGIVING BREAK

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November 29th - DESK CRITS

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December 6th - NO CLASS, STUDIO FINAL REVIEWS

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----- **December 13th - ALL FINAL IMAGES DUE & FINAL REVIEW (TENTATIVE)** -----