ULTRAREAL SYLLABUS

A4534 - TECHNIQUES OF THE ULTRAREAL

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Fall 2019
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 gsappultrareal.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.

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 4th - 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
- Review of first assignment
- Questions

VIDEO ASSIGNMENT: 17.1A, 17.1B, 17.2
VIDEO SUPPLEMENT: 13.1, 13.2, 13.5, 13.6

Due Next Week: One sketch of a proposed perspective for each student, uploaded to blogs

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September 11th - Photography & Cameras
ASSIGNMENT DUE: *One Sketch per student*
LECTURE: *Photography and Camera Techniques*
- Digital SLR Camera Set-up
- F Stop
- Shutter Speed
- Composition set up

VIDEO ASSIGNMENT: 17.3
VIDEO SUPPLEMENT:13.4, 13.8

Due Next Week: 3 Renders from Bootcamp Tutorial Video

September 18th - Composition & Analysis
ASSIGNMENT DUE: 3 Renders from Bootcamp Tutorial Video
LECTURE: *Composition*
- *Guest:* Gian Colangelo

DEMONSTRATION: *Formal Analysis*

- Several groups will be selected to present their sketches and renders

VIDEO ASSIGNMENT:
VIDEO SUPPLEMENT:13.1, 13.2, 13.5, 13.6

Due Next Week: *3 Photos per Student*. Interior, Exterior, and Black & White.

September 25th - Materials 01

ASSIGNMENT DUE: *Photo Assignment*

- Selected groups discuss their Images

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

VIDEO ASSIGNMENT: 18.2
VIDEO SUPPLEMENT:18.1A, 18.1B

Due Next Week: Material Palettes Due

September 26th - THURSDAY - Desk Crits

ASSIGNMENT DUE: *1st ½ of the class, all work to date, printed on 11 x 17 for review with critic*

October 2nd - Materials 02

ASSIGNMENT DUE: *Detail Screenshots*

- Selected groups will present their details

LECTURE: *Project Examples with Materials*
DEMONSTRATION: *Bitmap Materials*

- Bitmap Materials (Arroway, CG Textures, Dirt Maps)
    - scale
    - bump, displacement, reflectivity
    - UVW Map modifiers
    - Material IDs

VIDEO ASSIGNMENT: 15.1
VIDEO SUPPLEMENT:

Due Next Week: Final Views w/ 1 refined Bitmap Material

October 3rd - THURSDAY - Desk Crits
ASSIGNMENT DUE: *2nd ½ of the class, all work to date, printed on 11 x 17 for review with critic*

October 9th - Materials 03
ASSIGNMENT DUE: *Final Views*

- Selected groups discuss selected views w/ 1 refined material

LECTURE: *None*
DEMONSTRATION 1: *Custom Bitmaps*

- Using existing bitmaps to compile and create new ones
- Extracting geometry to create maps
- Creating maps from scratch
- Dirt Maps
- FSSS2

VIDEO ASSIGNMENT: 15.2
VIDEO SUPPLEMENT: 14.1

Due Next Week: Final Views w/ all materials

October 16th - Collage
ASSIGNMENT DUE: *Final Views*

- Selected groups discuss selected views w/ 1 refined material

LECTURE: *None*
DEMONSTRATION 2: *Custom Photo merging and collaging*

- How to collage Photos with renderings
- Extracting render elements
- Perspective Matching in 3D Max
- Photoshop Blending Techniques

VIDEO ASSIGNMENT: 15.2
VIDEO SUPPLEMENT: 14.1

Due After Spring Break: Collage Swap Assignment

October 23rd - Composition and Site Context

ASSIGNMENT DUE: *Collage Swap Assignment*

- Selected groups discuss collage swap

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

VIDEO ASSIGNMENT: 14.3, 14.4, 17.4

VIDEO SUPPLEMENT: 13.3, 13.7, 13.9, 13.11, 13.12, 13.13

Due Next Week: Context & Material Board Updates and Inspiration, Fina Render Views w/ Context

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October 30th - Lighting

ASSIGNMENT DUE: *Context & Material Boards, Final Views w/ Context*

- Selected groups review their boards and final views

LECTURE: *Lighting Systems*

DEMONSTRATION : *Interior Lighting*

- Advanced lighting
- Interior lighting
- IES profiles

VIDEO ASSIGNMENT: 13.14

VIDEO SUPPLEMENT:

Due Next Week: Night Time Renders

October 31st - THURSDAY - Desk Crits

ASSIGNMENT DUE: *1st ½ of the class, all work to date, printed on 11 x 17 for review with critic*

November 6th - Advanced Post Processing

ASSIGNMENT DUE: *Final View*

- Selected groups review their final views

LECTURE: *Advanced Post Processing*

DEMONSTRATION: *Advanced Post Processing*

- Using Vray render elements
- Adjusting levels
- Layer masks
- Lens blur / depth of field

VIDEO ASSIGNMENT:
VIDEO SUPPLEMENT:

Due Next Week: Fully collaged set of images for review

November 7th - THURSDAY - Desk Crits
ASSIGNMENT DUE: *2nd ½ of the class, all work to date, printed on 11 x 17 for review with critic*

November 13th - Advanced Atmospherics
ASSIGNMENT DUE: *All final views, fully collaged*
- Selected groups review their final views

LECTURE: *Advanced Atmospherics*
DEMONSTRATION: *Advanced Atmospherics*
- Using Vray environments
- Using After Effects / Magic Bullet / Volumetrics
- Adding atmospheric enhancements in Photoshop/After Effects

VIDEO ASSIGNMENT:
VIDEO SUPPLEMENT:

Due Next Week: First Draft of Final Views with post processing for 9/10 Review

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November 20th - 9/10 REVIEW
This will be presented as a compiled PDF
All assignments to date should be compiled chronologically for review

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November 27th - No Class - Thanksgiving Break

December 2nd - December 10th - No Class - Studio Final Reviews

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Thursday, December 12th
ALL FINAL IMAGES DUE & FINAL REVIEW (TENTATIVE)