

# ULTRAREAL SYLLABUS

## A4534 - TECHNIQUES OF THE ULTRAREAL

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Fall 2020

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](http://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.

### ***Attendance***

GSAPP policy states that more than three (3) absences will result in an unofficial withdrawal. Attendance will be taken every class and the GSAPP attendance policy will be strictly adhered to. Please consult and contact administration for information on excused absences.

### ***Schedule:***

#### **January 22nd - 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 (Individual Assignment):** One sketch of a proposed perspective PER STUDENT, uploaded to blogs.

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#### **January 29th - 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

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**February 5th - Materials Intro**

**ASSIGNMENT DUE:** 3 Bootcamp Render Images

- Selected groups discuss their Images

**LECTURE:** Project Examples with Materials, Map Examples Lecture

**DEMONSTRATION:** Materials Palettes, options, channels (texture vs. material)

**VIDEO ASSIGNMENT:** 18.2

**VIDEO SUPPLEMENT:**18.1A, 18.1B

**Due Next Week:** 5 views, each with 5 different times of day. 5 Sketch overlays (one for each view) (minimum)

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**February 12th - Composition & Analysis**

**ASSIGNMENT DUE:** 5 views, each with 5 different times of day (minimum) **Please print one sheet for each view (5 total) as well as sketches from first assignment on 11 x 17 and bring to class**

**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 (Individual Assignment):** 3 Photos per Student. Interior, Exterior, and Black & White.

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**February 19th - Materials 02**

**ASSIGNMENT DUE:** 3 photos per student

- Selected groups will present their photos

**DEMONSTRATION 1:** Procedural Materials

- Modeling in Max for specific materials
- Procedural Materials
  - Titanium
  - ETFE
  - Metals
  - Water
  - Chrome
  - Plastic
  - Channel Glass
  - Frosted Glass

**DEMONSTRATION 2:** 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:** Material Palette

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**February 20th - THURSDAY - Desk Crits**

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

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**February 26th - Materials 03**

**ASSIGNMENT DUE:** Material Palette

- Selected groups discuss palette

**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 and abstracted images of each (Photoshop cut-out filter)

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**February 27th - THURSDAY - Desk Crits**

**ASSIGNMENT DUE:** 2nd ½ of the class, all work to date, printed on 11 x 17 for review with critic

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**March 4th - Collage**

**ASSIGNMENT DUE:** Final Views and Abstracted Image Assignment

- 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 Next Week (Individual Assignment):** Collage Swap Assignment. 1 collage per student.

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**March 11th - Kinne Week (Class will be held) - Emerging Technologies**

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**March 18th - No Class - Spring Break**

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**March 25th - 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, Final Render Views w/ Context, sketch overlay for each image

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**April 1st - Lighting**

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

- 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

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**April 2nd - THURSDAY - Desk Crits**

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

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**April 8th - 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, sketch overlay for each image

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**April 9th - THURSDAY - Desk Crits**

**ASSIGNMENT DUE:** 2nd ½ of the class, all work to date, printed on 11 x 17 for review with critic

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**April 15th - Advanced Atmospheric**

**ASSIGNMENT DUE:** All final views, fully collaged

- Selected groups review their final views

**LECTURE:** Advanced Atmospheric

**DEMONSTRATION:** Advanced Atmospheric

- 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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**April 22nd - 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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**April 29th - No Class - Final Studio Reviews**

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**Thursday, May 7th**

***ALL FINAL IMAGES DUE & FINAL REVIEW (TENTATIVE)***

***Final Review Requirements***

All final deliverables must be sent to the TA by 6pm on the date of the review. Please zip all of the below requirements into one folder with your group name. The TA will provide instructions for file transfer. See below for list of requirements:

- The 9/10ths review PDF, including all assignments to date
- Minimum three (3) final images, rendered in high quality in TIFF format. Please work in 16-bit format, but downsave to 8-bit before submitting. Also, please submit in CMYK format, without any layers, and without any compression.
- Files must be named using the following convention: VS CriticLastName StudentName1 StudentName2 FA19 ImageNumber ImageTitle.ext - Example: VS BrennanCrupi JohnDoe JaneDoe FA19 01 entry rendering.tif
- Failure to submit using the above requirements may jeopardize Abstract consideration. You do not need to include your group name in the individual final images.
- All final images must include a VRay stamp in your electronic submissions. Please crop this out before the review and before printing. See attached image file for the location of this option.
- Please archive and submit your final 3ds Max model. This can be done by going to File>Archive
- Please note- unless you discussed the option of using a different platform with us at the beginning of the semester, all final images must be rendered in VRay for 3DS Max.

Please start pinning up at 6:30pm so we can start promptly at 7pm. The review will be a walking format, so critics will float around in groups or individually. They will observe projects in their own order at their own pace, so you should be prepared to go at any time. You will be presenting multiple times throughout the course of the evening. See below for requirements:

- You must print at least one (1) of your final images large format on photo paper, minimum 150 DPI.
- Please print the following on 11 x 17 and pin up next to your final image(s): all sketches, your favorite photos, all materials palettes, all collage swaps and your favorite white model studies.
- Please have all remaining material ready to present on an iPad, tablet, laptop, etc - most importantly all unprinted final images.