

Course Information

Number and title: Arch 490 - 05 - Real Time Rendering (RTR)

Professor info: **Alphonso Peluso**
E-Mail: peluso@IllinoisTech.edu

Prerequisite(s): DC2 or permission from the department

Required Text and Materials: All tutorials for in class learning will be provided on the portal

Tutorials and Class Assignments Location: [Portal Page Link](#)

Class Schedule: See page2 and link above

Course description:

The course explores the integration of cutting-edge real-time rendering technologies into the field of architecture. With the advent of powerful hardware and software, architects now have the ability to create immersive and interactive visualizations of their designs in real time. Throughout this course, students will delve into the fundamental principles, techniques, and tools used in real-time rendering engines to create high-quality and photorealistic architectural visualizations. The course emphasizes practical skills and hands-on experience, allowing students to develop proficiency in utilizing real-time rendering engines to enhance architectural design processes

Learning Objectives:

Model and prepare architectural projects for real-time rendering by integrating geometry, materials, and lighting optimized for high-performance visualization engines.

Produce high-quality visual outputs including still renderings, animations, and immersive VR experiences based on a current studio project.

Apply cinematic storytelling techniques to architectural visualization, creating compelling narratives that communicate design intent.

Incorporate drama, atmosphere, and style into visualizations to enhance emotional impact and viewer engagement.

Experiment with creative visual approaches that go beyond photorealism, exploring artistic and conceptual representations not found in reality.

Adapt and iterate efficiently within real-time rendering environments, maintaining flexibility in design and presentation workflows.

Software: Rhino / D5
Adobe Photoshop
Adobe Premiere

Grading: Each class students will submit completed class assignment(s) showing their progress and understanding of basic concepts.

Final grade is based on the four percentages below:

10% for attendance

(attendance is mandatory, signing in for someone and/or 3 unexcused absences will result in a failing grade)

20% for Homework assignments

30% for Midterm

40% for the Final

Please note: attendance, completion and submission of all course work on time is the minimum requirement and does not mean that you will receive an A grade. All grades are subject to the grade judging criteria below:

Grades are determined by judging 4 different categories:

Legibility - Make sure that your assignments are clear and easy to read. Use spell check (all software apps have it). Your shared folder should be neat and organized with assignment #'s labeled **Firstname_Lastname_A0#**.

Composition - In addition to being legible you should apply all the concepts of composition that you have previously learned. Some suggestions including but not limited to are: renderings should tell a story, cameras and lighting should create a sense of drama, assignments should include title and drawing names, all text should be placed with good layout & scale.

Style - This is an expansion of Composition. Create your own style. Some style elements including but not limited to are: rendering style, lighting, camera angles, material representation, font color, font type, background color, title bar and rendering style

Innovation - Expand upon the skill sets taught in the course and apply them to the assignments. Research additional learning resources found on the Internet and in Libraries. Create your own way to apply the software tools and concepts discussed in the course.

Americans with Disabilities Act (ADA) Policy Statement:

Reasonable accommodations will be made for students with documented disabilities. In order to receive accommodations, students must go through the Center for Disability Resources office. The Center for Disability Resources (CDR) is located in Life Sciences Room 218, telephone 312.567.5744 or <https://www.iit.edu/cdr>

Academic Resource Center (ARC): Hermann Hall for help with study or language skills.
<http://iit.edu/arc/>

IIT Writing Center: One-to-one help with writing assignments.
<https://www.iit.edu/cac/writing-guides/help-writing-assignments>

Student Health and Wellness Center: provides health care, advocacy, wellness resources
<https://www.iit.edu/shwc>

Therapy/Psychiatric Counseling: <https://www.iit.edu/shwc/appointments/counseling-appointments>

Center for Disability Resources: <https://www.iit.edu/cdr>

Code of Academic Honesty: <https://web.iit.edu/student-affairs/handbook/fine-print/code-academic-honesty>

Student Code of Conduct:
https://webmaster.iit.edu/files/general-counsel/faculty-handbook/code_of_conduct.pdf

Studio Culture: <https://arch.iit.edu/about/studio-culture>

Class Schedule

Week One:

August 21

Cameras _ Rhino / D5 Workflow
D5 Sunlight

Week Two:

August 28

D5 Sync _ Real Skies (HDRI images)
Material Basics _ Alpha Channel

Week Three:

September 04

D5 Basics _ Landscape Editing
Adding Entourage Assets
Photoshop Workflow Secrets

Week Four:

September 11

D5 PBR Materials and Texture Maps
Effects Stack
Photoshop Workflow Secrets

Week Five:

September 18

D5 Lighting _ Glass Material
Photoshop Glass Reflections
Open Street Maps

Week Six:

September 25

Work in Class

Week Seven:

October 02

Work in Class

Week Eight:

October 09

Midterm Presentation

Week Nine:

October 16

D5 Animation Basics 1 _ Camera Path Presets
Orbit Path _ Dolly Shot _ Pan/Tilt _ Follow Object

Week Ten:

October 23

D5 Animation Basics 2 _ Record Key Frames
Advanced Move _ Mass Move _ Wind _ Birds
Adobe Premiere Basics

Week Eleven:

October 30

Daylight, Water, and Weather Animation
Animations with a focus on Nature,
Weather, and Time lapse (Daylight study)

Week Twelve:

November 06

D5 360 Panoramic
VR Equirectangular Output
Adobe Premiere VR Export

Week Thirteen:

November 13

VR Tour with Hotspots

Week Fourteen:

November 20

Work in Class

Week Fifteen:

November 27

Work in Class

Week Sixteen:

December 04

No Class

Finals Week:

December 11

FINAL PRESENTATION

*note: course syllabus & schedule are subject to change