Course Information

Number and title: Arch 490-02 - Artificial Intelligence in Arch

Professor info: **Alphonso Peluso**
E-Mail: peluso@iit.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: http://www.digiitalarchfab.com/arch-490-ai-in-architecture-spring-2025/

Class Schedule: **See link above**

Course description: The AI Artificial Intelligence in Architecture course is designed to equip students with a comprehensive understanding of the applications and implications of artificial intelligence in the field of architecture. This course explores how AI technologies can enhance and revolutionize architectural design, planning, and construction processes. Throughout the course, students will delve into the fundamental concepts and theories underlying artificial intelligence, machine learning, and deep learning. They will examine various AI algorithms, techniques, and tools that can be employed in architectural practice. Students will also gain hands-on experience with state-of-the-art AI software and platforms used in the architecture industry.

Course goals: Students will work on weekly themes to generate images through an iterative process. For the midterm and final students will submit deliverables for a competition brief or a brief that they develop themselves.

Software:
MidJourney
Rhino
Stable Diffusion
Control Net
Adobe Premiere
Runway ML

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: images should tell a story. Images 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:image 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.

Students with Disabilities Statement:

Americans with Disabilities Act (ADA) Policy Statement
Reasonable accommodations will be made for students with documented disabilities. In order to receive accommodations, students must obtain a letter of accommodation from the Center for Disability Resources. The Center for Disability Resources (CDR) is located in 3424 S. State St., room 1C3-2 (on the first floor), telephone: 312.567.5744 or disabilities@iit.edu

Class Schedule

Week One:
January 16
Intro – Subscribe to MidJourney
MidJourney Interface
Floating Planes exercise
MJ Parameter --no (::-.5)
Ai _ Artificial Intelligence

Week Two:
January 23
MJ Prompt Weights _ Figure Ground Studies
MJ Parameter --style (raw)
MJ Parameter --style or --s (0-1000)(default 100)
ML _ Machine Learning

Week Three:
January 30
MJ Image Prompts _ Light Types
Chiaroscuro, Low-Key, High-Key, Back Lighting
Volumetric Soft Light, Fog
Google Search: Movie Light Types
NN _ Neural Network

Week Four:
February 06
MJ Aspect Ratios _ Film Types
https://filmcolors.org/
LLM _ Large Language Model

Week Five:
February 13
MJ Image Prompts _ Reverse story telling
/blend
GAN _ General Adverserial Network

Week Six:
February 20
Work in Class

Week Seven:
February 27
Work in Class

Week Eight:
March 06
Midterm Presentation

Week Nine:
March 13
RunPod _ Stable Diffusion _ Canny
DM _ Diffusion Models

Spring Break:
March 20
March 17 - 22

Week Ten:
March 27
Stable Diffusion Basics _ Deforum
MH - Machine Hallucinations

Week Eleven:
April 03
Stable Diffusion Basics _ Comfy UI
Real Time Rendering
Adobe Premiere Video Editing 1
CV - Computer Vision

Week Twelve:
April 10
Comfy UI installed Locally
Image to 3D with TripoSR
LoRa Training - Data Set and Training
LoRA - Low Rank Adaptation

Week Thirteen:
April 17
RunWay ML
Adobe Premiere Video Editing 2
VAE - Variational AutoEncoder

Week Fourteen:
April 24
Work in Class

Week Fifteen:
May 01
Work in Class

Finals Week:
May 08
FINAL PRESENTATION

*note: course syllabus & schedule are subject to change