VISUALIZATION III

3D Digital Design and Communication

Rutgers, The State University of New Jersey I Fall 2024
Landscape Architecture 11:550:350
Instructor : Haemee Han, LLA, ASLA haemee.han@rutgers.edu
TA : Kaylah Lue kl1044@scarletmail.rutgers.edu
Blake Hall Room 129 I Tuesday & Friday 8:30AM-11:30AM
Office Hour : Thursdays 10:30AM – 11:30AM (HH), Fridays 12:00PM – 1:00 PM (KL)

Image credit : Kaylah Lue, Concept Montage

The contemporary practice of Landscape Architecture requires the designer to fluidly work in a variety of digital media and with an integrated approach to analogue and digital design practices. Acquiring the fundamental skills of 2D drafting and 3D modelling facilitates landscape architects' ability to speculate, develop, produce, and communicate their spatial ideas with clarity and precision. This course will expand on the fundamentals of computer-aided design and drafting as a design and communication tool in the practice of landscape architecture. Intended as a continuation and progression beyond the fundamental drawing principles and graphic design tools introduced in the earlier visualization sequence of courses (Landscape Drawing & Design Communication), this course is designed to further the students' understanding of 2D and 3D space, form, and the application of the standards of visual representation in the practice of Landscape Architecture. Using digital drawing and representation as investigatory methods in design research, students will harness new methods for visualization in their study of a seminal work of landscape architecture from across the globe.

Course Goal:

Upon completion of this course, students with a passing grade will exhibit the following skills:

- Enhance both conceptual and practical design thinking through three-dimensional studies.
- Develop 3D modeling skills building on previously developed 2D drafting skills and logic.
- Building workflow between 2D and 3D software.
- Generate multiple design ideas and develop a design idea through 3D study iterations.
- Identify modelling methods based on 3d form, landscape materials, and construction techniques.
- Develop a unique graphic style that effectively communicates and visually represents design concepts.
- Students will produce a comprehensive design package integrating a 3D model with environment, 2D drafted architectural drawing set, rendered views, and illustrated presentation level drawings.

Course Format:

1. Lecture
2. In-Class Tutorials & Exercises
3. Weekly Assignments & Critiques
4. Final Portfolio

Student Obligations and expectations:

The course is a prerequisite in the Landscape Architecture degree program and the second in the sequence of Visualization courses required by the student for graduation. In accordance with university policy, students are expected to work an additional 9.75 hours per week outside of class. Therefore, please prepare appropriate time in your schedule this semester in relationship to your other course work, employment, and social obligations to prepare for and participate in class.
Students are expected to:
1. Complete and submit all assignments as directed on the designated due date. Late coursework will not be accepted.
2. Come to class on time. Late arrivals greater than twenty (20) minutes will be marked as absence.
3. Take notes during class presentations to help retain knowledge and repeat procedures outside of class. The instructor will not review any content that has been missed by a student's absence. Your attendance will be directly related to your success in this class.
4. Care. Put 100% into every one of your assignments and be proud of the work you produce in this class. Treat each assignment like it is your last.
5. Seek help, when needed, during office hours and in advance of an assignment's due date.

Equipment and Use of Facilities:

Laptop (please check graphic cards & memory needed for Lumion)
Mouse (required)

Software: AutoCAD, AdobeCC, Rhinoceros, Lumion
Grasshopper Plug-in (Landkit, Ladybug, Lunchbox), Stable Diffusion (A1111) with ControlNet

Assignments :

Students will be given weekly assignments on Tuesday. Assignments are to be worked on outside of class time and 'work in progress' is to be discussed during Friday class meetings. Weekly assignments must be uploaded to Canvas by 8:00PM on the due date specified.
If a student misses a class, whether excused or unexcused, it is the responsibility of the student to acquire the missed lecture information, new assignment and submit the previous assignment on time. Except for documented circumstances truly beyond the student's control, all projects that are incomplete on the due date should still be submitted on the due date in their incomplete state, to receive a partial credit and fully completed, thereafter for a reduced grade.
If a student elects to not submit work by the end of the semester, they will receive a zero. Any project work submitted late will lose a letter grade. Working beyond a due date is both unrealistic in a professional setting and unfair to classmates who have completed their work on time.

Weekly Assignments :

1. Submit final PDFs on Canvas
   Course Name : 550-350_Fall2024
2. Students must conform to the following naming conventions:
   550-350_LastName_FirstName_Assignment#

All the exported PDFs should be under 10MB

Readings and Resources:

https://www.food4rhino.com/en For downloading Grasshopper Plugins
https://3dwarehouse.sketchup.com/ For model downloads
https://civitai.com/ AI Stable Diffusion Checkpoint

Course Grades:

Scores for class projects during this semester will be graded and recorded as if for one class. Grades for the two courses will be determined based upon the following performance scale. In the event of split grades for the two courses, the instructor reserves the right to determine which course to assign grades. Grades will be based upon assessment of your performance.

A | Exemplary Work. Exceptional performance, discipline, and effort. The student is self-motivated to produce above and beyond what is assigned. "A" work shows initiative and independent exploration both in thought and in craft.

B | Good Work. Performance above the norm. A “B+” student completes precise and thoughtful work that executes the assignment in a well-crafted, thoughtful way, with a concept behind it. “B” work meets all expected criteria but lacks conceptual advancement or understanding.

C | Work is Lacking. Mediocre performance, little discipline, and effort. Student barely meets or is lacking the expectations of the assignment, and work is carried out in an unrefined manner.

D | Unacceptable Work. Not meeting the expectations or standards for the assignment and/or program. Student failed to apply the concepts applicable to the assignment. A sense of care does not accompany work submission.

F | Failing, Unacceptable Work. Complete lack of performance and shows no regret for non-compliance with the minimum requirements.

Academic Integrity:

1. Attendance Policy

The Department of Landscape Architecture requires attendance in all of its classes. The individual student's development as a landscape architect is largely dependent upon two aspects of education. First, is the exposure to an assimilation of a body of information which relates to the field. Second, is the application of this knowledge through studio projects and problem-solving skills developed through critiques, reviews, and interactions during each project. The Rutgers Landscape Architecture curriculum is designed to develop both areas. Attendance and participation in all lectures and studios are essential if the student is to achieve their maximum potential. It is the Policy of the department that more than three (3) unexcused absences will result in a reduction of the final course grade. Each additional three absences will result in another step reduction. If circumstances arise beyond your control, please notify the instructor prior to the class meeting, and other arrangements will be made. Please note that attendance is taken at the start of class and late arrivals greater than 10 minutes will be documented as a full absence. In addition, students may not leave the class prior to the official end time of class unless the instructor has officially dismissed the students, or the early departure has been pre-arranged with the instructor in advance. In-class exercises will be handed out during class periods; there will not be a chance to make up missed exercises.

2. Excused absences

An excused absence includes a written excuse from a Physician, excuse from the Dean of the College, or a field trip for another course if this instructor is notified one week or more in advance.

3. Due dates, deadlines, and presentations

Assignments must be submitted on the stated due date, time and place regardless of how complete or incomplete it is.

4. Policy for make-up work due to excused absence

Upon return from an excused absence, a student has one week to turn in any missed assignments without penalty.

5. Students needing assistance:

Students who know or suspect that they have any type of disability which may affect their performance in the class must inform the instructor of such disability in writing before the third class meeting. The professor will work with the University Counseling and Testing Center to accommodate the needs of such students. Without such notification, no special accommodations will be considered at any later date.

6. Special Circumstances:

Other situations will be dealt with on a case by case basis between the student and the instructor outside of class time. Arrangements will be made in writing and signed by both parties. Do not discuss late work or absences during class time.

7. Work ethics and standards:

Professionalism is requested. If presenting, students will be expected to wear professional dress. During studio, casual clothes suitable for work in an office will be the standard. Professional work days require evidence of self-directed learning and initiative. All students are encouraged to work together in the studio outside of class time rather than at home. You will each benefit from the interaction with classmates and upperclassmen if you take advantage of this opportunity. Typically, students who produce superior work participate fully in the studio environment rather than in isolation.

8. Lab rules and etiquette:

During class time, the following will not be permitted: • Use of tobacco of any form • Playing music or use of earphones • Browsing/surfing the Internet not related to class unless indicated by the class instructor • No pets in the studio & lab • Please observe common courtesy when working with others in the studio.

9. Cell Phone Use:

Cell phone use during class is considered a public distraction and discourteous to those around you. Please turn off your phone during lectures and studio and place your phone out of sight in backpacks, purses or lockers. If you need to communicate using this vehicle – please do so outside of the studio.

10. Documentation of Student's Work:

Students are required to keep all work completed during a semester until the end of the term in order to review progress and aid discussion if necessary.

11. Studio and Computer Lab Work:

All students are encouraged to work together in the studio outside of class time rather than at home. You will benefit from the interaction with classmates and upperclassmen.

12. Academic Honesty:

While students are encouraged to work alongside one another to learn the tools and techniques presented in this course and foster a positive studio environment, copying or sharing of digital information is not acceptable and will be considered a violation of the school's Integrity Policy

Assignment & Grading Schedule

In-class Exercise / Pop Quiz / Attendance **– 10%**
Weekly Exercise - **75%**
Final Design Package (Assignment #12) **– 15%**

Class Schedule

Day	Date	Class Assignment

Part 1 : Modeling Existing Site

Week 1 : Drafting & Surface making I

Tue.	9/3	Tutorial : Intro, Drafting
Fri.	9/6	Tutorial : Surface Making I & Work Session
		Assignment #1 Due 9/9 Monday 8:00PM

Week 2 : Surface making II

Tue.	9/10	Tutorial : Surface & Object creation
		In Class Exercise : Steps, Walls
Fri.	9/13	Tutorial : 3D Transformation
		Assignment #2 Due 9/16 Monday 8:00PM

Week 3 : Detail Modeling

Tue.	9/17	Tutorial as needed
		In Class Exercise : Bridge
Fri.	9/20	Tutorial: Rhino Render, Rhino Material

Week 4 : Detail Modeling

Tue.	9/24	Tutorial as needed
		Assignment #3 Due 9/26 Thursday 8:00PM
Fri.	9/27	Axon Typologies

Week 5 : Axon

Tue.	10/1	Tutorial : Site Typologies, Exploded Axon
		Assignment #4 Due (End of Part 1) 10/3 Thursday 8:00PM
Fri.	10/4	Tutorial : Design Alternatives

In Class Exercise : Circulation, Program

Part 2 : 3D as Design Tool

Week 6 : Circulation and Massing

Tue.	10/8	**No Class (ASLA Conference)** – Work on Design Alternatives
Fri.	10/11	Tutorial : Intro to Grasshopper

Week 7 : Topography, Paving

Tue.	10/15	Tutorial : Landkit (Analysis and Design Study)
		Assignment #5 Due 10/17 Thursdsay 8:00PM
Fri.	10/18	Tutorial : Pavingkit
		In Class Exercise : Paving Alternative

Week 8 : Design Development

Tue.	10/22	Tutorial : Furniture, Fixture
Fri.	10/25	Work Session
		Assignment #6 Due 10/28 Monday 8:00PM

Week 9 : Material Study, Detail Sectional Model

Tue.	10/29	Tutorial : Section Perspective
Fri.	11/1	Work Session
		Assignment #7 Due 11/4 Monday 8:00PM

Part 3 : Visualization

Week 10 : Perspective I

Tue.	11/5	Tutorial : Camera, Concept Montage
Fri.	11/8	Work Session
		Assignment #8 Due 11/11 Monday 8:00PM

Week 11 : Perspective II

Tue.	11/12	Tutorial : Lumion
Fri.	11/15	Tutorial : Styling
		Assignment #9 Due 11/18 Monday 8:00PM

Week 12 : Intro to AI

Tue.	11/19	Lecture : Designing with AI
		Tutorial : Stable Diffusion Intro
Fri.	11/22	Tutorial : Stable Diffusion
		Assignment #10 Due 11/25 Monday 8:00PM

Week 13 : Design Revision, Plan, Section Perspective

Tue.	11/26	Tutorial : Masterplan – If needed
Fri.	11/29	**No Class – Thanksgiving Break**

Week 14 : Final Project

Tue.	12/3	Work Session
		*Tutorial : Video Making or/and Sub D
Fri.	12/6	Work Session

Week 15 : Extra Fun Day!

Tue.	12/10	Assignment #11 Pin Up by 8:30 AM

*The detailed schedule above is tentative and may change as the course develops