ARCHITECTURAL DESIGN: ENVIRONMENTS AND MEDIATIONS
COURSE NUMBER UN2103 Spring 2021
Mondays and Wednesdays, 10:00am – 12:50pm, room 404 Diana Center

Barnard and Columbia Colleges Architecture Department
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Junya Ishigami, Disc-shaped dwelling between two rocks, Chile; Tezuka Architects, Woods of Net

COURSE DESCRIPTION.

This architectural design studio course explores modes of visualization, technologies of mediation and environmental transformations. These explorations will be used as catalysts for architectural analysis and design experimentation.

Introducing design methodologies that allow us to see and to shape environmental interactions in new ways, the studio will focus on how architecture may operate as a mediator – an intermediary that negotiates, alters or redirects multiple forces in our world: physical, cultural, social, technological, political etc. The semester will progress through three projects that examine unique atmospheric, spatial and urban conditions with the aid of multimedia visual techniques; and that employ design to develop creative interventions at the scales of an interface, space and city.
LEARNING OBJECTIVES
Upon the completion of this course, students should be able to:

• Demonstrate an understanding of design method as a step-by-step, iterative and incremental process of research, synthesis, and feedback that requires experimentation and risk taking

• Visually communicate design concepts and design intent using discipline-specific techniques of representation

• Utilize analog and digital modeling and visualization techniques in the design process

• Demonstrate the ability to record relations, transformations, and environments

PROJECT DESCRIPTIONS
The studio assignments will incorporate analog and digital drawings, collages, diagrams, sketches, digital and physical models, animation and videos, etc. The working process will develop feedback loops between conceptual and critical thinking, design ideas and iterative experimentation, and techniques of architectural representation. Students will work individually as well as collaboratively.

PROJECT 1: HUMAN POWERED INTERFACE: Curtain Walls, Sensation, Filter
This project begins with site analysis through the creation of a portable field station for observation and documentation. Students choose a data set from their surrounding neighborhood, their room, or campus, and create a wearable or portable device that allows for field documentation of some ephemeral quality, including light, stars, clouds, weather, shadows, air flows etc. Data retrieved from “field station” is used to create digital documentation that will serve as blue prints for a larger “wearable wall”—part architecture, part clothing. The wearable wall should serve as a filter for experiencing some ephemeral environmental experience.
PROJECT 2: 4TH DIMENSIONAL ARCHITECTURE: Un-blurring Time in Architecture

In *The Order of Time* physicist Carlo Rovelli (a friend from grad school) unravels our notion of time as linear. Instead he reveals time as a human construct. Time, as we know it, is a matter of perception. With that in mind, in Project 2 we will analyze the experience of a person walking through a public space in a large-scale work of architecture like the Lerner Center. The studio will then map human movement through architecture, including all facets of perception across the senses, from head to toe and at varied speeds, with the aim of creating diagrams that defy linear time. Collages and videos will be translated into digital documentation that then will be used to create an intervention into the public space. It will be an architectural intervention of simultaneity, a vision of the convergence of past, present and future.

Student models of Lerner Center, Bernard Tschumi, Columbia University campus. Experimental model of Frei Otto

PROJECT 3: TIME TRAVELING NYC INFRASTRUCTURE: NYC Past, Present and Future

According to Eric W. Sanderson and Markley Boyer, authors of *Mannahatta: A Natural History of New York City*, the island known as Mannahatta, when the Dutch arrived, had fifty-seven different ecosystems. It was a paradise of timber forests, fresh water ponds and mammals from beaver to bear. We know what it is now. What does the future hold, as climate change, rising seas, pandemics and food shortages threaten to change the way we live? This project asks students to create a new infrastructure across multiple zones of the city, a “new Babylon” or relative of what the Situationist Constant Nieuwenhuys (1920-2005) envisioned. Using architectural drawings and archival data and maps, we will document select public spaces, their occupations, and occupiers, both past and present, to create a hybrid timescape for the inhabitants of the city. These will bridge across time, and social strata.
DESIGN AND TECHNICAL SKILLS

The studio curriculum will be an introduction to fundamental design and technical skills. Workshops will be offered both in class and outside studio sessions to support software tutorials. In addition to periodic presentations by the studio critic and the TA, DAL Assistants will conduct other informal evening workshops focusing on techniques and methods relevant to ongoing projects. These sessions are optional but you are strongly encouraged to attend.

Students in this course are required to gain proficiency in the following:

**Architectural Drawings**

Analytical Diagrams
Plans, Elevations, Sections
Three-dimensional drawings: Axonometric, Isometric, Perspective, etc.
Freehand Sketching

**Modeling Skills**

Model-making using a variety of materials using paper, wood, chipboard, foam core, wire, plexiglass, etc.

**Software Skills**

Line drawings using Adobe Illustrator
2D/3D Renderings, Collages using Adobe CS
Three-dimensional modeling using Rhino
Moving Image Media (Adobe CS, iMovie)
CALENDAR

EXERCISE 1
Week 1.  Sept. 9th  Introduction
PROJECT 1A: HUMAN POWERED INTERFACE: FIELD STATION
Sept. 11th  Meeting and mini-presentations, model construction

Week 2.  Sept. 14th  CRITIQUE 1A.
BEGIN PROJECT 1B: HUMAN POWERED INTERFACE: WEARABLE WALL
Sept. 16th  Meeting and mini-presentations
Sept. 18th  Individual meetings

Week 3.  Sept. 21st  CRITIQUE 1B. BEGIN
PROJECT 2A: 4TH DIMENSIONAL ARCHITECTURE: PHOTOGRAPHIC ANALYSIS
Sept. 23rd  Photography, Photoshop workshop, Illustrator
Sept. 25th  Meeting and mini-presentations, analysis and concept discussion

Week 4.  Sept. 28th  CRITIQUE 2A.
BEGIN PROJECT 2B 4TH DIMENSIONAL ARCHITECTURE: MOTION/SENSE SPATIAL CONSTRUCTION
Sept. 30th  Model construction: layers and multiple data sets
Oct. 2nd  Meeting and mini-presentations

Week 5.  Oct. 5th  CRITIQUE 2B. BEGIN PROJECT 3A: TIME TRAVELLING NYC: RESEARCH AND VIDEO
Oct. 7th  Adobe Premiere workshop (iMovie if necessary)
Oct. 9th  Editing, fx, rhythm, audio techniques

Week 6.  Oct. 12th  CRITIQUE 3A. BEGIN PROJECT 3B: THE FUTURE OF INFRASTRUCTURE
Oct. 14th  Meeting and mini-presentations
Oct. 16th  Meeting and mini-presentations

Week 7.  Oct. 19th  FINAL REVIEW